

Refrigerators (Combis)

MODEL : * ERF-364M / 364A

* ERF-394M /394A

* ERF-414M / 414A

* ERF-367A / 397A /417A

✓ Caution

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

1. SPECIFICATIONS

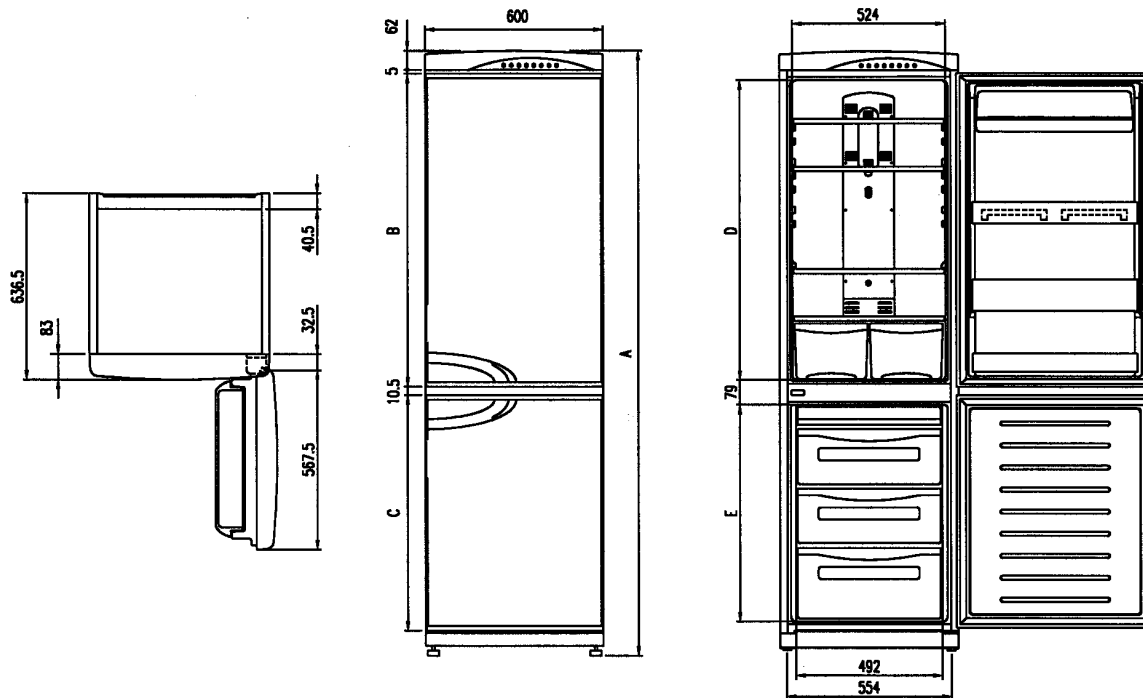
Specification

1.1 Product specification

Model name		ERF-364				ERF-394		ERF-414	
Division		A	M			A	M	A	M
Refrigerant type		R-134A							
Refrigerant Q'ty		0.1Kg	0.1Kg			0.1Kg	0.1Kg	0.1Kg	0.1Kg
Blowing agent		C-PENTANE							
Cooling system		Fan cool system							
Defrost system		Automatic start & Automatic stop system							
Compressor		HPL17YH-5							
Rated voltage		AC220~240V / 50Hz							
Rated input (W)		135							
Lamp rated input (W)		15							
Gross capacity (liter)	Freezer	93	93			93	93	114	114
	Refrigerator	223	223			253	253	254	254
	Total	316	316			346	346	368	368
External dimension (mm)	Height	1780	1780			1911	1911	2000	2000
	Width	600	600			600	600	600	600
	Depth	636,7	636,7			636,7	636,7	636,7	636,7
Energy consumption	kwh/24h	0,98	0,975			1,025	1,025	1,06	1,06
	class	A							
Freezing capacity(kg/24h)		5							
Star rating		* **	* **			* **	* **	* **	***
Climate class		N	N			N	N	N	N
Net weight (kg)		69	69			75	75	79	79

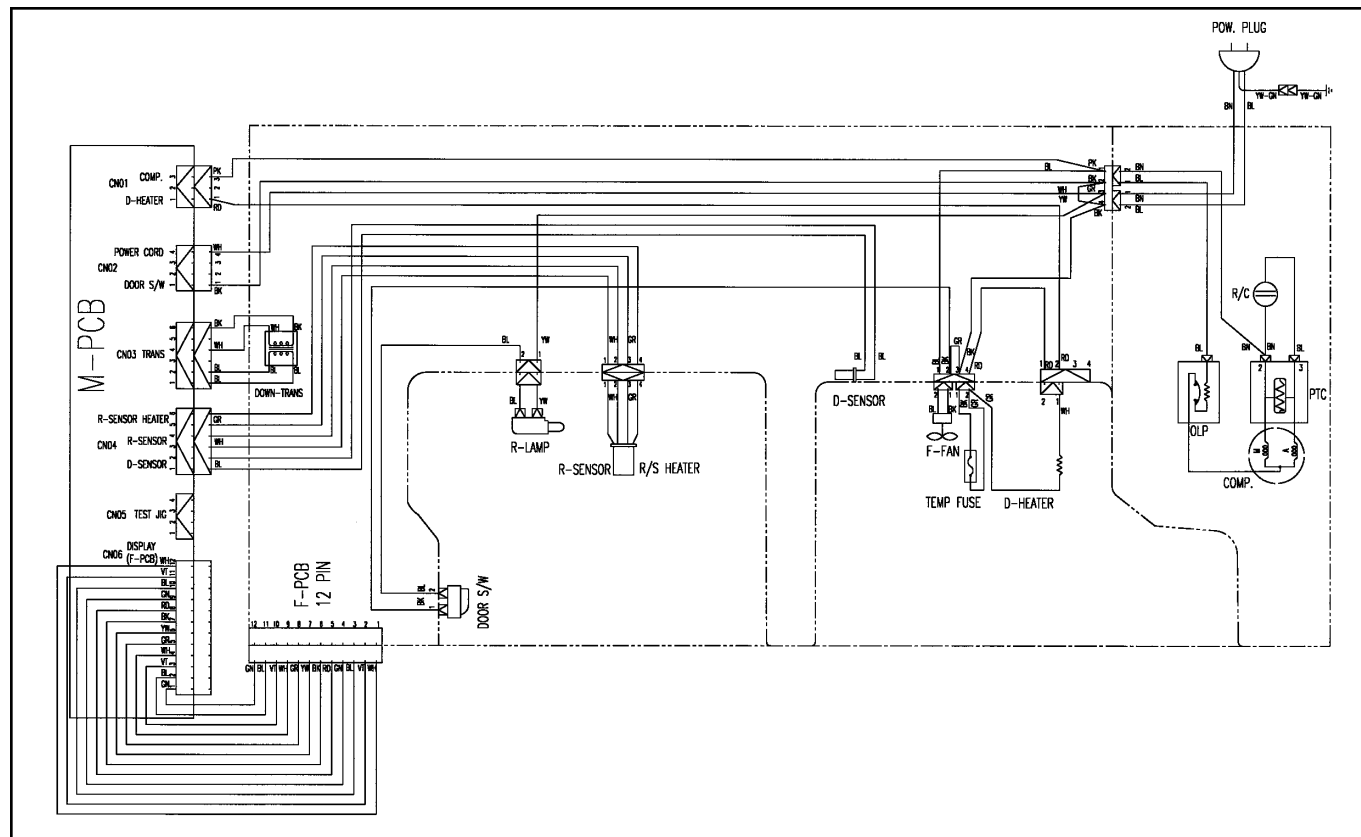
Model name		ERF-367A		ERF-397A		ERF-417A	
Refrigerant type		R-134A					
Refrigerant Q´ty		0.1Kg					
Blowing agent		C-PENTANE					
Cooling system		Fan cool system					
Defrost system		Automatic start & Automatic stop system					
Compressor		HPL17YH-5					
Rated voltage		AC220~240V / 50Hz					
Rated input (W)		135					
Lamp rated input (W)		15					
Gross capacity (liter)	Freezer	93		93		114	
	Refrigerator	223		253		254	
	Total	316		346		368	
External dimension (mm)	Height	1780		1911		2000	
	Width	600		600		2	
	Depth	636,7		636,7		636,7	
Energy consumption	kwh/24h	0,98		1,025		1,06	
	class	A					
Freezing capacity (kg/24h)		5					
Star rating		* **		* **		* **	
Climate class		N		N		N	
Net weight (kg)		69		75		79	

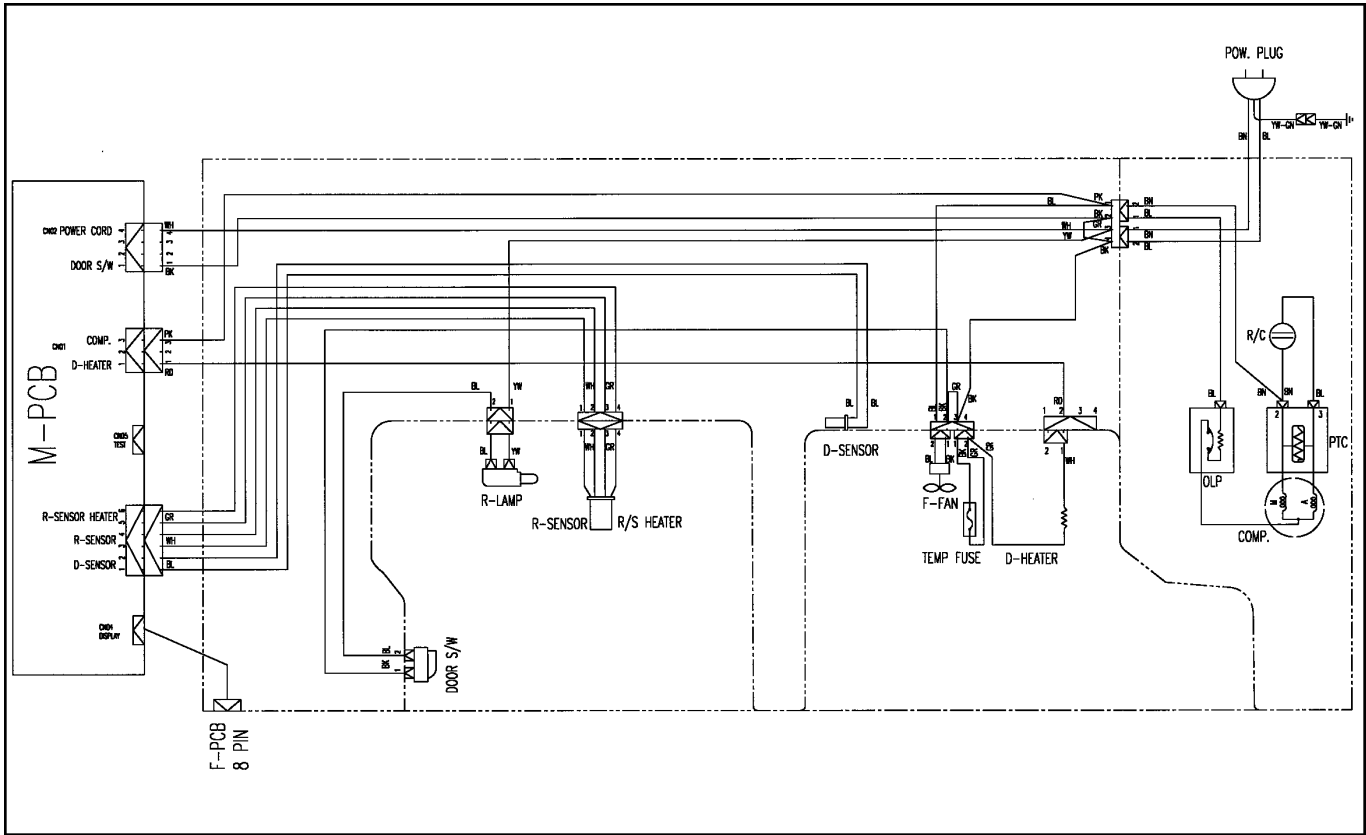
1. ERF-364A(M), 394A(M), 414A(M), 367A(M), 397A(M), 417A(M)



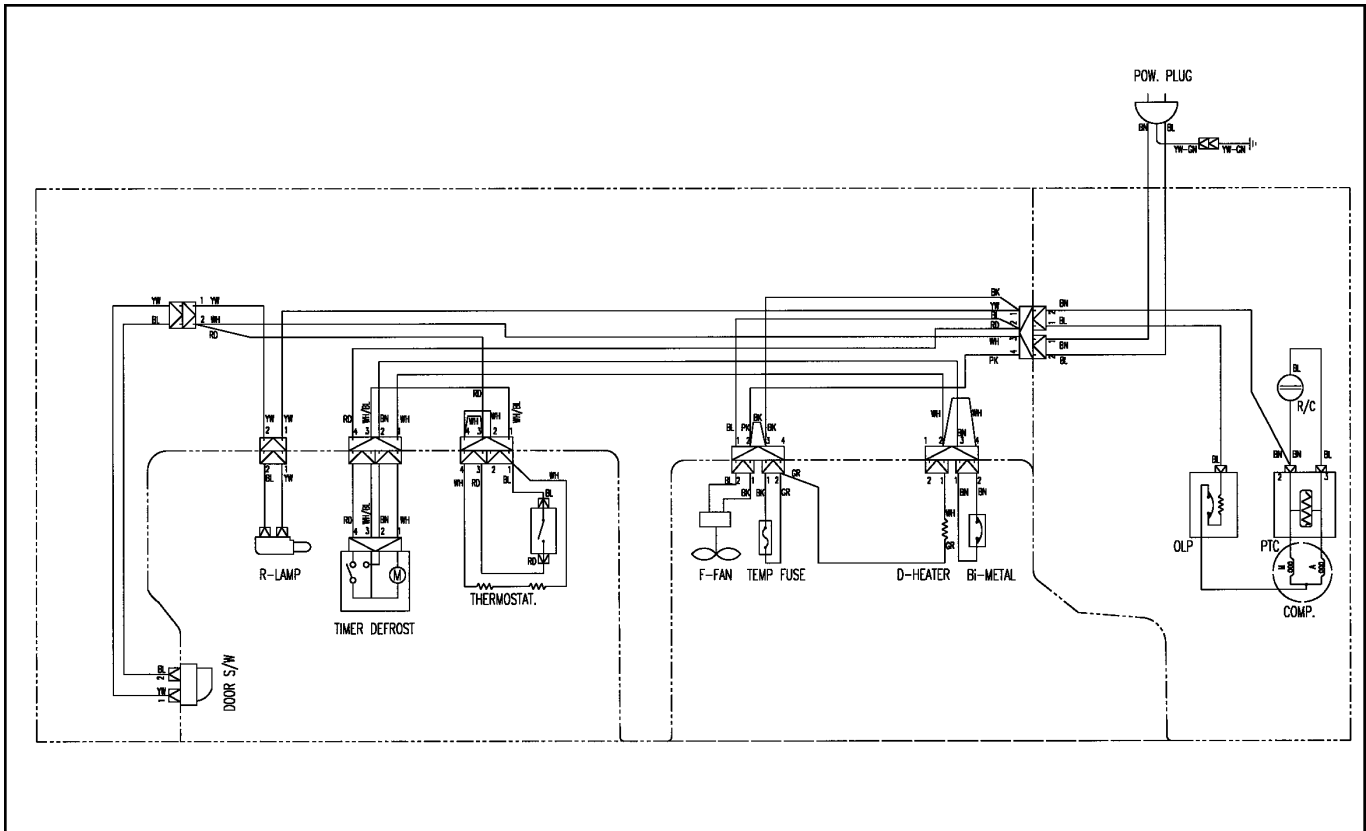
MODEL	A	B	C	D	E	REMARK
ERF-364/7A(M)	1780	931	698	862.5	621.5	
ERF-384/7A(M)	1869	931	787	862.5	710.5	
ERF-394/7A(M)	1911	1062	698	993.5	621.5	
ERF-414/7A(M)	2000	1062	787	993.5	710.5	

2. ERF-367A, 397A, 417A





4. ERF-364M, 394M, 414M

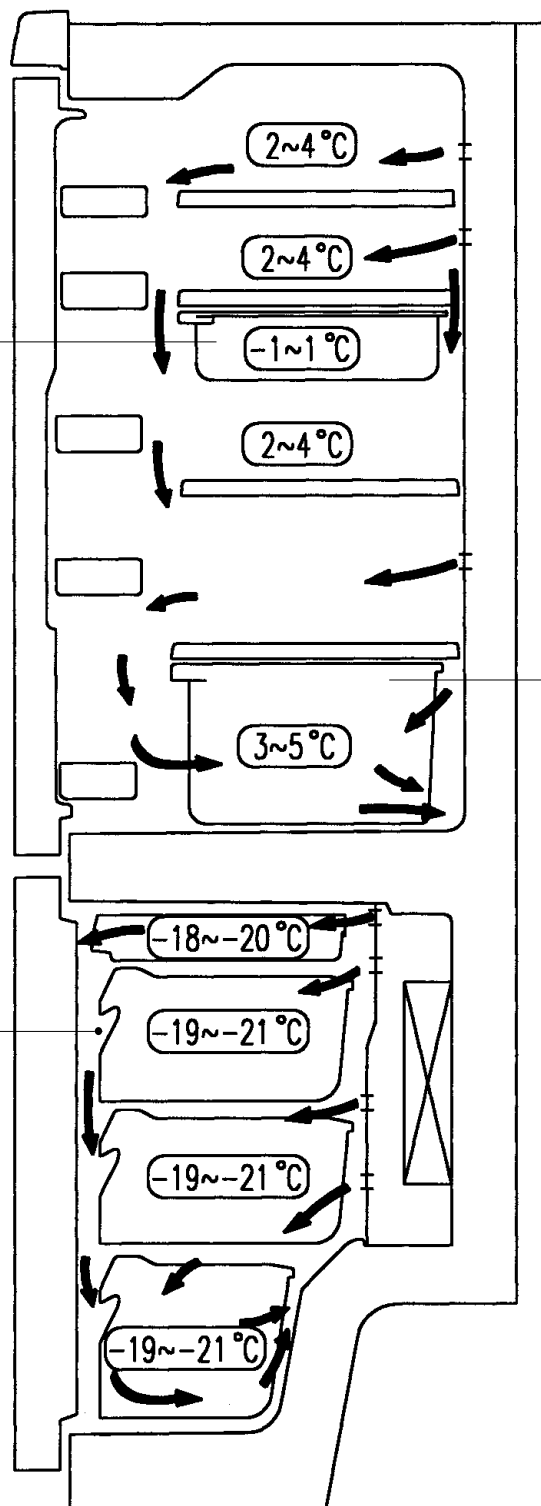


4. AIR FLOW DIAGRAM

Fresh food preserving case
(Chilled case)
Used for storing fish or meat

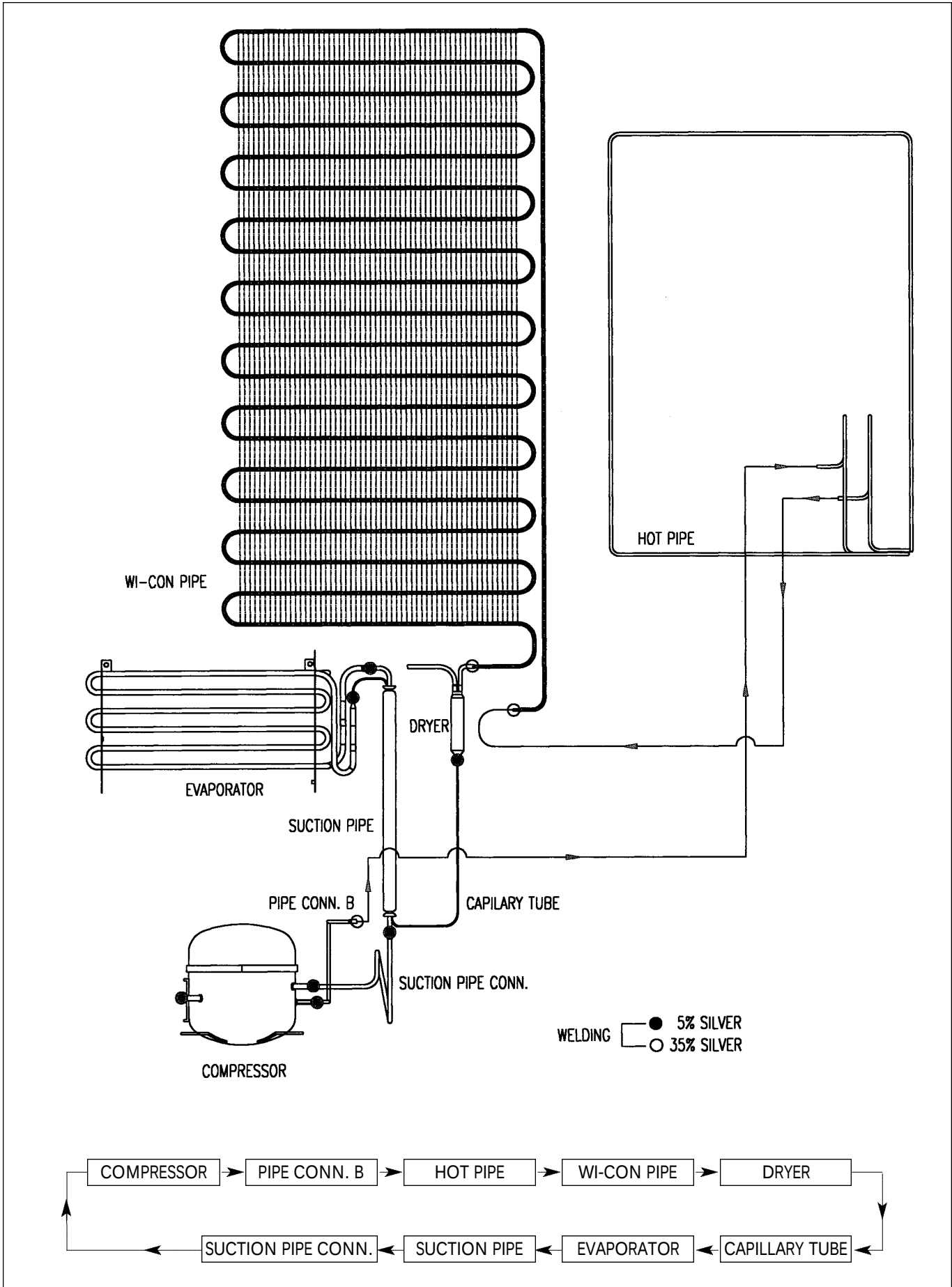
Case vegetable
For storing fruits or vegetables

Air circulation in the
freezer compartment
Cold air flow comes
out from the front
hole and comes into
the lower hole in
louver

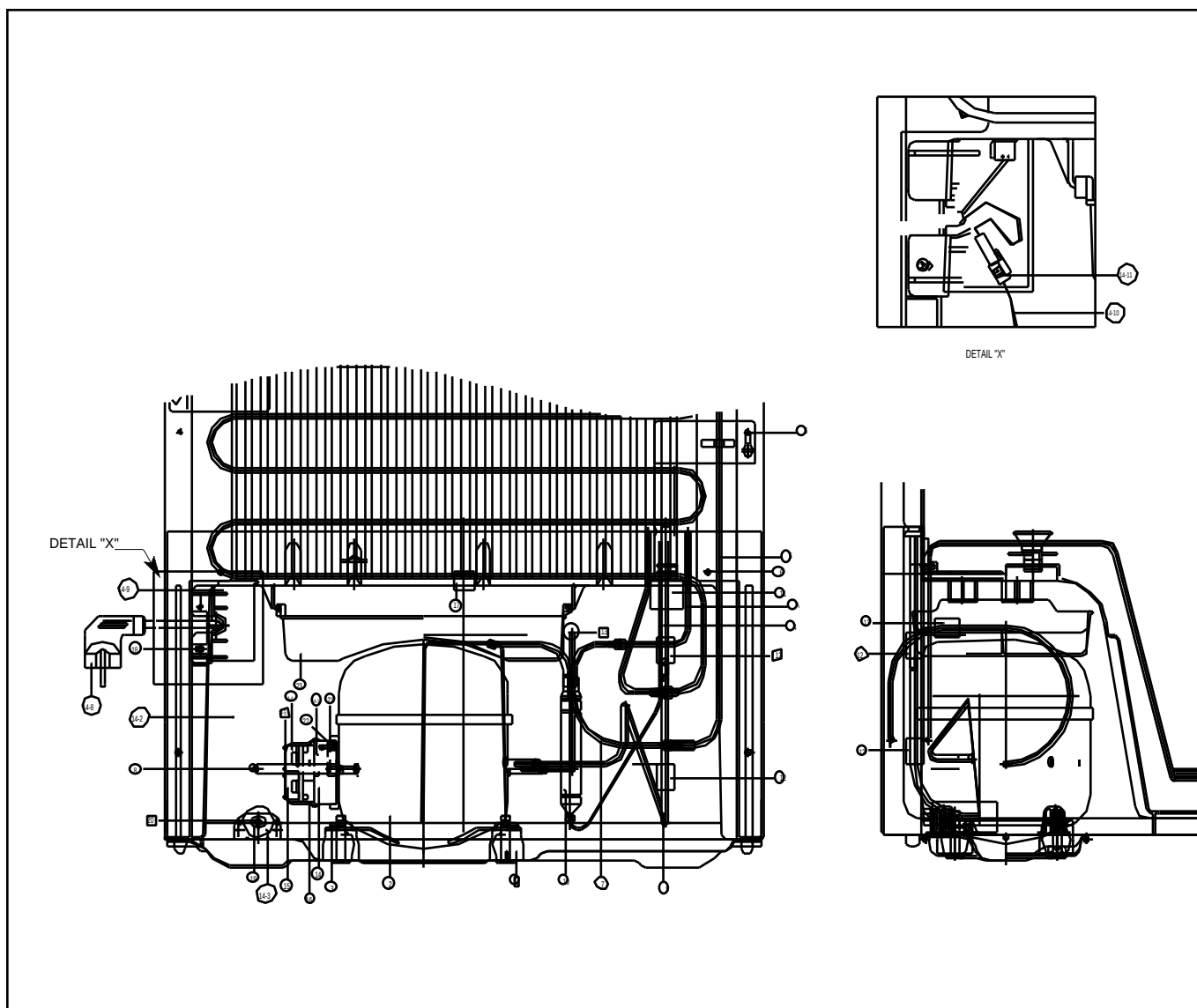


* Standard Model

5. REFRIGERANT CYCLE DIAGRAM



6. MACHINE ROOM VIEW AND PART LIST



N°	PART NAME	N°	PART NAME	N°	PART NAME
A	PIPE HOT	14	BOX RELAY AS	17	CAP DRAINER
1	ABSORBER COMP.	14-1	BOX RELAY	18	SCREW TAPPING
2	COMPRESSOR	14-2	HARNESS RELAY	19	SPECIAL WASHER R/C
3	FIXTURE COMP.	14-3	CAPACITOR RUN AS	20	SPECIAL NUT R/C
4	EVAPORATOR AS	14-4	CABLE CLAMP	21	SPECIAL WASHER
5	PIPE Wi-CON AS	14-5	SCREW TAPPING	22	SCREW MACHINE
6	SPECIAL SCREW E	14-6	SWITCH P RELAY PTC	23	CASE VAPORI
7	PIPE CONN B	14-7	SWITCH P RELAY OL		
8	PIPE CHARGE	14-8	CORD POWER AS		
9	PIPE SUC. CONN	14-9	COVER ME HOUSING		
10	DRYER AS	14-10	HARNESS EARTH		
11	ABSORBER PIPE B (GUM)	14-11	LABEL EARTH		
12	ABSORBER PIPE C (40 gr)	15	RELAY COVER		
13	ABSORBER PIPE C (38 gr)	16	BAND RELAY		

8. COMPONENTS SPECIFICATIONS

1. COMPRESSOR

	ERF-364A/364M/394A/394M/414A/414M /367A/397A/417A
Part name	HPL17YH-5
Part code	3956117S50
Rated voltage	220~240V / 50Hz
Starting type	RSCR
Refrigerant	R-134a

2. PTC

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Part name	SWITCH P RELAY PTC
Part code	3817923700

3. OLP

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Part name	4TM129SHBYY-53
Part code	3817923600

4. RUNNING CAPACITOR

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Part name	CAPACITOR RUN
Specification	5 Uf
Part code	3016402110

5. FAN MOTOR AS

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Part name	AS MOTOR FAN
Specification	DAI-6122 DESPA
Part code	3011804710

6. HEATER D AS

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Part name	GLASS HEATER
Specification	230V / 148W
Part code	3012807600

7. LAMP

	ERF-364A/364M/394A/394M/414A/414M
	ERF-367A/397A/417A
Type	Pygmy
Specification	230V / 15W
Part code	3013600700

8. SWITCH LAMP

		ERF-364A/364M/394A/394M/414A/414M
		ERF-367A/397A/417A
Type		1051
Specification		250V, 0.25A
Part code		3018111500

9. SOCKET LAMP AS

		ERF-364A/364M/394A/394M/414A/414M
		ERF-367A/397A/417A
Type		AJ0
Specification		AC 250V
Part code		3017903900

10. FUSE TEMPERATURE

		ERF-364A/364M/394A/394M/414A/414M
		ERF-367A/397A/417A
Type		SW-105T
Specification		AC250V, 77°C
Part code		3017200420

11. SWITCH BI-METAL

		ERF-364M/394M/414M
Type		PST-3
Specification		250V, 50~60Hz
Part code		3018120600

12. SWITCH D TIMER

		ERF-364M/394M/414M
Type		TMDEX09UU1
Specification		200-240 VAC 50/60 HZ
Part code		3018100350

13. THERMOSTAT

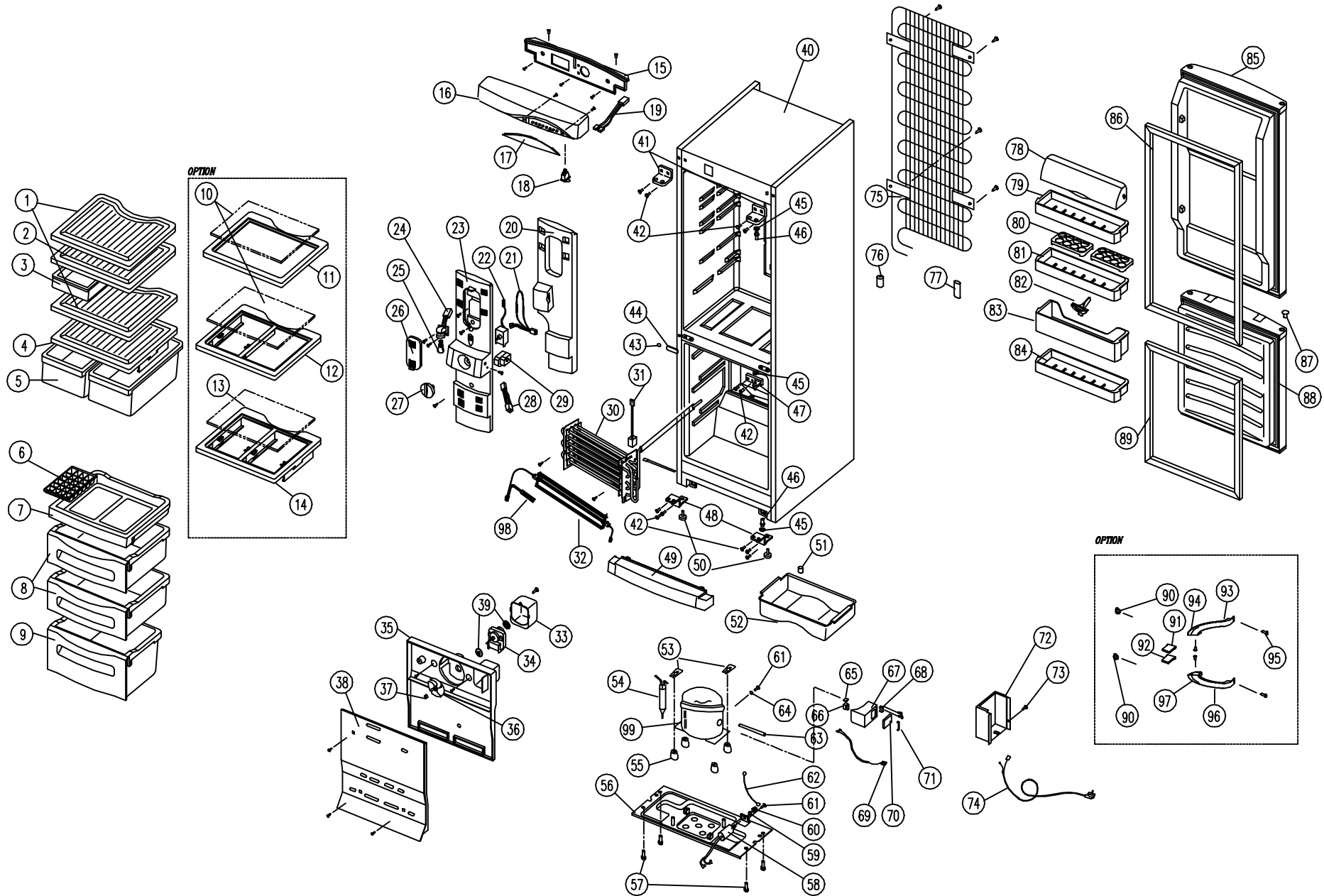
		ERF-364M/394M/414M
Type		BU-261
Specification		250V, 5A
Part code		3018120900

14. SENSOR R AS

		ERF-364A/394A/414A
Type		NBC-K43-D21
Specification		R=0 30 ±3%
Part code		3012731800

15. SENSOR D AS

		ERF-364A/394A/414A
Type		NBC-K43-D24
Specification		R=0 30 ±3%
Part code		3012733910

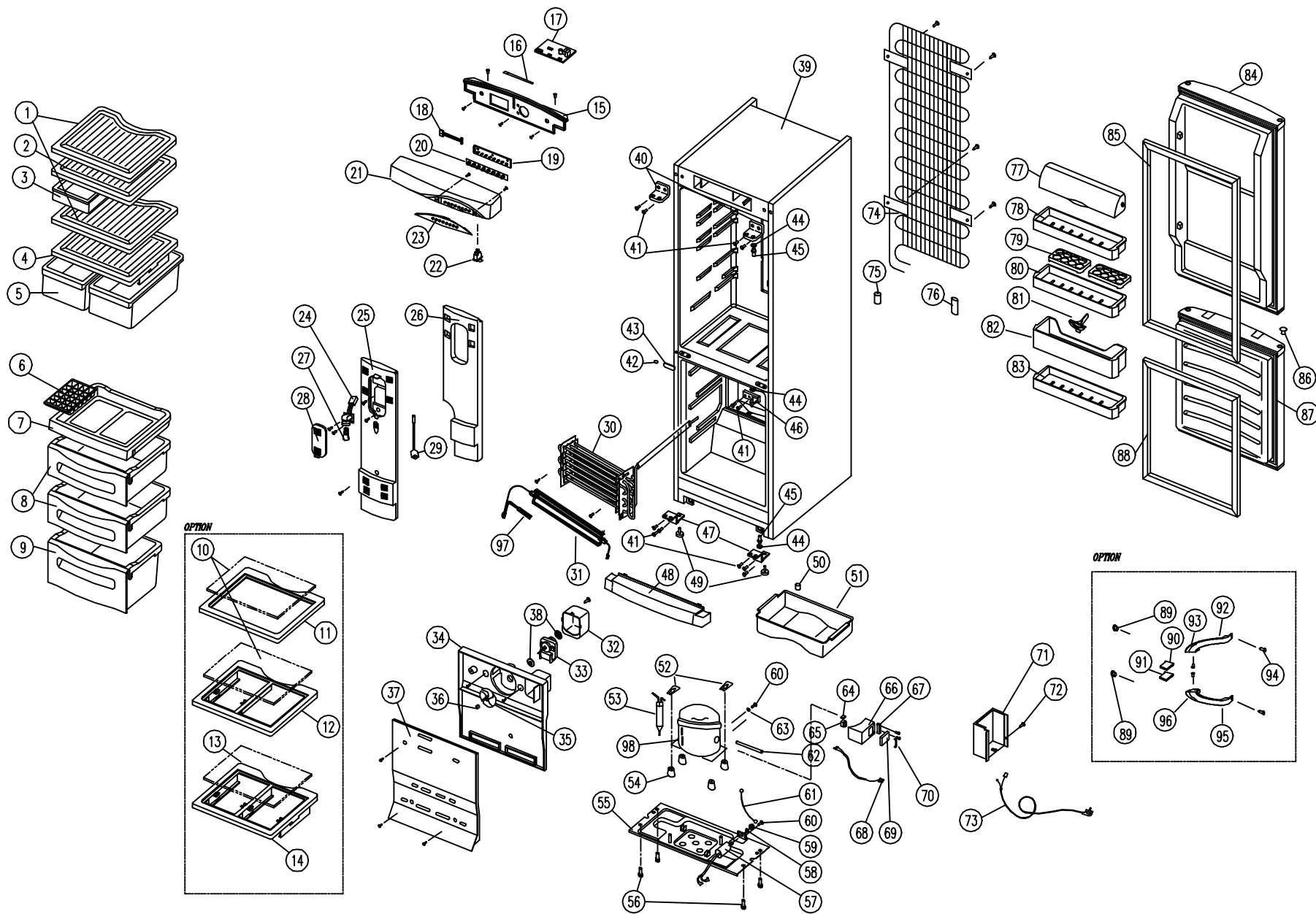


PART LIST

3. Part list (ERF-364M, ERF-394M, ERF-414M Type)

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			364	394	414		
1	SHELF R	3017823200	3	4	3	GPPS	391/411
2	COVER CHILLED CASE	3011453400	-	-	1	GPPS	
3	CASE CHILD	3011163300	-	-	1	GPPS	
4	COVER VEGTB CASE	3011453600	1	1	1	GPPS	
5	CASE VEGTB	3011163480	2	2	2	GPPS	
6	CASE ICING	3011163200	1	1	1	PP	
7	CASE FD	3011115940	1	1	1	HIPS	
8	CASE FB (414:CASE FC)	3011115301	2	2	-	HIPS	
		3011115410	-	-	2	HIPS	
9	CASE FA	3011115230	1	1	1	HIPS	
10	PLATE SHELF GLASS	3014547700	3	4	4	GLASS t4.0	OPTION
11	FRAME GLASS SHELF	3012202400	3	4	3	HIPS	OPTION
12	FRAME C/CASE COVER	3012202500	-	-	1	HIPS	OPTION
13	PLATE V/CASE COVER GLASS	3014547800	1	1	1	GLASS t4.0	OPTION
14	FRAME V/CASE COVER	3012202600	1	1	1	HIPS	OPTION
15	BASE CONTROL PANEL	COLOUR PAGE 42	1	1	1	HIPS	
16	PANEL CONTROL L/L	COLOUR PAGE 42	1	1	1	ABS	
17	WINDOW C/PANEL M	3015507300	1	1	1	ABS	
18	SWITCH LAMP	3018111500	1	1	1	250V 0,25A	
19	HARNESS LAMP SW	3012717020	1	1	1		
20	INSULATOR MULTI DUCT	3013337100	1	-	-	F-PS	
		3013337300	-	1	1	F-PS	
21	HARNESS THERMOSTAT	3012731500	1	1	1		
22	THERMOSTAT AS	3018120900	1	1	1	BU-261	
23	COVER MULTI DUCT	3011452000	1	-	-	HIPS	
		3011452300	-	1	1	HIPS	
24	SOCKET LAMP AS	3017903900	1	1	1	AC250V	ASSY
25	LAMP	3013600700	1	1	1	230V 15W	
26	WINDOW LAMP	3015503300	1	1	1		GPPS
27	KNOB R	3013401410	1	1	1	HIPS	
28	HARNESS TIMER	3012735300	1	1	1		
29	SWITCH DEF TIMER	3018100350	1	1	1	220V/50HZ	
30	EVAPORATOR AS	3017045600	1	1	1	EVA+SUC PIPE	
31	SWITCH BI-METAL	3018120600	1	1	1	250V 5A	
32	HEATER D AS	3012807600	1	1	1	GLASS HEATER+FUSE TEMP	
33	BRACKET FAN MOTOR	3010615600	1	1	1	PP	
34	MOTOR FAN AS	3011804710	1	1	1	DAI-6122DESPA	
35	LOUVER F B	3018905501	1	1	-	PP (414:HIPS)	
		3018905600	-	-	1	PP (414:HIPS)	
36	FAN	3011801410	1	1	1	ABS	
37	FIXTURE FAN RING	3012005400	1	1	1	SUS304 t0.5	
38	LOUVER F A	3018913800	1	1	-	HIPS	
		3018913900	-	-	1	HIPS	
39	BUSHING FAN MOTOR	3010901800	2	2	2	NR	
40	ASSY CAB URT	3010071031	1	-	-	ASSY	
		3010071041	-	1	-	ASSY	
		3010071051	-	-	1	ASSY	
41	HINGE *T	3012908100	2	2	2	P/O+ZN t3.2	
42	SPECIAL BOLT C	3016004900	10	10	10	M5xP0.89xL16 SWCH22A	
43	CAP SCREW	COLOUR PAGE 42	1	1	1	PE-LD	
44	CAP SCREW HOLE	3010920300	1	1	1	HIPS	
45	SPECIAL WASHER HINGE	3016005500	3	3	3	S20C t1.0 13/7	
46	SHAFT HI	3014903200	2	2	2		
47	HINGE *M	3012908001	1	1	1	DIE CASTING	
48	HINGE *U	3012908201	2	2	2	P/O+ZN t3.2	
49	COVER CAB BRACKET	COLOUR PAGE 42	1	1	1	HIPS	
50	FOOT ADJUSTING AS	3012101800	2	2	2	PP+SPECIAL BOLT	

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			364	394	414		
51	CAP DRAIN HOSE	3010919700	1	1	1	NBR	
52	CASE VAPORY	3011162600	1	1	1	PP	
53	FIXTURE COMP	3012005300	2	2	2	SK5+ZN5-C t0.8	
54	DRYER ASSY	3016802202	1	1	1	15Gr (t0.51)	
55	ABSORBER COMP	3010101700	4	4	4	NR	
56	BASE COMP	3010318600	1	1	1	SBHG t1.0	
57	SPECIAL SCREW A	3016004300	4	4	4	M6.5xL20	
58	CAPACITOR RUN	3016402110	1	1	1	5uF	
59	SPECIAL WASHER R/C	3016006410	1	1	1		
60	SPECIAL NUT R/C	3016006510	1	1	1	M8	
61	SCREW MACHINE	7051401065	2	2	2	PAN 4x10 BSNI	
62	HARNESS EARTH	3012735200	1	1	1	HOUSING+RING TERMINAL	
63	PIPE CHARGE	3014418202	1	1	1	DUCT1-O	
64	SPECIAL WASHER	3016004700	1	1	1	/4.3 STAR	earth:4
65	SWITCH P RELAY OL	3817923600	1	1	1	4TM129SHBY-53	
66	SWITCH P RELAY PTC	3817923700	1	1	1	33W	
67	RELAY BOX	3810506400	1	1	1		
68	CABLE CLAMP	3818200300	1	1	1		
69	HARNESS RELAY	3012731900	1	1	1		
70	RELAY BOX COVER	3811401300	1	1	1		
71	BAND RELAY	3816100400	1	1	1		
72	COVER MECH HOUSING	3011454100	1	1	1	HIPS	
73	SPECIAL SCREW	3016004800	1	1	1		
74	CORD POWER AS	3011343310	1	1	1	250V, 10/16A	COMMON
		3011343410	1	1	1	250V, 5A	U.K. SPECIAL
75	PIPE WI-CON AS	3014434510	1	1	1		
76	ABSORBER PIPE C	3010103000	2	2	2	EPDM, 40gr.	PIPE CONN
77	ABSORBER PIPE B	3010101900	1	1	1	IIR	PIPE SUC
78	COVER BUTTER CASE	3011433100	1	1	1	GPPS	
79	CASE BUTTER	3011114620	1	1	1	HIPS	
80	CASE EGG	3011163600	2	2	2	PP	
81	POCKET EGG	3019008760	1	1	1	HIPS	
82	GUIDE POCKET	3012510200	1	1	1	PP	
83	POCKET BOTTLE A	3019008600	1	1	1	HIPS	
84	POCKET R DOOR	3019008730	1	1	1	HIPS	
85	ASSY R DOOR URT	COLOUR PAGE 42	1	-	-	ASSY	
		COLOUR PAGE 42	-	1	1	ASSY	
86	GASKET R DOOR AS	3012306600	1	-	-	PVC+MAGNET	
		3012306800	-	1	1	PVC+MAGNET	
87	CAP DOOR BUSHING	COLOUR PAGE 42	1	1	1	PP	
88	ASSY F DOOR URT	COLOUR PAGE 42	1	1	-	ASSY	
		COLOUR PAGE 42	-	-	1	ASSY	
89	GASKET F DOOR AS	3012306500	1	1	-	PVC+MAGNET	
		3012306700			1	PVC+MAGNET	
90	CAP HANDLE	COLOUR PAGE 42	1	1	1	HIPS	OPTION
91	COVER DOOR CAP *L	COLOUR PAGE 42	2	2	2	ABS	OPTION
92	COVER DOOR CAP *R	COLOUR PAGE 42	2	2	2	ABS	OPTION
93	HANDLE R	COLOUR PAGE 42	1	1	1	ABS	OPTION
94	DECO. HANDLE R	3011612500	1	1	1	ABS+CR COATING	OPTION
95	SPECIAL SCREW D	3016004820	4	4	4	T2 FLT 4x16 PAINTING	OPTION
96	HANDLE F	COLOUR PAGE 42	1	1	1	ABS	OPTION
97	DECO. HANDLE F	3011612400	1	1	1	ABS+CR COATING	OPTION
98	TEMPERATURE FUSE	3017200420	1	1	1		
99	COMPRESSOR	3956117S50	1	1	1	HPL17YH1-5	



PART LIST

5. Part List (ERF-364A, 394A, 414A Type)

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			364	394	414		
1	SHELF R	3017823200	3	3	3	GPPS	391/411
2	COVER CHILLED CASE	3011453400	-	1	1		
3	CASE CHILD	3011163300	-	1	1	GPPS	
4	COVER VEGTB CASE	3011453600	1	1	1	GPPS	
5	CASE VEGTB	3011163480	2	2	2	GPPS	
6	CASE ICING	3011163200	1	1	1	PP	
7	CASE FD	3011115940	1	1	1	HIPS	
8	CASE FB (414:CASE FC)	3011115301	2	2	-	HIPS	
		3011115410	-	-	2	HIPS	
9	CASE FA	3011115230	1	1	1	HIPS	
10	PLATE SHELF GLASS	3014547700	3	3	3	GLASS t4.0	OPTION
11	FRAME GLASS SHELF	3012202400	3	3	4	HIPS	OPTION
12	FRAME C/CASE COVER	3012202500	-	1	1	HIPS	OPTION
13	PLATE V/CASE COVER GLASS	3014547800	1	1	1	GLASS t4.0	OPTION
14	FRAME V/CASE COVER	3012202600	1	1	1	HIPS	OPTION
15	BASE CONTROL PANEL	COLOUR PAGE 42	1	1	1	HIPS	
16	CABLE TIE	4016N03281	1	1	1		
17	PCB MAIN AS	30143A5060	1	1	1		
18	HARNESS F PCB	3012718300	1	1	1		
19	PCB F AS	3014372130	1	1	1		
20	WINDOWS LED	3015507400	1	1	1	SILICON RUBBER	
21	PANEL CONTROL	COLOUR PAGE 42	1	1	1	ABS	
22	SWITCH LAMP	3018111500	1	1	1	250V 0,25A	
23	WINDOW C/PANEL L/L	3015507200	1	1	1	ABS	
24	SOCKET LAMP AS	3017903900	1	1	1	AC250V	ASSY
25	COVER MULTI DUCT	3011451900	1	-	-	HIPS	
		3011452100	-	1	1	HIPS	
26	INSULATOR MULTI DUCT	3016637000	1	-	-	F-PS	
		3013337200	-	1	1	F-PS	
27	LAMP	3013600700	1	1	1	230V 15W	
28	WINDOW LAMP	3015503300	1	1	1		GPPS
29	SENSOR R AS	3012731800	1	1	1		
30	EVAPORATOR AS	3017045600	1	1	1	EVA+SUC PIPE	
31	HEATER D AS	3012807600	1	1	1	GLASS HEATER+FUSE TEMP	
32	BRACKET FAN MOTOR	3010615600	1	1	1	PP	
33	MOTOR FAN AS	3011804710	1	1	1	IS-231 1DWBFO	
34	LOUVER F B	3018905500	1	1	-	PP	
		3018905600	-	-	1	PP (414:HIPS)	
35	FAN	3011801410	1	1	1	ABS /100	
36	FIXTURE FAN RING	3012005400	1	-	-	SUS304 t0.5	
37	LOUVER F A	3018913800	1	1	-	HIPS	
		3018913900	-	-	1	HIPS	
38	BUSHING FAN MOTOR	3010901800	2	2	2	NR	
39	ASSY CAB URT	3010071001	1	-	-	ASSY	
		3010071010	-	1	-	ASSY	
		3010071020	-	-	1	ASSY	
40	HINGE *T	3012908100	2	2	2	P/O+ZN t3.2	
41	SPECIAL BOLT C	3016004900	10	10	10	M5xP0.89xL16 SWCH22A	
42	CAP SCREW	COLOUR PAGE 42	1	1	1	PE-LD	
43	CAP SCREW HOLE	3010920300	1	1	1	HIPS	
44	SPECIAL WASHER HINGE	3016005500	3	3	3	S20C t1.0 13/7	
45	SHAFT HI	3014903200	2	2	2		
46	HINGE *M	3012908001	1	1	1	DIE CASTING	
47	HINGE *U	3012908201	2	2	2	P/O+ZN t3.2	
48	COVER CAB BRACKET	COLOUR PAGE 42	1	1	1	HIPS	
49	FOOT ADJUSTING AS	3012101800	2	2	2	PP+SPECIAL BOLT	
50	CAP DRAIN HOSE	3010919700	1	1	1	NBR	

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			364	394	414		
51	CASE VAPORY	3011162600	1	1	1	PP	
52	FIXTURE COMP	3012005300	2	2	2	SK5+ZN5-C t0.8	
53	DRYER ASSY	3016802202	1	1	1	15Gr (t0.51)	
54	ABSORBER COMP	3010101700	4	4	4	NR	
55	BASE COMP	3010318600	1	1	1	SBHG t1.0	
56	SPECIAL SCREW A	3016004300	4	4	4	M6.5xL20	
57	CAPACITOR RUN	3016402110	1	1	1	4uF 400AC	
58	SPECIAL WASHER R/C	3016006410	1	1	1	A	
59	SPECIAL NUT R/C	3016006510	1	1	1	M8	
60	SCREW MACHINE	7051401065	2	2	2	PAN 4x10 BSNI	
61	HARNESS EARTH	3012735200	1	1	1	HOUSING+RING TERMINAL	
62	PIPE CHARGE	3014418202	1	1	1	DUCT1-O	
63	SPECIAL WASHER	3016004700	1	1	1	/4.3 STAR	earth:4
64	SWITCH P RELAY OL	3817923600	1	1	1	4TM129SHBYY-53	
65	SWITCH P RELAY PTC	3817923700	1	1	1	33W	
66	RELAY BOX	3810506400	1	1	1		
67	CABLE CLAMP	3818200300	1	1	1		
68	HARNESS RELAY	3012731900	1	1	1		
69	RELAY BOX COVER	3811401300	1	1	1		
70	BAND RELAY	3816100400	1	1	1		
71	COVER MECH HOUSING	3011454100	1	1	1	HIPS	
72	SPECIAL SCREW	3016004800	2	2	2		
73	CORD POWER AS	3011343310	1	1	1	250V, 10/16A	COMMON
		3011343410	1	1	1	250V, 5A	U.K. SPECIAL
74	PIPE WI-CON AS	3014434510	1	1	-		
75	ABSORBER PIPE C	3010103000	2	2	2	EPDM, 40gr.	PIPE CONN
76	ABSORBER PIPE B	3010101900	1	1	1	IIR	PIPE SUC
77	COVER BUTTER CASE	3011433100	1	1	1	GPPS	
78	CASE BUTTER	3011114620	1	1	1	GPPS	
79	CASE EGG	3011163600	2	2	2	PP	
80	POCKET EGG	3019008700	1	1	1	HIPS	
81	GUIDE POCKET	3012510200	1	1	1	PP	
82	POCKET BOTTLE A	3019008600	1	1	1	HIPS	
83	POCKET R DOOR	3019008730	1	1	1	HIPS	
84	ASSY R DOOR URT	COLOUR PAGE 42	1	-	-	ASSY	
		COLOUR PAGE 42	-	1	1	ASSY	
85	GASKET R DOOR AS	3012306600	1	-	-	PVC+MAGNET	
		3012306800	-	1	1	PVC+MAGNET	
86	CAP DOOR BUSHING	COLOUR PAGE 42	1	1	1	PP	
87	ASSY F DOOR URT	COLOUR PAGE 42	1	1	-	ASSY	
		COLOUR PAGE 42	-	-	1	ASSY	
88	GASKET F DOOR AS	3012306500	1	1	-	PVC+MAGNET	
		3012306700			1		
89	CAP HANDLE	COLOUR PAGE 42	1	1	1	HIPS	OPTION
90	COVER DOOR CAP *L	COLOUR PAGE 42	2	2	2	ABS	OPTION
91	COVER DOOR CAP *R	COLOUR PAGE 42	2	2	2	ABS	OPTION
92	HANDLE R	COLOUR PAGE 42	1	1	1	ABS	OPTION
93	DECO. HANDLE R	3011612500	1	1	1	ABS+CR COATING	OPTION
94	SPECIAL SCREW D	3016004820	4	4	4	T2 FLT 4x16 PAINTING	OPTION
95	HANDLE F	COLOUR PAGE 42	1	1	1	ABS	OPTION
96	DECO. HANDLE F	3011612400	1	1	1	ABS+CR COATING	OPTION
97	TEPERATURE FUSE	3017200420	1	1	1		
98	COMPRESSOR	3956117S50	1	1	1	HPL17YH1-5	
99	D-SENSOR	3012733910	1	1	1		

PART LIST

Part list of colour components (ERF-364A/M, ERF-394A/M, ERF-414A/M)

WHITE

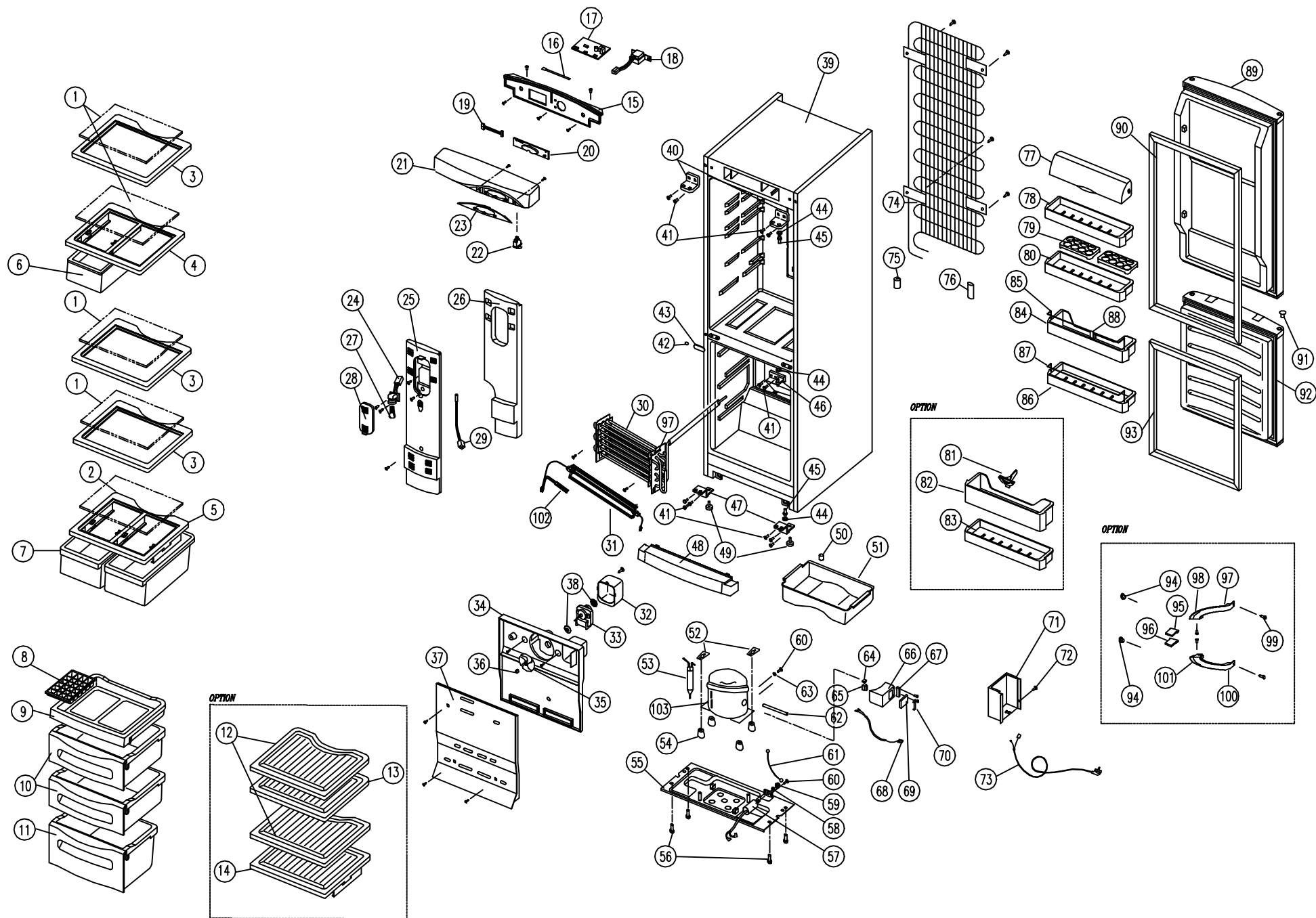
NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			364	394		414		
1	PANEL CONTROL L/L A	3014231000	1	1		1	ABS	electronic
2	PANEL CONTROL L/L M	3014231000	1	1		1	ABS	mechanical
3	BASE CONTROL PANEL	3010312900	1	1		1	HIPS	
4	REFRIGERATOR DOOR (364)	3010057730	1	-		-	URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (384)	3010057720	-	-		-	URT FORMING (CO-LAMINAR)	
6	REFRIGERATOR DOOR (394-414)	3010057750	-	1		1	URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (364-394)	3010086570	1	1		-	URT FORMING (CO-LAMINAR)	
8	FREEZER DOOR (384)	3010086780	-	-		-	URT FORMING (CO-LAMINAR)	
9	FREEZER DOOR (414)	3010086580	-	-		1	URT FORMING (CO-LAMINAR)	
10	REFRIGERATOR DOOR (364)-HH	3010086490	1	-		-	URT FORMING (CO-LAMINAR)	
11	REFRIGERATOR DOOR (384)-HH	3010057710	-	-		-	URT FORMING (CO-LAMINAR)	
12	REFRIGERATOR DOOR (394-414)-HH	3010057740	-	1		1	URT FORMING (CO-LAMINAR)	
13	FREEZER DOOR (364-394)-HH	3010086590	1	1		-	URT FORMING (CO-LAMINAR)	
14	FREEZER DOOR (384)-HH	3010086770	-	-		-	URT FORMING (CO-LAMINAR)	
15	FREEZER DOOR (414)-HH	3010086600	-	-		1	URT FORMING (CO-LAMINAR)	
16	HANDLE *F	3012626900	1	1		1	PBT	
17	HANDLE *R	3012627000	1	1		1	PBT	
18	COVER DOOR CAP *L	3011467300	2	2		2	ABS	
19	COVER DOOR CAP *R	3011467400	2	2		2	ABS	
20	CAP HANDLE	3010910000	4	4		4	HIPS	
21	CAP SCREW	3010920200	1	1		1	HIPS	
22	CAP DOOR BUSHING	3010918300	1	1		1	PP	
23	COVER CAB BRACKET	3011467500	1	1		1	HIPS	

SILVER

NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			364	394		414		
1	CONTROL PANEL A	3014231020	1	1		1	ABS + SILVER	electronic
2	CONTROL PANEL M	3014231020	1	1		1	ABS + SILVER	mechanical
3	BASE CONTROL PANEL	3010312910	1	1		1	HIPS +SILVER	
4	REFRIGERATOR DOOR (364)	3010057760	1	-		-	URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (384)	3010057800	-	-		-	URT FORMING (CO-LAMINAR)	
6	REFRIGERATOR DOOR (394-414)	3010057770	-	1		1	URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (364-394)	3010086620	1	1		-	URT FORMING (CO-LAMINAR)	
8	FREEZER DOOR (384)	3010086800	-	-		-	URT FORMING (CO-LAMINAR)	
9	FREEZER DOOR (414)	3010086630	-	-		1	URT FORMING (CO-LAMINAR)	
10	REFRIGERATOR DOOR (364)-HH	3010057780	1	-		-	URT FORMING (CO-LAMINAR)	
11	REFRIGERATOR DOOR (384)-HH	3010057820	-	-		-	URT FORMING (CO-LAMINAR)	
12	REFRIGERATOR DOOR (394-414)-HH	3010057790	-	1		1	URT FORMING (CO-LAMINAR)	
13	FREEZER DOOR (364-394)-HH	3010086640	1	1		-	URT FORMING (CO-LAMINAR)	
14	FREEZER DOOR (384)-HH	3010086790	-	-		-	URT FORMING (CO-LAMINAR)	
15	FREEZER DOOR (414)-HH	3010086650	-	-		1	URT FORMING (CO-LAMINAR)	
16	HANDLE *F	3012626920	1	1		1	PBT + SILVER	
17	HANDLE *R	3012627020	1	1		1	PBT + SILVER	
18	COVER DOOR CAP *L	3011467320	2	2		2	ABS + SILVER	
19	COVER DOOR CAP *R	3011467420	2	2		2	ABS + SILVER	
20	CAP HANDLE	3010910010	4	4		4	HIPS +SILVER	
21	CAP SCREW	3010920210	1	1		1	HIPS +SILVER	
22	CAP DOOR BUSHING	3010918310	1	1		1	PP + SILVER	
23	COVER CAB BRACKET	3011467520	1	1		1	HIPS + SILVER	

INOX (DARK GREY)

NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			364	394		414		
1	CONTROL PANEL A	3014231010	1	1		1	ABS	electronic
2	CONTROL PANEL M	3014231010	1	1		1	ABS	mechanical
3	BASE CONTROL PANEL	3010312910	1	1		1	HIPS	
4	REFRIGERATOR DOOR (364)	3010057830	1	-		-	URT FORMING (INOX)	
5	REFRIGERATOR DOOR (384)	3010057870	-	-		-	URT FORMING (INOX)	
6	REFRIGERATOR DOOR (394-414)	3010057840	-	1		1	URT FORMING (INOX)	
7	FREEZER DOOR (364-394)	3010086670	1	1		-	URT FORMING (INOX)	
8	FREEZER DOOR (384)	3010086820	-	-		-	URT FORMING (INOX)	
9	FREEZER DOOR (414)	3010086680	-	-		1	URT FORMING (INOX)	
10	REFRIGERATOR DOOR (364)-HH	3010057850	1	-		-	URT FORMING (INOX)	
11	REFRIGERATOR DOOR (384)-HH	3010057890	-	-		-	URT FORMING (INOX)	
12	REFRIGERATOR DOOR (394-414)-HH	3010057860	-	1		1	URT FORMING (INOX)	
13	FREEZER DOOR (364-394)-HH	3010086690	1	1		-	URT FORMING (INOX)	
14	FREEZER DOOR (384)-HH	3010086810	-	-		-	URT FORMING (INOX)	
15	FREEZER DOOR (414)-HH	3010086700	-	-		1	URT FORMING (INOX)	
16	HANDLE *F	3012626910	1	1		1	PBT	
17	HANDLE *R	3012627010	1	1		1	PBT	
18	COVER DOOR CAP *L	3011467310	2	2		2	ABS	
19	COVER DOOR CAP *R	3011467410	2	2		2	ABS	
20	CAP HANDLE	3010910010	4	4		4	HIPS	
21	CAP SCREW	3010920210	1	1		1	HIPS	
22	CAP DOOR BUSHING	3010918310	1	1		1	PP	
23	COVER CAB BRACKET	3011433310	1	1		1	HIPS	



PART LIST

7. Part list (ERF-367A/397A/417A Type)

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			367	397	417		
1	PLATE SHELF GLASS	3014547700	3	4	4	GLASS t4.0	OPTION
2	PLATE V/CASE COVER GLASS	3014547800	1	1	1	GLASS t4.0	OPTION
3	FRAME GLASS SHELF	3012202400	3	3	3	HIPS	OPTION
4	FRAME C/CASE COVER	3012202500	1	1	1	HIPS	OPTION
5	FRAME V/CASE COVER	3012202600	1	1	1	HIPS	OPTION
6	CASE CHILD	3011163340	-	1	1	GPPS	
7	CASE VEGTB	3011163480	2	2	2	GPPS	
8	CASE ICING	3011163200	1	1	1	PP	
	CASE FD	3011115940	1	1	1	HIPS	
9	CASE FB (417:CASE FC)	3011115301	2	2	-	HIPS	
10		3011115410	-	-	2	HIPS	
11	CASE FA	3011115230	1	1	1	HIPS	
12	SHELF R	3017823200	3	3	3	GPPS	394/414
13	COVER CHILLED CASE	3011453400	-	1	1	GPPS	
14	COVER VEGTB CASE	3011453600	1	1	1	GPPS	
15	BASE CONTROL PANEL	COLOUR PAGE 52	1	1	1	HIPS	
16	CABLE TIE	4016N03281	1	1	1		
17	PCB MAIN AS	30143A3060	1	1	1		
18	DOWN TRANS AS	5EPK041010	1	1	1		
19	HARNESS F PCB	3012718310	1	1	1		
20	PCB F AS	30143A3160	1	1	1		
21	PANEL CONTROL	COLOUR PAGE 52	1	1	1	ABS	
22	SWITCH LAMP	3018111500	1	1	1	250V 0,25A	
23	WINDOW C/P C/L	3015507100	1	1	1	ABS	
24	SOCKET LAMP AS	3017903900	1	1	1	AC250V	
25	COVER MULTI DUCT	3011451900	1	-	-	HIPS	ASSY
		3011452100	-	1	1	HIPS	
26	INSULATOR MULTI DUCT	3016637000	1	-	-	F-PS	
		3013337200	-	1	1	F-PS	
27	LAMP	3013600700	1	1	1	230V 15W	
28	WINDOW LAMP	3015503300	1	1	1		
29	SENSOR R AS	3012731800	1	1	1		GPPS
30	EVAPORATOR AS	3017045600	1	1	1	EVA+SUC PIPE	
31	HEATER D AS	3012807600	1	1	1	GLASS HEATER+FUSE TEMP	
32	BRACKET FAN MOTOR	3010615600	1	1	1	PP	
33	MOTOR FAN AS	3011804710	1	1	1	IS-231 1DWBF0	
34	LOUVER F B	3018905500	1	1	-	PP	
		3018905600	-	-	1	PP (417:HIPS)	
35	FAN	3011801410	1	1	1	ABS /100	
36	FIXTURE FAN RING	3012005400	1	-	-	SUS304 t0.5	
37	LOUVER F A	3018913800	1	1	-	HIPS	
		3018913900	-	-	1	HIPS	
38	BUSHING FAN MOTOR	3010901800	2	2	2	NR	
39	ASSY CAB URT	3010071001	1	-	-	ASSY	
		3010071010	-	1	-	ASSY	
		3010071020	-	-	1	ASSY	
40	HINGE *T	3012908100	2	2	2	P/O+ZN t3.2	
41	SPECIAL BOLT C	3016004900	10	10	10	M5xP0.89xL16 SWCH22A	
42	CAP SCREW	COLOUR PAGE 52	1	1	1	PE-LD	
43	CAP SCREW HOLE	3010920300	1	1	1	HIPS	
44	SPECIAL WASHER HINGE	3016005500	3	3	3	S20C t1.0 13/7	
45	SHAFT HI	3014903200	2	2	2		
46	HINGE *M	3012908001	1	1	1	DIE CASTING	
47	HINGE *U	3012908201	2	2	2	P/O+ZN t3.2	
48	COVER CAB BRACKET	COLOUR PAGE 52	1	1	1	HIPS	
49	FOOT ADJUSTING AS	3012101800	2	2	2	PP+SPECIAL BOLT	
50	CAP DRAIN HOSE	3010919700	1	1	1	NBR	
51	CASE VAPORY	3011162600	1	1	1	PP	

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			364	394	414		
52	FIXTURE COMP	3012005300	2	2	2	SK5+ZN5-C t0.8	
53	DRYER ASSY	3016802200	1	1	1	15Gr (t0.51)	
54	ABSORBER COMP	3010101700	4	4	4	NR	
55	BASE COMP	3010318600	1	1	1	SBHG t1.0	
56	SPECIAL SCREW A	3016004300	4	4	4	M6.5xL20	
57	CAPACITOR RUN	3016402110	1	1	1	5uF	
58	SPECIAL WASHER R/C	3016006410	1	1	1	A	
59	SPECIAL NUT R/C	3016006510	1	1	1	M8	
60	SCREW MACHINE	7051401065	2	2	2	PAN 4x10 BSNI	
61	HARNESS EARTH	3012735200	1	1	1	HOUSING+RING TERMINAL	
62	PIPE CHARGE	3014418202	1	1	1	DUCT1-O	
63	SPECIAL WASHER	3016004700	4	4	4	/4.3 STAR	earth:4
64	SWITCH P RELAY OL	3817923600	1	1	1	4TM129SHBY-53	
65	SWITCH P RELAY PTC	3817923700	1	1	1	33W	
66	RELAY BOX	3810506400	1	1	1		
67	CABLE CLAMP	3818200300	1	1	1		
68	HARNESS RELAY	3012731900	1	1	1		
69	RELAY BOX COVER	3811401300	1	1	1		
70	BAND RELAY	3816100400	1	1	1		
71	COVER MECH HOUSING	3011454100	1	1	1	HIPS	
72	SPECIAL SCREW	3016004800	2	2	2		
73	CORD POWER AS	3011343310	1	1	1	250V, 10/16A	COMMON
		3011343410	1	1	1	250V, 5A	U.K. SPECIAL
74	PIPE WI-CON AS	3014434510	1	1	-		
75	ABSORBER PIPE C	3010103000	2	2	2	EPDM, 40gr.	PIPE CONN
76	ABSORBER PIPE B	3010101900	1	1	1	IIR	PIPE SUC
77	COVER BUTTER CASE	3011433100	1	1	1	GPPS	
78	CASE BUTTER	3011114620	1	1	1	HIPS	
79	CASE EGG	3011163600	2	2	2	PP	
80	POCKET EGG	3019008760	1	1	1	HIPS	
81	GUIDE POCKET	3012510200	1	1	1	PP	
82	POCKET BOTTLE A	3019008600	1	1	1	HIPS	
83	POCKET R DOOR	3019008730	1	1	1	HIPS	
84	POCKET BOTTLE B	3019009510	FOR SUPERIOR CLASS			HIPS	SUPERIOR
85	GUIDE BOTTLE SUPPORT B	3012508000	FOR SUPERIOR CLASS			STEAL	SUPERIOR
86	POCKET R DOOR	3019008710	FOR SUPERIOR CLASS			HIPS	SUPERIOR
87	GUIDE BOTTLE SUPPORT C	3012508100	FOR SUPERIOR CLASS			STEAL	SUPERIOR
88	SUPPORT BOTTLE POCKET B	3015300400	1	1	1	HIPS	
89	ASSY R DOOR URT	COLOUR PAGE 52	1	-	-	ASSY	
		COLOUR PAGE 52	-	1	1	ASSY	
90	GASKET R DOOR AS	3012306600	1	-	-	PVC+MAGNET	
		3012306800	-	1	1	PVC+MAGNET	
91	CAP DOOR BUSHING	COLOUR PAGE 52	1	1	1	PP	
92	ASSY F DOOR URT	COLOUR PAGE 52	1	1	-	ASSY	
		COLOUR PAGE 52	-	-	1	ASSY	
93	GASKET F DOOR AS	3012306500	1	1	-	PVC+MAGNET	
		3012306700			1		
94	CAP HANDLE	COLOUR PAGE 52	1	1	1	HIPS	OPTION
95	COVER DOOR CAP *L	COLOUR PAGE 52	2	2	2	ABS	OPTION
96	COVER DOOR CAP *R	COLOUR PAGE 52	2	2	2	ABS	OPTION
97	HANDLE R	COLOUR PAGE 52	1	1	1	ABS	OPTION
98	DECO. HANDLE R	3011612500	1	1	1	ABS+CR COATING	OPTION
99	SPECIAL SCREW D	3016004820	4	4	4	T2 FLT 4x16 PAINTING	OPTION
100	HANDLE F	COLOUR PAGE 52	1	1	1	ABS	OPTION
101	DECO. HANDLE F	3011612400	1	1	1	ABS+CR COATING	OPTION
102	TEPERATURE FUSE	3017200420	1	1	1		
103	COMPRESSOR	3956117S50	1	1	1	HPL17YH1-5	
104	D-SENSOR	3012733910	1	1	1		

PART LIST

Part list of colour components (ERF-367A, ERF-397A, ERF-417A)

WHITE

NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			367	397		417		
1	PANEL CONTROL C/L A	3014230900	1	1		1	ABS	electronic
2	BASE CONTROL PANEL	3010312900	1	1		1	HIPS	
3	REFRIGERATOR DOOR (367)	3010057730	1	-		-	URT FORMING (CO-LAMINAR)	
4	REFRIGERATOR DOOR (387)	3010057750	-	-		-	URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (397-417)	3010057750	-	1		1	URT FORMING (CO-LAMINAR)	
6	FREEZER DOOR (367-397)	3010086570	1	1		-	URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (387)	3010086580	-	-		-	URT FORMING (CO-LAMINAR)	
8	FREEZER DOOR (417)	3010086580	-	-		1	URT FORMING (CO-LAMINAR)	
9	REFRIGERATOR DOOR (367)-HH	3010086490	1	-		-	URT FORMING (CO-LAMINAR)	
10	REFRIGERATOR DOOR (387)-HH	3010057710	-	-		-	URT FORMING (CO-LAMINAR)	
11	REFRIGERATOR DOOR (397-417)-HH	3010057740	-	1		1	URT FORMING (CO-LAMINAR)	
12	FREEZER DOOR (367-397)-HH	3010086590	1	1		-	URT FORMING (CO-LAMINAR)	
13	FREEZER DOOR (387)-HH	3010086770	-	-		-	URT FORMING (CO-LAMINAR)	
14	FREEZER DOOR (417)-HH	3010086600	-	-		1	URT FORMING (CO-LAMINAR)	
15	HANDLE *F	3012626900	1	1		1	PBT	
16	HANDLE *R	3012627000	1	1		1	PBT	
17	COVER DOOR CAP *L	3011467300	2	2		2	ABS	
18	COVER DOOR CAP *R	3011467400	2	2		2	ABS	
19	CAP HANDLE	3010910000	4	4		4	HIPS	
20	CAP SCREW	3010920200	1	1		1	HIPS	
21	CAP DOOR BUSHING	3010918300	1	1		1	PP	
22	COVER CAB BRACKET	3011467500	1	1		1	HIP	

SILVER

NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			367	397		417		
1	PANEL CONTROL C/L A	3014230920	1	1		1	ABS + SILVER	electronic
2	BASE CONTROL PANEL	3010312910	1	1		1	HIPS +SILVER	
3	REFRIGERATOR DOOR (367)	3010057760	1	-		-	URT FORMING (CO-LAMINAR)	
4	REFRIGERATOR DOOR (387)	3010057770	-	-		-	URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (397-417)	3010057770	-	1		1	URT FORMING (CO-LAMINAR)	
6	FREEZER DOOR (367-397)	3010086620	1	1		-	URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (387)	3010086630	-	-		-	URT FORMING (CO-LAMINAR)	
8	FREEZER DOOR (417)	3010086630	-	-		1	URT FORMING (CO-LAMINAR)	
9	REFRIGERATOR DOOR (367)-HH	3010057780	1	-		-	URT FORMING (CO-LAMINAR)	
10	REFRIGERATOR DOOR (387)-HH	3010057820	-	-		-	URT FORMING (CO-LAMINAR)	
11	REFRIGERATOR DOOR (397-417)-HH	3010057790	-	1		1	URT FORMING (CO-LAMINAR)	
12	FREEZER DOOR (367-397)-HH	3010086640	1	1		-	URT FORMING (CO-LAMINAR)	
13	FREEZER DOOR (387)-HH	3010086790	-	-		-	URT FORMING (CO-LAMINAR)	
14	FREEZER DOOR (417)-HH	3010086650	-	-		1	URT FORMING (CO-LAMINAR)	
15	HANDLE *F	3012626920	1	1		1	PBT + SILVER	
16	HANDLE *R	3012627020	1	1		1	PBT + SILVER	
17	COVER DOOR CAP *L	3011467320	2	2		2	ABS + SILVER	
18	COVER DOOR CAP *R	3011467420	2	2		2	ABS + SILVER	
19	CAP HANDLE	3010910010	4	4		4	HIPS +SILVER	
20	CAP SCREW	3010920210	1	1		1	HIPS +SILVER	
21	CAP DOOR BUSHING	3010918310	1	1		1	PP + SILVER	
22	COVER CAB BRACKET	3011467520	1	1		1	HIPS + SILVER	

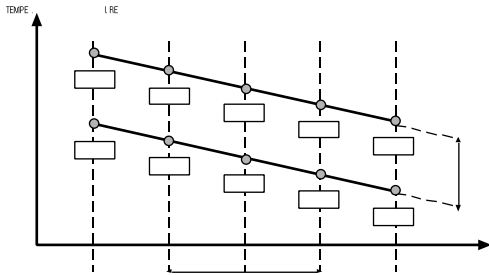
INOX (Dark gray)

NO	PART NAME	PART CODE	MODEL				DESCRIPTION	REMARK
			367	397		417		
1	PANEL CONTROL C/L A	3014230910	1	1		1	ABS	electronic
2	BASE CONTROL PANEL	3010312910	1	1		1	HIPS	
3	REFRIGERATOR DOOR (367)	3010057830	1	-		-	URT FORMING (INOX)	
4	REFRIGERATOR DOOR (387)	3010057840	-	-		-	URT FORMING (INOX)	
5	REFRIGERATOR DOOR (397-417)	3010057840	-	1		1	URT FORMING (INOX)	
6	FREEZER DOOR (367-397)	3010086670	1	1		-	URT FORMING (INOX)	
7	FREEZER DOOR (387)	3010086680	-	-		-	URT FORMING (INOX)	
8	FREEZER DOOR (417)	3010086680	-	-		1	URT FORMING (INOX)	
9	REFRIGERATOR DOOR (367)-HH	3010057850	1	-		-	URT FORMING (INOX)	
10	REFRIGERATOR DOOR (387)-HH	3010057890	-	-		-	URT FORMING (INOX)	
11	REFRIGERATOR DOOR (397-417)-HH	3010057860	-	1		1	URT FORMING (INOX)	
12	FREEZER DOOR (367-397)-HH	3010086690	1	1		-	URT FORMING (INOX)	
13	FREEZER DOOR (387)-HH	3010086810	-	-		-	URT FORMING (INOX)	
14	FREEZER DOOR (417)-HH	3010086700	-	-		1	URT FORMING (INOX)	
15	HANDLE *F	3012626910	1	1		1	PBT	
16	HANDLE *R	3012627010	1	1		1	PBT	
17	COVER DOOR CAP *L	3011467310	2	2		2	ABS	
18	COVER DOOR CAP *R	3011467410	2	2		2	ABS	
19	CAP HANDLE	3010910010	4	4		4	HIPS	
20	CAP SCREW	3010920210	1	1		1	HIPS	
21	CAP DOOR BUSHING	3010918310	1	1		1	PP	
22	COVER CAB BRACKET	3011433310	1	1		1	HIPS	

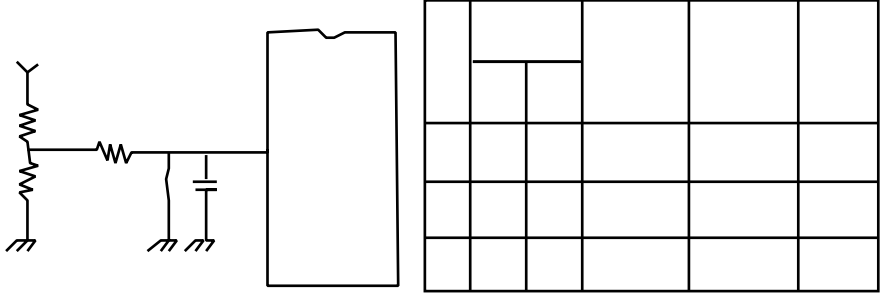
11. PCB CONTROL FUNCTIONS

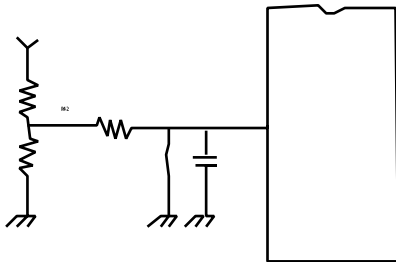
ERF-364/394/414A PCB CONTROL FUNCTION

N°	FUNCTION	CONTENTS										
1	DISPLA Y	 1) VAC ON: when the comp is controlled by VAC on/off condition. 2) SUPER FREEZING ON: when the comp is controlled by SUPER FREEZING on/off condition. 3) FREEZER TEMP DISPLAY: OK GREEN LED on / NG_RED LED on 4) REFRIGERATOR TEMP. DISPLAY: OK GREEN LED on / NG_RED LED on 5) REFRIGERATOR TEMP. CONTROL DISPLAY: one of LEDS (LOW, MID, HIGH) is on. 6) FUNCTION DISPLAY: - D1 ERROR: FREEZER RED LED is on & off one time. - D2 ERROR: FREEZER RED LED is on & off two times. - R1 ERROR: REF. RED LED is on & off one time. - RT ERROR: REF. RED LED is on & off two times. <table><tr><th>DISPLAY</th><th>LED</th></tr><tr><td>D1 ERROR</td><td></td></tr><tr><td>D2 ERROR</td><td></td></tr><tr><td>R1 ERROR</td><td></td></tr><tr><td>RT ERROR</td><td></td></tr></table> - SHORT CIRCUIT CONDITION: LOW, MID, HIGH, VAC, SUPER LED lamps are all on.	DISPLAY	LED	D1 ERROR		D2 ERROR		R1 ERROR		RT ERROR	
DISPLAY	LED											
D1 ERROR												
D2 ERROR												
R1 ERROR												
RT ERROR												
2	TEMPERATURE ADJUSTMENT & CONTROL	1) TEMP. CONTROL BUTTON: 1.1- TEMP. CONTROL: when TEMP CONTROL button is pressed, the led lamps LOW, MID, HIGH, VAC, SUPER FREEZING, LOW will be on in sequence. TEMP. will be set if the button doesn't get pressed again for 5 min. 1.2- FORCED DEFROST: will be start when this button pushed for over 5 seconds continuously. 1.3- SHORT CIRCUIT OPERATION: will be started and stopped when this button pushed over 30 times. 2) TEMPERATURE CONTROL 2.1- COMP will be controlled by the on/off condition of each mode. 2.2- STEP DIFF of ROOM R : 3 deg 2.3- OFF point of ROOM R : 0.5°C 2.4- ON/OFF DIFF of ROOM R : 4 deg										

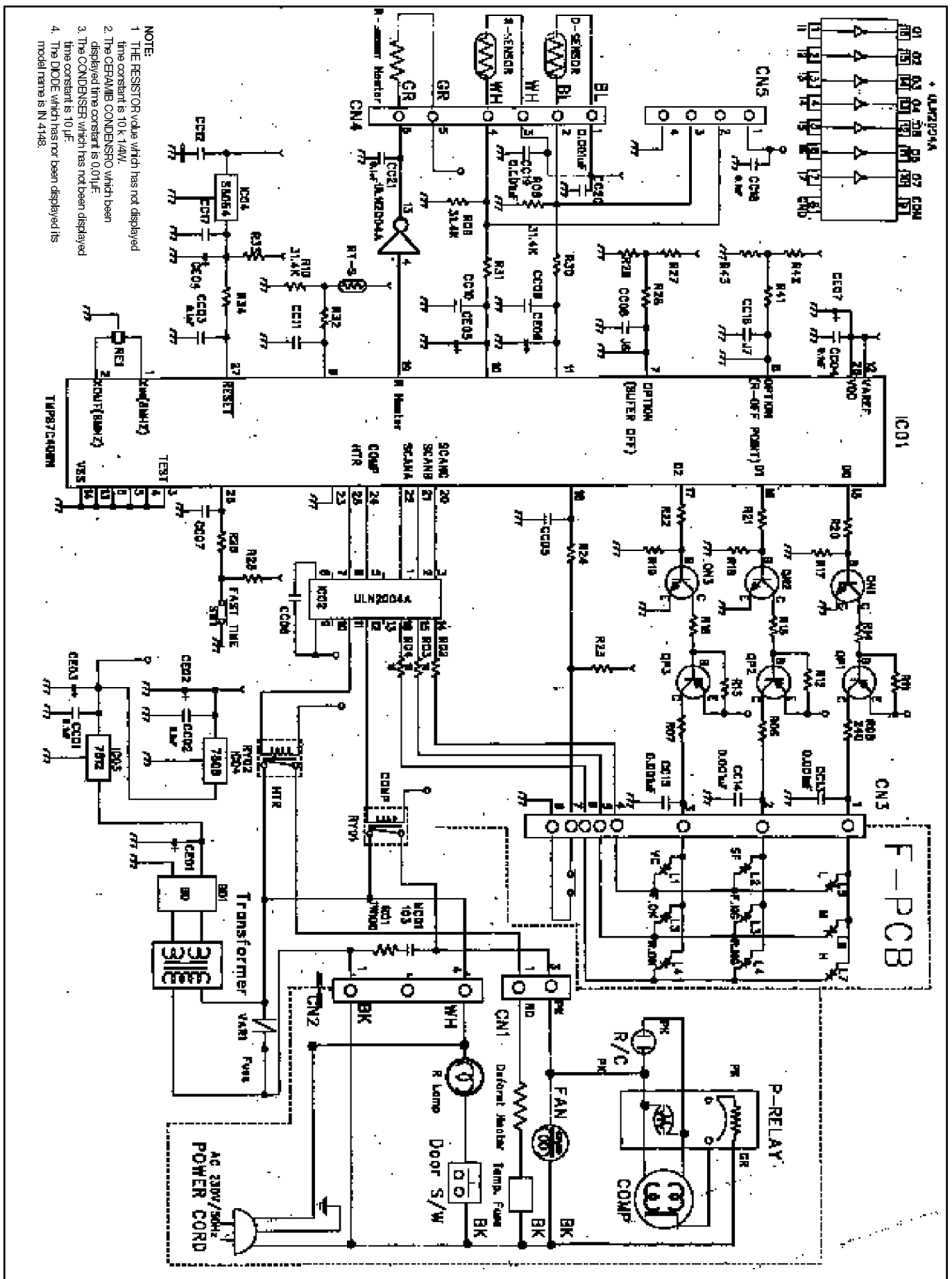
N°	FUNCTION	CONTENTS
2	TEMPERATURE ADJUSTMENT & CONTROL	3) FORCED DEFROST 3.1- Defrost mode will be Started independent of the cycle. 3.2- The flow is same as the general defrost mode flow.  4) SHORT CIRCUIT OPERATION 4.1- COMP & FAN will be on independent of the operation condition. 4.2- The time limit of SHORT CIRCUIT OPERATION : 60 hrs
3	VACATION	Press TEMP. CONTROL button and make VAC led lamp on. ON POINT: 8.5°C OFF POINT: 4.5°C
4	SUPER FREEZING	Press TEMP. CONTROL button and make SUPER FREEZING led lamp on. ON POINT: 0.5°C OFF POINT: -3.5°C
5	FREEZER OK / NG DISPLAY	1) Initial Condition: FREEZER RED LED LAMP on. 2) OK Condition: if temperature goes down under -5°C, green led lamp is supposed to be on. 3) NG Condition: if temperature condition or time condition is satisfied, red led lamp is on: - Temperature Condition: over -5°C at D-SENSOR when Comp turns off. - Time Condition: over -5°C at D SENSOR when Comp. is running for 4hr. 4) D1 ERROR: FREEZER RED LED LAMP on & off one time (This error means that D-SENSOR is short or open condition.) 5) D2 ERROR: FREEZER RED LED LAMP on & off two times (D2 ERROR happens when HEATER or TEMP. FUSE is open or there is heavy frost on the surface of EVA. On this condition, the system will be in defrost mode for 80 min.)
6	REFRIGERATOR OK / NG DISPLAY	1)Initial Condition: FREEZER RED LED LAMP on. 2)OK Condition: if temperature goes down under 10°C, green led lamp is supposed to be on. 3)NG Condition: if temperature condition or time condition is satisfied, red led lamp is on. - Temperature Condition: under -7°C or over 10°C at R-SENSOR when Comp turns off. - Time Condition: over 10°C at R-SENSOR when Comp. is running for 4hr. 4)R1 ERROR: REFRIGERATOR RED LED LAMP on & off one time (This error means that R-SENSOR is short or open condition.)

N°	FUNCTION	CONTENTS																
7	DETERMINATION OF DEFROST	1) Starting condition of Defrost Mode 1.1- When accumulated running time of comp. is 12hrs. 1.2- After checking the condition '1.1' if total time(COMP on time + COMP off time) is more than 48hrs, then defrost mode starts immediately.																
8	DEFROST MODE	1)General Defrost Mode 1.1- Start: by determination of defrost 1.2- Process: general operation heater on pause(6 min) general operation. Heater defrost: when the temperature at D-sensor is over 10°C, heater turns off. Limit time: If the system is on D-sensor error, heater is off by time(30 min). D2 error: 80 min in defrost position (defrost problem). 2)Forced Defrost Mode 2.1- Start: by press TEMP. CONTROL button for 5 seconds continuously. 2.2- Process: same as General Defrost Mode General Defrost Mode is on for initial 30 seconds after heater is on. (for TEST)																
9	INITIAL DEFROST	1) When power is on, if the temperature at the D-sensor is under 3.5°C, then General Defrost Mode starts.																
10	PREVENTION OF COMP. RESTART	1) RT ≤ 24: The COMP can't be on within 30 min after comp. is off even though R-sensor is on condition. (This is to protect comp.) FUNCTION of LOW RT. 2) RT > 24: The COMP can't be on within 6 min after comp. is off even though R-sensor is on condition. (This is to protect comp.)																
11	ERROR DISPLAY & CONTROL	1) D1 ERROR (It happens when D-SENSOR is OPEN or SHORT) 1.1- DISPLAY: FREEZER RED LED lamp in on & off one time. 1.2- CONTROL: return to the limit defrost time of Defrost (30 min). 2) D2 ERROR (It happens when heater is off by time (80 min). 2.1- DISPLAY: FREEZER RED LED lamp in on & off two times. 2.2- CONTROL: Return to the limit defrost time of Defrost (80 min). 3) R1 ERROR (It happens when R-SENSOR is OPEN or SHORT). 3.1- DISPLAY: REFRIGERATOR RED LED lamp in on & off one time. 3.2- CONTROL: controlled by the condition of RT 3.3- CANCEL: when R-SENSOR is working normally. <table><tr><td>RT-S TEMP</td><td>RT-S ERROR</td><td>~24°C</td><td>25°C ~40°C</td></tr><tr><td>COMP. work rate (%)</td><td>40%</td><td>30%</td><td>44%</td></tr><tr><td>ON/OFF (min)</td><td>20 / 30</td><td>15 / 35</td><td>22 / 28</td></tr><tr><td>NOTE</td><td>ERROR</td><td>Low RT TEMP</td><td>General</td></tr></table> 4) RT ERROR (It happens when RT-SENSOR is OPEN or SHORT)	RT-S TEMP	RT-S ERROR	~24°C	25°C ~40°C	COMP. work rate (%)	40%	30%	44%	ON/OFF (min)	20 / 30	15 / 35	22 / 28	NOTE	ERROR	Low RT TEMP	General
RT-S TEMP	RT-S ERROR	~24°C	25°C ~40°C															
COMP. work rate (%)	40%	30%	44%															
ON/OFF (min)	20 / 30	15 / 35	22 / 28															
NOTE	ERROR	Low RT TEMP	General															

N°	FUNCTION	CONTENTS
		4.1- DISPLAY: REFRIGERATOR RED LED lamp in on & off two times. 4.2- CONTROL: The system is normally operating but the controlling by RT-SENSOR doesn't work. 4.3- CANCELATION: when RT-SENSOR is working normally.
12	SHORT CIRCUIT TEST	1) START: by pressing TEMP CONTROL button 30 times continuously. 2) CANCEL: by pressing TEMP CONTROL button 30 times continuously Cf. the system generally operates when the limit time 60 hrs. passes. 3) DISPLAY: LOW, MID, HIGH, VAC, SUPER LED lamps are all on 4) CONTROL: COMP & FAN will be on independent of the operation condition. (There is no defrost mode on this test.)
13	FUNCTION OF TIME REDUCTION	1) HOW TO REDUCE: (There is no FAST KEY on PCB for MP.) 1 min: click FAST KEY one time. 30 min: if you press FAST KEY continuously, you can reduce 30 minutes on each second. 2) Practical Use: can be applied to reduce needless time on test. EX) function of stop for 6 min, confirming the determination of defrost mode.
14	SUPER OPTION	Protection for over-cooling of Room vegetable.  The diagram shows a circuit with a variable resistor (potentiometer) connected to a relay coil. The relay is connected to a power source. To the right of the circuit is a 4x4 grid, likely for a display or control panel.
15	FUNCTION OF LOW ROOM TEMPERATURE	1) LOW RT TEMP: RT SENSOR $\leq 24^{\circ}\text{C}$ 2) Hysteresis Difference: 1°C 2.1- Mode of LOW TEMP: RT SENSOR $\leq 24^{\circ}\text{C}$ 2.2- Mode of General TEMP: RT SENSOR $\geq 25^{\circ}\text{C}$ 2.3- Mode of TEMP. just before control : $24^{\circ}\text{C} \leq \text{RT-S} < 25^{\circ}\text{C}$ - During operating under 19°C, the system operates on LOW RT Mode until the temperature arrives between 24°C and 25°C RT-S: $\sim 24^{\circ}\text{C}$ (operating) $24\sim 25^{\circ}\text{C}$ (arriving). - During operating over 25°C, the system operates on General RT Mode until the temperature arrives between 24°C and 25°C RT-S: $25^{\circ}\text{C} \sim$ (operating) $24\sim 25^{\circ}\text{C}$ (arriving).

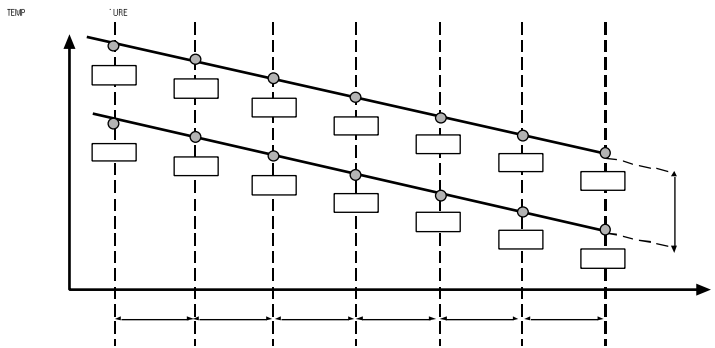
N°	FUNCTION	CONTENTS																								
		3) Control 3.1- When Comp. is on, R-SENSOR HTR is off. When it passes 6 min after COMP. was off, R-SENSOR HTR is on. 3.2- COMP. can't be on within 40 min after COMP. is off. 3.3- When it is Mode of General TEMP. or RT-SENSOR ERROR (open or short), R-SENSOR HTR is off. 3.4- The change of R-SENSOR OFF POINT: R-SENSOR OFF POINT increases 3. (0.5°C 3.5°C) 4) Check function of R-S HTR At initial operation, R-SENSOR HTR turn on and off four times for 8sec.																								
16	R-SENSOR OFF POINT ADJUSTING OPTION	1) R-SENSOR OFF POINT can be adjusted by changing the input voltage of MICOM 8 pin. 2) The default of input voltage is 0V. 3) The changed OFF POINT is base OFF POINT + OFF POINT of input voltage.  4) The change of R-SENSOR OFF POINT depend on the input voltage of MICOM. <table><tr><th>MICOM INPUT (V)</th><th>0</th><th>1.0</th><th>1.5</th><th>2.0</th><th>2.5</th><th>3.7</th><th>5.0</th></tr><tr><td>OFF POINT Variation (°C)</td><td>0,5 (DEF)</td><td>1.0 ↓</td><td>2.0 ↓</td><td>3.0 ↓</td><td>1.0 ↑</td><td>2.0 ↑</td><td>3.0 ↑</td></tr><tr><td>R42, 43 (KW)</td><td>J7 (in use)</td><td>R42: 40 R43: 10</td><td>R42: 23.3 R43: 10</td><td>R42: 15 R43: 10</td><td>R42: 10 R43: 10</td><td>R42: 3.5 R43: 10</td><td>R42: 10.0 R43: DEL</td></tr></table> 5) APPLICATION (MAIN PCB) 5.1- Default: MICOM 8 PORT – 0V. 5.2- Change of R OFF POINT 1.0 deg ↑ : changing R42, R43 after deleting J7. EX) A) delete J7 B)R42: 10 KW C)R43: 10 KW	MICOM INPUT (V)	0	1.0	1.5	2.0	2.5	3.7	5.0	OFF POINT Variation (°C)	0,5 (DEF)	1.0 ↓	2.0 ↓	3.0 ↓	1.0 ↑	2.0 ↑	3.0 ↑	R42, 43 (KW)	J7 (in use)	R42: 40 R43: 10	R42: 23.3 R43: 10	R42: 15 R43: 10	R42: 10 R43: 10	R42: 3.5 R43: 10	R42: 10.0 R43: DEL
MICOM INPUT (V)	0	1.0	1.5	2.0	2.5	3.7	5.0																			
OFF POINT Variation (°C)	0,5 (DEF)	1.0 ↓	2.0 ↓	3.0 ↓	1.0 ↑	2.0 ↑	3.0 ↑																			
R42, 43 (KW)	J7 (in use)	R42: 40 R43: 10	R42: 23.3 R43: 10	R42: 15 R43: 10	R42: 10 R43: 10	R42: 3.5 R43: 10	R42: 10.0 R43: DEL																			

12. MAIN PCB DIAGRAM (ERF-364A / 394A / 414A)

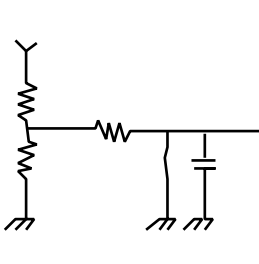
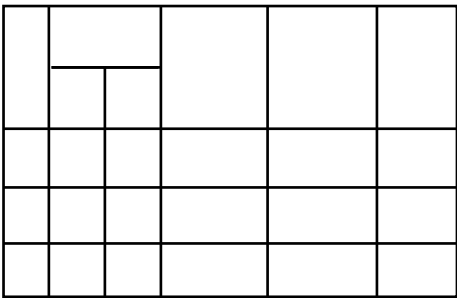


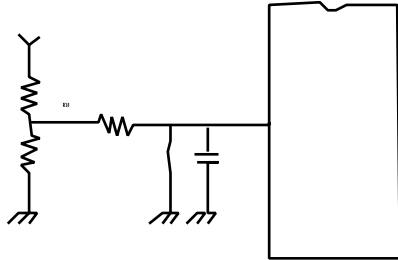
ERF-367/397/417A PCB CONTROL FUNCTION

Nº	FUNCTION	CONTENTS																											
1	DISPLA Y	 1) CONTROL BUTTON 1.1- Temperature of Room R adjustment 1.2- When you press this button, the temperature is controlled in sequence. • Display when VAC Mode was chosen: VAC LED lamp on. • Display when 1step Mode was chosen: 1 LED lamp on. • Display when 2step Mode was chosen: 1~2 LED lamps on. • Display when 3step Mode was chosen: 1~3 LED lamps on. • Display when 4step Mode was chosen: 1~4 LED lamps on. • Display when 5step Mode was chosen: 1~5 LED lamps on. • Display When TURBO Mode was chosen: 1~TURBO LED lamps on. 2) FUZZY BUTTON 2.1- When you press the 'FUZZY' button: VAC~4 LED lamps and AUTO LED lamp on. 2.2- If you press it one more time (it means FUZZY is off.), you can adjust the temperature of REF. by CONTROL button. If FUZZY is off, it turns to the last mode of TEMP. 3) TEMP. BUTTON 3.1- If you press 'TEMP' button one time, it displays the temperature of the refrigerator compartment. If you press 'TEMP' button two times continuously, it displays the temperature of the freezer compartment. <table><tr><th></th><th>VAC</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>TURBO</th><th>FUZZY</th></tr><tr><td>ROOM R</td><td>6</td><td>5</td><td>4</td><td>4</td><td>3</td><td>1</td><td>0</td><td>3</td></tr><tr><td>ROOM F</td><td>-17</td><td>-18</td><td>-19</td><td>-19</td><td>-20</td><td>-22</td><td>-23</td><td>-20</td></tr></table> 3.2- Display led lamp will turn off within 5 seconds.		VAC	1	2	3	4	5	TURBO	FUZZY	ROOM R	6	5	4	4	3	1	0	3	ROOM F	-17	-18	-19	-19	-20	-22	-23	-20
	VAC	1	2	3	4	5	TURBO	FUZZY																					
ROOM R	6	5	4	4	3	1	0	3																					
ROOM F	-17	-18	-19	-19	-20	-22	-23	-20																					
2	BUTTON ADJUSTMENT	1) CONTROL BUTTON 1.1- Temperature Adjustment: If you press the CONTROL button, it follows 4 (MID, Default) → 5 (HIGH) → TURBO (SUPER FREEZING mode) → VAC → 1(LOW) → 2 → 3 → 4 • If you don't press the button again in 4 seconds, temperature will be set. 1.2- Forced Defrost Mode: start by pressing CONTROL button for 5 seconds continuously. 1.3- SHORT CIRCUIT TEST: start and cancel by pressing CONTROL button 30 times continuously. 2) FUZZY BUTTON 2.1- Press the FUZZY button to turn on & off. 3) TEMP. BUTTON 3.1- If you press 'TEMP' button one time, it displays the temperature of Room R. If you press 'TEMP' button two times continuously, it displays the temperature of Room F.																											

N°	FUNCTION	CONTENTS
3	TEMPERATURE ADJUSTMENT & CONTROL	1) TEMP. CONTROL BUTTON - COMP will be controlled by ON / OFF point of each mode. - STEP DIFF of ROOM R: • VAC / 2 → 2deg • 2 / 4 → 2deg • 4 / TURBO → 4 deg - OFF point of ROOM R: -0.5°C (7 STEPS) - ON/OFF DIFF of ROOM R: 4 deg  2) FORCED DEFROST 2.1- FORCED Defrost mode will be Started independently of the cycle. 2.2- The flow is same as the general defrost mode flow. 3) SHORT CIRCUIT OPERATION 3.1- COMP & FAN will be on independent of the operation condition. 3.2- The time limit of SHORT CIRCUIT OPERATION: 60 hrs.
4	VACATION	Press CONTROL button and make VAC led lamp on. • ON POINT: 7.5°C • OFF POINT: 3.5°C
5	TURBO	Press CONTROL button and make TURBO LED lamp on. • ON POINT: -0.5°C • OFF POINT: -4.5°C
6	DETERMINATION OF DEFROST	1) Starting condition of Defrost Mode 1.1- When accumulated running time of comp. is 12hrs. 1.2- After Checking the condition '1.1' if total time(COMP on time + COMP off time) is more than 48hrs, then defrost mode starts immediately.

N°	FUNCTION	CONTENTS																
7	DEFROST MODE	1) General Defrost Mode 1.1- Start: By determination of defrost. 1.2- • Process: general operation Heater on Pause (5 min) general operation. • Heater defrost: when the temperature at D-sensor is over 10°C, heater turns off. • Limit time: 80 min (If the system is on D-sensor error, heater is off by time (30 min). • General Defrost Mode is on for initial 30 seconds after heater is on. (for TEST) 2) Forced Defrost Mode 2.1- Start: pressing CONTROL button for 5 seconds continuously. 2.2- Process: same as General Defrost Mode.																
8	INITIAL DEFROST	1) When power is on, if the temperature at the D-sensor is under 3.5°C, then General Defrost Mode starts. 2) When the INITIAL DEFROST Mode starts, heater will be right on and defrost mode will starts.																
9	PREVENTION OF COMP. RESTART	1) The COMP can't be on within 40 min after comp. is off even though R-sensor is on condition. (This is to protect comp.) FUNCTION of LOW RT. 2) The COMP can't be on within 6 min after comp. is off even though R-sensor is on condition. (This is to protect comp.) DEFAULT OPERATION.																
10	ERROR DISPLAY & CONTROL	ORDER OF PRIORITY FOF THE ERROR DISPLAY 1) R1 ERROR (It happens when R-SENSOR is OPEN or SHORT) 1.1- DISPLAY: R1 ERROR displays on the 88 segment. <table><tr><td>RT-S TEMP</td><td>RT-S ERROR</td><td>~24°C</td><td>25°C ~40°C</td></tr><tr><td>COMP. operating rate %</td><td>40%</td><td>30%</td><td>44%</td></tr><tr><td>ON/OFF (min)</td><td>20 / 30</td><td>15 / 35</td><td>22 / 28</td></tr><tr><td>NOTES</td><td>ERROR</td><td>Low RT TEMP</td><td>General</td></tr></table> 1.2- CONTROL: controlled by the condition of RT 1.3- CANCELATION: when R-SENSOR is working normally. 2) D1 ERROR (It happens when D-SENSOR is OPEN or SHORT). 2.1- DISPLAY: D1 ERROR displays on the 88 segment. 2.2- CONTROL: return to the limit defrost time of Defrost (30 min). 3) D2 ERROR (It happens when heater is off by time (80 min). 3.1- DISPLAY: D2 ERROR displays on the 88 segment. 3.2- CONTROL: return to the limit defrost time of Defrost (80 min). 4) RT ERROR (It happens when RT-SENSOR is OPEN or SHORT). 4.1- CONTROL: the system is normally operating but the controlling by RT-SENSOR doesn't work.	RT-S TEMP	RT-S ERROR	~24°C	25°C ~40°C	COMP. operating rate %	40%	30%	44%	ON/OFF (min)	20 / 30	15 / 35	22 / 28	NOTES	ERROR	Low RT TEMP	General
RT-S TEMP	RT-S ERROR	~24°C	25°C ~40°C															
COMP. operating rate %	40%	30%	44%															
ON/OFF (min)	20 / 30	15 / 35	22 / 28															
NOTES	ERROR	Low RT TEMP	General															

N°	FUNCTION	CONTENTS						
11	SHORT CIRCUIT TEST	4.2- CANCELATION: when RT-SENSOR is working normally. 1) START: by pressing TEMP. CONTROL button 30 times continuously. 2) CANCEL: by pressing TEMP. CONTROL button 30 times continuously Cf. the system generally operates when the limit time 60 hrs. passes. 3) DISPLAY: All of LED lamps are on. 4) CONTROL: COMP & FAN will be on independent of the operation condition. (There is no defrost mode on this test.)						
12	FUNCTION OF TIME REDUCTION	1) HOW TO REDUCE: (There is no FAST KEY on PCB for MP.) 1 min: click FAST KEY one time. 30 min: if you press FAST KEY continuously, you can reduce 30 minutes on each second. 2) Practical Use: can be applied to reduce needless time on test. EX) function of stop for 6 min.						
13	FUNCTION OF ARTIFICIAL INTELLIGENCE	1) START: by pressing FUZZY button one time 2) CANCEL: by pressing FUZZY button again. 3) DISPLAY: start - VAC~4 LED lamps and AUTO LED lamp on. cancel -It returns to the last TEMP. MODE. 4) CONTROL by RT-S <table border="1"> <tr> <td>RT-S</td><td>RT 24°C ↓</td><td>RT 25°C ↑</td></tr> <tr> <td>R-SENSOR DIAL</td><td>OFF POINT + 3°C</td><td>NORMAL OFF POINT</td></tr> </table>	RT-S	RT 24°C ↓	RT 25°C ↑	R-SENSOR DIAL	OFF POINT + 3°C	NORMAL OFF POINT
RT-S	RT 24°C ↓	RT 25°C ↑						
R-SENSOR DIAL	OFF POINT + 3°C	NORMAL OFF POINT						
14	TURBO OPTION	•Protection for over-cooling of Room vegetable.  						
15	FUNCTION OF LOW ROOM TEMPERATURE	1) LOW RT TEMP: RT SENSOR $\leq$ 24°C 2) Hysteresis Difference: 1°C 2.1- Mode of LOW TEMP.: RT SENSOR $\leq$ 24°C 2.2- Mode of General TEMP.: RT SENSOR $\geq$ 25°C 2.3- Mode of TEMP. just before control: 24°C_{ERT}-$\geq$25°C • During operating under 19°C, the system operates on LOW RT Mode until the temperature arrives between 24°C and 25°C RT-S: ~24°C(operating) 24~25°C (arriving) • During operating over 25°C, the system operates on General RT Mode until the temperature arrives between 24°C and 25°C RT-S: ~25°C(operating) _ 24~25°C (arriving) 3) Control 2.1 -When Comp. is on, R-SENSOR HTR is off. When it passes 6 min after COMP. was off, R-SENSOR HTR is on.						

N°	FUNCTION	CONTENTS																								
		2.2- COMP. can't be on within 40 min after COMP. is off. 2.3- When it is Mode of General TEMP. or RT-SENSOR ERROR (open or short), R-SENSOR HTR is off. 2.4- Change off-point of R-S: the operating temp. is up as high as 3 deg (-0.5°C_2.5°C). 4)FUNCTION of R-Heater TEST: R-HTR is on & off 4 times for 8 seconds when power turns on initially.																								
16	R-SENSOR OFF POINT ADJUSTING OPTION	1) R-SENSOR OFF POINT can be adjusted by changing the input voltage of Micom 24 pin. 2) The default of input voltage is 0V. 3) The changed OFF POINT is base OFF POINT + OFF POINT of input voltage.  4)The change of R-SENSOR OFF POINT depend on the input voltage of MICOM. <table><tr><th>MICOM INPUT (V)</th><th>0</th><th>1.0</th><th>1.5</th><th>2.0</th><th>2.5</th><th>3.7</th><th>5.0</th></tr><tr><td>OFF POINT Variation (°C)</td><td>-0.5 (DEF)</td><td>1.0 ↓</td><td>2.0 ↓</td><td>3.0 ↓</td><td>1.0 ↑</td><td>2.0 ↑</td><td>3.0 ↑</td></tr><tr><td>R 31, 32 (KW)</td><td>J7 (in use)</td><td>R31: 40 R32: 10</td><td>R31: 23.3 R32: 10</td><td>R31: 15 R32: 10</td><td>R31: 10 R32: 10</td><td>R31: 3.5 R32: 10</td><td>R31: 10.0 R32: DEL</td></tr></table> 5) APPLICATION (MAIN PCB) 5.1- Default: MICOM24 PORT – 0V 5.2- Change of R OFF POINT 1.0 deg: changing R31, R32 after deleting J7. EX) 1) delete J7 2) R31: 10 KW 3) R32: 10 KW	MICOM INPUT (V)	0	1.0	1.5	2.0	2.5	3.7	5.0	OFF POINT Variation (°C)	-0.5 (DEF)	1.0 ↓	2.0 ↓	3.0 ↓	1.0 ↑	2.0 ↑	3.0 ↑	R 31, 32 (KW)	J7 (in use)	R31: 40 R32: 10	R31: 23.3 R32: 10	R31: 15 R32: 10	R31: 10 R32: 10	R31: 3.5 R32: 10	R31: 10.0 R32: DEL
MICOM INPUT (V)	0	1.0	1.5	2.0	2.5	3.7	5.0																			
OFF POINT Variation (°C)	-0.5 (DEF)	1.0 ↓	2.0 ↓	3.0 ↓	1.0 ↑	2.0 ↑	3.0 ↑																			
R 31, 32 (KW)	J7 (in use)	R31: 40 R32: 10	R31: 23.3 R32: 10	R31: 15 R32: 10	R31: 10 R32: 10	R31: 3.5 R32: 10	R31: 10.0 R32: DEL																			

12. MAIN PCB DIAGRAM (ERF-367A / 397A / 417A)

