

Refrigerators (Combis)

- MODEL : * ERF-331MM
- * ERF-361MM
- * ERF-361AM
- * ERF-391MM
- * ERF-391AM
- * ERF-411MM
- * ERF-411AM
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✓ 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

1. Specifications

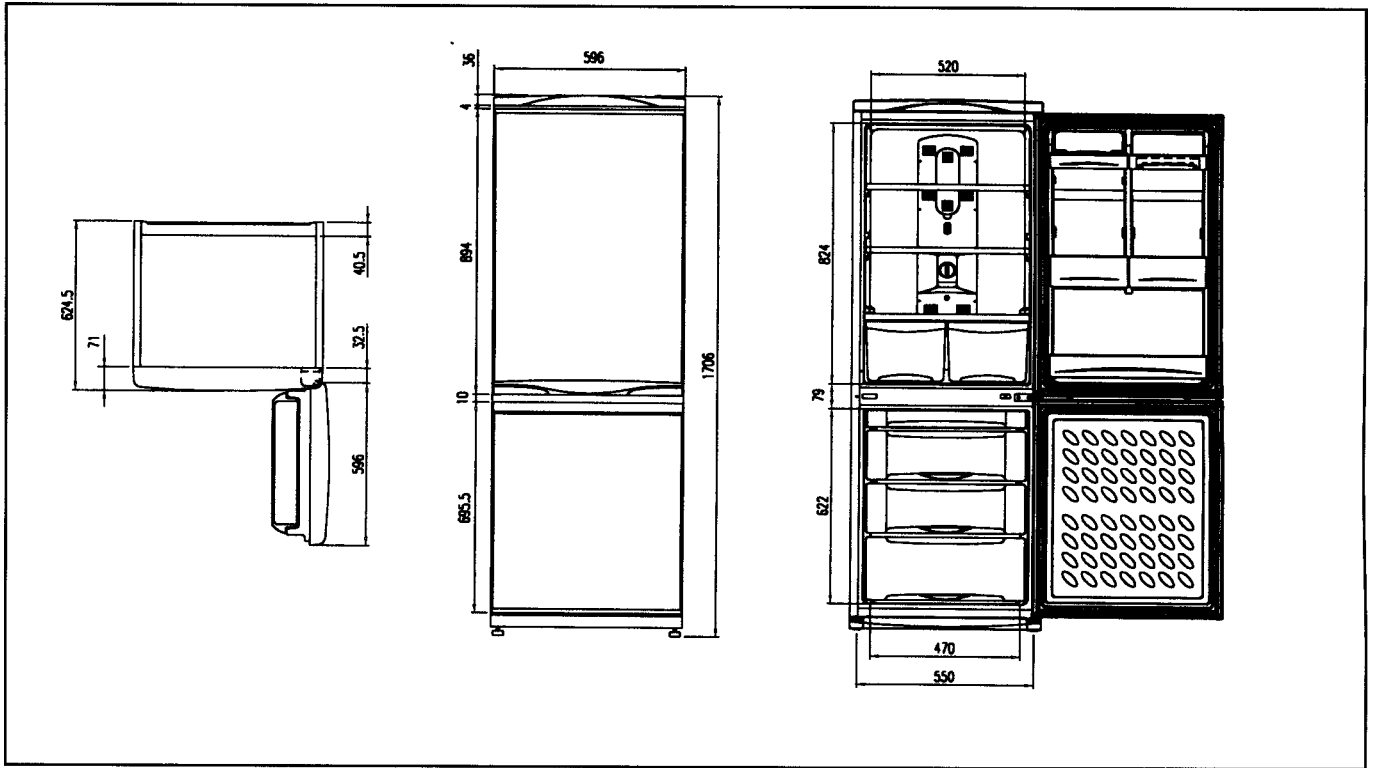
Model name		ERF-331	ERF-361		ERF-391		ERF-411	
Division		MM	AM	MM	AM	MM	AM	MM
Refrigerant	R-134a	80gr	90gr	90gr	90gr	90gr	90gr	90gr
Blowing agent		C-PENTANE						
Cooling system		Fan cool system						
Defrost system		Automatic start & Automatic stop system						
Compressor		HPL25YG1-5						
Rated voltage (w)		AC220~240V / 50Hz						
Rated input (W)		135	135	135	135	135	135	135
Lamp rated input (W)		15	15	15	15	15	15	15
Gross capacity (liter)	Freezer	99	93	93	93	93	114	114
	Refrigerator	201	223	223	253	253	254	254
	Total	300	316	316	346	346	368	368
External dimension (mm)	Height	1706	1780	1780	1911	1911	2000	2000
	Width	596	600	600	600	600	600	600
	Depth	624	618	618	618	618	618	618
Energy consumption	kwh/24h class	1,26 B	1,29 B	1,28 B	1,30 B	1,29 B	1,33 B	1,32 B
Freezing capacity(kg/24h)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Star rating		* **	* **	* **	* **	* **	* **	* **
Climate class		N	N	N	N	N	N	N
Net weight (kg)		61	69	69	75	75	79	79

Note) A : Electronic control type
M : Manual control type

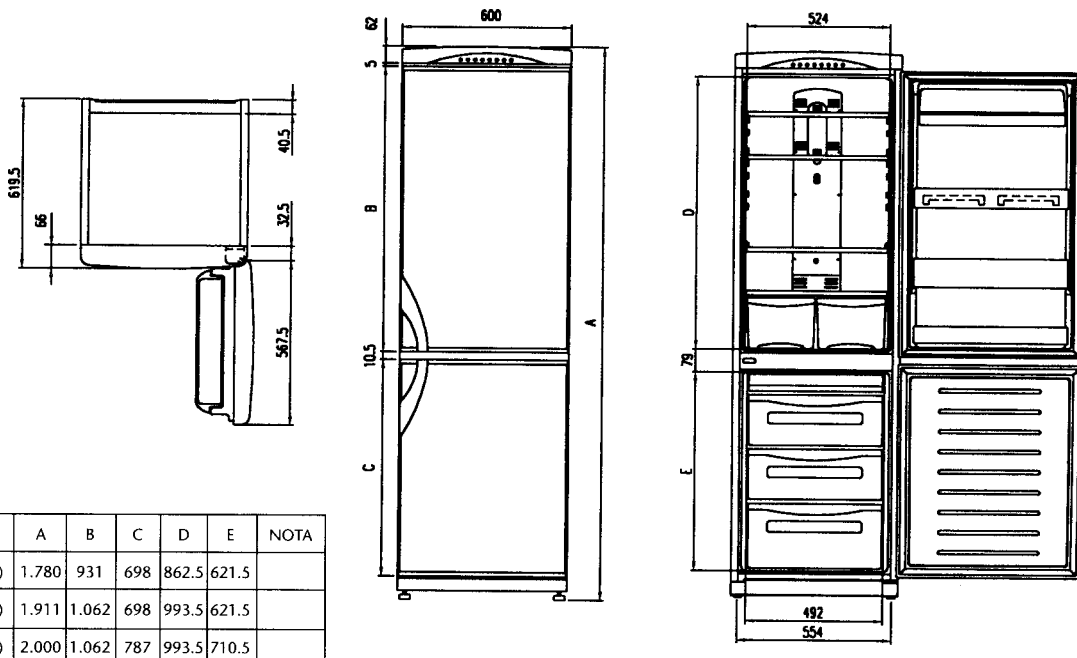
1.2. Types of the approved safety standards



1. ERF-331 MM



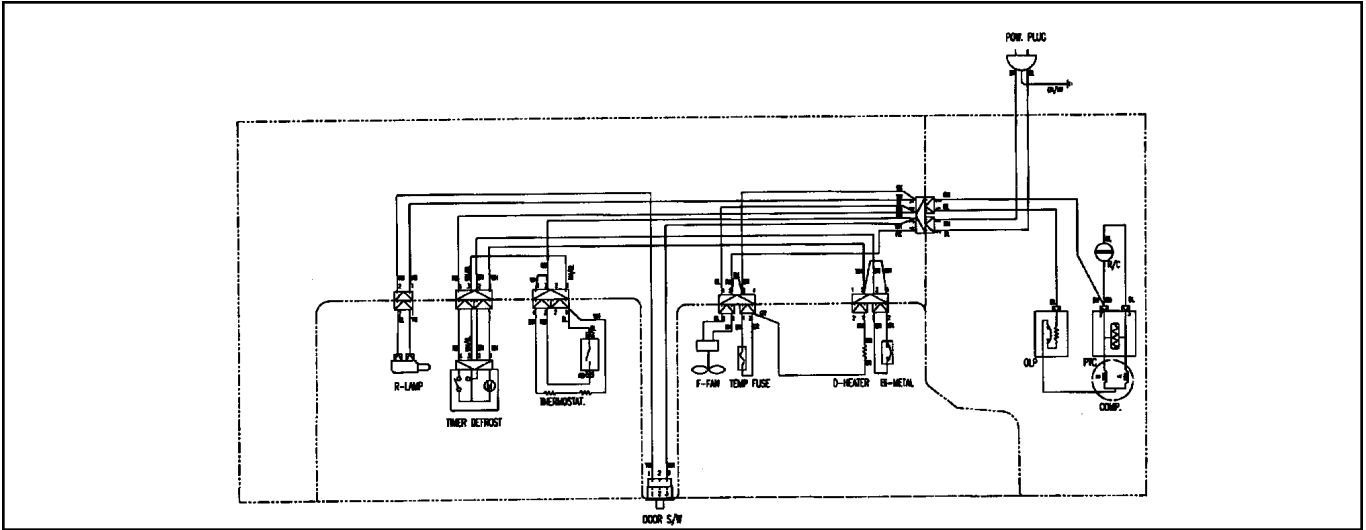
2. ERF-361AM(MM), 391AM(MM), 411AM(MM)



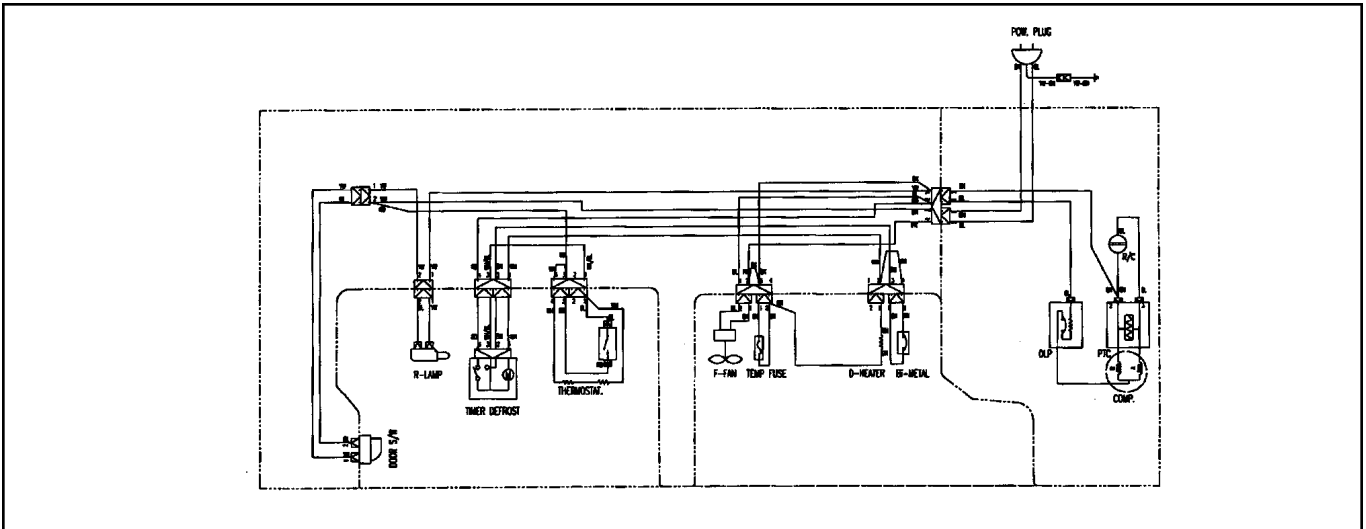
MODELO	A	B	C	D	E	NOTA
ERF-361A(M)	1.780	931	698	862.5	621.5	
ERF-391A(M)	1.911	1.062	698	993.5	621.5	
ERF-411A(M)	2.000	1.062	787	993.5	710.5	

3. WIRING DIAGRAMS

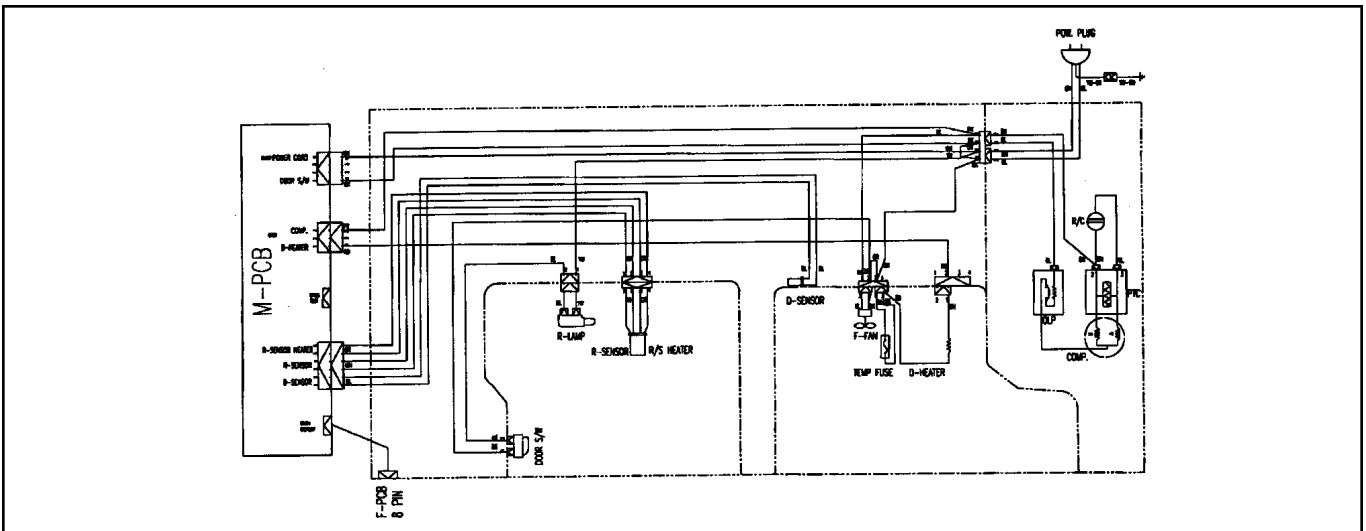
1. ERF-331MM



2. ERF-361MM, 391MM, 411MM

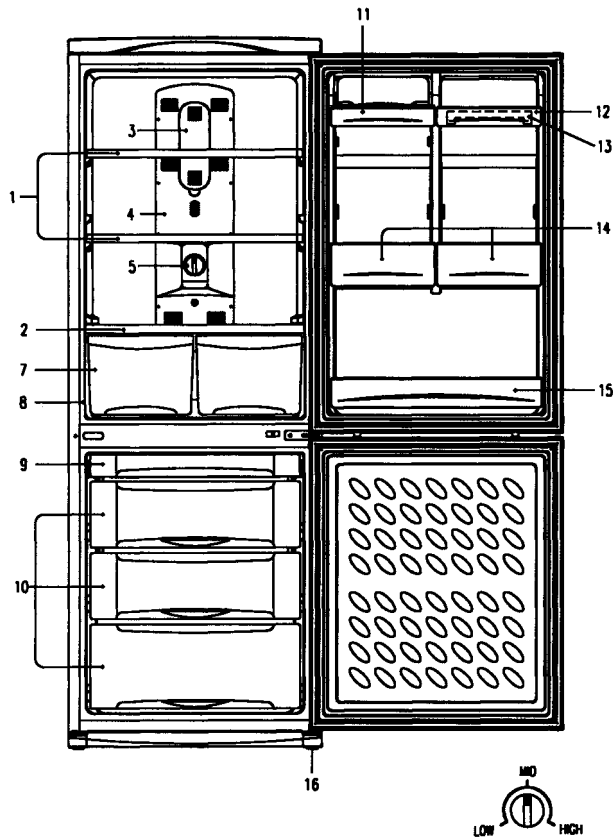


3. ERF-361AM, 391AM, 411AM



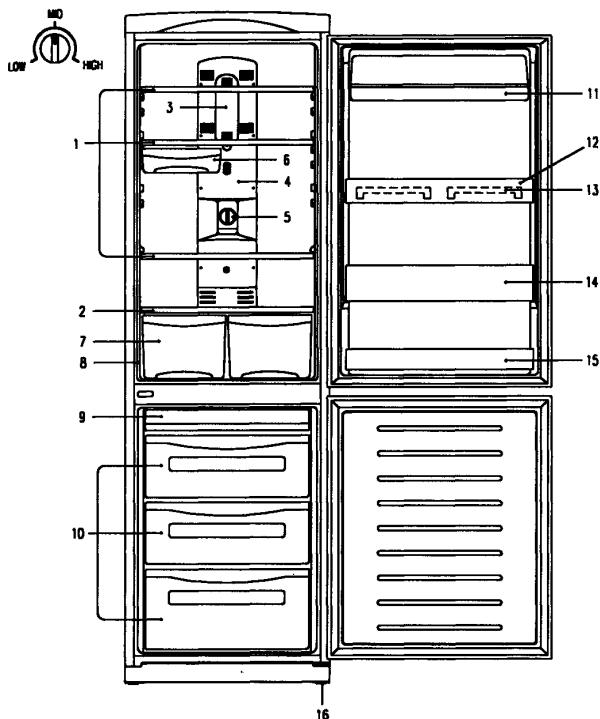
4. NAME OF PARTS

1. ERF-331MM

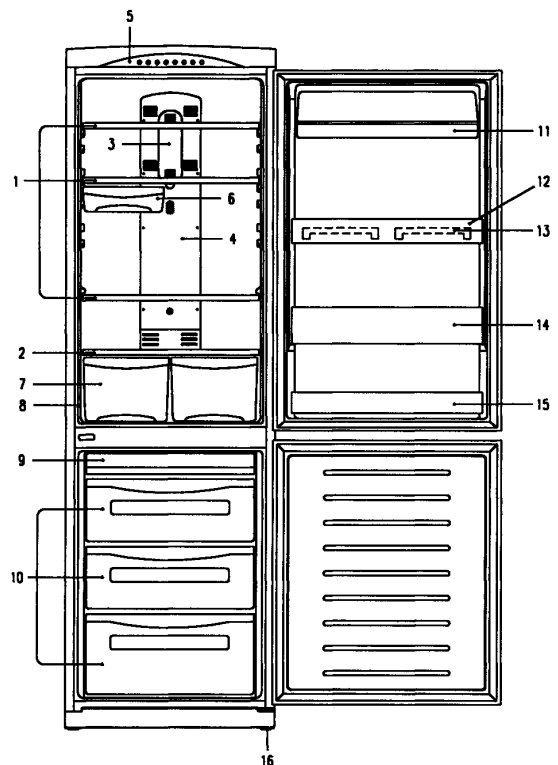


1. Shelves (The material of shelf can be changed by model).
ERF-331, 361 series: 2 shelves.
ERF-391, 411 series: 3 shelves
2. Cover vegetable case (The material of shelf can be changed by model).
3. Interior light for refrigerator compartment.
4. Multi air flow duct.
5. Refrigerator & freezer temperature control knob.
6. Low temperature compartments (only ERF-411A series).
7. Vegetable case. 1 box type or 2 boxes type (For the case of 1 box type, the Part (15) must be deleted).
8. Rating plate. It's attached in the refrigerator compartment on the left-hand side next to the vegetable case.
9. Ice cube tray.
10. Case for storing & freezing.
11. Butter pocket.
12. Egg pocket.
13. Egg tray.
14. Bottle pocket.
15. R door pocket.
16. Adjustable feet.

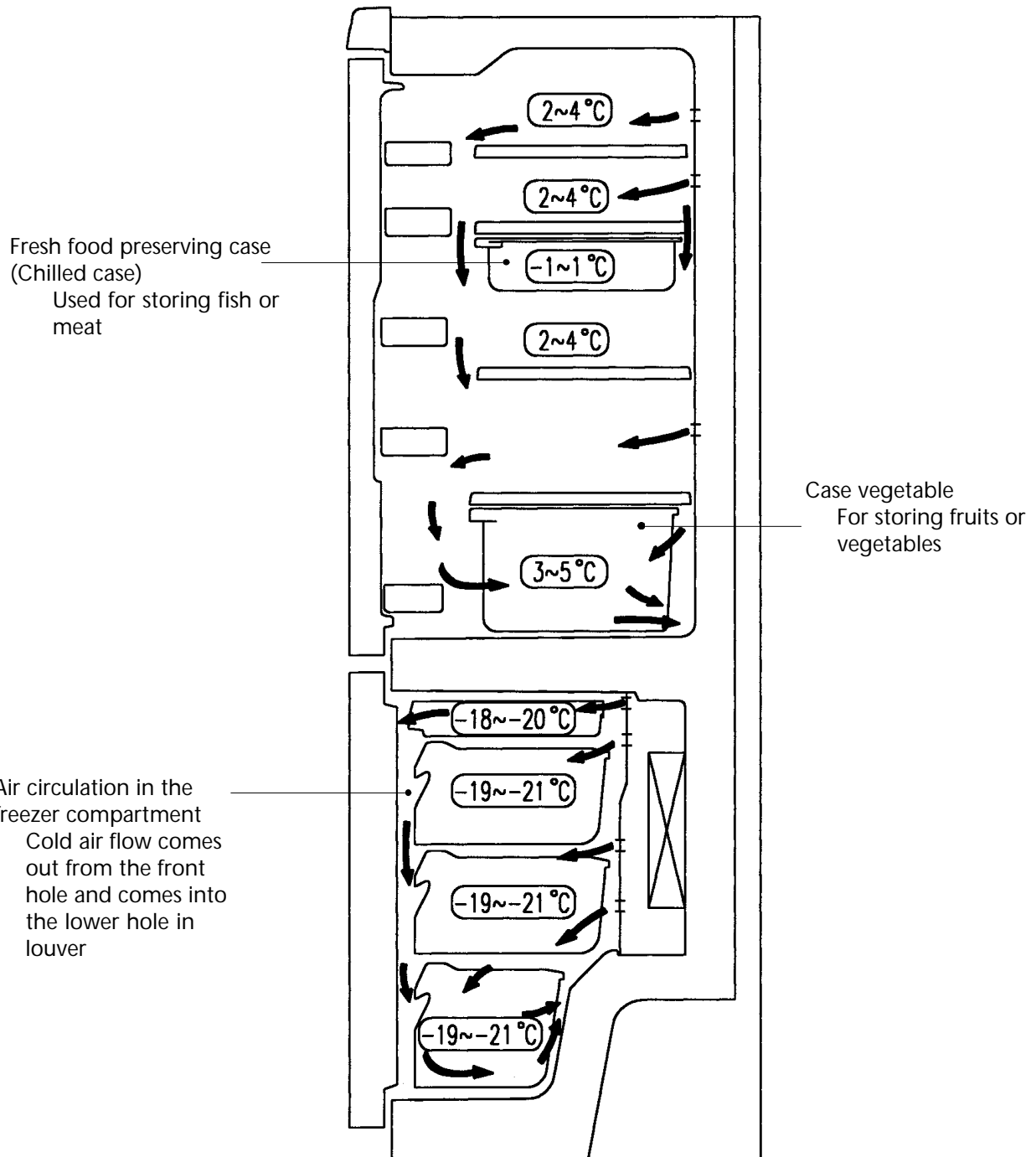
2. ERF-361MM, 391MM, 411MM



3. ERF-361AM, 391AM, 411AM

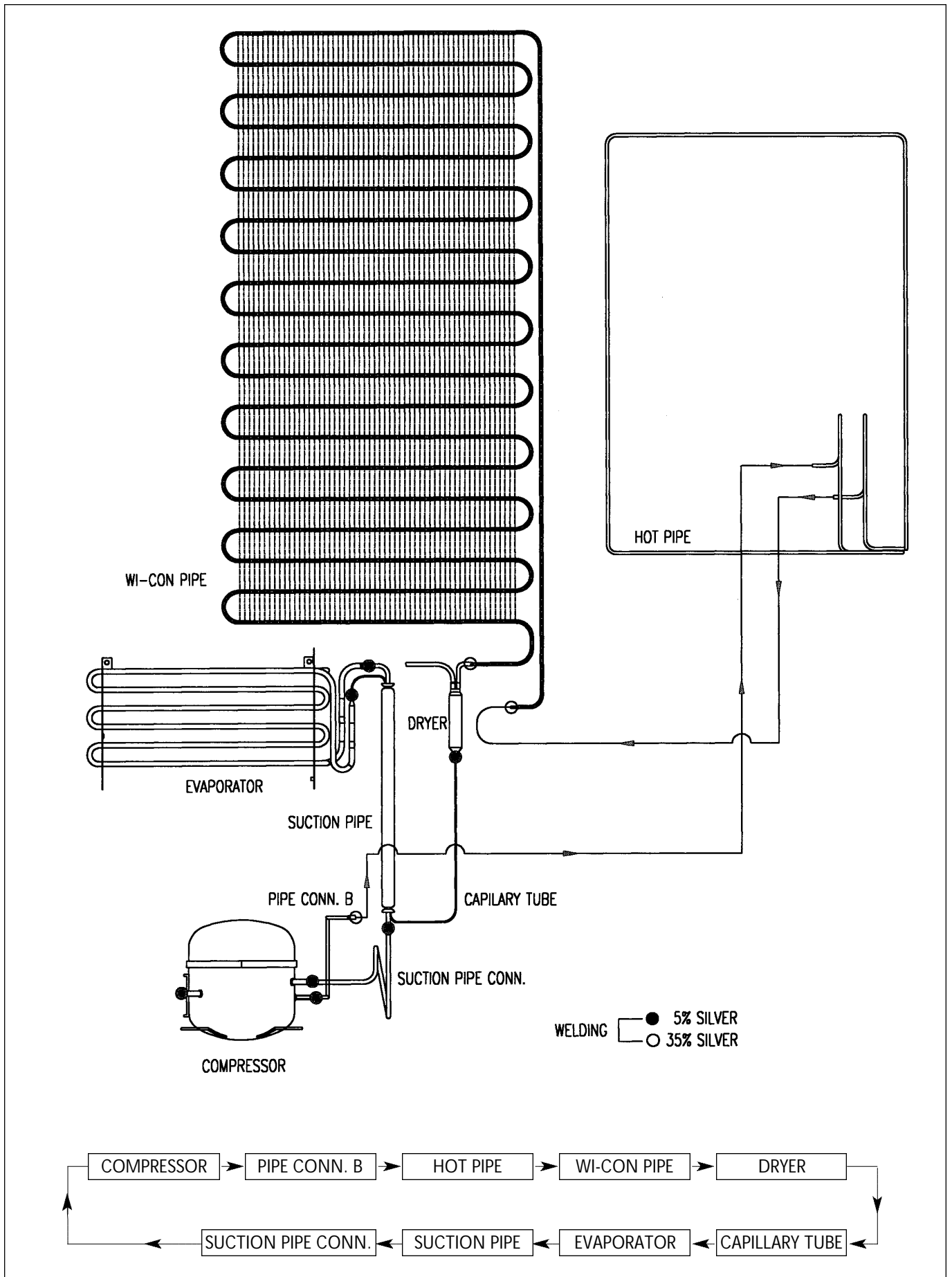


5. AIR FLOW DIAGRAM

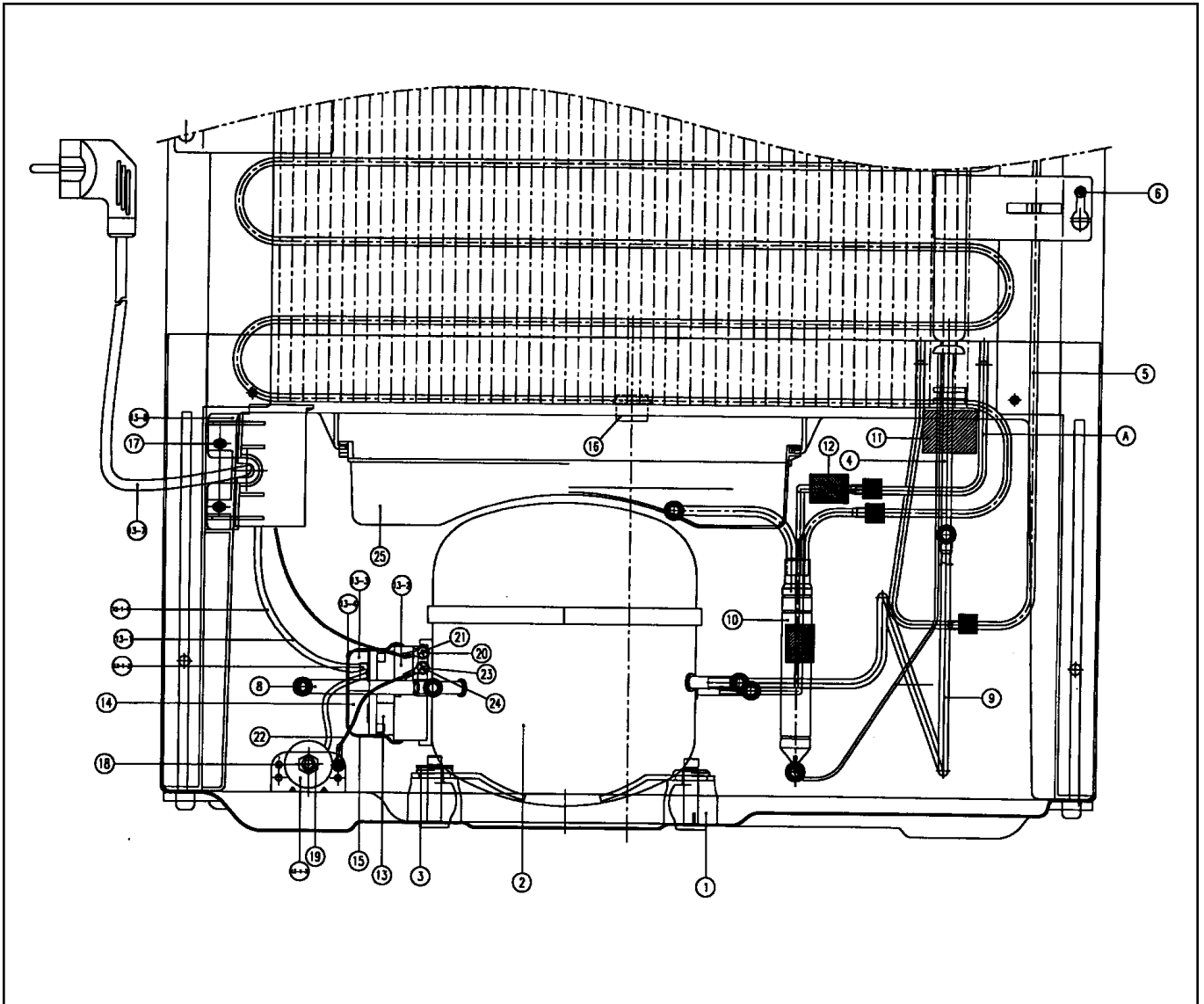


* Standard Model

6. REFRIGERANT CYCLE DIAGRAM



7. MACHINE ROOM VIEW AND PART LIST



N°	PART NAME	N°	PART NAME	N°	PART NAME
A	PIPE HOT	13-1	HARNESS RELAY AS	17	SCREW TRS 4X14
1	ABSORBER COMP.	13-1-1	HARNESS RELAY	18	SPECIAL WASHER R/C
2	COMPRESSOR	13-1-2	CAPACITOR RUN AS	19	SPECIAL NUT R/C
3	FIXTURE COMP.	13-1-3	CABLE TIE	20	SPECIAL WASHER
4	EVAPORATOR AS	13-2	BOX RELAY	21	SPECIAL MASHINE
5	PIPE Wi-CON AS	13-3	CABLE CLAMP	22	HARNESS EARTH
6	SPECIAL SCREW E	13-4	SCREW TAPPING	23	SPECIAL WASHER
7	PIPE CONN B	13-5	SWITCH P RELAY PTC	24	SCREW MASHINE
8	PIPE CHARGE	13-6	SWITCH P RELAY OL	25	CASE VAPORI
9	PIPE SUC. CONN	13-7	CODE POWER AS		
10	DRYER AS	13-8	COVER ME HOUSING		
11	ABSORBER PIPE B	14	REALY COVER		
12	ABSORBER PIPE C	15	BAND REALY		
13	BOX RELAY AS	16	CAP DRAINER		

9. COMPONENTS SPECIFICATIONS

Specification

1. COMPRESSOR

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Part name	HPL25YG1-5						
Part code	3956420481						
Rated voltage	220/240V 50Hz						
Starting type	RSCR						
Refrigerant	R-134a						

2. PTC

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Part name	PTH490D-AS330						
Part code	3817907000						

3. OLP

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Part name	4TM213NHBY						
Part code	3817911200						

4. RUNNING CAPACITOR

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Part name	MP80040061						
Specification	4 μ F, 400VAC						
Part code	3010938000						

5. FAN MOTOR AS

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Part name	IS-2321 1DWBFO						
Specification	220-240V, 50HZ, 2400RPM						
Part code	3011604700						

6. HEATER A AS

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	Glass tube heater						
Specification	AC230V, 148W						
Part code	3012807600						

Component specifications

7. LAMP

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	Pygmy						
Specification	AC230V, 15W (E14)						
Part code	3013600700						

8. SWITCHLAMP

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	DSSD-6	1051					
Specification	250V, 0,5A	250V, 0,25A					
Part code	3011721300	3018111500					

9. SOCKET LAMP

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	AIC-800						
Specification	AC250V, E14						
Part code	3017903900						

10. FUSE TEMPERATURE

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	DF77S						
Specification	AC250V, 77 °C						
Part code	3017200420						

11. SWITCH BI-METAL

	ERF-331MM	ERF-361AM	ERF-361MM	ERF-391AM	ERF-391MM	ERF-411AM	ERF-411MM
Type	PST-3						
Specification	250V, 50-60Hz						
Part code	3018120600						

12. SWITCH D TIMER

	ERF-331MM	ERF-361MM	ERF-391MM	ERF-411MM
Type	JDT-MN7109D			
Specification	AC250V, 50/60Hz			
Part code	3018117500			

13. THERMOSTAT

	ERF-331MM	ERF-361MM	ERF-391MM	ERF-411MM
Type	BU-260			
Specification	250V, SA			
Part code	3018302200			

14. SENSOR R AS

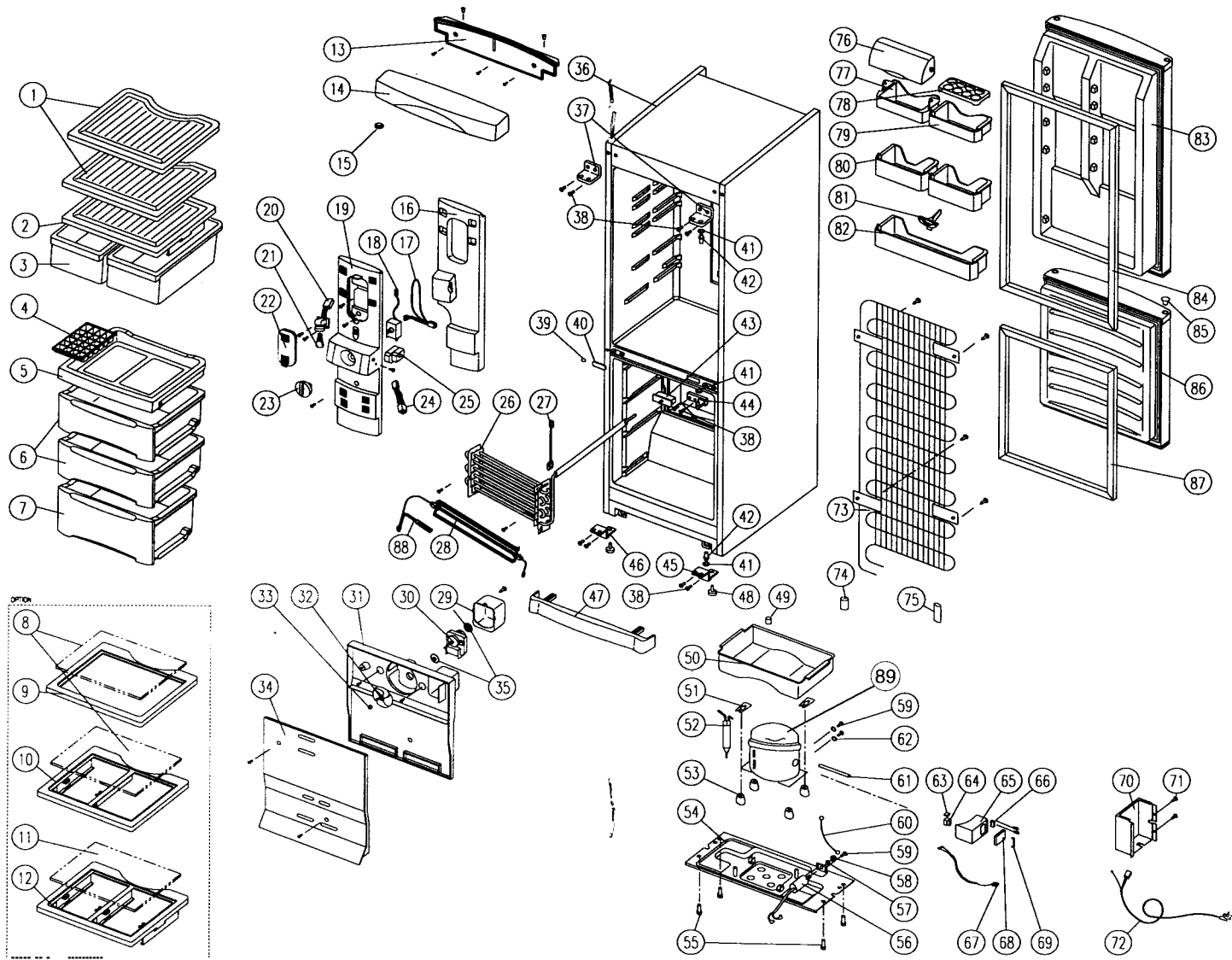
	ERF-361AM	ERF-391AM	ERF-411AM
Type	NBC-K43-D21		
Specification	R=0 °C 30K ±3%		
Part code	3012731800		

15. SENSOR D AS

	ERF-361AM	ERF-391AM	ERF-411AM
Type	NBC-K43-D21		
Specification	R=0 °C 30K ±3%		
Part code	3012731400 (HARNESS SENSOR AS)		

PLANO DE DESPIECE

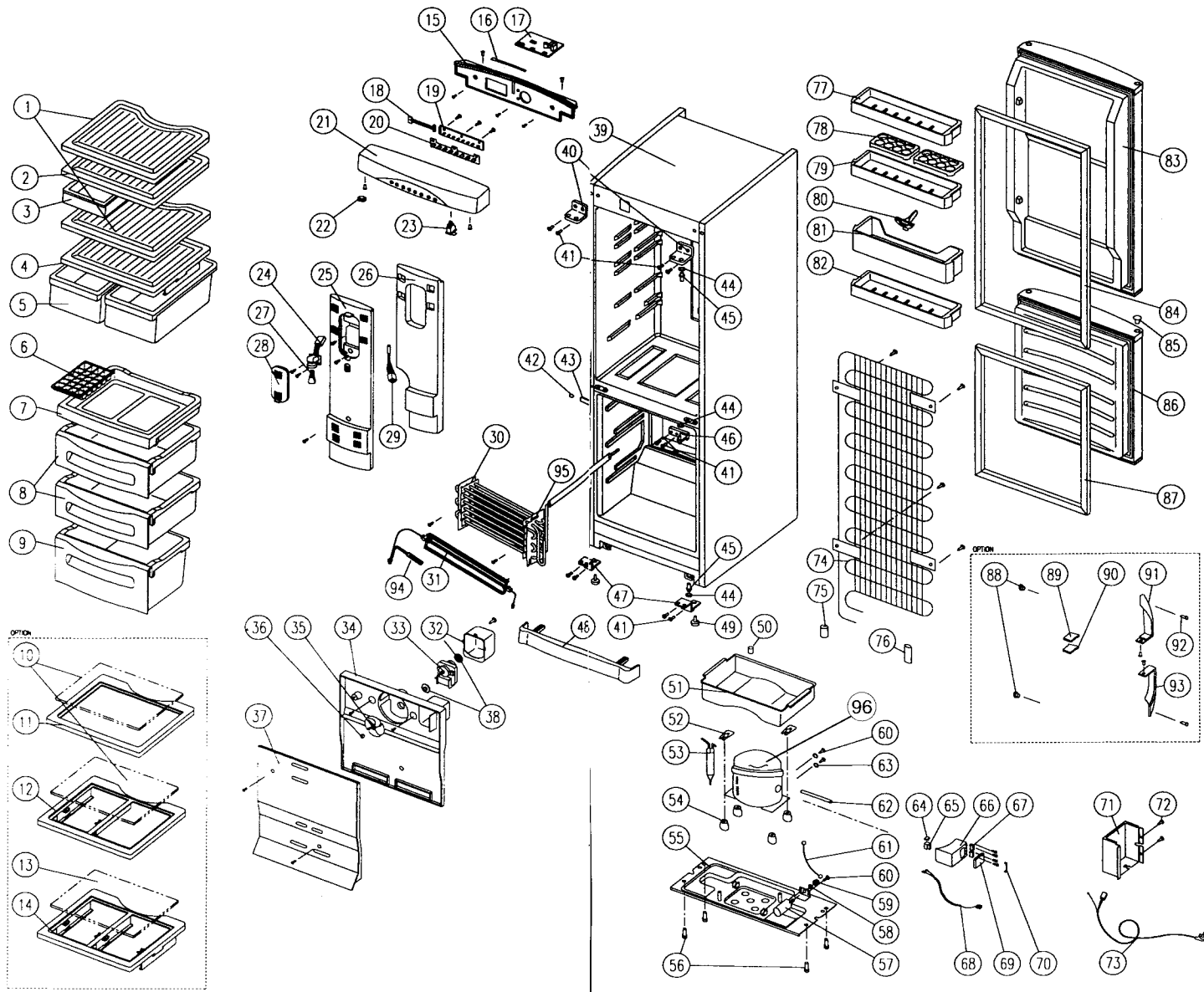
1. ERF - 331MM



11. PART LIST

1. Parts list (ERF-331MM)

NO	PART NAME	PART CODE	MODEL	DESCRIPTION	REMARK
1	SHELF R	3017823200	2	GPPS	391/411
2	COVER VEGTB CASE	3011453600	1	GPPS	
3	CASE VEGTB	3011163400	2	GPPS	
4	CASE ICING	3011163200	1	PP	
5	CASE FD	3011163100	1	HIPS	
6	CASE FB AS	3011164200	2	CASE+COVER	
7	CASE FA AS	3011164100	1	CASE+COVER	
8	PLATE SHELF GLASS	3014547700	1	GLASS t4.0	OPTION
9	FRAME GLASS SHELF	3012202400	1	HIPS	OPTION
10	FRAME C/CASE COVER	3012202500	1	HIPS	OPTION
11	PLATE V/CASE COVER GLASS	3014547800	1	GLASS t4.0	OPTION
12	FRAME V/CASE COVER	3012202600	1	HIPS	OPTION
13	BASE CONTROL PANEL	3010318700	1	HIPS	
14	PANEL CONTROL	3014228900	1	ABS	
15	CAP CONTROL PANEL A	3010902800	1	SILICON RUBBER	
16	INSULATOR MULTI DUCT	3013337600	1	F-PS (0.025)	
17	HARNESS THERMOSTAT	3012731500	1		
18	THERMOSTAT	3018302200	1	250V 6A	
19	COVER MULTI DUCT	3011453000	1	HIPS t2.0	
20	SOCKET LAMP AS	3017903900	1		ASSY
21	LAMP	3013600700	1	230V 15W	
22	WINDOW LAMP	3015503300	1		GPPS
23	KNOB R	3013401410	1	HIPS	
24	HARNESS TIMER	3012731600	1		
25	SWITCH DEF TIMER	3018115700	1		
26	EVAPORATOR AS	3017045700	1	EVA+SUC PIPE	
27	SWITCH BI-METAL	3018120600	1	250V 5A	
28	HEATER D AS	3012807600	1	GLASS HEATER+FUSE TEMP	
29	BRACKET FAN MOTOR	3010615600	1	PP	
30	MOTOR FAN AS	3011604700	1	IS-231 1DWBFO	
31	LOUVER F B	3018911400	1	PP (411:HIPS)	
32	FAN	3011801400	1	ABS /100	
33	FIXTURE FAN RING	3012005400	1	SUS304 t0.5	
34	LOUVER F A	3018911300	1	HIPS	
35	BUSHING FAN MOTOR	3010901800	2	NR	
36	ASSY CAB URT	3010086300	1	ASSY	
37	HINGE *T	3012908100	2	P/O+ZN t3.2	
38	SPECIAL BOLT C	3016004900	10	M5xP0.89xL16 SWCH22A	
39	CAP SCREW	3010920200	1	PE-LD	
40	CAP SCREW HOLE	3010920300	1	HIPS	
41	SPECIAL WASHER HINGE	3016005500	3	S20C t1.0 13/7	
42	SHAFT HI	3014903200	2		
43	SWITCH DOOR	3018120500	1	DSD-6	
44	HINGE *M	3012911800	1	ZNDC2, DIE CASTING	
45	HINGE *U *L	3012912200	1	SPHC 3.2t	
46	HINGE *U *L	3012912100	2	SPHC 3.2t	
47	COVER CAB BRACKET	3011453300	1	PP	
48	FOOT ADJUSTING AS	3012101800	2	PP+SPECIAL BOLT	
49	CAP DRAIN HOSE	3010919700	1	NBR	
50	CASE VAPORY	3011162600	1	PP	
51	FIXTURE COMP	3012005300	2	SK5+ZN5-C t0.8	
52	DRYER ASSY	3016802200	1	15Gr (t0.51)	
53	ABSORBER COMP	3010101700	4	NR	
54	BASE COMP	3010318600	1	SBHG t1.0	
55	SPECIAL SCREW A	3016004300	4	M6.5xL20	
56	CAPACITOR RUNNING	3010938000	1	4uF 400AC	DNA
57	SPECIAL WASHER R/C	3016006400	1	A	

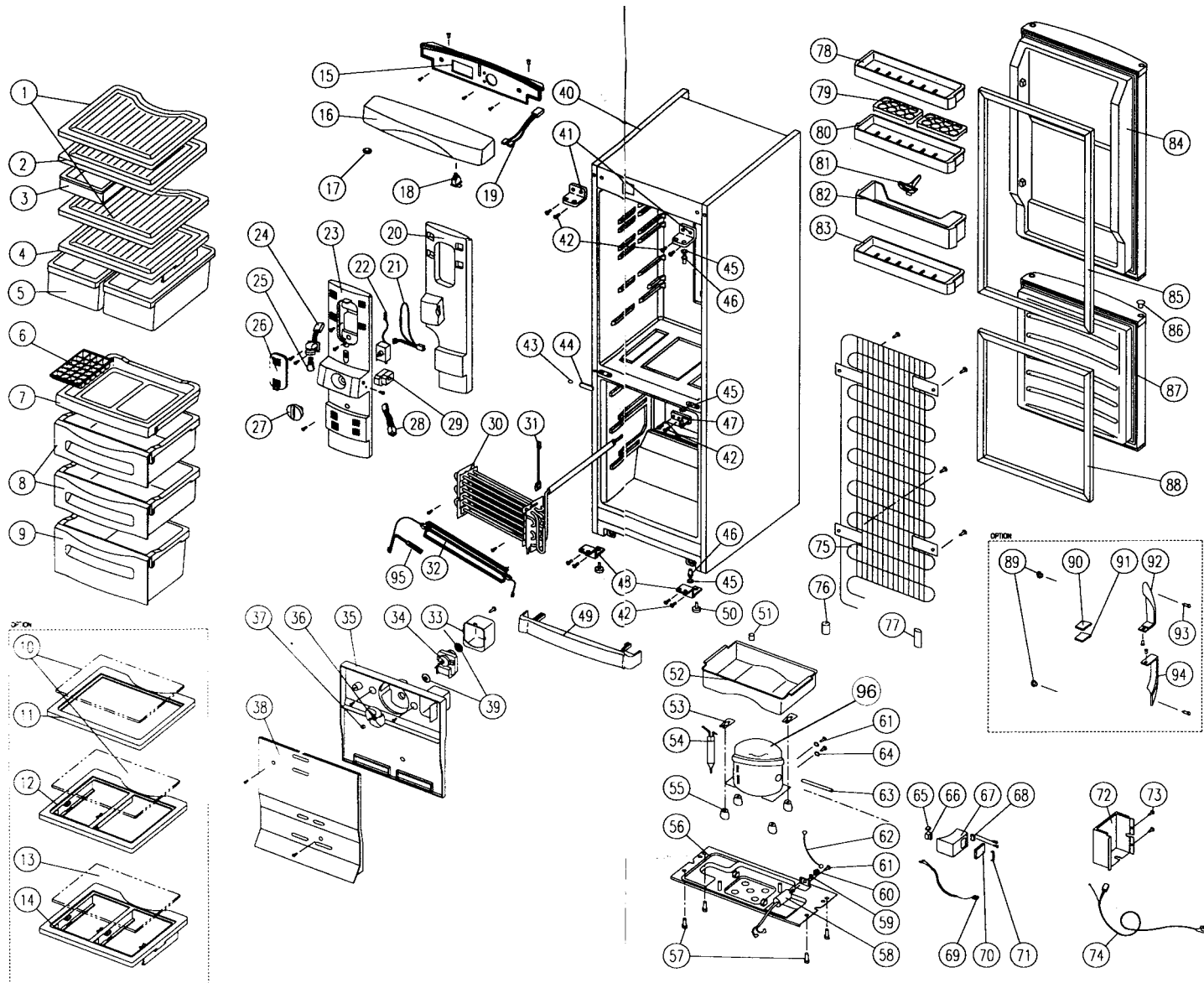


Part List

1. Parts list (ERF-361AM/391AM/411AM TYPE)

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			361A	391A	411A		
1	SHELF R	3017823200	1	2	2	GPPS	391/411
2	COVER CHILLED CASE	3011453400	1	1	1		
3	CASE CHILD	3011163300	1	1	1	GPPS	
4	COVER VEGTB CASE	3011453600	1	1	1	GPPS	
5	CASE VEGTB	3011163400	2	2	2	GPPS	
6	CASE ICING	3011163200	1	1	1	PP	
7	CASE FD	3011115911	1	1	1	HIPS	
8	CASE FB (411:CASE FC)	3011115310	2	2	-	HIPS	
		3011115410	-	-	2	HIPS	
9	CASE FA	3011115202	1	1	1	HIPS	
10	PLATE SHELF GLASS	3014547700	1	1	1	GLASS t4.0	OPTION
11	FRAME GLASS SHELF	3012202400	1	1	1	HIPS	OPTION
12	FRAME C/CASE COVER	3012202500	1	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	PAGE 34	1	1	1	HIPS	
16	CABLE TIE	4016N03281	1	1	1		
17	PCB MAIN AS	3014397060	1	1	1		
18	HARNESS F PCB	3012718300	1	1	1		
19	PCB F AS	3014372130	1	1	1		
20	WINDOWS LED	3015503400	1	1	1	SILICON RUBBER	
21	PANEL CONTROL	PAGE 34	1	1	1	ABS	
22	CAP CONTROL PANEL A	PAGE 34	1	1	1	SILICON RUBBER	
23	SWITCH LAMP	3018111500	1	1	1	250V 0,25A	
24	SOCKET LAMP AS	3017903900	1	1	1		ASSY
25	COVER MULTI DUCT	3011451900	1	-	-	HIPS t2.0	
		3011452100	-	1	1	HIPS t2.0	
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	3011604700	1	1	1	IS-231 1DWBFO	
34	LOUVER F B	3018905500	1	1	-	PP (411:HIPS)	
		3018905600	-	-	1	PP (411:HIPS)	
35	FAN	3011801400	1	1	1	ABS /100	
36	FIXTURE FAN RING	3012005400	1	-	-	SUS304 t0.5	
37	LOUVER F A	3018905300	1	1	-	HIPS	
		3018905400	-	-	1	HIPS	
38	BUSHING FAN MOTOR	3010901800	2	2	2	NR	
39	ASSY CAB URT	3010071001	1	-	-	ASSY	
		3010071011	-	1	-	ASSY	
		3010071021	-	-	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	PAGE 34	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	3012908000	1	1	1	DIE CASTING	
47	HINGE *U	3012908200	2	2	2	P/O+ZN t3.2	
48	COVER CAB BRACKET	PAGE 34	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
			361A	391A	411A		
51	CASE VAPORY	3011162600	1	1	1	PP	
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 RUNNING	3010938000	1	1	1	4uF 400AC	DNA
58	SPECIAL WASHER R/C	3016006400	1	1	1	A	
59	SPECIAL NUT R/C	3016006500	1	1	1	M8	
60	SCREW MACHINE	7051401065	3	3	3	PAN 4x10 BSNI	
61	HARNESS EARTH	3012735200	1	1	1	110mm	
62	PIPE CHARGE	3014418200	1	1	1	DCUT1-/6xT0.6x100	
63	SPECIAL WASHER	3016004700	4	4	4	/4.3 STAR	earth:4
64	SWITCH P RELAY OL	3817911200	1	1	1	4TM213NHB	
65	SWITCH P RELAY PTC	3817907000	1	1	1	33?(MURATA)	
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	3011343300	1	1	1	CP 2PIN	
74	WI-CON ASSY	3014434500	1	1	-		
		3014434600	-	-	1		
75	ABSORBER PIPE C	4016008014	2	2	2	EPDM (18g)	PIPE CONN
76	ABSORBER PIPE B	3010101900	1	1	1	IIR	PIPE SUC
77	POCKET BUTTER	3019008720	1	1	1	HIPS	
78	CASE EGG	3011163600	2	2	2	PP	
79	POCKET EGG	3019008701	1	1	1	HIPS	
80	GUIDE POCKET	3012510200	1	1	1	PP	
81	POCKET BOTTLE A	3019008600	1	1	1	HIPS	
82	POCKET R DOOR	3019013600	1	1	1	HIPS	
	POCKET BOTTLE B	3019009500	FOR SUPERIOR CLASS			HIPS	SUPERIOR
	GUIDE BOTTLE SUPPORT B	3012508000	FOR SUPERIOR CLASS			SUPERIOR POCKET R DOOR	
		3019008710	FOR SUPERIOR CLASS			HIPS	SUPERIOR
	GUIDE BOTTLE SUPPORT C	3012508010	FOR SUPERIOR CLASS				STEAL SUPERIOR
83	ASSY R DOOR URT	PAGE 34	1	-	-	ASSY	
		PAGE 34	-	1	1	ASSY	
84	GASKET R DOOR AS	3012306600	1	-	-	PVC+MAGNET	
		3012306800	-	1	1	PVC+MAGNET	
85	CAP DOOR BUSSHING	PAGE 34	1	1	1	PP	
86	ASSY F DOOR URT	PAGE 34	1	-	-	ASSY	
		PAGE 34	-	1	1	ASSY	
87	GASKET F DOOR AS	3012306500	1	1	-	PVC+MAGNET	
		3012306700	-	-	1	PVC+MAGNET	
88	CAP HANDLE	PAGE 34	1	1	1	HIPS	OPTION
89	COVER DOOR CAP *L	PAGE 34	2	2	2	ABS	OPTION
90	COVER DOOR CAP *R	PAGE 34	2	2	2	ABS	OPTION
91	HANDLE *T	PAGE 34	1	1	1	PBT	OPTION
92	SPECIAL SCREW D	3016004810	4	4	4	T2 FLT 4x16 PAINTING	OPTION
93	HANDLE *U	PAGE 34	1	1	1	PBT	OPTION
94	TEPERATURE FUSE	3017200420	1	1	1		
95	D-SENSOR	3012733910	1	1	1		
96	COMPRESSOR	3956420481	1	1	1	HPL25Y61-5	



11. PART LIST

1. Parts list (ERF-361MM/391MM/411MM TYPE)

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			361M	391M	411M		
1	SHELF R	3017823200	1	2	2	GPPS	391/411
2	COVER CHILLED CASE	3011453400	1	1	1		
3	CASE CHILD	3011163300	1	1	1	GPPS	
4	COVER VEGTB CASE	3011453600	1	1	1	GPPS	
5	CASE VEGTB	3011163400	2	2	2	GPPS	
6	CASE ICING	3011163200	1	1	1	PP	
7	CASE FD	3011115911	1	1	1	HIPS	
8	CASE FB (411:CASE FC)	3011115310	2	2	-	HIPS	
		3011115410	-	-	2	HIPS	
9	CASE FA	3011115202	1	1	1	HIPS	
10	PLATE SHELF GLASS	3014547700	1	1	1	GLASS t4.0	OPTION
11	FRAME GLASS SHELF	3012202400	1	1	1	HIPS	OPTION
12	FRAME C/CASE COVER	3012202500	1	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	PAGE 34	1	1	1	HIPS	
16	PANEL CONTROL	PAGE 34	1	1	1	ABS	
17	CAP CONTROL PANEL A	PAGE 34	1	1	1	SILICON RUBBER	
18	SWITCH LAMP	3018111500	1	1	1	250V 0,25A	
19	HARNES LAMP SW	3012717020	1	1	1		
20	INSULATOR MULTI DUCT	3013337100	1	-	-	F-PS	
		30133373000	-	1	1	F-PS	
21	HARNES THERMOSTAT	3012731500	1	1	1		
22	THERMOSTAT	3018302200	1	1	1	250V 6A	
23	COVER MULTI DUCT	3011452000	1	-	-	HIPS t2.0	
		3011452300	-	1	1	HIPS t2.0	
24	SOCKET LAMP AS	3017903900	1	1	1		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	HARNES TIMER	3012731600	1	1	1		
29	SWITCH DEF TIMER	3018115700	1	1	1		
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	3011604700	1	1	1	IS-231 1DWBFO	
35	LOUVER F B	3018905500	1	1	-	PP (411:HIPS)	
		3018905600	-	-	1	PP (411:HIPS)	
36	FAN	3011801400	1	1	1	ABS /100	
37	FIXTURE FAN RING	3012005400	1	-	-	SUS304 t0.5	
38	LOUVER F A	3018905300	1	1	-	HIPS	
		3018905400	-	-	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	PAGE 34	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	3012908000	1	1	1	DIE CASTING	
48	HINGE *U	3012908200	2	2	2	P/O+ZN t3.2	
49	COVER CAB BRACKET	PAGE 34	1	1	1	HIPS	
50	FOOT ADJUSTING AS	3012101800	2	2	2	PP+SPECIAL BOLT	

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			361M	391M	411M		
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	3016802200	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 RUNNING	3010938000	1	1	1	4uF 400AC	DNA
59	SPECIAL WASHER R/C	3016006400	1	1	1	A	
60	SPECIAL NUT R/C	3016006500	1	1	1	M8	
61	SCREW MACHINE	7051401065	3	3	3	PAN 4x10 BSNI	
62	HARNESS EARTH	3012735200	1	1	1	110mm	
63	PIPE CHARGE	3014418200	1	1	1	DCUT1-/6xT0.6x100	
64	SPECIAL WASHER	3016004700	4	4	4	/4.3 STAR	earth:4
65	SWITCH P RELAY OL	3817911200	1	1	1	4TM213NHB	
66	SWITCH P RELAY PTC	3817907000	1	1	1	33?(MURATA)	
67	REALY 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	2	2	2		
74	CORD POWER AS	3011343300	1	1	1	CP 2PIN	
75	WI-CON ASSY	3014434500	1	1	-		
		3014434600	-	-	1		
76	ABSORBER PIPE C	4016007014	2	2	2	EPDM (18g)	PIPE CONN
77	ABSORBER PIPE B	3010101900	1	1	1	IIR	PIPE SUC
78	POCKET BUTTER	3019008720	1	1	1	HIPS	
79	CASE EGG	3011163600	2	2	2	PP	
80	POCKET EGG	3019008701	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	3019013600	1	1	1	HIPS	
	POCKET BOTTLE B	3019009500	FOR SUPERIOR CLASS			HIPS	SUPERIOR
	GUIDE BOTTLE SUPPORT B	3012508000	FOR SUPERIOR CLASS			STEAL	SUPERIOR
	SUPERIOR POCKET R DOOR	3019008710	FOR SUPERIOR CLASS			HIPS	SUPERIOR
	GUIDE BOTTLE SUPPORT C	3012508010	FOR SUPERIOR CLASS			STEAL	SUPERIOR
84	ASSY R DOOR URT	PAGE 34	1	-	-	ASSY	
		PAGE 34	-	1	1	ASSY	
85	GASKET R DOOR AS	3012306600	1	-	-	PVC+MAGNET	
		3012306800	-	1	1	PVC+MAGNET	
86	CAP DOOR BUSSHING	PAGE 34	1	1	1	PP	
87	ASSY F DOOR URT	PAGE 34	1	-	-	ASSY	
		PAGE 34	-	1	1	ASSY	
88	GASKET F DOOR AS	3012306500	1	1	-	PVC+MAGNET	
		3012306700	-	-	1	PVC+MAGNET	
89	CAP HANDLE	PAGE 34	1	1	1	HIPS	OPTION
90	COVER DOOR CAP *L	PAGE 34	2	2	2	ABS	OPTION
91	COVER DOOR CAP *R	PAGE 34	2	2	2	ABS	OPTION
92	HANDLE *T	PAGE 34	1	1	1	PBT	OPTION
93	SPECIAL SCREW D	3016004810	4	4	4	T2 FLT 4x16 PAINTING	OPTION
94	HANDLE *U	PAGE 34	1	1	1	PBT	OPTION
95	TEMPERATURE FUSE	3017200420	1	1	1		
96	COMPRESSOR	3956420481	1	1	1	HPL25Y61-5	

Part List

Part list of colour components (ERF-361AM/MM,ERF-391AM/MM,ERF-411AM/MM)

WHITE

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			361	391	411		
1	CONTROL PANEL A	3014204800	1	1	1	ABS	electronic
2	CONTROL PANEL M	3014204950	1	1	1	ABS	mechanical
3	BASE CONTROL PANEL	3010312900	1	1	1	HIPS	
4	REFRIGERATOR DOOR (310)	3010075201	1			URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (340-370)	3010075213		1	1	URT FORMING (CO-LAMINAR)	
6	FREEZER DOOR (310-340)	3010075303	1	1		URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (370)	3010075313			1	URT FORMING (CO-LAMINAR)	
8	HANDLE *F	3012610100	1	1	1	PBT	
9	HANDLE *R	3012610200	1	1	1	PBT	
10	COVER DOOR CAP *L	3011437000	2	2	2	ABS	
11	COVER DOOR CAP *R	3011437010	2	2	2	ABS	
12	CAP HANDLE	3010910010	4	4	4	HIPS	
13	CAP SCREW	3010920200	1	1	1	HIPS	
14	CAP DOOR BUSHING	3010918300	1	1	1	PP	
15	CAP CONTROL PANEL	3010902810	1	1	1	SILICON RUBBER	
16	COVER CAB BRACKET	3011433320	1	1	1	HIPS	

SILVER

NO	PART NAME	PART CODE	MODEL			DESCRIPTION	REMARK
			361	391	411		
1	CONTROL PANEL A	3014204940	1	1	1	ABS	electronic
2	CONTROL PANEL M	3014204970	1	1	1	ABS	mechanical
3	BASE CONTROL PANEL	3010312910	1	1	1	HIPS	
4	REFRIGERATOR DOOR (310)	3010074601	1			URT FORMING (CO-LAMINAR)	
5	REFRIGERATOR DOOR (340-370)	3010075211		1	1	URT FORMING (CO-LAMINAR)	
6	FREEZER DOOR (310-340)	3010075301	1	1		URT FORMING (CO-LAMINAR)	
7	FREEZER DOOR (370)	3010075311			1	URT FORMING (CO-LAMINAR)	
8	HANDLE *F	3012610120	1	1	1	PBT	
9	HANDLE *R	3012610220	1	1	1	PBT	
10	COVER DOOR CAP *L	3011437040	2	2	2	ABS	
11	COVER DOOR CAP *R	3011437050	2	2	2	ABS	
12	CAP HANDLE	3010910010	4	4	4	HIPS	
13	CAP SCREW	3010920210	1	1	1	HIPS	
14	CAP DOOR BUSHING	3010918310	1	1	1	PP	
15	CAP CONTROL PANEL	3010902810	1	1	1	SILICON RUBBER	
16	COVER CAB BRACKET	3011433320	1	1	1	HIPS	

INOX (DARK GRAY)

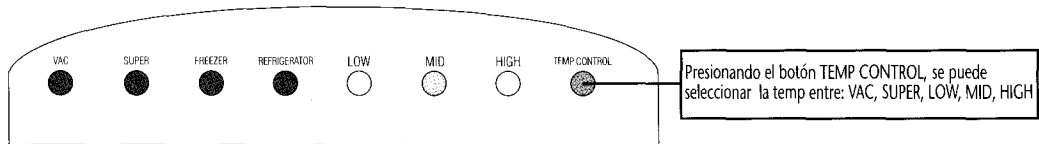
NO	PART NAME	PART CODE	APPLY MODEL			DESCRIPTION	REMARK
			361	391	411		
1	CONTROL PANEL A	3014204960	1	1	1	ABS	electronic
2	CONTROL PANEL M	3014204990	1	1	1	ABS	mechanical
3	BASE CONTROL PANEL	3010312910	1	1	1	HIPS	
4	REFRIGERATOR DOOR (310)	3010074602	1			URT FORMING (INOX)	
5	REFRIGERATOR DOOR (340-370)	3010075212		1	1	URT FORMING (INOX)	
6	FREEZER DOOR (310-340)	3010075302	1	1		URT FORMING (INOX)	
7	FREEZER DOOR (370)	3010075312			1	URT FORMING (INOX)	
8	HANDLE *F	3012610110	1	1	1	PBT	
9	HANDLE *R	3012610210	1	1	1	PBT	
10	COVER DOOR CAP *L	3011437020	2	2	2	ABS	
11	COVER DOOR CAP *R	3011437030	2	2	2	ABS	
12	CAP HANDLE	3010910010	4	4	4	HIPS	
13	CAP SCREW	3010920210	1	1	1	HIPS	
14	CAP DOOR BUSHING	3010918310	1	1	1	PP	
15	CAP CONTROL PANEL	3010902810	1	1	1	SILICON RUBBER	
16	COVER CAB BRACKET	3011433310	1	1	1	HIPS	

12. FUNCIONES DEL CONTROL PCB

Manual de servicio de la M-PCB correspondiente a modelos electronicos.

Modelo: ERF-361AM/391AM/411AM

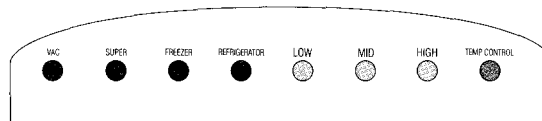
1. Cómo usar el panel.



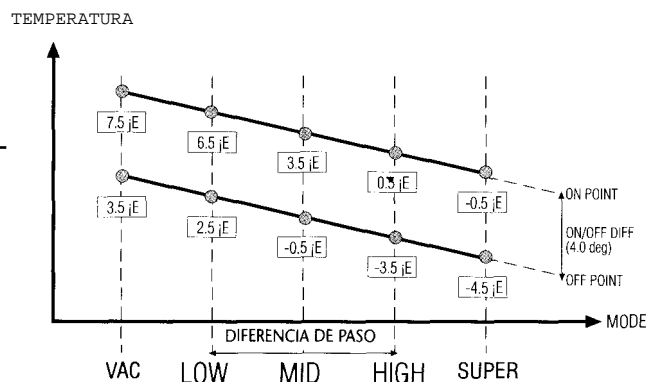
Nº	FUNCIÓN DECONTROL	CONTENIDOS
1	Funcionamiento inicial	<ol style="list-style-type: none"> 1) Al inicio del funcionamiento, el indicador se encuentra en posición MID. 2) Los LEDS del refrigerador y congelador están encendidos y en ROJO.
2	PANEL	<ol style="list-style-type: none"> 1) VAC ON: Cuando el compresor funciona bajo la condición ON/OFF VAC 2) SUPER ON: Cuando el compresor funciona bajo la condición ON/OFF SUPER 3) LED DEL CONGELADOR: VERDE ON: Cuando la temperatura en el congelador es correcta (menos de -5°C) ROJO ON: Cuando la temperatura en el congelador no es correcta. Condiciones de fallo (1 ó 2): 1- Mas de -5 grados en el D-SENSOR cuando se apaga el compresor. 2- Mas de -5 grados cuando el compresor funciona más de 240 minutos. Indicador del error: <ul style="list-style-type: none"> - Parpadeo continuo del led rojo: ERROR D1 Error del D SENSOR debido a corto o a circuito abierto - Parpadeo intermitente del led rojo: ERROR D2 El ERROR D2 ocurre cuando el sistema se encuentra en posición de descongelado durante 80 minutos (el calentador no funciona). Este es un "ERROR de descongelado". 4) LED DEL REFRIGERADOR: VERDE ON: Cuando la temperatura en el refrigerador es correcta (-7~10 °C deg) Condiciones de fallo (1 ó 2). 1- Mas de 10°C o menos de-7°C en el R-SENSOR. 2- Cuando el compresor funciona continuamente durante 240 minutos Indicador del error: <ul style="list-style-type: none"> - Parpadeo continuo del led rojo: ERROR R1 R SENSOR en corto o en circuito abierto. - Parpadeo discontinuo del led rojo: ERROR RT RT SENSOR en corto o circuito abierto. 5) LOW ON: Cuando el compresor funciona bajo la condición ON/OFF LOW 6) MID ON: Cuando el compresor funciona bajo la condición ON/OFF MID

Funciones del control PCB

Nº	FUNCION DE CONTROL	CONTENIDOS
2	PANEL	7) HIGH ON: Cuando el compresor funciona bajo la condición ON/OFF HIGH
3	Control de temperatura del refrigerador	1) La temperatura se puede controlar en cinco pasos presionando el botón TEMP CONTROL del refrigerador VAC---->SU PER --->LOW -->MID----->HIGH----->VAC



- 2) Control de temperatura ON/OFF del refrigerador
- 1- Punto off en MID: $-0.5\text{ }^{\circ}\text{C}$
 - 2- Diferencia ON /OFF : $4\text{ }^{\circ}\text{C}$
 - 3- Diferencia de paso (LOW-MID-HIGH): $3\text{ }^{\circ}\text{C}$

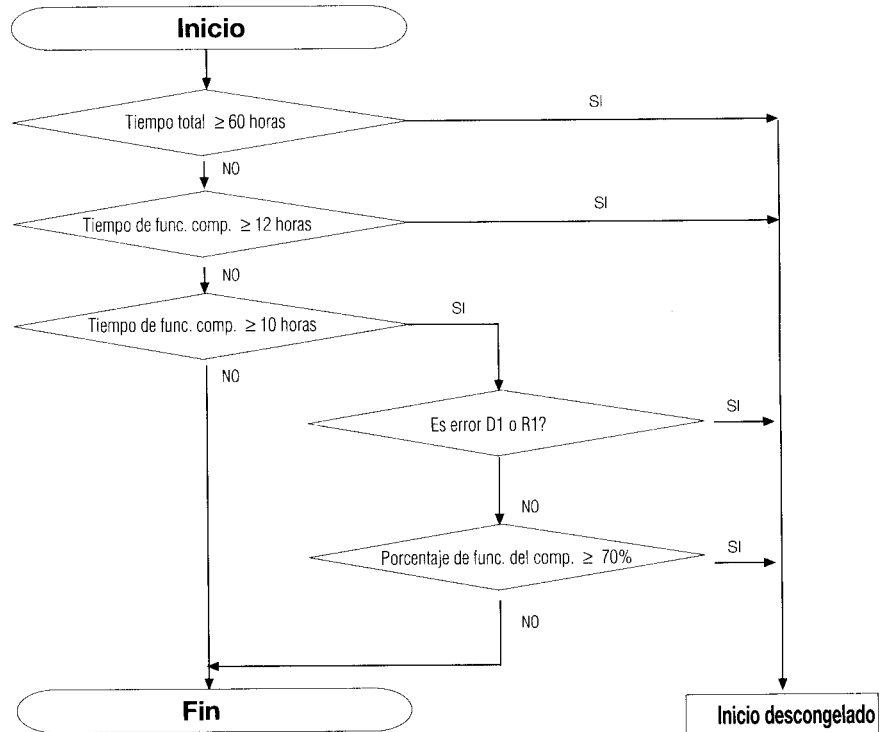


4	Determinación del modo descongelado	<p>1) Factores en la determinación del modo descongelado:</p> <ol style="list-style-type: none"> 1- Tiempo de funcionamiento acumulado del compresor. 2- Porcentaje de funcionamiento del compresor. 3- Tiempo total (tiempo ON + tiempo OFF del compresor) <p>2) Condición de inicio del modo descongelado.</p> <ol style="list-style-type: none"> 1- Cuando el tiempo acumulado de funcionamiento del compresor es de 12 horas. 2- Cuando después del funcionamiento acumulado del compresor es de 10 horas, si el porcentaje de funcionamiento es superior al 70%. 3- Finalmente, cuando el tiempo total es superior a 60 horas.
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N° | FUNCION DECONTROL

CONTENIDOS

5 Diagrama de flujo para la determinación del descongelado



6 Modo Descongelado

1) Inicio: Cuando se determinan las condiciones de descongelado.



2) CICLO

CALENTADOR----> PAUSA(6min.)---o.- CONTROL

1- CALENTADOR

- ON : Cuando comienza la condición de descongelado.
- OFF : Cuando el D-Sensor se encuentra a mas de 10°C.
Si hay error D1, el calentador se apaga por Tempo (30 min)
- Error D2 : 80 min en posición de descongelado.
("Problema de descongelado").

2- PAUSA

- Tiempo: 6 minutos minimo después del descongelado, todos los dispositivos permanecen en OFF (calentador, ventilador y compresor).

* Descongelado forzado:

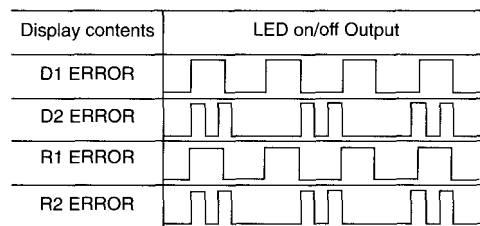
- 1) Inicio: Pulsando continuamente durante 10 segundos el botón TEMP. CONTROL
- 2) Ciclo: El ciclo es igual al ciclo general de descongelado.
- 3) Objetivo: Comprobar la corriente del calentador en la línea de producción, etc..
- 4) Aunque el D-Sensor esté a mas de 10 grados, el calentador está en ON durante por to menos 30 segundos.

Funciones del control PCB

Nº	FUNCION DE CONTROL	CONTENIDOS
7	Descongelado inicial	1) Cuando el frigorífico se enciende, se chequea la temperatura en el D-SENSOR 2) Condición: Menos de 3.5 °C en el D-SENSOR.
8	Prevención del re-arranque reinicio del COMP	1) RT-S<_ 24: El compresor no puede arrancar en los 30 min. posteriores a la parada del compresor despues de OFF 2) RT- S>25: El compresor no puede arrancar en los 6 min. posteriores a la parada del compresor despues de OFF
9	Control en caso de ERROR R1	Si el R-SENSOR está en corto o abierto, el compresor y el ventilador son controlados a la vez por to siguiente:

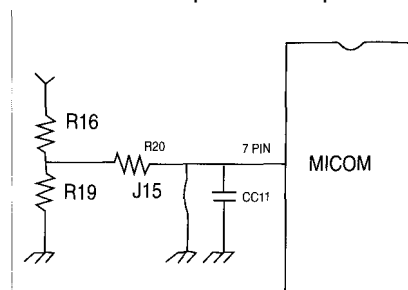
RT-S TEMP	RT-Sensor ERROR	RT-S ≤ 24°C	RT-S ≤ 24°C
Comp. operating rate (%)	40%	30%	44%
ON/OFF (min)	20/30	15/35	22/28

10	Código de error	1) Error D1 1- Indicador: Parpadeo continuo del LED rojo del congelador. 2- Condición: Cuando el D-SENSOR está en corto o abierto. 2) Error D2 1- Indicador: Parpadeo discontinuo del LED rojo del congelador 2- Condición: 80 min. en posición de descongelado. ("Problema de descongelado"). 3) Error R1 1- Indicador: Parpadeo continuo del LED rojo del refrigerador. 2- Condición: Cuando el R-SENSOR está en corto o abierto. 4) Error RT 1- Indicador: Parpadeo discontinuo del LED rojo del refrigerador. 2- Condición: Cuando el RTSENSOR está en corto o abierto.
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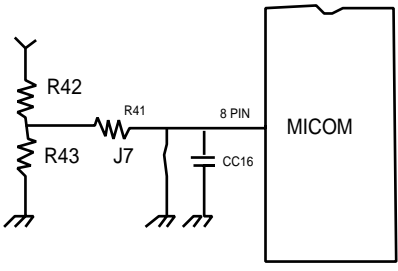
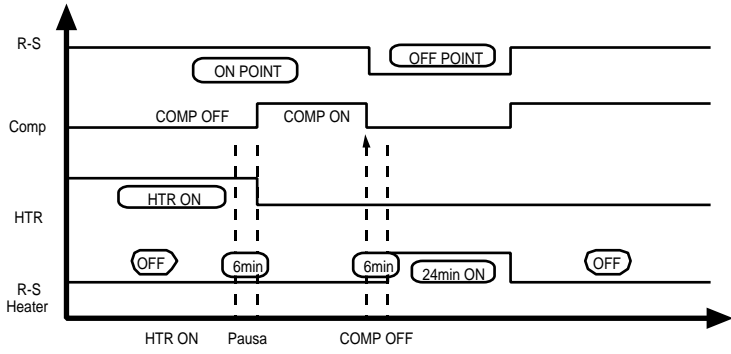


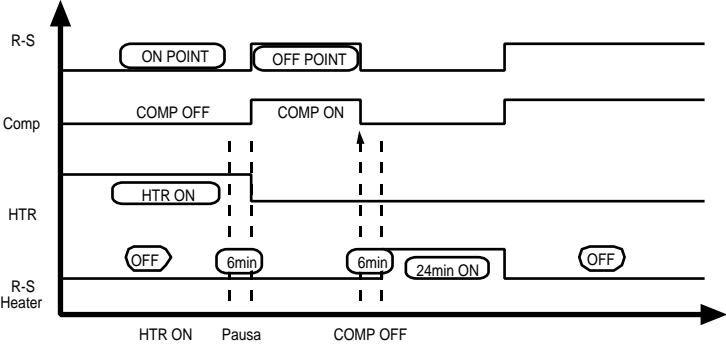
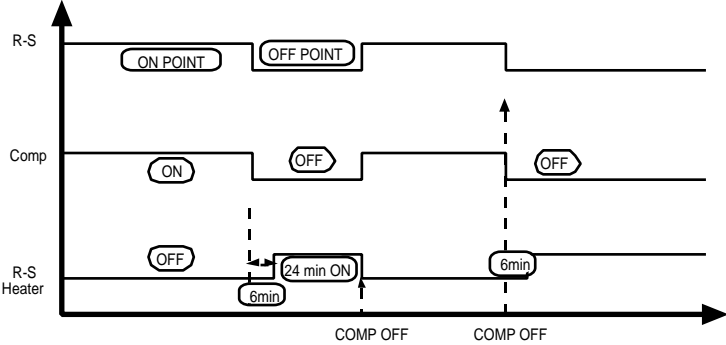
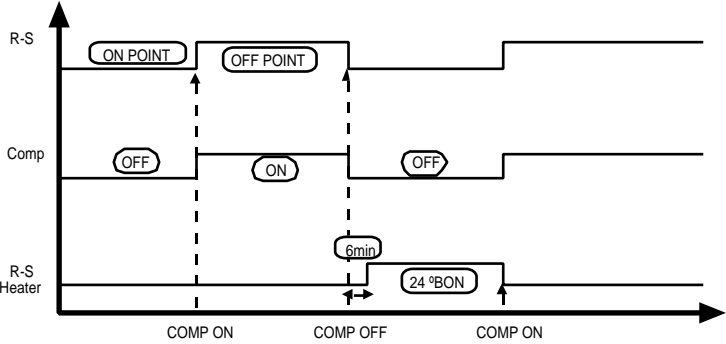
11 Opción SUPER

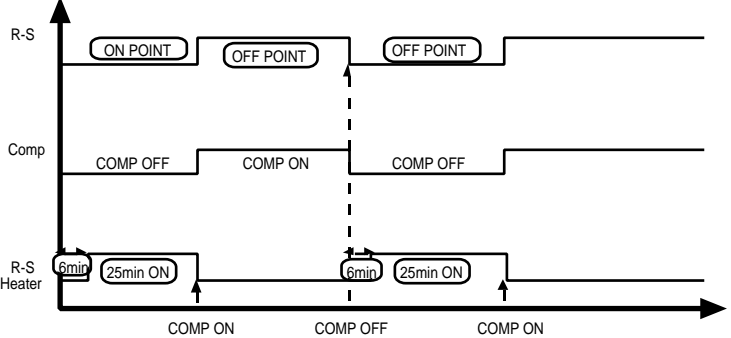
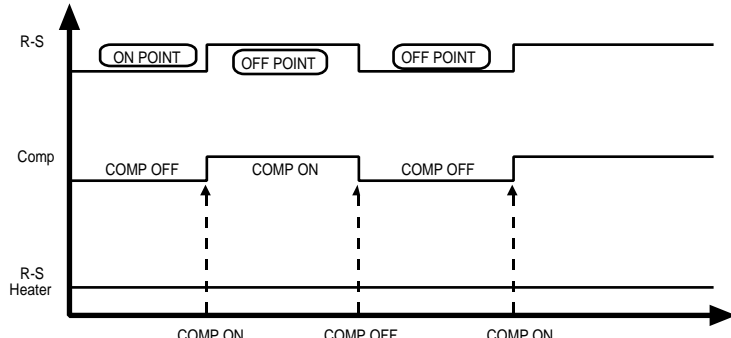
* Objetivo: Protección de "sobre enfriamiento" en la posición super



Nº	CONTROL		Application (M-PCB)	Micom inout Voltage (6PIN)	Etc.
	ON	OFF			
1	-0.5°C	-4.5°C	-	0 V	Default
2	0.53°C	-3.5°C	J6 cut	2.5 V	1.0 deg
3	1.5°C	-2.5°C	J6, R29 cut	5V	2.0 deg

NO	CONTROL FUNCTION	CONTENTS																								
12	R-sensor off point adjusting option	<p>- When refrigerator is over-cool or weak-cool, it is adjusted the option condition by R42 and R43(after deleting j7)</p>  <table border="1" data-bbox="986 474 1425 745"> <tr> <td>Micom input (V)</td> <td>0V</td> <td>1.0V</td> <td>1.5V</td> <td>2.0V</td> <td>2.5V</td> <td>3.7V</td> <td>5.0</td> </tr> <tr> <td>Off point variation (deg)</td> <td>-0.5 °C</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, R43 (KG)</td> <td>default</td> <td>R42:40 R43:10</td> <td>R42:23.3 R43:10</td> <td>R42:163 R43:10</td> <td>R42:10 R43:10</td> <td>R42:3.5 R43:10</td> <td>R42:10 R43:-</td> </tr> </table>	Micom input (V)	0V	1.0V	1.5V	2.0V	2.5V	3.7V	5.0	Off point variation (deg)	-0.5 °C	1.0	2.0	3.0	1.0	2.0	3.0	R42, R43 (KG)	default	R42:40 R43:10	R42:23.3 R43:10	R42:163 R43:10	R42:10 R43:10	R42:3.5 R43:10	R42:10 R43:-
Micom input (V)	0V	1.0V	1.5V	2.0V	2.5V	3.7V	5.0																			
Off point variation (deg)	-0.5 °C	1.0	2.0	3.0	1.0	2.0	3.0																			
R42, R43 (KG)	default	R42:40 R43:10	R42:23.3 R43:10	R42:163 R43:10	R42:10 R43:10	R42:3.5 R43:10	R42:10 R43:-																			
13	Functions of low temperature	<ol style="list-style-type: none"> 1) Low temp.: RT SENSOR 24°C 2) Hysteresis DIFFERENCE: 1°C <ol style="list-style-type: none"> 1- Mode of low temp. : RT SENSOR 24°C 2- Mode of general temp.: RT SENSOR 25°C 3- Mode of just before control : 24 RT-S<25°C <ol style="list-style-type: none"> ex) 1- Mode of general control when is arriving to 24°C 2- Mode of low control when is arriving to 25°C 3) Control <ol style="list-style-type: none"> 1- When comp. is on, R-s HTR is off 2- The comp can't be on whiting 30 min after comp. off 3- At general temp. Mode of RT error, R-s HTR is off 4- At low temp. mode, R-s off point increase 2 degrees (ex) -0.5 to 1.5 C 4) R-s heater initial Operation <ol style="list-style-type: none"> 1- R-s heater turn on and off four times for 8 sec. 																								
14	Time charts of low temperature	<ol style="list-style-type: none"> 1. LOW RT MODE (RT-S 24°C) <ol style="list-style-type: none"> A) D-S 3.5°C & R-S ON point condition (Initial operation) 																								

NO	CONTROL FUNCTION	CONTENTS
15	Time charts of low temperature	<p>B) D-S 3.5°C & R-S OFF point condition (Initial operation)</p>  <p>C) D-S 3.5°C & R-S ON point condition (Initial operation)</p>  <p>D) D-S > 3.5°C & R-S OFF point condition (Initial operation)</p> 

NO	CONTROL FUNCTION	CONTENTS
15	Time charts of low temperature	<p>E) General mode of Low temp. (RT 24°C)</p>  <p>F) General MODE (RT 25°C): deleting low temp function</p> 

13. MAIN PCB DIAGRAM

