Changes for the Better

MITSUBISHI ELECTRIC

HOME REFRIGERATORS

SERVICE MANUAL

2012

NO.SM-RE-1206

Models

MR-C375C-W-A
MR-C375C-ST-A
MR-C375C-OB-A
MR-C375CL-W-A
MR-C375CL-ST-A
MR-C405C-W-A
MR-C405C-ST-A
MR-C405CL-W-A
MR-C405CL-ST-A

CONTENTS

A……..Australia & New Zea land

1 SPECIFICATIONS

1-1 SPECIFICATIONS

MR-C375C-A, MR-C375CL-A

Power supply			230-240V 50Hz
Total capacity		L	GROSS (AS) 375 (R : 197 V : 75 F : 103)
Dimensions (HXWXD)		mm.	1678 x 600 x 656
Cabinet			Acrylic resin coated steel
Food liner			ABS resin
Insulation	Cabinet		Foamed cyclopenthane
	Refrigerator door		Foamed cyclopenthane
	Vegetable door		Foamed cyclopenthane
	Freezer door		Foamed cyclopenthane
Cooling system	Freezer		Forced air convection
	Refrigerator		3 way air flow
Evaporator			Fin and tube type
Condenser			Concealed type
Defrost system			Automatic (Defrost heater)
Drain			Automatic (drainage)
Temperature control system			Automatic control
Refrigerator room light			240V, 15W (E12)
Accessories	Glass shelf (R)		1 pc.
	Slide shelf		1 pc.
	Slide chilled case		1 pc.
	Water tank		1 pc.
	Free pocket (L)		2 pcs.
	Egg case		1 pc.
	Bottle pocket		1 pc.
	Vegetable case		1 pc.
	Fruit case		1 pc.
	Freezing case (UP)		1 pc.
	Freezing case (LOW)		1 pc.
	Ice box sheet		1 pc.
	Ice spoon		1 pc.
	Ice box		1 pc.
	Kick plate		1 pc.
Weight	Unit	kg	69
	Shipping	kg	75

MR-C405C-A, MR-C405CL-A

Power supply			230-240V 50Hz
Total capacity		L	GROSS (AS) 405 (R : 227 V : 75 F : 103)
Dimensions (HXWXD)		mm.	1798 x 600 x 656
Cabinet			Acrylic resin coated steel
Food liner			ABS resin
Insulation	Cabinet		Foamed cyclopenthane
	Refrigerator door		Foamed cyclopenthane
	Vegetable door		Foamed cyclopenthane
	Freezer door		Foamed cyclopenthane
Cooling system	Freezer		Forced air convection
	Refrigerator		3 way air flow
Evaporator			Fin and tube type
Condenser			Concealed type
Defrost system			Automatic (Defrost heater)
Drain			Automatic (drainage)
Temperature control system			Automatic control
Refrigerator room light			240V, 15W (E12)
Accessories	Glass shelf (R)		2 pcs.
	Slide shelf		1 pc.
	Slide chilled case		1 pc.
	Water tank		1 pc.
	Free pocket (L)		2 pcs.
	Egg case		1 pc.
	Free pocket (S)		1 pc.
	Bottle pocket		1 pc.
	Vegetable case		1 pc.
	Fruit case		1 pc.
	Freezing case (UP)		1 pc.
	Freezing case (LOW)		1 pc.
	Ice box sheet		1 pc.
	Ice spoon		1 pc.
	Ice box		1 pc.
	Kick plate		1 pc.
Weight	Unit	kg	73
	Shipping	kg	80

1-2 ELECTRICAL PARTS SPECIFICATION

MR-C375C-A , MR-C375CL-A

Compressor	Model			DHS66C10RAW
	Power supply			220-240V, 50Hz
	Rated input		W	113/113.5(220/240V 50Hz)
	Starting current		A	7.78/8.55(220/240V 50Hz)
	Rated current		A	0.70/0.64(220/240V 50Hz)
	Winding resistance (A.T. 20 °C)			18.4 Ω(Main) / 18.5 Ω(Aux)
PTC RELAY				PTH7M330MD2
Motor protector	Model			5TM718MFBYY-53
	Ambient temperature		°C	25
	Time		Sec.	16 MAX
	Current		A	4.2
Running capacitor				4μF 400VAC
Capillary tube			mm.	∅ 1.8 X ∅ 0.6 X 2350
Dehydrant Molecular sieve			g	10
Refrigerant HFC. 134a			g	170
Defrosting control	Defrosting timer			Control board
	Defrost finish		°C	Thermister 14 ± 1.5
	Thermal fuse		°C	73
	Defrost heater			372 Ω (240V, 155W)
	Deodorizing function of defrost heater			Not equipped
Fan motor	Refrigerator	Model		FBA12J12VXC
		Type		DC brushless
		Rate Voltage		12 VDC
		Input	W	4.2 (12 VDC)
		Revolution	r.p.m	2300 (12 VDC)
	Machine Chamber	Model		4715JL04WS16G51
		Type		DC brushless
		Rate Voltage		12 VDC
		Input	W	1.44 (12 VDC)
		Revolution	r.p.m	1450 (12 VDC)
Heater	Vegetable case heater		W	6
	Water pipe heater		W	0.9
	Drain pipe heater		W	6

			Thermistor F		Thermistor R	
			Freezer		Refrigerator	
Temperature control	Dial position		ON	OFF	OPEN	SHUT
	LOW	°C	-9.2	-15.7	7.0	5.1
	MID	°C	-14.0	-20.0	4.2	2.3
	HI	°C	-16.0	-21.9	1.6	-0.2

MR-C405C-A, MR-C405CL-A

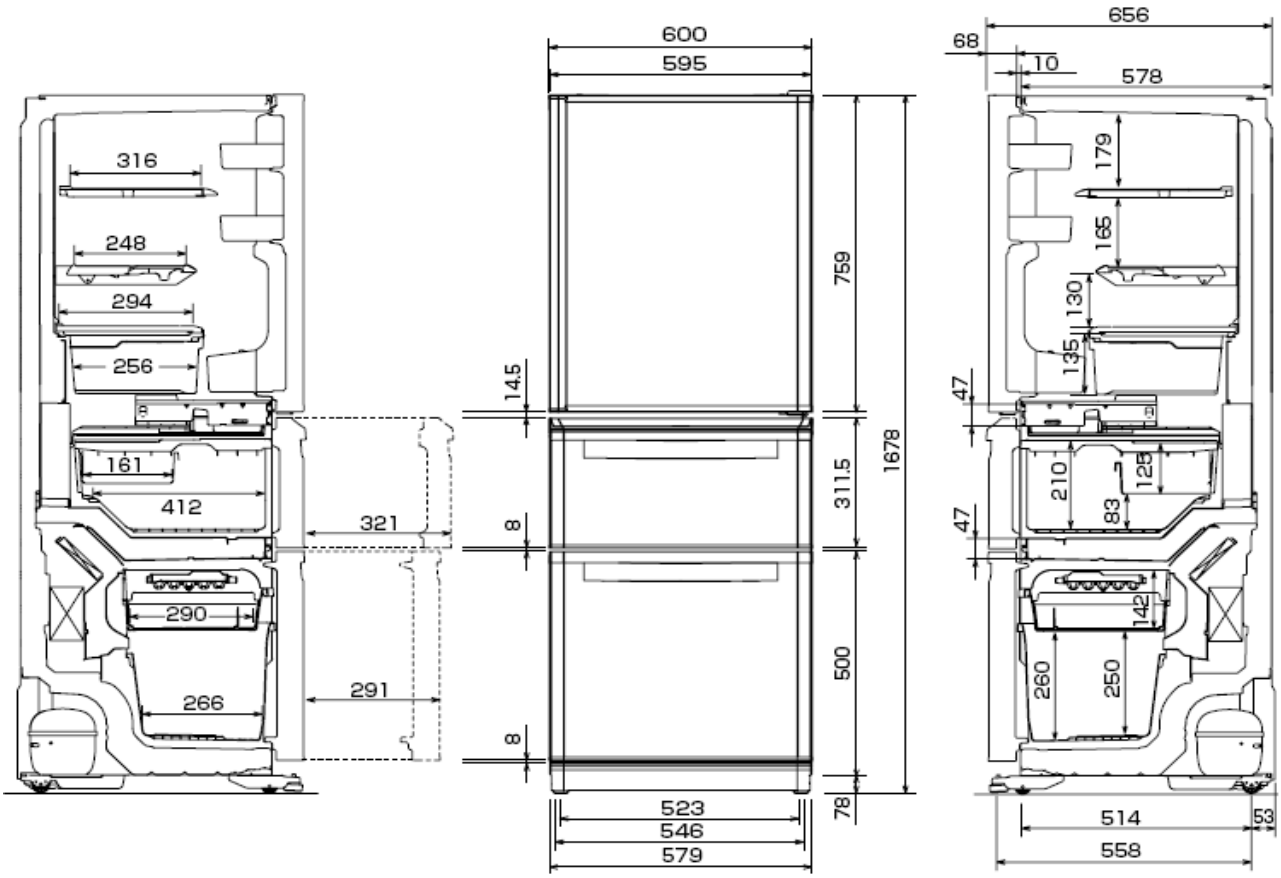
Compressor	Model		DHS66C10RAW
	Power supply		220-240V, 50Hz
	Rated input	W	113/113.5(220/240V 50Hz)
	Starting current	A	7.78/8.55(220/240V 50Hz)
	Rated current	A	0.70/0.64(220/240V 50Hz)
	Winding resistance (A.T. 20 °C)		18.4 Ω(Main) / 18.5 Ω(Aux)
PTC RELAY			PTH7M330MD2
Motor protector	Model		5TM718MFBYY-53
	Ambient temperature	°C	25
	Time	Sec.	16 MAX
	Current	A	4.2
Running capacitor			4μF 400VAC
Capillary tube		mm.	∅ 1.8 X ∅ 0.6 X 2350
Dehydrant Molecular sieve		g	10
Refrigerant HFC. 134a		g	170
Defrosting control	Defrosting timer		Control board
	Defrost finish	°C	Thermister 14 ± 1.5
	Thermal fuse	°C	73
	Defrost heater		372 Ω (240V, 155W)
	Deodorizing function of defrost heater		Not equipped
Fan motor – Refrigerator	Model		FBA12J12VXC
	Type		DC brushless
	Rate Voltage		12 VDC
	Input	W	4.2 (12 VDC)
	Revolution	r.p.m	2300 (12 VDC)
Fan motor – Machine Chamber	Model		4715JL04WS16G51
	Type		DC brushless
	Rate Voltage		12 VDC
	Input	W	1.44 (12 VDC)
	Revolution	r.p.m	1450 (12 VDC)
Heater	Vegetable case heater	W	6
	Water pipe heater	W	0.9
	Drain pipe heater	W	6

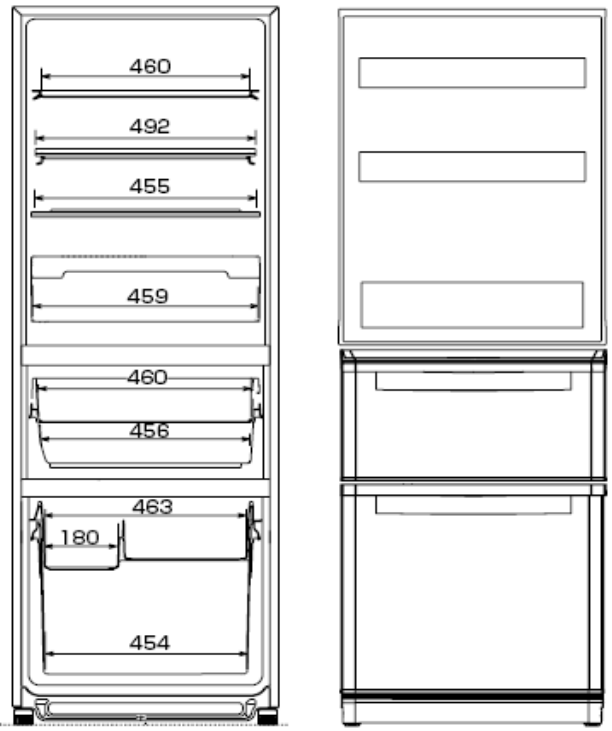
Temperature control			Thermistor F		Thermistor R	
			Freezer		Refrigerator	
	Dial position		ON	OFF	OPEN	SHUT
	LOW	°C	-9.2	-15.7	7.4	5.4
	MID	°C	-14.0	-20.0	4.5	2.6
	HI	°C	-16.0	-21.9	1.9	0.1

2 OUTLINES AND DIMENSIONS

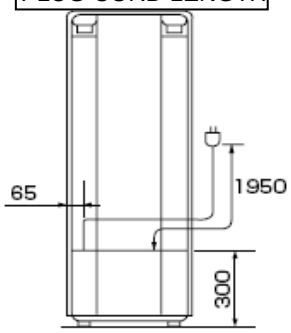
Unit : mm

MR-C375C-A, MR-C375CL-A

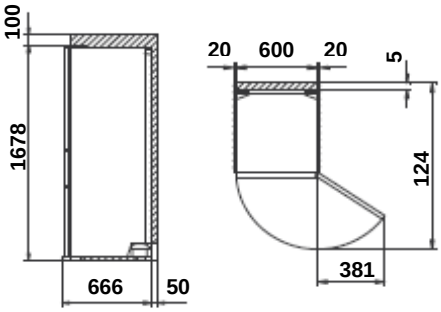




PLUG CORD LENGTH

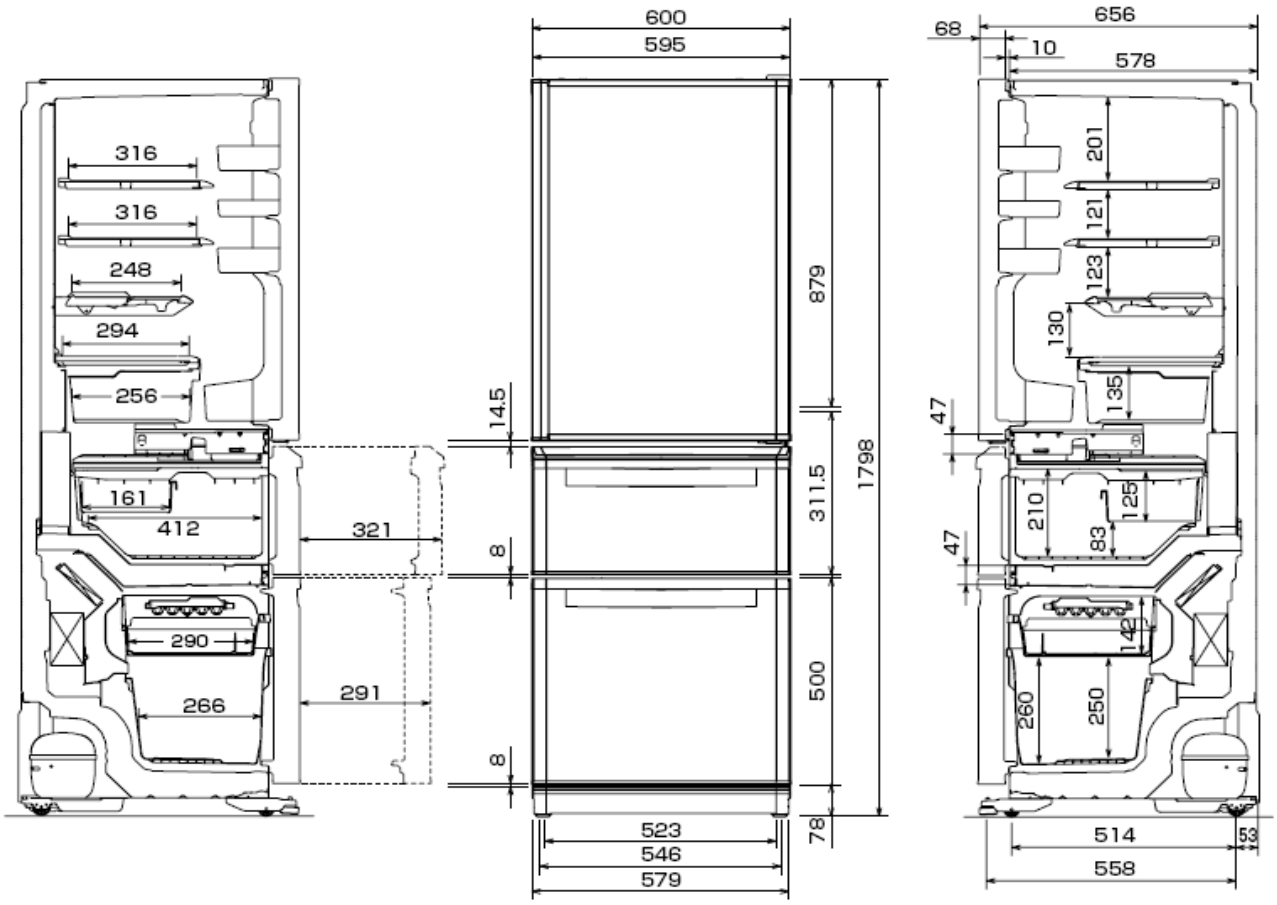


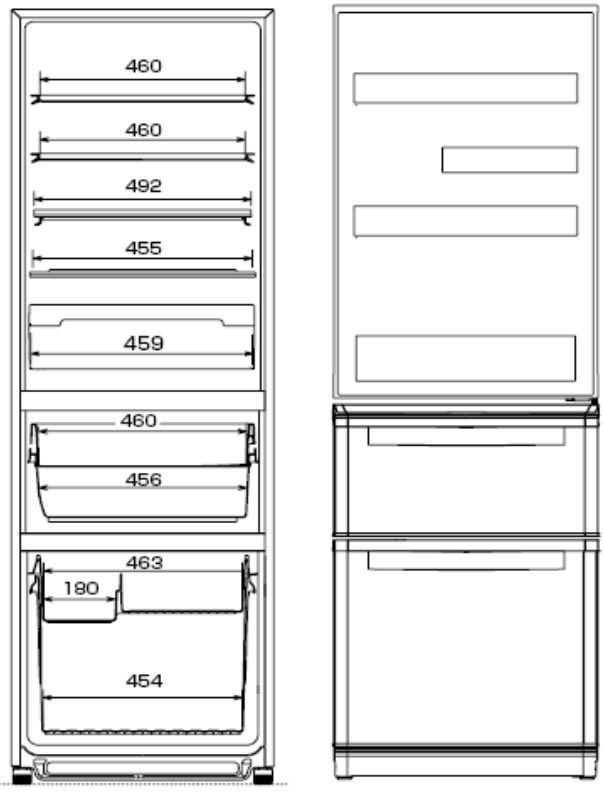
REQUIRED SPACE FOR INSTALLATION



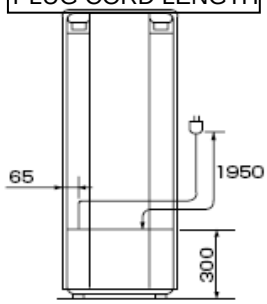
Unit : mm

MR-C405C-A, MR-C405CL-A

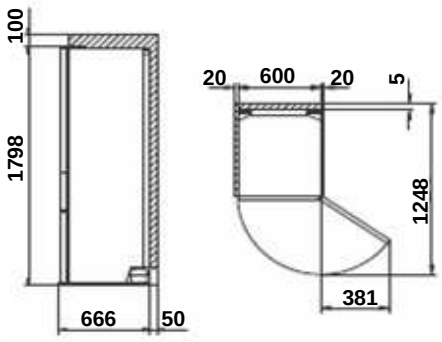




PLUG CORD LENGTH



REQUIRED SPACE FOR INSTALLATION

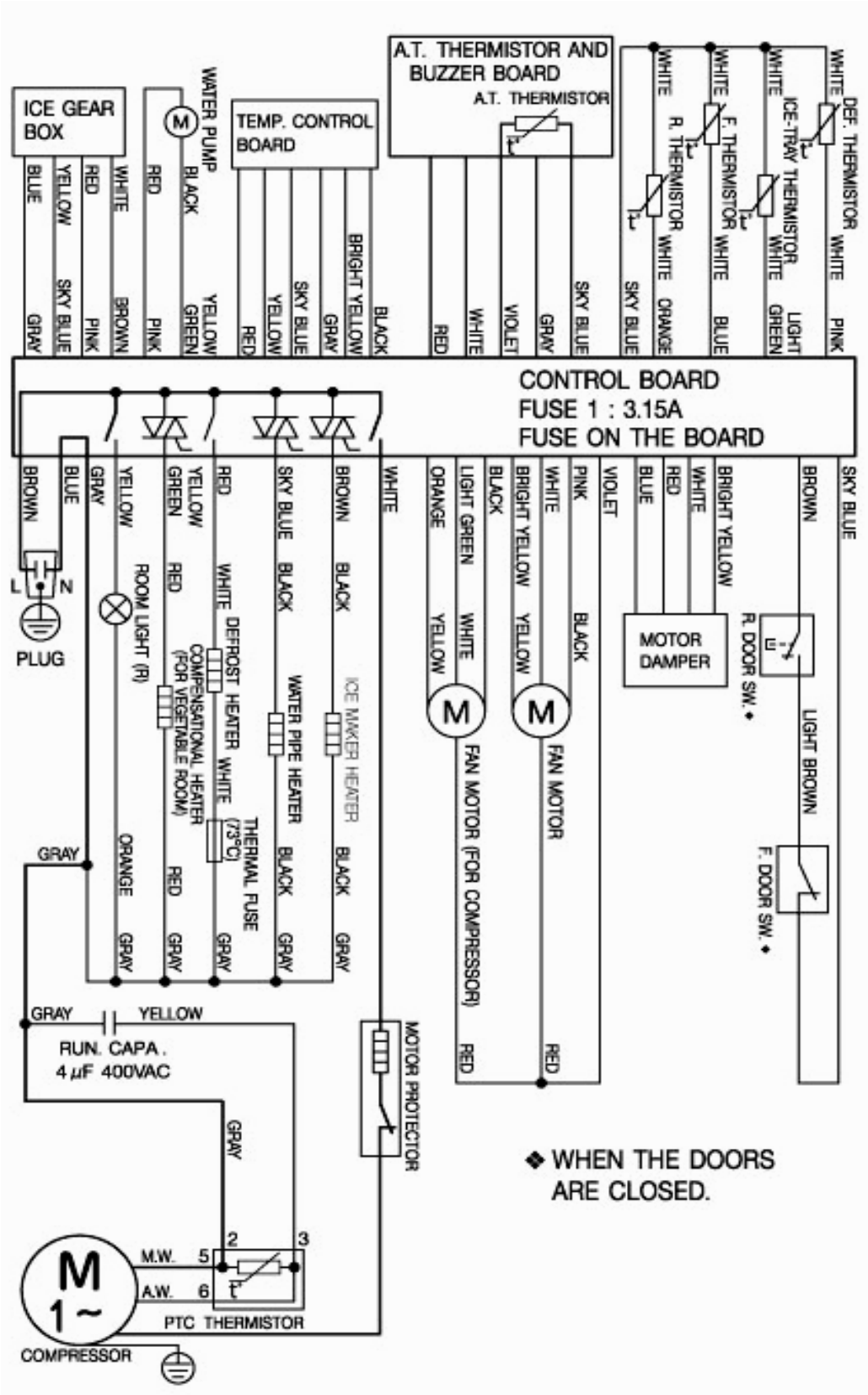


3 WIRING DIAGRAM

(SKELETON WIRING DIAGRAM)

MR-C375C-A, MR-C375CL-A

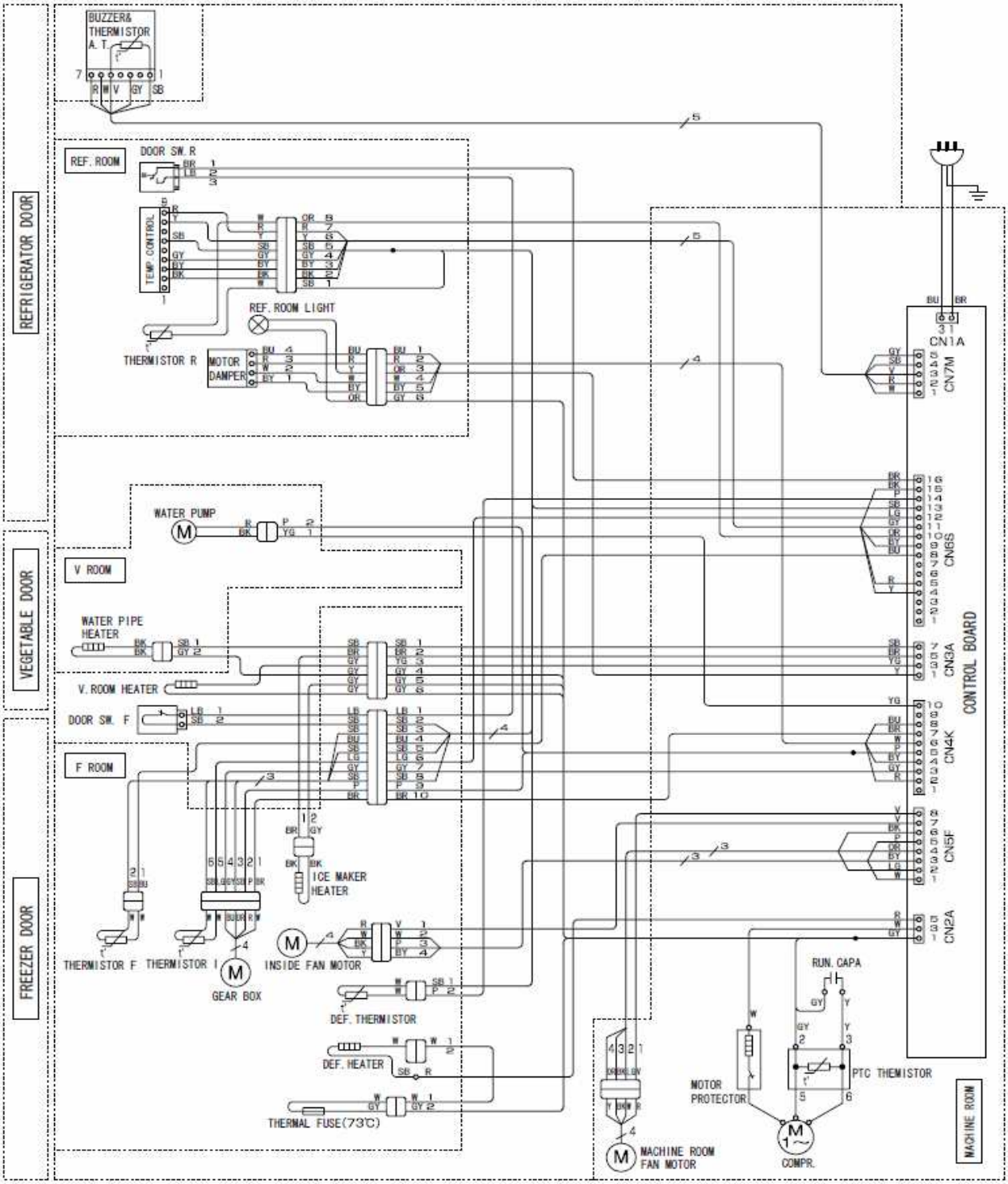
MR-C405C-A, MR-C405CL-A



(ACTUAL WIRING DIAGRAM)

MR-C375C-A, MR-C375CL-A

MR-C405C-A, MR-C405CL-A

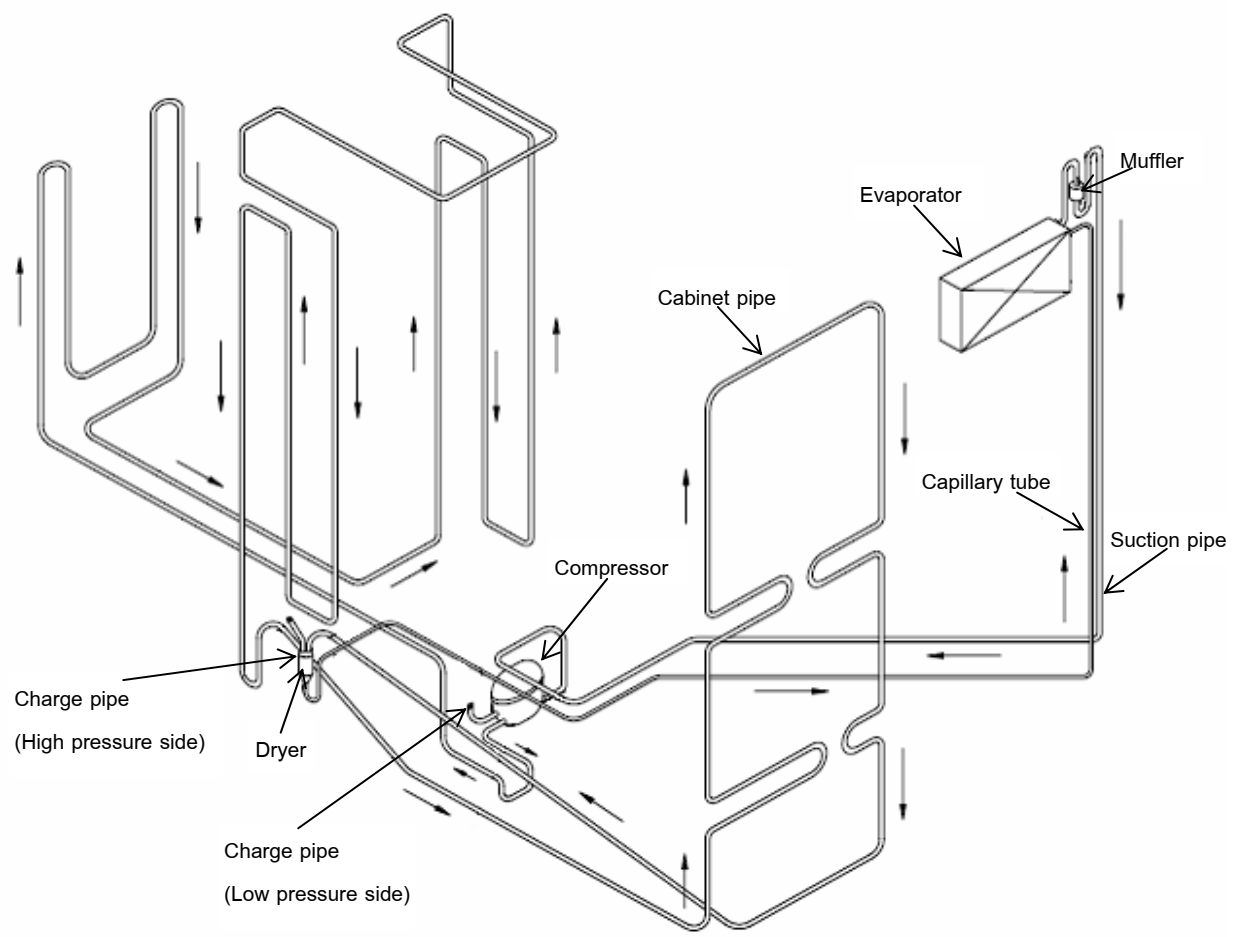


Remark	GY	=	GRAY	BK	=	BLACK	BR = BROWN
	W	=	WHITE	OR	=	ORANGE	
	R	=	RED	Y	=	YELLOW	
	SB	=	SKY BLUE	YG	=	YELLOW/GREEN	
	P	=	PINK	LG	=	LIGHT GREEN	
	LB	=	LIGHT BROWN	BY	=	BRIGHT YELLOW	
	V	=	VIOLET	BU	=	BLUE	

4 REFRIGERANT CIRCUIT

MR-C375C-A, MR-C375CL-A

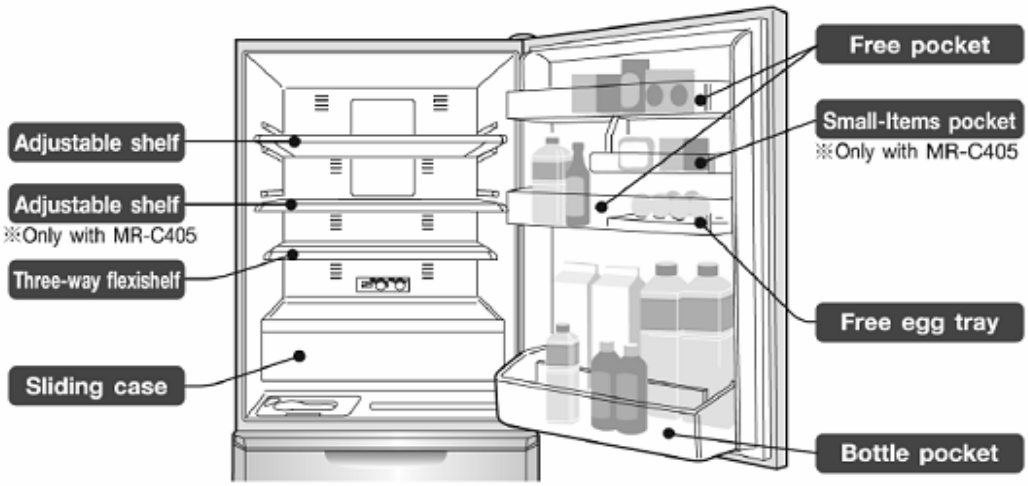
MR-C405C-A, MR-C405CL-A



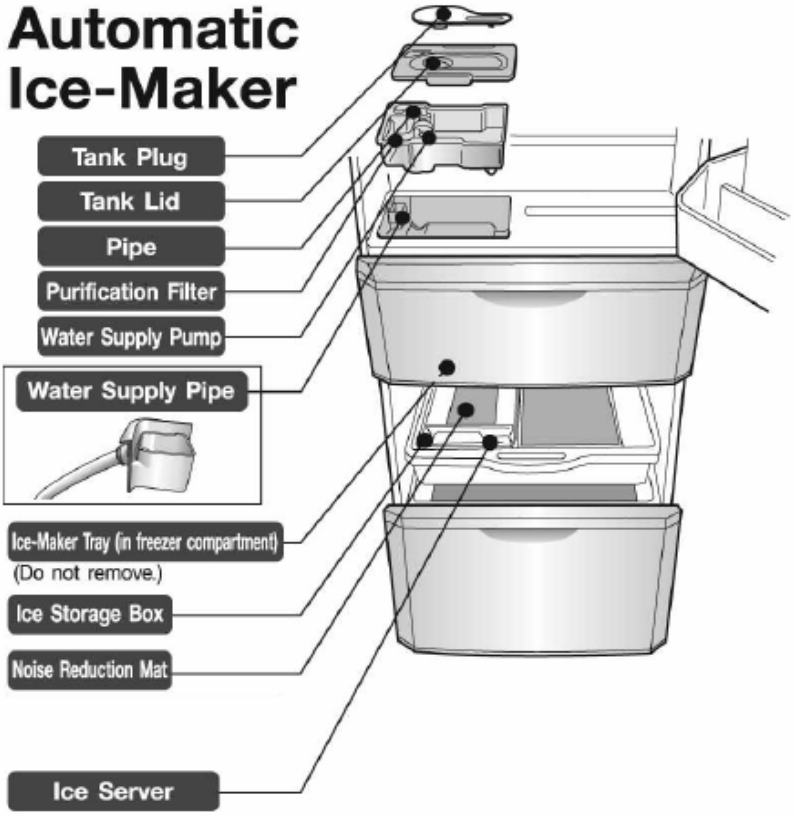
5 NAMES OF PARTS

MR-C375C-A MR-C375CL-A MR-C405C-A MR-C405CL-A

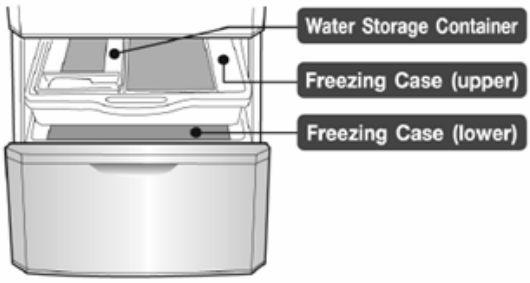
Refrigerator Compartment



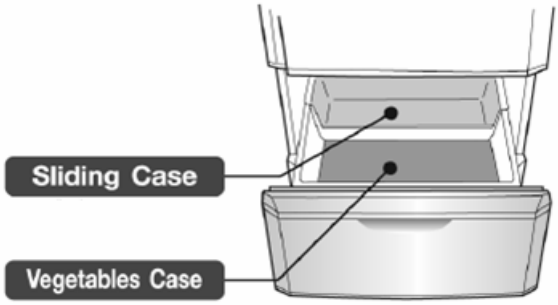
Automatic Ice-Maker



Freezer Compartment



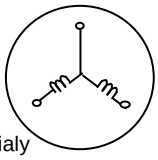
Vegetable Compartment

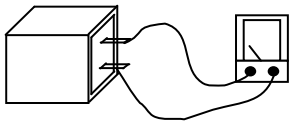
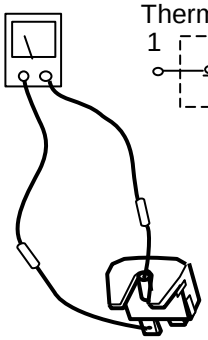


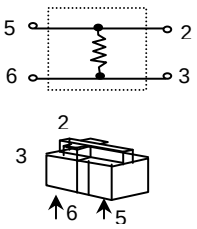
6 TROUBLE SHOOTING

6.1 TROUBLE CRITERION OF MAIN PARTS

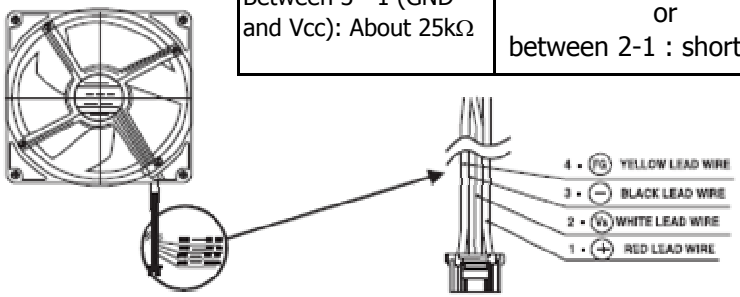
MR-C375CC-A MR-C375CL-A MR-C405C-A MR-C405CL-A

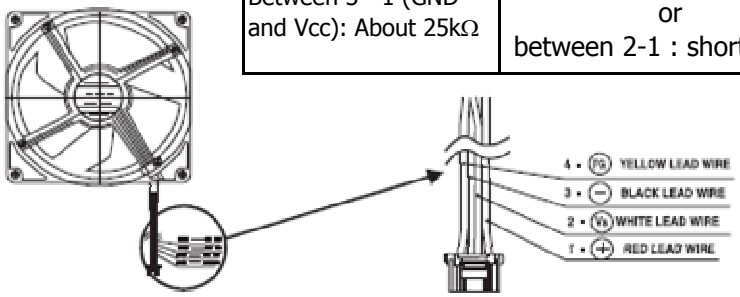
<table>
<tr><th>Components / Part Name</th><th>Check Method and Criterion</th><th>Parts Mounted Position</th></tr>
<tr><td>Compressor</td><td>
<table>
<tr><td>Model</td><td></td><td>DHS66C10RAW</td></tr>
<tr><td>Rated input</td><td>W</td><td>113/113.5(220/240V 50Hz)</td></tr>
<tr><td>Starting current</td><td>A</td><td>7.78./8.55(220/240V 50Hz)</td></tr>
<tr><td>Rated current</td><td>A</td><td>0.70/0.64(220/240V 50Hz)</td></tr>
</table>
<table>
<tr><th></th><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>Main wiring</td><td>18.4 Ω (Approx.)</td><td rowspan="2">Opened (∞ Ω) or Short (0Ω)</td></tr>
<tr><td>Auxilliary wiring</td><td>18.5 Ω (Approx.)</td></tr>
</table>


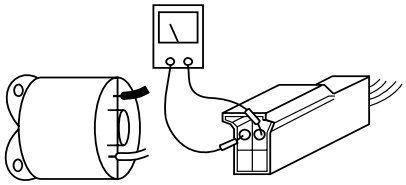
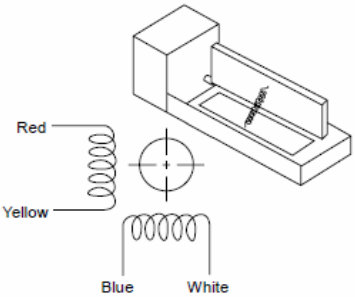
Measure the resistance with a tester.
(Ambient temperature:Room temperature 15°C ~ 25°C)
</td><td>Compressor in the machine chamber at the rear side of the frame</td></tr>
<tr><td>Run capacitor</td><td>

<table>
<tr><td>Rated input</td><td>400VAC</td></tr>
</table>
Measure the resistance with a tester.
<table>
<tr><th>Normal</th><th>Abnormal(faulty)</th></tr>
<tr><td>4 μF</td><td>Short (0Ω)</td></tr>
</table>
</td><td>In the control panel of the rear side at compressor room</td></tr>
<tr><td>Motor protector</td><td>


<table>
<tr><td>Model</td><td colspan="2">5TM718MFBYY-53</td></tr>
<tr><td rowspan="2">Connected Point</td><td>Open</td><td>120 ± 5° C</td></tr>
<tr><td>Close</td><td>69 ± 9° C</td></tr>
</table>
Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)
<table>
<tr><th>Normal</th><th>Abnormal(faulty)</th></tr>
<tr><td>Less than 1Ω</td><td>Opened (∞ Ω)</td></tr>
</table>
</td><td>Compressor in the machine chamber at the rear side of the frame</td></tr>
<tr><td>PTC Relay</td><td>


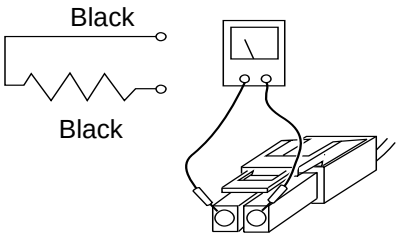
<table>
<tr><td>Model</td><td>PTH7M330MD2</td></tr>
</table>
Measure the resistance with a tester.
(Ambient temperature:Room temperature 15°C ~ 25°C)
<table>
<tr><th>Normal</th><th>Abnormal(faulty)</th></tr>
<tr><td>33 Ω (Approx.)</td><td>Opened (∞ Ω) or Short (0Ω)</td></tr>
</table>
As PTC Relay has been heated while refrigerator is running be sure to measure the resistance after the thermistor has got cool enough.
</td><td>Compressor in the machine chamber at the rear side of the frame</td></tr>
</table>

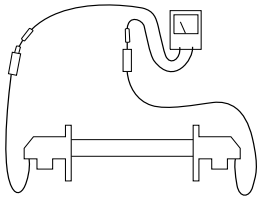
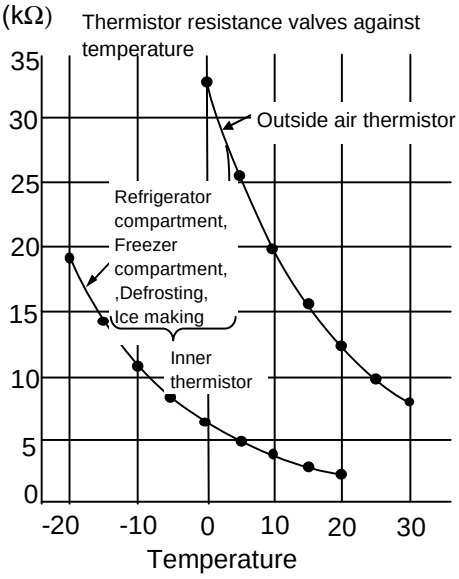
<table>
<tr><th>Components/ Part Name</th><th>Check Method and Criterion</th><th>Parts Mounted Position</th></tr>
<tr><td>Refrigerator fan motor</td><td>
<table>
<tr><td>Model</td><td>FBA12J12VXC</td></tr>
<tr><td>Type</td><td>DC brushless</td></tr>
</table>
Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)
<table>
<tr><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>Between 3 - 1 (GND and Vcc): About 25kΩ</td><td>Between 3-1 : open(∞ Ω) or between 2-1 : short (0 Ω)</td></tr>
</table>


</td><td>In the fan grille of the refrigerator compartment.</td></tr>
<tr><td>Machine chamber fan motor</td><td>
<table>
<tr><td>Model</td><td>4715JL04WS16G51</td></tr>
<tr><td>Type</td><td>DC brushless</td></tr>
</table>
Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)
<table>
<tr><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>Between 3 - 1 (GND and Vcc): About 25kΩ</td><td>Between 3-1 : open(∞ Ω) or between 2-1 : short (0 Ω)</td></tr>
</table>


</td><td>In the machine chamber at the rear side of the frame.</td></tr>
<tr><td>Water pump motor (DC 5V)</td><td>Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)

<table>
<tr><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>16 Ω (Approx.)</td><td>Open (∞Ω) or short circuit (0Ω)</td></tr>
</table></td><td>Under the water tank holder in refrigerator compartment.</td></tr>
<tr><td>Motor damper for refrigerator compartment/ slide compartment</td><td>Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)


<table>
<tr><th></th><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>Winding (Blue-White, Red-Yellow)</td><td>415 Ω (Approx.)</td><td>Open (∞ Ω) or short circuit (0Ω)</td></tr>
</table></td><td>In the fan grille of the refrigerator compartment.</td></tr>
</table>

<table>
<tr><th>Components/
Part Name</th><th>Check Method and Criterion</th><th>Parts Mounted
Position</th></tr>
<tr><td>Water pipe heater</td><td>Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)
 

<table>
<tr><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>1.3 kΩ (Approx.)</td><td>Open (∞ Ω)</td></tr>
</table>
<table>
<tr><td>Operation method</td><td>The heater is turned on when the temperature of tray for automatic ice making tray is about 10 °C or less</td></tr>
</table></td><td>At the left bottom of vegetable compartment</td></tr>
<tr><td>Defrost Heater</td><td> 
<table>
<tr><td>Rated input</td><td>155 W</td></tr>
<tr><td>operation method</td><td>Power ON after defrosting
(14 ± 1.5°C or more)</td></tr>
</table>
Measure the resistance with a tester.
(Ambient temperature:Room temperature 15°C ~ 25°C)
<table>
<tr><th>Normal</th><th>Abnormal (faulty)</th></tr>
<tr><td>372Ω (Approx.)</td><td>Opened (∞ Ω)</td></tr>
</table></td><td>In the drip tray under the evaporator of the freezer compartment</td></tr>
<tr><td>Thermistor</td><td>Measure the resistance with a tester according to the following graph.
(Thermistor resistance values against temperature)
• Resistance measured under the ambient temperature from -50°C to +50 °C
1. 200 Ω to 500kΩ .....normal
2. Out of the above range .....abnormal
 

Thermistor Check Procedure
• Thermistor resistance will vary with the change of temperature.
• Take the temperature around the thermistor, and then measure thermistor resistance using a tester.
The relation between resistance and temperature is as shown on the left side.
Trouble shooting with self-check
(1) If the self - check indicates the abnormality of thermistor right after the power is turned on, measure the resistance of the thermistor.
• If the circuit of thermistor is short , check the element of the thermistor and the contact of the connector.
(2) When the self - check indicates the abnormality of thermistor a few seconds after the power is turned on , check the contact of the connector.</td><td>(Defrost thermistor) Evaporator

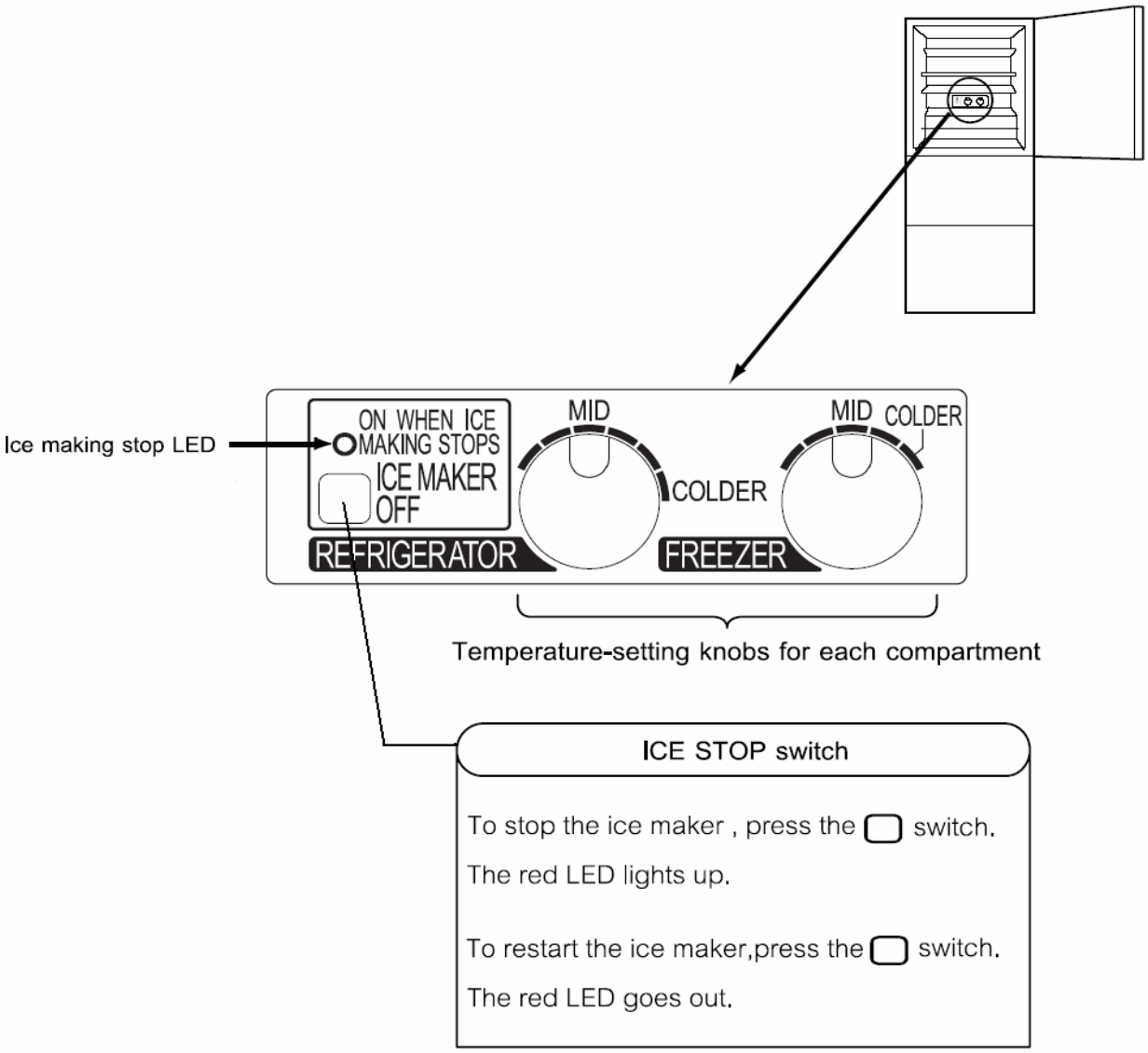
(Freezer compartment thermistor and Ice making tray thermistor) In Ice maker of freezer compartment

(Refrigerator compartment thermistor) In the control panel of refrigerator compartment

(Outside air thermistor) In the buzzer board (check board)</td></tr>
</table>

6.2 FUNCTION OF OPERATION PANEL

(1) Normal operation



(2) Ice making test / Self-check

2.1 **Setting**

- Press the ▢ switch for 5 seconds

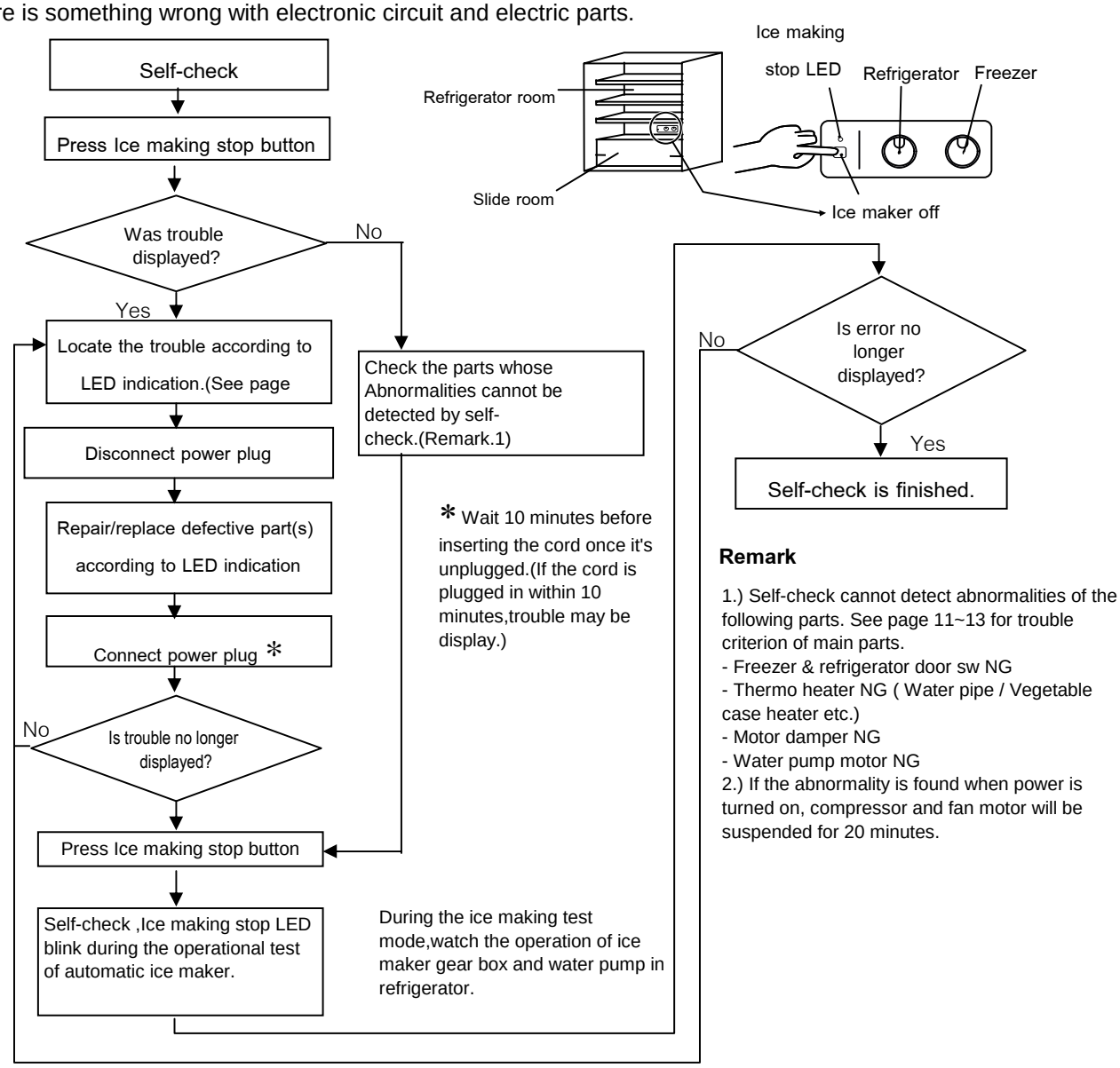
2.2 Operation and display

- During automatic ice making test,ice making stop LED blink.
- When somthing is faulty, the trouble is indicated with blinking number of ice making stop LED.(See page 13,14)
- Self-check finishes automatically. LED trouble display is also automatically released 10 minutes later. However, the abnormal part has not been repair yet.

6.3 FLOW CHART OF SELF-CHECK

(1) Trouble shooting with self-check

This refrigerator has self-check feature to clarify and indicate where & what the trouble is. It can be checked that there is something wrong with electronic circuit and electric parts.



Remark

1.) Self-check cannot detect abnormalities of the following parts. See page 11~13 for trouble criterion of main parts.
- Freezer & refrigerator door sw NG
- Thermo heater NG (Water pipe / Vegetable case heater etc.)
- Motor damper NG
- Water pump motor NG

2.) If the abnormality is found when power is turned on, compressor and fan motor will be suspended for 20 minutes.

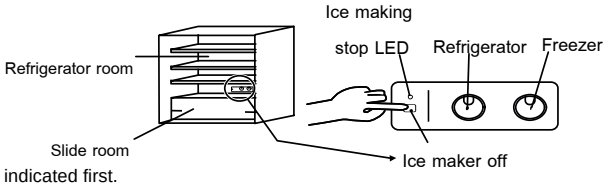
(2) Timing of self-check

- Defrost heater and related parts : Self-check is conducted after defrosting.(Make sure to confirm the display before unplugging because it is automatically reset once the power cord is pulled out.)
- Ice maker and related parts : To check the ice- making and then, check the blink amount of LED see the reference as (3)
- Fan motor and related parts : To check the blink amount of LED see the reference as (3)
- Thermistor and related parts : Self-check is continuously working.

Caution: The self-check will automatic start to begin power supply. But in the portion of the abnormality show the detail as (3) . And the caution checking couldn't be summarized, please use self-check means by using operation panel.

(3) LED trouble display and the check point

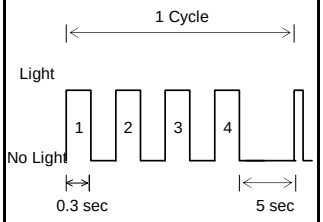
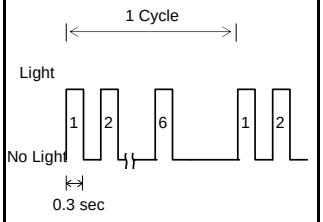
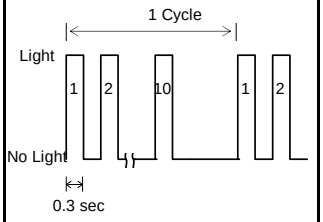
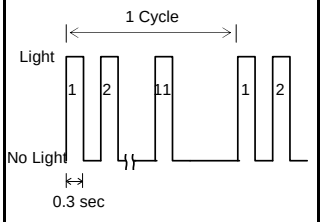
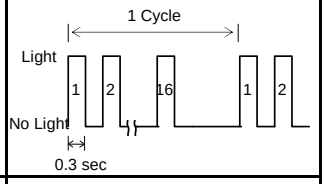
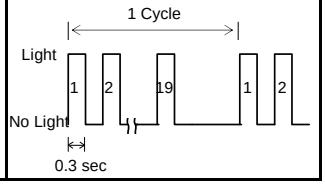
(3.1) LED trouble display : follow the procedure of "self check method and its operation" at page 11. Trouble is indicated by the blinking number of ice making stop LED.



✻ When several troubles occur, smaller blinking number of LEDs has to be indicated first.

(3.2) Check point and treatment

Function	Explanation	Detecting method and corrective NG points	Display function of LED
Off	**Normal** 1. Normally display and the Auto ice-maker system display. * If non-power supply, it'll show as same the effect.	NO	Light No Light
Blink 0.1 second	**Auto ice maker NG** 1. The connector lead wire of Auto ice maker is not orderly. 2. Auto ice maker (Motor's not rotate and non-display) 3. PCB plate (Ref Con assy) NG	1. Check all points of the Auto ice maker connector lead wire. May be un-lock and struck insert. 2. Replace and re-check the Auto ice maker. 3. Replace and re-check the PCB plate (Ref Con assy)	0.1 sec 0.1 sec Light No Light
Blink 0.3 seconds	**Thermistor(I) NG** 1. The connector thermistor (I) lead wire isn't orderly. 2. Thermistor (I) NG (break or short) 3. PCB plate (Ref Con assay) NG	1. Check all points of the thermistor (I) connector lead wire, may be unlock and struck insert. 2. If the resistance of thermistor (I) is NG, should be changed the thermistor and re-check the resistance. 3. If the resistance is OK,should be changed PCB plate (Ref Con assy and re-check the resistance).	0.3 sec 0.3 sec Light No Light
1 Blink	**Thermistor (F) NG** 1. The connector thermistor (F) lead wire isn't orderly. 2. Thermistor (F) NG (break or short) 3. PCB plate (Ref Con assy) NG	1. Check all points of the thermistor (F) connector lead wire, may be unlock and struck insert. 2. If the resistance of thermistor (F) is NG,should be changed the thermistor and re-check the resistance. 3. If the resistance is OK,should be changed PCB plate (Ref Con assy and re-check the resistance.	0.3 sec 5 sec Light 1 1 No Light 1 Cycle
2 Blinks	**Thermistor (DEF) NG** 1. The connector DEF. thermistor lead wire isn't orderly. 2. Thermistor (DEF) NG (break or short) 3. PCB plate (Ref Con assy) NG	1. Check all points of the thermistor (DEF) connector lead wires, may be unlock and struck insert. 2. If the resistance of thermistor (DEF) is NG,should be changed the thermistor and re-check the resistance. 3. If the resistance is OK,should be changed PCB plate (Ref Con assy and re-check the resistance.	0.3 sec 5 sec Light 1 2 1 2 No Light 1 Cycle
3 Blinks	**Defrost heater NG** 1. The Defrost heater connector lead wire isn't orderly. 2. Defrost heater break or Thermal fuse break. 3. PCB plate (Ref Con assy) break.	1. Check all points of the defrost heater connector lead wire, may be un-lock and struck insert. 2. Check the resistance of the defrost heater and thermal fuse. 3. If the resistance is OK,should be changed PCB plate (Ref Con assy and re-check the resistance.	1 Cycle Light 1 2 3 1 No Light 0.3 sec 5 sec

Function	Explanation	Detecting method and corrective NG points	Display function of LED
4 Blinks	**Thermistor (R) NG** 1. The Thermistor (R) connector lead wire isn't orderly. 2. Thermistor (R) NG (break or short) 3. PCB plate (Ref Con assy) NG	1. Check all points of Thermistor (R) connector lead wire, may be unlock and struck insert. 2. If the resistance of Thermistor (R) is NG, should be replaced the Thermistor (R) and re-check the resistance. 3. If the resistance is OK., should be replaced PCB plate (Ref Con assy) and re-check the resistance.	
6 Blinks	**Thermistor (A.T.) NG** 1. The Thermistor (A.T.) connector lead wire isn't orderly. 2. Thermistor (A.T.) NG (break or short) 3. PCB plate (Ref Con assy) NG	1. Check all points of the thermistor (A.T.) connector lead wire, may be unlock and struck insert. 2. If the resistance of Thermistor (A.T) is NG, should be replaced the Thermistor (R) and re-check the resistance. 3. If the resistance is OK., should be replaced PCB plate (Ref Con assy) and re-check the resistance.	
10 Blinks	**Fan motor (Fan grille assy) NG** 1. DC motor is orderly connected. 2. DC motor NG (Motor un-rotate and non-display) 3. PCB plate (Ref Con assy) NG	1. Check all points of DC motor connector lead wire, may be unlock and struck insert. 2. Replace DC motor (Fan grille assy) and re-check display. 3. If the resistance is OK., should be replaced PCB plate (Ref Con assy) and re-check the resistance.	
11 Blinks	**Fan motor (Outer motor assy) NG** 1. DC fan motor is orderly connected. 2. DC fan motor NG (Motor un-rotated, and non-display.) 3. PCB plate (Ref Con assy) NG	1. Check all points of DC Fan motor connector lead wire, may be unlock and struck insert. 2. Replace DC fan motor (Outer motor assy) and check display. 3. If the resistance is OK., should be replaced PCB plate (Ref Con assy) and re-check the resistance.	
16 Blinks	**PCB plate (Ref Con assy) NG** 1. PCB program (Ref Con assy) is NG	1. Replace a new PCB plate (Ref Con assy)	
19 Blinks	**Refrigerant circuit is NG.** 1. Pipe cracked (Welding joint) 2. Gas leak 3. Compressor NG	1. Check and corrective to each problem.	

Remark :

1.) For the refrigerator is NG more than one case, will show as the first symptoms before, such as Thermistor (F) NG (1 blink in 0.3 seconds) and Thermistor (R) NG (4 blinks in 0.3 seconds). LED will blink 1 blink in 0.3 seconds until Thermistor (F) was corrected. Then change to 4 blinks in 0.3 seconds and LED won't blink when Thermistor (R) was corrected.

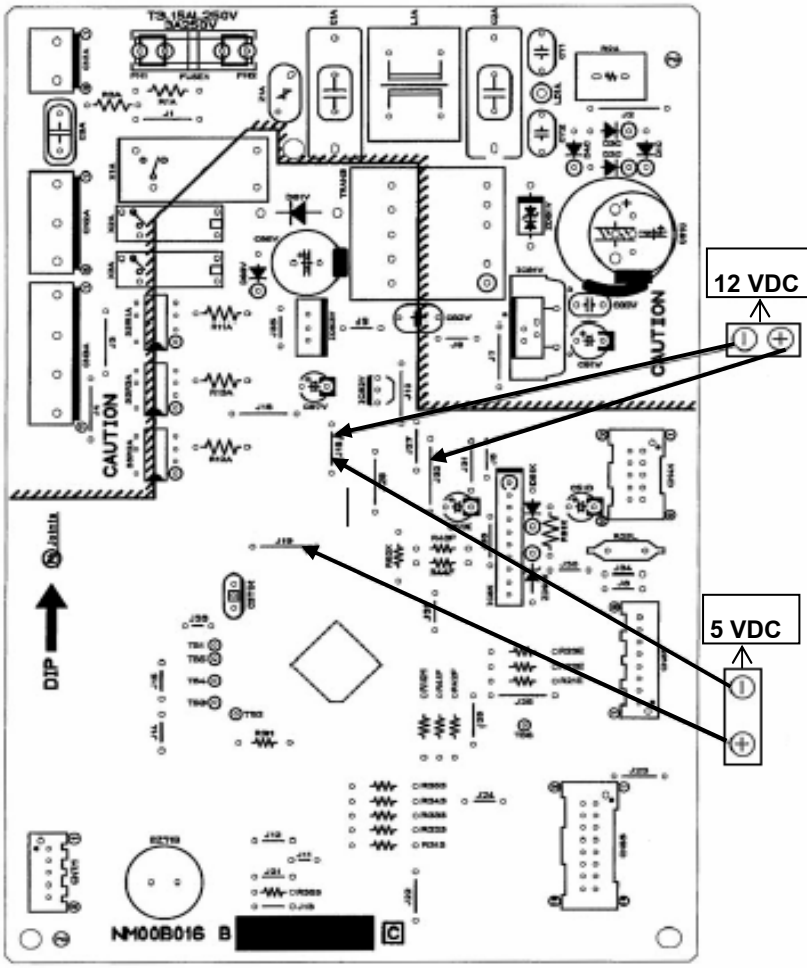
2.) Ice making stop LED blink during the operational test for ice maker.

3.) Compressor won't work if the fridge have problem and LED blink

4.) Characteristic value may be changed due to the product improvement

6.4 TEST POINT DIAGRAM OF MAIN CONTROL BOARD

MR-C375C-A MR-C375CL-A MR-C405C-A MR-C405CL-A



CN4K	Lead color	Parts Name
1		
2	Red	Damper
3	Gray	Ice Maker Positon SW
4	Bright Yellow	Damper
5	Pink	Ice Maker & Water Pump Forward
6	White	Damper
7	Brown	Ice Maker Reverse
8	Blue	Damper
9		
10	Yellow/Green	Water Pump

CN5F	Lead color	Parts Name
8	Violet	12 VDC Common
7	Violet	12 VDC Common
6	Black	GND
5	Pink	GND
4	Orange	Outer Fan Motor FG
3	Bright Yellow	Inner Fan Motor FG
2	Light Green	Outer Fan Motor Vs
1	White	Inner Fan Motor Vs

CN6S	Lead color	Parts Name
1		
2		
3		
4	Yellow	Ice Maker Stop SW
5	Red	Ice Maker Stop LED
6		
7		
8	Blue	F Thermistor
9	Bright Yellow	Temp Control Board
10	Orange	R Thermistor
11	Gray	Temp Control Board
12	Light Green	I Thermistor
13	Sky Blue	5 VDC Common
14	Pink	DEF Thermistor
15	Black	GND
16	Brown	Door SW

CN1A	Lead color	Parts Name
1	Grey	220 VAC
3	Black	

CN2A	Lead color	Parts Name
1	Grey	220 VAC Common
3	White	Compressor
5	Red	Defrost Heater

CN3A	Lead color	Parts Name
1	Yellow	Lamp
3	Yellow/Green	V Heater
5	Brown	Ice Maker Heater
7	Sky Blue	Pipe Heater

CN7M	Lead color	Parts Name
1	White	12 VDC Common
2	Red	Buzzer
3	Violet	A.T. Thermistor
4	Sky Blue	5 VDC Common
5	Grey	Compulsion DEF

Compulsory defrosting method have 2 methods as below

1) Short circuit at 2-pin connector between no.6 (white wire) with no.7 (red wire) at Buzzer & Thermistor A.T. board.(Inside hinge cover)
2) Open door R and then adjust dial freezer at MID position. Use magnet touch door switch in order to simulate as door closing. (lamp must no light),then turn the dial continuously as follow COLDER → LOW → MID

7 DISASSEMBLY INSTRUCTIONS

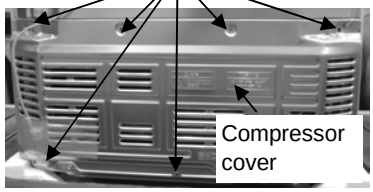
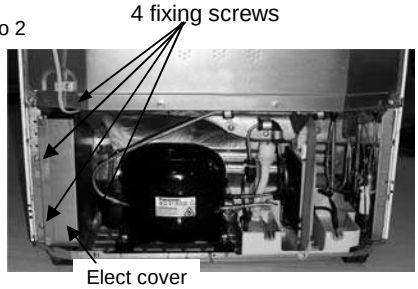
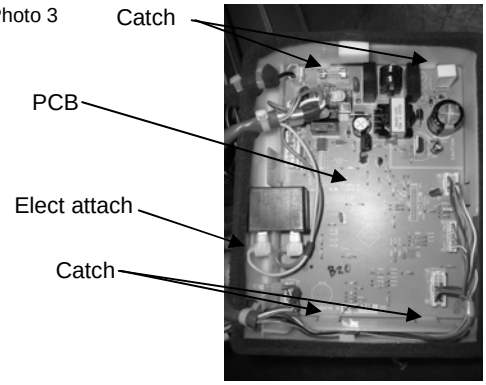
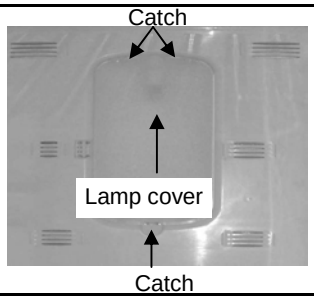
MR-C375C-A MR-C375CL-A MR-C405C-A MR-C405CL-A

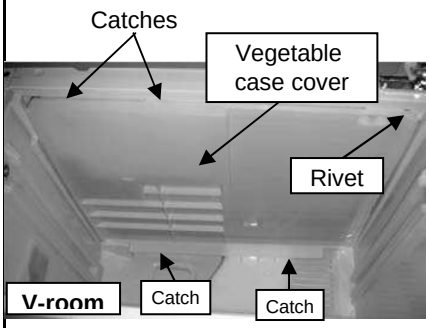
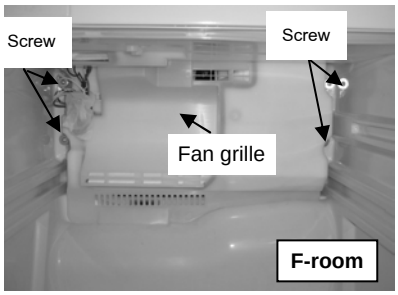
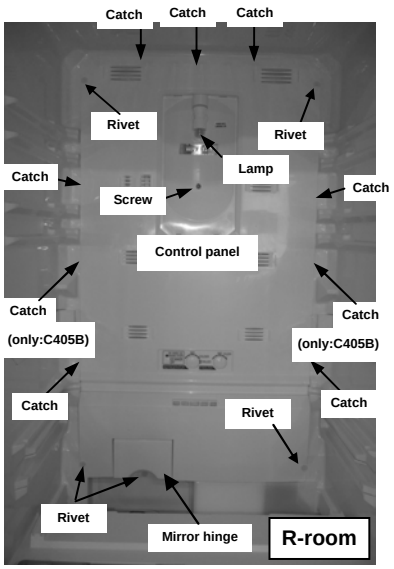
Plug out before work.

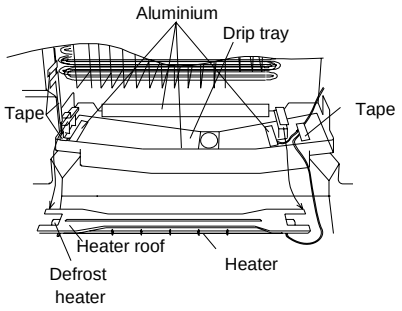
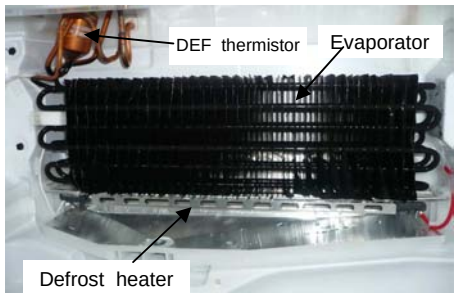
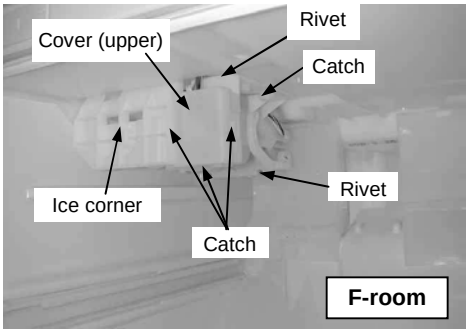
Check the automatic ice-maker by pressing ice making stop switch.

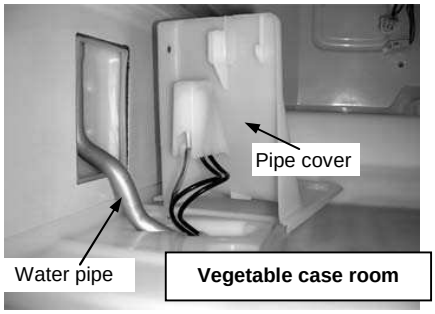
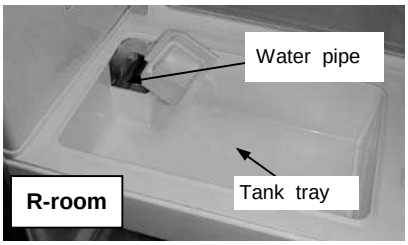
In assembling & disassembling parts use several kind of screws and rivets. Do not mistake to use them.

4 x12 Stainless steel 4 x12 (Black) With metal washer Rivet Rivet

OPERATING PROCEDURE	PHOTOS
1. Detachment Control PCB parts **Compressor cover** (1) Detach 7 pcs. of compressor cover screws behind the refrigerator. (Photo 1) **Elect cover** (2) Detach 4 pcs. of Elect cover screws. (Photo 2) **Elect attach** (3) Disconnect the connector and remove Elect attach. (Photo 3) **PCB (Refcon assy)** (4) Remove the catch of elect attach to release the PCB plate. (Photo 3) **Caution on assembly** [1] Firmly connect the lead wire and the connector. Ensure the wire are not pinched. [2] Please use the new material of sealing insulation when re-attach.	Photo 1  Photo 2  Photo 3 
2. Detachment Lamp cover parts (1) Remove parts inside the refrigerator Shelf 1,2,3 shelf **Lamp cover inside the refrigerator** (1) Push up the lower catch, and pull the room light cover toward you. (2) Detach two upper catches to take out the cover (Photo 4)	Photo 4 

OPERATING PROCEDURE	PHOTOS
3. Detachment the Vegetable case parts (1) Detach parts inside vegetable compartment (Vegetable case, Fruit case). (2) Detach the door of vegetable compartment. (3) Detach rivet (C) at the right and unhooking 2 catches at front, (center and left). (Photo 5) **Caution on assembly** [1] Be sure to put vegetable case cover on the catches at the rear of vegetable compartment. **Water pump motor** (4) Remove two screws and cut the lead wire of water-pump motor to detach it.	Photo 5 
4. Detach the refrigerator room parts (1) Detach parts inside the refrigerator compartment. (2) Detach parts inside the vegetable compartment. (3) Detach a left screw of mirror hinge and pull out the lead wire. (Photo 7) (4) Detach the connector. **Control panel , Duct R, Temperature control panel** (5) Remove the upper and lower rivets (C) of right side and left side, then unhook 7 catches.(9 catches for C405B) * Remove the right catch before push the control panel to the right and detach it. (Photo 7) **Fan grille** (6) Remove the following; Screw (A) at the upper and right center, 2 screws (B) at the left and 2 screws (B) at the right. (Photo 6) * Motor damper and thermal fuse are combined with fan grille. * Fan and fan motor are combined with fan grille. **Caution on assembly** [1] Use new tapes and sealing materials for assembly. [2] Putting some tape across joints, tape them securely so that they will not leak the cool air. [3] Attach a connector securely in order to prevent contact failure.	Photo 6  Photo 7 

OPERATING PROCEDURE	PHOTOS
Defrost heater, Drip tray (7) Peel off the tape that fixes lead wires on the side wall of the vegetable compartment. Then take out defrost heater together with heater roof. Detach heater roof and Heater cover from Defrost heater. Detach the drip tray after removing the defrost heater. **Defrost thermistor** (8) Cut the binder and disconnect the connector. (Photo 9) **Caution on assembly** [1] Loosen the lead wire at the defrost heather to prevent water from entering the glass tube and careful the direction for the correct assembly. [2] Attach the drip tray securely to the lower parts. [3] Attach the defrost thermistor in the correct place. (If they're attached out of place, thermal characteristics will go wrong). [4] Attach the lead wires to the fixture.	Photo 8  Photo 9 
5 Detachment the parts in Freezer compartment (1) Detach the parts inside the Freezer room (Ice spoon, Freezing case [upper] and Freezing case [lower]). (2) Pull the door of Freezer compartment by pulling toward you. **Cover (upper)** (3) Detach 3 catches and remove it. (Photo 10) (4) Disconnect the connector. **Automatic ice-maker** (5) push a catch to upper and pull the part to the right and detach it. (Photo 10)	Photo 10 

OPERATING PROCEDURE	PHOTOS
6 Detachment the vegetable compartment parts (1) Detach the door of the vegetable compartment. **Water pipe (lower)** (2) Detach a rivet (C), pipe cover and connector. Then remove the water pipe lower. **Water tank tray** (3) Pull Tank tray to R-room upper and take it out together with the water pipe. **Caution on assembly** (1) Fit the water tank tray properly in order to prevent a water leak. **Door Switch** (4) Insert a minus screwdriver between switch and body to remove the door switch.	Photo 11  Photo 12 

OPERATING PROCEDURE

Compressor cover

(1) Remove 7 screws for compressor cover at the back of the refrigerator.

Fan motor of compressor compartment

(2) Detach the Elect cover

(3) Detach the Connector.

(4) Remove a screw that fixed bell mouth. Pull out the whole fan motor and disconnect the terminals.

(5) Pull out the fan from the fan motor.

(6) Detach the lid-fixing screw to take out the fan motor.

7 Detachment compressor.

(1) Collect gas from the charge pipe on the high pressure side.

(2) After collecting gas, cut the charge pipe on the low pressure side.

(3) Detach the welded section of the discharge pipe and suction pipe.

(4) Replace the compressor and the dryer at a time.

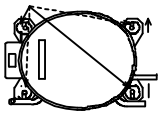
Caution on assembly

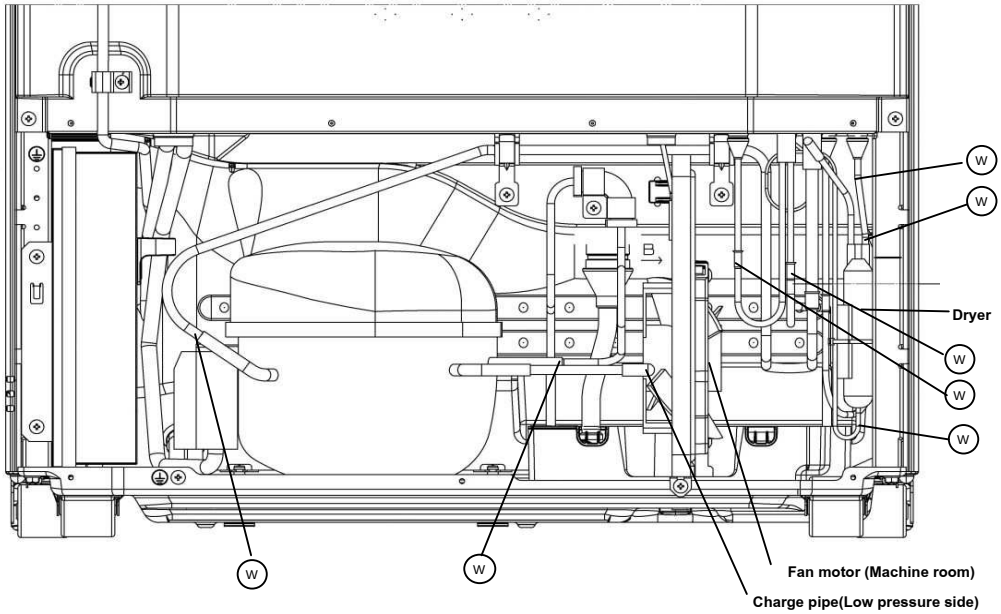
(1) After attaching the compressor, must to Vacuum and charge gas from charge pipe.

(2) Arrage the piping so that the pipe will not hit each other and compressor cover, (which causes loud noise). Then attach the compressor cover.

(3) After all the work is complete, be sure to check the cooling preformance and the gas leak from the welded points.

Attach U washer as the figure shown below



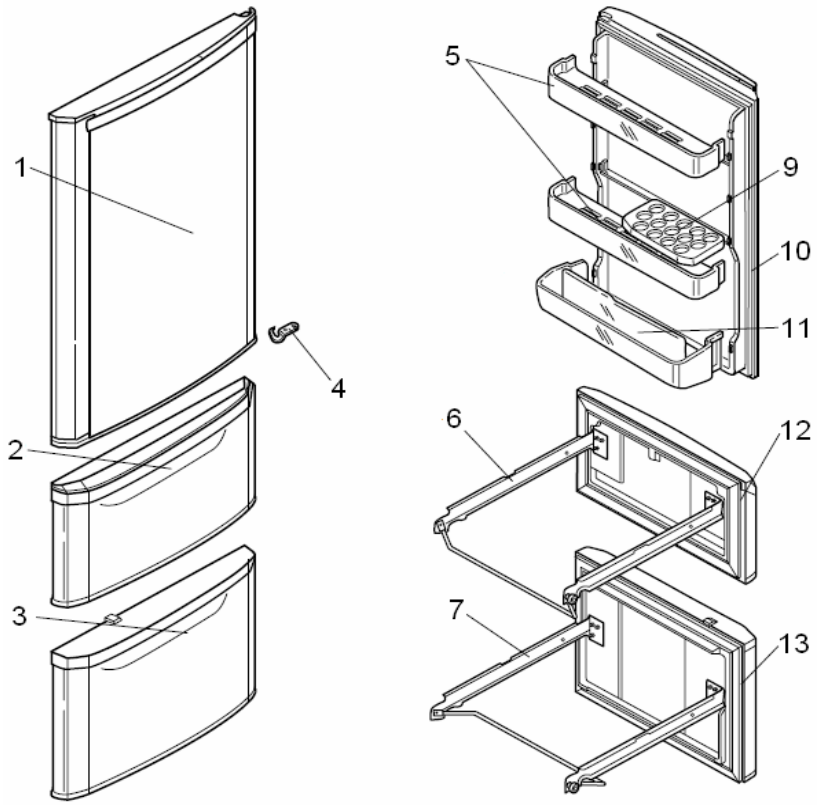


W : This mark shown welded point

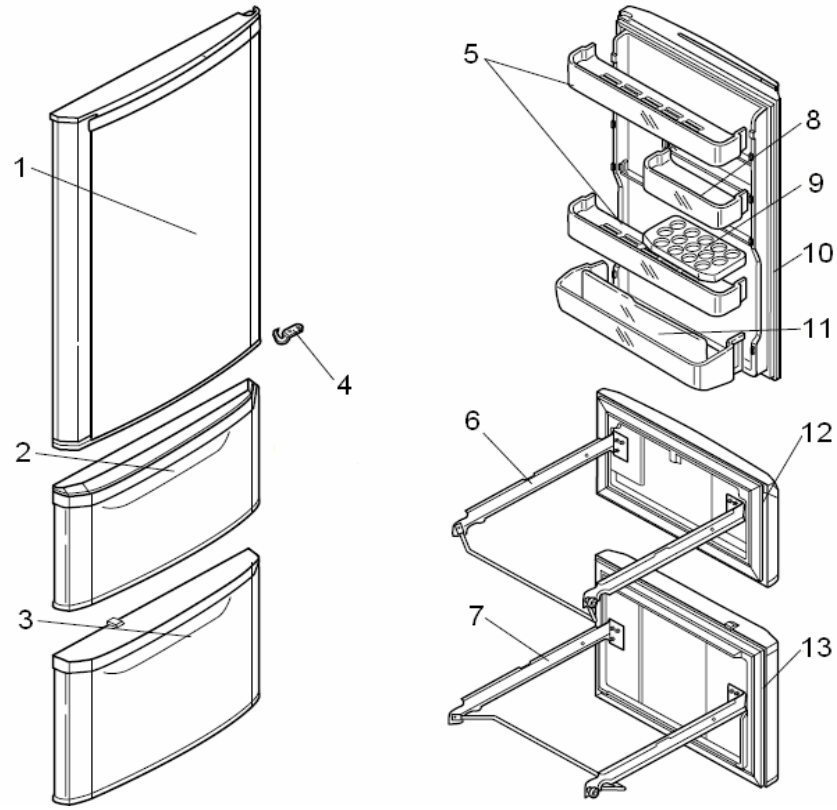
8 PARTS LIST

DOOR, BODY PARTS

MR-C375C-A
MR-C375CL-A



MR-C405C-A
MR-C405CL-A



NO.	PART NO.	RoHS	PART NAME	SPEC	Q'TY/UNIT									PRICE/PIECE(US$-FCA)
					MR-C375C-A			MR-C375CL-A		MR-C405C-A		MR-C405CL-A		
					W	ST	OB	W	ST	W	ST	W	ST	
1	KIERL6000	<G>	DOOR R		1									
	KIER66000	<G>				1								
	KIER63000	<G>					1							
	KIERN6000	<G>						1						
	KIERN7000	<G>							1					
	KIERL8000	<G>								1				
	KIER71000	<G>									1			
	KIERP0000	<G>										1		
	KIERP1000	<G>											1	
2	KIEPE2002	<G>	DOOR V		1			1		1		1		
	KIEP90002	<G>					1							
	KIEP91002	<G>				1			1		1		1	
3	KIEPE2001	<G>	DOOR F		1			1		1		1		
	KIEP90001	<G>					1							
	KIEP91001	<G>				1			1		1		1	
4	KIEG05741	<G>	CATCHER RH		1	1	1			1	1			
	KIEPE4741	<G>	CATCHER LH					1	1			1	1	
5	KIEP89118	<G>	FREE POCKET L		2	2	2	2	2	2	2	2	2	
6	KIEP89151	<G>	FRAME V ASSY		1	1	1	1	1	1	1	1	1	
7	KIEP89157	<G>	FRAME F ASSY		1	1	1	1	1	1	1	1	1	
8	KIEP89119	<G>	FREE POCKET S							1	1	1	1	
9	KIEHJ3115	<G>	EGG CASE		1	1	1	1	1	1	1	1	1	
10	KIEP89110	<G>	MAGNET GASKET ASSY (R)		1	1	1	1	1					
	KIEP94110	<G>								1	1	1	1	
11	KIEP89124	<G>	BOTTLE POCKET		1	1	1	1	1	1	1	1	1	
12	KIEP89112	<G>	MAGNET GASKET ASSY (V)		1	1	1	1	1	1	1	1	1	
13	KIEP89111	<G>	MAGNET GASKET ASSY (F)		1	1	1	1	1	1	1	1	1	
(14)	KIERN0031	<G>	BADGE ASSY		1			1		1		1		
	KIER72031	<G>				1	1		1		1		1	

RECOMMEND PART NO. 1, 2, 3, 10, 12, 13

ABBREVIATION

F	FREEZER ROOM	V	VEGETABLE ROOM
R	REFRIGERATOR ROOM		

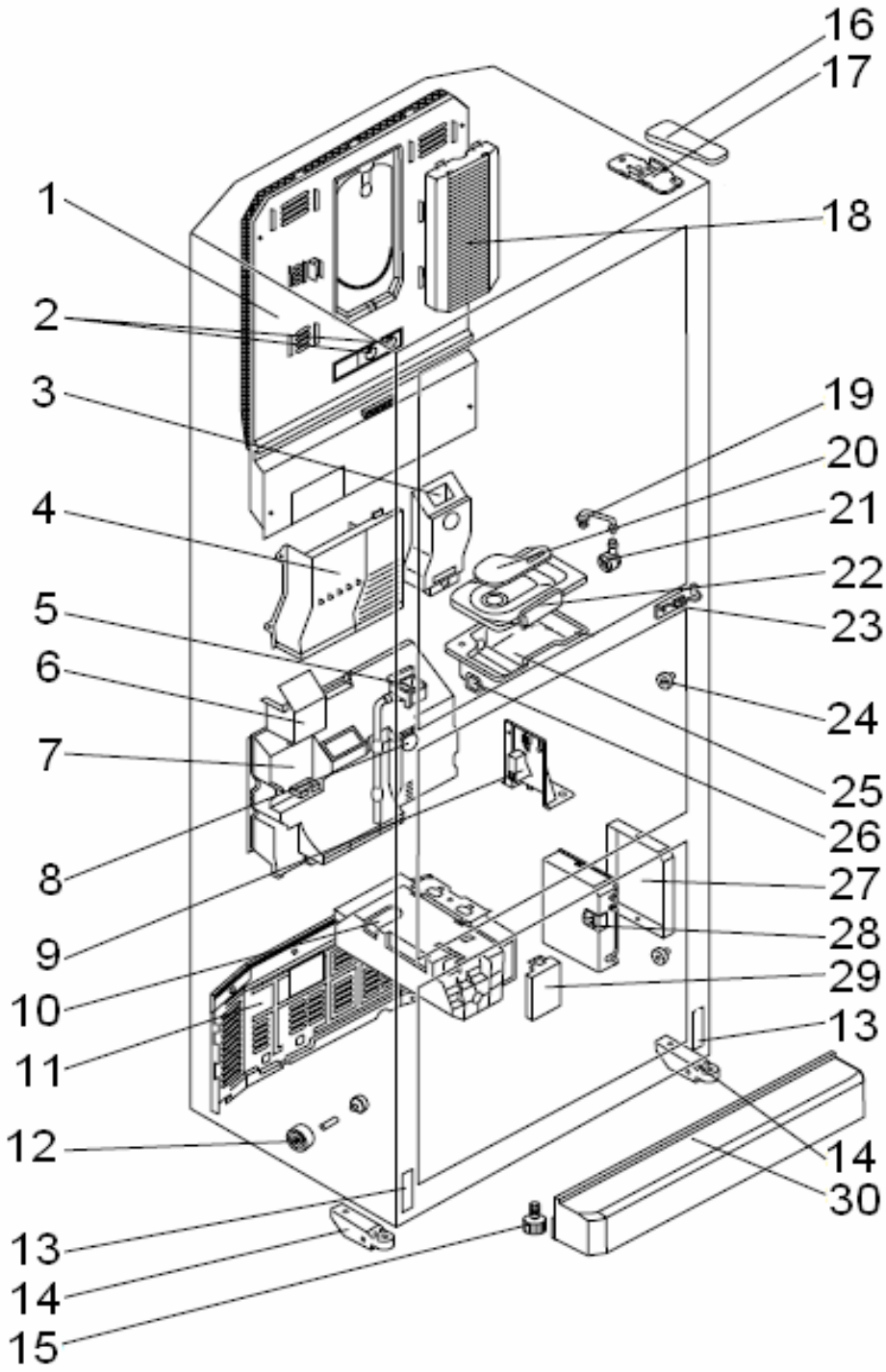
ENCIRCLED PART NUMBER ARE NOT SHOWN IN THE FIGURES.

Remark

- Country code : A= Australia and New Zealand
- Colour code : W = White, ST = Stainless

BODY PARTS

MR-C375C-A
MR-C375CL-A
MR-C405C-A
MR-C405CL-A



NO.	PART NO.	RoHS	PART NAME	SPEC	Q'TY/UNIT									PRICE/PIECE (US$-FCA)
					MR-C375C-A			MR-C375CL-A		MR-C405C-A		MR-C405CL-A		
					W	ST	OB	W	ST	W	ST	W	ST	
1	KIEP89858	<G>	CONTROL PANEL		1	1	1	1	1					
	KIEP94858	<G>								1	1	1	1	
2	KIEHJ3305	<G>	THERMO DIAL (R)		2	2	2	2	2	2	2	2	2	
3	KIEP89802	<G>	DUCT V ASSY		1	1	1	1	1	1	1	1	1	
4	KIEP89818	<G>	COVER DUCT V		1	1	1	1	1	1	1	1	1	
5	KIEP89503	<G>	WATER TRAY ASSY		1	1	1	1	1	1	1	1	1	
6	KIEP89808	<G>	CONNECTOR COVER		1	1	1	1	1	1	1	1	1	
7	KIEPE2663	<G>	FAN GRILLE ASSY		1	1	1	1	1	1	1	1	1	
8	KIEHJ3708	<G>	LABEL FC		1			1		1		1		
	KIEP91708	<G>				1			1		1		1	
	KIEP90708	<G>					1							
9	KIEP89442	<G>	PIPE COVER		1	1	1	1	1	1	1	1	1	
10	KIEPE2350	<G>	AUTO ICE MAKER		1	1	1	1	1	1	1	1	1	
11	KIEP89652	<G>	COMP COVER ASSY		1	1	1	1	1	1	1	1	1	
12	KIE805794	<G>	CASTER SET		2	2	2	2	2	2	2	2	2	
13	KIEHJ3709	<G>	SCREW LABEL (F)		2	2	2	2	2	2	2	2	2	
14	KIEH79795	<G>	CASTER ASSY		2	2	2	2	2	2	2	2	2	
15	KIEC02460	<G>	ADJUST BOLT		2	2	2	2	2	2	2	2	2	
16	KIER65705	<G>	HINGE COVER		1					1				
	KIEP91705	<G>				1					1			
	KIEP90705	<G>					1							
	KIERN6705	<G>						1				1		
	KIEPE5705	<G>							1				1	
17	KIEP89701	<G>	HINGE ASSY (UP)		1	1	1			1	1			
	KIEPE4701	<G>						1	1			1	1	
18	KIEP89470	<G>	LAMP COVER		1	1	1	1	1	1	1	1	1	
19	KIEHJ4503	<G>	JOINT PIPE (TANK)		1	1	1	1	1	1	1	1	1	
20	KIEHJ3531	<G>	WATER TANK CAP		1	1	1	1	1	1	1	1	1	
21	KIEHJ3519	<G>	WATER PUMP		1	1	1	1	1	1	1	1	1	
22	KIEK96527	<G>	WATER TANK COVER ASSY		1	1	1	1	1	1	1	1	1	
23	KIEMT0702	<G>	HINGE ASSY (LOW)		1	1	1			1	1			
	KIEHJ2702	<G>						1	1			1	1	
24	KIEHJ3798	<G>	ROLLER		4	4	4	4	4	4	4	4	4	
25	KIEHJ3520	<G>	WATER TANK		1	1	1	1	1	1	1	1	1	
26	KIEHJ3526	<G>	FILTER (TANK)		1	1	1	1	1	1	1	1	1	
27	KIEP89328	<G>	ELECT BOX COVER ASSY		1	1	1	1	1	1	1	1	1	
28	KIEMQ4326	<G>	ELECT BOX SUB ASSY		1	1	1	1	1	1	1	1	1	
29	KIEHJ4442	<G>	COVER (IM)		1	1	1	1	1	1	1	1	1	
30	KIEPE2730	<G>	KICK PLATE		1			1		1		1		
	KIEP91730	<G>				1			1		1		1	
	KIEP90730	<G>					1							
(31)	KIEPJ5663	<G>	FAN GRILLE		1	1	1	1	1	1	1	1	1	
(32)	KIEP94662	<G>	BELL MOUTH		1	1	1	1	1	1	1	1	1	
(33)	KIEHJ4682	<G>	DUCT DAMPER		1	1	1	1	1	1	1	1	1	
(34)	KIEP89336	<G>	THERMAL FUSE ASSY		1	1	1	1	1	1	1	1	1	

RECOMMEND PART NO. 7, 20, 22, 34

ABBREVIATION

F	FREEZER ROOM	IM	ICE MAKER
R	REFRIGERATOR ROOM	V	VEGETABLE ROOM

ENCIRCLED PART NUMBER ARE NOT SHOWN IN THE FIGURES.

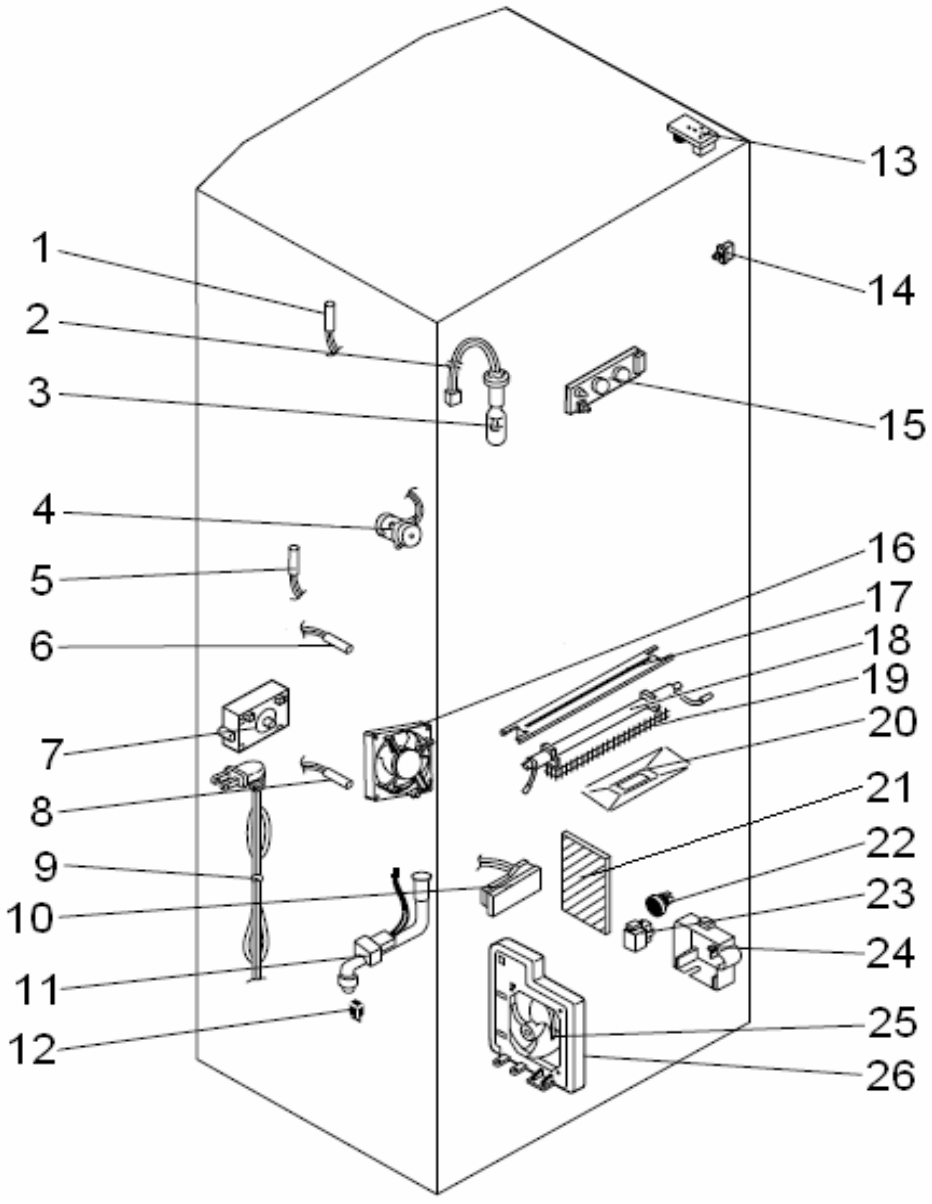
ELECTRICIAL PARTS

MR-C375C-A

MR-C375CL-A

MR-C405C-A

MR-C405CL-A

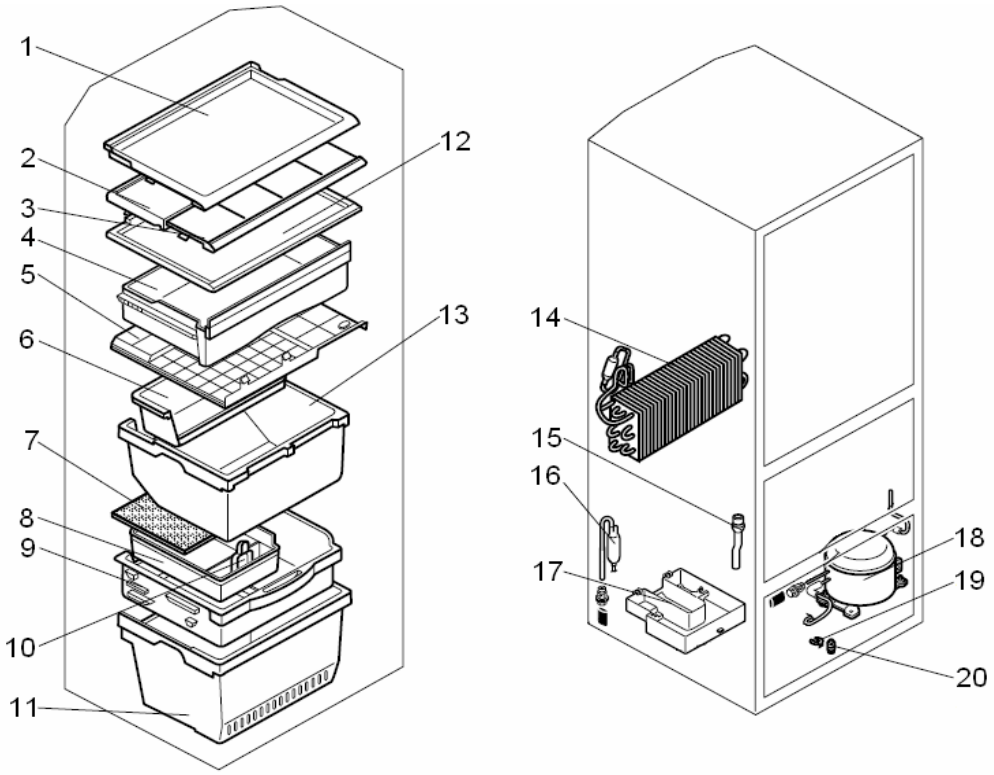


NO.	PART NO.	RoHS	PART NAME	SPEC	Q'TY/UNIT									PRICE/PIECE(US$-FCA)
					MR-C375C-A			MR-C375CL-A		MR-C405C-A		MR-C405CL-A		
					W	ST	OB	W	ST	W	ST	W	ST	
1	KIEHJ3313	<G>	THERMISTOR (R)		1	1	1	1	1	1	1	1	1	
2	KIEP89386	<G>	LAMP SOCKET		1	1	1	1	1					
	KIEP94386	<G>								1	1	1	1	
3	KIE402360	<G>	LAMP	240V 15W E12	1	1	1	1	1	1	1	1	1	
4	KIEHJ3365	<G>	WATER PUMP		1	1	1	1	1	1	1	1	1	
5	KIEP89312	<G>	THERMISTOR (DEF)		1	1	1	1	1	1	1	1	1	
6	KIEHJ3378	<G>	THERMISTOR (F)		1	1	1	1	1	1	1	1	1	
7	KIEHJ3469	<G>	GEAR BOX (IM)		1	1	1	1	1	1	1	1	1	
8	KIEHJ3316	<G>	THERMISTOR (I)		1	1	1	1	1	1	1	1	1	
9	KIEPE2354	<G>	PLUG CORD ASSY		1	1	1	1	1	1	1	1	1	
10	KIEHJ3362	<G>	REED SWITCH		1	1	1	1	1	1	1	1	1	
11	KIEP89364	<G>	WATER PIPE ASSY		1	1	1	1	1	1	1	1	1	
12	KIELR4346	<G>	RUNNING CAPACITOR	4μF 400VAC	1	1	1	1	1	1	1	1	1	
13	KIEKA0374	<G>	BUZZER BOARD & THERMISTOR (A.T.)		1	1	1	1	1	1	1	1	1	
14	KIEMQ4363	<G>	LAMP SWITCH (R)		1	1	1	1	1	1	1	1	1	
15	KIEKA0382	<G>	TEMP CONTROL PANEL		1	1	1	1	1	1	1	1	1	
16	KIEMQ4320	<G>	FAN MOTOR ASSY		1	1	1	1	1	1	1	1	1	
17	KIEP89537	<G>	HEATER ROOF		1	1	1	1	1	1	1	1	1	
18	KIEP89392	<G>	DEFROST HEATER		1	1	1	1	1	1	1	1	1	
19	KIEP89397	<G>	HEATER COVER		1	1	1	1	1	1	1	1	1	
20	KIEP89538	<G>	DRIP TRAY		1	1	1	1	1	1	1	1	1	
21	KIERN4339	<G>	REFCON ASSY		1	1	1	1	1					
	KIERN8339	<G>								1	1	1	1	
22	KIEP89340	<G>	MOTOR PROTECTOR	5TM718MFBYY53	1	1	1	1	1	1	1	1	1	
23	KIEE76330	<G>	PTC RELAY	PTH7M330MD2	1	1	1	1	1	1	1	1	1	
24	KIEG05341	<G>	PROTECTOR COVER		1	1	1	1	1	1	1	1	1	
25	KIEP89325	<G>	OUT FAN MOTOR ASSY		1	1	1	1	1	1	1	1	1	
26	KIEP89662	<G>	BELL MOUTH M ASSY		1	1	1	1	1	1	1	1	1	

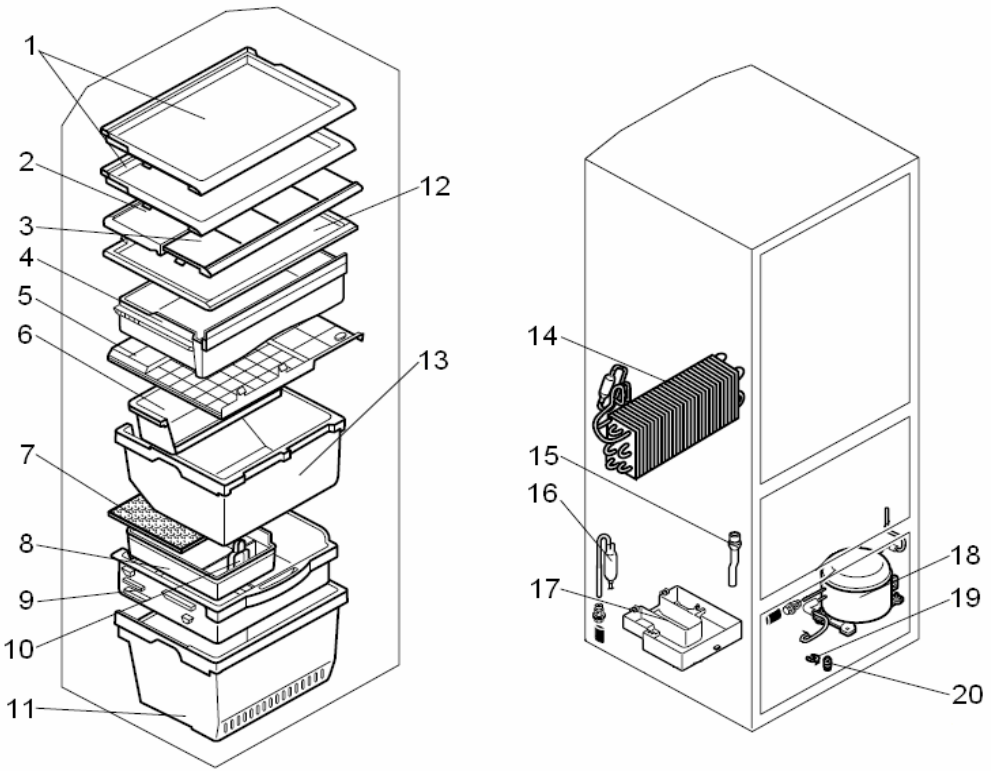
RECOMMEND PART NO. 1, 3, 5, 6, 8, 13, 15, 18, 21, 22, 23

ACCESSORY AND UNIT PARTS

MR-C375C-A
MR-C375CL-A



MR-C405C-A
MR-C405CL-A



NO.	PART NO.	RoHS	PART NAME	SPEC	Q'TY/UNIT									PRICE/PIECE(US$-FCA)
					MR-C375C-A			MR-C375CL-A		MR-C405C-A		MR-C405CL-A		
					W	ST	OB	W	ST	W	ST	W	ST	
1	KIEP89420	<G>	GLASS SHELF R ASSY		1	1	1	1	1	2	2	2	2	
2	KIEHJ3427	<G>	SLIDE SHELF (REAR)		1	1	1	1	1	1	1	1	1	
3	KIEHJ3428	<G>	SLIDE SHELF (FRONT)		1	1	1	1	1	1	1	1	1	
4	KIEP89413	<G>	SLIDE CHILLED CASE		1	1	1	1	1	1	1	1	1	
5	KIEP89409	<G>	VEGEATABLE CASE COVER		1	1	1	1	1	1	1	1	1	
6	KIEP89406	<G>	FRUIT CASE		1	1	1	1	1	1	1	1	1	
7	KIEP89468	<G>	ICE BOX SHEET		1	1	1	1	1	1	1	1	1	
8	KIEP89487	<G>	ICE BOX		1	1	1	1	1	1	1	1	1	
9	KIEP89474	<G>	FREEZING CASE (UP)		1	1	1	1	1	1	1	1	1	
10	KIEHJ3477	<G>	ICE SPOON		1	1	1	1	1	1	1	1	1	
11	KIEP89475	<G>	F CASE (LOW)		1	1	1	1	1	1	1	1	1	
12	KIEP89420	<G>	GLASS SHELF R ASSY		1	1	1	1	1	1	1	1	1	
13	KIEP89405	<G>	VEGEATABLE CASE		1	1	1	1	1	1	1	1	1	
14	KIEP89995	<G>	EVAPORATOR		1	1	1	1	1	1	1	1	1	
15	KIEP89504	<G>	ELBOW		1	1	1	1	1	1	1	1	1	
16	KIEAA1980	<G>	DRYER	XH-9,10GR	1	1	1	1	1	1	1	1	1	
17	KIEP89435	<G>	DRAIN PAN		1	1	1	1	1	1	1	1	1	
18	KIEPE2277	<G>	COMPRESSOR	DHS66C10RAW	1	1	1	1	1	1	1	1	1	
19	KIEHJ3735	<G>	U WASHER		4	4	4	4	4	4	4	4	4	
20	KIEE76797	<G>	RUBBER MOUTH		4	4	4	4	4	4	4	4	4	

RECOMMEND PART NO. 1, 2, 3, 4, 14, 16, 18

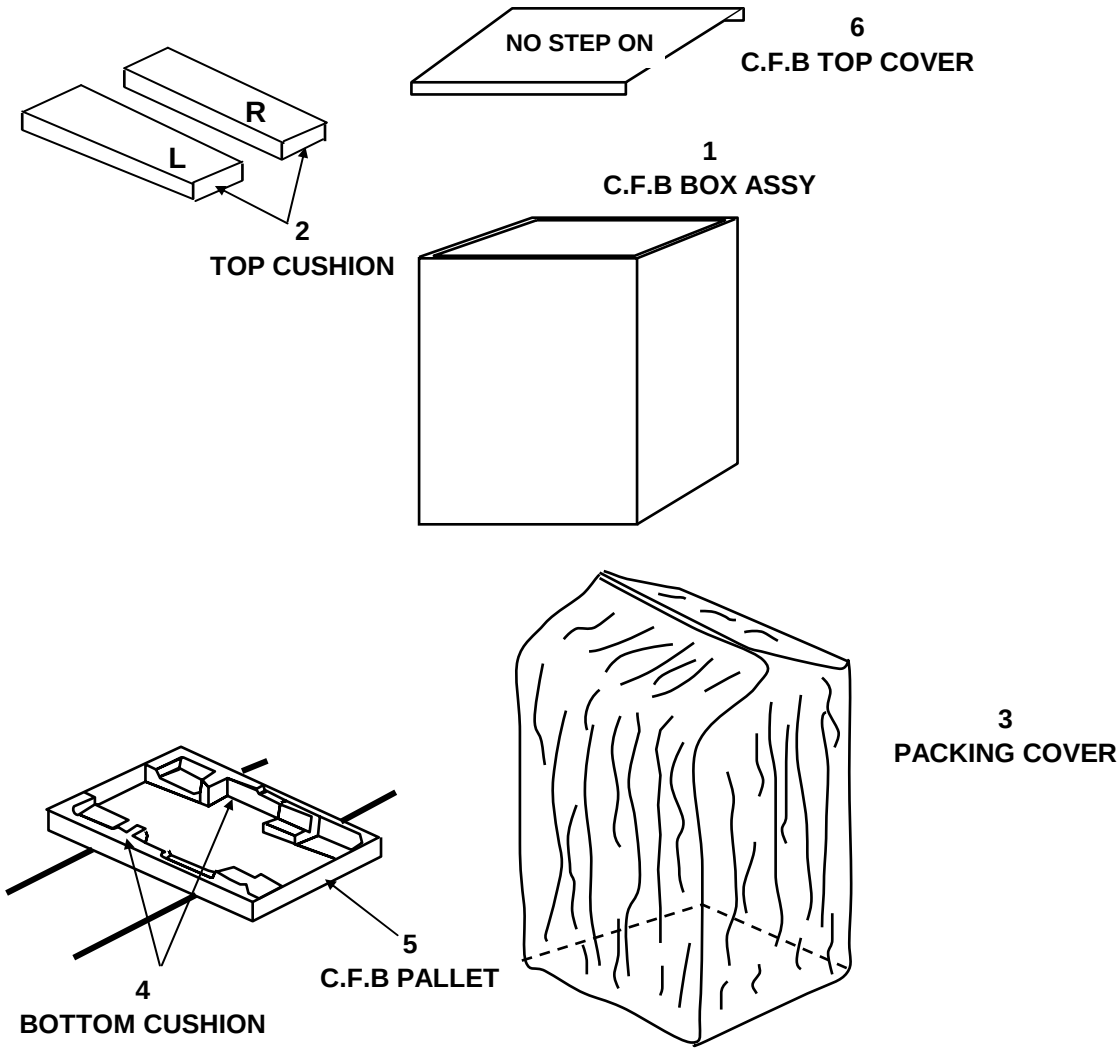
PACKING PARTS

MR-C375C-A

MR-C375CL-A

MR-C405C-A

MR-C405CL-A



NO.	PART NO.	RoHS	PART NAME	SPEC	Q'TY/UNIT									PRICE/PIECE(US$-FCA)
					MR-C375C-A			MR-C375CL-A		MR-C405C-A		MR-C405CL-A		
					W	ST	OB	W	ST	W	ST	W	ST	
1	KIERN4970	<G>	C.F.B BOX ASSY		1									
	KIERN5970	<G>				1								
	KIETY7970	<G>					1							
	KIERN6970	<G>						1						
	KIERN7970	<G>							1					
	KIERN8970	<G>								1				
	KIERN9970	<G>									1			
	KIERP0970	<G>										1		
	KIERP1970	<G>											1	
2	KIEP89979	<G>	TOP CUSHION		1	1	1	1	1	1	1	1	1	
3	KIEHN8973	<G>	PACKING COVER		1	1	1	1	1	1	1	1	1	
4	KIEP89978	<G>	BOTTOM CUSHION		1	1	1	1	1	1	1	1	1	
5	KIEP89974	<G>	C.F.B PALLET		1	1	1	1	1	1	1	1	1	
6	KIEP89975	<G>	C.F.B TOP COVER		1	1	1	1	1	1	1	1	1	

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