Service Manual

Refrigerator

Model No. **FR-561N..**
FR-640N..   **FR-641N..**

Factory No. **FRP-510****   **FRP-511****

✔ **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).

DAEWOO
ELECTRONICS

C O N T E N T S

WARNINGS AND PRECAUTIONS FOR SAFETY

Please observe the following safety precautions in order to use safely and correctly the refrigerator and to prevent accident and danger during repair.

1. Be care of an electric shock. Disconnect power cord from wall outlet and wait for more than three minutes before replacing PCB parts.
   Shut off the power whenever replacing and repairing electric components.

2. When connecting power cord, please wait for more than five minutes after power cord was disconnected from the wall outlet.

3. Please check if the power plug is pressed down by the refrigerator against the wall.
   If the power plug was damaged, it may cause fire or electric shock.

4. If the wall outlet is over loaded, it may cause fire.
   Please use its own individual electrical outlet for the refrigerator.

5. Please make sure the outlet is properly earthed, particularly in wet or damp area.

6. Use standard electrical components when replacing them.

7. Make sure the hook is correctly engaged.
   Remove dust and foreign materials from the housing and connecting parts.

8. Do not fray, damage, machine, heavily bend, pull out or twist the power cord.

9. Please check the evidence of moisture intrusion in the electrical components.
   Replace the parts or mask it with insulation tapes if moisture intrusion was confirmed.

10. Do not let the customers repair, disassemble and reconstruct the refrigerator for themselves.
    It may cause accident, electric shock, or fire.

11. Do not store flammable materials such as ether, benzene, alcohol, chemicals, gas, or medicine in the refrigerator.

12. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.

13. Do not put glass bottles with full of water into the freezer.
    The contents shall freeze and break the glass bottles.

14. When you scrap the refrigerator, please disconnect the door gasket first and scrap it where children are not accessible.
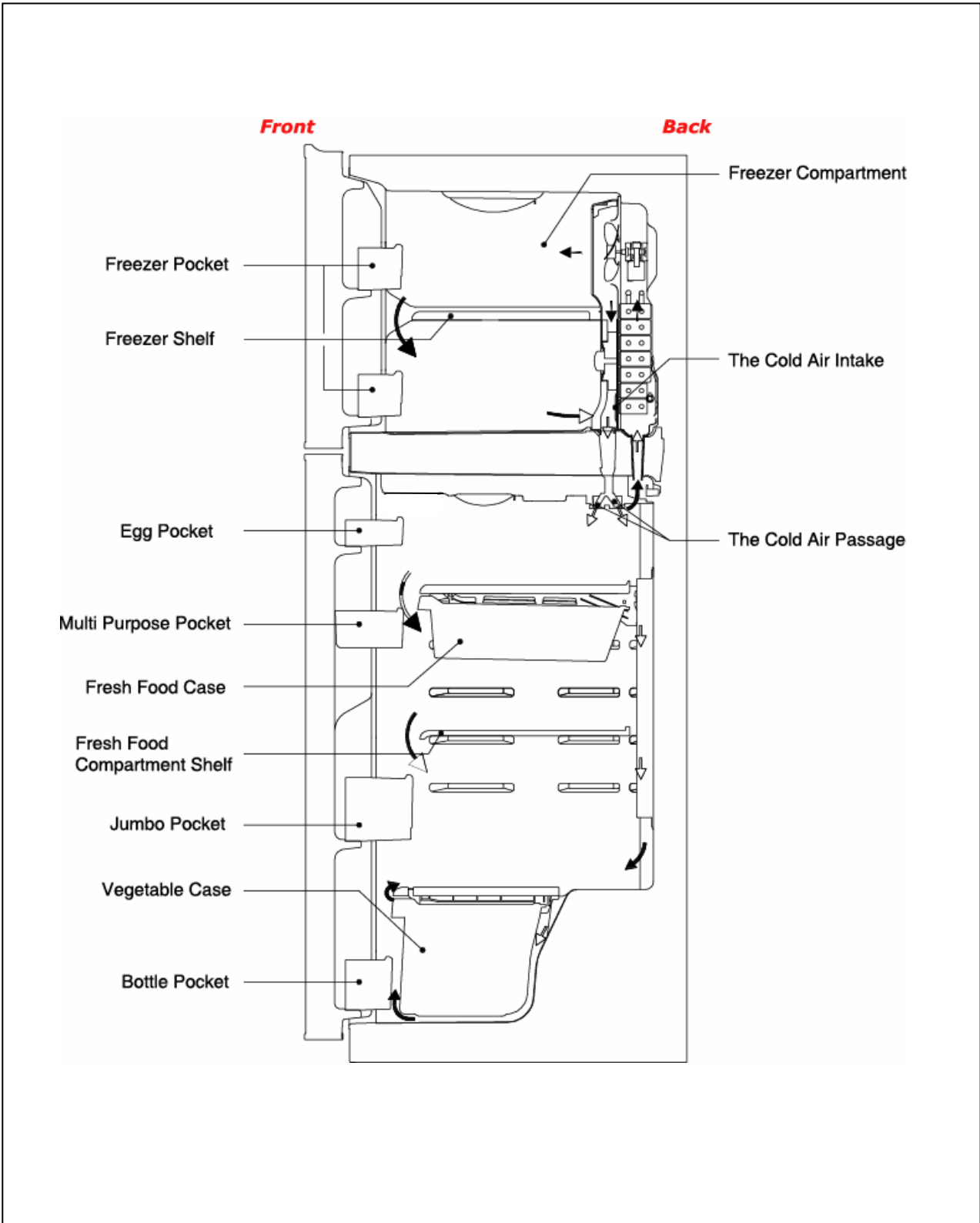
1. SPECIFICATION

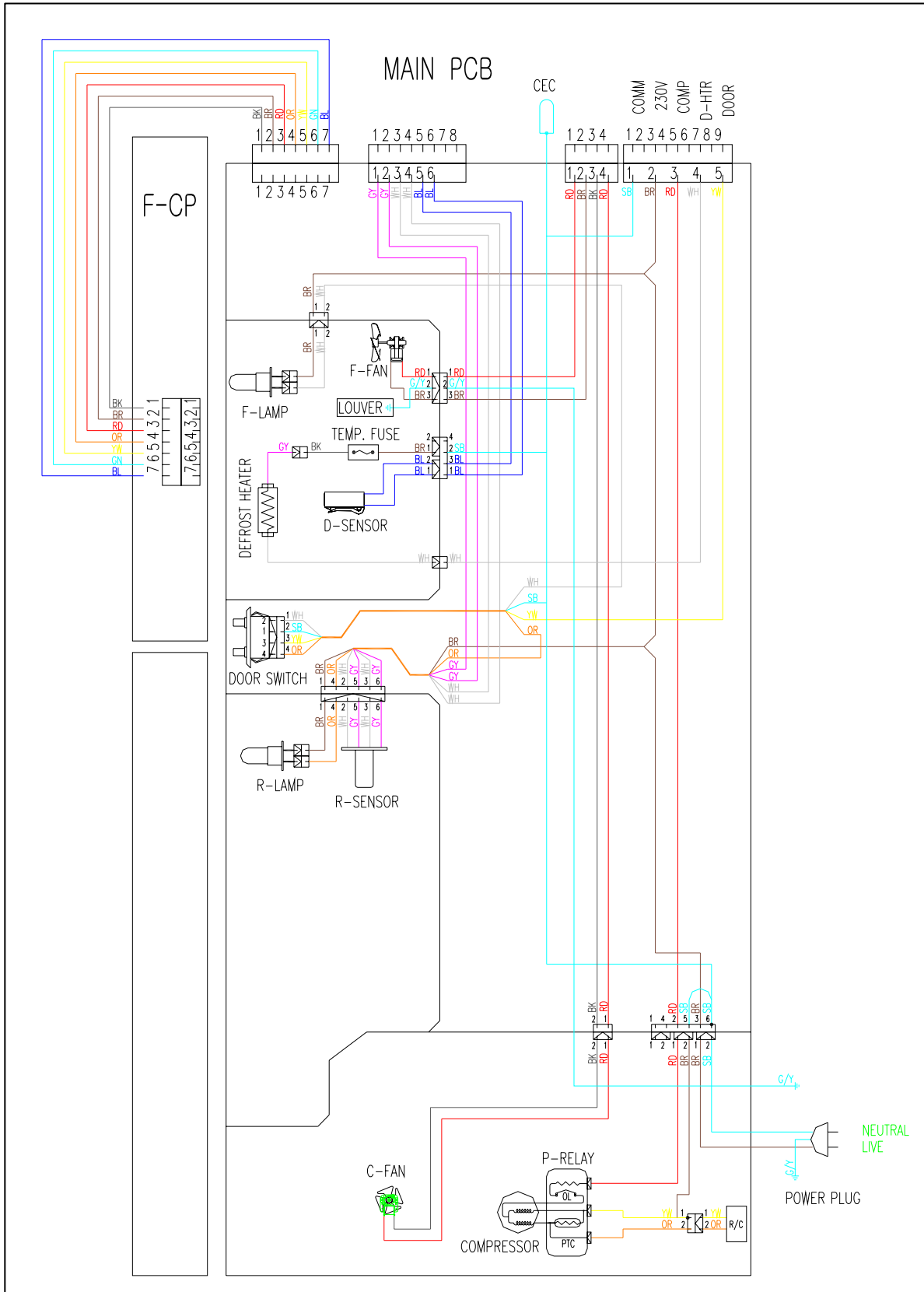| Item		Specification
ISO Gross Volume (Li)	Total	**524 Li**
	Freezer Compartment	**162 Li**
	Fresh Food Compartment	**362 Li**
ISO Storage Volume (Li)	Total	**492 Li**
	Freezer	**136 Li**
	Refrigerator	**356 Li**
Weight		83 kg
External Dimension (Width x Depth x Height)		770 mm x 762 mm x **1814.5** mm
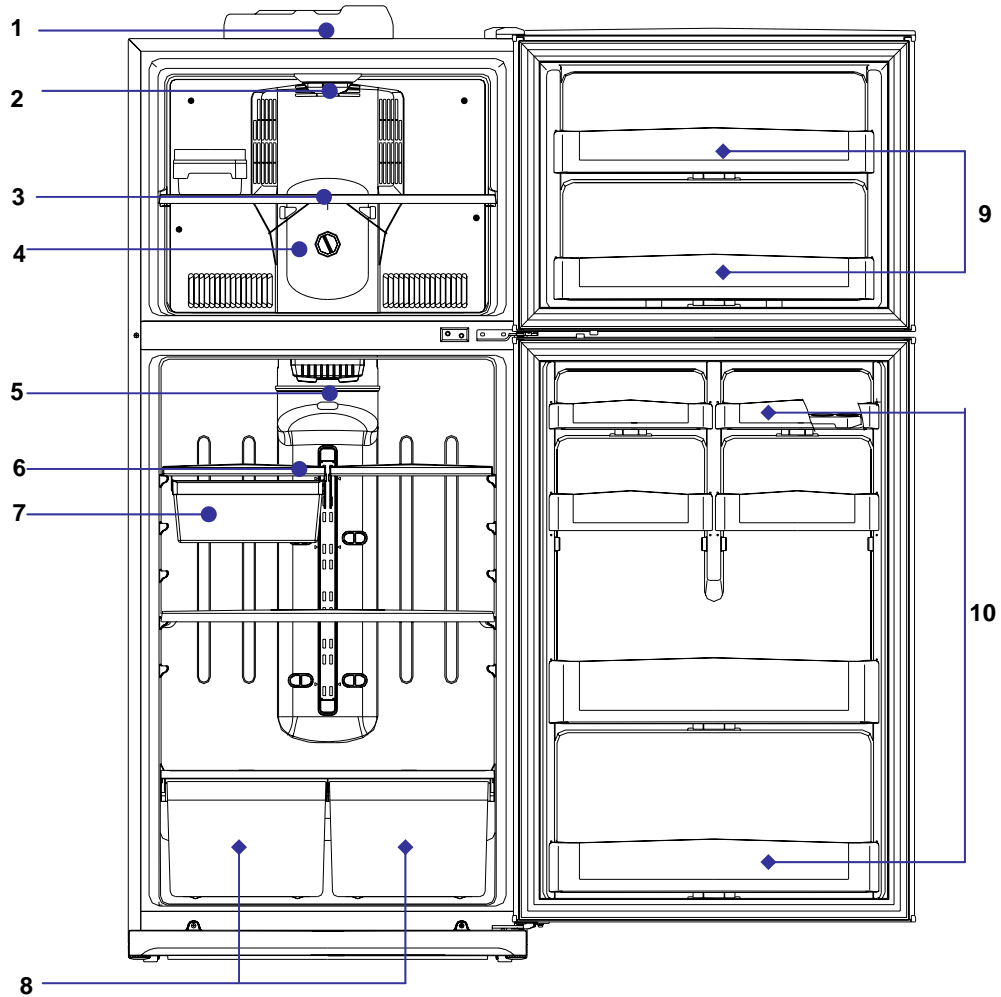
1. Cover Main PCB	7. Chilled Case
2. Freezer Compartment Lamp (15Wx1)	8. Vegetable Case (2EA)
3. Freezer Compartment Shelves	9. Freezer Compartment Pockets
4. Freezer Compartment Temperature Controller	10. Fresh Food Compartment Pockets
5. Fresh Food Compartment Lamp (15Wx1)	
6. Fresh Food Compartment Shelves	

3. Cold Air Circulation

Front   Back

- Freezer Pocket
- Freezer Shelf
- Egg Pocket
- Multi Purpose Pocket
- Fresh Food Case
- Fresh Food Compartment Shelf
- Jumbo Pocket
- Vegetable Case
- Bottle Pocket

- Freezer Compartment
- The Cold Air Intake
- The Cold Air Passage

4. Wiring Diagram

5. PCB CIRCUIT DIAGRAMS
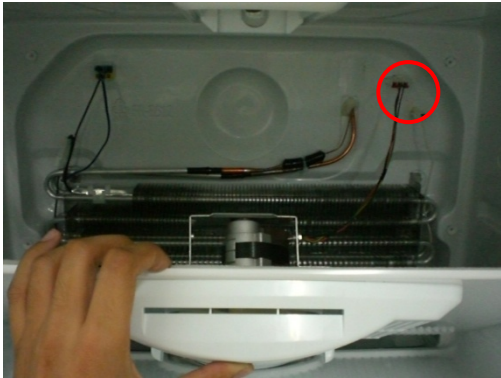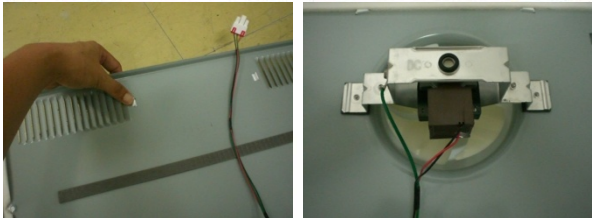
6. How To Replace The Parts
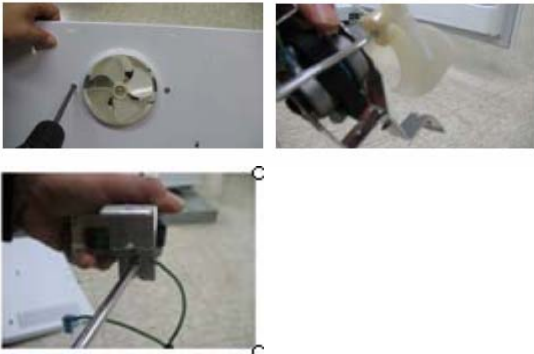
6-1. Freezer Louver Part

No	Photos	Description
1		- Remove 'Freezer Shelf' at first. - Remove 'Freezer Lamp Window'.
2		- Remove 4 screws on 'Freezer Louver'.
3		- Pull forward the 'Freezer Louver'. - Then disconnect 'Freezer Motor'.
4		- Disassemble the 'Cover Fan F AS'. - Be careful not to damage the hook.

6-2. Cover Fan F As

No	Photos	Description
1	Cover Fan B	- Remove 'Cover Fan B'.
2		- Replace 'Knob F Control'.
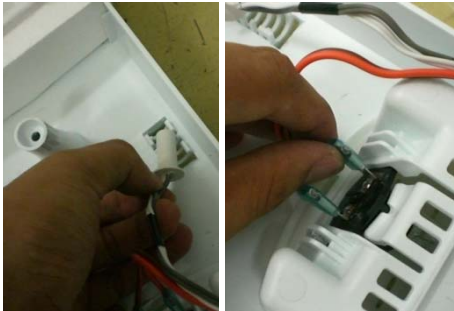
6-3. Freezer Motor As

No	Photos	Description
1		- Remove 2 screws. - Remove Clamp Fan with pliers and then disassemble 'Fan' with (-) driver. - Unscrew the earth wire bolt.
2		- Remove the screws holding the bracket.
3		- Now disassemble the 'Freezer Motor'.
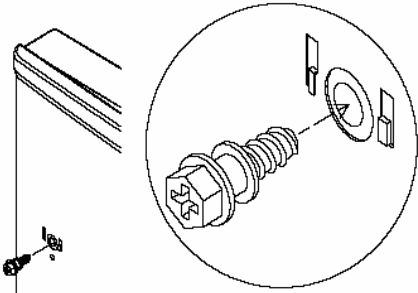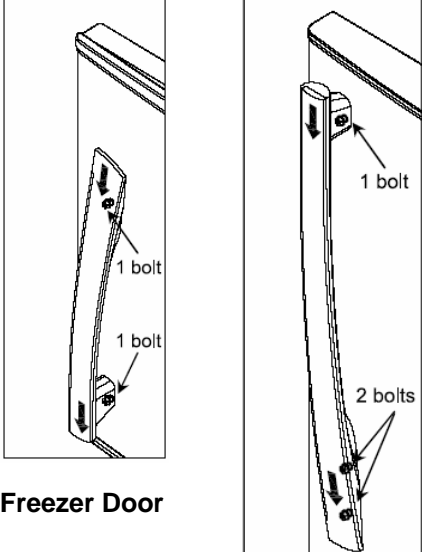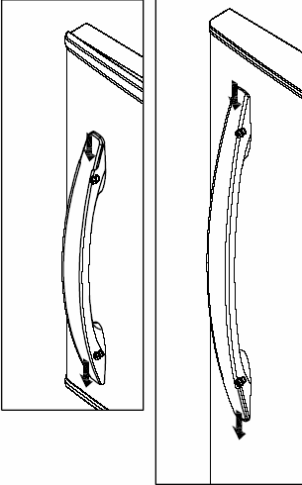
6-4. Evaporator

No	Photos	Description
1		- Remove the screw which fixes evaporator.
2		- Pull forward the evaporator and pipes. - Be careful not to bend the pipes.
3	**Defrost Heater** 	**< Defrost Heater >** - Disconnect 'Defrost Heater' lead wire on the right. - Disconnect 'Temperature Fuse' lead wire and 'Defrost Sensor' lead wire on the left. - Disassemble the 'Defrost Heater'.

6-5. Control Box

No	Photos	Description
1		- Remove the 'Shelf Fixture' to disassemble the shelves and Cover Duct. (Push down the fixture and pull out.)
2		- Remove 'Deco M/Flow Duct' with (-) driver. - Pull out the 'Cover M/Flow Duct'.
3		- Remove 2 screws on the 'Control Box'. - Disconnect wire to remove the 'Control Box'.
4		**< R Sensor >** - Disassemble the 'R Sensor' with (-) driver. - Be careful not to damage the sensor and wire - Disconnect the lead wire.
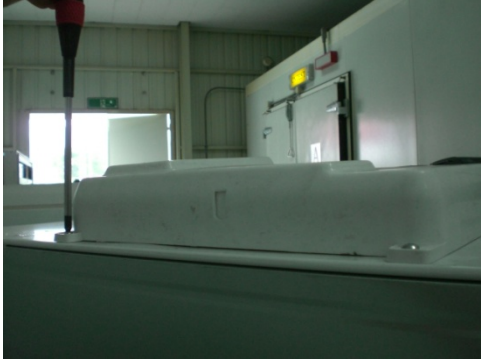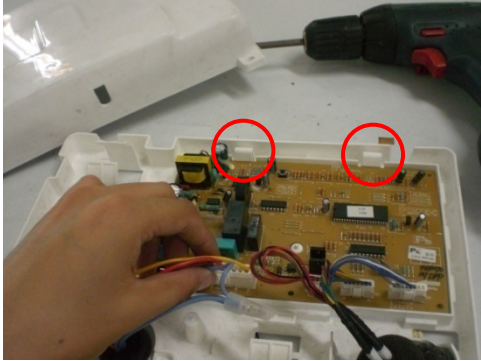
6-6. Handle Installation

No	Photos	Description
1		- Screw the bolt.
2	**Freezer Door** **Refrigerator Door**	**< FR-640N* Model >** - Assemble and pull down the handle. (Be careful the direction.)
3		**< FR-641N* Model >**

6-7. FRONT PCB

No	Photos	Description
1		- Input a cutter sleeve between Window FCP and Panel F control. Important : Input carefully sharp ruler or cutter in the area that picture shows (downside).
2		- Lift Window FCP up * Remark : Input sharp ruler or cutter deeply and carefully in order to lift up easily and avoid paint damages and scratches.
3		- Unscrew Panel F Control.

6-8. MAIN PCB

No	Photos	Description
1		- Unscrew the 2 fixing screws of cover PCB box.
2		- Disconnect all housings connectors from M-PCB, and force plastic locker of PCB box in order to take out the PCB.

7. PCB CONTROL FUNCTION

7-1. DISPLAY

INPUT	CONTROL OBJECT
● PCB Control Panel Buttons	● PCB Control Panel LED

Temperature adjustment button for refrigerator compartment.

"Super Cool" button

REFERENCE PAGE
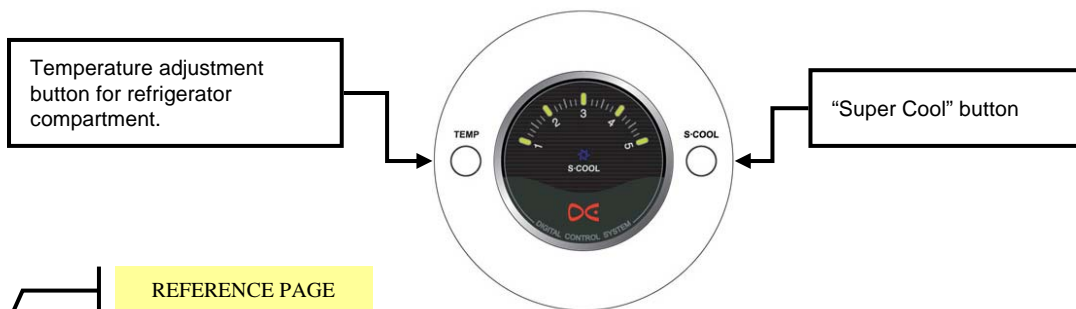
	LED DISPLAY	FUNCTION	OPERATION
17	LED "3" on	TEMP STEP "3"	Push "TEMP" button 1 time.
	LED "4" on	TEMP STEP "4"	Push "TEMP" button 2 times.
	LED "5" on	TEMP STEP "5"	Push "TEMP" button 3 times.
	LED "1" on	TEMP STEP "1"	Push "TEMP" button 4 times.
	LED "2" on	TEMP STEP "2"	Push "TEMP" button 5 times.
	LED "S-COOL" on	TEMP S-COOL	Push "S-COOL" button 1 time.
25	"3" flickeringly	ERROR "R SENSOR" (R1)	<How to enter Error Mode> Push "S-COOL" button for continuously and "TEMP" button 5 times. If there is no error (normal), "4" and "5" LED flickers. *The Priorities of Error : R SENSOR> RT SENSOR> DR S/W> CYCLE> DEFROST
	"2" flickeringly	ERROR "RT SENSOR" (RT)	
	"1" flickeringly	ERROR "D SENSOR" (D1)	
	"2" & "3" flickeringly	ERROR "DOOR S/W" (DR)	
	"1" & "3" flickeringly	ERROR "CYCLE" (C1)	
	"1" & "2" flickeringly	ERROR "DEFROST" (F3)	
18	"3" & "S-COOL" on, "4" & "5" flickeringly	Forced Defrost Test	Push "TEMP" button for continuously and "S-COOL" button 5 times. <Display> Push "S-COOL" button for continuously and "TEMP" button 5 times.
21	"1" & "S-COOL" on "4" & "5" flickeringly	Short Circuit Test	Push "TEMP" button 30 times. <Display> Push "S-COOL" button for continuously and "TEMP" button 5 times.

7-2. Temperature Control of Refrigerator Compartment	
INPUT	**CONTROL OBJECT**
● PCB Control Panel "TEMP" Buttons ● R-sensor	● PCB Control Panel LED ● COMPRESSOR, FAN

A. "TEMP" Button

ⓐ Temperature control of Refrigerator compartment

ⓑ 5 step mode of successive temperature mode

ⓒ Initial mode by power input: step "3"

ⓓ Temperature will be set if the button doesn't get pressed again within 5 sec.

　※ Whenever pressing "TEMP" button, setting is repeated in the order of

　　"3" → "4" → "5" → "1" → "2" (LED LAMP ON)

B. Temperature of Refrigerator Control

ⓐ COMP and FAN will be controlled by the on/off condition of each mode.

ⓑ Temperature Difference of Refrigerator each step :

Temperature Step	"1"	"2"	"3"	"4"	"5"
Temp. Diff. of Each Step	1.0°C	1.0°C	1.0°C	1.0°C	

ⓒ Temperature of Refrigerator
　at step "3" OFF point: 1.8°C

ⓓ Refrigerator ON/OFF Temp.
　Difference: 0.7°C

C. "S-COOL" MODE

ⓐ Press S-COOL SWITCH
　and make S-COOL led lamp on.

ⓒ COMP & FAN are on until R-sensor
　 reaches to "Over Refrigeration
　 OFF Point", **-7°C**

ⓓ After the reach of **-7°C** , STEP "5" mode continues.

ⓑ When "S-COOL" MODE (Quick Refrigeration Mode)
　lasts for about 40 minutes, it returns to general
　operation mode.

D. Temperature of Freezer Control

-It will be only controlled by using
 "KNOB F LOUVER" in Freezer.
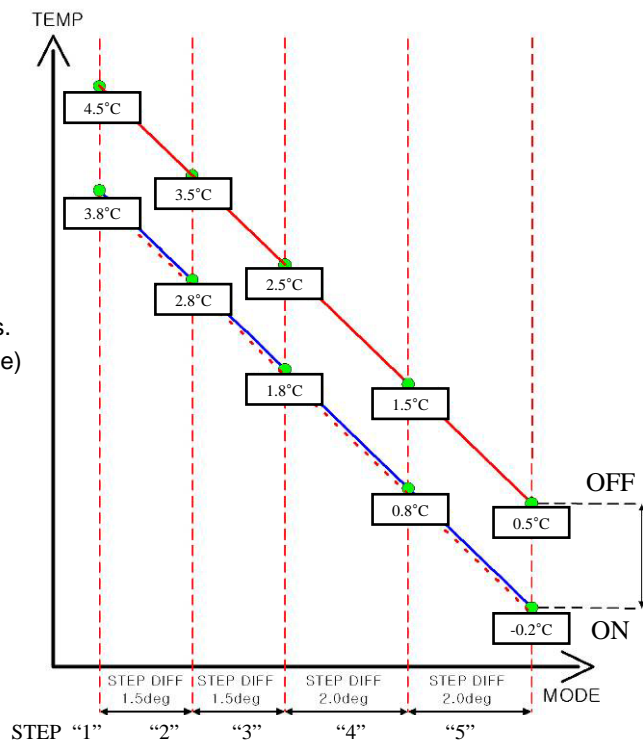
TEMP

4.5°C

3.8°C

3.5°C

2.8°C

2.5°C

1.8°C

1.5°C

0.8°C

0.5°C　OFF

-0.2°C　ON

STEP DIFF 1.5deg　STEP DIFF 1.5deg　STEP DIFF 2.0deg　STEP DIFF 2.0deg　MODE

STEP "1"　"2"　"3"　"4"　"5"

7-3. Defrost Mode

INPUT	CONTROL OBJECT
● Total COMP Work Time ● COMP Working Rate ● Total Door Open Time ● RT	● Defrost Mode

● Conditions of Defrost Mode

A. When total operation time of compressor becomes: 6, 8, 10, 12 hours.
 ⓐ any error mode-R1, D1, F3, C1, RT/S, Door SW error- happens.
 ⓑ or, running rate of COMP (per 2hrs of total operation time) is more than 90%.
 ⓒ or, total door open time is over 3 minutes.
 ⓓ or, ambient temperature (RT) is more than 40°C.
B. Even if the above condition "**A**" is not satisfied,
 ⓐ Defrost mode starts immediately when total operation time of COMP is 14hrs.
 ⓑ or, defrost mode starts immediately as long as total time (COMP on time + COMP off time) is 60 hrs.

● Defrost Mode

A. General Defrost Mode
 ⓐ How to start: By conditions of defrost
 ⓑ Process :
 General operation→
 "PRE-COOL" → Defrost Heater on→ Pause(10 min)→ General operation
　※ PRE-COOL: When the defrost heater works, the temp. of freezer increases.
　　 So the COMP works for 25 min before defrost mode.
 ⓒ Limited Time of Defrost Heater
　● 40 minutes: Heater turns off when "D SENSOR" is OPEN or SHORT.
　● 50 minutes: Heater turns off after 50 minutes.
 ⓓ Heater Off: When the temperature at "D SENSOR" is over 10°C

	PRE-COOL	Defrost Mode	Pause
Compressor	ON	OFF	OFF
Fan	ON	OFF	OFF
Defrost Heater	OFF	ON	OFF

B. Forced Defrost Mode
 ⓐ How to start: by press "TEMP" button for continuously and "S-COOL" button 5 times.
 ⓑ Process: same as General Defrost Mode except "PRE-COOL"
　※ Heater is on Initial 30 seconds even though the temp. at "D SENSOR" is over 10°C.
　　 (for TEST)
 ⓒ How to confirm: by press "S-COOL" button for continuously and "TEMP" button 5 times.
　　　　　　　 And then, the mode displays.
 ⓓ Display : led lamps "3"& "S-COOL" on, "4" & "5" on/off continually

7-3. Defrost Mode

INPUT	CONTROL OBJECT
● Total COMP Work Time ● COMP Working Rate ● Total Door Open Time ● RT	● Defrost Mode

● Initial Defrost

A. In providing initial power or returning power failure,
   if the temperature at the D-sensor is under 3.5°C, Defrost Mode starts. (It proceeds from "PRE-COOL".)
      ["PRE-COOL" → Heater on → Pause(10 min) → General operation **]**
B. Initial defrost mode starts after "Prevention of Compressor Restart". (Refer to Function No. 5)

● Flow Chart of Defrost Start

```
                        ┌──────────────┐
                        │    Start     │
                        └──────┬───────┘
                               │
                      ╱────────────────╲   NO
                      ╲ COMP time ≥ 2hrs ╱──────────►
                      ╲────────────────╱
                               │ YES
        YES           ╱────────────────╲
      ◄───────────────╲ Total time ≥ 60hrs╱
                      ╲────────────────╱
                               │ NO
        YES           ╱────────────────╲
      ◄───────────────╲ COMP time ≥ 14hrs╱
                      ╲────────────────╱
                               │ N0
                      ╱────────────────╲   NO
                      ╲ COMP time ≥ 6hrs ╱──────────►
                      ╲────────────────╱
                               │ N0
        YES           ╱────────────────╲
      ◄───────────────╲ COMP Rate ≥ 80% ╱
                      ╲────────────────╱
                               │ N0
        YES           ╱────────────────╲
      ◄───────────────╲   Any error?    ╱
                      ╲────────────────╱
                               │ NO
        YES           ╱────────────────╲
      ◄───────────────╲ RT Temp ≥ 40°C  ╱
                      ╲────────────────╱
                               │ N0
        YES           ╱────────────────╲
      ◄───────────────╲Total door open time╱
                      ╲   ≥ 3 min?       ╱
                      ╲────────────────╱
                               │ NO
   ┌──────────────┐    ┌──────────────┐
   │Defrosting start│   │     END      │
   └──────────────┘    └──────────────┘
```
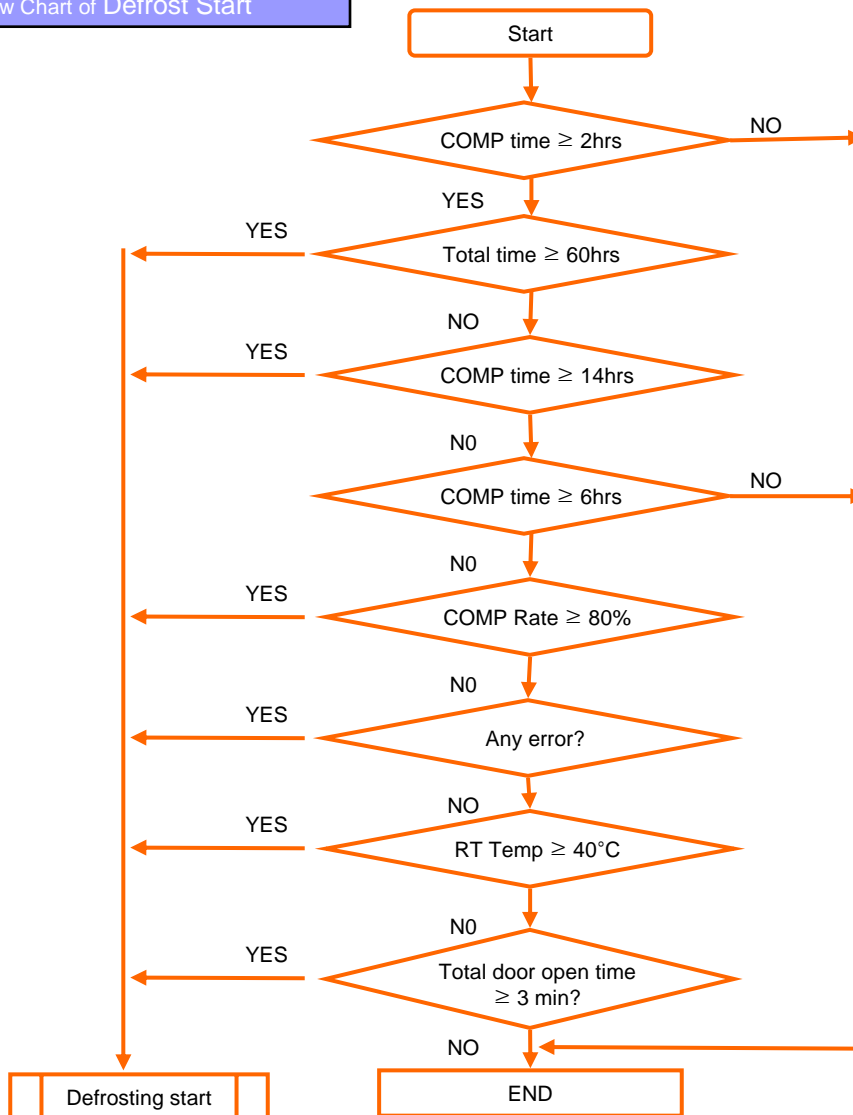
7-4. Function of Low Ambient Temperature (RT)

INPUT	CONTROL OBJECT
● RT	● R-HTR ● COMP

A. Condition of LOW RT

ⓐ LOW RT Period : RT sensor ≤ 19°C

ⓑ When the temperature of RT sensor is over 20°C, the system comes to be "General Operation Mode".

ⓒ When the temp. of RT sensor is between 19°C to 20°C, the system keeps the previous mode.

B. Control

ⓐ When Comp. is on, R-HTR is off.

ⓑ When it passes 6 min after COMP is off, R- HTR is on.

ⓒ COMP can't be on within 30 min after COMP is off.

　※ COMP doesn't work at the steps "Heater On" and "Pause" of "Defrost Mode".

　　If COMP comes to be off for "Low Room Temp" in the steps, it seems to take over 30 minutes.

ⓓ Change of "Prevention Time of COMP Restart" :

　If satisfy the following conditions simultaneously, the time changes 6 minutes.

　　● Accumulated running time of COMP passes 20 seconds after COMP is off.

　　● R-Sensor is more than 'ON' Point TEMP.

ⓔ When it is not the mode of LOW ROOM TEMP

　or RT-Sensor is on ERROR (open or short), R-Sensor HTR is off.

ⓕ Function of R-Heater Inspection:

　After initial power is on, R-HTR is on/off 5times for 10 seconds.

ⓖ When D-HTR is on, R-HTR is on.

7-5. Prevention of Compressor Restart

INPUT	CONTROL OBJECT
	● COMP

COMP. doesn't work after COMP turns off even though R-sensor is on condition. (This is to protect comp.)

A. General operation (Temp. at the RT sensor ≥ 20°C): The COMP can't be on within 6 min.

B. Operation of LOW RT (Temp. at the RT sensor ≤ 19°C):

　The COMP can't be on within 30 min.

　(But the COMP can be on after 6min when the doors open more than 20 seconds.)

7-6. Buzzer Sound

INPUT	CONTROL OBJECT
● Control Buttons　● Door Switch ● Initial Power Input	● Buzzer

A. Whenever "PCB Control Panel" button's pushed, the buzzer rings.

B. After 2 minutes power's on, the buzzer rings 3 times.

C. Time of Buzzer: Forced Defrost Mode (3 times), Short Circuit Test (1 time)

D. When door opens, the buzzer rings every 1 minute for 5 minutes.

7-7. Short Circuit Test

INPUT	CONTROL OBJECT
● "TEMP" Button	● COMP & FAN

A. How to start: by pressing "TEMP" button 30 times continuously.
B. How to confirm: by pressing "S-COOL" button for continuously and "TEMP" button 5 times.
  And then, the mode displays.
C. How to control:
  ⓐ COMP & FAN will be on independent of the operating condition. (There is no defrost mode on this test.)
  ⓑ It is available to restart the test and it'll be take 30 hours.
D. CANCEL : after the limit test time 30 hours passes.
E. DISPLAY : LED lamp "1" and "S-COOL" are on and "4" & "5"are flickeringly.

7-8. Time Reduction

INPUT	CONTROL OBJECT
● "FAST KEY"	● Buzzer

A. HOW TO REDUCE
  ⓐ 1 min : Click FAST KEY one time on MAIN PCB.
  ⓑ 30 min : If you press FAST KEY continuously, you can reduce 30 minutes on each 2.5 seconds with buzzer.
B. Practice Use : Can be applied to reduce needless time on test.
  EX) function of stop for 6 min

7-9. Demonstration Function

INPUT	CONTROL OBJECT
● "TEMP" +"S-COOL" Buttons	● Display Panel

A. START : by pressing "TEMP" and "S-COOL" buttons for 5 seconds.
B. CONTROL :
  ⓐ All electronic compartments are off except "Display Panel".
  ⓑ When "DEMO" mode works, led lamps will be on as next steps.
    ["1" → "2" → "3" → "4" → "5" → "1"]
D. CANCEL :
  Push again "TEMP" and "S-COOL" buttons for 5 seconds at "DEMO", or turn off power and restart.

7-10. Control of R-sensor OFF Point	
INPUT	**CONTROL OBJECT**
● "J1" On Main PCB	● Control Resistance of R sensor OFF Point

A. LOW COOLING OPTION

  - When the refrigeration of refrigerator is poor or weak though Fan and COMP are working continuously,
    the following actions are recommended for service.

     ● Resistance (R47) : Default resistance (31.4Kohms)
     ● Resistance (R45) : Cut the "J1" off to reduce basic resistance by 1.5°C. (2KΩ up)
     ● Resistance (R42) : Cut the "J2" off additionally to reduce basic resistance by 1.5°C. (total 4KΩ up)

  R47 = R-SENSOR OFF point
  R47 + R45 = R-SENSOR OFF point - 1.5°C
  R47 + R45 + R42 = R-SENSOR OFF point - 3°C
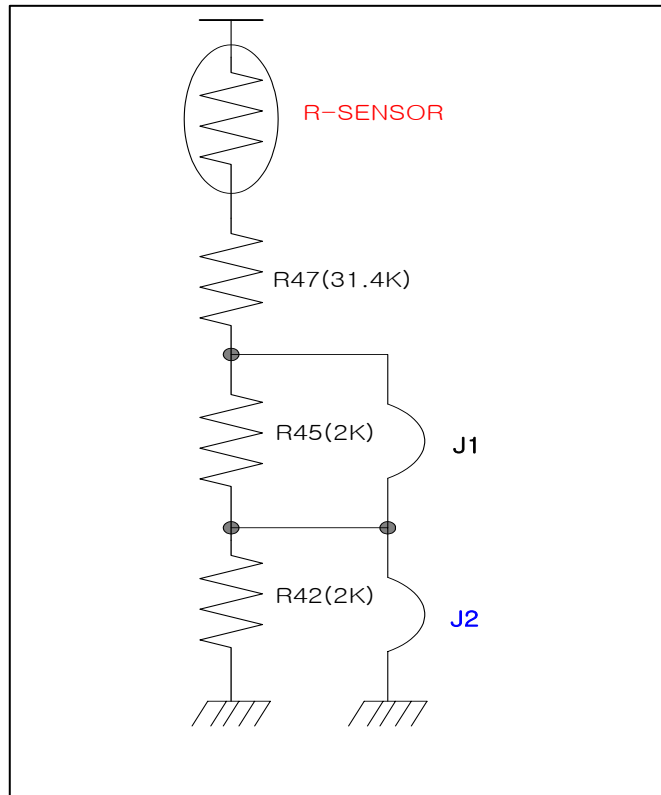
7-10. Control of R-sensor OFF Point

INPUT	CONTROL OBJECT
● "J3" & "R30" On Main PCB	● Input voltage of MICOM ● R-sensor ON/OFF Point

B. Prevention OPTION of EXCESSIVE OR LOW COOLING.
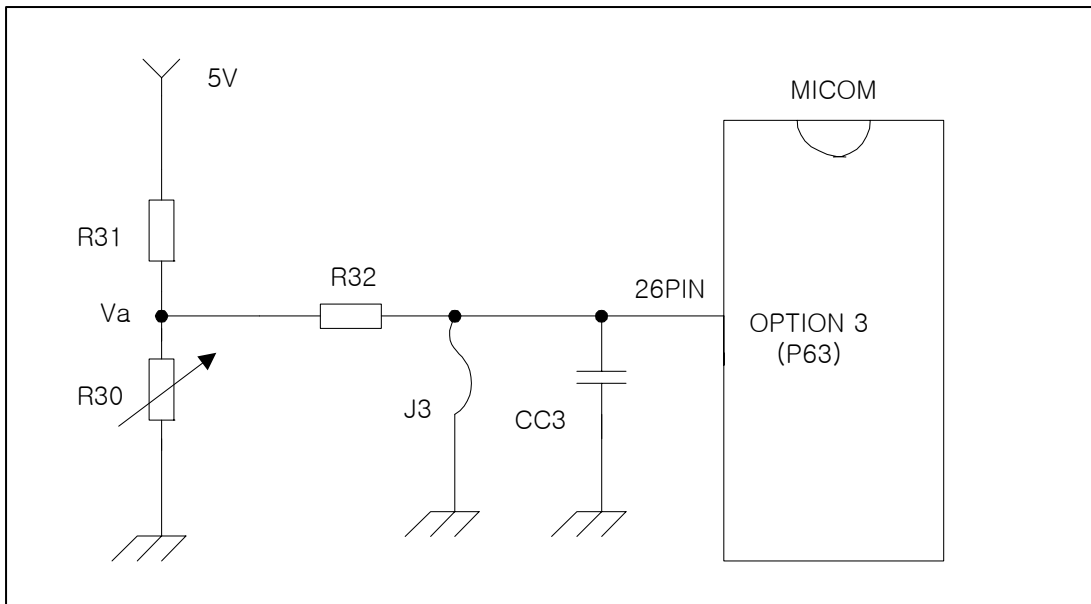
* The input voltage of MICOM and R-Sensor ON/OFF point by changing J3 & R30.

NO	TEMP. STEP "3"		APPLICATION	MICOM	Compared to "STANDARD"
	ON	OFF	(MAIN PCB)	INPUT VOL.	
1	2.5°C	1.8°C	-	0V	STANDARD
2	0.7°C	0°C	J3(CUT), R30 (→680Ω)	0.3V	-1.8°C
3	1.1°C	0.4°C	J3(CUT), R30 (→2kΩ)	0.8V	-1.4°C
4	1.4°C	0.7°C	J3(CUT), R30 (→2.8kΩ)	1.1V	-1.1°C
5	1.8°C	1.1°C	J3(CUT), R30 (→3.92kΩ)	1.4V	-0.7°C
6	2.1°C	1.4°C	J3(CUT), R30 (→4.87kΩ)	1.6V	-0.4°C
7	2.9°C	2.2°C	J3(CUT), R30 (→6.65kΩ)	2.0V	+0.4°C
8	3.2°C	2.5°C	J3(CUT), R30 (→10kΩ)	2.5V	+0.7°C
9	3.6°C	2.9°C	J3(CUT), R30 (→19.6kΩ)	3.3V	+1.1°C
10	3.9°C	3.2°C	J3(CUT), R30 (→40.2kΩ)	4V	+1.4°C
11	4.3°C	3.6°C	J3(CUT), R30(NO USE)	5V	+1.8°C

7-10. Control of R-sensor OFF Point

INPUT	CONTROL OBJECT
● "J4" & "R23" On Main PCB	● Input voltage of MICOM ● R-sensor ON/OFF Point

C. Changing Difference between R-sensor "On" point and "Off" point.
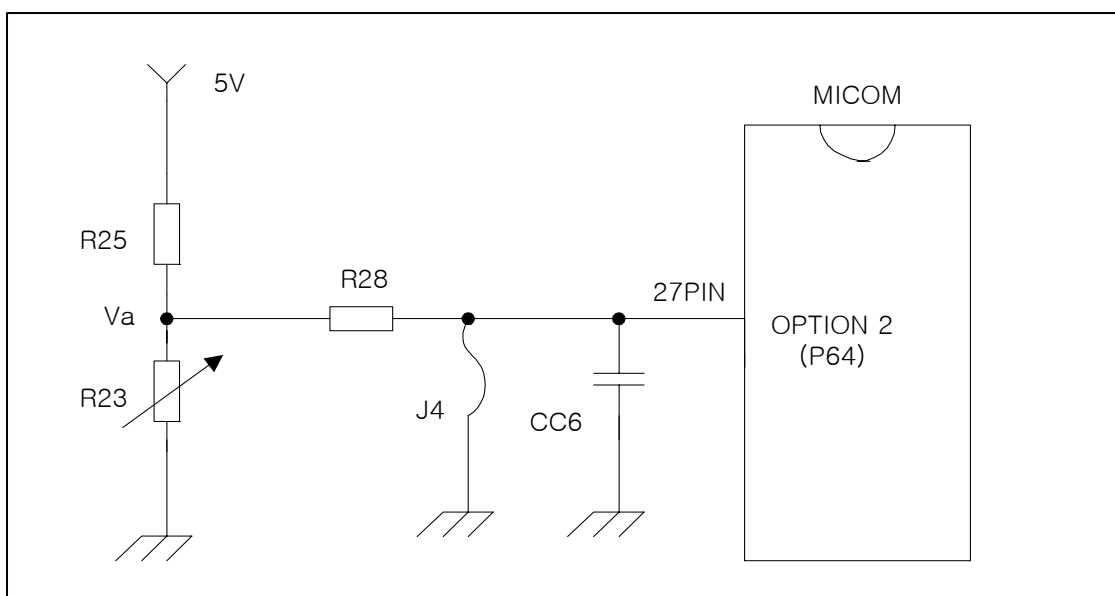
* The input voltage of MICOM and R-Sensor ON/OFF DIFF. by changing J4 & R23.

NO	TEMP. STEP "3"		APPLICATION	MICOM	DIFFERENCE OF ON/OFF POINT
	ON	OFF	(MAIN PCB)	INPUT VOL.	
1	2.5˚C	1.8˚C	-	0V	STANDARD
2	2.2˚C	1.8˚C	J4(CUT), R30 (→680Ω)	0.3V	-0.3˚C
3	2.9˚C	1.8˚C	J4(CUT), R30 (→2kΩ)	0.8V	0.4˚C
4	3.2˚C	1.8˚C	J4(CUT), R30 (→2.8kΩ)	1.1V	0.7˚C
5	3.6˚C	1.8˚C	J4(CUT), R30 (→3.92kΩ)	1.4V	1.1˚C
6	3.9˚C	1.8˚C	J4(CUT), R30 (→4.87kΩ)	1.6V	1.4˚C
7	4.3˚C	1.8˚C	J4(CUT), R30 (→6.65kΩ)	2.0V	1.8˚C
8	4.6˚C	1.8˚C	J4(CUT), R30 (→10kΩ)	2.5V	2.1˚C
9	5.0˚C	1.8˚C	J4(CUT), R30 (→19.6kΩ)	3.3V	2.5˚C
10	5.3˚C	1.8˚C	J4(CUT), R30 (→40.2kΩ)	4V	2.8˚C
11	5.7˚C	1.8˚C	J4(CUT), R30(NO USE)	5V	3.2˚C

7-11. Error Display

INPUT	CONTROL OBJECT
● PCB Control Panel Buttons ● Door	● LED Lamp

- ERROR DISPLAY
  - To confirm error happens or not, push S-COOL" button for continuously and "TEMP" button 5 times.
  - To stop the Error Display Set, push "TEMP" button 1 times, or wait 4 minutes.
  - After operations back to normal, the displays come to be reset.

A. R1 ERROR

(It happens when R-Sensor is OPEN or SHORT)

ⓐ DISPLAY : STEP "3" LED is on & off continually.

ⓑ CONTROL :
  - Controlled by the following condition of RT
  - When "RT ERROR" happens at the same time, "COMP. ON/OFF Operating Time" is 16min/24min.

(Unit : min)

RT sensor TEMP	~13°C	~19°C	~29°C	29°C~
COMP. Operating TIME (ON/OFF)	6/34	10/30	16/24	20/20

ⓒ CANCEL : when R-Sensor is working normally.

B. RT ERROR

(It happens when RT-Sensor is OPEN or SHORT)

ⓐ DISPLAY : STEP "2" LED is on & off continually.

ⓑ CONTROL : Delete the conditions of "RT-sensor Control" and operate normally.

ⓒ CANCEL : when RT-Sensor is working normally.

C. D1 ERROR

(It happens when D-Sensor is OPEN or SHORT)

ⓐ DISPLAY : STEP "1" LED is on & off continually.

ⓑ CONTROL : Return to next limit defrost time (40 min)

ⓒ CANCEL : when D-Sensor is working normally.

D. DR ERROR

(It happens when the system senses door opens more than 1 hour.)

ⓐ DISPLAY : STEP "2", "3" LED Lamps are on & off continually.

ⓑ CONTROL : Deletion of function related door switch sensing

ⓒ If door switch (open & close) is sensed, the error is terminated automatically

E. C1 ERROR

(When D-Sensor is more than -5°C, Comp operates over 3 hrs)

ⓐ DISPLAY : STEP "1" & "3" LED Lamps are on & off continually.

ⓑ CONTROL : The system is normally operating

ⓒ CANCEL : When Comp is off, D-Sensor is less than -5°C.

F. F3 ERROR

(Return to next limit defrost time (50 min))

6.1- DISPLAY : STEP "1" & "2" LED Lamps are on & off continually.

6.2- CONTROL : At Defrost Mode, Deletion of "PRE-COOL" Mode.

6.3- CANCEL : Completion of defrost returned by D-Sensor.

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CODE	LED	ERROR
R1	"3"	R sensor
RT	"2"	RT sensor
D1	"1"	D sensor
DR	"2", "3"	DR Switch
C1	"1", "3"	Cycle
F3	"1", "2"	Defrost

※ To Confirm Errors:
Push "S-COOL" for continuously and "TEMP" button 5 times.

※ The Priorities of Error :
R1→RT→D1→DR→C1→F3
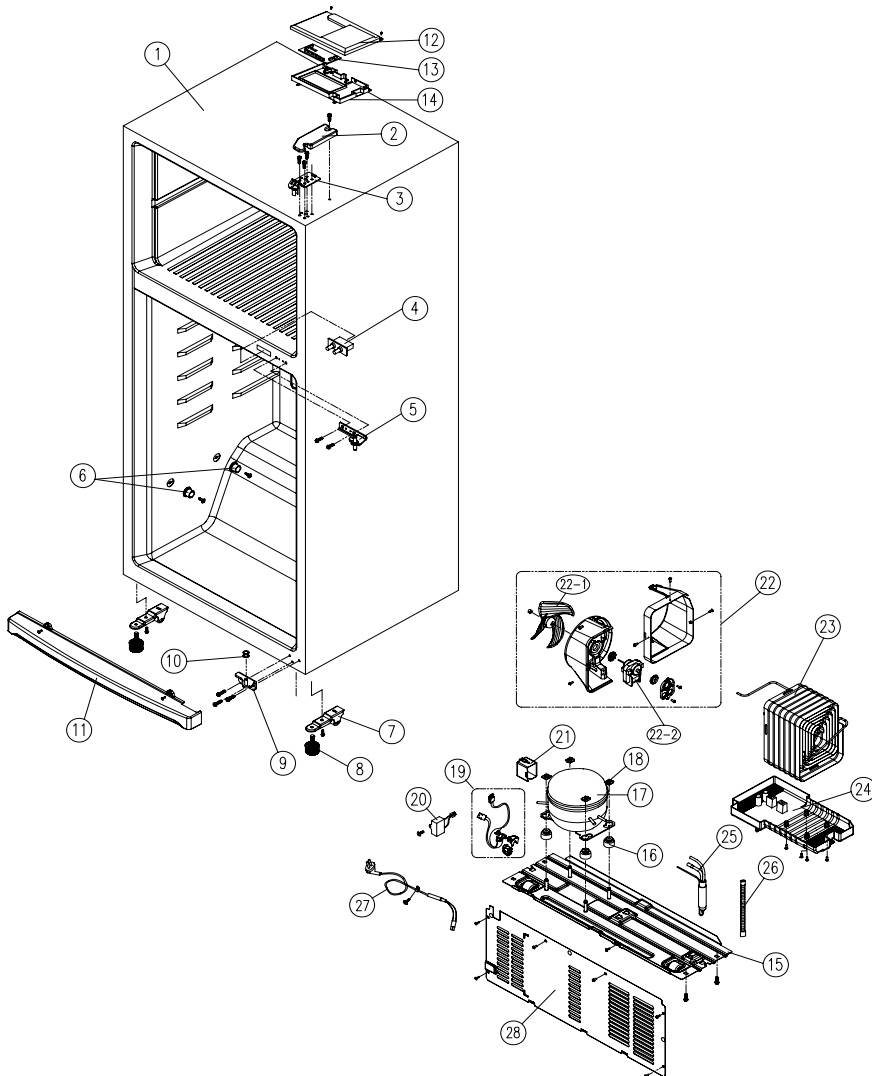
Cabinet Part

NO	PART-CODE	PART NAME	SPEC.	Q'ty	Remark
1	3000066300	ASSY CAB URT	FR-B512FH	1	
2	3001420700	COVER HI *T	PP	1	
3	3012930300	HINGE *T AS	FRP-510	1	
4	3018100010	SWITCH DR	2 BUTTON/4P,DSD-5	1	
5	3012925600	HINGE *M AS	FR-B512FH	1	
6	3012517500	GUIDE COVR VEGETB	PP	4	
7	3016502110	CASTER *F AS	FR-B512FH	2	
8	3012105100	FOOT ADJ AS	PP	2	
9	3012906401	HINGE *U AS	FR-B442CB	1	
10	3016007000	SPECIAL WASHER	SBHG T0.6	2	
11	3001404200	COVER CAB BRKT *F	WHITE	1	
12	3011444901	COVER M/PCB BOX	PP	1	
13	30143H8060	PCB MAIN AS	FRP-510	1	
14	3010519210	BOX M/PCB	PP	1	

Machine Room Part

NO	PART-CODE	PART NAME	SPEC.	Q'ty	Remark
15	3010345200	BASE COMP AS	FR-B512FH	1	
16	3010101600	ABSORBER COMP	NBR	4	
17	3956183D50	COMPRESSOR	MK183Q-L2U 220-240V-50HZ	1	
18	3016002500	SPECIAL WASHER	SK-5 T0.8	3	
19	3018130620	SWITCH P RELAY AS	FR-640K,265RHB,330	1	
20	3016401170	CAPACITOR RUN	350VAC 5UF(EUROPEAN)	1	
21	3811402100	COVER RELAY	DS3-3NORYL S/S	1	
22	3018500410	MOUTHBELL AS	DC12V	1	
22-1	3011834700	FAN	ABS OD3.17XD150	1	
22-2	3015914100	MOTOR C FAN	DL-2213DWCA-3	1	
23	3014467200	PIPE WICON AS	FR-B512FH	1	
24	3011190900	CASE VAPORI AS	FR-B512FH	1	
25	3016808100	DRYER AS	C1220T-M OD19.05XL135	1	
26	3013202700	HOSE DRN B	PP	1	
27	3011349300	CORD POWER AS	250V/16A, FERRITE	1	
28	3012407000	GRILLE AS	GRILL+SEAL	1	

- Some parts can be chaged for improving their perfomance without notice.
- Above parts number doesn't describe your own colour & printing.

Date	*A* mendment Note
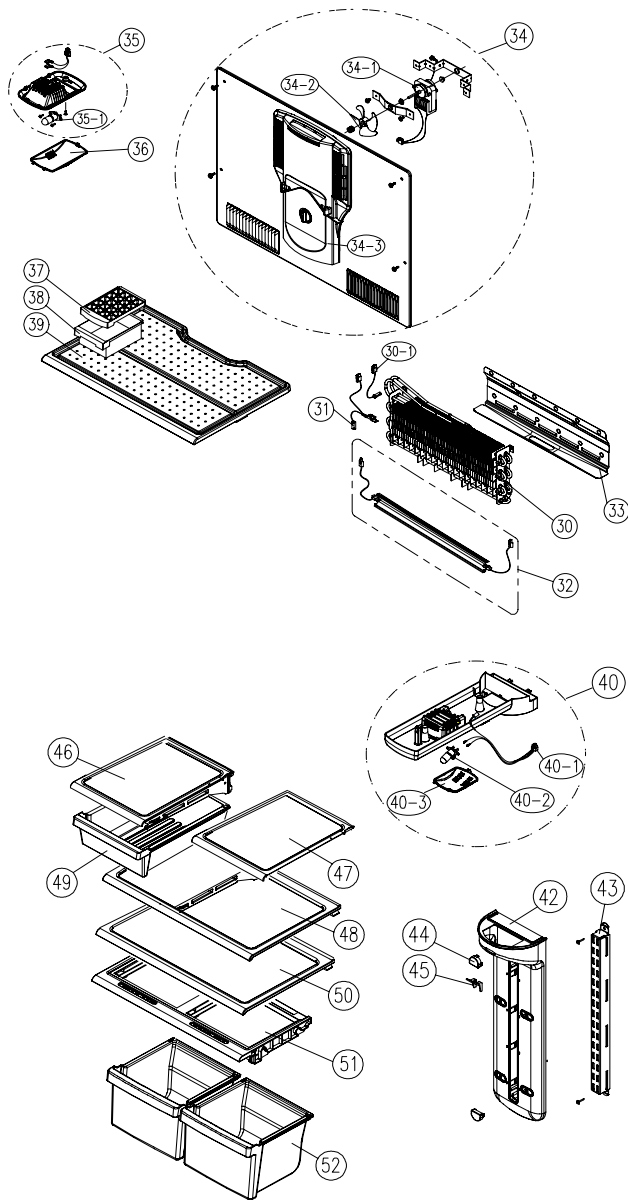
Freezer Compartment

NO	PART-CODE	PART NAME	SPEC.	FR-561N* FR-640N*	FR-641N*
30	3017065500	EVA AS	FRP-510	1	1
30-1	3012767700	HARNESS D SENS	NBC-K43-D24(PBN-43)	1	1
31	3017202700	FUSE TEMP AS	FR-B512FH	1	1
32	3012821010	HEATER D AS	230V, 250W	1	1
33	3012530800	GUIDE DRN	GL T0.4X550X240	1	1
34	3018927600	LOUVER F AS	FRP-510	1	1
34-1	3015919500	MOTOR F FAN AS	DC12V	1	1
34-2	3011802700	FAN AS	FAN(OD110)+CLAMP	1	1
34-3	3001410500	COVER F FAN AS	FR-B512FH	1	1
35	3010551700	BOX F LAMP AS	FR-B512FH	1	1
35-1	3017907700	SOCKET R LAMP AS	240V, 15W	1	1
36	3015511600	WINDOW F LAMP	PP	1	1
37	4010G56012	CASE ICING	PP(J-360)	1	1
38	4017Z99112	CASE ICE	HC-2	1	1
39	3956183D50	SHELF F	HIPS	1	1

Refrigerator Compartment

NO	PART-CODE	PART NAME	SPEC.	FR-561N* FR-640N*	FR-641N*
40	3010551510	BOX CONTL MULTI AS	HIPS	1	1
40-1	3012767500	HARNESS BOX CONTL AS	NBC-K43-D21(PBN-43)	1	1
40-2	3017907700	SOCKET R LAMP AS	240V, 15W	1	1
40-3	3015511500	WINDOW R LAMP	PP	1	1
42	3001403400	COVER M/F DUCT AS	COVER+INSU AS	1	1
43	3015310800	SUPPORTER SHELF R *M	SECC(EGI)+PAINT	1	x
43	3015310900	SUPPORTER M/FLOW DUCT	SECC(EGI)+PAINT	x	1
44	3011641200	DECO M/FLOW DUCT	HIPS, BLUE	2	x
45	3015204800	STOPPER SHELF SM	HIPS	1	x
46	3017844700	SHELF CHILD CASE SM AS	FR-B512FH	1	x
47	3017845000	SHELF SM *R AS	FR-B512FH	1	x
48	3017846300	SHELF CHILD CASE INJEC AS	FR-B512FM/L	x	1
49	3011190600	CASE CHILD	GPPS + SILK PRINT	1	1
50	3017846900	SHELF INJECT AS	FR-B512FH	1	1
51	3001404000	COVER V/CASE AS	FR-B512FH	1	1
52	3011190700	CASE VEGETB	GPPS + SILK PRINT	2	2

Date	*A*mendment Note

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Freezer Door

NO	PART-CODE	PART NAME	SPEC.	FR-561N* FR-640N*	FR-641N*
60	3000096100	ASSY F DR TOTAL	FRP-510	1	x
	-		FRP-511	x	1
60-1	3012320200	GASKET F DR AS	PVC, GRAY	1	1
60-2	3015513010	WINDOW FCP	ABS+INSERT	1	1
60-3	3014240120	PANEL F PCB AS	FRP-510,WHITE	1	1
	3014240130		FRP-510,SILVER		
61	3019029200	POCKET F DR	HIPS	2	2
62	3016042700	SPECIAL BOLT HNDL A	M6	2	2
63	3012644210	HANDLE F AS	FR-B512FH	1	x
64	3012644610		FR-B512FM/L	x	1

Refrigerator Door

NO	PART-CODE	PART NAME	SPEC.	FR-561N* FR-640N*	FR-641N*
65	3000066700	ASSY R DR TOTAL	FRM-510(WHITE EMBO)	1	x
	3018130610		FRM-510K(WHITE EMBO)		
	3000066720		FRM-510(O3 SILVER)		
	3000066730		FRM-510K(O3 SILVER)		
	3000066740		FRM-510(VCM)		
	3000066750		FRM-510K(VCM)		
	3000067400		FRM-511(WHITE EMBO)	x	1
	3000067410		FRM-511K(WHITE EMBO)		
	3000067420		FRM-511(O3 SILVER)		
	3000067430		FRM-511K(O3 SILVER)		
	3000067440		FRM-511(VCM)		
	3000067450		FRM-511K(VCM)		
65-1	3012320300	GASKET R DR AS	PVC, GRAY	1	1
66	3011190800	CASE EGG TRAY	GPPS	1	1
67	3019029300	POCKET EGG	HIPS	2	2
68	3019029400	POCKET UTILITY	HIPS	2	2
69	3019029600	POCKET JUMBO	HIPS	1	1
70	3019029500	POCKET BOTL	HIPS	1	1
71	3016042700	SPECIAL BOLT HNDL A	M6	3	2
72	3012644410	HANDLE R AS	FR-B512FH	1	x
73	3012644710		FR-B512FM/L	x	1
74	3012648300	HANDLE A AS	FRM-510	1	x
	3012648400	HANDLE B AS	FRM-511	x	1

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