

SAMSUNG

SPLIT-TYPE AIR CONDITIONER

INDOOR UNIT

OUTDOOR UNIT

Basic: AS10VBL

Model: AS12VBL

Model Code: AS09VBNNXSV AS09VBNXXSV

AS09VBNNXSE AS09VBNXXSE

AS12VBNNXSV AS12VBNXXSV

SERVICE Manual

AIR CONDITIONER



AS09VBLN / AS10VBLN



AS09VBLX



AS10VBLX

THE FEATURE OF PRODUCT

■ Silver Nano Evaporator

■ Anti Allergy filter, Deodorizing Filter

■ Anti-Bacterial Cross Fan

■ good'sleep Mode

: good'sleep Mode can help you sleep quickly and soundly and wake up refreshed.

■ MPI Mode

: The Micro Plasma Ion mode creates strong purified zone in your room.

Refer to the service manual in the GSPN(see the rear cover) for the more information.

Contents

1. Precautions	1-1
1-1 Installing the air conditioner	1-1
1-2 Power supply and circuit breaker	1-1
1-3 During operation	1-1
1-4 Disposing of the unit	1-2
1-5 Others	1-2
2. Product Specifications	2-1
2-1 The Feature of Product	2-1
2-2 Product Specifications	2-2
2-3 The Comparative Specifications of Product	2-3
2-4 Accessory and Option Specifications	2-5
3. Alignment and Adjustments	3-1
3-1 Test Mode	3-1
3-2 Indoor Display Error and Check Method	3-2
3-3 Outdoor LED Error Display and Check Method	3-3
3-4 Setting Option Setup Method	3-4
4. Disassembly and Reassembly	4-1
4-1 Indoor Unit	4-2
4-2 Outdoor Unit	4-5
5. Exploded Views and Parts List	5-1
5-1 Indoor Unit	5-1
5-2 Outdoor Unit	5-4
5-3 Ass'y Control In	5-8
6. Electrical Parts List	6-1
7. Wiring Diagram	7-1
8. Schematic Diagram	8-1
9. Circuit Descriptions	9-1
9-1 PCB Circuit Descriptions	9-1
9-2 Refrigerating Cycle Diagram	9-3
10. PCB Diagram	10-1

Contents

11. Operating Instructions	11-1
11-1 Name of Each Part	11-1
11-2 Wireless Remote Control-Buttons and Display	11-3
11-3 Main Function	11-4
12. Troubleshooting	12-1
12-1 Items to be checked first	12-1
12-2 Fault Diagnosis by Symptom	12-2
12-3 PCB Inspection Method	12-20
12-4 Main Part Inspection Method	12-22
13. Block Diagram	13-1
14. Reference Sheet	14-1
14-1 Index for Model Name	14-1
14-2 Low Refrigerant Pressure Distribution	14-2
14-3 Pressure & Capacity mark	14-3
14-4 Q & A for Non-trouble	14-4
14-5 Cleaning/Filter Change	14-7
14-6 Installation	14-9
14-7 Installation Diagram of Indoor Unit and Outdoor Unit	14-10



GSPN(Global Service Partner Network)

Area	Web Site
North America	http://service.samsungportal.com
Latin America	http://latin.samsungportal.com
CIS	http://cis.samsungportal.com
Europe	http://europe.samsungportal.com
China	http://china.samsungportal.com
Asia	http://asia.samsungportal.com
Mideast & Africa	http://mea.samsungportal.com

This Service Manual is a property of Samsung Electronics Co., Ltd.
Any unauthorized use of Manual can be punished under applicable
International and/or domestic law.

© Samsung Electronics Co., Ltd. Mar. 2007.
Printed in China.
Code No. DB98-00000A(1)

1. Precautions

1-1 Installing the air conditioner

- Users should not install the air conditioner by themselves.
Ask the dealer or authorized company to install the air conditioner except the window-type air conditioner in U.S.A and Canada.
- If you don't install the air conditioner properly, it may cause a fire, a water leakage or an electric shock.
- You must install the air conditioner according to the national wiring regulations and safety regulations.
- Install the indoor unit higher than 2.5m from the floor to avoid the injury caused by the operation of the fan.
(except the window-type air conditioner)
- The manufacturer is not responsible for any accidents or injury caused by an incorrect installation.
- When installing the built-in type air conditioner, keep all electric cables such as the power cable and the connection cord in pipes, ducts, or cable channels to protect them from the danger of impact or any other incidents.

1-2 Power supply and circuit breaker

- If the power cord of the air conditioner is damaged, it must be replaced by the manufacturer or a qualified person in order to avoid a hazard.
- The air conditioner must be plugged into an independent circuit if applicable or connect the power cable to the auxiliary circuit breaker.
An all pole disconnection from the power supply must be incorporated in the fixed wiring with a contact opening of >3mm.
- Do not extend an electric cord to the air conditioner.
- The air conditioner must be plugged in after you complete the installation.

1-3 During operation

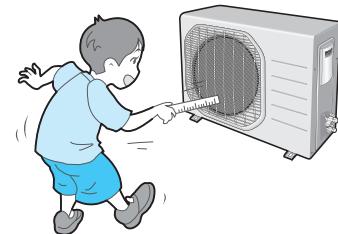
- Do not repair the air conditioner at your discretion.
It is recommended to contact a service center directly.
- Never spill any kind of liquid on the air conditioner.
If this happens, turn off the air conditioner and contact an authorized service center.
- Do not insert anything between the airflow blades to prevent damage of the inner fan and consequent injury.
Keep children away from the air conditioner.
- Do not place any obstacles in front of the air conditioner.
- Do not spray any kind of liquid into the indoor unit. If this happens, turn off the air conditioner and contact a service center.
- Make sure that the air conditioner is well ventilated at all times:
Do not place a cloth or other materials over it.
- Remove the batteries if you don't use the remote control for a long time. (If applicable)
- Use the remote control within 7 meters from the indoor unit. (If applicable)

1-4 Disposing of the unit

- Before throwing out the air conditioner, remove the batteries from the remote control.
- When you dispose of the air conditioner, consult your dealer. If pipes are removed incorrectly, refrigerant may blow out and cause air pollution. When it contacts with your skin, it can cause skin injury.
- The package of the air conditioner should be recycled or disposed of properly for environmental reasons.

1-5 Others

- Never store or load the air conditioner upside down or sideways to prevent the damage to the compressor.
- Young children or infirm persons should be always supervised when they use the air conditioner.
- Max current is measured according to IEC standard for safety.
- Current is measured according to ISO standard for energy efficiency.



2. Product Specifications

2-1 The Feature of Product

- **Silver Nano Evaporator**

- **Anti Allergy filter**

- **Deodorizing Filter**

- **good'sleep Mode**

good'sleep Mode can help you sleep quickly and soundly and wake up refreshed.

- **MPI Mode**

The Micro Plasma Ion mode creates strong purified zone in your room.

- **Anti-Bacterial Cross Fan**

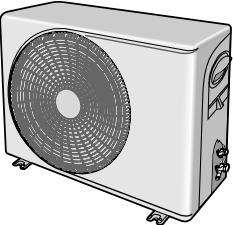
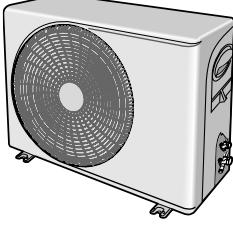


2-2 Product Specifications

Item	Model	AS09VBNXSV(XSE)		AS12VBNXSV			
		Indoor Unit	Outdoor Unit	Indoor Unit	Outdoor Unit		
Type		Wall-mounted		Wall-mounted			
Performance	Cooling	kW	2.6	2.75			
		Btu/hr	9000	12000			
	Dehumidifying		kg/h	0.9			
	Air Volume	Cooling	m ³ /min	10.0	28.0		
	Noise	Cooling	dB	41.0	54.0		
	Energy Efficiency Ratio	Cooling	W/W	3.03	2.78		
			Btu/hr	10.34	10.5		
Power	Power Source		-V-Hz	1-220-50	1-220-50		
	Power Consumption	Cooling	kW	0.87	1.1		
	Operating Current	Cooling	A	4.0	5.4		
	Power Factor	Cooling	%	98.86			
	Starting Current		A	20.0			
	Power Cord	Length	m	2.0	2.0		
		Number of Core Wire		3.0	3.0		
		Capacity	A	250V-10/16A	250V-10/16A		
Size	Outer Dimension	WidthxHeight xDepth	mm	825x285x189	660x470x240		
			inch	32.5x11.2x7.44	26x18.5x9.44		
	Weight		kg	8.5	24.5		
	refrigerant pipe	Liquid	mmxL(m)	6.35x5			
		Gas	mmxL(m)	9.52x5			
	Drain Hose		DxL(mm)	18x2,000			
	Compressor	Type		Rotary			
		Motor	Induction Motor(PSC)		Induction Motor(PSC)		
			Rated Output	W	868		
	Oil Type			NOC & Suniso-4GSD			
Blower	Blower	Type		Cross-flow	Propeller		
		Motor	Type		Steel		
			Rated Output	W	30		
Heat Exchanger			2 ROW 10 STEP	1 ROW 20 STEP	2 ROW 10 STEP		
Refrigerant Control Unit			Capillary Tube		Capillary Tube		
Freezer Oil Capacity			360		360		
Refrigerant to Change(R22)			420		420		
Protection Device(OLP)			RAC12188-12500		RBC12065-12500		
Cooling Test Condition			INDOOR UNIT : DB27°C WB19°C, OUTDOOR UNIT : DB35°C WB24°C				
Maximum Operation Condition			INDOOR UNIT : DB32°C WB23°C, OUTDOOR UNIT : DB43°C WB26°C				

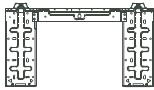
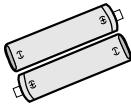
2-3 The Comparative Specifications of Product

09K/12K

Item		Development Model	Development Model
		AS09VBN	AS12VBN
Design	Indoor Unit		
	Outdoor Unit		
Net Weight	Indoor Unit	8.5kg	8.5kg
	Outdoor Unit	24.5kg	24.5kg
Outer Dimension	Indoor Unit	825 x 285 x 189 (mm)	825 x 285 x 192.5(mm)
	Outdoor Unit	660 x 470 x 240 (mm)	720 x 548 x 265 (mm)
Noise	Indoor Unit	41dB	43dB
	Outdoor Unit	54dB	54dB
Air Purifying System	Filter	Silver Nano Evaporator Cathechin Filter Deodorizing Fiter	Silver Nano Evaporator Cathechin Filter Deodorizing Fiter
	Micro Plasma Ion	MPI Mode	MPI Mode
Indoor Display		Digital I Display	Digital I Display

2-4 Accessory and Option Specifications

2-4-1 Accessories

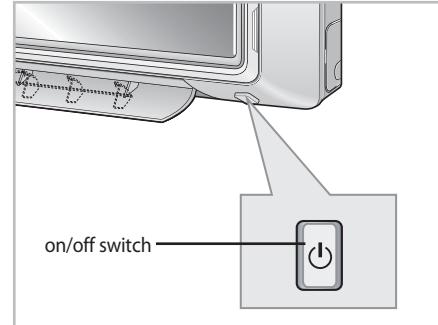
Item	Descriptions	Code-No.	Q'TY	Remark
	Ass'y Plate Hanger	DB94-01049B	1	
	Remote Control	DB93-04700R	1	
	Batteries for Remote Control	DB47-90024A	2	Indoor Unit
	User's Manual + Installation Manual	DB98-28709A	1	
	Rubber Leg	DB73-00179A (**09**) DB73-20134A (**10**)	4	Outdoor Unit

3. Alignment and Adjustments

3-1 Test Mode

■ How to Approach Test Mode

You can approach the Test Mode by pressing the on/off switch of indoor unit for 5 seconds.



■ Test Mode Operation Option

After installing the air conditioner, check whether each subordinate is normally operated or not by operating the Test Mode.

- **When an error occurs, display the Error Mode.**
- **Operation Mode :** Cool mode. Operate the cool mode by operating the compressor by force without the compressor ON/OFF according to the set temperature/indoor temperature. (Do not follow the antifreeze control)
- **Up-down louver :** Up-down swing mode
- **Indoor Fan :** High



- Because the Test Mode operate the cool mode by force not related to the set temperature / indoor temperature, check whether each subordinate is operated normally or not after completing installation and must turn off the power of the air conditioner.

3-2 Indoor Display Error and Check Method

No	LED Display	Explanation	Explanation
1	E464	IPM Over Current(O.C)	
2	E461	Compressor Starting Error	
3	E473	Compressor Lock Error	
4	E466	DC-Link voltage under/over Error	
5	E221	Outdoor temperature sensor Error	
6	E416	Discharge over temperature	
7	E251	Discharge temperature sensor Error	
8	E468	Current sensor Error	
9	E465	Compressor Vlimit Error	
10	E237	Coil temperature sensor Error	
11	E202	1min. Time out Communication	
12	E458	Fan Error	
13	E471	OTP Error	
14	E467	Compressor Rotation Error	
15	E440/E441 (Low/High)	Operation condition secession	
16	E469	DC-Link valtage sensor Error	
17	E462	I_Trip error / PFC Over current	
18	E554	Gas Leak Error	
19	E472	AC Line Zero Cross Signal out	
20	E556	Capacity Miss-match	
21	E121	Room sensor Error	Open/Short
22	E122	In-coil sensor Error	Open/Short
23	E154	FAN Error	Indoor Fan Motor Abnormal Operation Holding for 15 sec. at less than 450rpm
24	E101	1min. Time out Communication	
25	All Lamps Blink	EEPROM Error	
26	All Lamps Blink	Option Error	Option Not Set up, Option Data Error

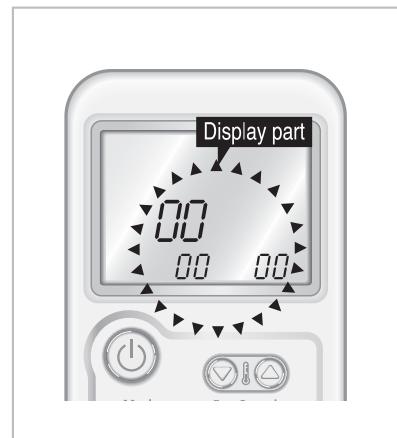
MEMO

3-4 Setting Option Setup Method

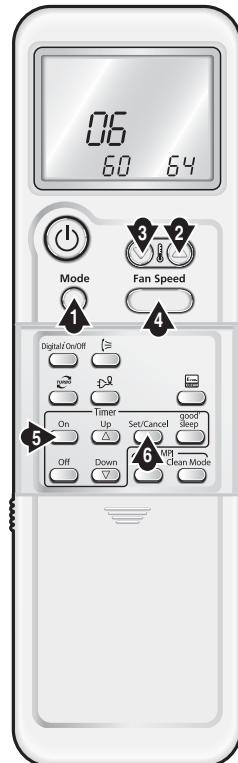
ex) Option No.: 066064-170373

Step 1 : Enter the Option Setup mode.

- 1st Take out the batteries of remote control.
- 2nd Press the temperature  button simultaneously and insert the battery again.
- 3rd Make sure the remote display shown as 



Step 2 : Enter the Option Setup mode and select your option according to the following procedure.



1
The default value is 
Otherwise, push the  button to 
Every time you push the button, the display panel reads  or  repeatedly.

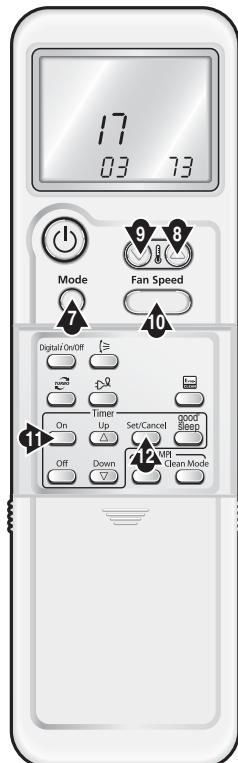
2
Push the  button to set the display panel to 
Every time you push the button, the display panel reads   
 $\rightarrow 3 \rightarrow \dots 9 \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$ repeatedly.

3
Push the  button to set the display panel to 
Every time you push the button, the display panel reads   
 $\rightarrow 3 \rightarrow \dots 9 \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$ repeatedly.

4
Push the  button to set the display panel to 
Every time you push the button, the display panel reads   
 $\rightarrow 3 \rightarrow \dots 9 \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$ repeatedly.

5
Push the  button to set the display panel to 
Every time you push the button, the display panel reads   
 $\rightarrow 3 \rightarrow \dots 9 \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$ repeatedly.

6
Push the  button to set the display panel to 
Every time you push the button, the display panel reads   
 $\rightarrow 3 \rightarrow \dots 9 \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$ repeatedly.



* Setting is not required if you must 0 a value which has a 0 default.

7 Press ^{Mode} button, then the default value is 00 00.

8 Push the  button to set the display panel to 7. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.

9 Push the  button to set the display panel to 0. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.

10 Push the  button to set the display panel to 3. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.

11 Push the  button to set the display panel to 7. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.

12 Push the  button to set the display panel to 3. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key,  to set the display part to 0 and check the display part.

→ The display part shows 00 00.

Press the Mode Selection key,  to set the display part to 1 and check the display part.

→ The display part shows 03 03.

Step 4 : Pressing the ON/OFF button ()

When pressing the operation ON/OFF key with the direction of remote control for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON() lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

Second, Re-insert the battery into the remote control.

Third, Press ON/OFF key with the direction of remote control for set.

• Error Mode

- 1st If all lamps of indoor unit are flickering, Plug out, plug in power plug again and press ON/OFF key to retry.
- 2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

■ OPTION ITEMS

MODEL \ REMOCON	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
AS09VBL	0	2	0	0	0	0	1	7	4	2	4	7
AS10VBL	0	2	0	0	0	0	1	7	4	2	4	9
AS12VBL	0	2	0	0	0	0	1	7	4	2	4	A
AS13VBL	0	2	0	0	0	0	1	7	4	2	6	A

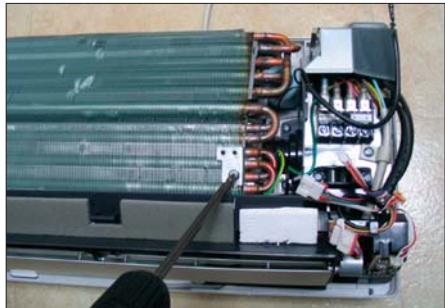
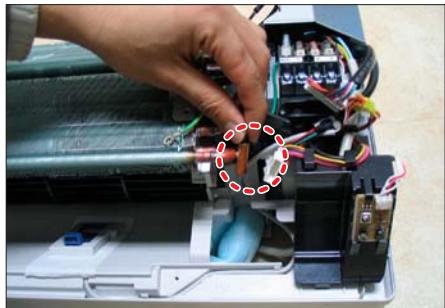
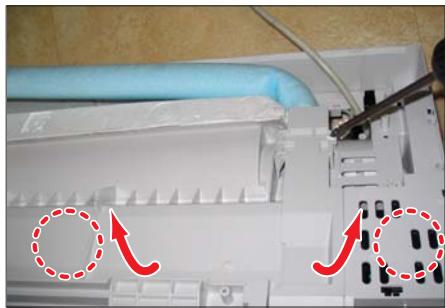
4. Disassembly and Reassembly

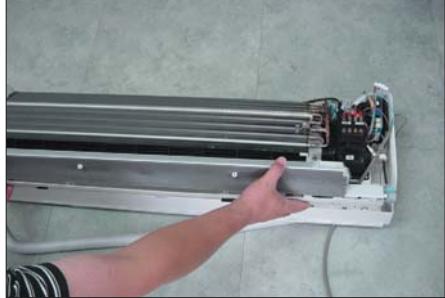
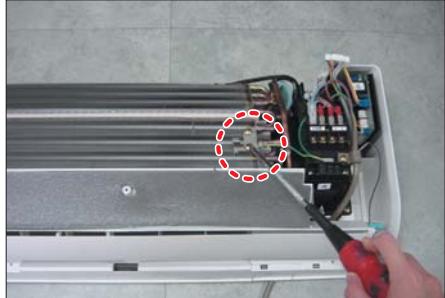
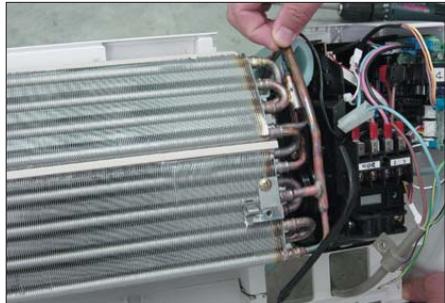
■ Necessary Tools

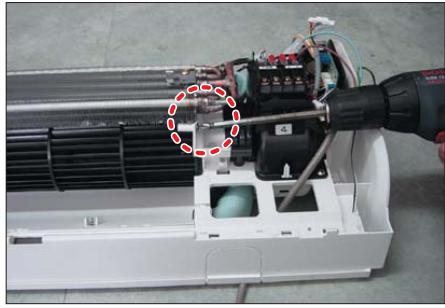
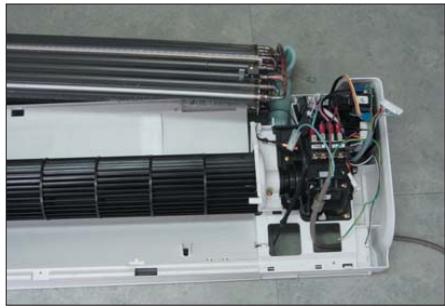
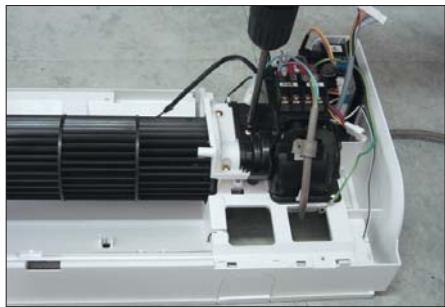
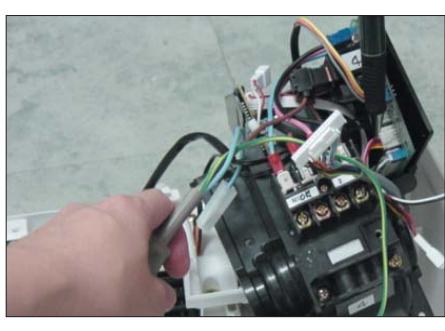
Item	Remark
+SCREW DRIVER	
MONKEY SPANNER	

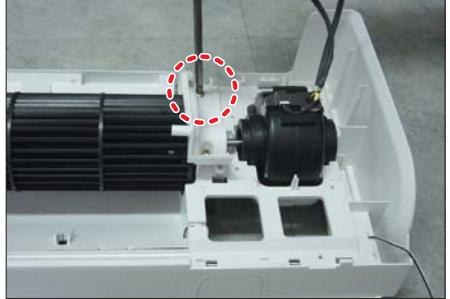
4-1 Indoor Unit

No	Parts	Procedure	Remark
1	PANEL-FRONT	<p>1) Stop the driving of air conditioner and shut off main power supply.</p> <p>2) Please open the front grille.</p> <p>3) Please detach link grilles from main frame.</p> <p>4) To detach front grille from main frame, please catches finger stop</p> <p>5) Please loosen clamping screw and detach the terminal cover.</p> <p>6) Please take out filter to downward.</p>	    

No	Parts	Procedure	Remark
		<p>7) Please detach the cover screw 3EA from the bottom of the panel front.</p> <p>8) Loosen screws 3EA at the bottom of panel front and 2EA at the front of the panel front.</p> <p>9) Loosen the screw of the ASSY DISPLAY.</p> <p>10) Please separate Linked connector from the assy display.</p> <p>11) Unlock 2 hooks between panel front and try drain to separate panel front.</p>	    

No	Parts	Procedure	Remark
		12) Unlock 2 hooks between panel front and back body.	
2	TRAY DRAIN	1) Please detach stepping motor wire. 2) Please pull tray drain and separate from back body.	
3	evap	1) Loosen the ground wire screw. 2) Detach the temperature sensor. 3) Detach the holder pipe.	  

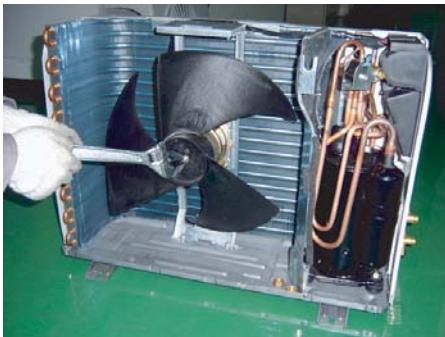
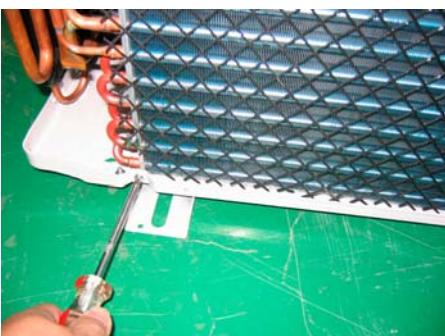
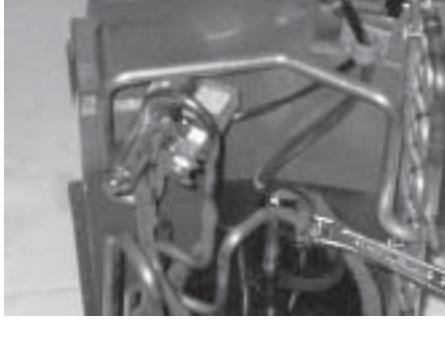
No	Parts	Procedure	Remark
		<p>4) Loosen 3 EA screws, left of holder evap.</p> <p>5) Loosen 1EA screw, right of holder motor.</p> <p>6) Detach the heat exchanger from indoor unit.</p>	  
4	MAIN PCB	<p>1) Loosen 4EA screws of holder.</p> <p>2) Detach Link wires of indoor, outdoor unit and fan motor.</p> <p>3) Detach assy control from indoor unit.</p>	 

No	Parts	Procedure	Remark
5	Fan Motor & Cross Fan	1) Loosen 2EA screws of holder motor and Detach the holder. 2) Loosen a screw and detach the cross fan. 3) Detach the holder bearing and motor.	

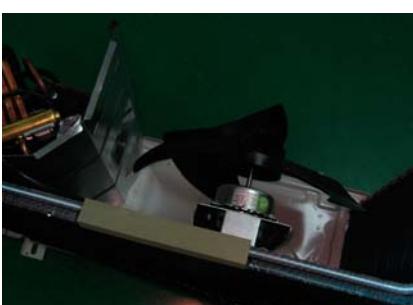
4-2 Outdoor Unit

09

No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen 2 fixing screws and separate the Cover Terminal.</p> <p>2) Loosen 2 fixing screws and separate the Cover Control.</p> <p>3) Separate the connection wire from the Terminal Block.</p> <p>4) Loosen 6 fixing screws and separate the Cabinet Front.</p> <p>5) Loosen 1 fixing screw of Ass'y E-part.</p> <p>6) Loosen 12 fixing screws and separate the Cabinet-Side</p>	    

No	Parts	Procedure	Remark
2	Fan & Motor	1) Remove the Nut Flange. (Turn to the clockwise) 2) Separate the Fan.	
		3) Loosen 4 fixing screws to separate the Motor. 4) Loosen 2 fixing screws and separate the Motor Bracket from the Base.	
3	Heat Exchanger	1) Loosen 2 fixing screws of left and right side. 2) Disassemble the inlet and outlet pipe by welding. 3) Separate the Heat Exchanger.	
4	Compressor	1) Open the Terminal Cover of Compressor and unscrew the Connection Terminal. 2) Disassemble the inlet and outlet pipe of Compressor by welding. 3) Loosen 3 bolts of the lower part. 4) Separate the Compressor.	
			

10

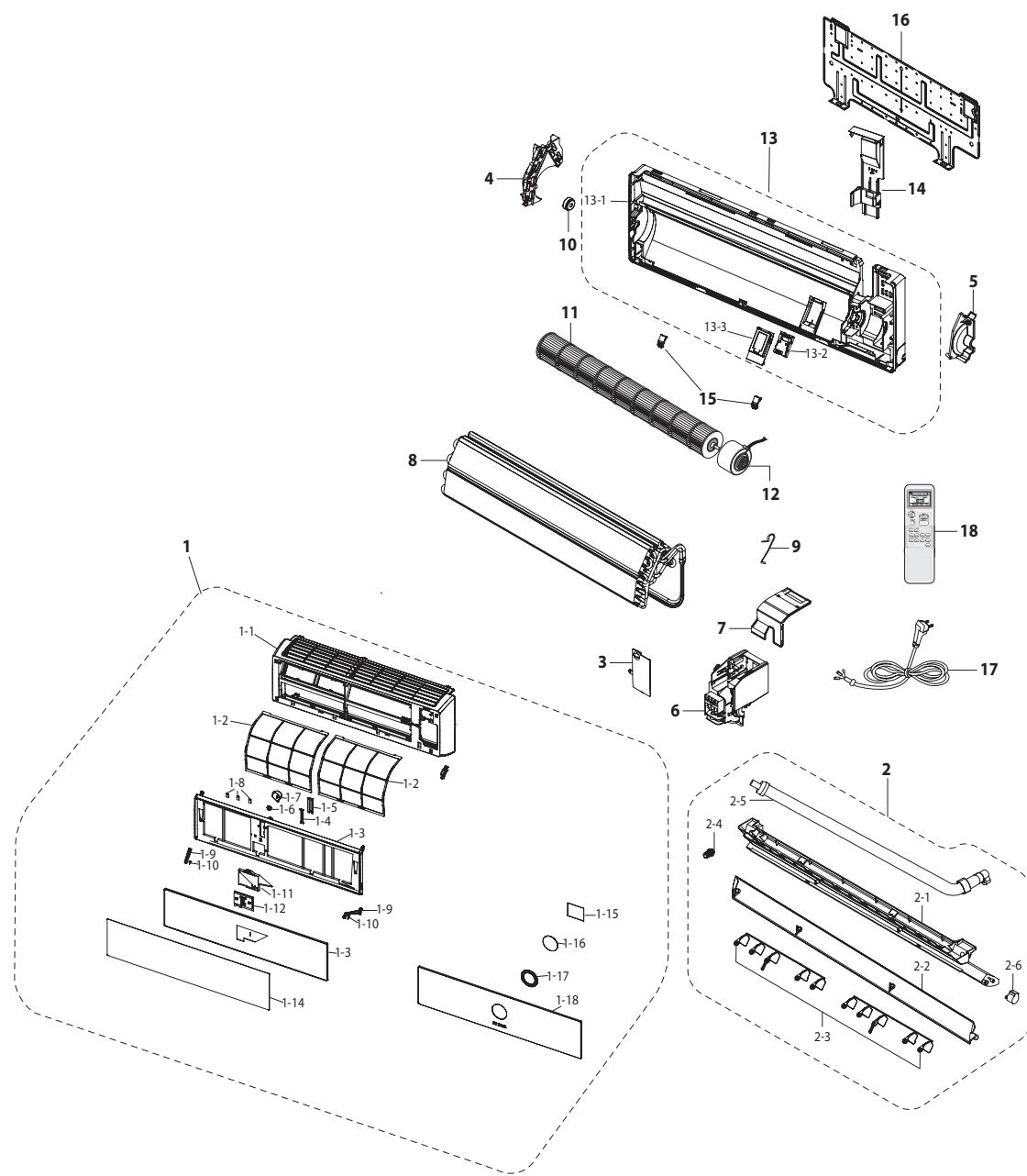
No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen the fixing screw of the Cover Control.</p> <p>2) Loosen the fixing screws on right and left, back Cabinet-Side edge and a fixing screw on the Cabinet-Front lower to detach the Cabinet-Front.</p> <p>3) Loosen the fixing screws of the Ass'y-Control out.</p> <p>4) Loosen the fixing screws of the Cabinet-Side RH.</p> <p>5) Loosen the fixing screws of the Cabinet-Side LF.</p>	    

No	Parts	Procedure	Remark
2	Fan & Motor	<p>1) Detach the Nut Flange.(Turn counterclockwise because the screw is right-handed)</p> <p>2) Detach the Fan.</p> <p>3) Loosen 4 fixing screws to detach the Motor.</p>	
3	Heat Exchanger	<p>1) Loosen 3 fixing screws of the Bar Steel.</p> <p>2) Loosen 2 fixing screws on both sides.</p> <p>3) Disassemble the pipe in both inlet and outlet with welding torch.</p> <p>4) Detach the Heat Exchanger.</p>	
4	Compressor	<p>1) Loosen the Terminal Cover nut to open the Terminal Cover.</p> <p>2) Disassemble the cloth sound felt.</p> <p>3) Disassemble the pipe in both inlet and outlet of the Compressor with welding torch.</p> <p>4) Loosen the 3 bolts at the bottom.</p> <p>5) Detach the Compressor.</p>	 

MEMO

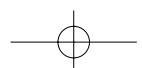
5. Exploded Views and Parts List

5-1 Indoor Unit

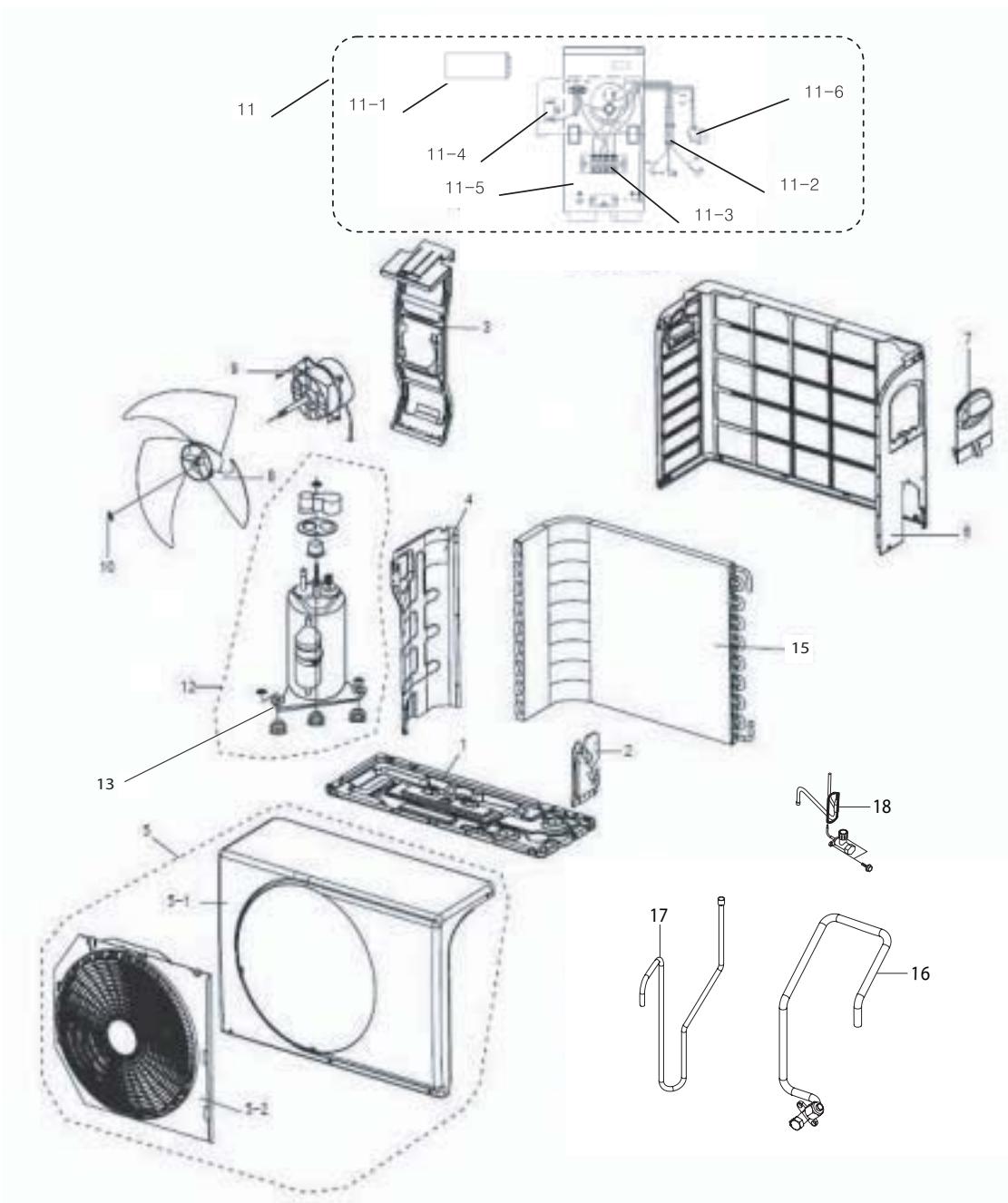


No	Code No.	Descriptions	Specification	Q'TY		SA/SNA	Remark
				AS09VBNNXSV AS09VBNNXSE	AS12VBNNXSV		
1	DB90-03704B	ASSY FRAME GRILLE-PANEL FRONT	VIVACE1,TS	1	1	SA	
1-1	DB64-01843A	PANEL-FRONT	AS10VBANXST,HIPS,T2.2,285,76	1	1	SNA	
1-2	DB63-01772A	FILTER-PRE	AS10VBANXST,PP,2,0,317,300,SI	2	2	SNA	
1-3	DB64-01845A	PANEL-MID	AS10VBANXST,HIPS,T2.5,223,800,	1	1	SNA	
1-4	DB66-01152A	LINK-GRILLE	WV,POM,74,2.5,5,WHITE,SSEC	1	1	SA	
1-5	DB66-01156A	GEAR-RACK	WV,POM,1,14,47.75,WHITE,3.1415	1	1	SA	
1-6	DB66-01155A	GEAR-PINION	WV,POM,1,18,26.5,WHITE,20,SS	1	1	SA	
1-7	DB31-00369B	MOTOR STEP	35BYJ46,-,-,-,DC12V,-,-,-	1	1	SA	
1-8	DA60-90148A	CLIP-CORD POWER	PP,SR-A17/19,T1,W10,L25,	1	1	SNA	
1-9	DB66-01176A	LINK-SUPPORT	MODERATO,POM,46,2.5,8,WHITE	4	4	SNA	
1-10-1	DB61-03139A	SPRING ETC-GRILLE	VIVACE,STC,#7.8,-,-,	1	1	SA	
1-11-2	DB61-03139A	SPRING ETC-GRILLE	VIVACE,STC,#7.8,-,-,	1	1	SA	
1-12	DB63-01771A	COVER-DISPLAY	AS10VBANXST,ABS,T2.5,96.3,	1	1	SNA	
1-13	DB61-03236A	FRAME-GRILLE	AS10VBANXST,HIPS,-,-,BLACK,	1	1	SNA	
1-14	DB92-01678A	ASSY WINDOW MIRROR	VIVALDI,TSE	1	1	SNA	
1-15	DB64-02034A	WINDOW-DISPLAY FILM	VIVACE,ETC,0.1,30,50	1	1	SNA	
2	DB94-01639A	ASSY TRAY DRAIN	VICTORY,LEFT,300,Y,R22,V	1	1	SA	
2-1	DB63-01770A	TRAY DRAIN	AS10VBANXST,ABS,T2.0,W91.3,L6	1	1	SNA	
2-2	DB61-03234A	BLADE-H	AS10VBANXST,ABS,SC-97471R VICTOR	1	1	SA	
2-3	DB61-01636A	BLADE-V	SS-P/J,PP,BLK,-,SSEC	2	2	SA	
2-4	DB73-00180A	RUBBER-CAP DRAIN	SS-PJT,GUM-EPM,-,-,-	1	1	SNA	
2-5	DB94-02195A	ASSY DRAIN-HOSE	BLACK,RIGTH,Y,R22,VIVALD	1	1	SA	
2-6	DB31-00369B	MOTOR STEP	35BYJ46,-,-,-,DC12V,-,-,-	1	1	SA	
3	DB90-04824A	ASSY COVER-TERMINAL	VIVACE,TSE,PL	1	1	SA	
4	DB63-01231A	COVER BEARING	ASP13WOWE,ABS,T2.0,-,-,-	1	1	SNA	
5	DB96-06057A	ASSY-SUPPORT EVAP RH	ASK09W8WD,C1120T-0	1	-	SNA	
	DB96-04443A	ASSY-SUPPORT EVAP RH	ASK(P)13W	-	1	SNA	
6	DB93-05974A	ASSY CONTROL IN	CO,T,1300 BTU,POWER SAVI	1	1	SA	
7	DB70-00794A	PLATE-COVER PBA	AS10VBANTSE,SGCC-M,0.5,8	1	1	SNA	
8	DB96-08794A	ASSY EVAP UNIT	VIVACE,9K	1	-	SA	
	DB96-06008F	ASSY EVAP UNIT	AS12VBL,AQ12VBL	-	1	SA	
9	DB67-60030A	SPRING-SENSOR	WW2-PJT,SGCC,-,-,-,T0.	1	1	SNA	
10	DB94-01908A	ASSY BEARING-RUBBER	FORTE,GUM NBR, HARDN	1	1	SA	
11	DB94-00456C	ASSY-CROSS FAN	WW1-PJT,SSEC	1	1	SA	
12	DB31-00219A	MOTOR FAN	YDK-016541408-01,SS-P/J Motor	1	1	SA	
13	DB94-01865A	ASSY BACK BODY	220V,Y,GRAY,R22,LEFT,NEO	1	-	SA	
	DB94-01864A	ASSY BACK BODY	220V,Y,GRAY,R22	-	1	SA	
13-1	DB61-03233A	BODY BACK	AS10VBANXST,HIPS,T2.0,H250V,82	1	1	SNA	
13-2	DB93-04230B	ASSY-SPI	SPI,FEED-BACK,RAC,4PIN,12V,-,-	1	1	SA	
13-3	DB63-01768A	COVER-MPI	AS10VBANXST,HIPS,T1.5,49.3,99.	1	1	SNA	
14	DB61-02270B	HOLDER-PIPE	AS10FAXST,HIPS,T2.5,165,30,H	1	1	SA	
15	DB67-00613A	CAP-SCREW	WW2,ABS,-,10,10,SS,-	2	2	SNA	
16	DB94-01049B	ASSY-PLATE HANGER	AS10FAXST,220V,Y,Gray,	1	1	SA	
17	3903-000095	CBF-POWER CORD	AT,RU,CP3,HOUSING(1Px2)+L	1	1	SA	XSV
	DB93-01549B	ASSY POWER CORD		1	-	SA	XSE
18	DB93-04700R	ASSY REMOCON	Vivace, Moderato/MPI (C/O),	1	1	SA	

MEMO



5-2 Outdoor Unit



Part List

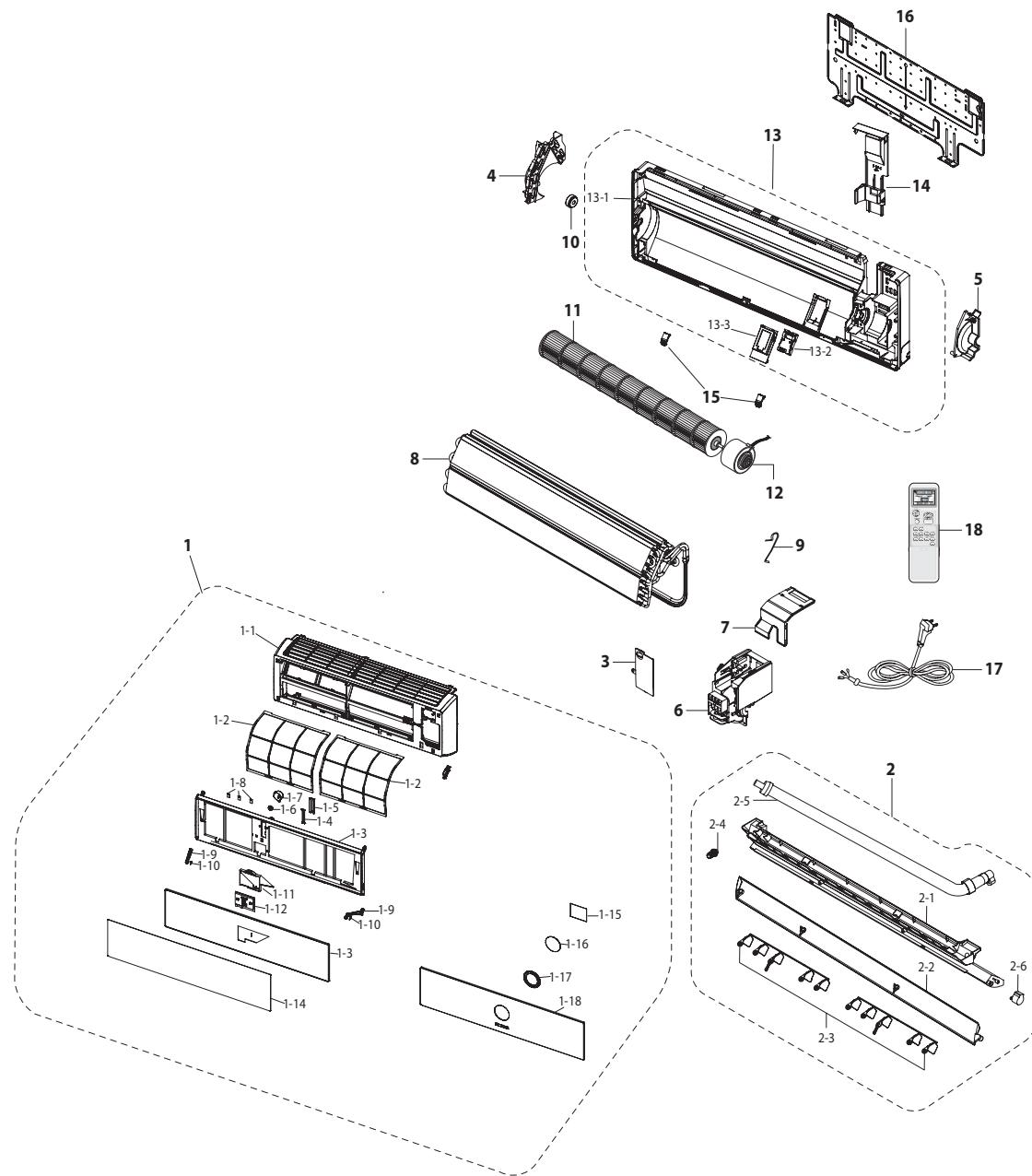
Explode view & Part List

No	Code No	Description	Specification	Q'TY		SA/SNA
				AS09VBNXXSV	AS12VBNXXSV	
1	DB90-02991A	ASSY BASE-OUTDOOR	AS09XAXSE,AFGI,NON-PAI	1	1	SA
2	DB61-02753B	BRACKET-VALVE	AS09XLXSE,AFGI,T1.0,W98,L1	1	1	SA
3	DB90-04200A	ASSY BRACKET MOTOR	AS09XL,SMART,9K,CO,22	1	1	SA
4	DB94-01852A	ASSY PARTITION	AS09XL,TSE	1	1	SA
5	DB90-04241A	ASSY CABI FRONT	FORTE1&SMART,PLASTIC BEL	1	1	SA
5-1	DB64-01596A	CABINET FRONT	WW1,PP,T2.5,W457,L660,-,SC	1	1	SNA
5-2	DB81-00681A	BELL MOUSE	PP,SC-90073R,463*420,T2.0,-,-	1	1	SA
6	DB90-03374B	ASSY-CABI SIDE	AS13FANXST,TSE	1	1	SA
7	DB63-01506A	COVER-CONTROL OUT	ASK12WHWE,HIPS,T1,W50,	1	1	SA
8	DB67-00036A	FAN-PROPELLER	AS+GF 20%,BLK,OD375,V21-PJ	1	1	SA
9	DB31-00426B	MOTOR FAN	Y5S613B826GL,PRISM, HB, TIFFAN	1	1	SA
10	DB60-30004A	SCREW-MACHINE	FL,-,-,M6,-,ZPC(WHT),SWRCH	1	1	SNA
11	DB93-05849C	ASSY CONTROL OUT	CO,N,12000,ENERGY,220V,	1	-	SA
	DB93-05849D	ASSY CONTROL OUT	CO,N,12000,ENERGY,220V,	-	1	SA
11-1	2501-001236	C-OIL	30uF,450V,BK,53x85mm,20.6	1	-	SA
	2501-001239	C-OIL	45uF,450V,BK,53x110mm,20.6mm	-	1	SA
11-2	DB95-01381A	ASSY-CONNECT WIRE TERMINAL BLO	AS13NLXST	1	1	SA
11-3	DB65-00167A	TERMINAL BLOCK	WW2,PC,SCREW,2,38(W)*25(H	1	1	SA
11-4	2301-001375	C-FILM,LEAD-OTHER	1500nF,+10-5%,450V,BK,	1	1	SA
11-5	DB90-03372A	ASSY COVER-CONTROL	AS10FAXST,HIPS,PMMA,T	1	1	SA
12	44B092DXAEL-TS	COMPRESSOR	,,SET,,R22,TH	1	-	SA
	44D124DXCEL-TS	ROTARY COMPRESSOR	:220V,50HZ,1P	-	1	SA
13	6009-001074	SCREW-SPECIAL	HH,HEX,FLANGE,M6,L16,ZPC(B	1	1	SA
14	DB62-04259A	INSULATION-COMP	V-PJT,FELT,T8,W235,L526,	1	-	SA
	DB62-04260A	INSULATION-COMP	V-PJT,FELT,T8,W263,L526,	-	1	SA
15	DB96-03064E	ASSY COND-UNIT	FORTE SMART,AQ05XAXSER	1	-	SA
	DB96-06023B	ASSY COND-UNIT	FORTE 1,AS10FAXST	-	1	SA
16	DB96-06449A	ASSY TUBE SUCTION	FORTE 9K,STD 5 STAR	1	-	SA
	DB96-08215A	ASSY TUBE SUCTION	AS12FLXXSE,FORTE1	-	1	SA
17	DB96-06804A	ASSY TUBE DISCHARGE	AS09XAXSE,FORTE EX	1	-	SA
	DB96-08216A	ASSY TUBE DISCHARGE	AS12FLXXSE,FORTE 1	-	1	SA
18	DB96-06448A	ASSY TUBE CAPILLARY	FORTE 9K,STD 5 STAR	1	-	SA
	DB96-06448B	ASSY TUBE CAPILLARY	AS12FAXSE,FORTE 1,1.	-	1	SA

MEMO

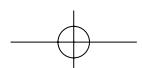
5. Exploded Views and Parts List

5-1 Indoor Unit

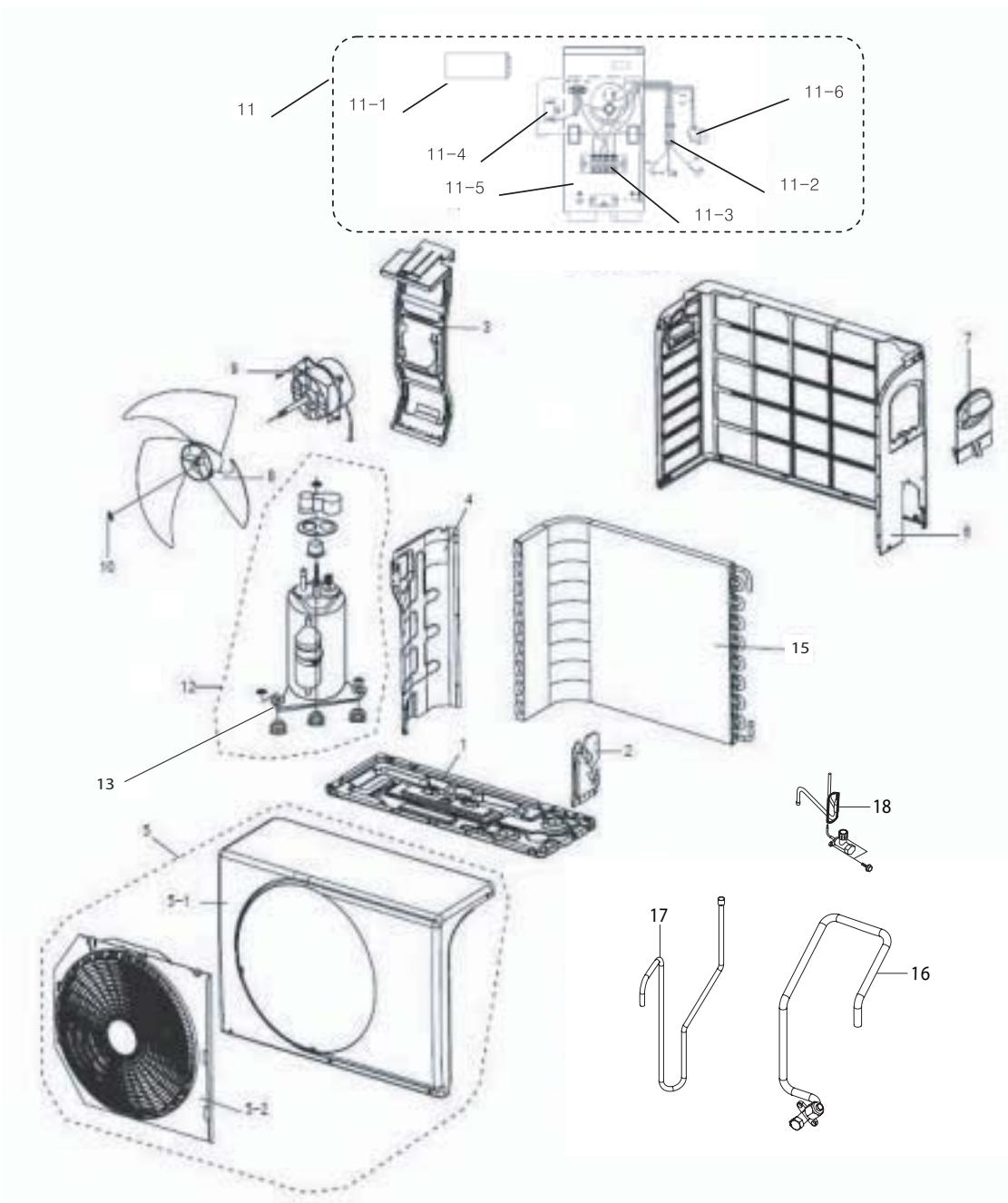


No	Code No.	Descriptions	Specification	Q'TY		SA/SNA	Remark
				AS09VBNNXSV AS09VBNNXSE	AS12VBNNXSV		
1	DB90-03704B	ASSY FRAME GRILLE-PANEL FRONT	VIVACE1,TS	1	1	SA	
1-1	DB64-01843A	PANEL-FRONT	AS10VBANXST,HIPS,T2.2,285,76	1	1	SNA	
1-2	DB63-01772A	FILTER-PRE	AS10VBANXST,PP,2,0,317,300,SI	2	2	SNA	
1-3	DB64-01845A	PANEL-MID	AS10VBANXST,HIPS,T2.5,223,800,	1	1	SNA	
1-4	DB66-01152A	LINK-GRILLE	WV,POM,74,2.5,5,WHITE,SSEC	1	1	SA	
1-5	DB66-01156A	GEAR-RACK	WV,POM,1,14,47.75,WHITE,3.1415	1	1	SA	
1-6	DB66-01155A	GEAR-PINION	WV,POM,1,18,26.5,WHITE,20,SS	1	1	SA	
1-7	DB31-00369B	MOTOR STEP	35BYJ46,-,-,-,DC12V,-,-,-	1	1	SA	
1-8	DA60-90148A	CLIP-CORD POWER	PP,SR-A17/19,T1,W10,L25,	1	1	SNA	
1-9	DB66-01176A	LINK-SUPPORT	MODERATO,POM,46,2.5,8,WHITE	4	4	SNA	
1-10-1	DB61-03139A	SPRING ETC-GRILLE	VIVACE,STC,#7.8,-,-,-	1	1	SA	
1-11-2	DB61-03139A	SPRING ETC-GRILLE	VIVACE,STC,#7.8,-,-,-	1	1	SA	
1-12	DB63-01771A	COVER-DISPLAY	AS10VBANXST,ABS,T2.5,96.3,	1	1	SNA	
1-13	DB61-03236A	FRAME-GRILLE	AS10VBANXST,HIPS,-,-,BLACK,	1	1	SNA	
1-14	DB92-01678A	ASSY WINDOW MIRROR	VIVALDI,TSE	1	1	SNA	
1-15	DB64-02034A	WINDOW-DISPLAY FILM	VIVACE,ETC,0.1,30,50	1	1	SNA	
2	DB94-01639A	ASSY TRAY DRAIN	VICTORY,LEFT,300,Y,R22,V	1	1	SA	
2-1	DB63-01770A	TRAY DRAIN	AS10VBANXST,ABS,T2.0,W91.3,L6	1	1	SNA	
2-2	DB61-03234A	BLADE-H	AS10VBANXST,ABS,SC-97471R VICTOR	1	1	SA	
2-3	DB61-01636A	BLADE-V	SS-P/J,PP,BLK,-,SSEC	2	2	SA	
2-4	DB73-00180A	RUBBER-CAP DRAIN	SS-PJT,GUM-EPM,-,-,-	1	1	SNA	
2-5	DB94-02195A	ASSY DRAIN-HOSE	BLACK,RIGTH,Y,R22,VIVALD	1	1	SA	
2-6	DB31-00369B	MOTOR STEP	35BYJ46,-,-,-,DC12V,-,-,-	1	1	SA	
3	DB90-04824A	ASSY COVER-TERMINAL	VIVACE,TSE,PL	1	1	SA	
4	DB63-01231A	COVER BEARING	ASP13WOWE,ABS,T2.0,-,-,-	1	1	SNA	
5	DB96-06057A	ASSY-SUPPORT EVAP RH	ASK09W8WD,C1120T-0	1	-	SNA	
	DB96-04443A	ASSY-SUPPORT EVAP RH	ASK(P)13W	-	1	SNA	
6	DB93-05974A	ASSY CONTROL IN	CO,T,1300 BTU,POWER SAVI	1	1	SA	
7	DB70-00794A	PLATE-COVER PBA	AS10VBANTSE,SGCC-M,0.5,8	1	1	SNA	
8	DB96-08794A	ASSY EVAP UNIT	VIVACE,9K	1	-	SA	
	DB96-06008F	ASSY EVAP UNIT	AS12VBL,AQ12VBL	-	1	SA	
9	DB67-60030A	SPRING-SENSOR	WW2-PJT,SGCC,-,-,-,T0.	1	1	SNA	
10	DB94-01908A	ASSY BEARING-RUBBER	FORTE,GUM NBR, HARDN	1	1	SA	
11	DB94-00456C	ASSY-CROSS FAN	WW1-PJT,SSEC	1	1	SA	
12	DB31-00219A	MOTOR FAN	YDK-016541408-01,SS-P/J Motor	1	1	SA	
13	DB94-01865A	ASSY BACK BODY	220V,Y,GRAY,R22,LEFT,NEO	1	-	SA	
	DB94-01864A	ASSY BACK BODY	220V,Y,GRAY,R22	-	1	SA	
13-1	DB61-03233A	BODY BACK	AS10VBANXST,HIPS,T2.0,H250V,82	1	1	SNA	
13-2	DB93-04230B	ASSY-SPI	SPI,FEED-BACK,RAC,4PIN,12V,-,-	1	1	SA	
13-3	DB63-01768A	COVER-MPI	AS10VBANXST,HIPS,T1.5,49.3,99.	1	1	SNA	
14	DB61-02270B	HOLDER-PIPE	AS10FAXST,HIPS,T2.5,165,30,H	1	1	SA	
15	DB67-00613A	CAP-SCREW	WW2,ABS,-,10,10,SS,-	2	2	SNA	
16	DB94-01049B	ASSY-PLATE HANGER	AS10FAXST,220V,Y,Gray,	1	1	SA	
17	3903-000095	CBF-POWER CORD	AT,RU,CP3,HOUSING(1Px2)+L	1	1	SA	XSV
	DB93-01549B	ASSY POWER CORD		1	-	SA	XSE
18	DB93-04700R	ASSY REMOCON	Vivace, Moderato/MPI (C/O),	1	1	SA	

MEMO



5-2 Outdoor Unit



Part List

Explode view & Part List

No	Code No	Description	Specification	Q'TY		SA/SNA
				AS09VBNXXSV	AS12VBNXXSV	
1	DB90-02991A	ASSY BASE-OUTDOOR	AS09XAXSE,AFGI,NON-PAI	1	1	SA
2	DB61-02753B	BRACKET-VALVE	AS09XLXSE,AFGI,T1.0,W98,L1	1	1	SA
3	DB90-04200A	ASSY BRACKET MOTOR	AS09XL,SMART,9K,CO,22	1	1	SA
4	DB94-01852A	ASSY PARTITION	AS09XL,TSE	1	1	SA
5	DB90-04241A	ASSY CABI FRONT	FORTE1&SMART,PLASTIC BEL	1	1	SA
5-1	DB64-01596A	CABINET FRONT	WW1,PP,T2.5,W457,L660,-,SC	1	1	SNA
5-2	DB81-00681A	BELL MOUSE	PP,SC-90073R,463*420,T2.0,-,-	1	1	SA
6	DB90-03374B	ASSY-CABI SIDE	AS13FANXST,TSE	1	1	SA
7	DB63-01506A	COVER-CONTROL OUT	ASK12WHWE,HIPS,T1,W50,	1	1	SA
8	DB67-00036A	FAN-PROPELLER	AS+GF 20%,BLK,OD375,V21-PJ	1	1	SA
9	DB31-00426B	MOTOR FAN	Y5S613B826GL,PRISM, HB, TIFFAN	1	1	SA
10	DB60-30004A	SCREW-MACHINE	FL,-,-,M6,-,ZPC(WHT),SWRCH	1	1	SNA
11	DB93-05849C	ASSY CONTROL OUT	CO,N,12000,ENERGY,220V,	1	-	SA
	DB93-05849D	ASSY CONTROL OUT	CO,N,12000,ENERGY,220V,	-	1	SA
11-1	2501-001236	C-OIL	30uF,450V,BK,53x85mm,20.6	1	-	SA
	2501-001239	C-OIL	45uF,450V,BK,53x110mm,20.6mm	-	1	SA
11-2	DB95-01381A	ASSY-CONNECT WIRE TERMINAL BLO	AS13NLXST	1	1	SA
11-3	DB65-00167A	TERMINAL BLOCK	WW2,PC,SCREW,2,38(W)*25(H	1	1	SA
11-4	2301-001375	C-FILM,LEAD-OTHER	1500nF,+10-5%,450V,BK,	1	1	SA
11-5	DB90-03372A	ASSY COVER-CONTROL	AS10FAXST,HIPS,PMMA,T	1	1	SA
12	44B092DXAEL-TS	COMPRESSOR	,,SET,,R22,TH	1	-	SA
	44D124DXCEL-TS	ROTARY COMPRESSOR	:220V,50HZ,1P	-	1	SA
13	6009-001074	SCREW-SPECIAL	HH,HEX,FLANGE,M6,L16,ZPC(B	1	1	SA
14	DB62-04259A	INSULATION-COMP	V-PJT,FELT,T8,W235,L526,	1	-	SA
	DB62-04260A	INSULATION-COMP	V-PJT,FELT,T8,W263,L526,	-	1	SA
15	DB96-03064E	ASSY COND-UNIT	FORTE SMART,AQ05XAXSER	1	-	SA
	DB96-06023B	ASSY COND-UNIT	FORTE 1,AS10FAXST	-	1	SA
16	DB96-06449A	ASSY TUBE SUCTION	FORTE 9K,STD 5 STAR	1	-	SA
	DB96-08215A	ASSY TUBE SUCTION	AS12FLXXSE,FORTE1	-	1	SA
17	DB96-06804A	ASSY TUBE DISCHARGE	AS09XAXSE,FORTE EX	1	-	SA
	DB96-08216A	ASSY TUBE DISCHARGE	AS12FLXXSE,FORTE 1	-	1	SA
18	DB96-06448A	ASSY TUBE CAPILLARY	FORTE 9K,STD 5 STAR	1	-	SA
	DB96-06448B	ASSY TUBE CAPILLARY	AS12FAXSE,FORTE 1,1.	-	1	SA

MEMO

6. Electrical Parts List

MAIN PCB:[DB93-05750G]

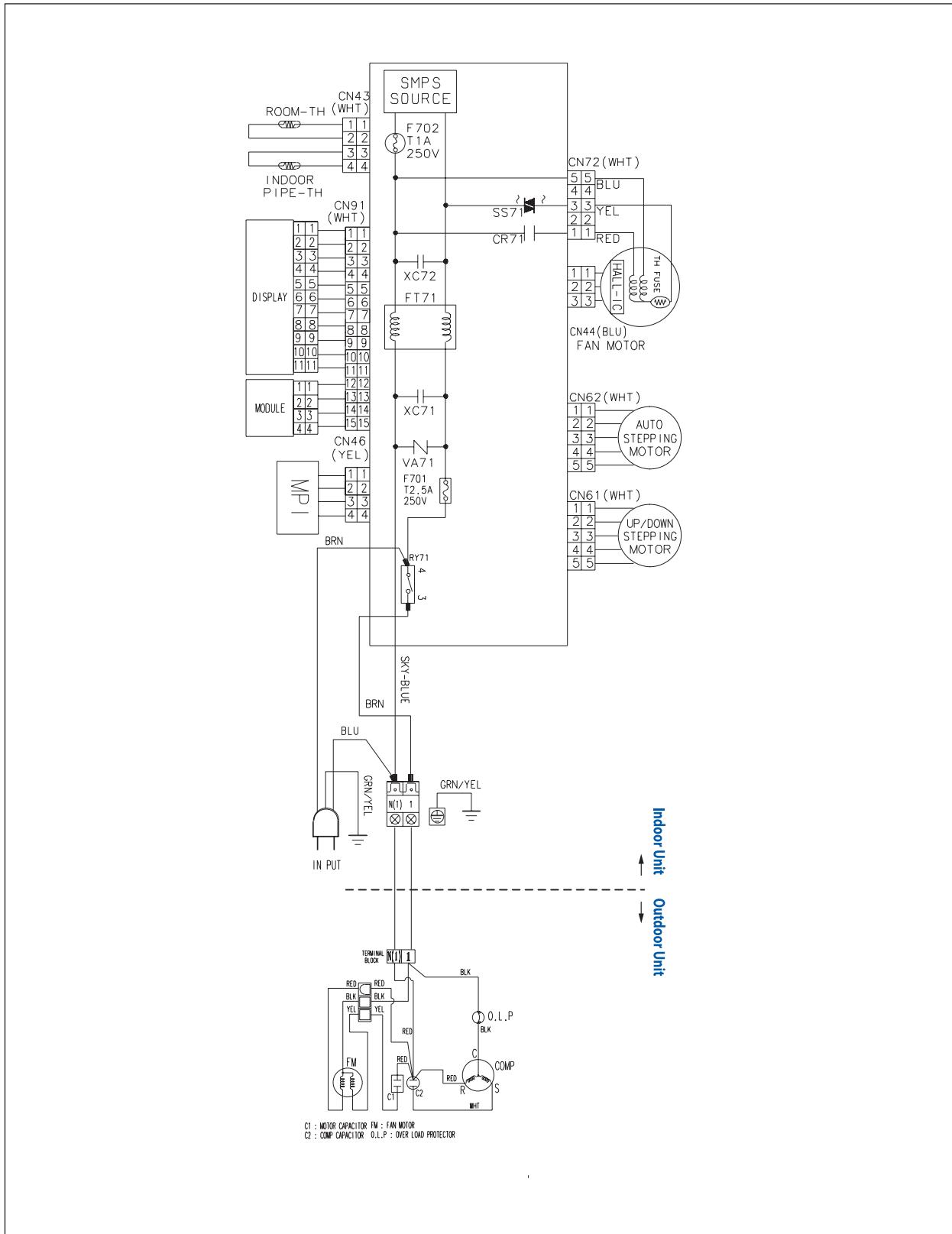
Parts Code	Design location	Quantity	Parts Description	Spec.	Service
0402-000012	D701	1	DIODE-RECTIFIER	UF4007,1KV,1A,DO-41,TP	SNA
0402-000137	D102	1	DIODE-RECTIFIER	1N4007,1KV,1A,DO-41,TP	SNA
0402-001194	D101	1	DIODE-RECTIFIER	UG2D,SHG2D,200V,2A,,-TP	SNA
0402-001298	BD71	1	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	SNA
0403-000252	ZD11	1	DIODE-ZENER	BZX84C3V6,3.4-3.8V,350mW,SOT-23,TP	SNA
0403-000466	ZD13	1	DIODE-ZENER	BZX84C4V3,4.3,225mW,SOT-23,TP	SNA
0403-001285	ZD12	1	DIODE-ZENER	BZX84-C11,10.4-11.6V,350mW,SOT- 23,TP	SNA
0501-000534	Q201	1	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-390	SNA
0501-000534	Q401	1	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-390	SNA
0501-000534	Q601	1	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-390	SNA
0501-000534	Q603	1	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-390	SNA
0501-002296	Q602	1	TR-SMALL SIGNAL	MMST2907A,PNP,200mW,SMT3,TP,100-300	SNA
0504-001064	Q101	1	TR-DIGITAL	DTC114EKA,NPN,200mW,10K/10K,SOT-23,TP	SNA
0506-000175	IC05	1	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	SNA
0506-000175	IC06	1	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	SNA
0506-000175	IC08	1	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	SNA
0604-001003	PC02	1	PHOTO-COUPLER	TR,50-150%,200mW,DIP-4,ST	SNA
0604-001038	PC01	1	PHOTO-COUPLER	TR,130-260%,200mW,DIP-4,ST	SNA
0604-001038	PC03	1	PHOTO-COUPLER	TR,130-260%,200mW,DIP-4,ST	SNA
1003-001462	IC07	1	IC-SOURCE DRIVER	TD62783AFW,SOL,18P,-8,- 500mA,TP,PLASTIC,50V,-40TO85C,1.47,50V,- 93LC56,256x8/128x16Bit,SOP,8P,5x4mm,- ,2.5V,-,-40to+85C,10uA,-,TP	SNA
1103-001175	IC09	1	IC-EEPROM	78L05A,TO-92,3P-,PLASTIC,4.6/ 266,DIP,8P,300MIL,PLASTIC,-0.3/700V,-,-	SNA
1203-000429	IC02	1	IC-POSI.FIXED REG.	40TO+150C,560mA,,-ST	SNA
1203-002545	IC01	1	IC-PWM CONTROLLER	220hm,1.4A,3100K,9.5mW/C,,-7.0,- 680V,4500A,17.5x6.5mm,TP	SNA
1404-001274	NTC1	1	THERMISTOR-NTC	12Mohm,5%,1/2W,AA,TP,3.4x9mm	SNA
1405-000160	VA71	1	VARISTOR	12Mohm,5%,1/2W,AA,TP,3.4x9mm	SNA
2002-001104	R103	1	R-COMPOSITION	100Kohm,5%,2W,AA,TP,4x12mm	SNA
2002-001104	R104	1	R-COMPOSITION	100ohm,5%,1/10W,TP,1608	SNA
2003-000448	R106	1	R-METAL OXIDE(S)	330ohm,5%,1/10W,TP,1608	SNA
2007-000074	R101	1	R-CHIP	330ohm,5%,1/10W,TP,1608	SNA
2007-000076	R405	1	R-CHIP	470ohm,5%,1/10W,TP,1608	SNA
2007-000076	R406	1	R-CHIP	470ohm,5%,1/10W,TP,1608	SNA
2007-000077	R105	1	R-CHIP	470ohm,5%,1/10W,TP,1608	SNA
2007-000077	R607	1	R-CHIP	470ohm,5%,1/10W,TP,1608	SNA
2007-000077	R608	1	R-CHIP	470ohm,5%,1/10W,TP,1608	SNA
2007-000078	R210	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R211	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R212	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R301	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R302	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R401	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R402	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R404	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R602	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R604	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R610	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000078	R611	1	R-CHIP	1Kohm,5%,1/10W,TP,1608	SNA
2007-000084	R606	1	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	SNA
2007-000084	R909	1	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	SNA
2007-000087	R403	1	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	SNA
2007-000090	R209	1	R-CHIP	10Kohm,5%,1/10W,TP,1608	SNA
2007-000090	R501	1	R-CHIP	10Kohm,5%,1/10W,TP,1608	SNA
2007-000090	R605	1	R-CHIP	10Kohm,5%,1/10W,TP,1608	SNA
2007-000090	R802	1	R-CHIP	10Kohm,5%,1/10W,TP,1608	SNA
2007-000090	R908	1	R-CHIP	10Kohm,5%,1/10W,TP,1608	SNA
2007-000109	R502	1	R-CHIP	1Mohm,5%,1/10W,TP,1608	SNA
2007-000119	R609	1	R-CHIP	560ohm,5%,1/10W,TP,1608	SNA
2007-000124	R102	1	R-CHIP	2.2Kohm,5%,1/10W,TP,1608	SNA
2007-000944	R201	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R202	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R203	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R204	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R205	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R206	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-000944	R207	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA

MAIN PCB:[DB93-05750G] (cont.)

Parts Code	Design location	Quantity	Parts Description	Spec.	Service
2007-000944	R208	1	R-CHIP	47Kohm,5%,1/4W,TP,3216	SNA
2007-001068	R407	1	R-CHIP	6.8Kohm,1%,1/10W,TP,1608	SNA
2007-001068	R408	1	R-CHIP	6.8Kohm,1%,1/10W,TP,1608	SNA
2007-001318	R801	1	R-CHIP	1Kohm,5%,1/4W,TP,3216	SNA
2201-000983	C110	1	C-CERAMIC,DISC	1NF,10%,2KV,Y5P,TP,9X5MM,7.5	SNA
2201-000987	C107	1	C-CERAMIC,DISC	2.2NF,20%,400V,Y5U,BK,12.5X6MM,10	SNA
2201-000987	C108	1	C-CERAMIC,DISC	2.2NF,20%,400V,Y5U,BK,12.5X6MM,10	SNA
2201-002193	C109	1	C-CERAMIC,DISC	0.082nF,?10%,3000V,SL,-,8.5 X 3,5	SNA
2203-000257	C202	1	C-CER,CHIP	10nF,10%,50V,X7R,1608	SNA
2203-000257	C203	1	C-CER,CHIP	10nF,10%,50V,X7R,1608	SNA
2203-000257	C404	1	C-CER,CHIP	10nF,10%,50V,X7R,1608	SNA
2203-000440	C401	1	C-CER,CHIP	1nF,10%,50V,X7R,1608	SNA
2203-005249	C102	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C104	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C106	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C201	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C204	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C301	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C302	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C402	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C403	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C501	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C502	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C503	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C504	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C801	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C802	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2203-005249	C901	1	C-CER,CHIP	100nF,10%,50V,X7R,1608	SNA
2301-001220	XC71	1	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	SNA
2301-001220	XC72	1	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	SNA
2301-001251	CR71	1	C-FILM,LEAD-PPF	1.2uF,10%,450Vac,BK,38x18x30,3	SNA
2401-001363	C105	1	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	SNA
2401-000151	C103	1	C-AL	1000uF,20%,25V,GP,TP,10x20,5	SNA
2401-002300	C601	1	C-AL	47?F,20%,50V,GP,TP,6.3x11.5mm	SNA
2401-004219	C101	1	C-AL	15?F,20%,500V,-,TP,12.5X20,5mm	SNA
2802-001198	X501	1	RESONATOR-CERAMIC	10MHZ,0.5%,BK,8X3X5.5MM	SNA
3002-001129	BZ61	1	BUZZER-PIEZO	85dB,-,-,2KHZ,-	SNA
3501-001169	RY71	1	RELAY-POWER	12VDC,0.9W,20000MA,SPST,20MS,10MS	SNA
3502-000115	SS71	1	SSR	12Vdc,-,2A,1mS,1mS	SNA
3601-000400	F701	1	FUSE-CARTRIDGE	250V,2.5A,TIME-LAG,GLASS,5.2x20mm	SNA
3601-001209	F702	1	FUSE-RADIAL LEAD	250V,1A,TIME-LAG,-,8.5x8mm	SNA
3711-000262	CN72	1	HEADER-BOARD TO CABLE	1WALL,3P,1R,7.92MM,STRAIGHT,SN,WHT	SNA
3711-000879	CN44	1	HEADER-BOARD TO CABLE	BOX,3P,1R,2.5mm,STRAIGHT,SN,BLU	SNA
3711-000941	CN46	1	HEADER-BOARD TO CABLE	BOX,4P,1R,2.5mm,STRAIGHT,SN	SNA
3711-000999	CN62	1	HEADER-BOARD TO CABLE	BOX,5P,1R,2.5mm,STRAIGHT,SN,WHT	SNA
3711-004352	CN91	1	HEADER-BOARD TO CABLE	BOX,15P,1R,2mm,STRAIGHT,SN,NTR	SNA
3711-004379	CN43	1	HEADER-BOARD TO CABLE	BOX,4P,1R,2mm,STRAIGHT,SN,NTR	SNA
3711-004484	CN61	1	HEADER-BOARD TO CABLE	BOX,5P,1R,2mm,STRAIGHT,SN,NTR	SNA
DB09-00495B	IC04	1	IC MICOM	S3C848AXB0-QT8A,-,64P,+5V,10MHz,STM-0626-OA, ROM Size: 48K bytes,8BIT,8BIT,QFP,QFP,-,8BIT,-40~+85	SA
DB26-00065A	ST11	1	TRANS SWITCHING	EI1916-09N,9W,PREMIUM,-,160V/280V,PL-3	SNA
DB27-00020A	FT71	1	COIL CHOKE	EI1916,-,EI1916,50/60Hz,UL,1.65mH?10%,-,-,750mA,DC12V,INDIA IMPROVE	SNA
DB93-05953A	POWER(N)	1	CONNECT WIRE	SSU10V-1500S, TNTERIOR SLIM,15 VIVACE ,#1015 18 AWG,-,1P-,SKY BLU ,175022-1 (AMP),ST780400 (KET),TP,220V/50Hz,4mm,170mm,-,-,SSEC	SNA
DB41-00650A		1	PCB MAIN	FORTE-PJT DELUXE,FR-4,2 LAYER, 6	SA
3602-001012	F701	1	FUSE-BLOCK	500V,100M	SNA

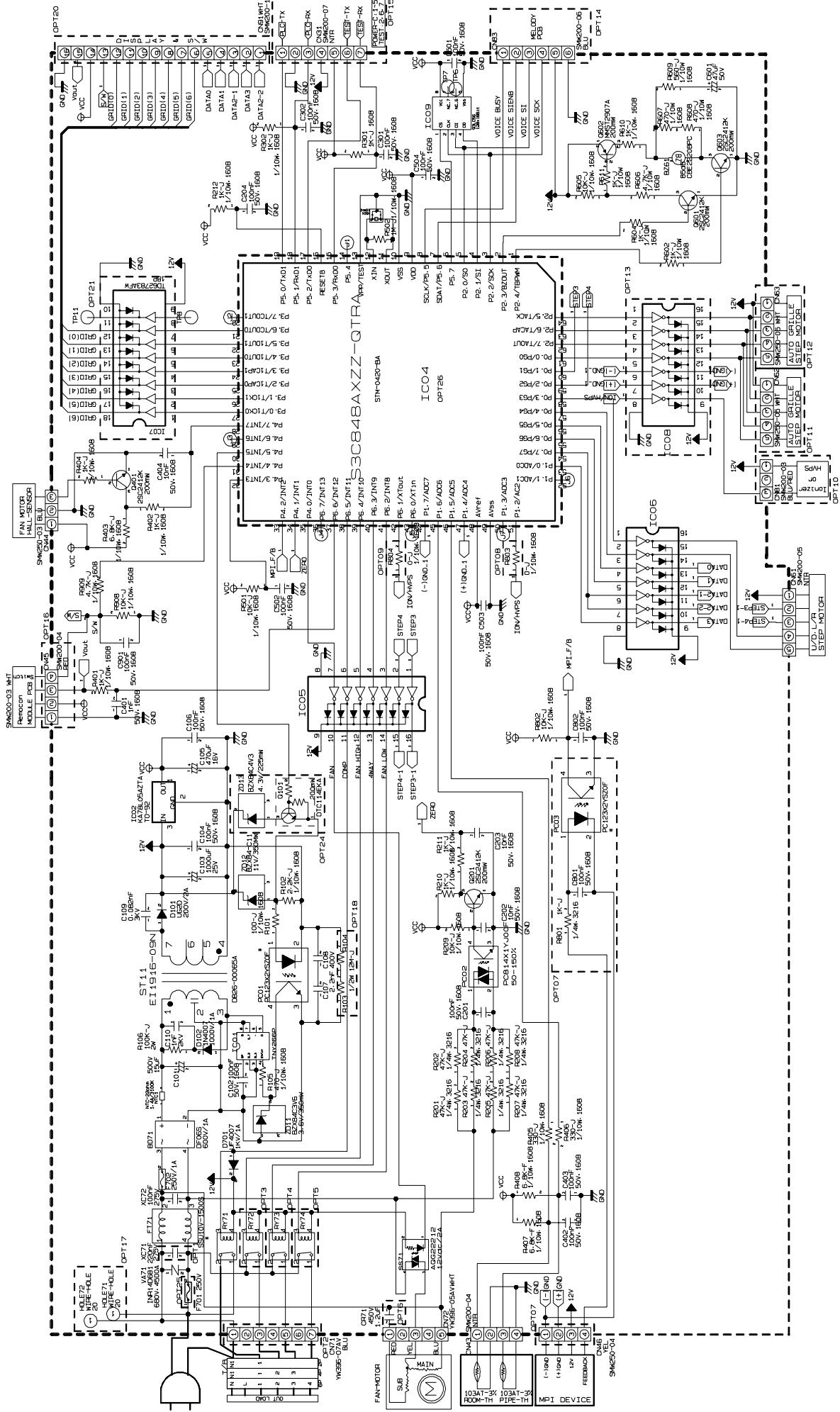
7. Wiring Diagram

C/O(9K/10K)



This Document can not be used without Samsung's authorization.

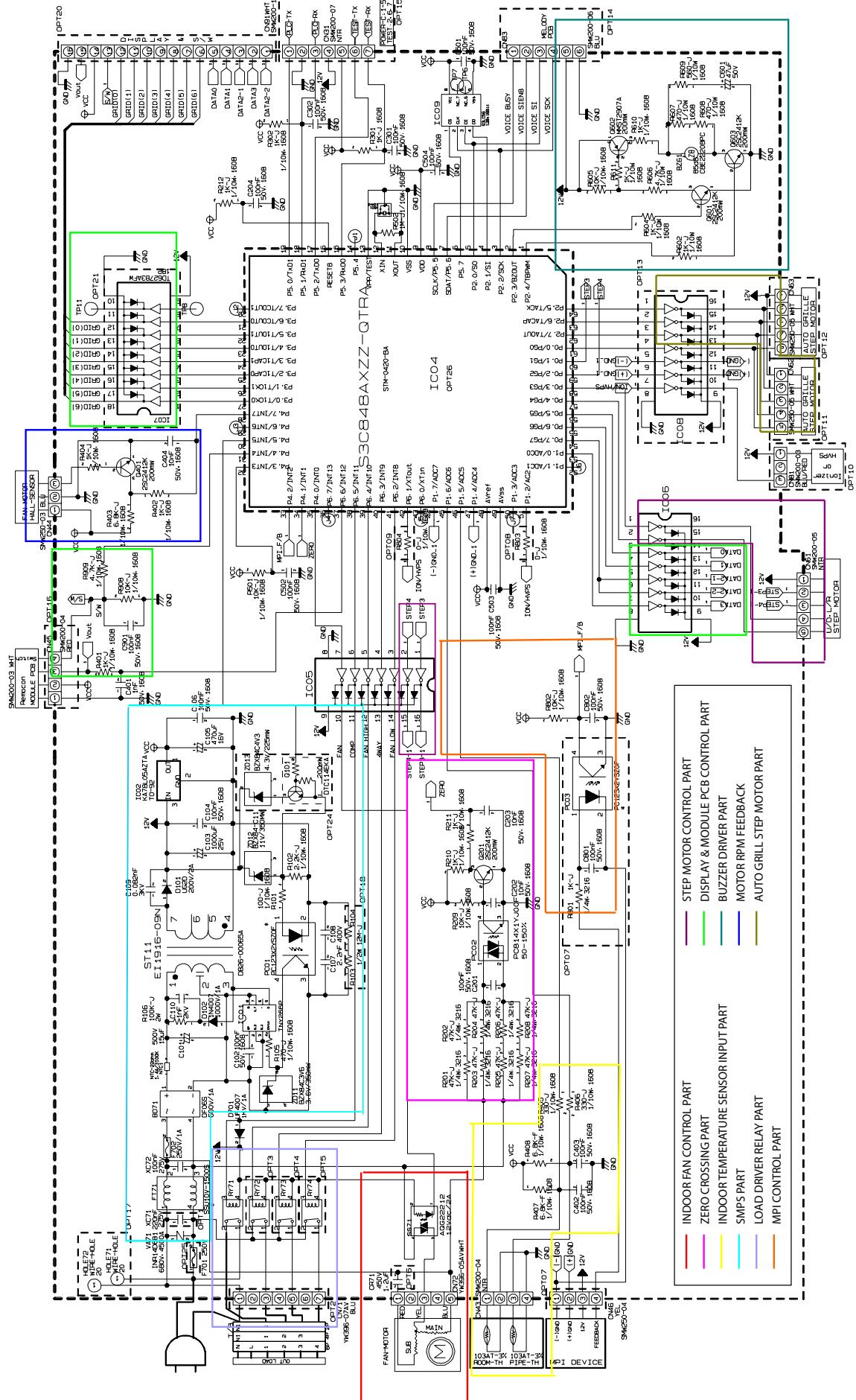
3. Schematic Diagram



This Document can not be used without SamSUNG's authorization

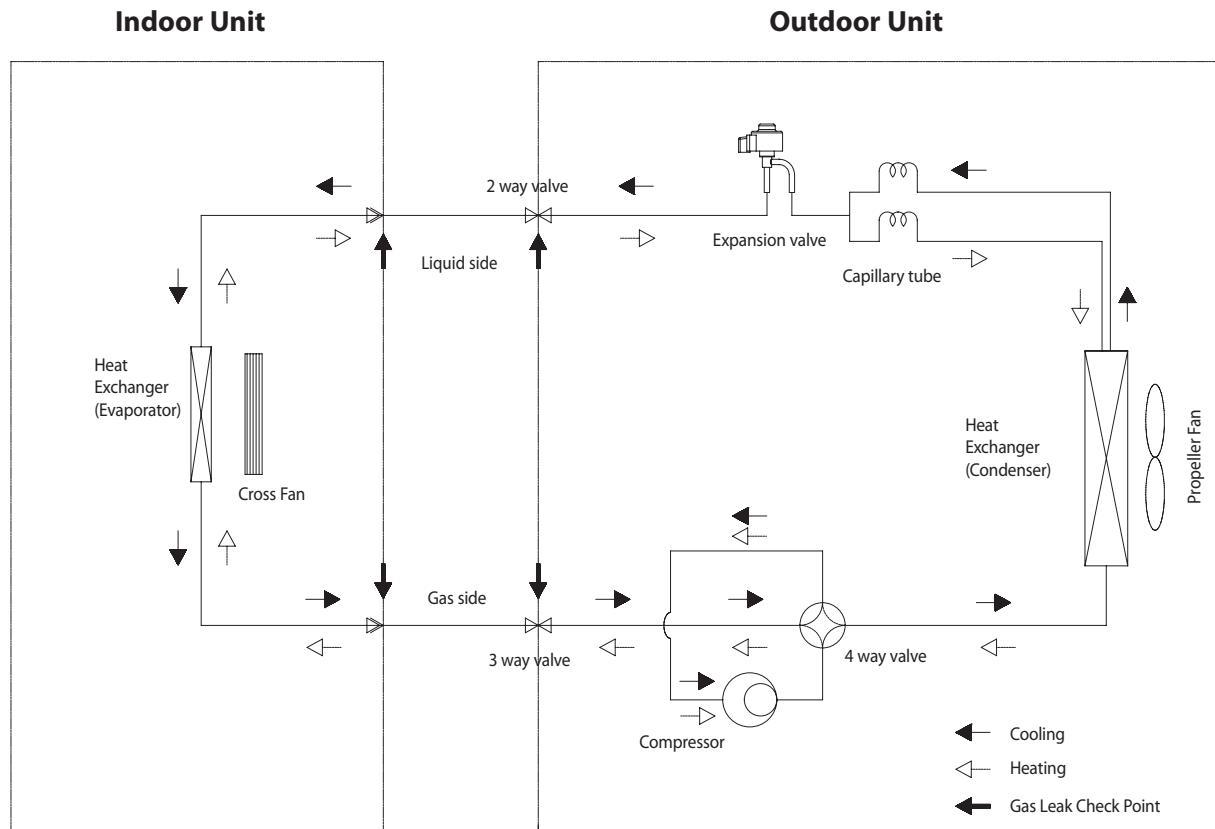
9. Circuit Descriptions

9-1 PCB Circuit Descriptions



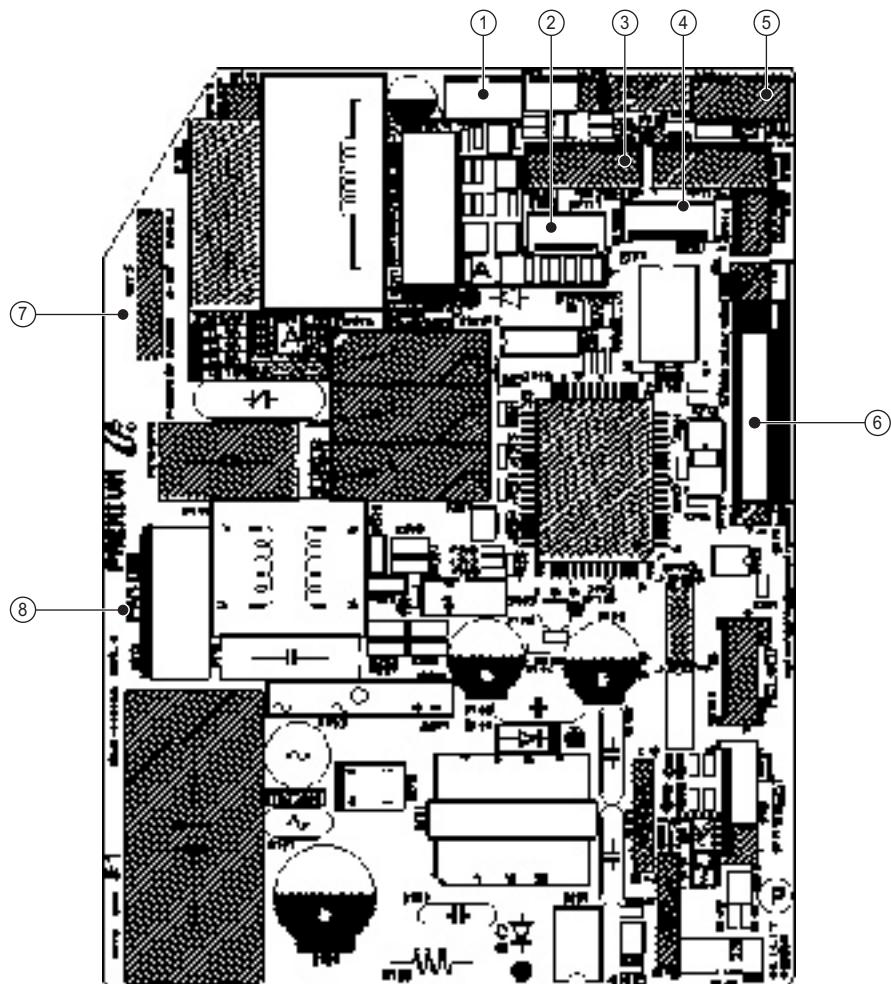
This Document can not be used without Samsung's authorization.

9-2 Refrigerating Cycle Diagram



10. PCB Diagram

10-1 Indoor PCB



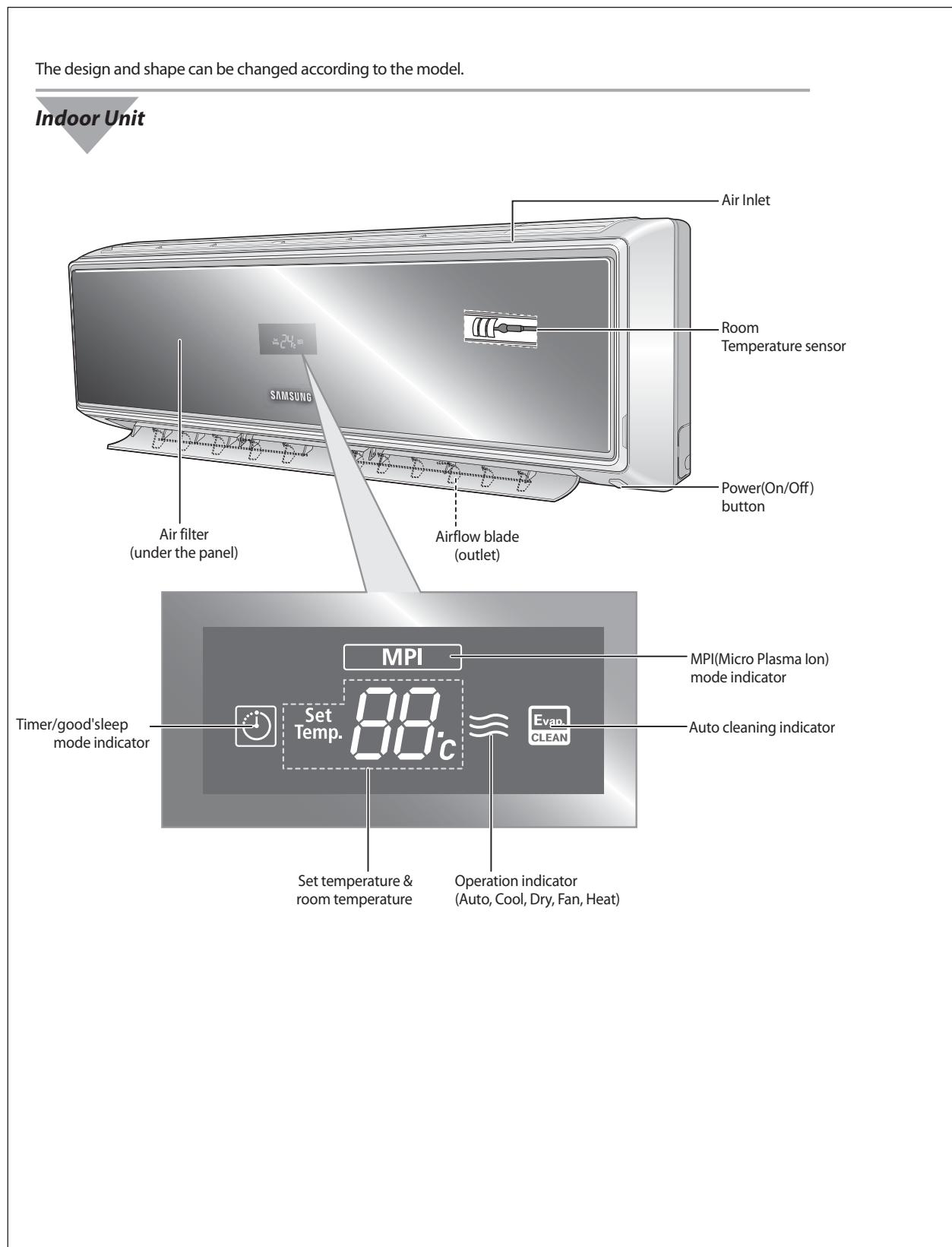
①	Motor RPM Feedback	⑤	MPI
②	Temperature Sensor	⑥	DISPLAY & MODULE PCB CONNECTOR
③	Auto grill	⑦	Power
④	BLADE-H Step Motor	⑧	Indoor Fan Motor

MEMO

11. Operating Instructions

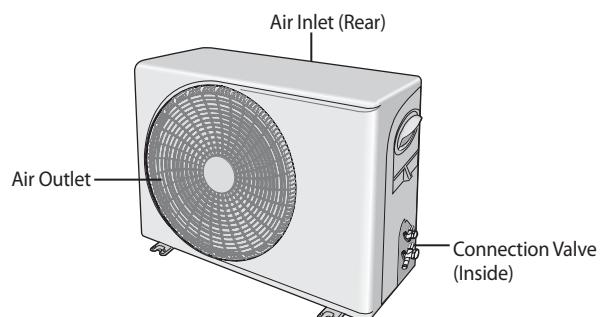
11-1 Name of Each Part

11-1-1 Indoor Unit

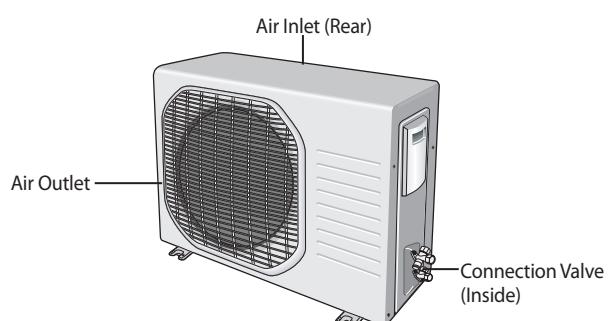


11-1-2 Outdoor Unit

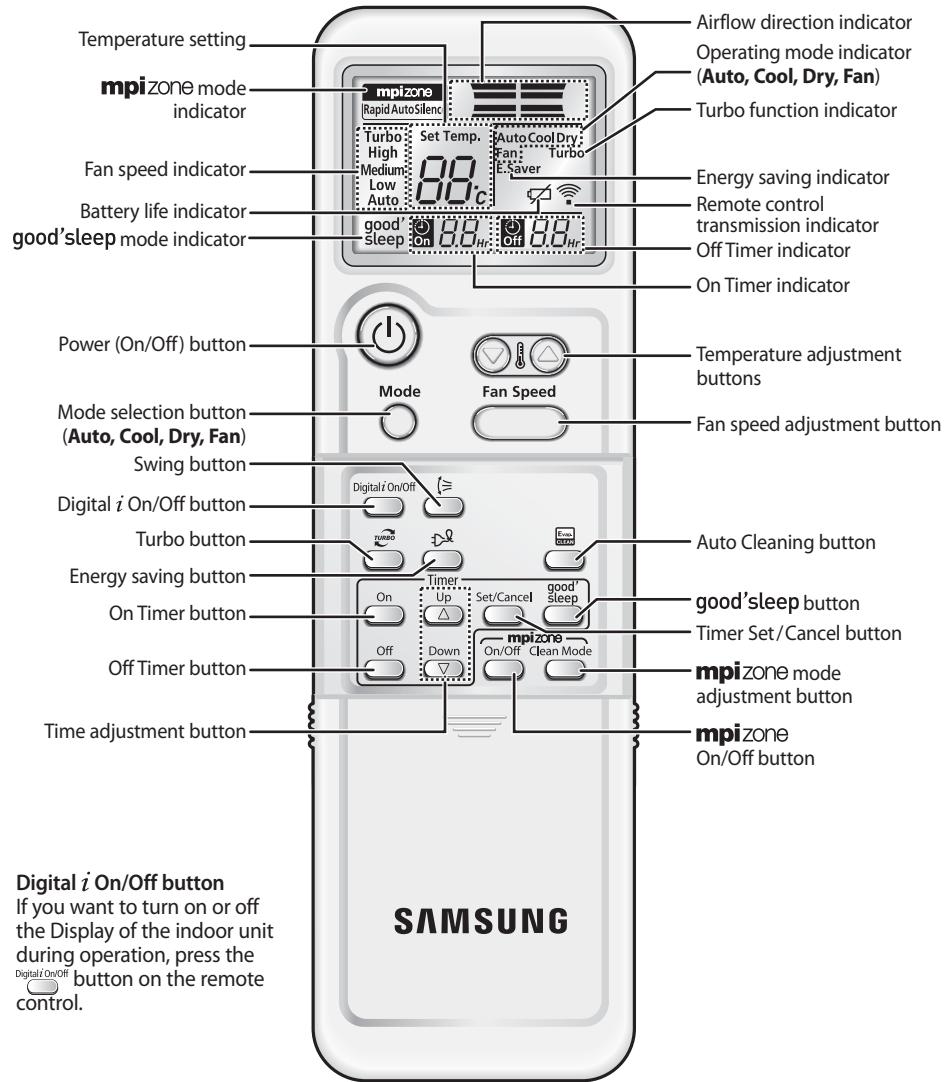
AS09V** Series



AS10V ** Series

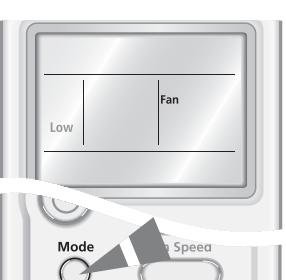


11-2 Wireless Remote Control-Buttons and Display

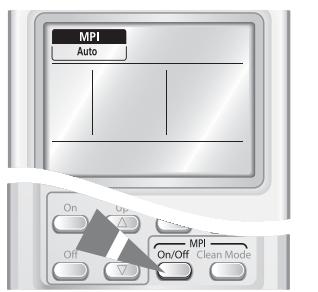


11-3 Main Function

11-3-1 Basic Function

Mode	Explanation	Remark
Auto Mode	Press the  button on the remote control until Auto is displayed.	
Cool Mode	<p>Press the  button on the remote control until Cool is displayed.</p> <p>Press the  button to select the fan speed until the required setting is displayed.</p> <p>Auto → Low → Medium → High</p>	 
Dry Mode	Press the  button on the remote control until Dry is displayed.	
Fan Mode	Press the  button on the remote control until Fan is displayed.	

11-3-2 Applied Function

Mode	Explanation	Remark
Good Morning Mode	Press the  button. <ul style="list-style-type: none"> ◆ The timer indicator is displayed. ◆ The Off timer is blinking on the remote control. 	
MPI Mode	Press the  button. <ul style="list-style-type: none"> ◆ The air conditioner starts up in MPI-Auto mode automatically. ◆ The MPI mode also runs when the air conditioner is turned on. ◆ By pressing the  button again, the MPI mode is canceled. 	

12. Troubleshooting

12-1 Items to be checked first

1. The input voltage should be rating voltage $\pm 10\%$ range.
The air conditioner may not operate properly if the voltage is out of this range.
2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
The indoor unit and the outdoor unit shall be linked by 5 cables.
Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
Otherwise the air conditioner may not operate properly.
3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the air conditioner.

No	Operation of air conditioner	Explanation
1	The OPERATION indication LED(BLUE) blinks when a power plug of the indoor unit is plugged in for the first time.	It indicates power is on. The LED stops blinking if the operation ON/OFF button on the remote control unit is pushed.
2	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. [In case of heat pump model] In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew.
3	Fan speed setting is not allowed in DRY mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is selected automatically in AUTO mode.
4	Compressor stops operation intermittently in DRY mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
5	Timer LED(ORANGE) of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
6	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.
7	[In case of heat pump model] Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 9 minutes(maximum) until the deice is completed.
8	[In case of heat pump model] The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
9	[In case of heat pump model] Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation

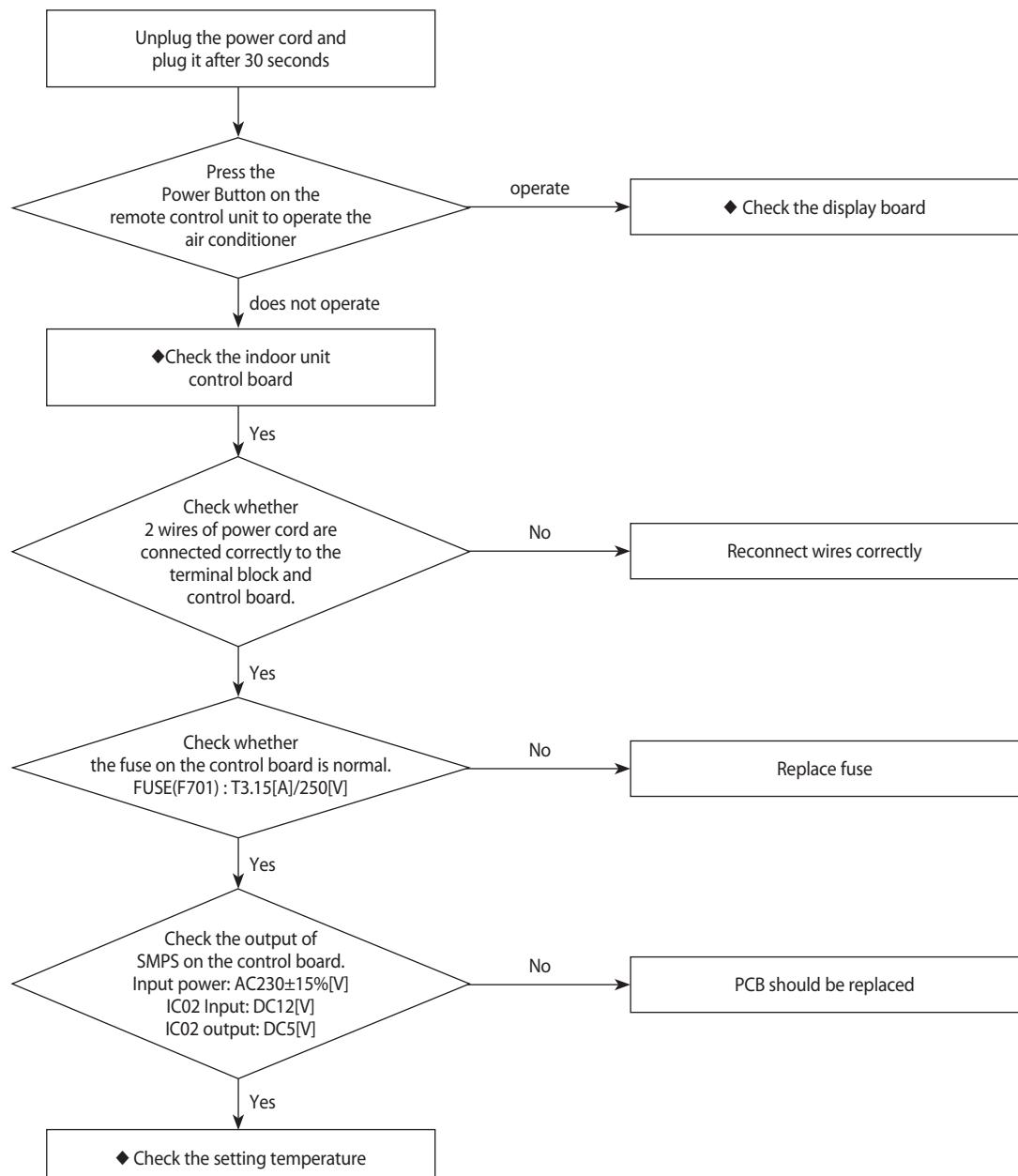
12-2 Fault Diagnosis by Symptom

12-2-1 No Power (completely dead)-Initial diagnosis

1. Checklist :

- 1) Is input voltage normal?
- 2) Is AC power linked correctly?
- 3) Is input voltage of DC regulator IC KA7805 (IC02) normal? (11VDC-12.5VDC)
- 4) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)

2. Troubleshooting procedure

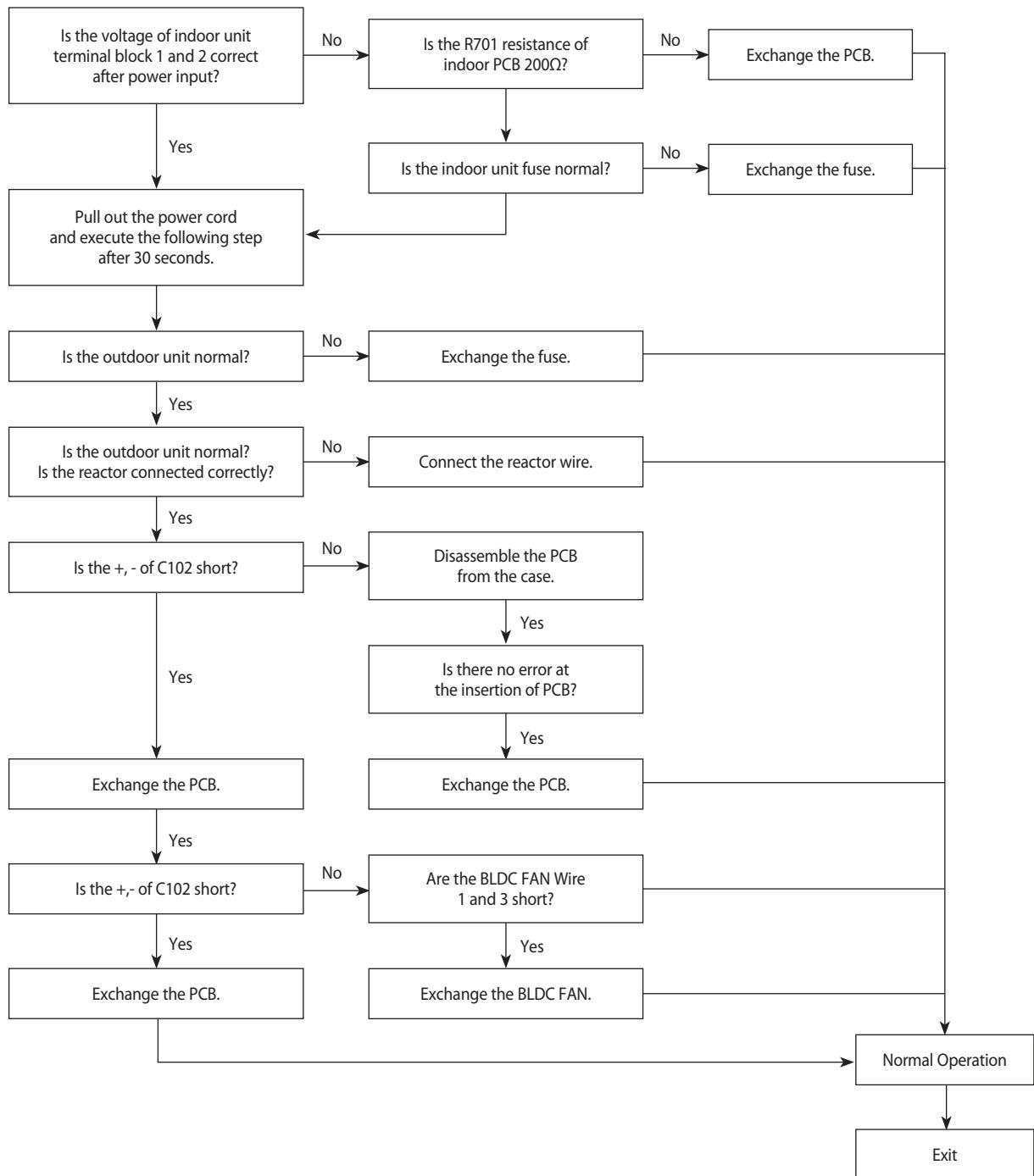


12-2-2 The Outdoor unit power supply error

1. Checklist :

- 1) Are the input power voltage and the power connection correct?
- 2) Is there no Fuse short in the indoor unit and outdoor unit?
- 3) Is the cable connected correctly between the indoor unit and outdoor unit in order.
- 4) Is the wire connected correctly to the terminal block of the indoor unit and outdoor unit?

2. Troubleshooting procedure

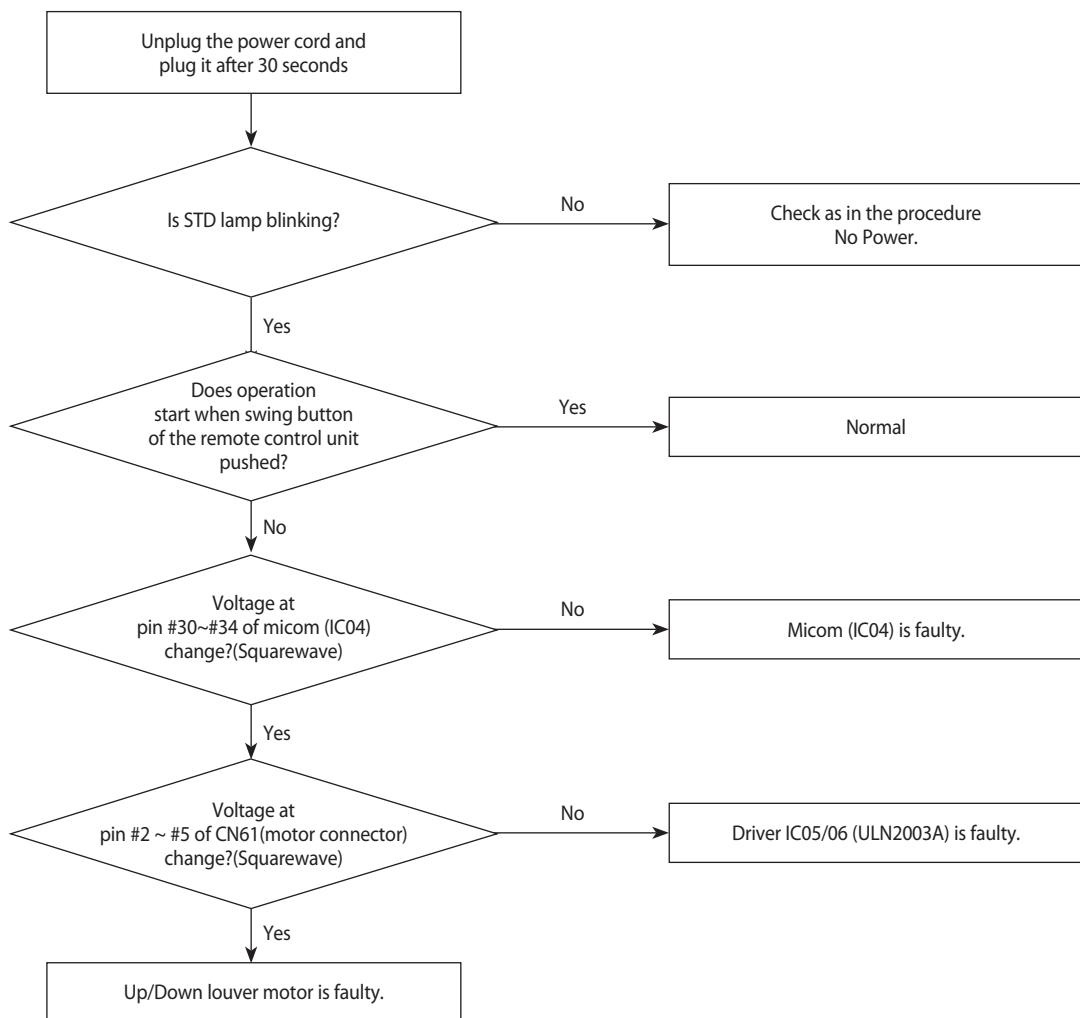


12-2-3 When the Up/Down Louver Motor Does Not Operate. (Initial Diagnosis)

1. Checklist :

- 1) Is input voltage normal?
- 2) Is the Up/Down louver motor properly connected with the connector (CN61)?

2. Troubleshooting procedure

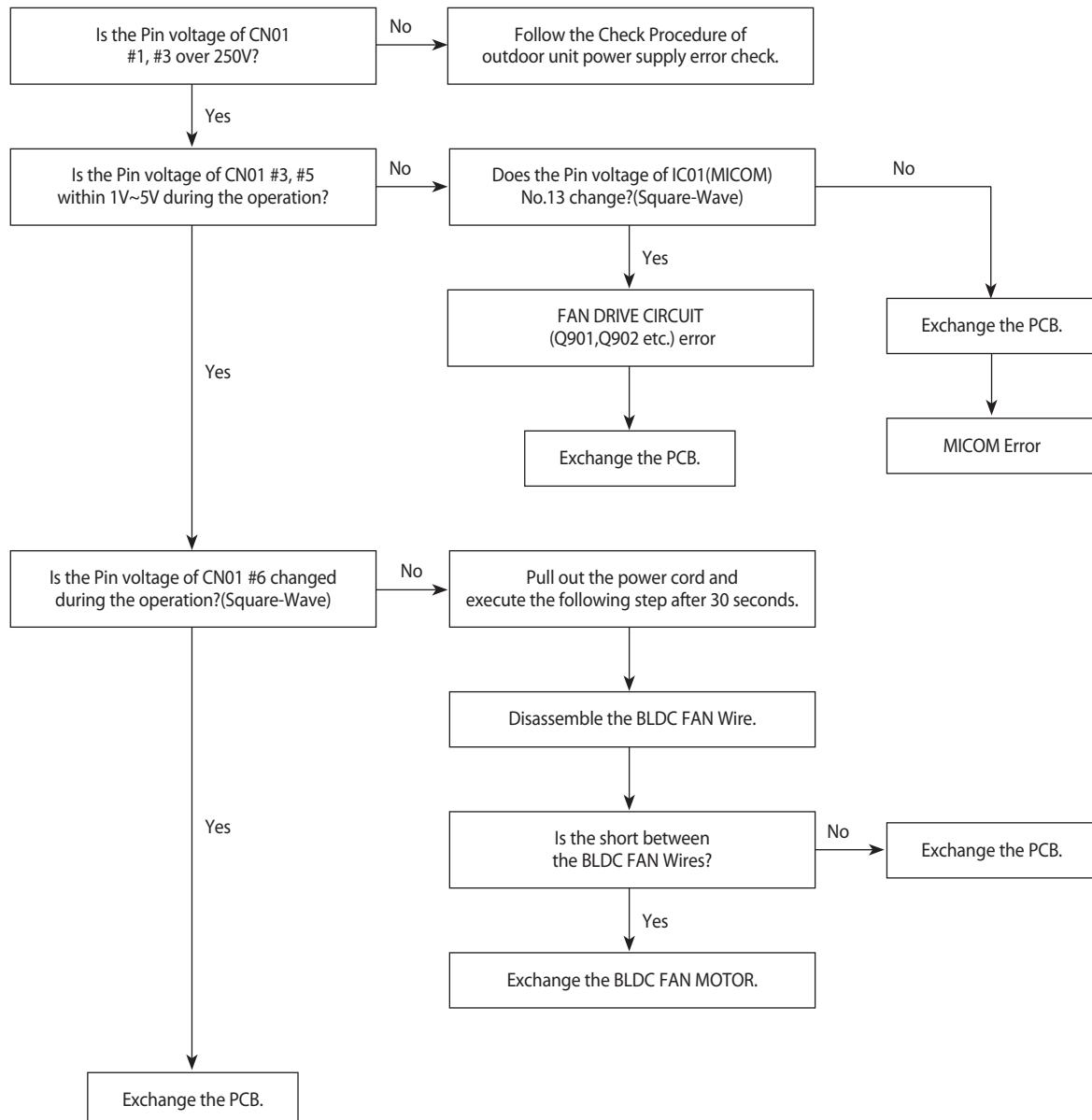


12-2-4 The Outdoor unit Fan error

1. Checklist :

- 1) Are the input power voltage and the power connection correct?
 - 2) Is the motor wire connected to the outdoor PCB correctly?
 - 3) Is there no assembly error or none-assembly in the terminal of motor wire connector?
 - 4) Is there no obstacle at the surrounding of motor and propeller?

2. Troubleshooting procedure

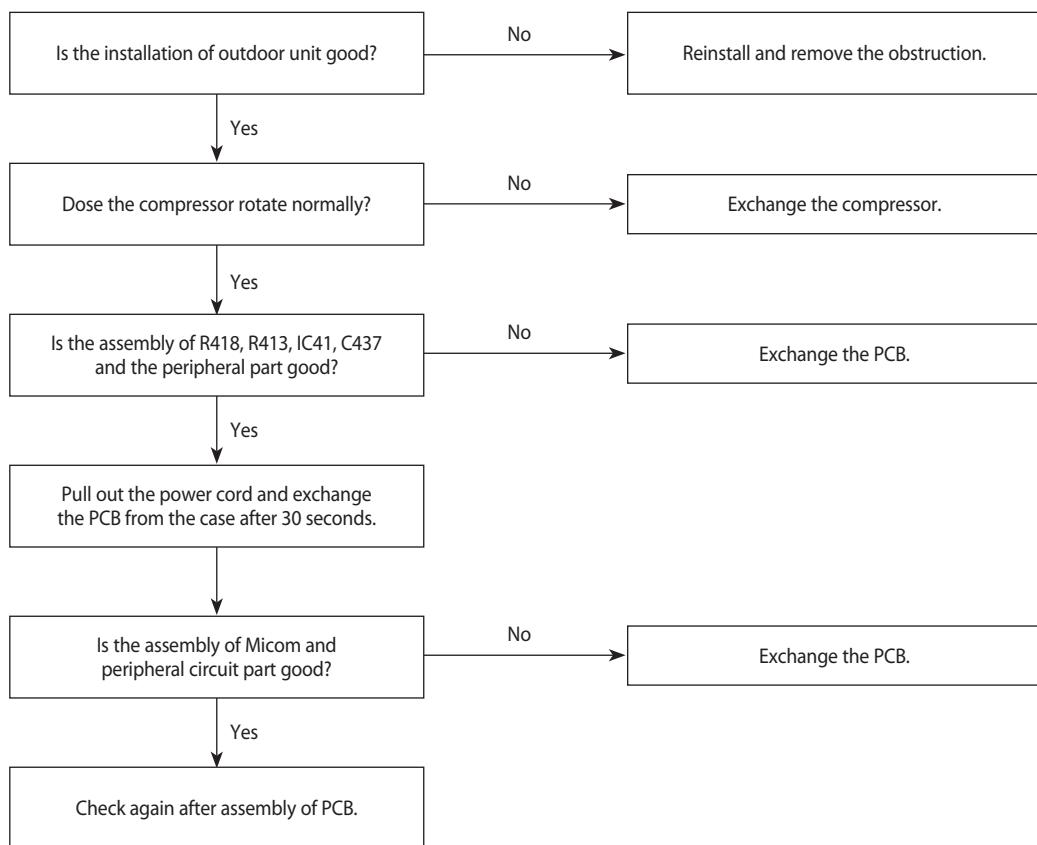


12-2-5 Total current Trip error

1. Checklist :

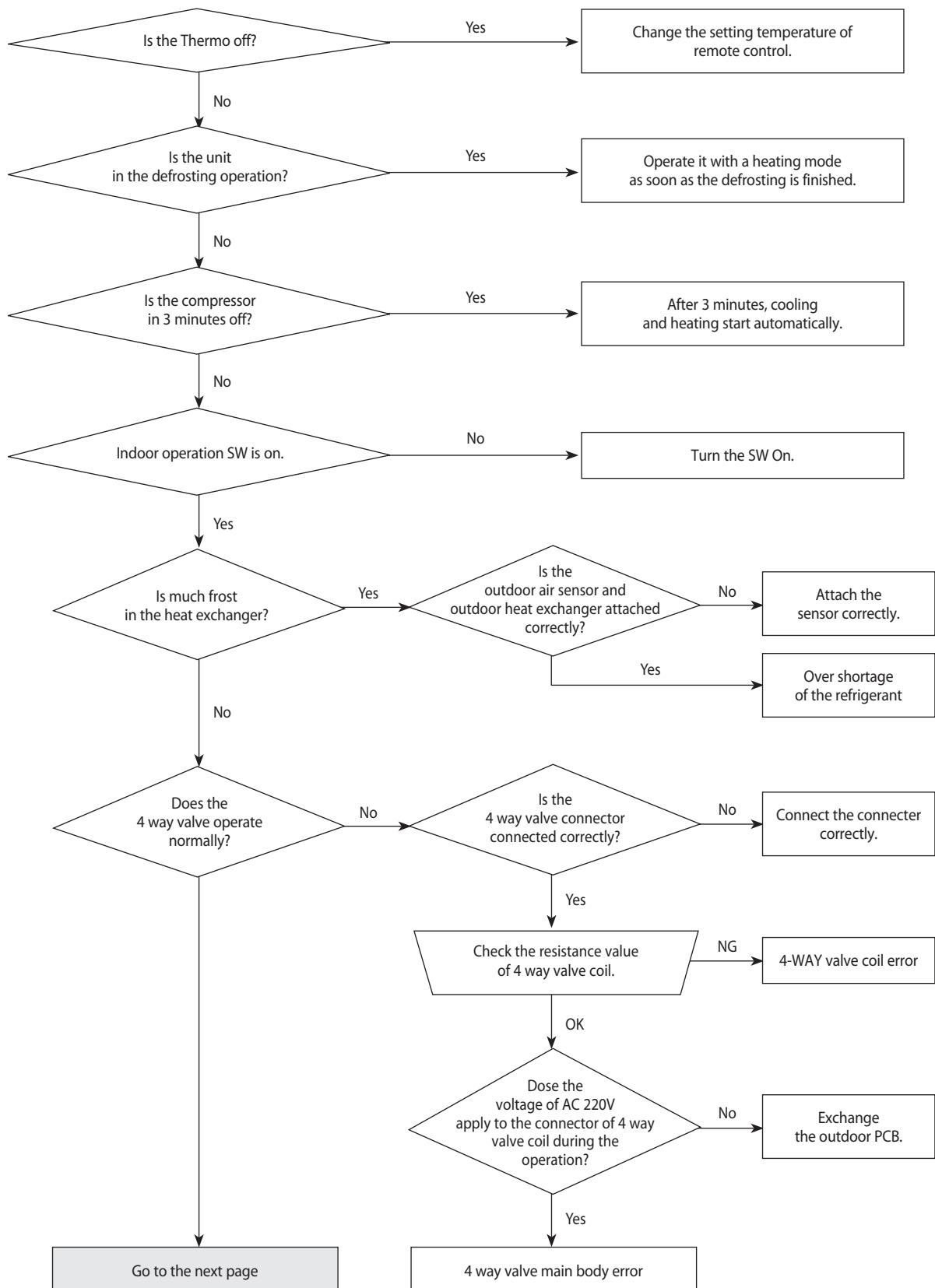
- 1) Is the input power voltage proper?
- 2) Is the refrigerant charged properly?
- 3) Does the compressor rotate normally? (Reverse rotation, Locking etc.)
- 4) Does the outdoor fan operate normally? (Fan propeller loss, Motor error etc.)
- 5) Is the installation condition of outdoor unit good? (Piping, Space etc.)
- 6) Is there no ventilation obstruction at the surrounding of outdoor? (Outdoor unit cover, Fan front obstruction etc.)

2. Troubleshooting procedure

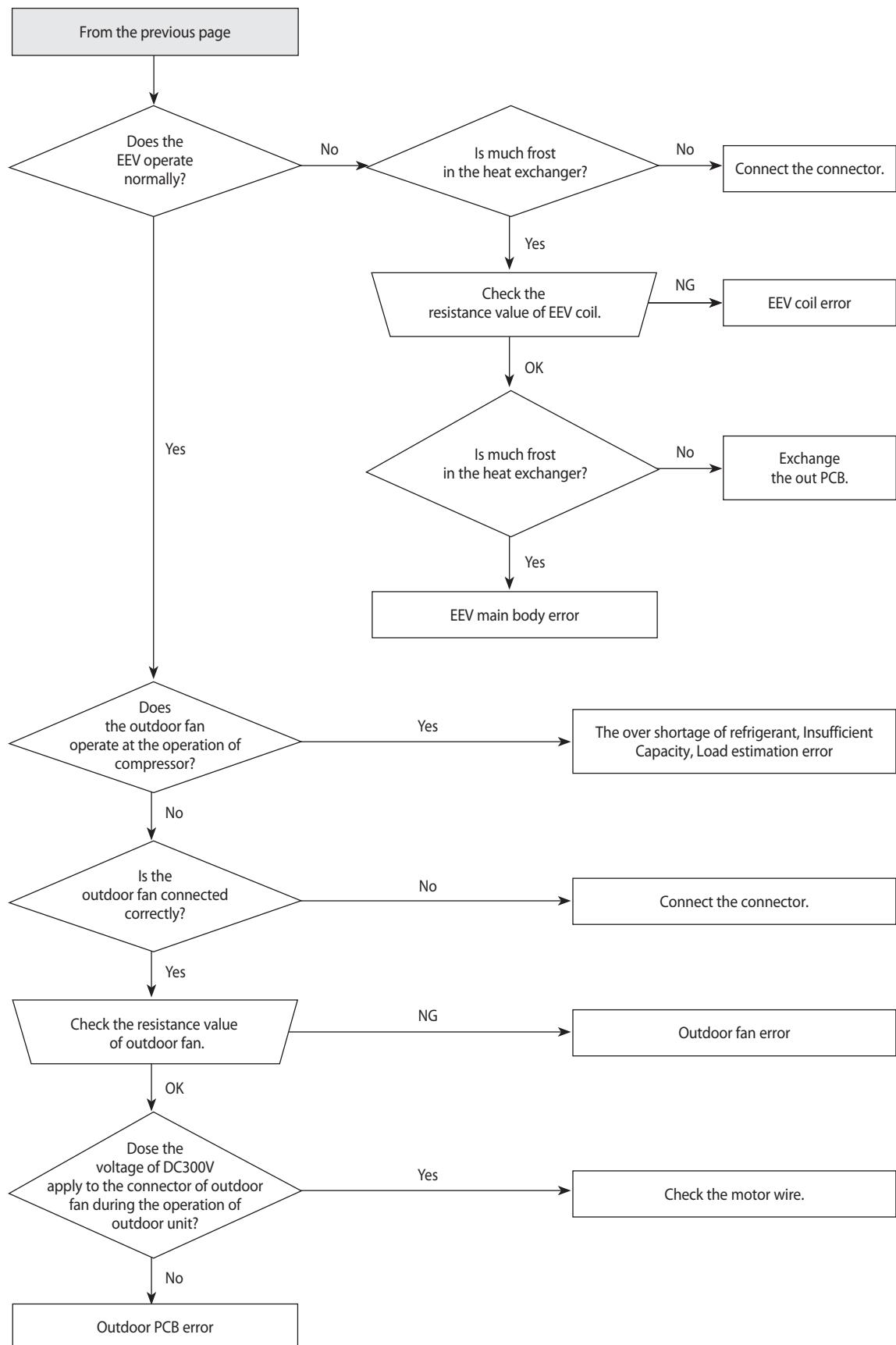


12-2-6 In case of heating at the cooling mode or cooling at the heating mode

1. Troubleshooting procedure



In case of heating at the cooling mode or cooling at the heating mode(cont.)

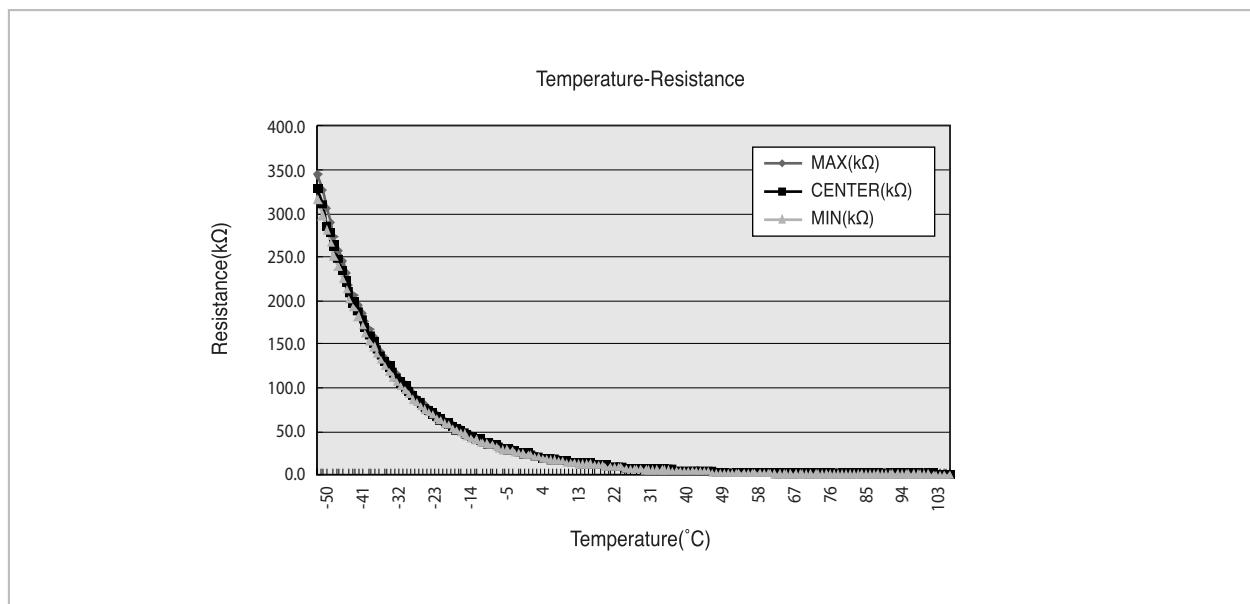
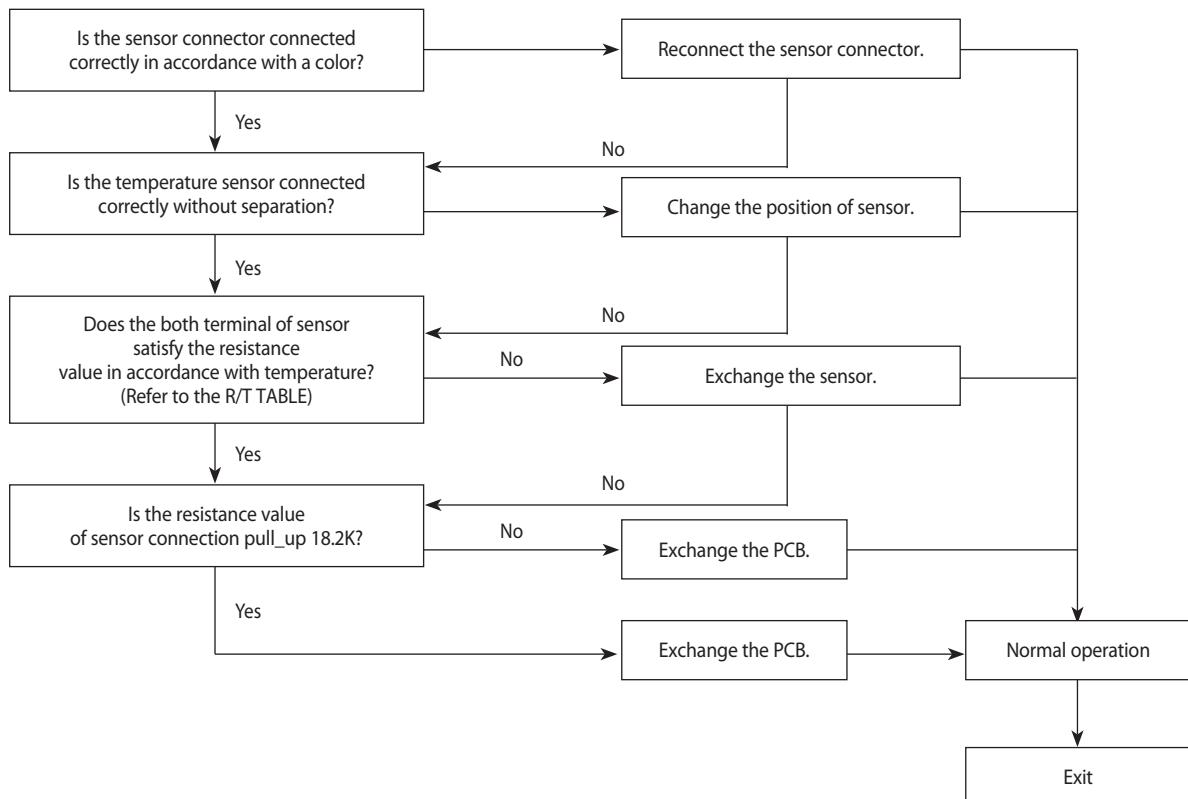


12-2-7 Outdoor temperature sensor error

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

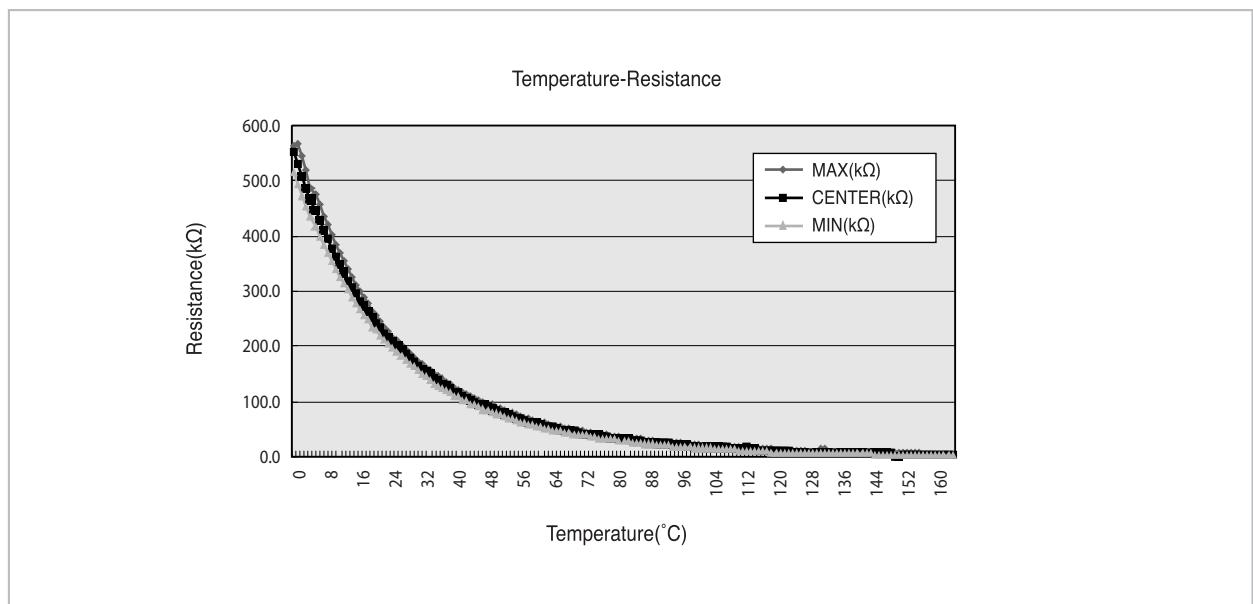
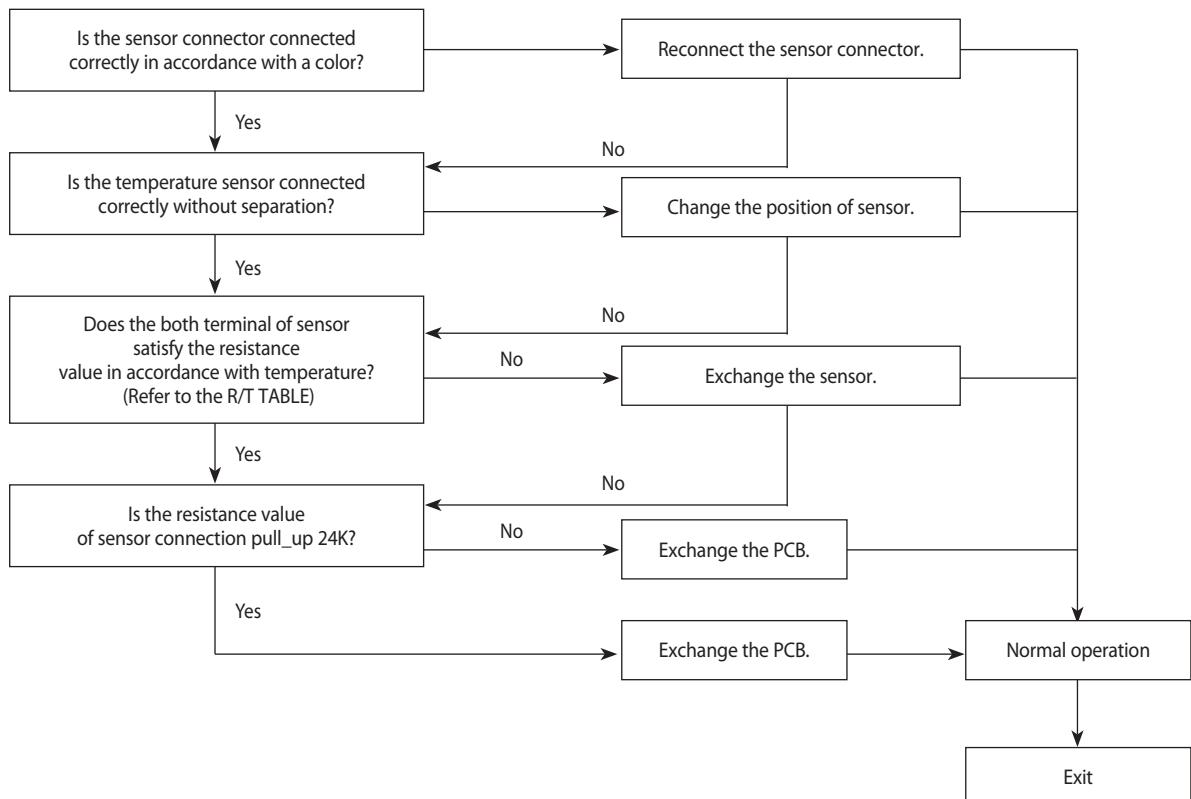


12-2-8 Discharge temperature sensor error

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

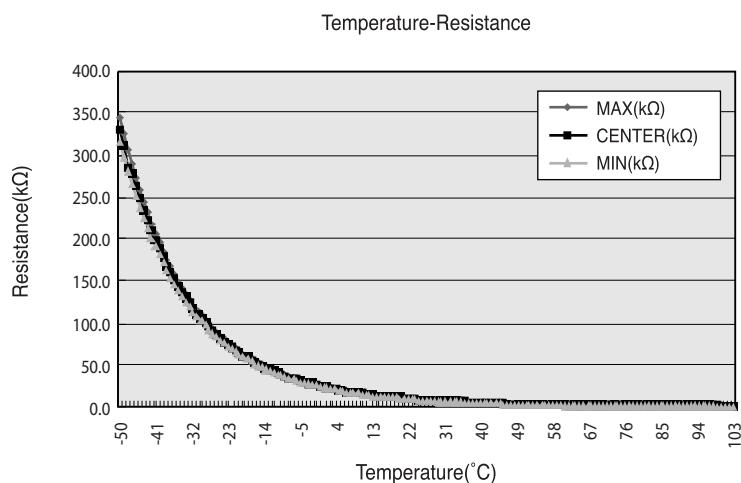
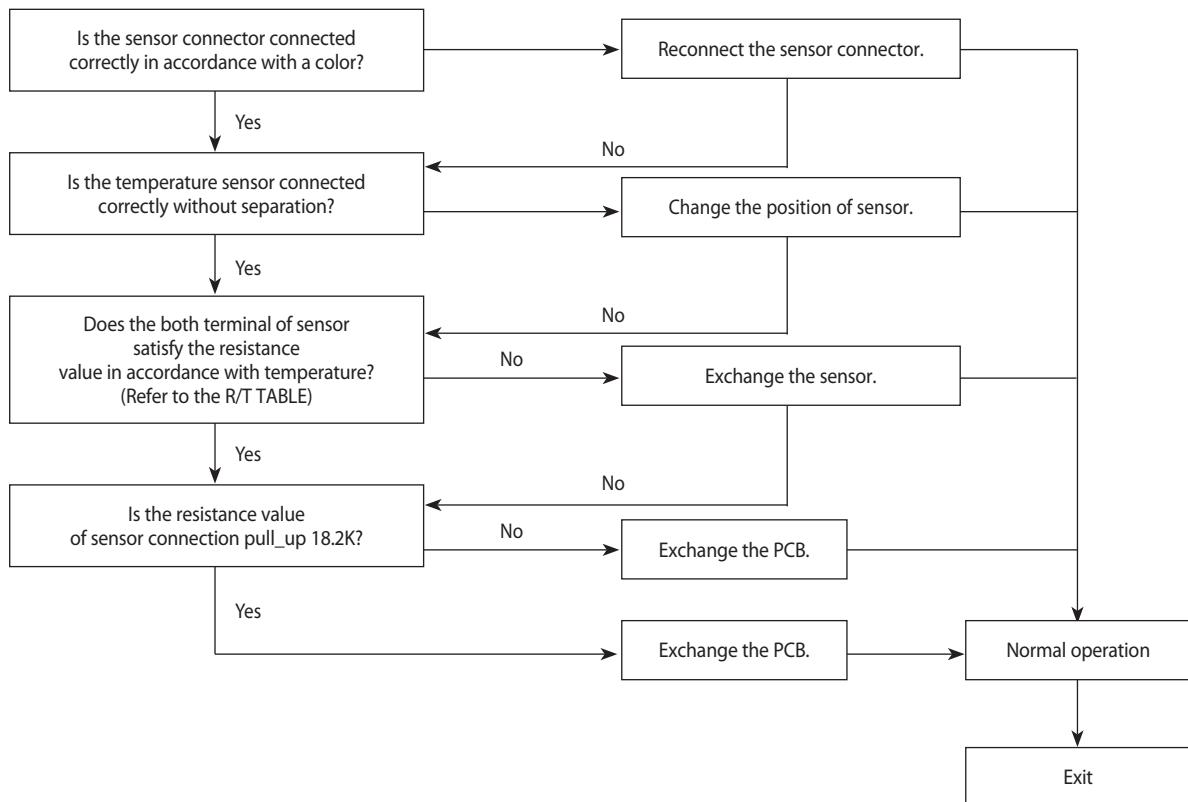


12-2-9 Coil temperature sensor error

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

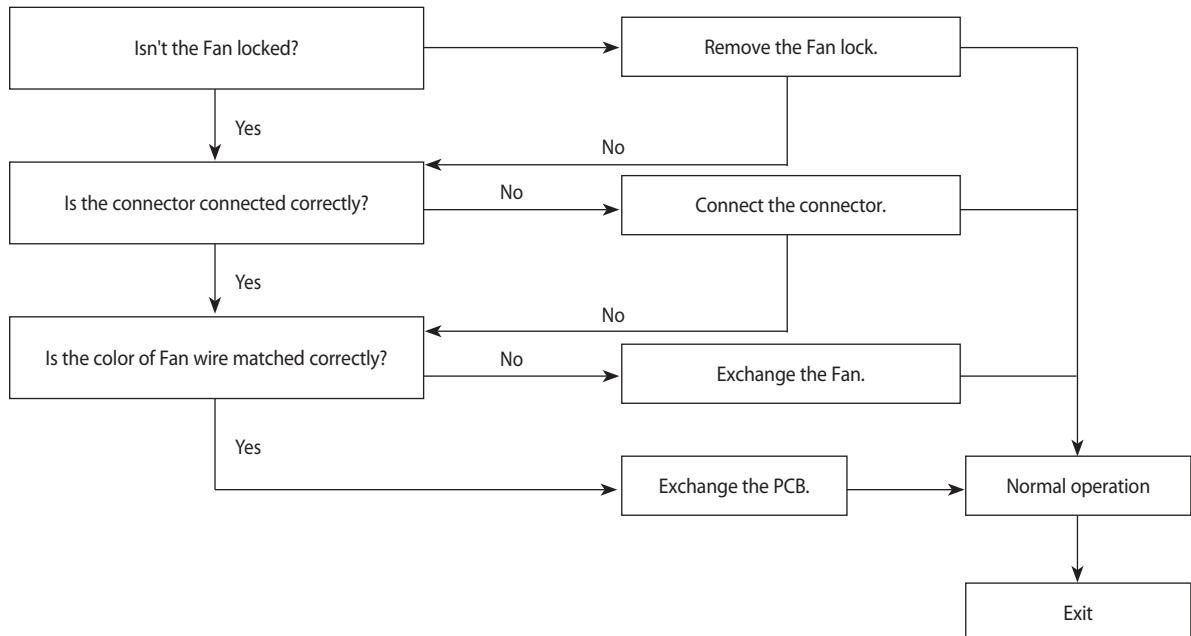


12-2-10 Fan error

1. Checklist :

- 1) Isn't the fan locked?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

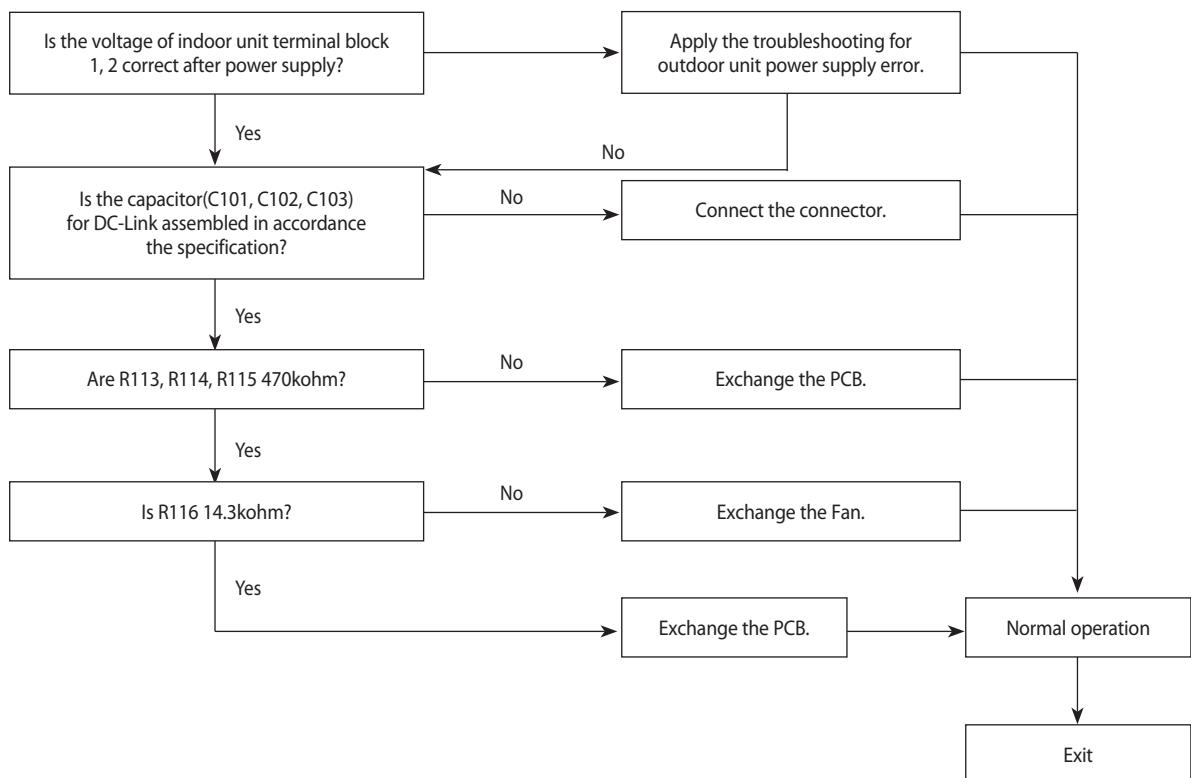


12-2-11 DC-Link voltage sensor error

1. Checklist :

- 1) Is the voltage of indoor unit terminal block 1, 2 correct after power supply?
- 2) Is the capacitor(C101, C102, C103) for DC-Link assembled in accordance the specification?
- 3) Are R112, R113, R114 470 Kohm?
- 4) Is R115 14.3Kohm?

2. Troubleshooting procedure

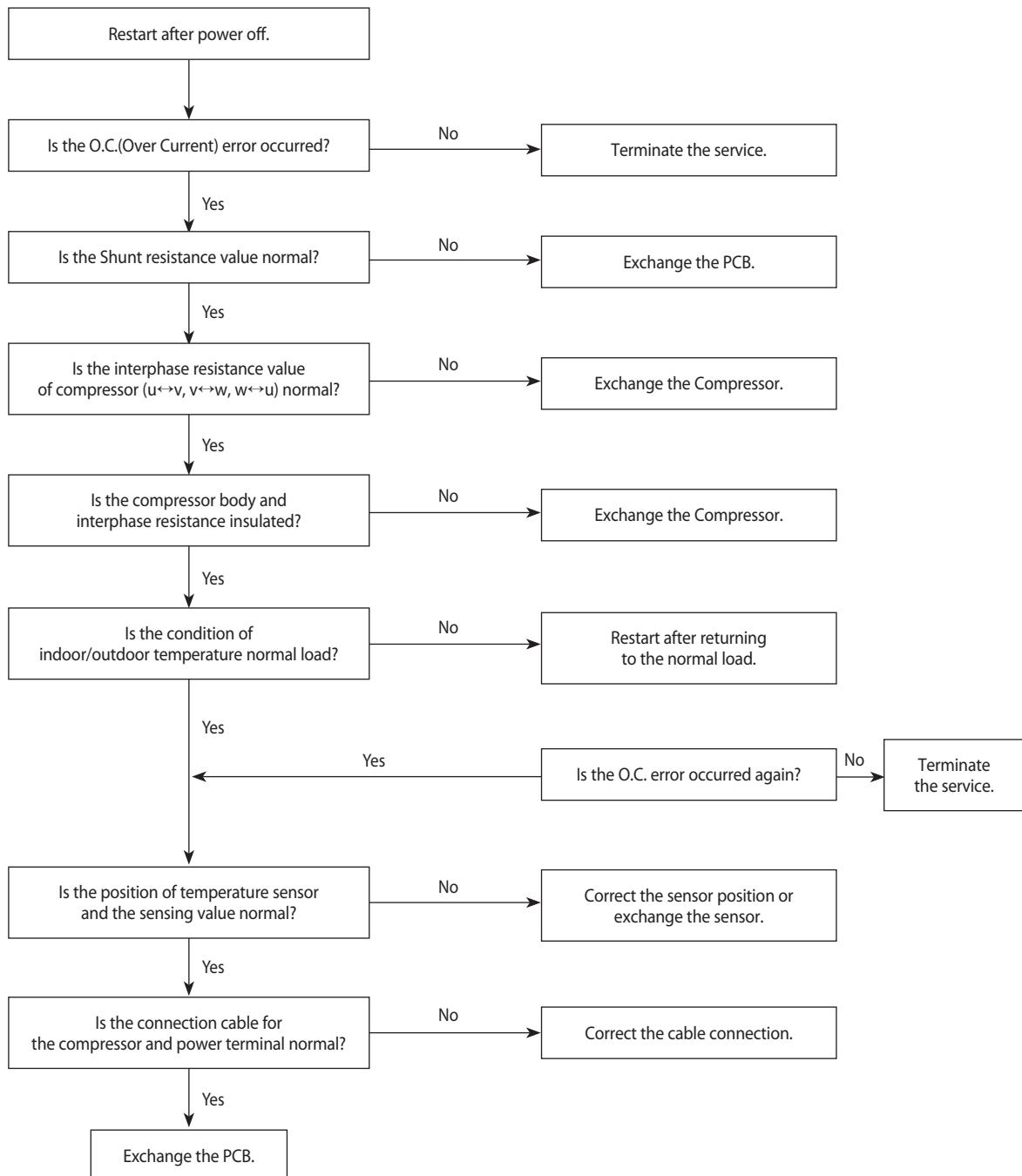


12-2-12 O.C.(Over Current) error

1. Checklist :

- 1) Is the Shunt resistance value correct?
- 2) Is the condition of surrounding temperature abnormal overload?
- 3) Is there any problem as like the temperature sensor separation or measurement value error?
- 4) Is the interphase resistance of compressor normal?

2. Troubleshooting procedure

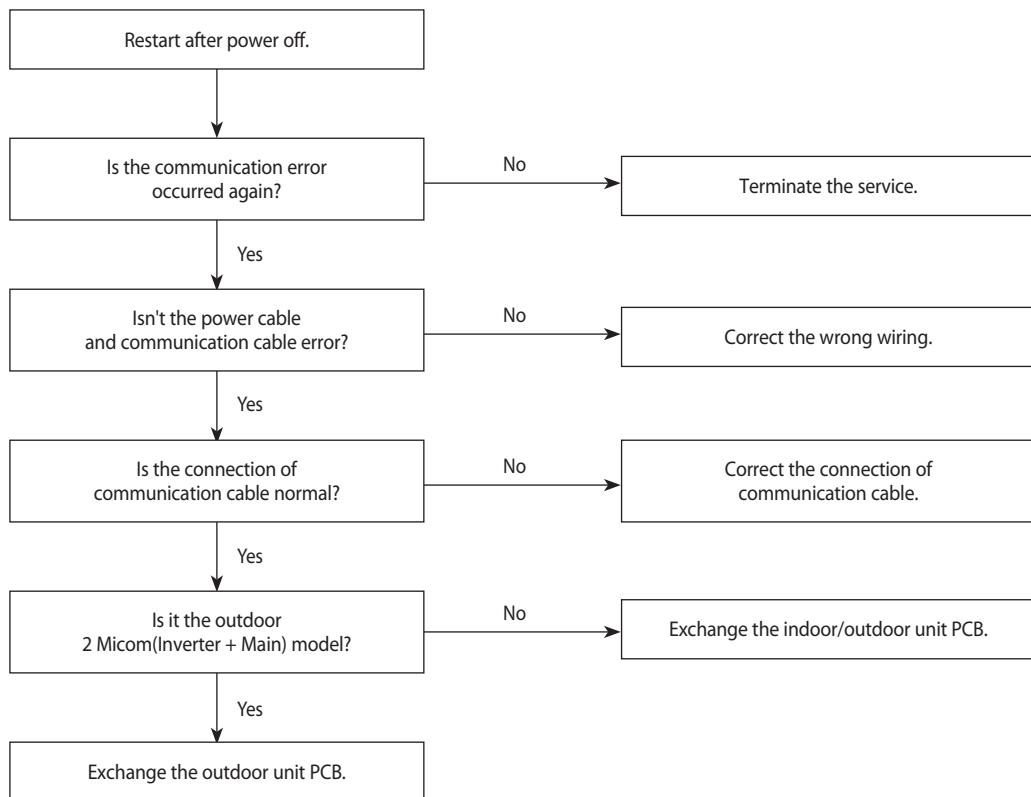


12-2-13 Communication error

1. Checklist :

- 1) Is the communication cable between the indoor unit and outdoor unit connected correctly?
- 2) Isn't the power cable and communication cable error?

2. Troubleshooting procedure

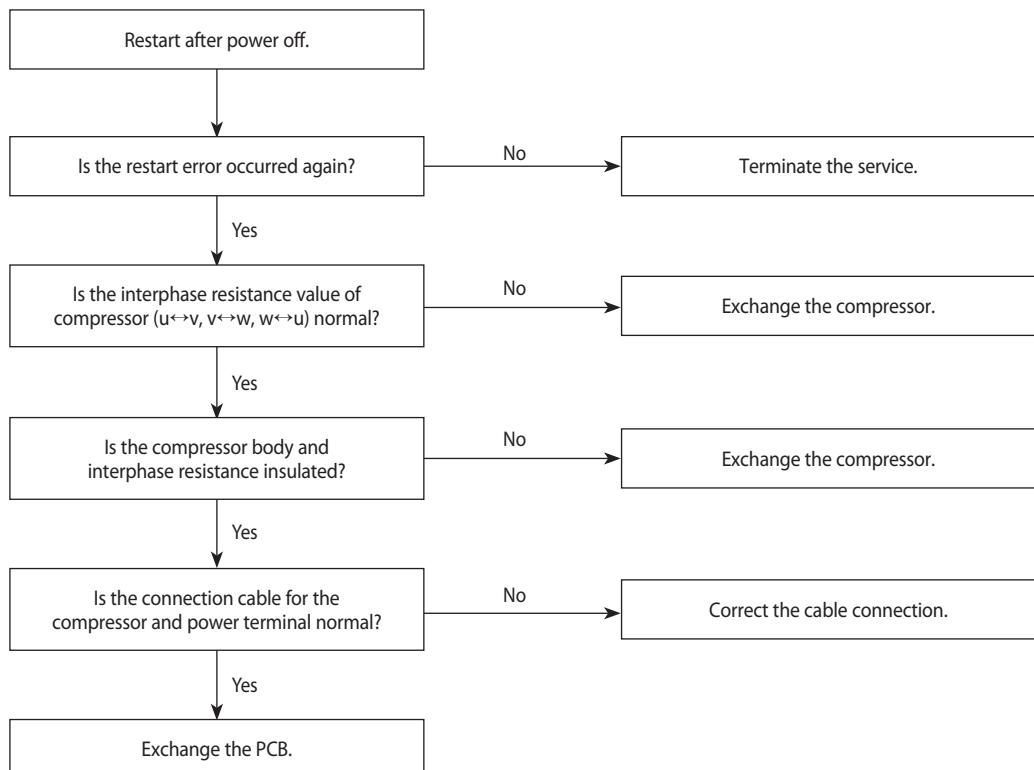


12-2-14 Compressor start error

1. Checklist :

- 1) Is the connection of cable for the compressor and power?
- 2) Is the interphase resistance of compressor normal?

2. Troubleshooting procedure

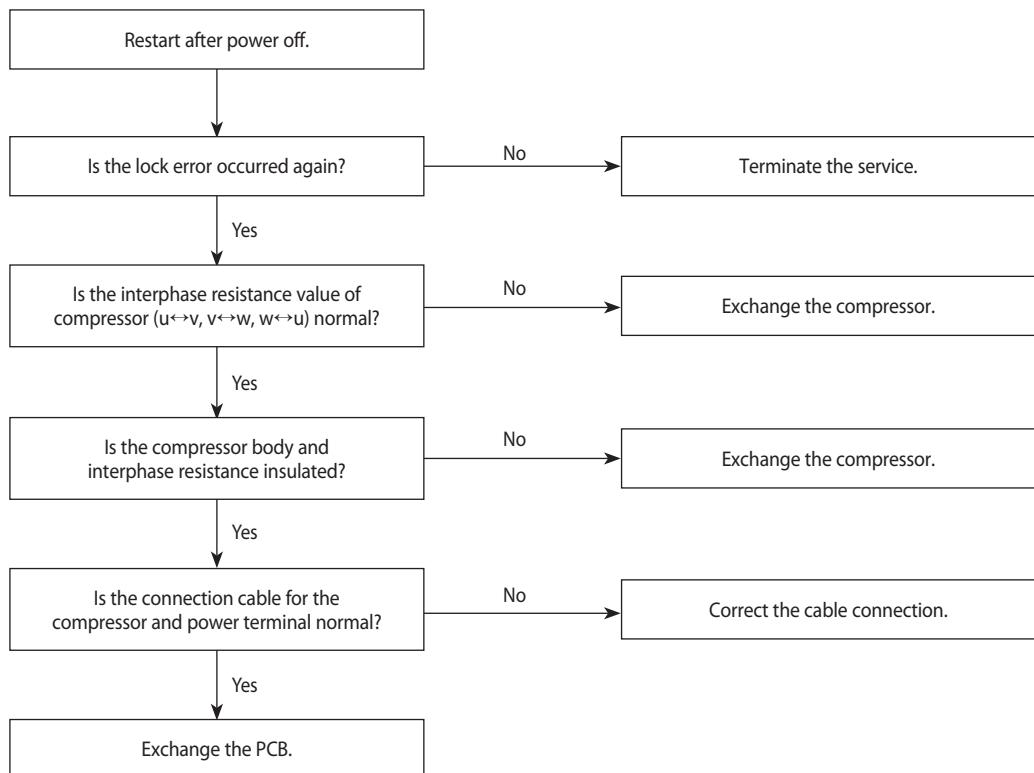


12-2-15 Compressor lock error

1. Checklist :

- 1) Is the connection of cable for the compressor and power?
- 2) Is the interphase resistance of compressor normal?

2. Troubleshooting procedure

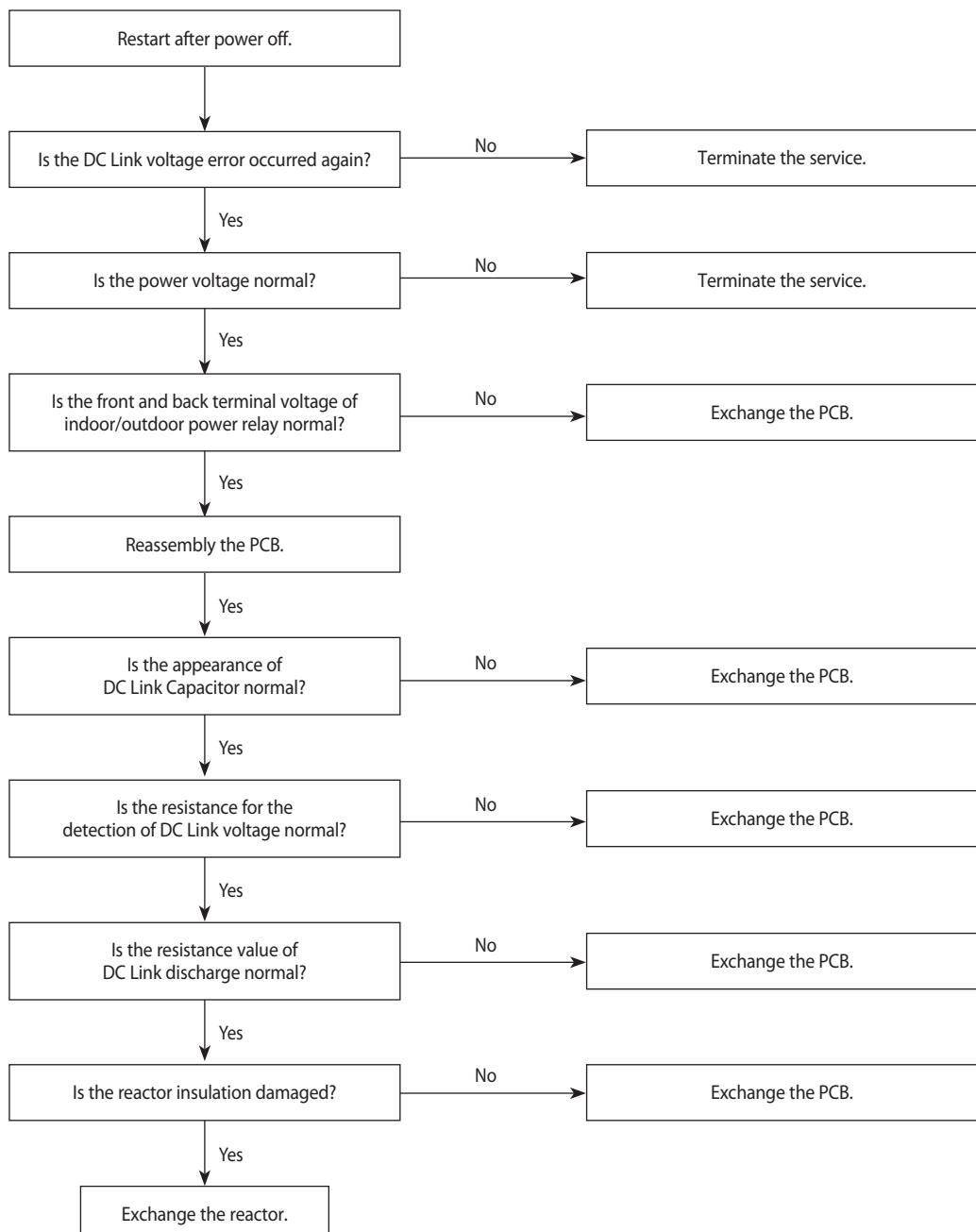


12-2-16 DC Link Over voltage/ Low voltage error

1. Checklist :

- 1) Is the power voltage normal?
- 2) Is the voltage of front and back terminal of indoor(outdoor) power relay normal?
- 3) Is the resistance value for DC Link voltage detection NORMAL?
- 4) Is the resistance value of DC Link discharge normal?
- 5) Is the appearance of DC Link Capacitor normal?

2. Troubleshooting procedure



12-2-17 When the remote control is not receiving

1. Check if the connector was normally assembled.
2. Put the set in operation and check the voltage of No. 15(+) and No. 16(-) of the main PCB CN91 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.
3. Replace the assembly display PCB because the module PCB is poor if the voltage between No. 15~16 of CN91 maintains 5V after the remote control starts operation.

12-2-18 The others

1. AC Line Zero Cross Signal OUT
 - Check the assembly condition of peripheral part of IC21, ZD21, ZD20 and D200 on the PCB.
2. Capacity miss match
 - Check again the indoor unit option code.

12-3 PCB Inspection Method

12-3-1 Pre-inspection Notices

1. Check if you pulled out the AC power plug when you eliminate the PCB or front panel.
2. Don't hold the PCB side not impose excessive force on it to eliminate the PCB.
3. Don't pull the lead wire but hold the whole housing to connect or disconnect a connector to the PCB.
4. In case of outdoor PCB disassembly, check first the complete discharge of condenser (C103) after 30 seconds power off.

12-3-2 Inspection Procedure

1. Check connector connection and peeling of PCB or bronze coating pattern when you think the PCB is broken.
2. The PCB is composed of the 3 parts.
 - Indoor Main PCB Part : MICOM and surrounding circuit, relay, room fan motor driving circuit and control circuit, sensor driving circuit, power circuit of DC12V and DC5V, and buzzer driving circuit.
 - Display part : LED lamp, Switch, Remocon module
 - Outdoor Main PCB part : MICOM and surrounding circuit. IPM and PFC circuit and control circuit.
 - EMI PCB Part : Line filter and Noise Capacitor, Varistor

12-3-3 Indoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Plug out and pull the PCB out of the electronic box. Check the PCB fuse.	1) Is the fuse disconnected?	<ul style="list-style-type: none">• Over current• Indoor Fan Motor Short• AC Part Pattern Short of the MAIN PCB
2	Supply power. If the operating lamp twinkles at this time, the above 1)~3) have no relation.	Checking the power voltage.	
		1) Is the DB71 input voltage AC200V~AC240V?	<ul style="list-style-type: none">• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.
		2) Is the voltage between both terminals of the C104 on the 2 nd side of the transformer DC12V ±0.5V?	<ul style="list-style-type: none">• Switching Trans or Power Circuit is faulty
		3) Is the voltage between both terminals of OUT and GND of IC19(KA78L05) DC5V ±0.5V?	<ul style="list-style-type: none">• Power Circuit is faulty, Load Short
3	Press the ON/OFF button.	Checking the power voltage.	
		1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	<ul style="list-style-type: none">• Relay(RY71) Coil Disconnection, IC05 is faulty
		2) Check the voltage of both terminals of terminal block 1 and N(1) after 3 minute operation.: AC220V	<ul style="list-style-type: none">• Relay(RY71) Contact is faulty
4	Press the ON/OFF button. 1. FAN Speed [High] 2. Continuous Operation	1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	<ul style="list-style-type: none">• Fan Motor of the indoor is faulty
		2) The fan motor of the indoor unit doesn't run.	<ul style="list-style-type: none">• Fan Motor Connector(CN72) is faulty
		3) The power voltage between terminal #3 and #5 of the connector(CN72) is 0V.	<ul style="list-style-type: none">• ASS'Y Main PCB is faulty• Connection is faulty

12-3-4 Outdoor Detailed Inspection Procedure

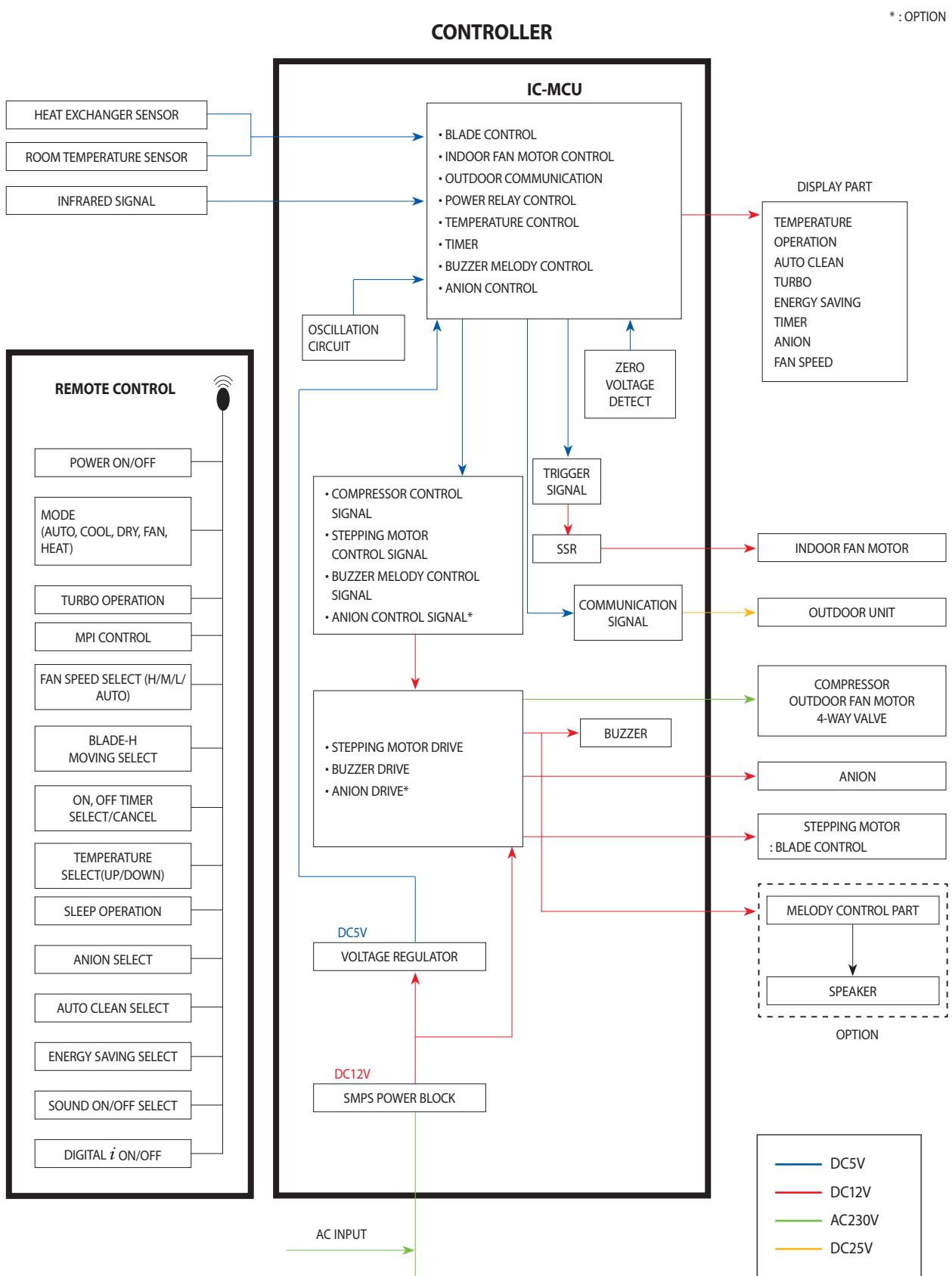
No	Procedure	Inspection Method	Cause
1	Wait 30 seconds over after disconnecting the power cable Check the outdoor PCB.	1) Is C101 discharged? 2) Is the resistance of both terminals of C101 opened? 3) Is the fuse of EMI PCB normal? 4) Is the reactor wire connected?	• Over Current • Inner short of PCB • BLDC FAN Motor Error
2	Check the Outdoor unit PCB.	1) Is R701 200ohm? 2) Does ry74 operate normally? (IC05 & 16:0V, 1:5V) 3) Is the fuse(F701) normal? 4) Is the Sub PCB assembled normally?	• Outdoor PCB Error • SUB Relay(RY74) Error • IC05 Error • Indoor PCB Error
3	Check the LED lighting after power supply.	1) Normal: Red: Light On, Green: Flickering, Yellow: Light Off? 2) Is the voltage of C101 250V over? 3) Is the input of IC19 8V, and the output 5V? 4) Recheck after disassembling BLDC FAN Wire.	• Inner short of outdoor PCB • Wrong assembly of outdoor PCB • BLDC FAN Error
4	Check the condition of indoor & outdoor connection cable.	1) Is the green LED light on once per second? 2) Is the indoor & outdoor connection cable connected in order? 3) Is the grounding wire connected to the both of indoor & outdoor unit? 4) Is the voltage of terminal block N(1), 225V?	• Wrong connection of Indoor/Outdoor wiring • Wrong assembly of outdoor communication circuit
5	Check the Comp Wire.	1) Is it connected red, blue, and yellow in order in counterclockwise. 2) Are the valve and its installation condition good? 3) Is the installation condition of outdoor unit?	• Wrong assembly • Installation condition is bad.
6	Check the BLDC Fan.	1) Is CN01 1, 3 over 250V? 2) Is CN01 3, 5 within 1V~5V? 3) Is the voltage of CN01 6 changed? 4) Is the resistance of BLDC Motor 1, 3 opened after power off?	• Outdoor PCB Error • BLDC Motor Error

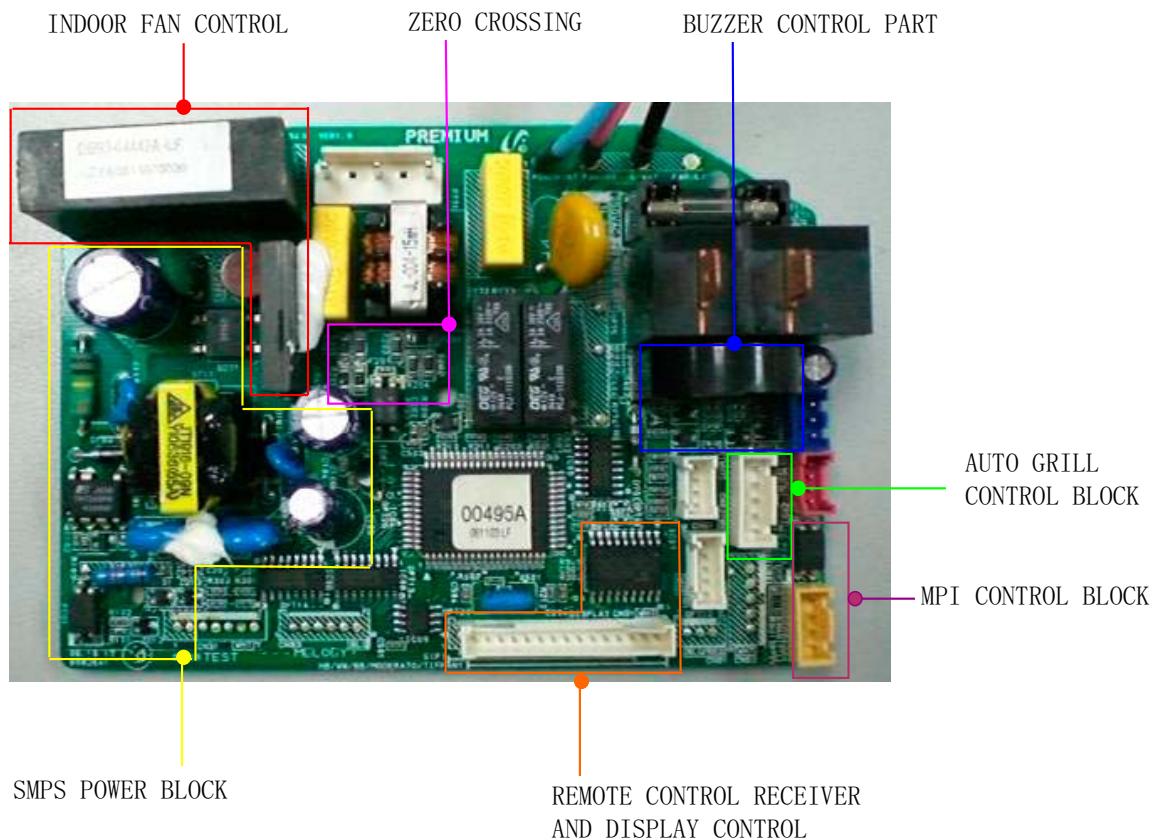
12-4 Main Part Inspection Method

Part	Breakdown Inspection Method										
Room Temperature Sensor	Measure resistance with a tester										
	Normal	At the normal temperature $37k\Omega \sim 8.3k\Omega$ (-7°C ~ +30°C) *Refer to Table 12-3-4.									
	Abnormal	$\infty, 0\Omega \dots$ Open or Short									
Room Fan Motor	Measure the resistance between terminals of the connector (CN72) with a tester.										
	Normal	At the normal temperature (10°C ~ 30°C) <table border="1" data-bbox="659 572 1270 685"> <thead> <tr> <th>Compare terminal</th> <th>Resistance</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Yellow, Blue</td> <td>$404.4\Omega \pm 10\%$</td> <td>Main</td> </tr> <tr> <td>Yellow, Red</td> <td>$340\Omega \pm 10\%$</td> <td>Sub</td> </tr> </tbody> </table>		Compare terminal	Resistance	Remark	Yellow, Blue	$404.4\Omega \pm 10\%$	Main	Yellow, Red	$340\Omega \pm 10\%$
Compare terminal	Resistance	Remark									
Yellow, Blue	$404.4\Omega \pm 10\%$	Main									
Yellow, Red	$340\Omega \pm 10\%$	Sub									
Abnormal	$\infty, 0\Omega \dots$ Open or Short										
Stepping Motor			Measure the resistance between the red wire and each terminal wire with a tester.								
	Normal	About 300Ω at the normal temperature (20°C ~ 30°C)									
	Abnormal	$\infty, 0\Omega \dots$ Open or Short									

13. Block Diagram

13-1 Indoor Unit





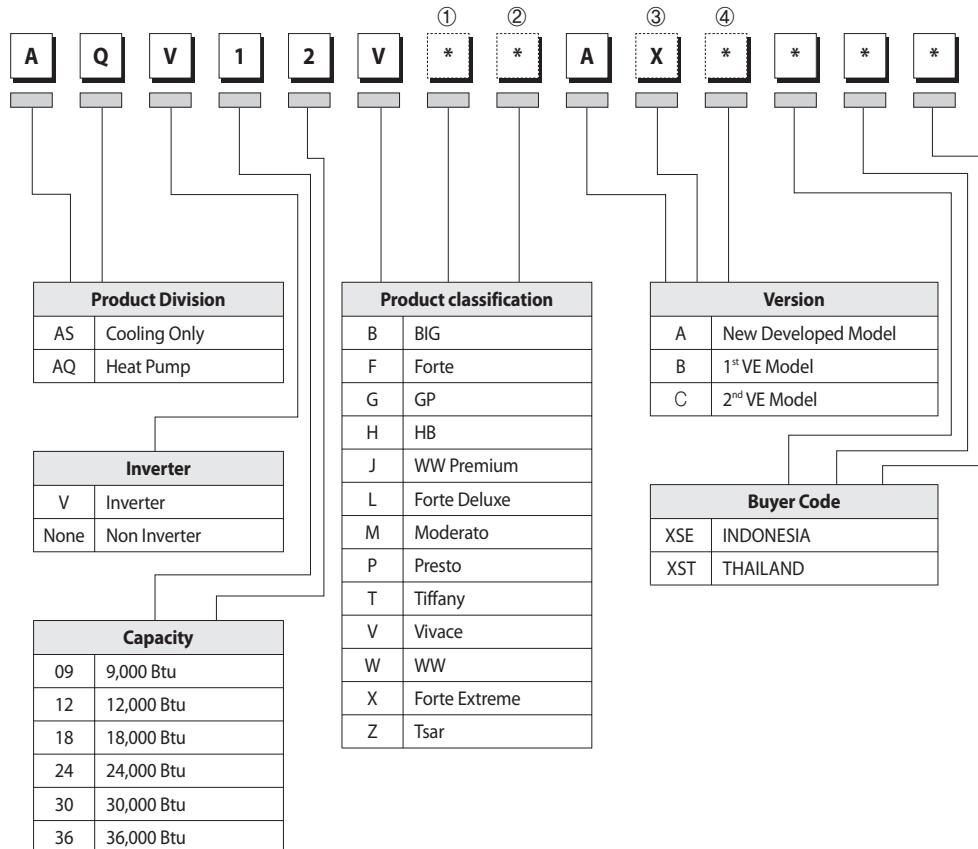
REMOTE RECEIVER & SWITCH(ON/OFF) MODULE PCB

14. Reference Sheet

14-1 Index for Model Name

* Project model code for overseas from 2007(For RAC Export Models)

Model Code



①: Use the "①" digit for Grille Color deviation.

: Don't use the digit for Basic White model.

ex) Silver : S, Black : B, White : W, etc.

②: Use the "②" digit for Electric Source deviation.

: Only for "XAP", "XAX", "GEM" Buyer.

③: Use the "③" digit for classification between indoor and outdoor.

Indoor ➔ "N" & Outdoor ➔ "X".

④: Use the "④" digit for KD models.

"CKD" ➔ "1" & "SKD" ➔ "2".

□ Except the RAC Export Models for China.

14-2 Refrigerant Pressure during the Charging

Outdoor Unit Temperature	Low Pressure kg/cm ² (PSIC)
Less than 20°C	4.5 ~ 4.7(64~67)
Less than 24°C	4.7 ~ 4.8(67~68)
Less than 28°C	4.8 ~ 4.9(68~70)
Less than 32°C	4.9 ~ 5.0(70~71)
Less than 36°C	5.0 ~ 5.1(71~73)
Less than 40°C	5.1 ~ 5.2 (73~74)
Less than 44°C	5.2 ~ 5.3 (74~75)

14-3 Pressure & Capacity mark

■Power/Heat

W	cal/s	kcal/h	Btu/h	HP	kg·m/s	lb·m/s
1	0.23885	0.85985	3.4121	0.001341	0.10197	0.73756
4.1868	1	3.6	14.286	0.0056146	0.42693	3.088
1.163	0.27778	1	3.9683	0.0015596	0.11859	0.85778
0.29307	0.06999	0.252	1	3.9302x10 ⁻⁴	0.029885	0.21616
745.7	178.11	641.19	2,544.4	1	76.04	550
9.8067	2.3423	8.4322	33.462	0.013151	1	7.233
1.3558	0.32383	1.1658	4.6262	0.0018182	0.13826	1

14-4 Q & A for Non-trouble

Classification	Class	Description
Cooling	Q	The cooling is weak.
	A	When it is hot outside, its cooling capacity decreases due to the increase of the ambient temperature. When the dust filter gets blocked or warm outside air gets in, the cooling capacity will decrease. So, make sure to clean the dust filter frequently, prevent heat loss by closing the doors and insulate the cooling area by using curtains, blinds, shades or window tinting.
	Q	The cooling is good generally. But, it gets weak when it is considerably hot.
	A	It occurs when the outdoor unit is exposed to direct sun light and heat-up air is not ventilated well. So, set up a sunblind over the outdoor unit and keep stuff away from the unit to increase the ventilation. When the cooling capacity decreases during a heat wave, clean the heat exchanger of the outdoor unit or spray some cold water to the heat exchanger to increase the cooling capability.
	Q	The cooling is weak. Does it need refrigerant charging?
	A	It is not correct charging refrigerant regularly. Except that you have moved in several times or the connection pipes are broken, the refrigerant does not run low. So, when refrigerant is additionally charged, it could be costly and cause a product's failure. When the refrigerant leaks, all of it will escape in a short time resulting in cooling failure and no water coming out of the drain hose. So, if water comes out from the drain hose, it indicates the normal operation of the product and it does not need refrigerant charging.
	Q	It fails to do cooling.
	A	When the air conditioner is set to Ventilation or the desired temperature is set higher than the current temperature, it fails to do cooling. In this case, select Cooling or set the desired temperature lower.
Leakage	Q	It floods the floor.
	A	Place the drain hose properly. When it is not placed properly, the drain water would flow back flooding the floor. So, straighten out the drain hose for the water to be drained well.
	Q	Water drips at the drain connection (service valve) of the outdoor unit.
	A	When a glass bottle is taken out of the refrigerator, moisture gets condensed on its surface due to the temperature differences. The same principle applies to the air conditioner. When cold refrigerant goes through the copper tube, moisture gets condensed on the surface of the tube and the connection areas. To prevent the water condensation, the pipes are insulated. But, the connection areas of the outdoor unit are not insulated for the purpose of maintenance or repair, and water gets condensed due to the temperature differences and drips down. Generally, it evaporates right away. But, when it drips much during muggy days, put a water pan on the floor.
	Q	It leaks even though a drain pump is used.
Smells	A	It occurs when the drain pump is plugged out or it is out of order. Check the power of the drain pump and the position of the drain hose, and when the pump is faulty, contact the drain pump manufacturer. Samsung Electronics do not manufacture drain pumps. So, we are not able to correct the drain pump problems.
	Q	Whenever the air conditioner is turned on, it irritates my eyes and gives me a headache.
	A	There are no components in the air conditioner irritating the eyes and sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, it occurs at a interior renovated place, a pharmacy, a gasoline handling place, a tire shop, a second-hand book shop or an electronic component handling place; when its chemical or musty smells are sucked in and sent out, it can be misled that the air conditioner generates them. So, find and root out the problem or refresh the room frequently.

Classification	Class	Description
Smells	Q	Whenever the air conditioner is turned on, it stinks.
	A	There are no components in the air conditioner sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, when the drain hose is taken out to the washing room or there are sources of smells such as a diaper bin, a shoe shelf or a socks bin, bad smells generate. Also, it occurs where glass cleaners or air fresheners are used; when they are sucked in interacting with dusts and moistures inside, bad smells generate. These kinds of organic materials noxious to human bodies. So, we recommend against the use of them.
	Q	Whenever the air conditioner is turned on, it smells sour.
	A	When the room is papered recently, its paste smells would be sucked inside. Also, when the air conditioner is installed in the study room of young boys loving sweat-generating activities such as the basketball, excessive sweats evaporate and get sucked into the air conditioner resulting in bad smells. So, find and root out the problem or refresh the room frequently.
	Q	Whenever the air conditioner is turned on, it smells musty.
	A	It is due to the improper keeping of the product after its use. When keeping the product, dry up the inside with the operation of Ventilation to prevent must. When the product is kept without drying up the inside with Ventilation, mold would grow inside resulting in must. So, open the windows and switch on the Ventilation function to get rid of the saturated smell inside.
	Q	Whenever the air conditioner is turned on, it sends out bad smells such as stale smells.
	A	It occurs generally when there are pet animals in the house. Their smells stay at the same place. But, when the air conditioner is turned on, the air gets circulated resulting in the circulation of the smells. So, find and root out the problem or refresh the room frequently.
	Q	It sends out bad smells.
	A	When the air filter is filthy, it could send out bad smells. So, clean the filter and ventilate the room with the windows open while operating the Ventilation function.
Operation	Q	It won't start.
	A	There is a power failure or it is plugged out. Also, check if the power distribution panel is switched off.
	Q	It goes off during operation.
	A	When the hot air does not escape properly, it goes off during operation. It occurs when it does not ventilate properly because the outdoor unit is covered, the back of the outdoor unit is blocked by a cardboard or a plywood panel, and the front of the outdoor unit is blocked by the closed window or other obstacles. Clear the above obstacles from the outdoor unit.
	Q	It generally works properly. But, when it's considerably hot, it goes off during operation.
	A	It occurs when the outdoor unit is exposed to direct sunlight and the hot air does not escape properly. Set up a sun blind over the outdoor unit and clear the neighboring obstacles from the outdoor unit to provide good ventilation. When it goes off frequently during a heat wave, it would prevent the turn-off and increase the cooling capacity cleaning the outdoor unit or spraying some water to the heat exchanger.
	Q	The remote controller won't operate.
	A	When the batteries run out or the transmitter or receiver of the remote controller is blocked by obstacles, change the batteries or keep the obstacles away from the controlling area. Also, the remote controller may not work under intensive light from a 3-wave length lamp or a neon sign due to the EMI. In this case, take the remote controller closer to the receiver.

Classification	Class	Description
Installation	Q	Who installs the air conditioner? (Relocation/Re-installation)
	A	When relocating or re-installing the air conditioner, make sure to contact Samsung Electronics Service Center or Authorized Service Agent and have them to do the job. (If not, it could cause personal injury or product damage.) The cost for the relocation/re-installation of the air conditioner is subject to the customer's expense. There is a cost table. But, our service engineer needs to visit to total up the cost correctly. When you move in, make sure to contact Samsung Electronics Service Center or Authorized Service Agent in advance to streamline the process.
	Q	Is it possible to install the outdoor unit outside?
	A	It is possible to install it at a designated place in the apartment or on the rooftop nearby. But, it's illegal hanging an angle iron case with the outdoor unit in it outside the apartment. Also, it is illegal obstructing passers-by with the outdoor unit installed outside.
	Q	What can be done to install the outdoor unit facing the road because it is a commercial building?
	A	The following is an excerpt from Building Code going into effect from JUNE 1st 2005. "The exhaust pipe of a cooling or ventilation facility installed in a building adjacent to the streets of commercial or residential areas shall be installed higher than 2 m to prevent the exhaust air from blowing directly to passers-by and the current facilities shall be corrected by MAY 31st 2005." So, please install it higher than 2 m or not to blow the hot exhausting air directly to passers-by.
	Q	What about installing a windscreen during installation not to blow hot air directly to passers-by?
	A	When the hot air from the front of the outdoor unit is blocked, the product's performance will be affected and it will fail to operate properly. So, keep it at least 300mm away from its surrounding walls and give it good ventilation.

14-5 Cleaning/Filter Change

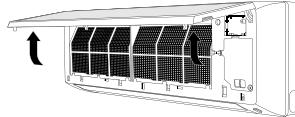
14-5-1 Cleaning your Air Conditioner

To get the best possible use out of your air conditioner, you must clean it regularly to remove the dust that accumulates on the air filter.

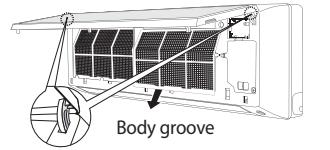


- Before cleaning your air conditioner, ensure that you have switched off the breaker used for the unit.

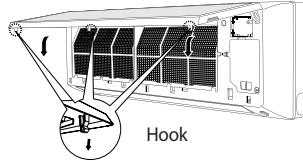
1. Open the front panel by pulling tabs on the lower right and left sides of the indoor unit.



2. Detach the front panel by pulling it forwards.
3. Hold the edge of the air filter under the front panel and pull to release.
4. Remove all dust on the air filter with a vacuum cleaner or brush.
5. WHEN YOU FINISH, INSERT THE TOP OF THE FILTER INTO THE SLOT AND FIX IT TO 5 tabs or 3 tabs of the panel.



6. CLEAN THE FRONT PANEL WITH A DAMP CLOTH AND MILD DETERGENT (do NOT use benzene, solvents or other chemicals).
7. Reassemble the air filter and the front panel.



Note : • If you have not used the air conditioner for a long period of time, set the fan going for three to four hours to dry the inside of the air conditioner thoroughly.

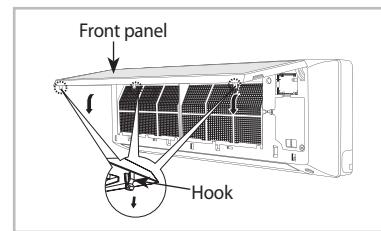
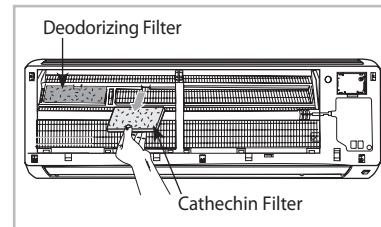
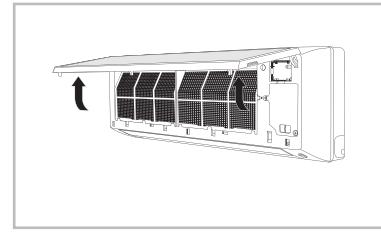
14-5-2 Cleaning Cathechin Filter

Cathechin filter protects you from allergy-causing particles, even if you raise pets at home.

- 1 Open the upper front panel by pulling the lower right and left tabs of the panel.
- 2 Detach the cathechin filter(green) by pulling it forwards.
- 3 Wash the filter with clean water.
 - ◆ Make sure not to rub the filter when washing.
- 4 Dry it in the shade, and then insert it in its place.
 - ◆ Avoid direct sunlight when dry the cathechin filter. If not, it may cause variation.
- 5 Close the front panel.

Note

- ◆ You should clean the filters every 3 months even if the cleaning period might be different depending on how long and where you are using.
- ◆ The filter function is not affected even if deodorizing filter and cathechin filter are inverted.



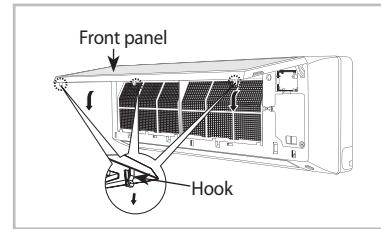
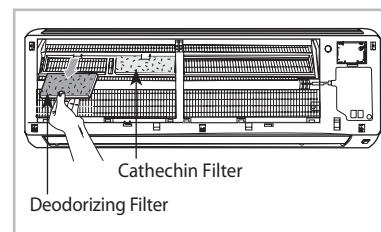
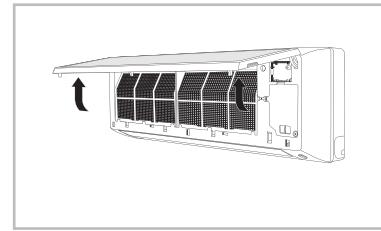
14-5-3 Replacing Deodorizing Filter

Activated carbon is incorporated in the Deodorizing filter, efficiently absorbing cigarette smoke, pet odors and other unpleasant smells.

- 1 Open the upper front panel by pulling the lower right and left tabs of the panel.
- 2 Detach the deodorizing filter(black) by pulling it forwards.
- 3 Replace the deodorizing filter with a new one into the slot.
 - ◆ Use the deodorizing filter you purchased after removing the vinyl wrap.
- 4 Close the front panel.

Note

- ◆ You should clean the filters every year even if the replacing period might be different depending on how long and where you are using.
- ◆ You can purchase deodorizing filter at the customer care center.
- ◆ The filter function is not affected even if deodorizing filter and cathechin filter are inverted.



14-6 Installation

14-6-1 Before Installation

Keep the air conditioner outlet and inlet free from its surroundings.

In case of installation, keep the symmetry and fix it to prevent vibration.

The pipe length shall meet the standard as far as possible.

14-6-2 Installation Procedure

■ Location

Install the product in an area to guarantee the best cooling effect, convenience of piping and electric work, and inexistence of vibration or wind.

■ Wall Drilling

Drill the wall downward in a diameter of 60 to 65mm.

■ Fixing Indoor Unit & Outdoor Unit

Fix the air conditioner indoor unit securely to the wall. Secure the outdoor unit in a suitable position.

■ Pipe Spooling & Connecting

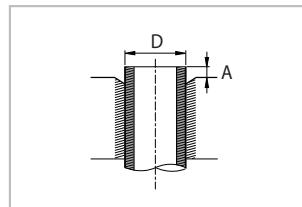
You shall cut the pipe with a pipe cutter and grind all the burrs of the cut surface.

Pipe expansion may continue until the pipe surface becomes uneven or torn apart.

Be sure to use a torque wrench to tighten pipes or flare nuts.

<Torque & Depth>

Outer Diameter(D)	Torque(kgf·cm)	Depth(A)
6.35mm(1/4")	140~170	1.3mm
9.52mm(3/8")	250~280	1.8mm
12.70mm(1/2")	380~420	2.0mm
15.88mm(5/8")	440~480	2.2mm
19.05mm(3/4")	990~1,210	2.2mm



■ Leak Test

Put an inert gas like nitrogen in the outdoor unit pipe and put soap bubbles or other test liquids on the pipe surface for the leak test.

■ Drain Hose Connecting

Install the drain hose downward to drain water naturally. Be sure to pour water into the hose to check if it drains well.

■ Electric & Earth Work

Electric and earth work shall meet the "Electric Facility Technology Standard" and the "Internal Wire Regulation" of the Electric Business Laws.

■ Inspection & Trial Run

Upon completion of the tests, you shall make a trial run while you explain the main functions of the air conditioner to finish the installation.

14-7 Installation Diagram of Indoor Unit and Outdoor Unit

14-7-1 Air-Purge Procedure

- 1) Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.



- 2) Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port as shown at the figure.



- 3) Open the valve of the low pressure side of manifold gauge counter-clockwise.



- 4) Purge the air from the system using vacuum pump for about 30 minutes.

- Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 30 minutes.
- This procedure is very important in order to avoid gas leak.
- Turn off the vacuum pump.
- Close the valve of the low pressure side of manifold gauge clockwise.
- Remove the hose of the low pressure side of manifold gauge.



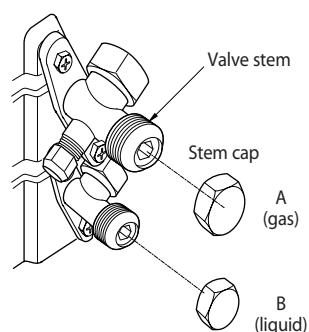
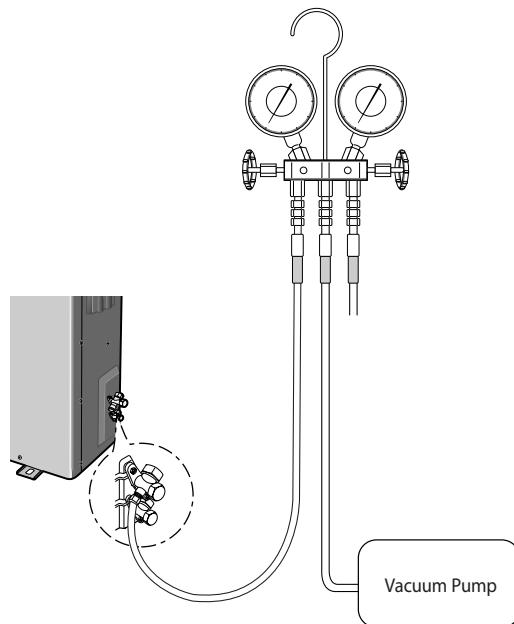
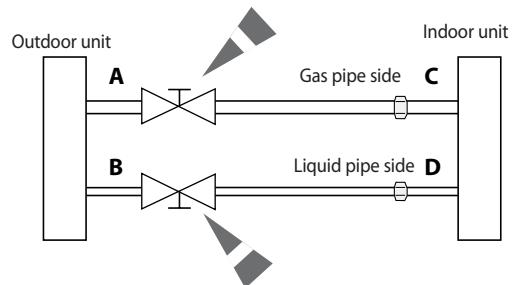
- 5) Set valve cork of both liquid side and gas side of packed valve to the open position.



- 6) Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf·cm with a torque wrench.



- 7) Check for gas leakage.
 - At this time, especially check for gas leakage from the 3 way valve's stem nuts, and from the service port cap.



14-7-2 "Pump down" Procedure

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

- 1) Remove the caps from the 3 way valve and the 3-Way valve.



- 2) Turn the 3-Way valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the 3 way valve again.



- 3) Set the unit to cool operation mode.
(Check if the compressor is operating.)



- 4) Turn the 3-Way valve clockwise to close.



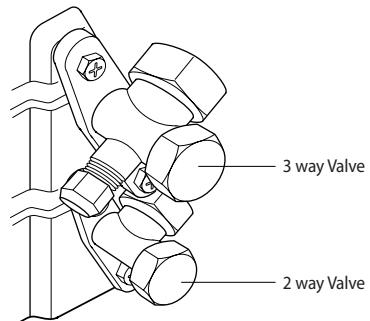
- 5) When the pressure gauge indicates "0" turn the 3-Way valve clockwise to close.



- 6) Stop operation of the air conditioner.



- 7) Close the cap of each valve.



Relocation of the air conditioner

- Refer to this procedure when the unit is relocated.
- Carry out the pump down procedure (refer to the details of 'pump down').
- Remove the power cord.
- Disconnect the assembly cable from the indoor and outdoor units.
- Remove the flare nut connecting the indoor unit and the pipe.
- At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Disconnect the pipe connected to the outdoor unit.
- At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Make sure you do not bend the connection pipes in the middle and store together with the cables.
- Move the indoor and outdoor units to a new location.
- Remove the mounting plate for the indoor unit and move it to a new location.