



# ROOM AIR CONDITIONER

## INDOOR UNIT

SH09AWH

SH09ZWH

AQ09WHWE

KFR-25G/SWA

SH12AWH

SH12ZWH

AQ12WHWE

KFR-35G/SWA

## OUTDOOR UNIT

SH09AWHX

SH09ZWHX

UQ09WHWE

KFR-25W/SWA

SH12AWHX

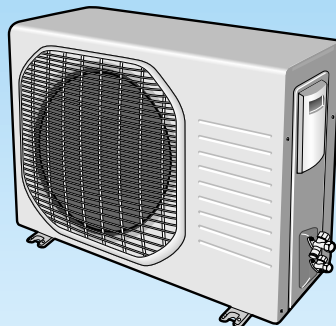
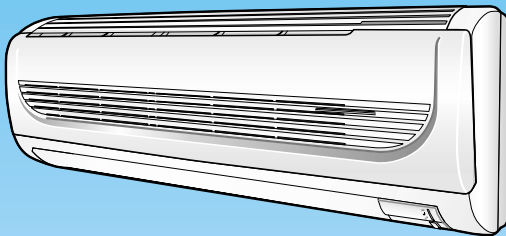
SH12ZWHX

UQ12WHWE

KFR-35W/SWA

# **SERVICE** *Manual*

## AIR CONDITIONER



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# 1. Product Specifications

## 1-1 Table

Item			Model	SH09AWH		SH12AWH		
				Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	
Type				Wall-mounted		Wall-mounted		
Performance	Cooling		kW	2.75		3.5		
	Heating		kW	2.90		4.2		
	Dehumidifying		ℓ/h	1.0		1.4		
	Air Volume	Cooling	m <sup>3</sup> /min	7.3	25	8.3	25	
		Heating		8.0	25	9.0	25	
	Noise	Cooling	dB	38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53	
		Heating		38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53	
	Energy Efficiency Ratio	Cooling	W/W	2.81		2.82		
		Heating		3.22		3.23		
Power		V-Hz	1-220 / 240-50		1-220 / 240-50			
Power	Power Consumption	Cooling	W	980		1,240		
		Heating		900		1,300		
	Operating Current	Cooling	A	4.5		5.7		
		Heating		4.5		5.7		
	Power Factor	Cooling	%	96.5		98.3		
		Heating		95.5		98.0		
	Starting Current		A	21.0		30.0		
	Power Cord	Length		m	-		-	
		Number of Core Wire			-		-	
Capacity		A	250V-10A		250V-10A			
Size	Outer Dimension	Width x Height x Depth	mm	825 x 285 x 189	720 x 548 x 265	825 x 285 x 189	720 x 548 x 265	
			inch	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	
	Weight(Net)		kg	8.2	31.3	8.4	33.8	
	Refrigerant Pipe	Liquid	mm x L(m)	ø6.35 x 7.5		ø6.35 x 7.5		
		GAS	mm x L(m)	ø9.52 x 7.5		ø9.52 x 7.5		
	Drain Hose		D x L(mm)	ø18 x 550		ø18 x 550		
	Compressor	Type		Rotary		Rotary		
		Motor	Type	Induction Motor(PSC)		Induction Motor(PSC)		
			Rated Output	900		1,075		
	Oil Type			DAPHNE FV68S(PVE)		DAPHNE FV68S(PVE)		
	Blower	Type		Cross-flow	Propeller	Cross-flow	Propeller	
Motor		Type	steel	steel	steel	steel		
		Rated Output	W	15	50	15	50	
Heat Exchanger				2ROW 14STEP	1ROW 24STEP	2ROW 14STEP	2ROW 24STEP	
Refrigerant Control Unit				CAPILLARY TUBE		CAPILLARY TUBE		
Freezer Oil Capacity		cc	350		520			
Refrigerant to Change(R410A)		g	650		1,020			
Protection Device(OLP)				MRA99134-9201		MRA99908-9201		
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		

**Table(cont.)**

Item			Model	SH09ZWH		SH12ZWH	
				Indoor unit	Outdoor unit	Indoor unit	Outdoor unit
Type			Wall-mounted			Wall-mounted	
Performance	Cooling		kW	2.70		3.5	
	Heating		kW	2.90		4.0	
	Dehumidifying		ℓ/h	1.0		1.4	
	Air Volume	Cooling	m <sup>3</sup> /min	7.3	25	8.3	25
		Heating		8.0	25	9.0	25
	Noise	Cooling	dB	38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53
		Heating		38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53
	Energy Efficiency Ratio	Cooling	W/W	2.70		2.99	
Heating		3.22		3.48			
Power		V-Hz	1-220 / 240-50		1-220 / 240-50		
Power	Power Consumption	Cooling	W	1,000		1,170	
		Heating		900		1,150	
	Operating Current	Cooling	A	4.5		5.2	
		Heating		4.0		5.2	
	Power Factor	Cooling	%	98.2		96.9	
		Heating		99.1		96.2	
	Starting Current		A	21.0		30.0	
	Power Cord	Length		m	-		-
Number of Core Wire			-		-		
Capacity		A	250V-10A		250V-10A		
Size	Outer Dimension	Width x Height x Depth	mm	825 x 285 x 189	720 x 548 x 265	825 x 285 x 189	720 x 548 x 265
			inch	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4
	Weight(Net)		kg	8.2	31.3	8.4	33.8
	Refrigerant Pipe	Liquid	mm x L(m)	ø6.35 x 5.0		ø6.35 x 5.0	
		GAS	mm x L(m)	ø9.52 x 5.0		ø12.70 x 5.0	
	Drain Hose		D x L(mm)	ø18 x 550		ø18 x 550	
	Compressor	Type		Rotary		Rotary	
		Motor	Type	Induction Motor(PSC)		Induction Motor(PSC)	
			Rated Output	1,005		1,206	
	Oil Type			SUNISO-4GSD		SUNISO-4GSD	
Blower	Type		Cross-flow	Propeller	Cross-flow	Propeller	
	Motor	Type	steel	steel	steel	steel	
		Rated Output	W	15	50	15	50
Heat Exchanger				2ROW 14STEP	1ROW 24STEP	2ROW 14STEP	2ROW 24STEP
Refrigerant Control Unit				CAPILLARY TUBE		CAPILLARY TUBE	
Freezer Oil Capacity		cc	360		600		
Refrigerant to Change(R22)		g	580		980		
Protection Device(OLP)				RAC12110-9622		RAC12074-9622	
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	

Item		Model		AQ09WHWE		AQ12WHWE	
				Indoor unit	Outdoor unit	Indoor unit	Outdoor unit
Type				Wall-mounted		Wall-mounted	
Performance	Cooling		kW	2.70		3.5	
	Heating		kW	2.90		4.0	
	Dehumidifying		ℓ/h	1.0		1.4	
	Air Volume	Cooling	m <sup>3</sup> /min	7.3	25	8.3	25
		Heating		8.0	25	9.0	25
	Noise	Cooling	dB	38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53
		Heating		38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53
	Energy Efficiency Ratio	Cooling	W/W	2.70		2.99	
Heating		3.22		3.48			
Power		V-Hz	1-220 / 240-50		1-220 / 240-50		
Power	Power Consumption	Cooling	W	1,000		1,170	
		Heating		900		1,150	
	Operating Current	Cooling	A	4.5		5.2	
		Heating		4.0		5.2	
	Power Factor	Cooling	%	98.2		96.9	
		Heating		99.1		96.2	
	Starting Current		A	21.0		30.0	
	Power Cord	Length		m	-		-
Number of Core Wire			-		-		
Capacity		A	250V-10A		250V-10A		
Size	Outer Dimension	Width x Height x Depth	mm	825 x 285 x 189	720 x 548 x 265	825 x 285 x 189	720 x 548 x 265
			inch	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4
	Weight(Net)		kg	8.2	33.0	8.4	33.8
	Refrigerant Pipe	Liquid	mm x L(m)	ø6.35 x 5.0		ø6.35 x 5.0	
		GAS	mm x L(m)	ø9.52 x 5.0		ø12.70 x 5.0	
	Drain Hose		D x L(mm)	ø18 x 550		ø18 x 550	
	Compressor	Type		Rotary		Rotary	
		Motor	Type	Induction Motor(PSC)		Induction Motor(PSC)	
			Rated Output	1,005		1,206	
	Oil Type			SUNISO-4GSD		SUNISO-4GSD	
Blower	Type		Cross-flow	Propeller	Cross-flow	Propeller	
	Motor	Type	steel	steel	steel	steel	
		Rated Output	W	15	50	15	50
Heat Exchanger			2ROW 14STEP	1ROW 24STEP	2ROW 14STEP	2ROW 24STEP	
Refrigerant Control Unit			CAPILLARY TUBE		CAPILLARY TUBE		
Freezer Oil Capacity		cc	360		600		
Refrigerant to Change(R22)		g	580		980		
Protection Device(OLP)			RAC12110-9622		RAC12074-9622		
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		





**Table(cont.)**

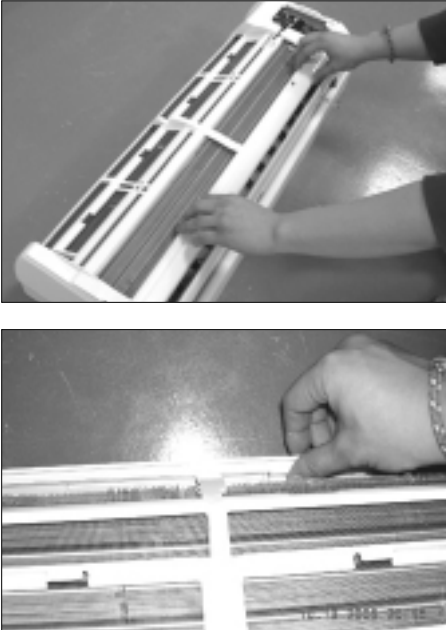
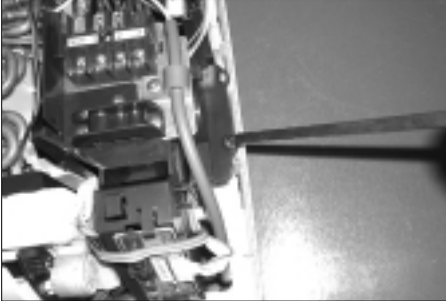

Item			Model	KFR-25G / SWA		KFR-35G / SWA		
				Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	
Type				Wall-mounted		Wall-mounted		
Performance	Cooling		kW	2.65		3.5		
	Heating		kW	2.90		4.0		
	Dehumidifying		ℓ/h	1.0		1.4		
	Air Volume	Cooling	m <sup>3</sup> /min	7.3	25	8.3	25	
		Heating		8.0	25	9.0	25	
	Noise	Cooling	dB	38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53	
		Heating		38 / 36 / 34	51 / 51	41 / 39 / 37	53 / 53	
	Energy Efficiency Ratio	Cooling	W/W	2.65		2.99		
Heating		3.22		3.48				
Power		V-Hz	1-220-50		1-220-50			
Power	Power Consumption	Cooling	W	1,000		1,170		
		Heating		900		1,150		
	Operating Current	Cooling	A	4.6		5.8		
		Heating		4.1		5.8		
	Power Factor	Cooling	%	97		92		
		Heating		97		92		
	Starting Current		A	21.0		30.0		
	Power Cord	Length		m	-		-	
Number of Core Wire			-		-			
Capacity		A	250V-10A		250V-16A			
Size	Outer Dimension		Width x Height x Depth	mm	825 x 285 x 189	720 x 548 x 265	825 x 285 x 189	720 x 548 x 265
			inch	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	32.5 x 11.2 x 7.44	28.4 x 21.6 x 10.4	
	Weight(Net)		kg	8.2	31.3	8.4	33.8	
	Refrigerant Pipe		Liquid	mm x L(m)	ø6.35 x 4.0		ø6.35 x 4.0	
			GAS	mm x L(m)	ø9.52 x 4.0		ø12.70 x 4.0	
	Drain Hose		D x L(mm)	ø18 x 550		ø18 x 550		
	Compressor	Type		Rotary(SAMSUNG)		Rotary(SAMSUNG)		
		Motor	Type	Induction Motor(PSC)		Induction Motor(PSC)		
			Rated Output	990		1,210		
	Oil Type		SUNISO-4GSD/NOC		SUNISO-4GSD/NOC			
Blower	Type		Cross-flow	Propeller	Cross-flow	Propeller		
	Motor	Type	steel	steel	steel	steel		
		Rated Output	W	15	50	15	50	
Heat Exchanger				2ROW 14STEP	1ROW 24STEP	2ROW 14STEP	2ROW 24STEP	
Refrigerant Control Unit				CAPILLARY TUBE		CAPILLARY TUBE		
Freezer Oil Capacity		cc	360		600			
Refrigerant to Change(R22)		g	600		950			
Protection Device(OLP)				RAC12054-9622		RAC12074-9622		
Cooling Test Condition				INDOOR UNIT : DB27°C WB19°C		OUTDOOR UNIT : DB35°C WB24°C		
Maximum Operation Condition				INDOOR UNIT : DB32°C WB27.5°C		OUTDOOR UNIT : DB43°C WB33°C		

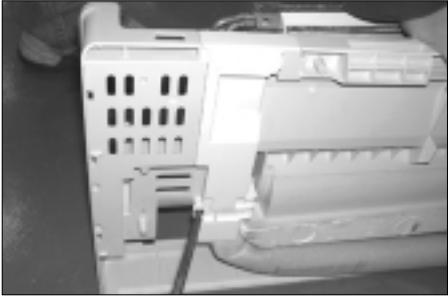

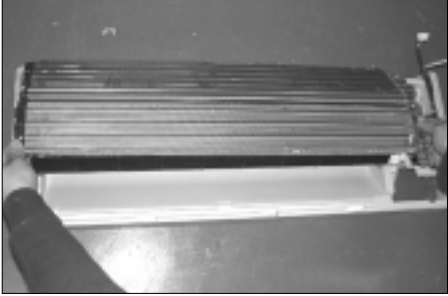
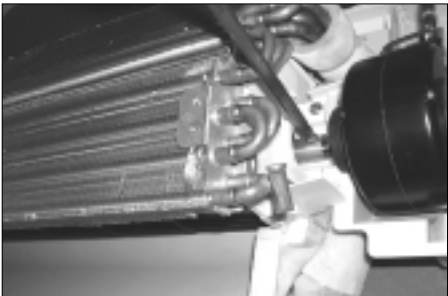
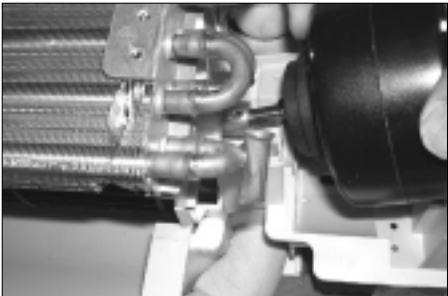
## 2. Disassembly and Reassembly

Stop operation of the air conditioner and remove the power cord before repairing the unit.

### 2-1 Indoor Unit






No	Parts	Procedure	Remark
1	Front Grille	<ol style="list-style-type: none"><li>1) Stop the air conditioner operation and block the main power.</li><li>2) Open the Front Grille by pulling right and left sides of the hook.</li><li>3) Loosen 1 of the right screw and detach the Terminal Cover.</li><li>4) Detach the thermistor from the Front Grille.</li><li>5) Loosen 2 fixing screws of Front Grille.</li></ol>	   



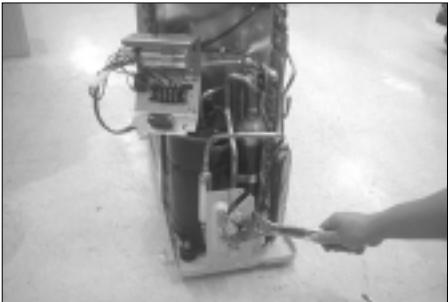

No	Parts	Procedure	Remark
		<p>6) Unlock 2 hooks to fix Panel Front and Tray Drain.</p> <p>7) Unlock 3 hooks to fix Panel Front and Back-Body.</p>	
2	Control-In (Main PCB)	<p>1) Take all the connector of PCB upper side out. (Inclusion Power Cord)</p> <p>2) Detach the outdoor unit connection wire from the Terminal Block.</p> <p>3) Loosen 4 fixing screws of Ass'y Control-In.</p>	
3	Tray Drain	<p>1) Pull Tray Drain out from the Back Body.</p>	

No	Parts	Procedure	Remark
4	Heat Exchanger	<ol style="list-style-type: none"> <li>1) Loosen 2 fixing earth screws of right side.</li> <li>2) Detach the Connection Pipe.</li> <li>3) Detach the Holder Pipe at the rear side.</li> <li>4) Loosen the 3 fixing screws of right and left side.</li> <li>5) Lifting the Heat Exchanger up a little to push the up side for separation from the indoor unit.</li> </ol>	  
5	Fan Motor & Cross Fan	<ol style="list-style-type: none"> <li>1) Loosen the fixing screw and detach the Motor Holder.</li> <li>2) Detach the Fan Motor from the Fan.</li> <li>3) Detach the Fan From the left Holder Bearing.</li> </ol>	 



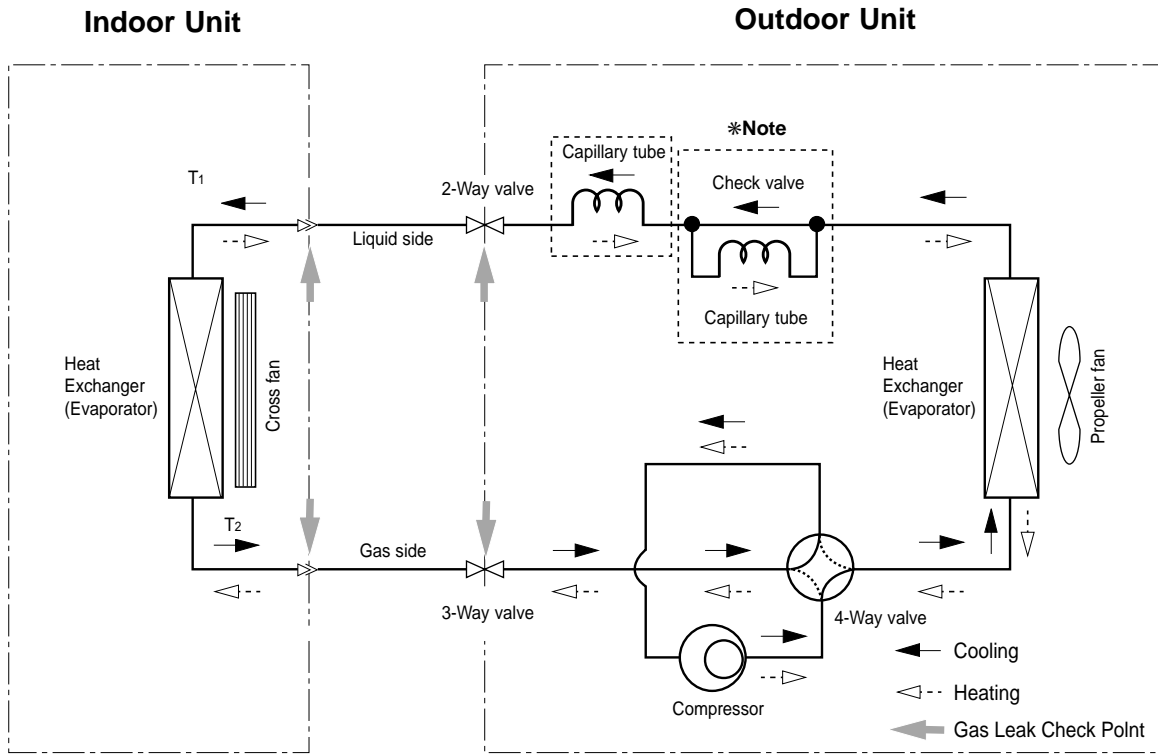
## 2-2 Outdoor Unit

No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen each 3 fixing screws on both right and left Cabinet-Side edge and a fixing screw on the Cabinet-Front lower to detach the Cabinet-Front.</p> <p>2) Loosen 2 fixing screws of the Ass'y-Control.</p> <p>3) Loosen 6 fixing screws of the Cabinet-Side RH.</p> <p>4) Loosen 2 fixing screws of the Cabinet-Side LF.</p>	    

No	Parts	Procedure	Remark
2	Fan & Motor	<ol style="list-style-type: none"> <li>1) Detach the Nut Flange.(Turn counterclockwise because the screw is right-handed)</li> <li>2) Detach the Fan.</li> <li>3) Loosen 4 fixing screws to detach the Motor.</li> </ol>	
3	Heat Exchanger	<ol style="list-style-type: none"> <li>1) Loosen 2 fixing screws on both sides.</li> <li>2) Disassemble the pipe in both inlet and outlet with welding torch.</li> <li>3) Detach the Heat Exchanger.</li> </ol>	 
4	Compressor	<ol style="list-style-type: none"> <li>1) Loosen the Terminal Cover nut to open the Terminal Cover.</li> <li>2) Disassemble the cloth sound felt.</li> <li>3) Disassemble the pipe in both inlet and outlet of the Compressor with welding torch.</li> <li>4) Disassemble the pipe in both inlet and outlet of the Condenser with welding torch.</li> <li>5) Loosen the 3 bolts at the bottom.</li> <li>6) Detach the Compressor.</li> </ol>	

# 3. Refrigerating Cycle Diagram

## 3-1 Refrigerating Cycle Diagram



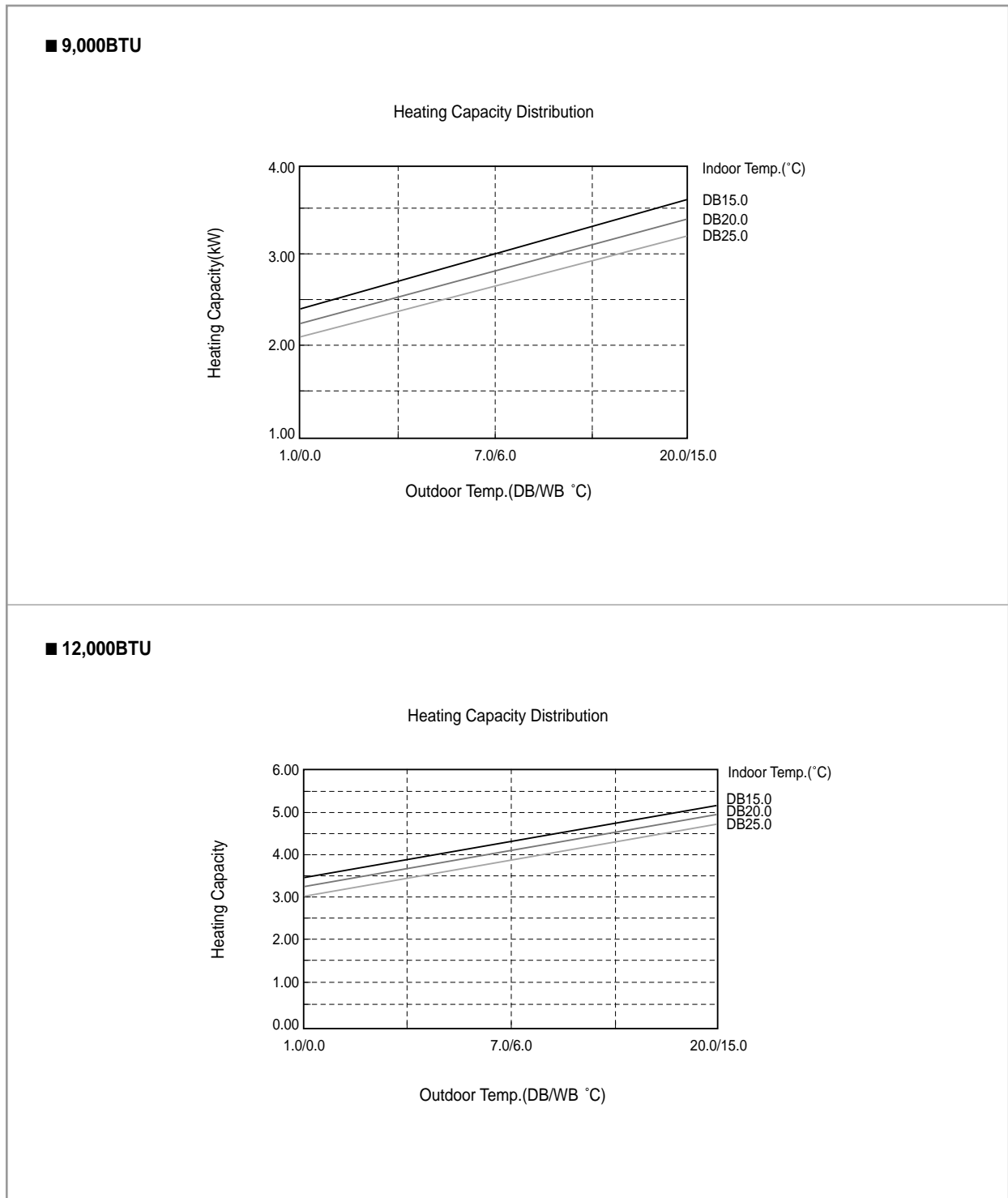
## 3-2 Refrigerating Cycle Characteristic

### 3-2-1 Capacity Distributions

Capacity Distributions according to indoor and outdoor temperature variation.

- Indoor Temp. Variation : 15.0°C ~ 25.0°C

- Outdoor Temp. Variation : 1.0°C ~ 20.0°C

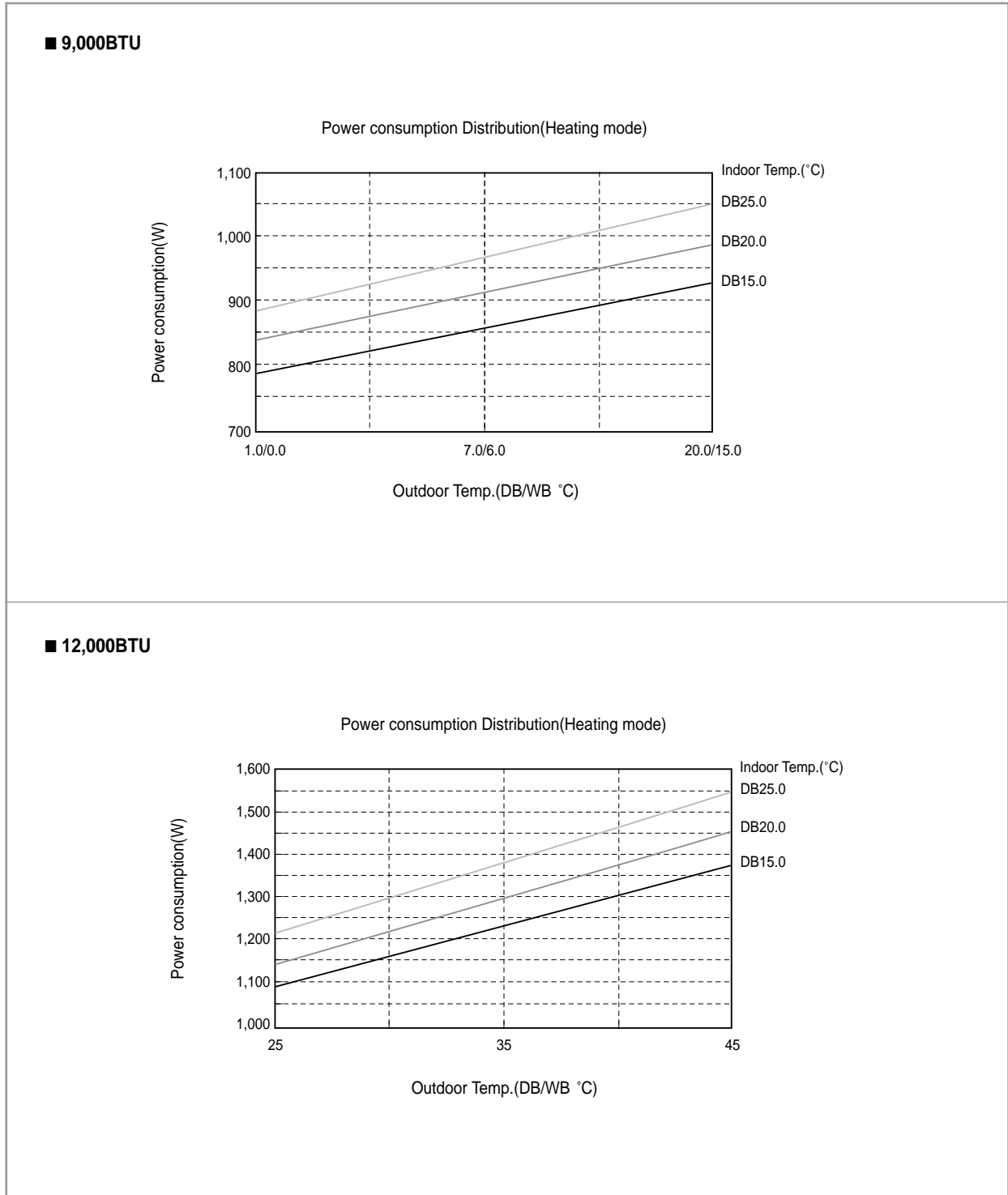


### 3-2-2 Power Consumption Distributions

Power consumption distributions according to indoor and outdoor temperature variation.

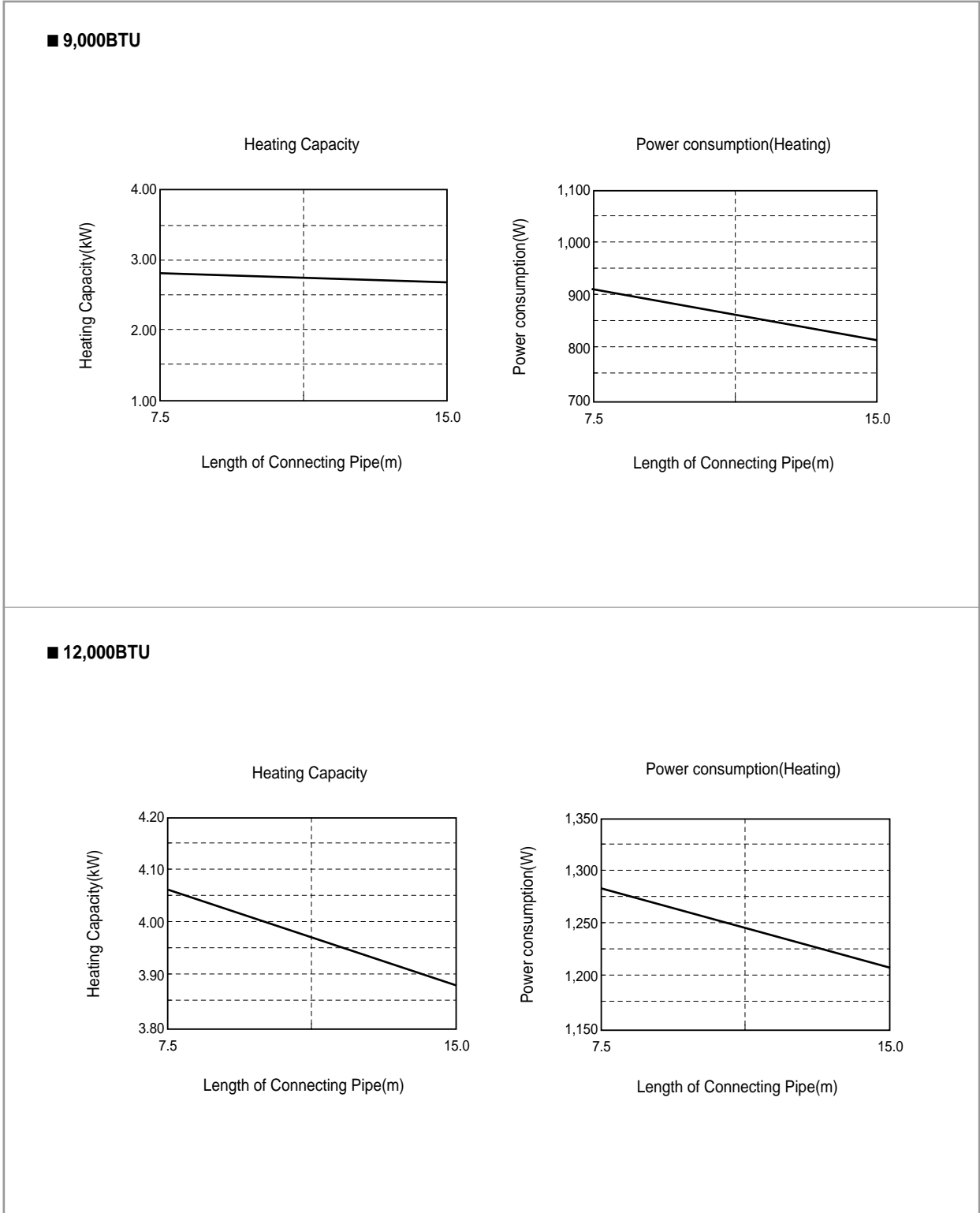
- Indoor Temp. Variation : 15.0°C ~ 25.0°C

- Outdoor Temp. Variation : 1.0°C ~ 20.0°C



### 3-2-3 Capacity and Power Consumption Distributions

Capacity and power consumption distributions according to the length of connecting pipe between indoor unit and outdoor unit.





# 4. Set Up the Model Option

## 4-1 Setting Option Setup Method












ex) Option No. : 25 02 57 03 40










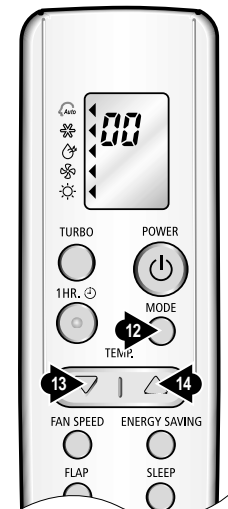










### Step 1 : Enter the Option Setup mode.

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




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

	Feature	Display
	<p><b>1</b> Setting Option SEG1. Push the  button to set the display panel to 2. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.</p>	
	<p><b>2</b> Setting Option SEG2. Push the  button to set the display panel to 5. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.</p>	
	<p><b>3</b> Change it into the set display of Option SEG3 and SEG4 with the  button.</p>	
	<p><b>4</b> Setting Option SEG3. 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.</p>	
	<p><b>5</b> Setting Option SEG4. Push the  button to set the display panel to 2. Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.</p>	

	Feature	Display
	<p><b>6</b></p> <p>Change it into the set display of Option SEG5 and SEG6 with the  button.</p>	
	<p><b>7</b></p> <p>Setting Option SEG5. Push the  button to set the display panel to 5 . Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.</p>	
	<p><b>8</b></p> <p>Setting Option SEG6. 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.</p>	
	<p><b>9</b></p> <p>Change it into the set display of Option SEG7 and SEG8 with the  button.</p>	
	<p><b>10</b></p> <p>Setting Option SEG7. 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.</p>	
	<p><b>11</b></p> <p>Setting Option SEG8. 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.</p>	
	<p><b>12</b></p> <p>Change it into the set display of Option SEG9 and SEG10 with the  button.</p>	
	<p><b>13</b></p> <p>Setting Option SEG9. Push the  button to set the display panel to 4 . Every time you push the button, the display panel reads 0 → 1 → 2 → 3 → ... 9 → A → b → c → d → E → F repeatedly.</p>	
	<p><b>14</b></p> <p>Setting Option SEG10. 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.</p>	



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

Whenever you press the  button, the set Option will be displayed.




**Step 4 : Pressing the ON/OFF button (  )**

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

**Step 5 : Unit operation test-run**

**First,** Remove the battery from the remote controller.

**Second,** Re-insert the battery into the remote controller.

**Third,** Press ON/OFF (  ) key with the direction of remote controller for set.

**• Error Mode**

- 1<sup>st</sup> If all lamps of indoor unit are flickering, Plug out, plug in power plug again and press ON/OFF key to retry.
- 2<sup>nd</sup> 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.

## 4-2 Table of the option Code



Model	Option Code									
	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10
SH12AWH SH12ZWH AQ12WHWE KFR-35G/SWA	2	5	0	2	5	7	0	3	4	0
SH09AWH	2	5	0	2	5	7	0	0	c	8
SH09ZWH AQ09WHWE KFR-25G/SWA	2	5	0	2	5	7	0	0	F	b

## 5. Troubleshooting

Check the basic items first to judge if the problem was caused by breakdown or misuse. If none of the basic items are related to the problem, please scrutinize the machine according to the 'Breakdown Diagnosis by Symptoms' method.

### 5-1 Basic Breakdown Diagnosis Items




- The input voltage should be rating voltage  $\pm 10\%$  range.  
The airconditioner may not operate properly if the voltage is out of this range.
- 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 airconditioner may not operate properly.
- When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the airconditioner.

No	Operation of air conditioner	Explanation
1	The OPERATION indication LED(GREEN) 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 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	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.
6	Timer LED(GREEN) 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.
7	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.
8	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
9	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.

## 5-2 Trouble check in the initial status

### 5-2-1 Diagnosis and marking of the part in trouble.

Please check the air conditioner operation status and write the check result in the chart in the room.

Description	LAMP		
	OPERATION	TIMER	TURBO
			
Indoor unit room temperature sensor error (open or short)	○	◐	○
Indoor unit heat exchanger temperature sensor error (open or short)	◐	◐	○
Indoor fan motor mal function	◐	○	◐
EEPROM error	○	◐	◐
Option error (option wasn't set up or option data error)	◐	◐	◐

○ : Lamp off   ◐ : Lamp flickering

### 5-2-2 Operation with abnormal motion

No	Abnormal condition	Inspection		Initial Diagnosis
1	No response from the remote control operation signal.	<ul style="list-style-type: none"> <li>• Plug out and plug in 5 seconds later.</li> </ul>	Able to operate the remote control.	OK
			Unable to operate the remote control.	Press the ⏻ button in the indoor unit. <ul style="list-style-type: none"> <li>• If it operates, the remote control and indoor unit receiver are in trouble.</li> <li>• If not, the indoor unit is in trouble.</li> </ul>
2	Unable to operate the outdoor unit	<ul style="list-style-type: none"> <li>• Press the TURBO button with the remote control.</li> <li>• In 3 minutes, check the voltage between the indoor unit terminal block N(1) and 1.</li> </ul>	AC200V ~ AC240V	Problem with the outdoor unit or PCB
			No power source displayed.	Problem with the relay (RY71) or PCB

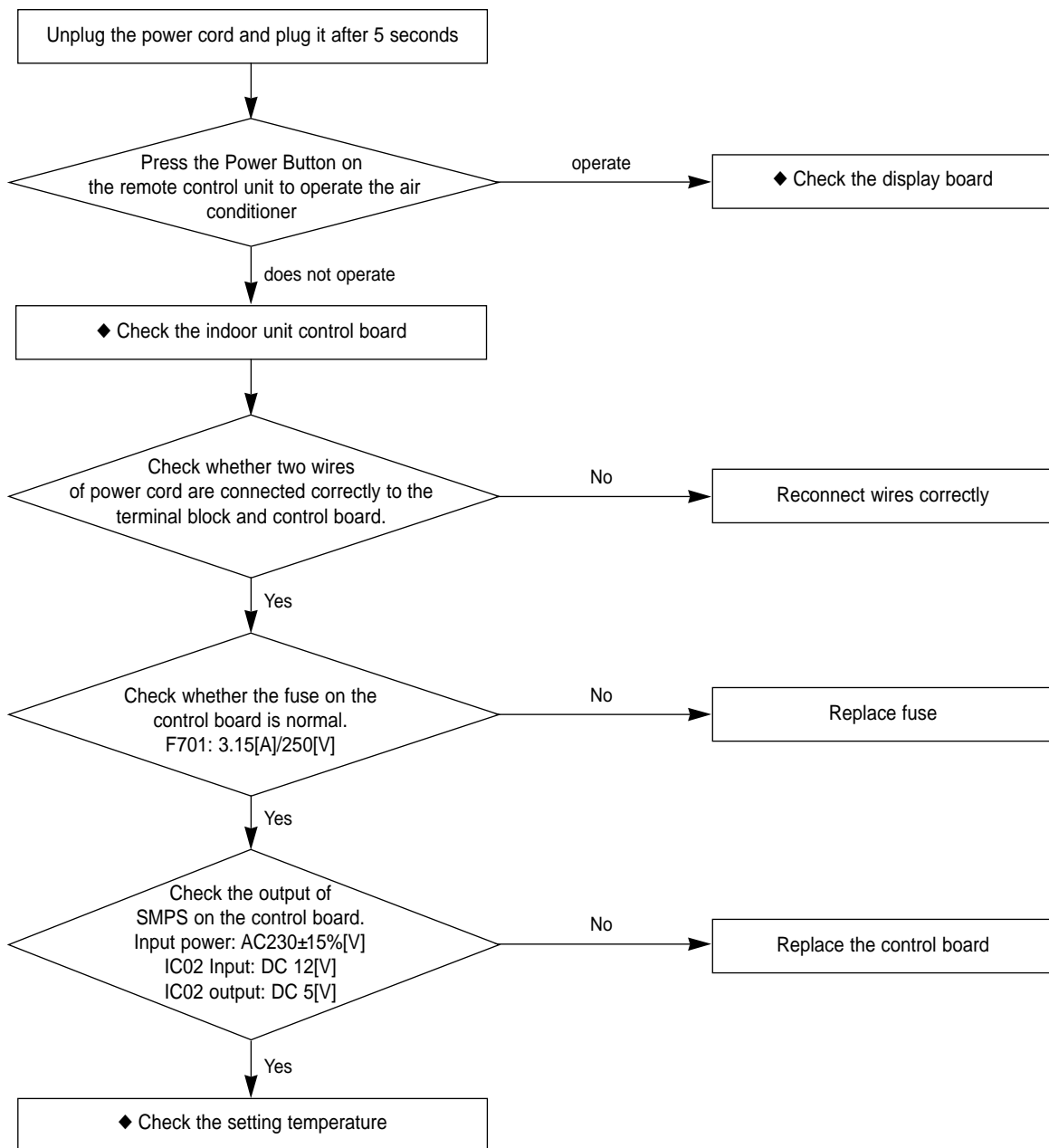
## 5-3 Breakdown diagnosis by symptoms

### 5-3-1 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

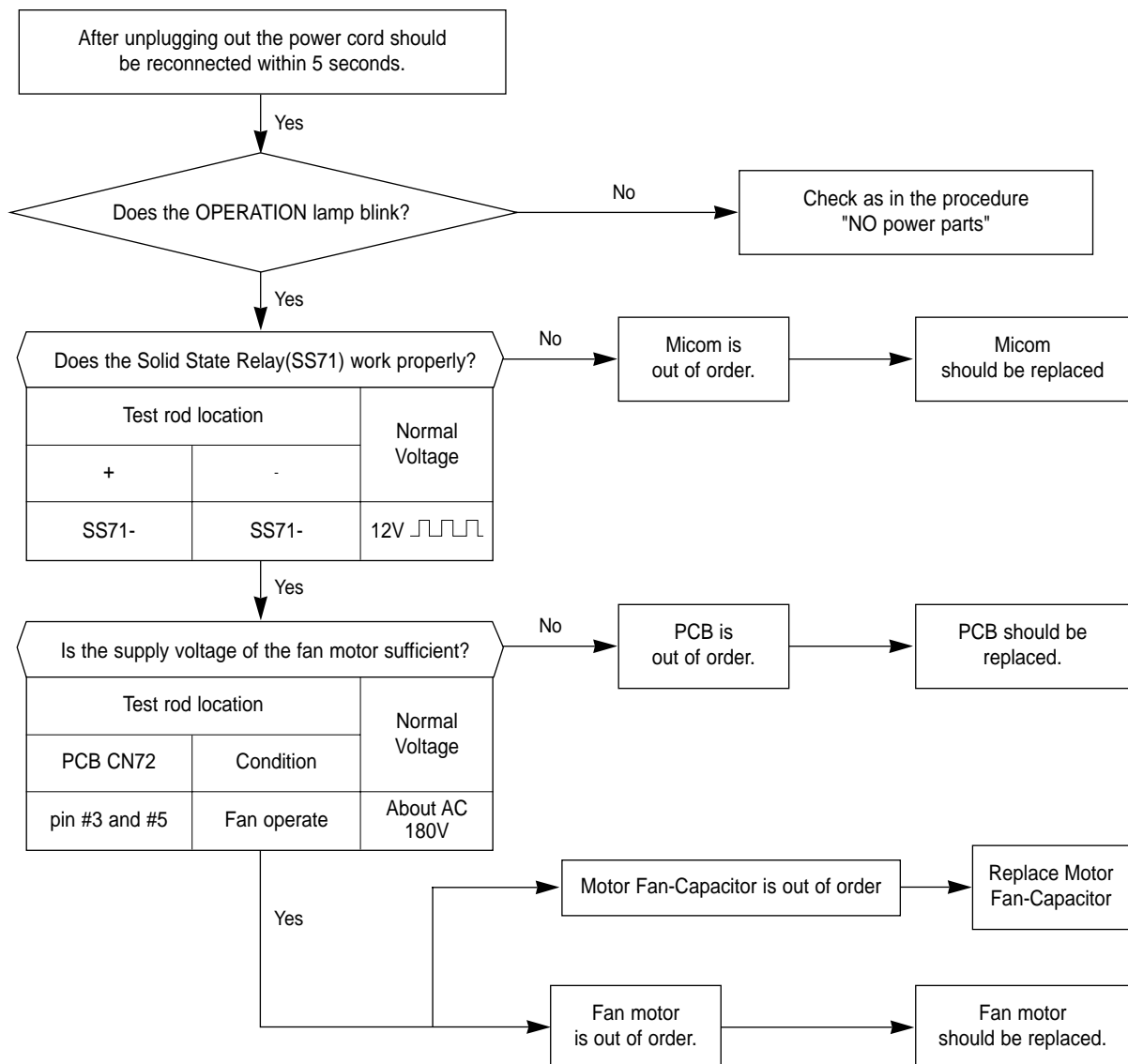


### 5-3-2 When the Indoor Unit Fan Does Not Operate. (Initial Diagnosis)

1. Checklist :

- 1) Is the indoor unit fan motor properly connected with the connector (CN72)?
- 2) Is the AC voltage correct?
- 3) Is HALL IC in indoor fan motor properly connected with the connector (CN44)?
- 4) Is the running capacitor (CR71) properly connected with PCB board?

2. Troubleshooting procedure

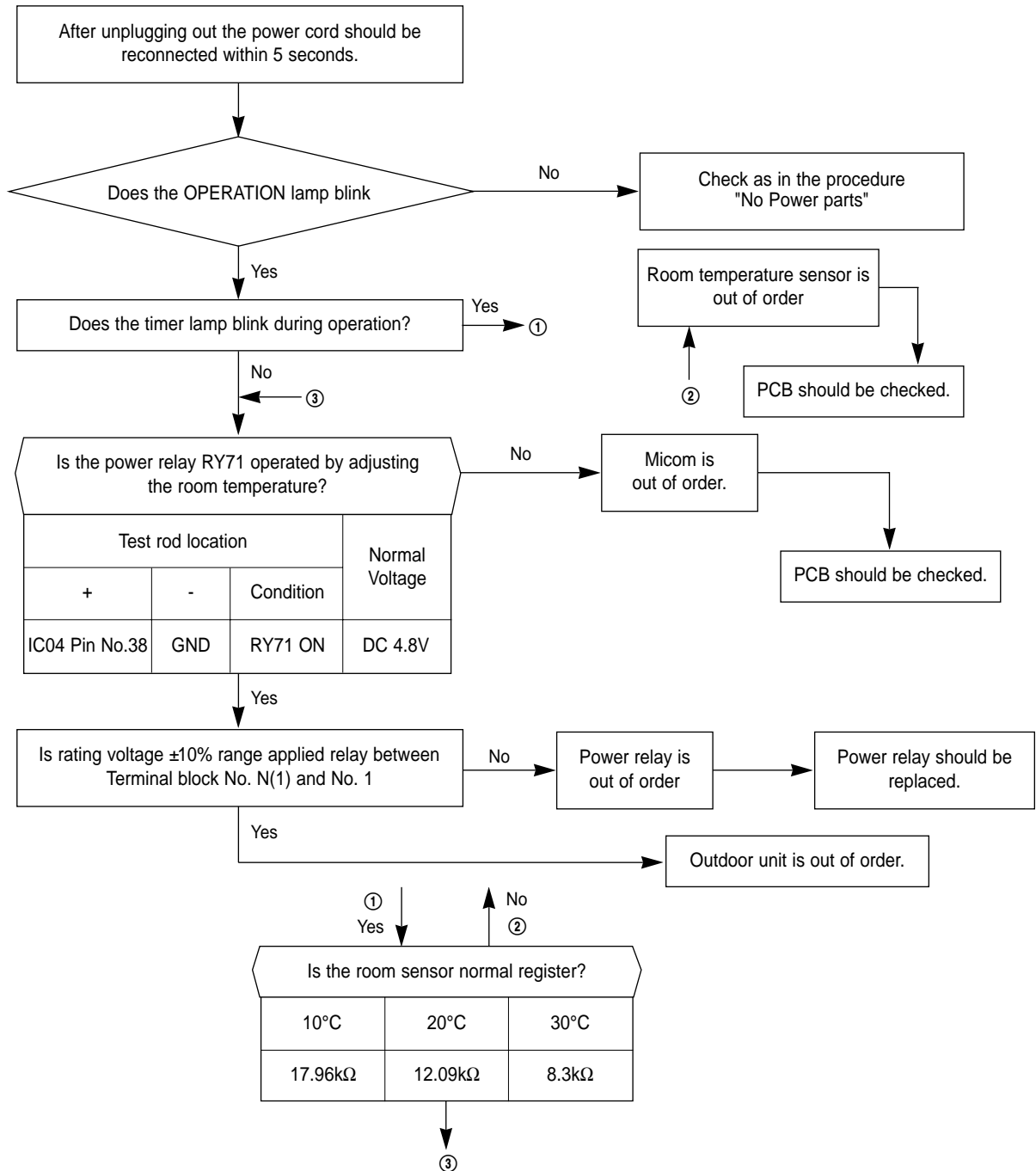


### 5-3-3 When the Outdoor Unit Does Not Operate. (Initial Diagnosis)

1. Checklist :

- 1) Is input voltage normal?
- 2) Is the set temperature of the remote control higher than room temperature in COOL mode?
- 3) Is the set temperature of the remote control lower than room temperature in HEAT mode?
- 4) Is the POWER IN connector (CN71) linked correctly?
- 5) Is the outdoor unit properly connected with the TERMINAL BLOCK connector(N(1), 1, 2, 3)?

2. Troubleshooting procedure

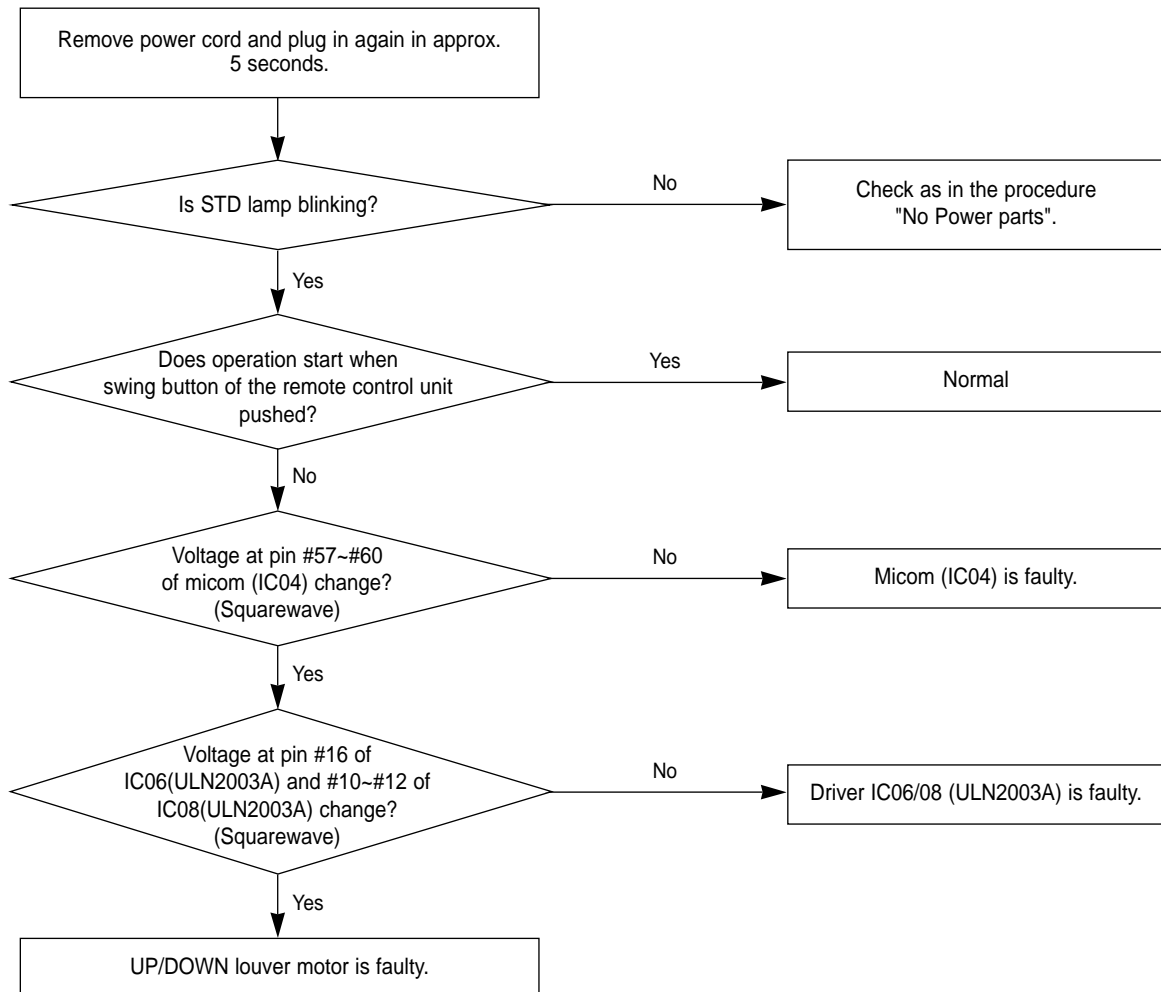


### 5-3-4 When the UP/DOWN Louver Motor Does Not Operate. (Initial Diagnosis)

1. Checklist :

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

2. Troubleshooting procedure



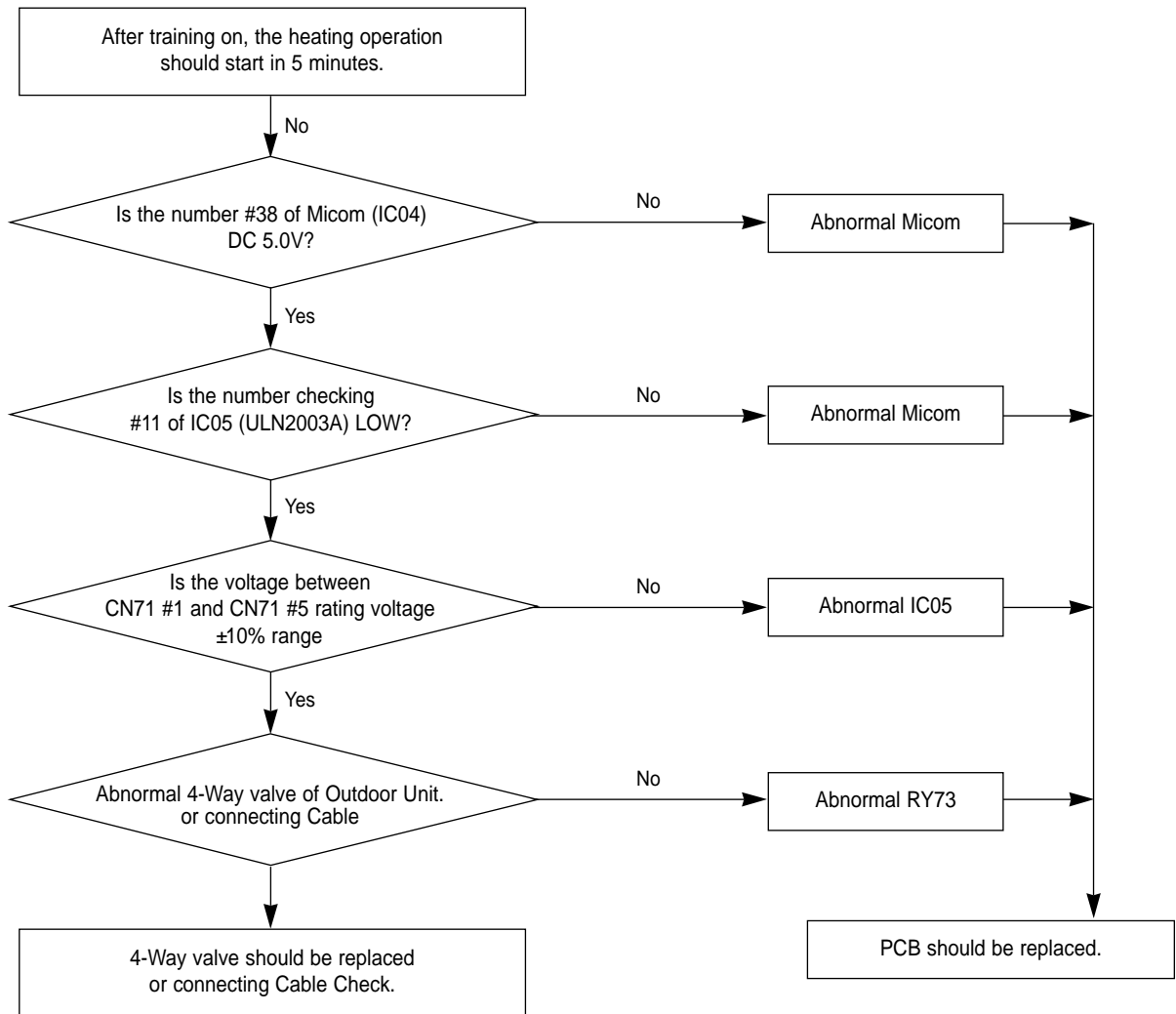


### 5-3-5 In the HEAT mode, When there is no warm air current. Check this fist;




1. Checklist :

- 1) Is the set temperature of Remote Control lower than room temperature in Heat mode?
- 2) Is the Indoor PCB properly connected with the CN71 connector?

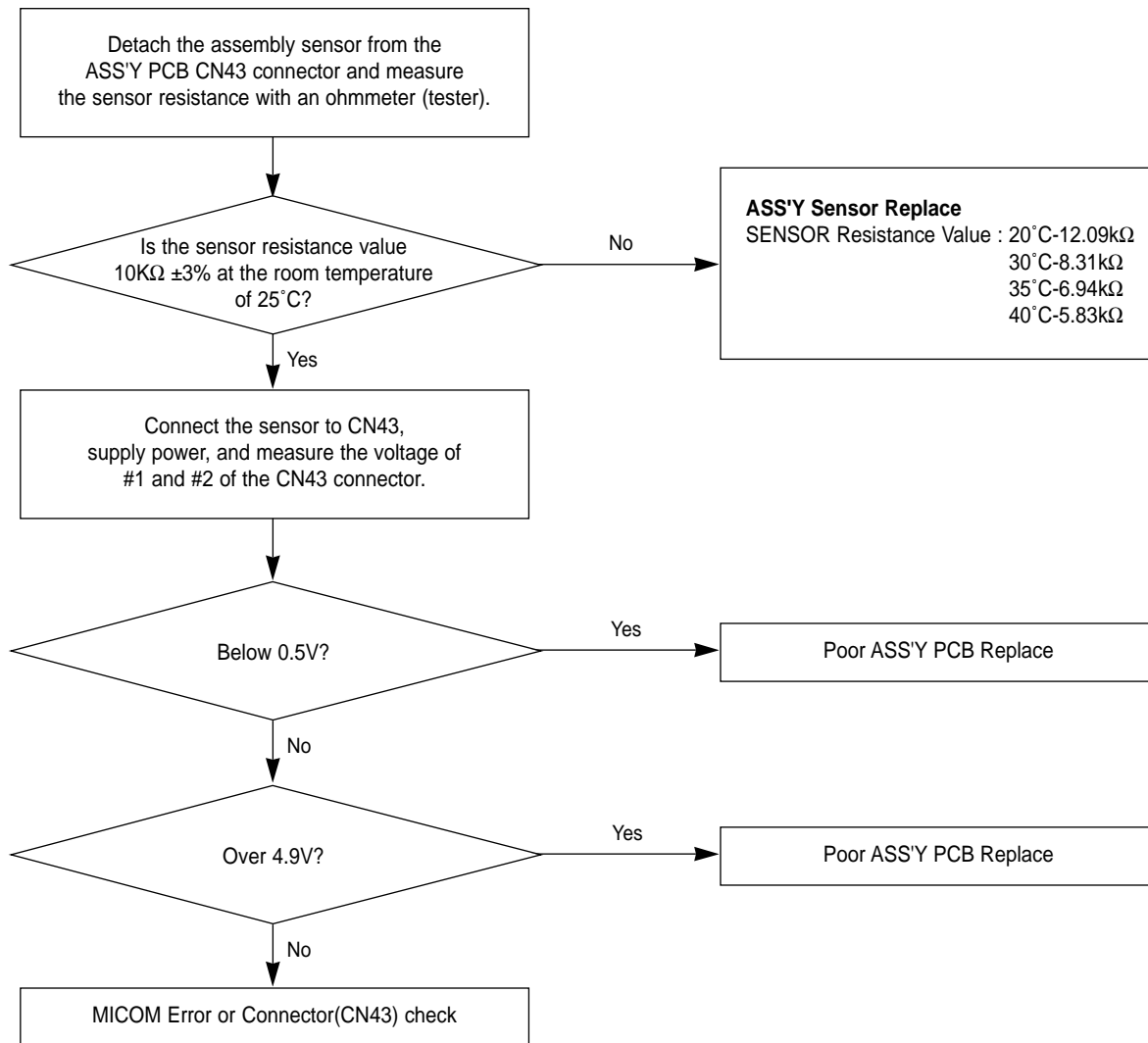
2. Troubleshooting procedure









### 5-3-6 Room temperature sensor failure

Description	LAMP		
	OPERATION	TIMER	TURBO
			
Indoor unit room temperature sensor error(open or short)	○	◐	○

○ : Lamp off ◐ : Lamp flickering



### 5-3-7 Room Pipe sensor failure

Description	LAMP		
	OPERATION	TIMER	TURBO
			
Indoor unit heat exchanger temperature sensor error (open or short)			

○ : Lamp off ● : Lamp flickering

1. Check the assembly condition of the sensor connector(CN43) on the indoor unit Main PCB and if not assembled, reassemble the connector accurately.
2. Detach the room pipe sensor connector(CN43) and check the resistance between connector 3 and 4.

Temperature(°C)	Resistance Value(Kohm)	Temperature(°C)	Resistance Value(Kohm)	Others
15	14.68	30	8.31	The data tolerance is ±3%.
20	12.09	35	6.94	
25	10	40	5.83	

If the above data is not met, replace the room pipe sensor.

3. Assemble the room pipe sensor to PCB, plug in, and check the voltage of connector 3 and 4. If the resistance is below 0.5V or over 4.9V, replace the indoor Main PCB. (short or disconnected in the PCB board)

### 5-3-8 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. 3(+) and No. 2(-) 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. 2~3 of CN91 maintains 5V after the remote control starts operation.

## 5-4 PCB Inspection Method

### 5-4-1 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.

### 5-4-2 Inspection Procedure

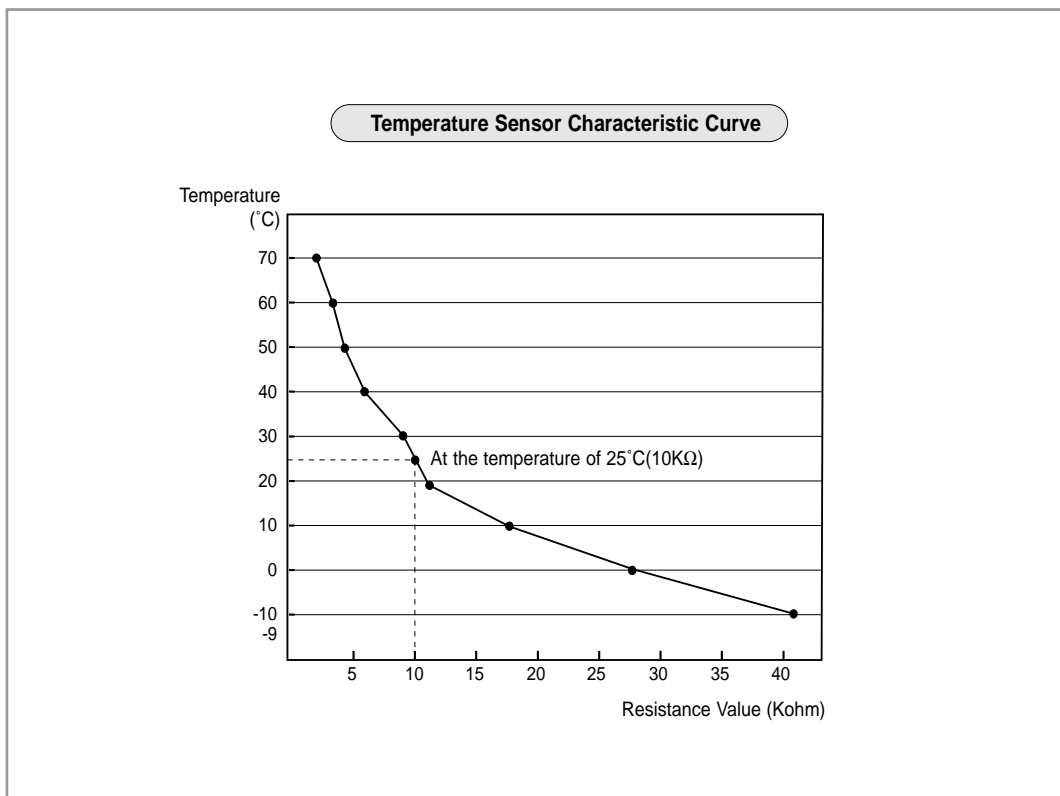
1. Check connector connection and peeling of PCB or bronze coating pattern when you think the PCB is broken.
2. The PCB is composed of the 3 parts.
  - **Main PCB Part** : MICOM and surrounding circuit, relay, room fan motor driving circuit and control circuit, sensor driving circuit, power circuit of DC12V and DC5V, and buzzer driving circuit.
  - **Display part** : LED lamp
  - **Switch part** : Switch

### 5-4-3 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? (F701)	<ul style="list-style-type: none"> <li>• Overcurrent</li> <li>• Indoor Fan Motor Short</li> <li>• AC Part Pattern Short of the MAIN PCB</li> </ul>
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"> <li>• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.</li> </ul>
		2) Is the voltage between both terminals of the C102 on the 2 <sup>nd</sup> side of the transformer AC12V $\pm 0.5V$ ?	<ul style="list-style-type: none"> <li>• Switching Trans or Power Circuit is faulty</li> </ul>
3	Press the ON/OFF button and operate TURBO mode. But, exclude the RESERVE operation.	Checking the power voltage.	
		1) Check the voltage of the relay(RY71) coil(IC05 PIN #11 and GND : 0V, PIN#6 and GND : 5V) during operation(3 minutes after TURBO operation).	<ul style="list-style-type: none"> <li>• Relay(RY71) Coil Disconnection, IC05 is faulty</li> </ul>
		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"> <li>• Relay(RY71) Contact is faulty</li> </ul>
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"> <li>• Fan Motor of the indoor is faulty</li> </ul>
		2) The fan motor of the indoor unit doesn't run.	<ul style="list-style-type: none"> <li>• Fan Motor Connector(CN72) is faulty</li> </ul>
		3) The power voltage between terminal #3 and #5 of the connector(CN72) is 0V.	<ul style="list-style-type: none"> <li>• ASS'Y Main PCB is faulty</li> <li>• Connection is faulty</li> </ul>

### 5-4-4 Temperature Sensor Feature Conversion Table(Room Temperature Sensor); 103AT

Temperature [°C]	Sensor Resistance [Kohm]	Temperature [°C]	Sensor Resistance [Kohm]	Temperature [°C]	Sensor Resistance [Kohm]	Temperature [°C]	Sensor Resistance [Kohm]
70	2.229						
69	2.296	49	4.300	29	8.622	9	18.700
68	2.365	48	4.444	28	8.944	8	19.480
67	2.437	47	4.594	27	9.281	7	20.290
66	2.512	46	4.749	26	9.632	6	21.150
65	2.589	45	4.912	25	10	5	22.050
64	2.669	44	5.080	24	10.380	4	22.990
63	2.752	43	5.256	23	10.780	3	23.900
62	2.838	42	5.439	22	11.200	2	25.030
61	2.928	41	5.630	21	11.630	1	26.130
60	3.021	40	5.828	20	12.090	0	27.280
59	3.116	39	6.033	19	12.560	-1	28.470
58	3.216	38	6.246	18	13.060	-2	29.720
57	3.319	37	6.468	17	13.570	-3	31.040
56	3.426	36	6.699	16	14.120	-4	32.430
55	3.537	35	6.941	15	14.680	-5	33.890
54	3.652	34	7.192	14	15.280	-6	35.430
53	3.772	33	7.455	13	15.900	-7	37.050
52	3.897	32	7.729	12	16.550	-8	38.760
51	4.026	31	8.015	11	17.240	-9	40.560
50	4.161	30	8.313	10	17.960		

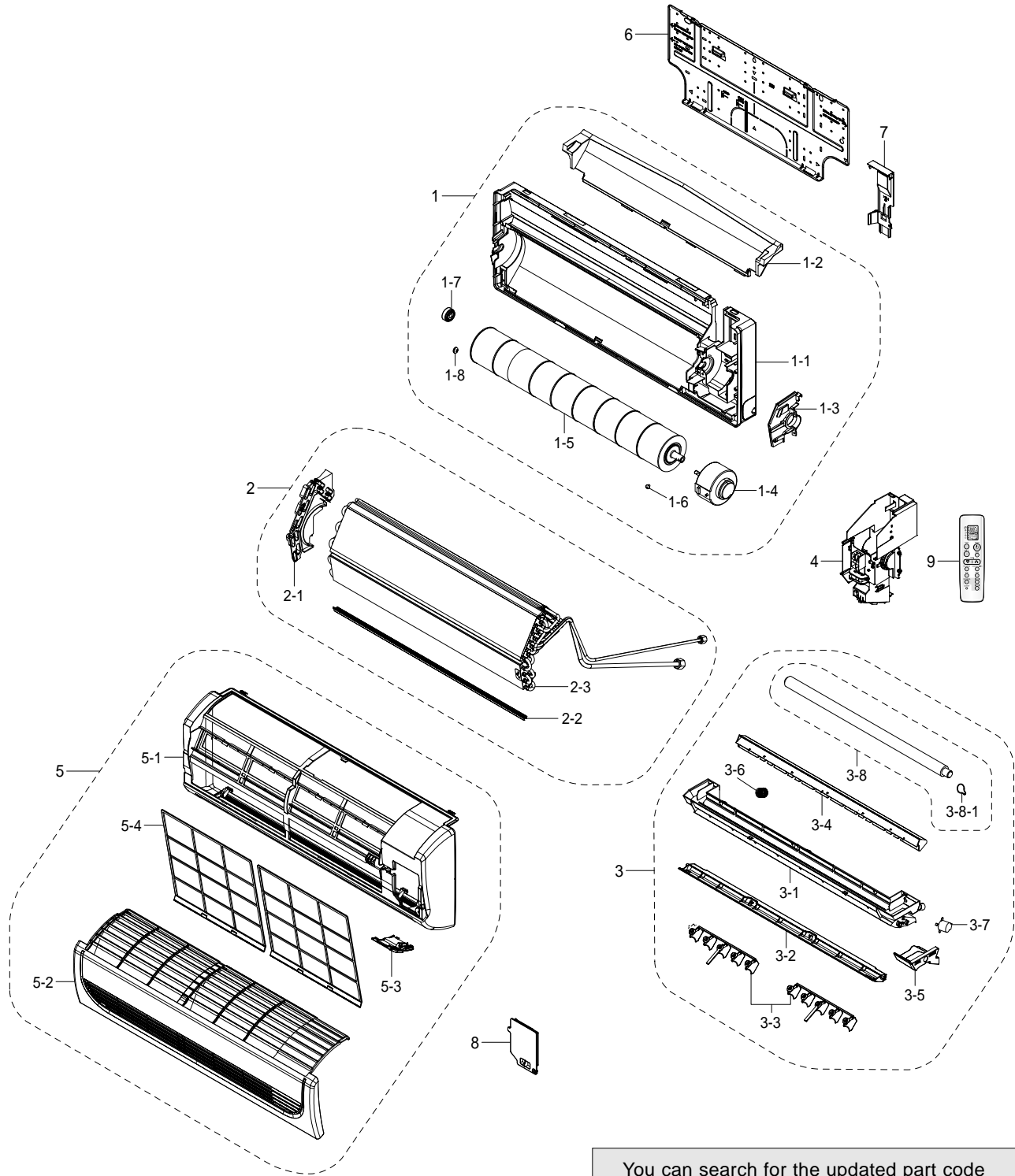


## 5-5 Main Part Inspection Method

Part	Breakdown Inspection Method										
<b>Room Temperature Sensor</b>	Measure resistance with a tester										
	Normal	At the normal temperature $37k\Omega \sim 8.3k\Omega (-7^{\circ}\text{C} \sim +30^{\circ}\text{C})$ *Refer to Table 5-4-4.									
	Abnormal	$\infty, 0\Omega$ · · · Open or Short									
<b>Room Fan Motor</b>	Measure the resistance between terminals of the connector (CN72) with a tester.										
	Normal	At the normal temperature ( $10^{\circ}\text{C} \sim 30^{\circ}\text{C}$ ) <table border="1" data-bbox="673 563 1279 683"> <thead> <tr> <th>Compare terminal</th> <th>Resistance</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Yellow, Blue</td> <td><math>404.4\Omega \pm 10\%</math></td> <td>Main</td> </tr> <tr> <td>Yellow, Red</td> <td><math>340\Omega \pm 10\%</math></td> <td>Sub</td> </tr> </tbody> </table>	Compare terminal	Resistance	Remark	Yellow, Blue	$404.4\Omega \pm 10\%$	Main	Yellow, Red	$340\Omega \pm 10\%$	Sub
	Compare terminal	Resistance	Remark								
Yellow, Blue	$404.4\Omega \pm 10\%$	Main									
Yellow, Red	$340\Omega \pm 10\%$	Sub									
Abnormal	$\infty, 0\Omega$ · · · Open or Short										
<b>Outdoor Fan Motor</b>	Measure the resistance between motor wires with a tester.										
	Normal	At the normal temperature ( $10^{\circ}\text{C} \sim 30^{\circ}\text{C}$ ) <table border="1" data-bbox="673 936 1279 1055"> <thead> <tr> <th>Compare terminal</th> <th>Resistance</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Yellow, Red</td> <td><math>360\Omega \pm 10\%</math></td> <td>Main</td> </tr> <tr> <td>Black, Yellow</td> <td><math>328\Omega \pm 10\%</math></td> <td>Sub</td> </tr> </tbody> </table>	Compare terminal	Resistance	Remark	Yellow, Red	$360\Omega \pm 10\%$	Main	Black, Yellow	$328\Omega \pm 10\%$	Sub
	Compare terminal	Resistance	Remark								
Yellow, Red	$360\Omega \pm 10\%$	Main									
Black, Yellow	$328\Omega \pm 10\%$	Sub									
Abnormal	$\infty, 0\Omega$ · · · Open or Short										
<b>Stepping Motor</b>	Measure the resistance between the red wire and each terminal wire with a tester.										
	Normal	About $300\Omega$ at the normal temperature ( $20^{\circ}\text{C} \sim 30^{\circ}\text{C}$ )									
	Abnormal	$\infty, 0\Omega$ · · · Open or Short									

# 6. Exploded Views and Parts List

## 6-1 Indoor Unit



You can search for the updated part code number through the ITSELF.  
URL : <http://itself.sec.samsung.co.kr>

## ■ Parts List

No.	Code No.	Description	Specification	Q'TY		Remark
				SH09AWH	SH12AWH	
1	DB94-00454B	ASS'Y-BACK BODY	ASS'Y	1	1	
1-1	DB61-01632A	BACK-BODY	HIPS	1	1	
1-2	DB69-00834A	CUSHION-BACK BODY	EPS	1	1	
1-3	DB61-01634A	SUPPORTER-EVAP RH	HIPS	1	1	
1-4	DB31-00219A	MOTOR-IN	YDK-20S4F8C-1	1	1	
1-5	DB94-00456A	ASS'Y-CROSS FAN	OD92x635	1	1	
1-6	DB97-02075A	ASS'Y BOLT-SPECIAL	ASS'Y	1	1	
1-7	DB73-00181A	RUBBER-BEARING	RUBBER	1	1	
1-8	DB94-40007A	MOLD-BEARING	BEARING	1	1	
2	DB96-03112A	ASS'Y CYCLE IN	ASS'Y	-	1	
	DB96-03112B	ASS'Y CYCLE IN	ASS'Y	1	-	
2-1	DB63-00850A	COVER BEARING	ABS	1	1	
2-2	DB60-00118A	SPACE-EVAP-LOW	PVC	1	1	
2-3	DB96-04716A	ASS'Y-EVAP TOTAL	1.3S, 2x14	-	1	
	DB96-04716B	ASS'Y-EVAP TOTAL	1.5S, 2x14	1	-	
3	DB94-00457D	ASS'Y-TRAY DRAIN	ASS'Y	1	1	
3-1	DB63-00848A	TRAY-DRAIN	ABS	1	1	
3-2	DB61-01635A	BLADE-H	HIPS	1	1	
3-3	DB61-01636A	BLADE-V	PP	2	2	
3-4	DB63-00849A	STABILIZER	ABS	1	1	
3-5	DB69-00839A	CUSHION-TRAY RH	EPS30	1	1	
3-6	DB73-00180A	RUBBER-CAP	GUM-EPM	1	1	
3-7	DB95-20138A	ASS'Y-STEPPING-MOTOR	PM24-600g, 24BYJ48	1	1	
3-8	DB94-00458B	ASS'Y DRAIN HOSE	ASS'Y	1	1	
3-8-1	DB61-01715A	CLIP TERMINAL HOSE	STS, PI1.0	1	1	
4	DB93-02481L	ASS'Y-CONTROL IN	ASS'Y	1	1	Refer to page 40
5	DB92-00536A	ASS'Y-PANEL FRONT	ASS'Y	1	1	
5-1	DB64-00989A	PANEL-FRONT	PS	1	1	
5-2	DB64-00990A	GRILLE-AIR INLET	HIPS	1	1	
5-3	DB97-02064A	ASS'Y-COVER DISPLAY	ASS'Y	1	1	
5-4	DB63-00846A	GUARD-AIR FILTER	PP	2	2	
6	DB70-00406A	PLATE-HANGER	SGCC-M T0.6x320x650	1	1	
7	DB61-01638A	HOLDER-PIPE	PS	1	1	
8	DB63-00844A	COVER TERMINAL	ABS-V0	1	1	
9	DB93-02532B	ASS'Y-REMOCON	REMOCON	1	1	



## ■ Parts List(cont.)

No.	Code No.	Description	Specification	Q'TY		Remark
				SH09ZWH AQ09WHWE	SH12ZWH AQ12WHWE	
1	DB94-00454B	ASS'Y-BACK BODY	ASS'Y	1	1	
1-1	DB61-01632A	BACK-BODY	HIPS	1	1	
1-2	DB69-00834A	CUSHION-BACK BODY	EPS	1	1	
1-3	DB61-01634A	SUPPORTER-EVAP RH	HIPS	1	1	
1-4	DB31-00219A	MOTOR-IN	YDK-20S4F8C-1	1	1	
1-5	DB94-00456A	ASS'Y-CROSS FAN	OD92x635	1	1	
1-6	DB97-02075A	ASS'Y BOLT-SPECIAL	ASS'Y	1	1	
1-7	DB73-00181A	RUBBER-BEARING	RUBBER	1	1	
1-8	DB94-40007A	MOLD-BEARING	BEARING	1	1	
2	DB96-03112C	ASS'Y CYCLE IN	ASS'Y	-	1	
	DB96-03112D	ASS'Y CYCLE IN	ASS'Y	1	-	
2-1	DB63-00850A	COVER BEARING	ABS	1	1	
2-2	DB60-00118A	SPACE-EVAP-LOW	PVC	1	1	
2-3	DB96-03060A	ASS'Y-EVAP	1.3S, 2x14	-	1	
	DB96-03257A	ASS'Y-EVAP	1.5S, 2x14	1	-	
3	DB94-00457D	ASS'Y-TRAY DRAIN	ASS'Y	1	1	
3-1	DB63-00848A	TRAY-DRAIN	ABS	1	1	
3-2	DB61-01635A	BLADE-H	HIPS	1	1	
3-3	DB61-01636A	BLADE-V	PP	2	2	
3-4	DB63-00849A	STABILIZER	ABS	1	1	
3-5	DB69-00839A	CUSHION-TRAY RH	EPS30	1	1	
3-6	DB73-00180A	RUBBER-CAP	GUM-EPM	1	1	
3-7	DB95-20138A	ASS'Y-STEPPING-MOTOR	PM24-600g, 24BYJ48	1	1	
3-8	DB94-00458B	ASS'Y DRAIN HOSE	ASS'Y	1	1	
3-8-1	DB61-01715A	CLIP TERMINAL HOSE	STS, PI1.0	1	1	
4	DB93-02481*	ASS'Y-CONTROL IN	ASS'Y	1	1	Refer to page 40
5	DB92-00536A	ASS'Y-PANEL FRONT	ASS'Y	1	1	
5-1	DB64-00989A	PANEL-FRONT	PS	1	1	
5-2	DB64-00990A	GRILLE-AIR INLET	HIPS	1	1	
5-3	DB97-02064A	ASS'Y-COVER DISPLAY	ASS'Y	1	1	
5-4	DB63-00846A	GUARD-AIR FILTER	PP	2	2	
6	DB70-00406A	PLATE-HANGER	SGCC-M T0.6x320x650	1	1	
7	DB61-01638A	HOLDER-PIPE	PS	1	1	
8	DB63-00844A	COVER TERMINAL	ABS-V0	1	1	
9	DB93-02532B	ASS'Y-REMOCON	REMOCON	1	1	

## ■ Parts List(cont.)

No.	Code No.	Description	Specification	Q'TY		Remark
				KFR-25G/SWA	KFR-35G/SWA	
1	DB94-00454B	ASS'Y-BACK BODY	ASS'Y	1	1	
1-1	DB61-01632A	BACK-BODY	HIPS	1	1	
1-2	DB69-00834A	CUSHION-BACK BODY	EPS	1	1	
1-3	DB61-01634A	SUPPORTER-EVAP RH	HIPS	1	1	
1-4	DB31-00219A	MOTOR-IN	YDK-20S4F8C-1	1	1	
1-5	DB94-00456A	ASS'Y-CROSS FAN	OD92x635	1	1	
1-6	DB97-02075A	ASS'Y BOLT-SPECIAL	ASS'Y	1	1	
1-7	DB73-00181A	RUBBER-BEARING	RUBBER	1	1	
1-8	DB94-40007A	MOLD-BEARING	BEARING	1	1	
2	DB96-03112C	ASS'Y CYCLE IN	ASS'Y	-	1	
	DB96-03112D	ASS'Y CYCLE IN	ASS'Y	1	-	
2-1	DB63-00850A	COVER BEARING	ABS	1	1	
2-2	DB60-00118A	SPACE-EVAP-LOW	PVC	1	1	
2-3	DB96-03060A	ASS'Y-EVAP	1.3S, 2x14	-	1	
	DB96-03257A	ASS'Y-EVAP	1.5S, 2x14	1	-	
3	DB94-00457D	ASS'Y-TRAY DRAIN	ASS'Y	1	1	
3-1	DB63-00848A	TRAY-DRAIN	ABS	1	1	
3-2	DB61-01635A	BLADE-H	HIPS	1	1	
3-3	DB61-01636A	BLADE-V	PP	2	2	
3-4	DB63-00849A	STABILIZER	ABS	1	1	
3-5	DB69-00839A	CUSHION-TRAY RH	EPS30	1	1	
3-6	DB73-00180A	RUBBER-CAP	GUM-EPM	1	1	
3-7	DB95-20138A	ASS'Y-STEPPING-MOTOR	PM24-600g, 24BYJ48	1	1	
3-8	DB94-00458B	ASS'Y DRAIN HOSE	ASS'Y	1	1	
3-8-1	DB61-01715A	CLIP TERMINAL HOSE	STS, PI1.0	1	1	
4	DB93-02481*	ASS'Y-CONTROL IN	ASS'Y	1	1	Refer to page 40
5	DB92-00536B	ASS'Y-PANEL FRONT	ASS'Y	1	1	
5-1	DB64-00989A	PANEL-FRONT	PS	1	1	
5-2	DB64-00990A	GRILLE-AIR INLET	HIPS	1	1	
5-3	DB97-02064A	ASS'Y-COVER DISPLAY	ASS'Y	1	1	
5-4	DB63-00846B	GUARD-AIR FILTER	PP	2	2	
6	DB70-00406A	PLATE-HANGER	SGCC-M T0.6x320x650	1	1	
7	DB61-01638A	HOLDER-PIPE	PS	1	1	
8	DB63-00844A	COVER TERMINAL	ABS-V0	1	1	
9	DB93-02532D	ASS'Y-REMOCON	REMOCON	1	1	

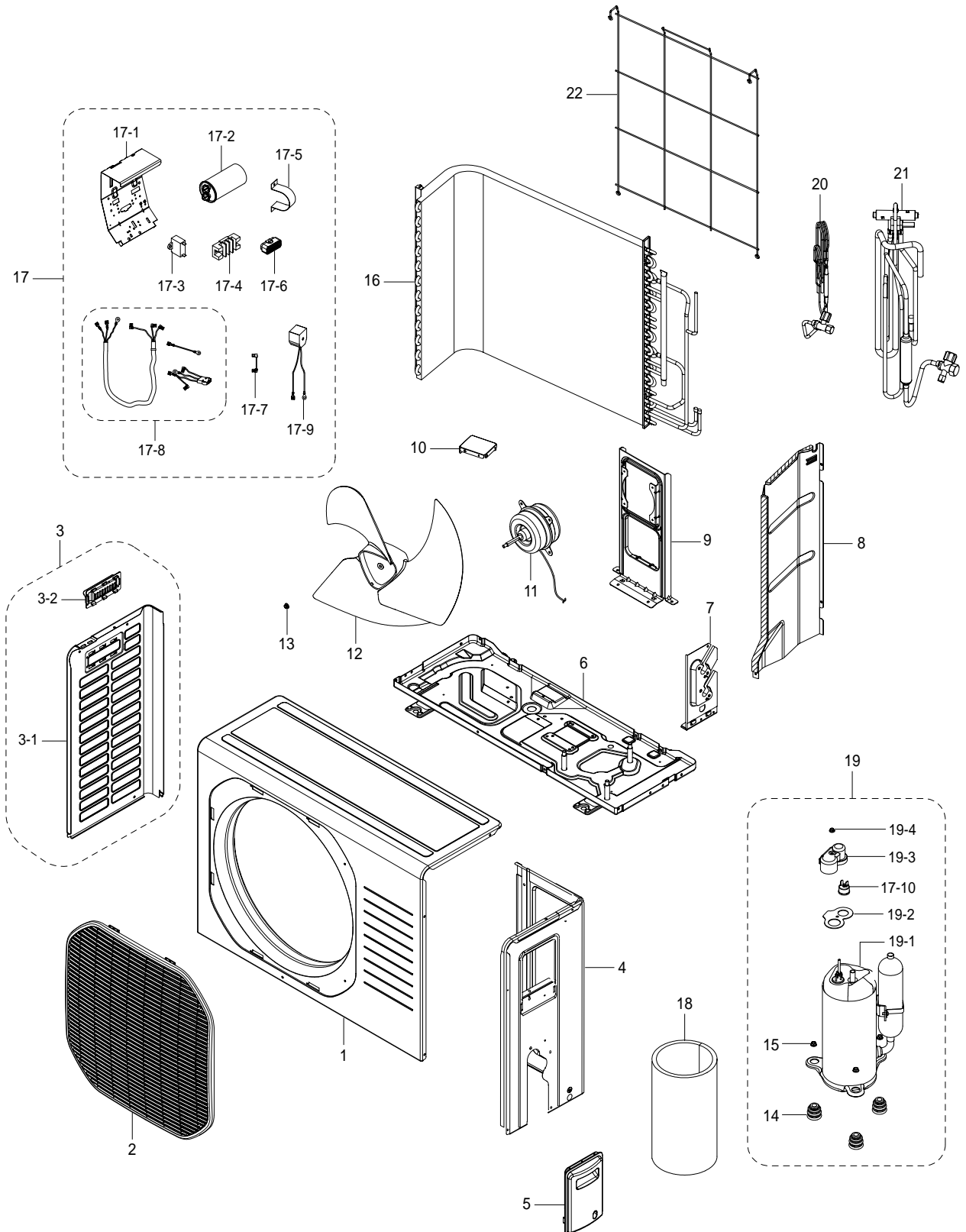
## ■ Parts List(cont.)

No.	Code No.	Description	Specification	Q'TY		Remark
				SH09ZWH (RUSSIA)	SH12ZWH (RUSSIA)	
1	DB94-00454B	ASS'Y-BACK BODY	ASS'Y	1	1	
1-1	DB61-01632A	BACK-BODY	HIPS	1	1	
1-2	DB69-00834A	CUSHION-BACK BODY	EPS	1	1	
1-3	DB61-01634A	SUPPORTER-EVAP RH	HIPS	1	1	
1-4	DB31-00219A	MOTOR-IN	YDK-20S4F8C-1	1	1	
1-5	DB94-00456A	ASS'Y-CROSS FAN	OD92x635	1	1	
1-6	DB97-02075A	ASS'Y BOLT-SPECIAL	ASS'Y	1	1	
1-7	DB73-00181A	RUBBER-BEARING	RUBBER	1	1	
1-8	DB94-40007A	MOLD-BEARING	BEARING	1	1	
2	DB96-03112C	ASS'Y CYCLE IN	ASS'Y	-	1	
	DB96-03112D	ASS'Y CYCLE IN	ASS'Y	1	-	
2-1	DB63-00850A	COVER BEARING	ABS	1	1	
2-2	DB60-00118A	SPACE-EVAP-LOW	PVC	1	1	
2-3	DB96-03060A	ASS'Y-EVAP	1.3S, 2x14	-	1	
	DB96-03257A	ASS'Y-EVAP	1.5S, 2x14	1	-	
3	DB94-00457D	ASS'Y-TRAY DRAIN	ASS'Y	1	1	
3-1	DB63-00848A	TRAY-DRAIN	ABS	1	1	
3-2	DB61-01635A	BLADE-H	HIPS	1	1	
3-3	DB61-01636A	BLADE-V	PP	2	2	
3-4	DB63-00849A	STABILIZER	ABS	1	1	
3-5	DB69-00839A	CUSHION-TRAY RH	EPS30	1	1	
3-6	DB73-00180A	RUBBER-CAP	GUM-EPM	1	1	
3-7	DB95-20138A	ASS'Y-STEPPING-MOTOR	PM24-600g, 24BYJ48	1	1	
3-8	DB94-00458B	ASS'Y DRAIN HOSE	ASS'Y	1	1	
3-8-1	DB61-01715A	CLIP TERMINAL HOSE	STS, PI1.0	1	1	
4	DB93-02481*	ASS'Y-CONTROL IN	ASS'Y	1	1	Refer to page 40
5	DB92-00536A	ASS'Y-PANEL FRONT	ASS'Y	1	1	
5-1	DB64-00989A	PANEL-FRONT	PS	1	1	
5-2	DB64-00990A	GRILLE-AIR INLET	HIPS	1	1	
5-3	DB97-02064A	ASS'Y-COVER DISPLAY	ASS'Y	1	1	
5-4	DB63-00846A	GUARD-AIR FILTER	PP	2	2	
6	DB70-00406A	PLATE-HANGER	SGCC-M T0.6x320x650	1	1	
7	DB61-01638A	HOLDER-PIPE	PS	1	1	
8	DB63-00844A	COVER TERMINAL	ABS-V0	1	1	
9	DB93-02532B	ASS'Y-REMOCON	REMOCON	1	1	

## ■ Parts List(cont.)

No.	Code No.	Description	Specification	Q'TY		Remark
				SH09ZWH (AUSTRALIA)	SH12ZWH (AUSTRALIA)	
1	DB94-00454B	ASS'Y-BACK BODY	ASS'Y	1	1	
1-1	DB61-01632A	BACK-BODY	HIPS	1	1	
1-2	DB69-00834A	CUSHION-BACK BODY	EPS	1	1	
1-3	DB61-01634A	SUPPORTER-EVAP RH	HIPS	1	1	
1-4	DB31-00219A	MOTOR-IN	YDK-20S4F8C-1	1	1	
1-5	DB94-00456A	ASS'Y-CROSS FAN	OD92x635	1	1	
1-6	DB97-02075A	ASS'Y BOLT-SPECIAL	ASS'Y	1	1	
1-7	DB73-00181A	RUBBER-BEARING	RUBBER	1	1	
1-8	DB94-40007A	MOLD-BEARING	BEARING	1	1	
2	DB96-03112C	ASS'Y CYCLE IN	ASS'Y	-	1	
	DB96-03112D	ASS'Y CYCLE IN	ASS'Y	1	-	
2-1	DB63-00850A	COVER BEARING	ABS	1	1	
2-2	DB60-00118A	SPACE-EVAP-LOW	PVC	1	1	
2-3	DB96-03060A	ASS'Y-EVAP	1.3S, 2x14	-	1	
	DB96-03257A	ASS'Y-EVAP	1.5S, 2x14	1	-	
3	DB94-00457D	ASS'Y-TRAY DRAIN	ASS'Y	1	1	
3-1	DB63-00848A	TRAY-DRAIN	ABS	1	1	
3-2	DB61-01635A	BLADE-H	HIPS	1	1	
3-3	DB61-01636A	BLADE-V	PP	2	2	
3-4	DB63-00849A	STABILIZER	ABS	1	1	
3-5	DB69-00839A	CUSHION-TRAY RH	EPS30	1	1	
3-6	DB73-00180A	RUBBER-CAP	GUM-EPM	1	1	
3-7	DB95-20138A	ASS'Y-STEPPING-MOTOR	PM24-600g, 24BYJ48	1	1	
3-8	DB94-00458B	ASS'Y DRAIN HOSE	ASS'Y	1	1	
3-8-1	DB61-01715A	CLIP TERMINAL HOSE	STS, P11.0	1	1	
4	DB93-02481*	ASS'Y-CONTROL IN	ASS'Y	1	1	Refer to page 40
5	DB92-00536A	ASS'Y-PANEL FRONT	ASS'Y	1	1	
5-1	DB64-00989A	PANEL-FRONT	PS	1	1	
5-2	DB64-00990A	GRILLE-AIR INLET	HIPS	1	1	
5-3	DB97-02064A	ASS'Y-COVER DISPLAY	ASS'Y	1	1	
5-4	DB63-00846A	GUARD-AIR FILTER	PP	2	2	
6	DB70-00406A	PLATE-HANGER	SGCC-M T0.6x320x650	1	1	
7	DB61-01638A	HOLDER-PIPE	PS	1	1	
8	DB63-00844A	COVER TERMINAL	ABS-V0	1	1	
9	DB93-02532B	ASS'Y-REMOCON	REMOCON	1	1	

# 6-2 Outdoor Unit



## ■ Parts List

No.	Code No.	Description	Specification	Q'TY	
				SH09AWHX	SH12AWHX
1	DB90-01341A	ASS'Y-CABI FRONT	T0.7, SECC-P	1	1
2	DB63-00847A	GUARD-FAN	PP, 378g	1	1
3	DB90-01332A	ASS'Y CABI SIDE LF	ASS'Y	1	1
3-1	DB64-01094A	CABI SIDE LF(COATING)	T0.6, SECC-P	1	1
3-2	DB64-00992A	HANDLE LF	PP, 30g	1	1
4	DB90-01331A	ASS'Y CABI SIDE RH	T0.6, SECC-P	1	1
5	DB63-00853A	COVER-CONTROL	ABS-V0, 66g	1	1
6	DB90-01330A	ASS'Y-BASE	T1.0, SECC-P	-	1
	DB90-01330B	ASS'Y-BASE	T1.0, SECC-P	1	-
7	DB99-00401A	ASS'Y BRACKET VALVE	SECC-P, T1.0x95x235	1	1
8	DB94-00459C	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	-	1
	DB94-00459B	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	1	-
9	DB61-01644A	BRACKET-MOTOR	SGCC-M T0.6x370x490	1	1
10	DB97-02225A	ASS'Y PLATE SUPPORT B/M	ASS'Y	-	1
	DB97-02225B	ASS'Y PLATE SUPPORT B/M	ASS'Y	1	-
11	DB31-00220A	MOTOR-OUT	YDK-25F6M13E-1	1	1
12	DB67-00397A	PROPELLER-FAN	AS+G/F 20%, 422g	1	1
13	DB60-30004A	NUT FLANGE		1	1
14	DB63-00815A	GROMMET	NR	-	3
	DB63-00763A	GROMMET	NR	3	-
15	DB60-30028A	NUT WASHER		3	3
16	DB96-03061A	ASS'Y-COND	2x24, FP1.5, LOUVER	-	1
	DB96-03172A	ASS'Y-COND	1x24, FP1.5, LOUVER	1	-
17	DB93-02554A	ASS'Y-CONTROL OUT	ASS'Y	-	1
	DB93-02554B	ASS'Y-CONTROL OUT	ASS'Y	1	-
17-1	DB61-01642A	CASE-CONTROL OUT	SGCC-M T0.6x150x250	1	1
17-2	2501-001236	CAPACITOR-COMP	30μFx450V	-	1
	2501-001237	CAPACITOR-COMP	35μFx450V	1	-
17-3	2301-001375	CAPACITOR-MOTOR	1.5μFx450V	1	1
17-4	DB65-40049E	TERMINAL-BLOCK		1	1
17-5	DB65-10046A	CLIP-CAPACITOR		1	1
17-6	DB61-00250A	HOLDER-WIRE		1	1
17-7	DB93-50062C	LEAD WIRE		1	1
17-8	DB93-00481H	ASS'Y LEAD WIRE		-	1
	DB93-00481J	ASS'Y LEAD WIRE		1	-
17-9	DB33-00050A	SOLENOID-ASS'Y	WIRE, ASS'Y	1	1
17-10	DB35-00029A	OLP	MRA99908-9201	-	1
	DB35-00029B	OLP	MRA99134-9201	1	-
18	DB72-00726A	SPONGE-FELT COMP CLOTH	FELT+PVC	-	1
	DB72-00726B	SPONGE-FELT COMP CLOTH	FELT+PVC	1	-
19	DB95-00468A	ASS'Y-COMP		-	1
	DB95-00467A	ASS'Y-COMP		1	-
19-1	DB95-00501A	COMP	802 354 45, SANYO	-	1
	DB95-00534A	COMP	802 141 55, SANYO	1	-
19-2	DB63-00943A	GASKET		-	1
	DB63-00999A	GASKET		1	-
19-3	DB63-00942A	COVER-TERMINAL		1	1
19-4	DB60-30018A	NUT FLANGE		1	1
20	DB96-03062A	ASS'Y CHECK VALVE	ASS'Y	-	1
	DB96-03049A	ASS'Y CAPILLARY	ASS'Y	1	-
21	DB99-00445A	ASS'Y 4WAY VALVE	ASS'Y	-	1
	DB99-00413A	ASS'Y 4WAY VALVE	ASS'Y	1	-
22	DB71-00090A	BAR-STEEL		-	1
	DB71-00090B	BAR-STEEL		1	-

## ■ Parts List(cont.)

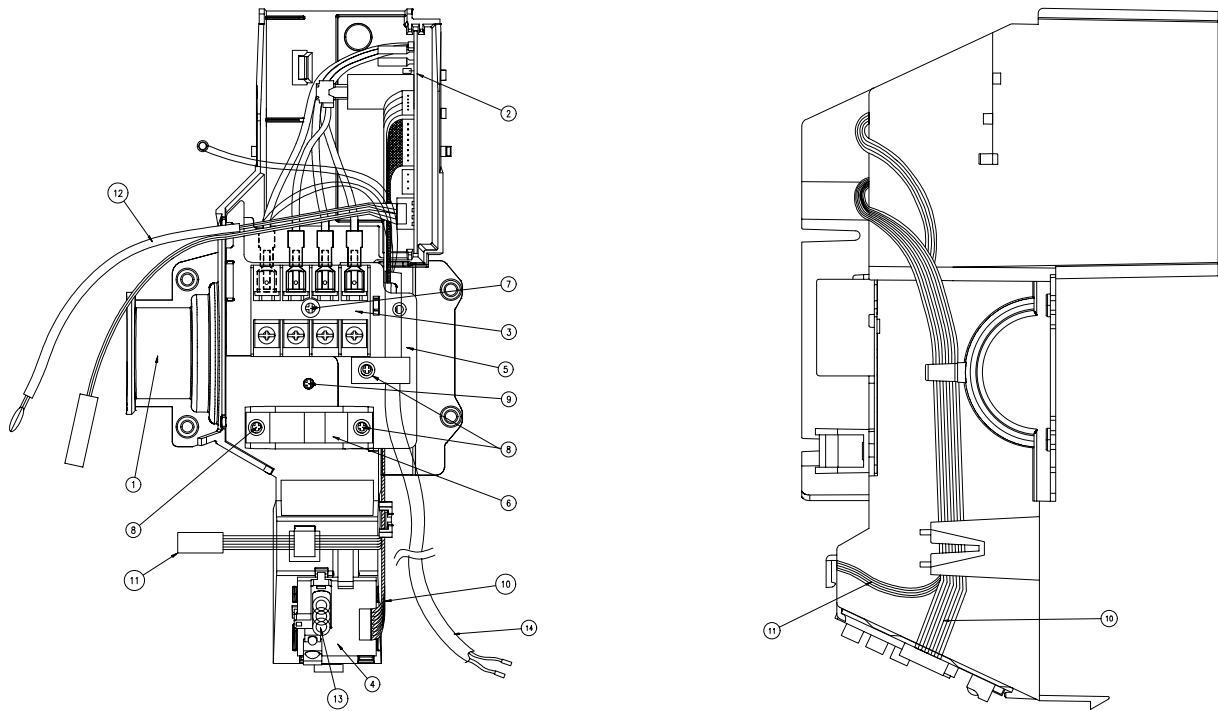
No.	Code No.	Description	Specification	Q'TY	
				SH09ZWHX UQ09WHWE	SH12ZWHX UQ12WHWE
1	DB90-01341A	ASS'Y-CABI FRONT	T0.7, SECC-P	1	1
2	DB63-00847A	GUARD-FAN	PP, 378g	1	1
3	DB90-01332A	ASS'Y CABI SIDE LF	ASS'Y	1	1
3-1	DB64-01094A	CABI SIDE LF(COATING)	T0.6, SECC-P	1	1
3-2	DB64-00992A	HANDLE LF	PP, 30g	1	1
4	DB90-01331A	ASS'Y CABI SIDE RH	T0.6, SECC-P	1	1
5	DB63-00853A	COVER-CONTROL	ABS-V0, 66g	1	1
6	DB90-01330E	ASS'Y-BASE	T1.0, SECC-P	-	1
	DB90-01330B	ASS'Y-BASE	T1.0, SECC-P	1	-
7	DB99-00401A	ASS'Y BRACKET VALVE	SECC-P, T1.0x95x235	1	1
8	DB94-00459C	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	-	1
	DB94-00459B	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	1	-
9	DB61-01644A	BRACKET-MOTOR	SGCC-M T0.6x370x490	1	1
10	DB97-02225A	ASS'Y PLATE SUPPORT B/M	ASS'Y	-	1
	DB97-02225B	ASS'Y PLATE SUPPORT B/M	ASS'Y	1	-
11	DB31-00220A	MOTOR-OUT	YDK-25F6M13E-1	1	1
12	DB67-00397A	PROPELLER-FAN	AS+G/F 20%, 422g	1	1
13	DB60-30004A	NUT FLANGE		1	1
14	DB63-00815A	GROMMET	NR	-	3
	DB63-00763A	GROMMET	NR	3	-
15	DB60-30028A	NUT WASHER		3	3
16	DB96-03580A	ASS'Y-COND	2x24, FP1.5, LOUVER	-	1
	DB96-03581A	ASS'Y-COND	1x24, FP1.5, LOUVER	1	-
17	DB93-02748A	ASS'Y-CONTROL OUT	ASS'Y	-	1
	DB93-02748B	ASS'Y-CONTROL OUT	ASS'Y	1	-
17-1	DB61-01642A	CASE-CONTROL OUT	SGCC-M T0.6x150x250	1	1
17-2	2501-001236	CAPACITOR-COMP	30μFx450V	-	1
	2501-001238	CAPACITOR-COMP	40μFx450V	1	-
17-3	2301-001375	CAPACITOR-MOTOR	1.5μFx450V	1	1
17-4	DB65-40049E	TERMINAL-BLOCK		1	1
17-5	DB65-10046A	CLIP-CAPACITOR		1	1
17-6	DB61-00250A	HOLDER-WIRE		1	1
17-7	DB93-50062C	LEAD WIRE		1	1
17-8	DB93-00481H	ASS'Y LEAD WIRE		1	1
17-9	DB33-00050A	SOLENOID-ASS'Y	WIRE, ASS'Y	1	1
17-10	DB35-00030C	OLP	RAC12074-9622	-	1
	DB35-00020G	OLP	RAC12110-9622	1	-
18	DB72-00726E	SPONGE-FELT COMP CLOTH	FELT+PVC	-	1
	DB72-00726D	SPONGE-FELT COMP CLOTH	FELT+PVC	1	-
19	DB95-00552A	ASS'Y-COMP		-	1
	DB95-00551A	ASS'Y-COMP		1	-
19-1	48D129JU1EL	COMP	SEC	-	1
	44B102JX1EL	COMP	SEC	1	-
19-2	DB63-20002A	GASKET		1	1
19-3	DB63-10165D	COVER-TERMINAL		1	1
19-4	DB60-30018A	NUT FLANGE		1	1
20	DB99-00453A	ASS'Y CHECK VALVE	ASS'Y	-	1
	DB99-00478A	ASS'Y CHECK VALVE	ASS'Y	1	-
21	DB99-00475A	ASS'Y 4WAY VALVE	ASS'Y	-	1
	DB99-00477A	ASS'Y 4WAY VALVE	ASS'Y	1	-
22	DB71-00090A	BAR-STEEL		-	1
	DB71-00090B	BAR-STEEL		1	-

## ■ Parts List(cont.)

No.	Code No.	Description	Specification	Q'TY	
				KFR-25W / SWA	KFR-35W / SWA
1	DB90-01341A	ASS'Y-CABI FRONT	T0.7, SECC-P	1	1
2	DB63-00847A	GUARD-FAN	PP, 378g	1	1
3	DB90-01332A	ASS'Y CABI SIDE LF	ASS'Y	1	1
3-1	DB64-01094A	CABI SIDE LF(COATING)	T0.6, SECC-P	1	1
3-2	DB64-00992A	HANDLE LF	PP, 30g	1	1
4	DB90-01331A	ASS'Y CABI SIDE RH	T0.6, SECC-P	1	1
5	DB63-00853A	COVER-CONTROL	ABS-V0, 66g	1	1
6	DB90-01330E	ASS'Y-BASE	T1.0, SECC-P	-	1
	DB90-01330B	ASS'Y-BASE	T1.0, SECC-P	1	-
7	DB99-00401A	ASS'Y BRACKET VALVE	SECC-P, T1.0x95x235	1	1
8	DB94-00459D	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	-	1
	DB94-00459E	ASS'Y-PARTITION	ASS'Y, SGCC-M, T0.6	1	-
9	DB61-01644A	BRACKET-MOTOR	SGCC-M T0.6x370x490	1	1
10	DB97-02225A	ASS'Y PLATE SUPPORT B/M	ASS'Y	-	1
	DB97-02225B	ASS'Y PLATE SUPPORT B/M	ASS'Y	1	-
11	DB31-00220A	MOTOR-OUT	YDK-25F6M13E-1	1	1
12	DB67-00397A	PROPELLER-FAN	AS+G/F 20%, 422g	1	1
13	DB60-30004A	NUT FLANGE		1	1
14	DB63-00815A	GROMMET	NR	-	3
	DB63-00763A	GROMMET	NR	3	-
15	DB60-30028A	NUT WASHER		3	3
16	DB96-03580A	ASS'Y-COND	2x24, FP1.5, LOUVER	-	1
	DB96-03581A	ASS'Y-COND	1x24, FP1.5, LOUVER	1	-
17	DB93-02748C	ASS'Y-CONTROL OUT	ASS'Y	-	1
	DB93-02748D	ASS'Y-CONTROL OUT	ASS'Y	1	-
17-1	DB61-01642A	CASE-CONTROL OUT	SGCC-M T0.6x150x250	1	1
17-2	2501-001236	CAPACITOR-COMP	30μFx450V	-	1
	2501-001237	CAPACITOR-COMP	35μFx450V	1	-
17-3	2301-001375	CAPACITOR-MOTOR	1.5μFx450V	1	1
17-4	DB65-40049H	TERMINAL-BLOCK		1	1
17-5	DB65-10046A	CLIP-CAPACITOR		1	1
17-6	DB61-00250A	HOLDER-WIRE		1	1
17-7	DB93-50062C	LEAD WIRE		1	1
17-8	DB93-00481H	ASS'Y LEAD WIRE		1	1
17-9	DB33-00050A	SOLENOID-ASS'Y	WIRE, ASS'Y	1	1
17-10	DB35-00030C	OLP	RAC12074-9622	-	1
	DB35-00030A	OLP	RAC12054-9622	1	-
18	DB72-00726E	SPONGE-FELT COMP CLOTH	FELT+PVC	-	1
	DB72-00726D	SPONGE-FELT COMP CLOTH	FELT+PVC	1	-
19	DB95-00543B	ASS'Y-COMP		-	1
	DB94-00542B	ASS'Y-COMP		1	-
19-1	48D129MXAEL	COMP	SSEC	-	1
	44B102MXAEL	COMP	SSEC	1	-
19-2	DB63-20002A	GASKET		1	1
19-3	DB63-10165D	COVER-TERMINAL		1	1
19-4	DB60-30018A	NUT FLANGE		1	1
20	DB99-00453A	ASS'Y CHECK VALVE	ASS'Y	-	1
	DB99-00478B	ASS'Y CHECK VALVE	ASS'Y	1	-
21	DB99-00475A	ASS'Y 4WAY VALVE	ASS'Y	-	1
	DB99-00491A	ASS'Y 4WAY VALVE	ASS'Y	1	-
22	DB71-00090A	BAR-STEEL		-	1
	DB71-00090B	BAR-STEEL		1	-



## 6-3 Ass'y-Control In(Code No : DB93-02481\*)

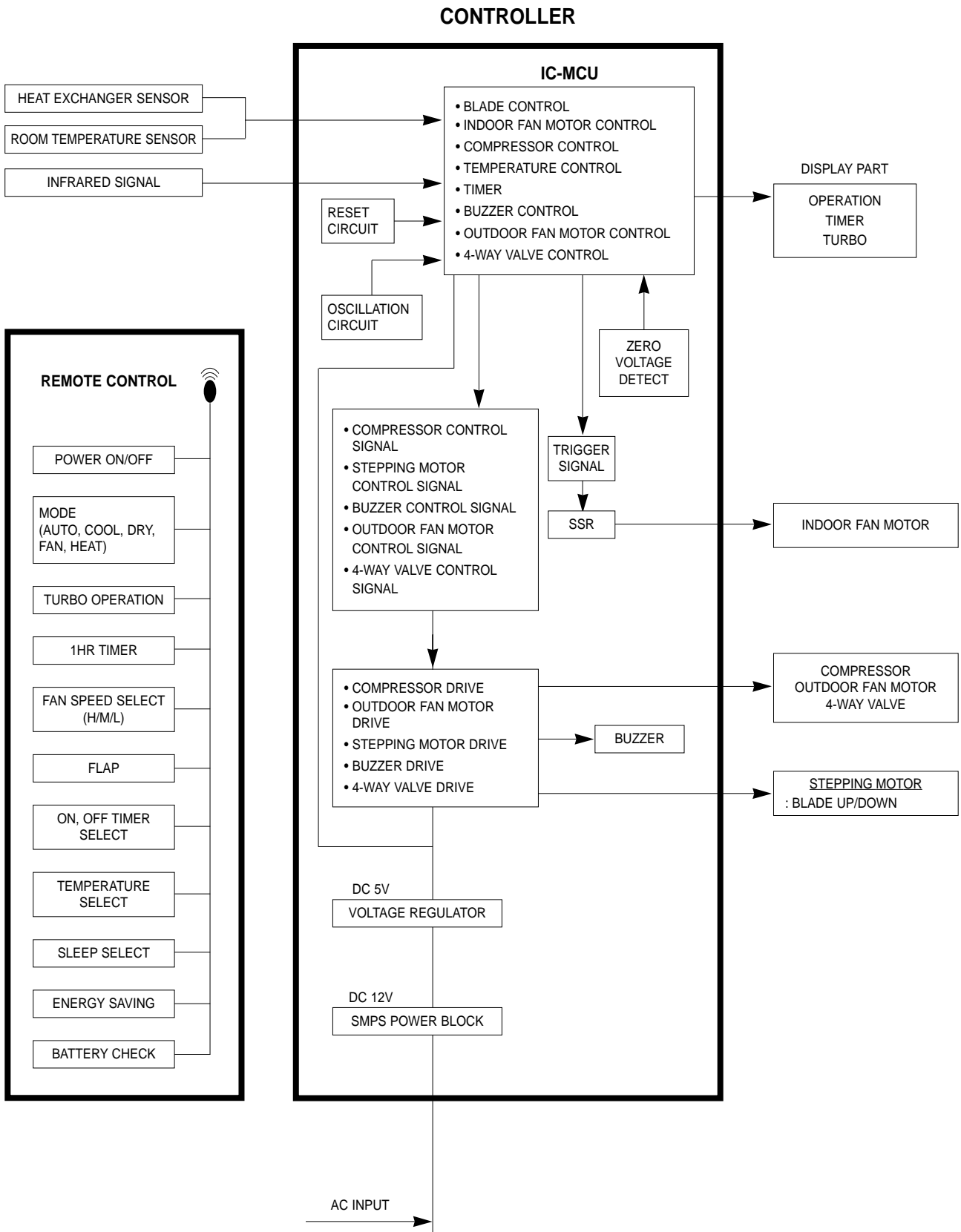


Code No.	MODEL	Code No.	MODEL
DB93-02481L	SH09AWH/EDC, SH12AWH/EDC, SH09ZWH/EDC,	DB93-02481G	KFR-35G/SWA
	SH12ZWH/EDC, AQ09WHWE/FES, AQ12WHWE/FES	DB93-02481J	KFR-25G/SWA
DB93-02481C	SH09ZWH/XSA, SH12ZWH/XSA		
DB93-02481E	SH09ZWH/SER, SH12ZWH/SER, SH09ZWH/XFO,		
	SH12ZWH/XFO		

### ■ Parts List

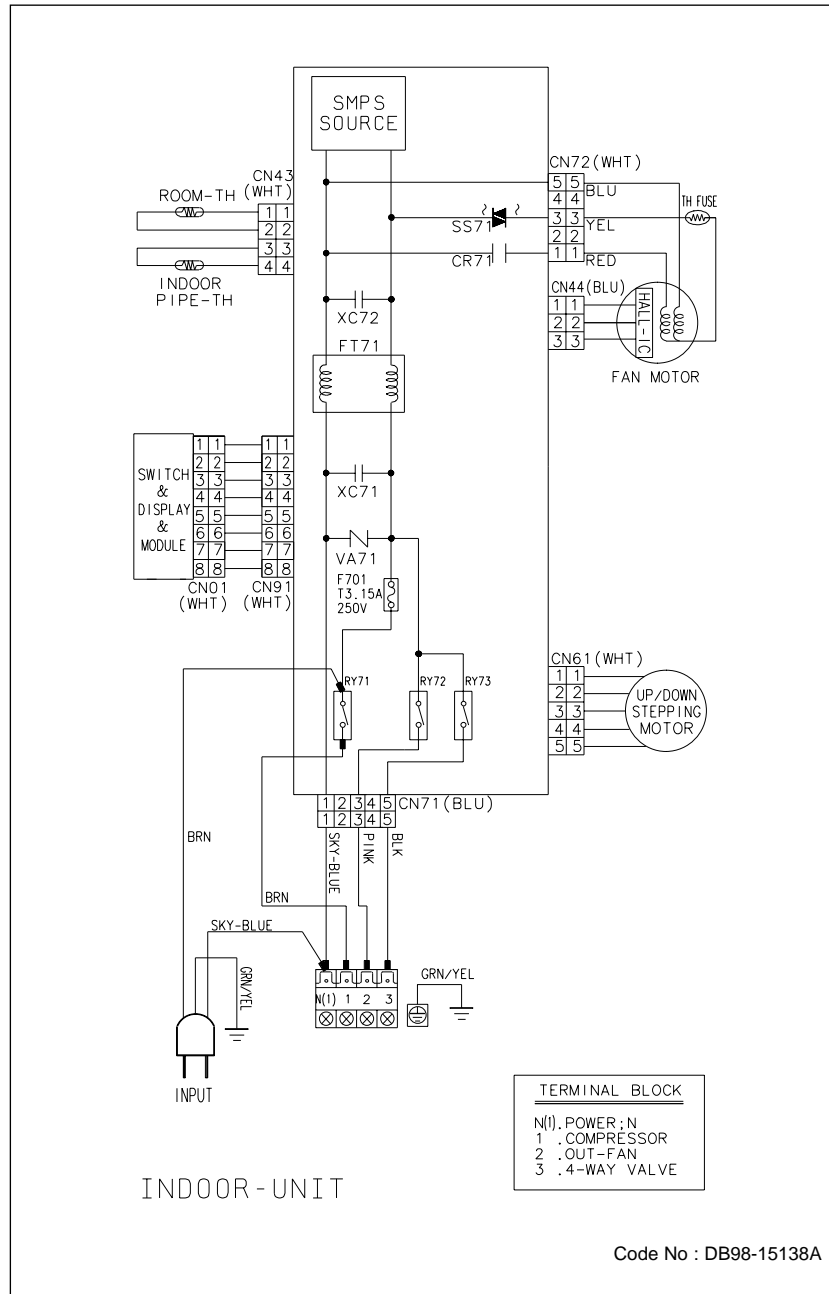
No.	Code No.	Description	Specification	Q'TY	Remark
1	DB61-01637A	CASE-CONTROL	ABS	1	
2	DB93-02482A	ASS'Y PCB MAIN	FR-4, 120x90	1	
3	DB65-00140A	ASS'Y TERMINAL BLOCK	4P	1	
4	DB93-02483A	ASS'Y S/W & MODULE & DISPLAY PCB	FR-1, 30x70	1	
5	DB61-01639A	PLATE-CONTROL	SGCC-M, T1-2	1	
6	DB61-00171A	HOLDER-WIRE CLAMP	ABS	1	
7	-	SCREW-MACHINE	PH M3xL22	1	SNA
8	-	SCREW-MACHINE	TH M4xL16	2	SNA
9	-	SCREW-MACHINE	TH M4xL10	1	SNA
10	DB39-00949A	CONNECTOR WIRE S/W & MODULE & DISPLAY	8P	1	
11	DB39-00147D	CONNECTOR WIRE STEP MOTOR UP/DOWN	5P	1	
12	DB32-00020D	ASS'Y THERMISTOR WIRE	4P(103AT)	1	
13	DB63-00851A	COVER CLAMP	HIPS	1	
14	-	POWER CORD	3P	1	

# 7. Block Diagram



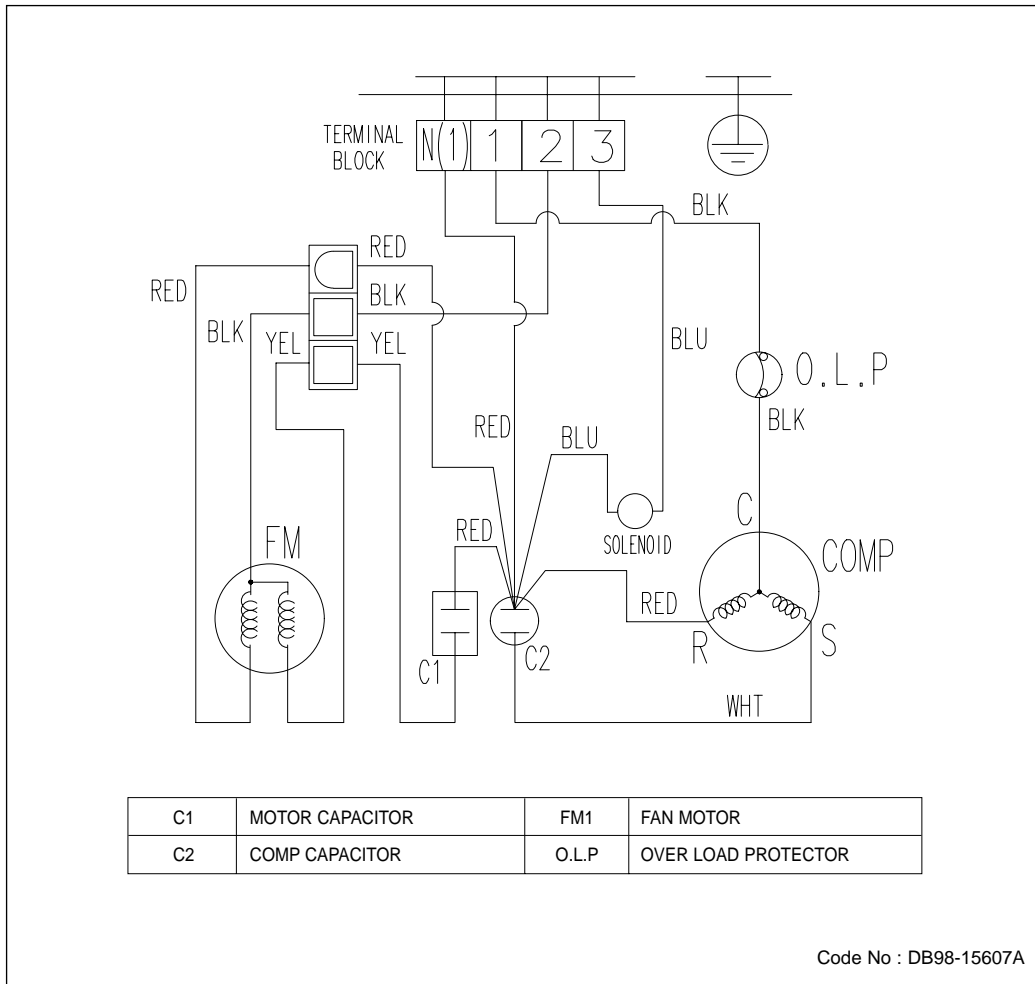
# 8. Wiring Diagram

## 8-1 Indoor Unit



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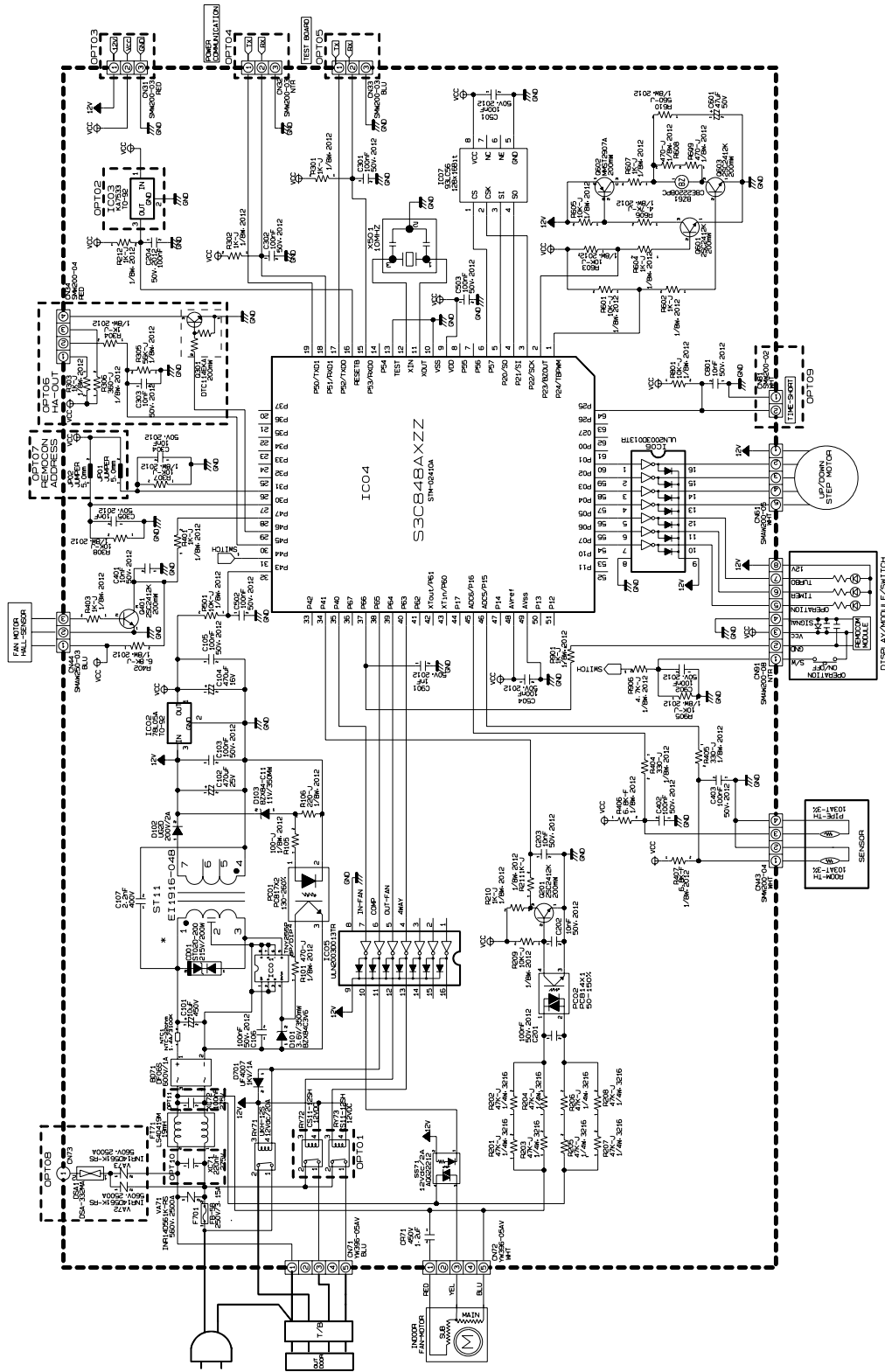
## 8-2 Outdoor Unit



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# 9. Schematic Diagram

## 9-1 Indoor Unit



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