



ROOM AIR CONDITIONER

INDOOR UNIT

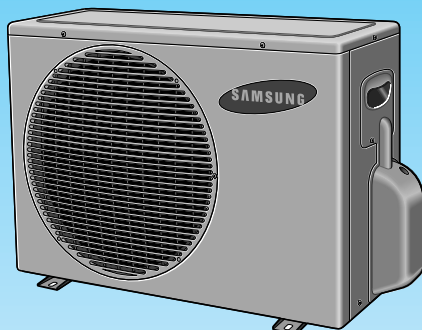
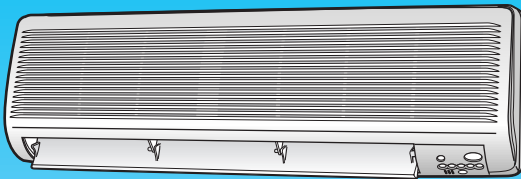
AQ12A5(6)MB
AQ12A5(6)ME
AQ09A5(6)ME
SH09ZA5(6)
AQ07A5(6)ME
SH07ZA5(6)
AQ09A7(8)ME
SH09ZA7(8)
AQ07A7(8)ME
SH07ZA7(8)

OUTDOOR UNIT

UQ12A5(6)MB
UQ12A5(6)ME
UQ09A5(6)ME
SH09ZA5(6)X
UQ07A5(6)ME
SH07ZA5(6)X
UQ09A7(8)ME
SH09ZA7(8)X
UQ07A7(8)ME
SH07ZA7(8)X

SERVICE Manual

AIR CONDITIONER



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1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.
2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)
3. Use the proper tools: Use the proper tools and test equipment, and know how to use them. Using defective tools or test equipment may cause problems later-intermittent contact, for example.
4. Power Cord: Prior to repair, check the power cord and replace it if necessary.
5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.
6. After completing repairs and reassembly, check the insulation resistance. Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megohms.
7. Make sure that the grounds are adequate.
8. Make sure that the installation conditions are satisfactory. Relocate the unit if necessary.
9. Keep children away from the unit while it is being repaired.
10. Be sure to clean the unit and its surrounding area.

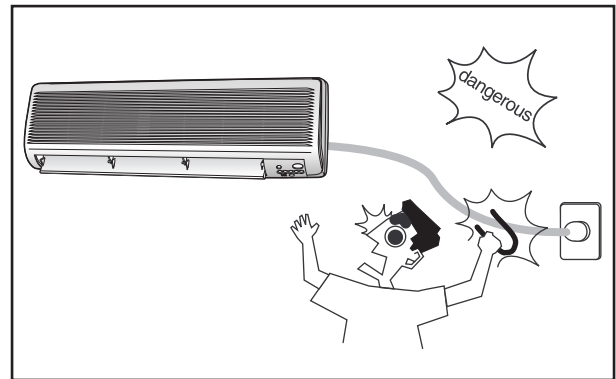


Fig. 1-1 Avoid Dangerous Contact

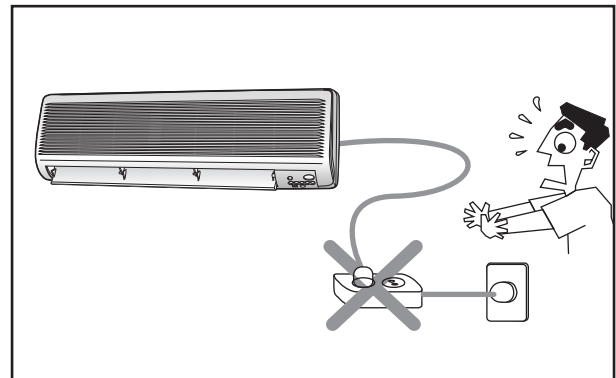


Fig. 1-2 No Tapping and No Extension Cords

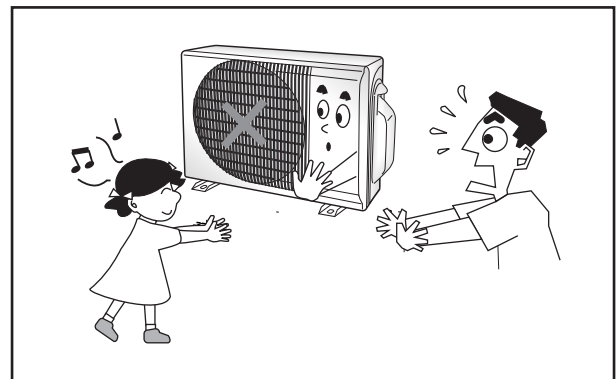


Fig. 1-3 No Kids Nearby!

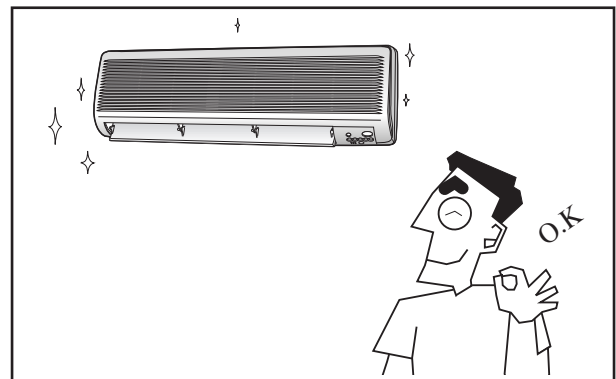


Fig. 1-4 Clean the Unit

MEMO

2. Product Specifications














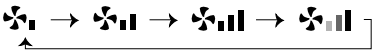





2-1 Table

Item	Model		AQ12A5(6)MB		AQ12A5(6)ME		AQ09A5(6)ME/SH09ZA5(6)		AQ07A5(6)ME/SH07ZA5(6)		AQ09A7(8)ME/SH09ZA7(8)		AQ07A7(8)ME/SH07ZA7(8)		
			Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	
Type			Wall-mounting		Wall-mounting		Wall-mounting		Wall-mounting		Wall-mounting		Wall-mounting		
Performance	Cooling	BTU/h(KW)	12000		12000 (3.4)		9000 (2.72)		7500 (2.3)		9000 (2.64)		7500 (2.2)		
	Heating	BTU/h(KW)	13000		13000 (3.7)		10000 (2.95)		8000 (2.38)		10000 (2.93)		8000 (2.34)		
	Dehumidifying	l/h	1.9		1.9		1.4		0.9		1.4		0.9		
	Air volume	Cooling	m ³ /min	7.4	19	7.4	19	6.0	18	5.6	18	6.0	20.5	5.6	20.5
		Heating		8.1	19	8.1	19	6.7	18	5.5	18	6.7	20.5	5.5	20.5
	Noise	Cooling	dB	41	53	41	53	38	51	35	50	38	51	35	50
		Heating		41	53	41	53	38	51	35	50	38	51	35	50
	Energy efficiency ratio	Cooling	BTU/h · W	9.375		10.0		9.375		10.0		9.47		10.0	
		Heating		10.0		10.6		10.752		10.959		10.75		10.96	
	Power		V-Hz	1-220-60		1-220 / 240-50		1-220 / 240-50		1-220 / 240-50		1-220 / 240-50		1-220 / 240-50	
Power Consumption	Cooling	W	1280		1200		960		750		950		750		
	Heating		1300		1230		930		730		930		730		
Operating Current	Cooling	A	6.0		5.4		4.4		3.3		4.2		3.3		
	Heating		6.2		5.5		4.2		3.3		3.9		3.2		
Power factor	Cooling	%	97		96.6		94.9		98.8		98.3		98.8		
	Heating		95.3		97.2		96.3		96.7		10.37		99.2		
Starting current		A	30		30		30		30		30		30		
Power cord	Length	m	-		-		-		-		-		-		
	Number of core wire		-		-		-		-		-		-		
Fuse capacity		A	250V-10 / 16A		250V-10 / 16A		250V-10 / 16A		250V-10 / 16A		250V-10 / 16A		250V-10 / 16A		
Size	Outer Dimension	Width x Height x Depth	mm	790 x 245 x 165	762 x 532 x 280	790 x 245 x 165	762 x 532 x 280	790 x 245 x 165	660 x 497 x 235	790 x 245 x 165	660 x 497 x 235	790 x 245 x 165	660 x 470 x 242	790 x 245 x 165	660 x 470 x 242
		inch	31.1 x 9.6 x 6.5	30 x 20.9 x 11	31.1 x 9.6 x 6.5	30 x 20.9 x 11	31.1 x 9.6 x 6.5	26 x 19.6 x 9.3	31.1 x 9.6 x 6.5	26 x 19.6 x 9.3	31.1 x 9.6 x 6.5	26 x 18.5 x 9.5	31.1 x 9.6 x 6.5	26 x 18.5 x 9.5	
	Weight		7.7	35	7.7	35	7.7	29	7.7	29	7.7	25	7.7	25	
	Refrigerant pipe	Liquid	mm x L(MT)	ø6.35 x 5		ø6.35 x 5		ø6.35 x 5		ø6.35 x 5		ø6.35 x 5		ø6.35 x 5	
		GAS	mm x L(MT)	ø12.7 x 5		ø12.7 x 5		ø9.52 x 5		ø9.52 x 5		ø9.52 x 5		ø9.52 x 5	
	Drain hose		D x L(mm)	ø18 x 2000		ø18 x 2000		ø18 x 2000		ø18 x 2000		ø18 x 2000		ø18 x 2000	
	Compressor	Type		Rotary		Rotary		Rotary		Rotary		Rotary		Rotary	
		Motor Type		-	-	-	-	-	-	-	-	-	-	-	-
		Rated output		-	-	-	-	-	-	-	-	-	-	-	-
	Blower	Type		Cross-flow	Propeller	Cross-flow	Propeller	Cross-flow	Propeller	Cross-flow	Propeller	Cross-flow	Propeller	Cross-flow	Propeller
Motor Type			Resin	steel	Resin	steel	Resin	steel	Resin	steel	Resin	steel	Resin	steel	
	Rated output	W	15	25	15	25	15	25	15	25	15	25	15	25	
Heat exchanger			2ROW 12STEP	1ROW 20STEP	2ROW 12STEP	1ROW 20STEP	2ROW 12STEP	1ROW 18STEP	2ROW 12STEP	1ROW 18STEP	2ROW 12STEP	1ROW 18STEP	2ROW 12STEP	1ROW 18STEP	
Refrigerant control unit			CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE		
Freezer oil capacity			410		410		360		360		360		360		
Refrigerant to change(R-22)			800		820		670		630		630		630		
Protection device			MRA 12002-9200/MRA 12002-12008		MRA 12030-12008		RAC 12054-9622		RAC 12086-9622		MRA 12110-12008		MRA 12086-12008		
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						

3. Operating Instructions and Installation

3-1 Operating Instructions

3-1-1 Name & Function of Key in remote controller

NO	NAMED OF KEY	FUNCTION OF KEY
1		Power On/Off button to start and stop airconditioner or timer set up
2	 (UP)	Temp. up button. To increase the temperature by the pressing the temperature button
	 (DOWN)	Temp. down button. To decrease the temperature by the pressing the temperature button
3		Each time you press this button Mode is changed in the following order  <ul style="list-style-type: none">  : Auto Mode  : Cool Mode  : Dry Mode  : Fan Only  : Heat Mode
4		Press TURBO until the appearance. the air condition cools or heats the room as quickly as possible. after 30minutes, the air, the airconditioner is reset automatically to the previous mode
		Press  until the appearance. the sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a period of six hours.
5		Each time you press this button, FAN SPEED is changed in the following order. 
6		Adjust air flow vertically.
7		The ON Timer enables you to switch on the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.
8		The Off Timer enables you to switch off the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.
9		To select the 5 way function with the remote control, press the 5 way button one or more times until the desired mode is selected.. Each time you press the 5 way button  Each 5 way indicator on the indoor unit comes on in order.

3-1-1 Name & Function of Key in remote controller

1. **AUTO MODE** : In this mode, operation mode(COOL, HEAT) is selected automatically by the room temperature of initial operation.

Room Temp	Operation Type
$Tr \geq 21^{\circ}\text{C} + \Delta T$	Cool Operation (Set Temp: AUTO SETTING)
$21^{\circ}\text{C} + \Delta T > Tr$	Heat Operation (Set Temp : $22^{\circ}\text{C} + \Delta T$)

$\Delta T = -1^{\circ}\text{C}, -2^{\circ}\text{C}, 0^{\circ}\text{C} + 1^{\circ}\text{C} + 2^{\circ}\text{C}$

ΔT is controlled by setting temperature up/down key of remote controller

2. **COOL MODE** : The unit operates according to the difference between the setting and room temperature. ($18^{\circ}\text{C} \sim 30^{\circ}\text{C}$)
3. **HEAT MODE** : The unit operates according to the difference between the setting and room temperature. ($16^{\circ}\text{C} \sim 30^{\circ}\text{C}$)
 - *Prevention against cold wind : For about 3~5 minutes after initial operation, thermo control or "de-ice", the indoor fan will either not operate or operate very slowly, then switch to the selected fan speed. This period is to allow the indoor unit's heat-exchanger to prewarm before emitting warm air.
 - *High temperature release function : The outdoor unit for and compressor ON/OFF control for safety operation, when the overheat is heat exchanger of indoor unit.
 - *De-ice : Deicing operation is controlled by indoor unit's heat exchanger temperature and accumulating time of compressor's operation.
 - De-ice end by sensing of the processing time by de-ice Condition.

4. **DRY MODE** : Has 3 states, each determined by room temperature.
The unit operates in DRY mode.
*Compressor ON/OFF Time is controlled compulsorily (can not set up the fan speed, always breeze).
*Protective function : Low temperature release. (Prevention against freeze)
5. **TURBO MODE** : This mode is available in AUTO, COOL, HEAT, DRY, FAN MODE.
When this button is pressed at first, the air conditioner is operated "powerful" state for 30 minutes regardless of the set temperature, room temperature.
When this button is pressed again, or when the operating time is 30 minutes, turbo operation mode is canceled and returned to the previous mode.
*But, if you press the TURBO button in DRY or FAN mode that is changed with AUTO mode automatically.
6. **SLEEP MODE** : Sleep mode is available only in COOL or HEAT mode.
The operation will stop after 6 hours.
*In COOL mode : The setting temperature is automatically raised by 1°C each 1hour
When the temperature has been raised by total of 2°C , that temperature is maintained.
*In HEAT mode : The setting temperature is automatically dropped by 1°C each 1hour.
When the temperature has been dropped by total of 2°C , that temperature is maintained.
7. **FAN SPEED** : Manual (3 step), Auto (4 step)
Fan speed automatically varies depending on both the difference between setting and the room temperature.


8. COMPULSORY OPERATION :


For operating the air conditioner without the remote controller.


*AUTO : The operating is the same function that AUTO MODE in the remote controller. And each time you press the button the 5WAY function is changed as follow.
 STD → NATURE → POWER → SAVING → SILENCE → POWER OFF


Each time you press This button, 5WAY function is changed in the following order
 STD(standard) → NATURE → POWER(High-speed) → Saving(Power-Saving) → Quite

* STD(standard) () : General operation Mode

* NATURE () : The unit is operated according to health pattern control

* POWER () : The unit is operated in powerful state




* SAVING () : The unit is operated in power saving state


* SILENCE () : The unit is operated quietly

Each mode has Auto, Cool and SLEEP operation designed in advance.

9. SWING : BLADE-H is rotated vertically by the stepping motor.

*Memory louver : When ON/OFF button is pressed at stop state, the BLADE-H returns to its original location which is operating state before stop

*Swing Set : Press the  button under the remote control is displayed on LCD the  and the blades move up and down. If the one more time press the  button, blades location is stop.







10. 24-Hour ON/OFF Real Setting Timer. : The air conditioner is turned ON at a specified time using  .

OFF TIMER : The air Conditioner is turned OFF at a specified time using  .

*ON TIMER : Only timer LED lights on.

*OFF TIMER : Both timer and operation LED lights on.

11. SELF Diagnosis

Check Point	LED DISPLAY					
	TIMER	STD	NATURE	POWER	SAVING	SILENCE
						
Indoor unit room temperature sensor error(open or short)	●	○	○	○	○	○
Indoor unit heat exchanger temperature sensor error(open or short)	●	●	○	○	○	○
Indoor fan mal function	○	○	●	○	○	○
EEPROM error	●	●	●	○	○	○
Option error(option wasn't set up or option data error)	●	●	●	●	●	●

● : LED blinking ○ : LED off

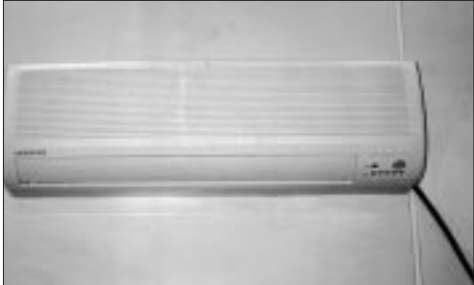

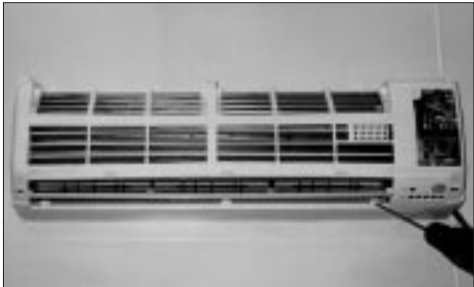
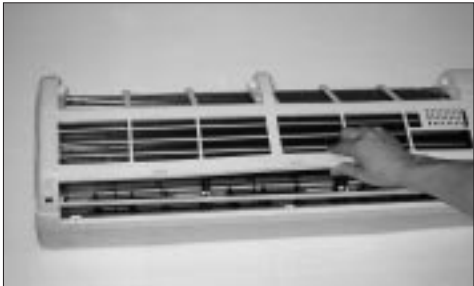
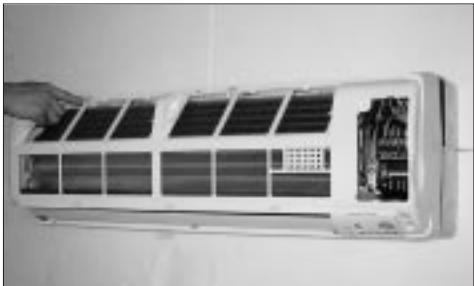
12. BUZZER SOUND : Whenever the ON/OFF button is pressed or whenever change occurs to the condition which is set up or select, the compulsory operation mode, buzzer is sounded "beep"



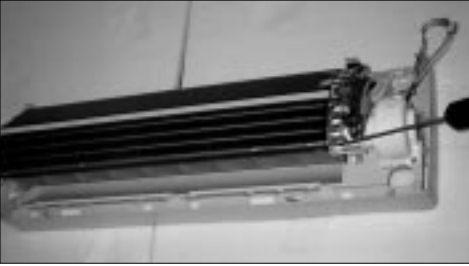


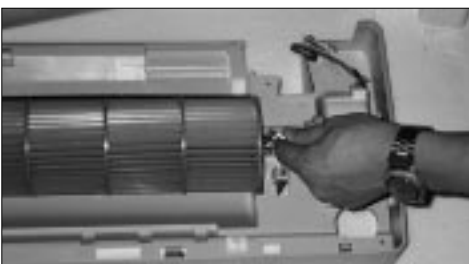
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4. Disassembly and Reassembly

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





4-1 Indoor Unit

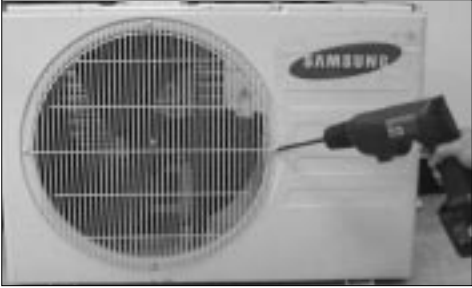

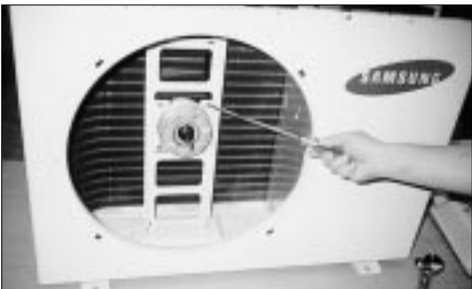
No	Parts	Procedure	Remark
1	Front Grille	<p>1) Stop the air conditioner operation and block the main power.</p> <p>2) Separate tape of front panel upper.</p> <p>3) Contract the second finger to the left, and right handle and pull to open the inlet grille.</p> <p>4) Take the left and right filter out.</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">*Taking off the deodorizing filter.</div> <p>5) Loosen one of the right fixing screw and separate the terminal cover.</p> <p>6) Loosen three fixing screws of front grille.</p> <p>7) Pull the upper left and right of discharge softly for the outside cover to be pulled out.</p> <p>8) Pull softly the lower part of discharge and push it up.</p> <p>Caution; Assemble the front panel and fix the hooks of left and right.</p>	    

No	Parts	Procedure	Remark
2	Ass'y Tray Drain.	<ol style="list-style-type: none"> 1) Do "1" above 2) Take all the connector of PCB upper side out. (Inclusion Power cord) 3) Separate the outdoor unit connection wire from the terminal block. 4) If pulling the Main PCB up. it will be taken out. 	
3	Electrical Parts (Main PCB)	<ol style="list-style-type: none"> 1) Do "1", "2", above Separate the drain hose from the extension drain hose. 2) Pull tray drain out from the back body. 	
4	Heat Exchanger	<ol style="list-style-type: none"> 1) Do "1" and "2", "3", above 2) Loosen two fixing earth screws of right side. 3) Separate the connection pipe. 4) Separate the holder pipe at the rear side. 5) Loosen the three fixing screws of right and left side. 6) Lifting the heat exchanger up a little to push the up side for separation from the indoor unit. 	 
5	Fan Motor and Cross Fan	<ol style="list-style-type: none"> 1) Do "1" "2" "3" "4", above. 2) Loosen the fixing two screws and separate the motor holder. 3) Loosen the fixing screw of fan motor. (By use of M3 wrench) 4) Separate the fan motor from the fan. 5) Separate the fan from the left holder bearing. 	 

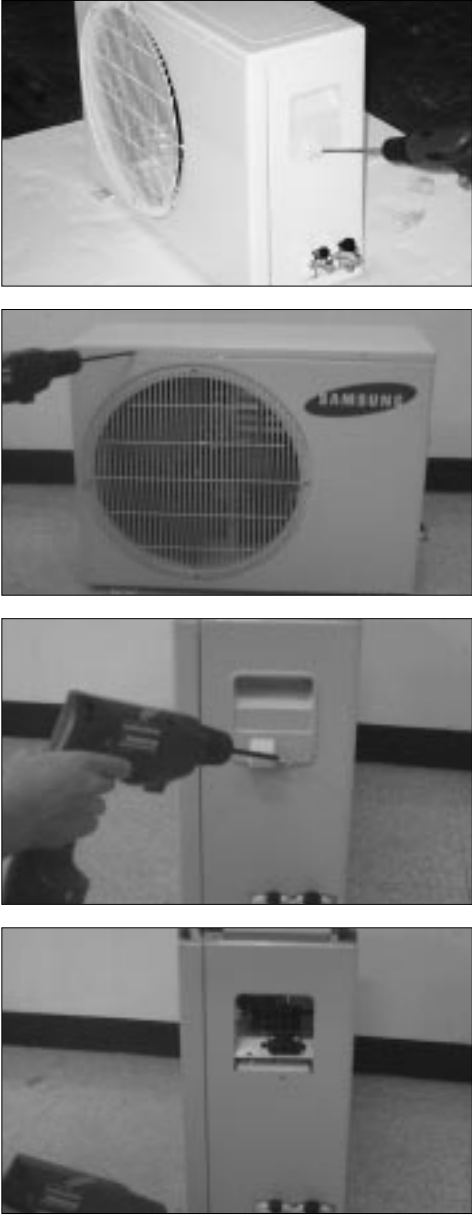

4-2 Outdoor Unit

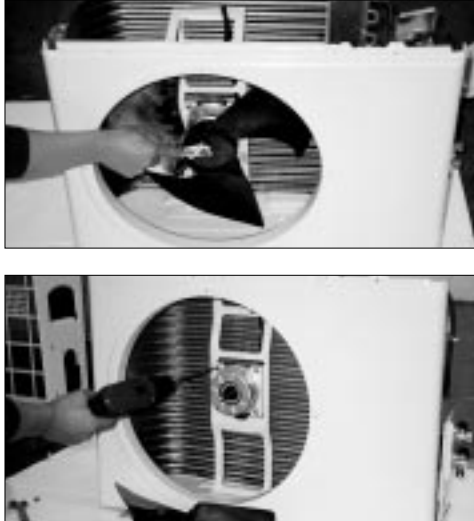
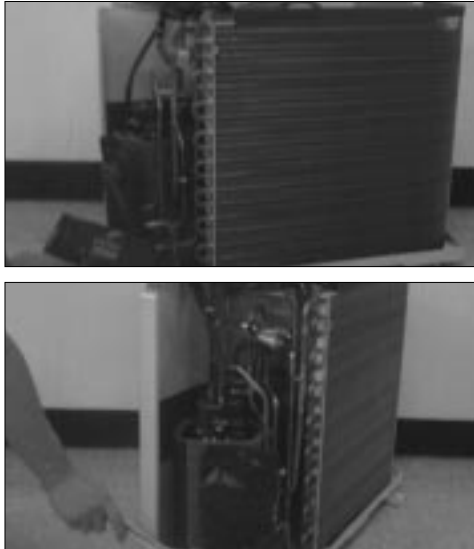

• UQ12A5(6)M*

No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen the fixing screw and separate the Handle-Cabi RH.</p> <p>2) Separate the connection wire from the terminal block.</p> <p>3) Loosen 6 fixing screws and separate the upper cabinet.</p> <p>4) Loosen the fixing screw of Ass'y E-part.</p> <p>5) Loosen 5 fixing screws and separate the side cabinet.</p>	   






No	Parts	Procedure	Remark
2	Fan-Motor	<p>1) Loosen 4 fixing screw of the Guard-Fan.</p> <p>2) Remove the nut flange (Turn to the right to remove, as it is a left hand screw)</p> <p>3) Separate the fan.</p> <p>4) Loosen four fixing screws to separate the motor.</p>	  

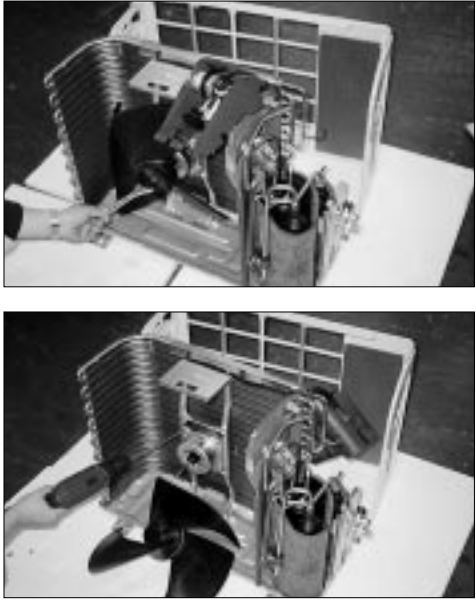


- SH09ZA5(6)X
- UQ09A5(6)M*
- SH07ZA5(6)X
- UQ07A5(6)M*

No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen the fixing two screws and separate the cover E-parts.</p> <p>2) Separate the connection wire from the terminal block.</p> <p>3) Loosen five fixing screws and separate the cabi Upper.</p> <p>4) Loosen two fixing screws of Ass'y E-part.</p> <p>5) Loosen nine fixing screws and separate the cabi side.</p>	
2	Fan and Motor	<p>1) Do "1", above.</p> <p>2) Loosen four screws and sepearaate Guard Fan from front cabinet</p>	

No	Parts	Procedure	Remark
		2) Remove the nut flange (Turn to the right to remove, as it is a left hand screw) 3) Separate the fan. 4) Loosen four fixing screws to separate the motor.	
3	Heat Exchanger	1) Do "1", 2 above. 2) Loosen two fixing screws of left and right side. 3) Disassemble the inlet and outlet pipe by welding. 4) Separate the heat exchanger.	
4	Compressor	1) Do "1", above. 2) Loosen the nut on the terminal cover and open the terminal cover. 3) Disassemble the inlet and outlet pipe of compressor by welding. 4) Disassemble the inlet and outlet pipe of condenser by welding 5) Loosen the three bolts of the lower part. 6) separate the compressor.	

- SH07ZA7(8)X/SH09ZA7(8)X
- UQ07A7(8)M*/UQ09A7(8)M*




No	Parts	Procedure	Remark
1	Common Work	<p>1) Loosen the fixing two screws and separate the COVER TERMINAL</p> <p>2) Loosen the fixing two screws and separate the cover control</p> <p>3) Separate the connection wire from the terminal block.</p> <p>4) Loosen six fixing screws and separate the cabi front.</p> <p>5) Loosen the one fixing screw of Ass'y E-part.</p> <p>6) Loosen 12 fixing screws and separate the cabi side.</p>	    

No	Parts	Procedure	Remark
2	Fan and Motor	<ol style="list-style-type: none"> 1) Do "1", above. 2) Remove the nut flange (Turn to the right to remove, as it is a left hand screw) 3) Separate the fan. 4) Loosen Four fixing screws to separate the motor. 5) Loosen two fixing screws and separate the motor bracket from the base. 	
3	Heat Exchanger	<ol style="list-style-type: none"> 1) Do "1", "2", above. 2) Loosen two fixing screws of left and right side. 3) Disassemble the inlet and outlet pipe by welding. 4) Separate the heat exchanger. 	
4	Compressor	<ol style="list-style-type: none"> 1) Do "1", "2", "3", above. 2) Open the terminal cover of compressor and unscrew the connection terminal. 3) Disassemble the inlet and outlet pipe of compressor by welding. 4) Loosen the three bolts of the lower part. 5) separate the compressor. 	

5. Troubleshooting

5-1 Items to be checked first

- 1) The input voltage should be rating voltage $\pm 10\%$ range.
The airconditioner 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 airconditioner 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 airconditioner.

NO	Operation of air conditioner	Explanation
1	The STD operation indication LED 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 AUTO or DRY mode.  	The speed of the indoor fan is set to LL in DRY mode. Fan speed is 5 steps 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 only 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.

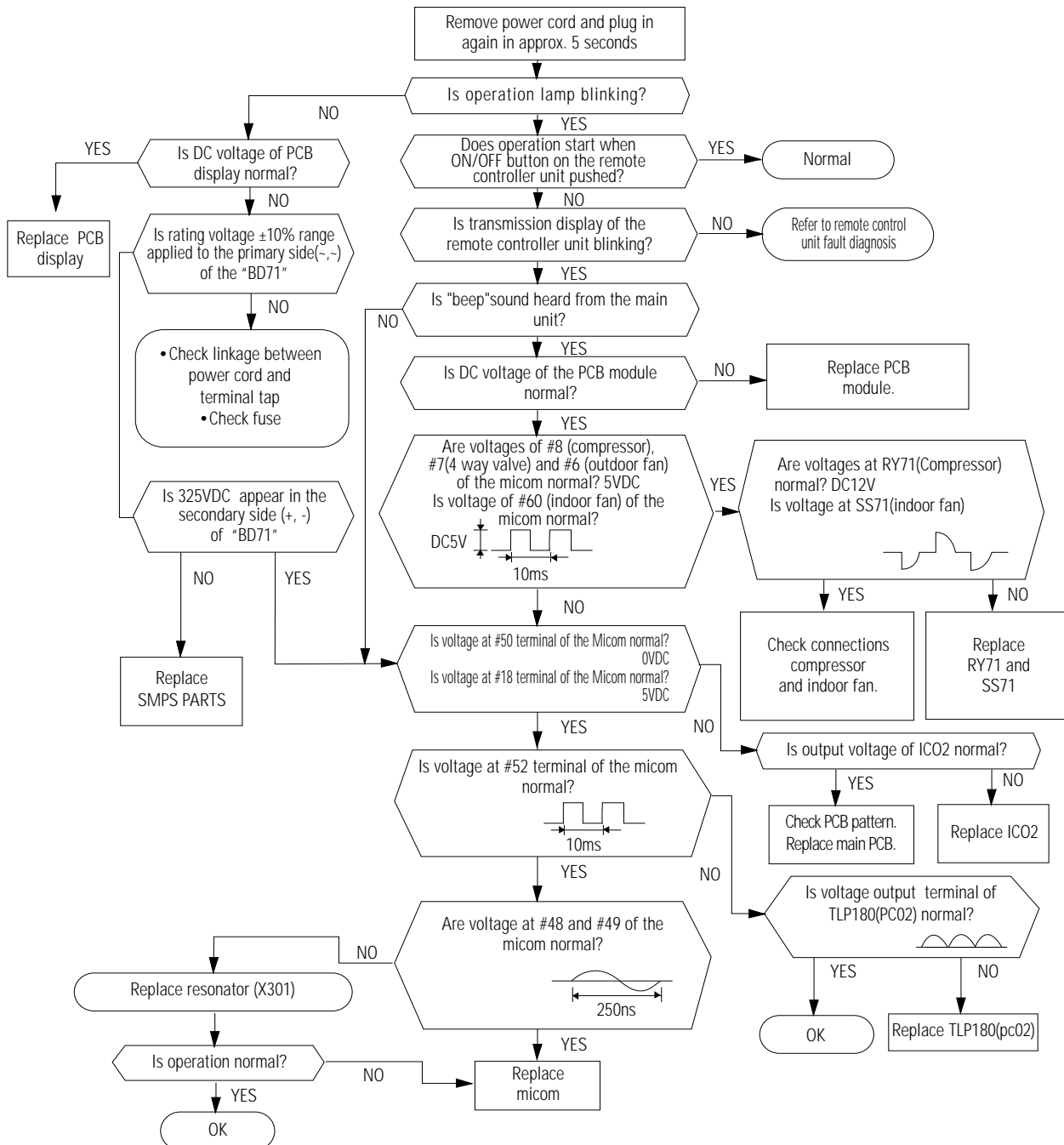
- 4) Indoor unit observes operation condition of the air conditioner, and displays self diagnosis details on the display panel.

NO	Display	Self Diagnosis
1	STD LED blinking (1Hz)	Restore from power failure (input initial power)
2	TIMER LED blinking (1Hz)	Indoor unit Room sensor Error (open or short)
3	STD and TIMER LED blinking (1Hz)	Indoor unit heat exchanger temperature sensor Error (open or short)
4	NATURE LED blinking (1Hz)	Indoor fan malfunctioning (for speed is Below 450rpm)

5-2 Fault Diagnosis by Symptom

5-2-1 No Power (completely dead)-Initial diagnosis

- 1) Checklist :
 - (1) Is input voltage normal?
 - (2) Is AC power linked correctly?
 - (3) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)
- 2) Troubleshooting procedure

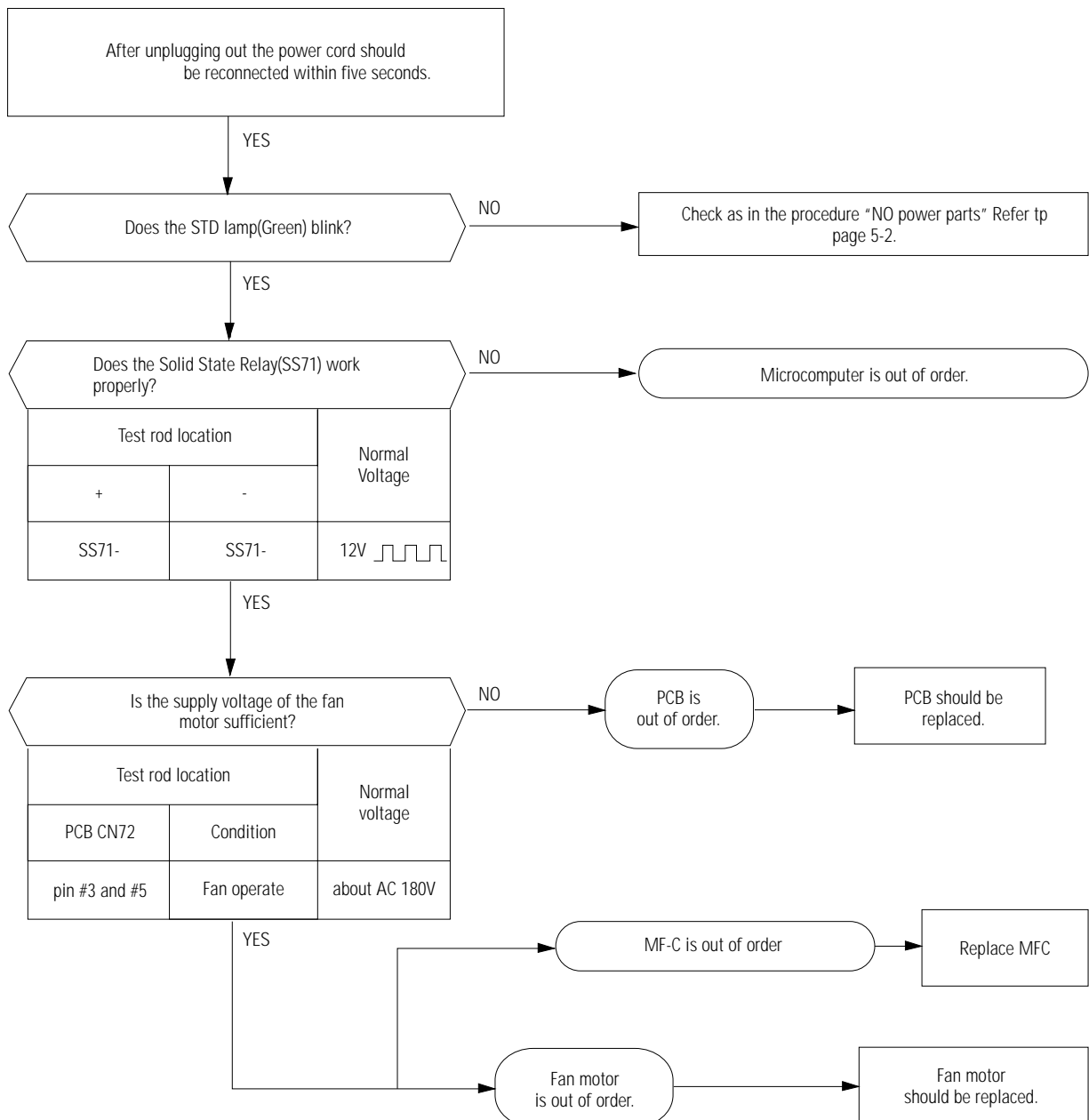


5-2-2 When the Indoor Unit Fan Does Not Operate. (Initial Diagnosis)

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 (CN42)?
- (4) Is the running capacitor (CR71) properly connected with PCB board?

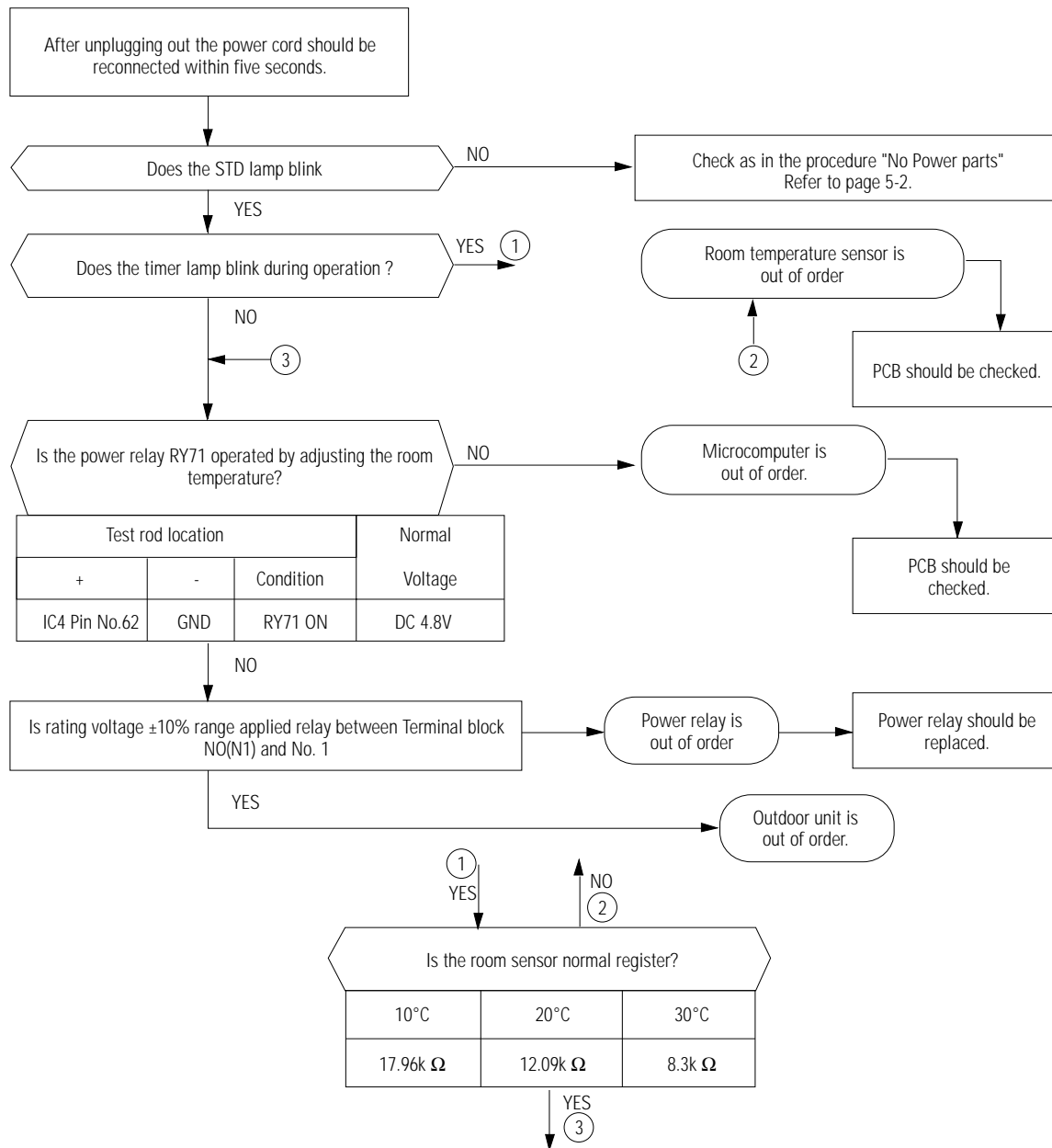
2) Troubleshooting procedure



5-2-3 When the Outdoor Unit Does Not Operate. (Initial Diagnosis)

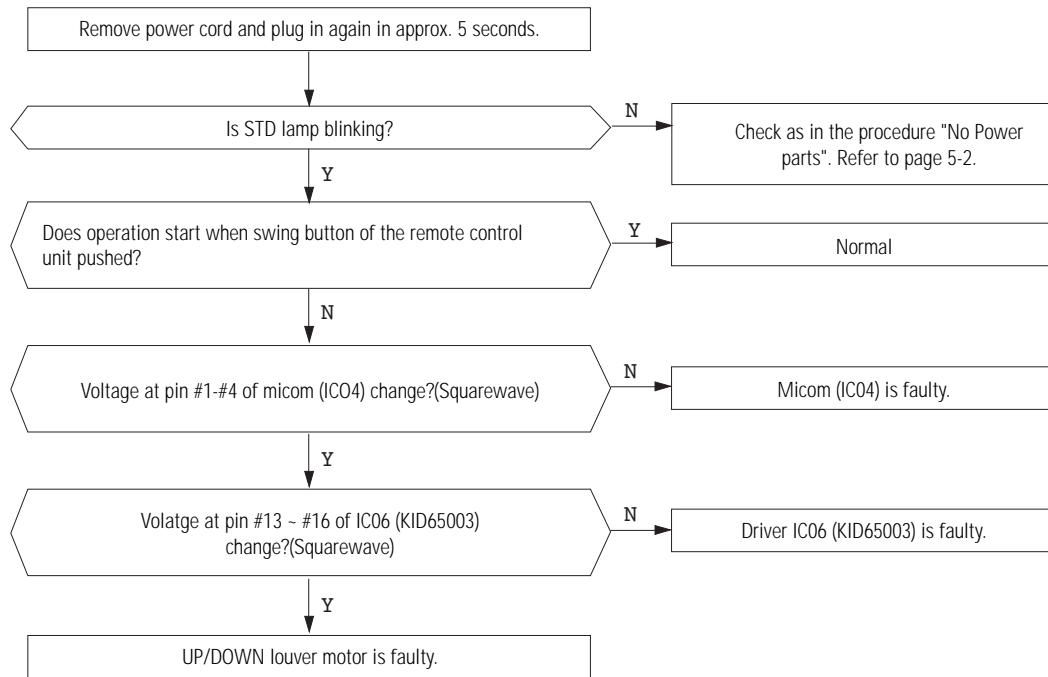
- 1) Checklist :
 - (1) Is input voltage normal?
 - (2) Is the set temperature of the remote control higher than room temperature in COOL mode?
 - (3) Is the POWER IN connector (CN71) linked correctly?
 - (4) Is the outdoor unit properly connected with the TERMINAL BLOCK connector((N1), 1)?

2) Troubleshooting procedure



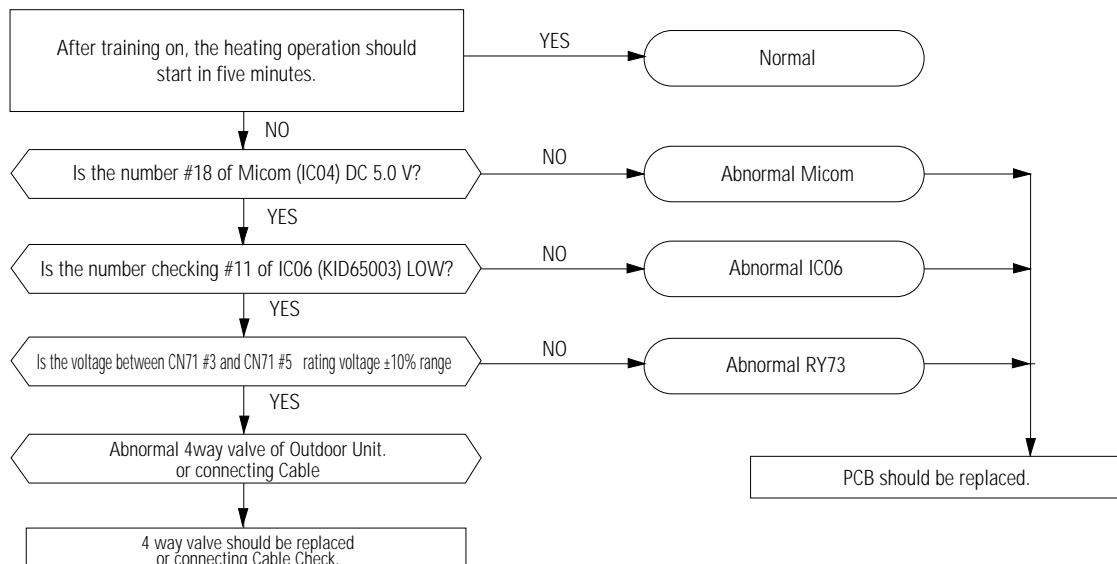
5-2-4 When the UP/DOWN Louver Moter Does Not Operate. (Initial Diagnosis)

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



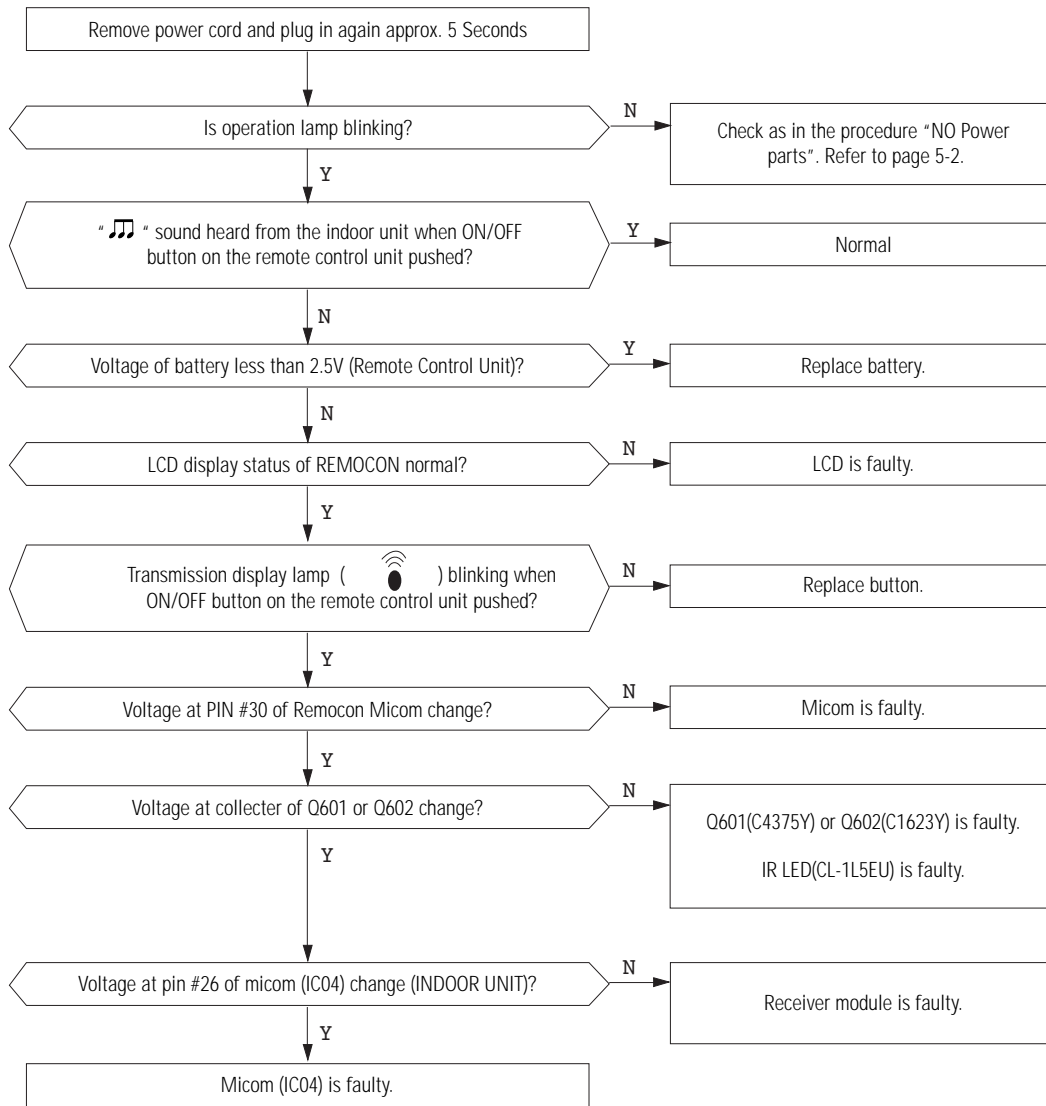
5-2-5 In the mode, When there is no warm air current. Check this first;

- (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?



5-2-6 If Operation By Remote Control Unit Is Impossible. (Initial Diagnosis)

1) Troubleshooting procedure



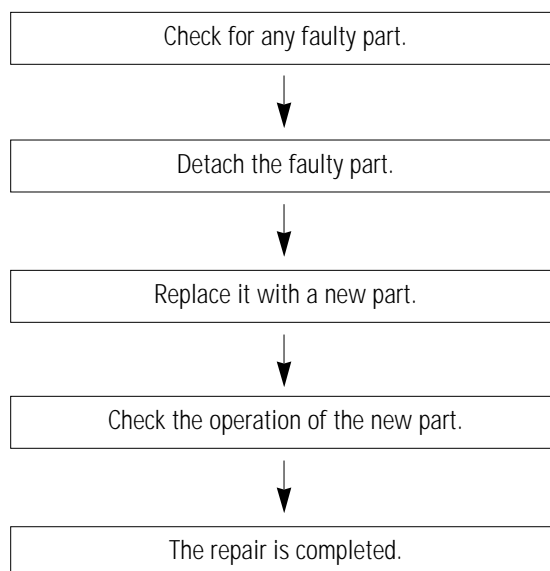
5-3 PCB Inspection

5-3-1 Cautions for Part Replacement

1. The human body carries much static electricity. Before touching a part for repair, replacement or the similar purpose, be sure to touch a grounded metallic portion by hand to let the static electricity go through the metallic portion to the earth. Especially when handling any micro computer or IC, carefully remove such static electricity before touching them.
2. When repairing any part on a work bench, be sure to place an insulative sheet on the bench and always keep the sheet surface neat without any metal fragments. If any such fragment touches a part, a secondary trouble will possibly be caused in the part.
3. Before replacing any parts, be sure to turn off the power supply. If such replacement is done with the power supply kept on, an electric shock, short circuit or destruction of a part may result.
4. During replacement or repair of a part, carefully handle it : The printed circuit board has fine lead wires (jumper wires) and glass-made parts (diode) on its substrate. So if a circuit board is roughly handled, such lead wires and parts will be easily broken or damaged by bending or shock.
5. When soldering the lead wires of any new part, be sure to polish them using an emery paper or the like before soldering them. Since the lead wires of any new part are covered with an oxide film, solder cannot adhere to the lead wires if not polished.
6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).
7. The heat of the soldering iron should be transferred to the entire object to be soldered. If the solder pieces are not well fused due to insufficient transfer of the heat from the soldering iron, no satisfactory electrical continuity can be assured even if the soldered objects appear well connected to each other.
8. The solder used should be limited to a minimum. If excessive solder is used, it will cause inter-pattern contact, which may cause malfunction of the circuit.

5-3-2 Procedure

The parts should be replaced in the following procedure.



5-3-3 Detailed Procedure

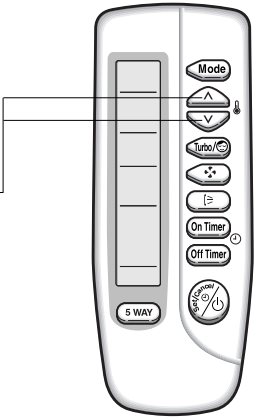
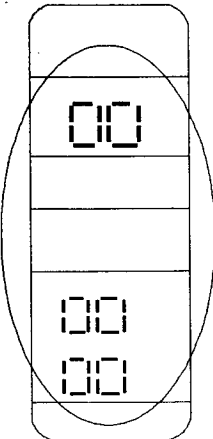
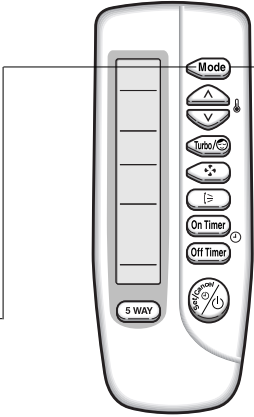
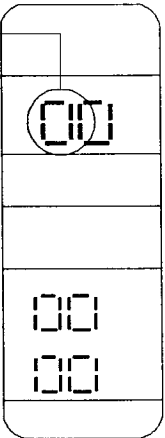
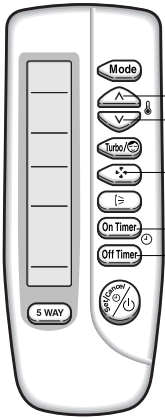
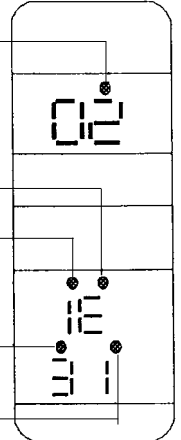
No.	Malfunction	Checking point (symptoms)	Causes
1	Pull out the power plug from the AC terminal and confirm the fuse on the PCB assembly	1. Is the broken(open)?	<ul style="list-style-type: none"> ▷ Voltage over ▷ Indoor unit fan motor short-circuit
2	Turn the power on.	Voltage check	SMPS circuit is faulty
		1. AC voltage at BD71(-,-)? : rating voltage ± 10% range	▷ SMPS circuit is faulty
		2. DC voltage at BD71(+,-)? : about 325[v] ± 10%	
		3. DC voltage at IC02 : IN-GND → DC12[v] : OUT-GND → DC5[v]	
		4. Voltage waveform at Q201 : collector-GND → squarewave	▷ PC02, R202-R205
3	Set the TURBO mode	Voltage check	SMPS circuit is faulty
		1. check voltage of IC06 (pin#10,pin#8) : relay on → 0.7[v] : relay off → 12[v]	▷ IC06 is faulty
		2. Voltage at terminal block ((N1) -1) → rating voltage	▷ RY71 is faulty


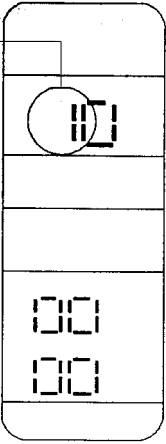
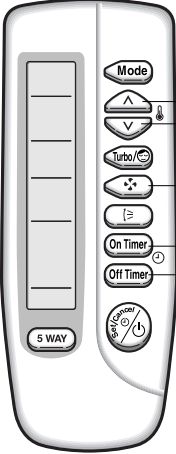
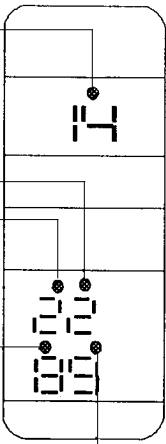
5-4 Fault Diagnosis of Major Parts

Parts	Diagnosis																						
Temp.Sensor Heat ex. Sensor	Measure resistance with a tester.																						
	Normal	<table border="1"> <thead> <tr> <th>Ambient temperature</th> <th>15°C</th> <th>20°C</th> <th>25°C</th> <th>30°C</th> <th>35°C</th> <th>40°C</th> </tr> </thead> <tbody> <tr> <td>Resistance of thermistor[kΩ]</td> <td>14.68</td> <td>12.09</td> <td>10</td> <td>8.31</td> <td>6.94</td> <td>5.83</td> </tr> </tbody> </table>						Ambient temperature	15°C	20°C	25°C	30°C	35°C	40°C	Resistance of thermistor[kΩ]	14.68	12.09	10	8.31	6.94	5.83		
		Ambient temperature	15°C	20°C	25°C	30°C	35°C	40°C															
Resistance of thermistor[kΩ]	14.68	12.09	10	8.31	6.94	5.83																	
Abnormal	∞, 0 Ω ... open or short																						
Indoor Fan Motor	Measure resistance between terminals (CN72) with a tester																						
	Normal	At ambient temperature (10°C ~ 30°C)																					
		<table border="1"> <thead> <tr> <th>between</th> <th>Voltage</th> <th></th> </tr> </thead> <tbody> <tr> <td>Red, Blue</td> <td>410±10%</td> <td>Main</td> </tr> <tr> <td>Red, Yellow</td> <td>325±10%</td> <td>Sub</td> </tr> </tbody> </table>						between	Voltage		Red, Blue	410±10%	Main	Red, Yellow	325±10%	Sub							
		between	Voltage																				
	Red, Blue	410±10%	Main																				
Red, Yellow	325±10%	Sub																					
Abnormal																							
Measure the voltage between ground and signal wire of the fan motor																							
Outdoor Fan Motor	Normal	<table border="1"> <thead> <tr> <th>between</th> <th>Voltage</th> <th></th> </tr> </thead> <tbody> <tr> <td>Gray, Orange</td> <td>0.5V~4.5V</td> <td></td> </tr> <tr> <td>Yellow, Orange</td> <td>5V</td> <td></td> </tr> </tbody> </table>					between	Voltage		Gray, Orange	0.5V~4.5V		Yellow, Orange	5V									
		between	Voltage																				
		Gray, Orange	0.5V~4.5V																				
Yellow, Orange	5V																						
Abnormal	Abnormal if voltage does not change from 0V to 5V.																						
Stepping Motor (UP/DOWN swing motor)	Normal	At ambient temperature (10°C ~ 30°C)																					
		<table border="1"> <thead> <tr> <th></th> <th>**A7(A8)**</th> <th>**A5(A6)**</th> <th></th> </tr> </thead> <tbody> <tr> <td>between</td> <td colspan="2">Resistance</td> <td></td> </tr> <tr> <td>Black, Red</td> <td>304±10%</td> <td>360±10%</td> <td>Main</td> </tr> <tr> <td>Black, White</td> <td>289±10%</td> <td>257±10%</td> <td>Sub</td> </tr> </tbody> </table>							**A7(A8)**	**A5(A6)**		between	Resistance			Black, Red	304±10%	360±10%	Main	Black, White	289±10%	257±10%	Sub
			A7(A8)	**A5(A6)**																			
		between	Resistance																				
	Black, Red	304±10%	360±10%	Main																			
Black, White	289±10%	257±10%	Sub																				
Abnormal	∞, 0 Ω ... open or short																						
Measure resistance between red wire and each terminal.																							
Normal	Approx. 380Ω at ambient temperature (20°C ~30°C)																						
Abnormal	∞, 0 Ω ... open or short																						

5-5 Set up the Model option

* If you make the replacement of the ASS'Y CONTROL-IN or MAIN PCB ,
Be sure to be set up the model option as follow the steps

Remote controller operation method as per the step	Applicable key	Display status
<p>1st step Method) ① Remove the battery of remote controller ② Press the temperature raise/down key simultaneously ③ Insert the battery again</p> <p>(Result) If the screen of remocon displays as shown in the right, go to the second step</p>		
<p>2nd step Method) If the first digit of LCD is 0 on the remocon screen, go to the 3rd step.</p> <p>* If it is 1, press the mode key once to change to 0 and go to the 3rd step.</p>		
<p>3rd step Method) Press the marked key to input the option number. example) 021E31</p> <p>Result) Go to 4th step if it displays as shown in the right (The number increases from 1-9, and A, b, C, d, E, F whenever pressing the key.)</p>		

Remote controller operation method as per the step	Applicable key	Display status
<p>4th step Method) After completion of 3rd step, and if the MODE KEY is pressed once, _____</p> <p>1. 1-3 steps are saved internally 2. If the first number at the time is "1", it is correct and so go to 5th step</p> <p>* If pressing mode key and the first digit becomes 0, the screen of 1-3 steps can be seen.</p>		
<p>5th step Method) Pressing the marked key to input the option number. example) 142285</p> <p>Result) If it displays as shown in the right go to the 6th step</p>		
<p>6th step Method) When pressing the operation ON/OFF key with the direction of remote controller for set, the sound "Ding, or Diriring is heard and then the input of option is completed.</p> <p>* Refer to the right side if the error appears.</p>	<p>ERROR MODE</p> <p>1. When the lamp(STANDARD(☀️), NATURE(☁️), TIMER(🕒)) is flickering → failure of option input After removing the set power cord and insert it again, pressing the operation on/off key to retry and if the condition is same, EPROM is deffective or misinserted. So replace the PCB.</p>	<p>2. When all lamps (☀️☁️🕒) are flickering with the sound of Dididiring, → The current option input is different from that of already input one: Check the option number correctly and if it is correct, press the key once more to input the option. (check correctly) → If the option is not input at the time and the all lamps are continuously flickering ; since it is the case that the option number is out of the input range, check the option number again and do again the steps from 1 - 6steps</p>

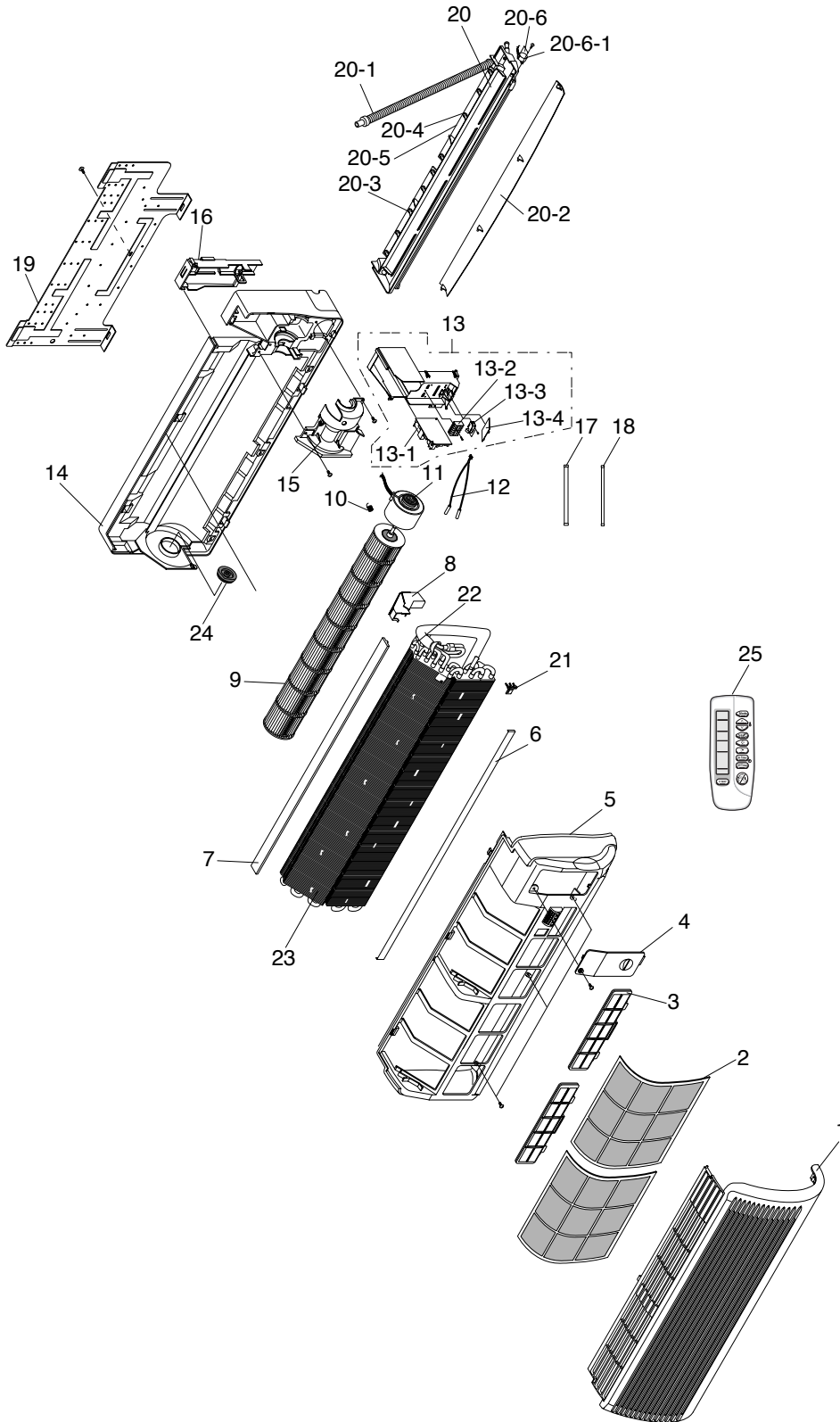
<Table of the option code>

MODEL	OPTION CODE
AQ12A5MB	017725-17021d
AQ12A6MB	007725-17021d
AQ12A5ME	017626-17021d
AQ12A6ME	007626-17021d
AQ09A5ME SH09ZA5	016A25-1700d9
AQ09A6ME SH09ZA6	006A25-1700d9
AQ07A5ME SH07ZA5	014A25-1700b7
AQ07A6ME SH07ZA6	004A25-1700b7
AQ09A7ME SH09ZA7	016825-1700d9
AQ09A8ME SH09ZA8	006825-1700d9
AQ07A7ME SH07ZA7	014825-170067
AQ07A8ME SH07ZA8	004825-170067

MEMO

6. Exploded Views and Parts List

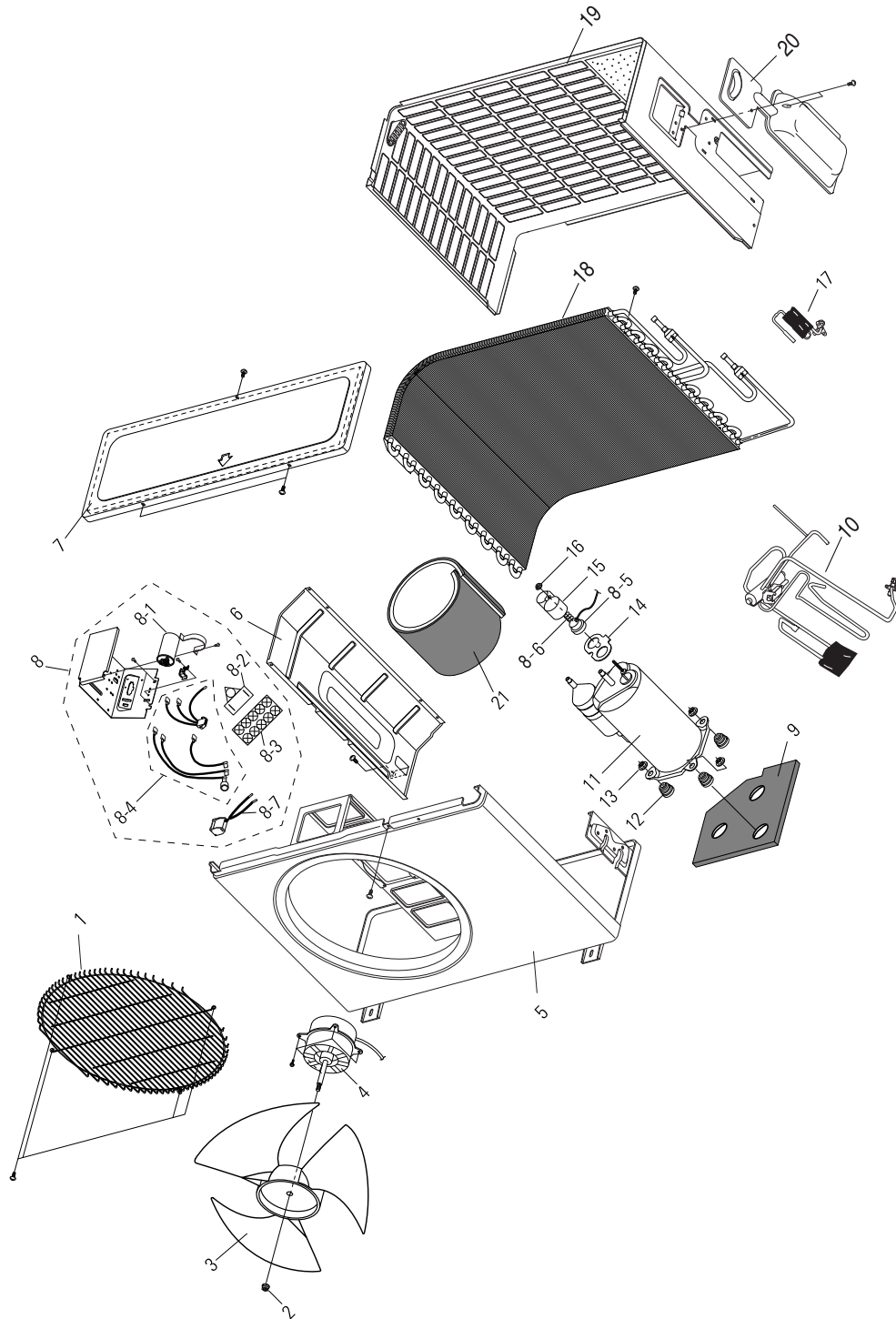
6-1 Indoor Unit



■ Parts List

No.	CODE NO	Description	Q'TY				REMARK
			AQ12A5(6)MB	AQ12A5(6)ME	AQ09A5(6)ME / SH09ZA5(6) AQ09A7(8)ME / SH09ZA7(8)	AQ07A5(6)ME / SH07ZA5(6) AQ07A7(8)ME / SH07ZA7(8)	
1	DB64-00085A	GRILLE AIR INLET	1	1	1	1	
2	DB63-00064A	GUARD-AIR FILTER	2	2	2	2	
3	DB74-00011A	FILTER CLEANER ASS'Y	1	1	1	1	
4	DB63-00067A	COVER TEMINAL	1	1	1	1	
5	DB92-00031E	ASS'Y PANEL	1	1	1	1	
6	DB67-00051A	SPACER EVAP LOW	1	1	1	1	
7	DB67-00032A	SPACER EVAP UP	1	1	1	1	
8	DB63-00083A	COVER U BEND	1	1	1	1	
9	DB94-00040E	ASS'Y FAN CROSS(SF)	1	1	1	1	
10	DB60-20011A	BOLT SPECIAL	1	1	1	1	
11	DB31-00033A	MOTOR FAN IN	1	1	1	1	
12	DB32-00020A	THERMISTOR WIRE ASS'Y	1	1	1	1	
13	DB93-00255A	ASS'Y CONTROL IN	1	1	1	1	
13-1	DB93-00267A	ASS'Y PCB MAIN	1	1	1	1	
13-1-1	1103-001175	IC EPROM	1	1	1	1	
13-1-2	1203-001813	IC PWM CONTROLLER	1	1	1	1	
13-1-3	3501-001154	RELAY MINIATURE	1	1	1	1	
13-1-4	3502-000115	SSR	1	1	1	1	
13-1-5	DB09-00071A	IC MCU	1	1	1	1	
13-2	DB65-00030A	TERMINAL BLOCK ASS'Y	1	1	1	1	
13-3	DB61-00171A	HOLDER WIRE CLAMP	1	1	1	1	
13-4	DB93-00268A	ASS'Y PCB DISPLAY	1	1	1	1	
13-4-1	2202-000780	C CERAMIC,MLC-AXIAL	1	1	1	1	
13-4-2	DB32-00017A	MODULE REMOCON	1	1	1	1	
14	DB94-00056A	ASS'Y BACK BODY(RIGHT SIDE)	1	1	1	1	
15	DB61-00162A	HOLDER MOTOR	1	1	1	1	
16	DB61-00165A	HOLDER PIPE	1	1	1	1	
17	DB39-00146A	CONNECT WIRE DISPLAY	1	1	1	1	
18	DB39-00147A	CONNECT WIRE PCB	1	1	1	1	
19	DB70-00036A	PLATE HANGER	1	1	1	1	
20	DB94-00058B	ASS'Y TRAY DRAIN(RIGHT SIDE)	-	1	1	1	
	DB94-00058D	ASS'Y TRAY DRAIN(RIGHT SIDE)	1	-	-	-	
20-1	DB94-00018A	ASS'Y DRAIN HOSE	1	1	1	1	
20-2	DB66-00042A	BLADE H	1	1	1	1	
20-3	DB66-00128A	BLADE V,A	3	3	3	3	
20-4	DB66-00128B	BLADE V,B	6	6	6	6	
20-5	DB63-00082A	SCREEN SAFETY WIRE	-	1	1	1	OPTION
20-6	DB95-20138A	ASS'Y MOTOR STEPPING	1	1	1	1	
20-6-1	DB31-10129A	MOTOR STEPPING; GSP 24RW	1	1	1	1	
21	DB61-40251A	HOLDER SENSOR	1	1	1	1	
22	DB67-60030A	SPRING SENSOR	1	1	1	1	
23	DB98-01494A	EVAPORATOR ASS'Y	1	1	-	-	
	DB75-00020A	EVAPORATOR ASS'Y	-	-	1	1	
24	DB94-40003A	ASS'Y BEARING	1	1	1	1	
25	DB93-00251L	ASS'Y REMOCON	1	1	1	1	

6-2 Outdoor Unit(UQ12A5(6)MB(E))

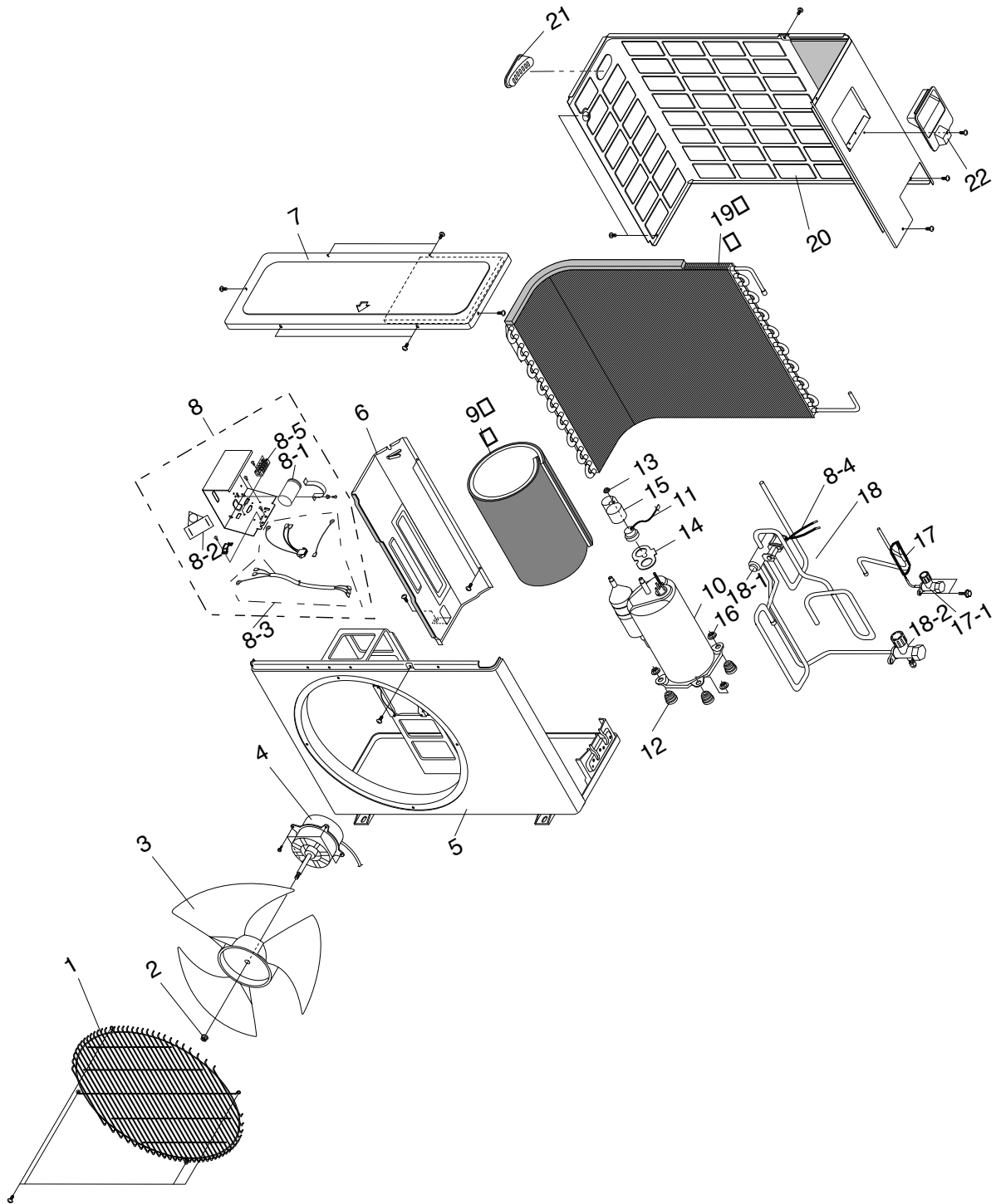


■ Parts List (OUTDOOR UNIT)

No.	CODE NO	Description	Specification	Q'TY		Remark
				UQ12A5(6)MB	UQ12A5(6)ME	
1	DB63-00071A	GUARD FAN	HSER	1	1	
2	DB60-30004A	NUT FLANGE	2C SM20C M6 NTR	1	1	
3	DB67-50063A	PROPELLER-FAN	AS+G/F, Ø405	1	1	
4	DB31-10058C	MOTOR FAN OUT	ASS020WTVA	1	1	
5	DB90-00272A	ASS'Y FRAME(PAINT)	ASS'Y	1	-	
6	DB94-50077A	ASS'Y PARTITION	ASS'Y	1	1	
7	DB90-00085B	CABINET UPPER	SECC-P	1	1	
8	DB93-00453B	ASS'Y CONTROL OUT	ASS'Y	1	-	
	DB93-00453A	ASS'Y CONTROL OUT	ASS'Y	-	1	
8-1	2501-001226	CAPACITOR COMP	25µF 370VAC	1	-	
	2501-001236	CAPACITOR COMP	30µF 450VAC	-	1	
8-2	2301-001377	CAPACITOR MOTOR	1.2µF 450VAC	1	1	
8-3	DB65-40049E	TERMINAL BLOCK	4P DFT-20A	1	1	
8-4	DB93-00412A	ASS'Y LEAD WIRE	ASS'Y	1	1	
8-5	DB47-20001G/L	O L P	MRA12002-9200/MRA12002-12008	1	-	
	DB47-20001E	O L P	MRA12030-12008	-	1	
8-6	DB67-60020A	O L P SPRING	STS304	1	1	
8-7	DB33-00007C	ASS'Y SOLENOIDE	220-240,6W,LB81 RANCO	1	1	
9	DB72-50574D	CLOTH COMP BOTTOM	FELT	1	1	
10	DB99-00089A	ASS'Y 4WAY VALVE	ASS'Y	1	1	
11	48A135IV1EL	COMPRESSOR	220V 60Hz	1	-	
	48A124JV1EL	COMPRESSOR	220V-240V/50Hz	-	1	
12	DB73-10004B	GROMMET-ISOLATOR	SILICON	3	3	
13	DB60-30028A	NUT-WASHER	HEX 2C MB ZPC	3	3	
14	DB63-20002A	GASKET	EPDM	1	1	
15	DB63-10165D	COVER TERMINAL	PBT	1	1	
16	DB60-30018A	NUT-FLANGE	M5, SM20C	1	1	
17	DB96-00513A	ASS'Y-CAPILLARY	ASS'Y(1.7 x1100)	1	-	
	DB99-00085A	ASS'Y-CHECK VALVE	ASS'Y (C=1.7x1200 H=1.5x300)	-	1	
18	DB96-00509A	ASS'Y COND	ASS'Y(SF)	1	-	
19	DB64-00136B	CABINET SIDE	ASS'Y(BENDING)	1	1	
20	DB67-90025A	HANDLE CABI, RH	ABS	-	1	
21	DB72-00211A	CLOTH-COMP SIDE	FELT	1	1	

Outdoor Unit

- UQ07A5(6)ME
- SH07ZA5(6)X
- UQ09A5(6)ME
- SH09ZA5(6)X

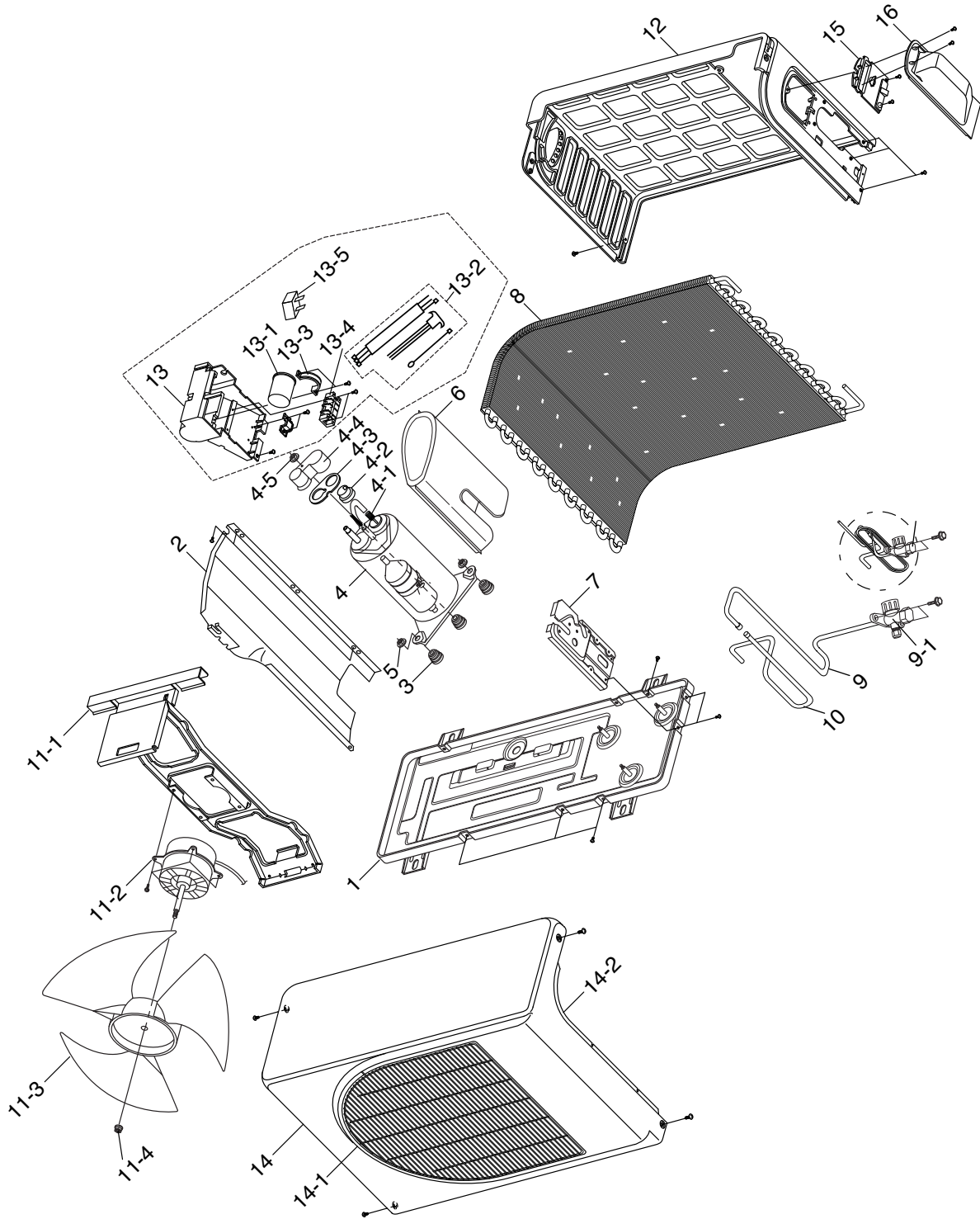


■ Parts List

No.	CODE NO	Description	Specitication	Q'TY	
				UQ07A5(6)ME SH07ZA5(6)X	UQ09A5(6)ME SH09ZA5(6)X
1	DB63-00086B	GUARD-FAN	HSWR, IP2, 5&3, SC-90073T, NEW A-P/J 370FAN	1	1
2	DB60-30004A	NUT-FLALNGE	2C, M6, SM20C, NTR	1	1
3	DB67-00036A	FAN-PROPELLER	AS+G/F20%, PI 375, BLK	1	1
4	DB31-10058C	MOTOR-FAN OUT	AMASS-020WTVA, FAN OUT, 220/240	1	1
5	DB90-00264A	ASS'Y FRAME (PAINT)	SC-90073T	1	1
6	DB94-00078A	ASS'Y PARTITION	ASS'Y 620mm COND	1	1
7	DB90-00077B	ASS'Y CABI-UPPER	ASS'Y	1	1
8	DB93-00478B	ASS'Y CONTROL OUT	ASS'Y	1	-
	DB93-00478A	ASS'Y CONTROL OUT	ASS'Y	-	1
8-1	2501-001228	C-OIL (COMP)	35µF, 370VAC	1	-
	2501-001229	C-OIL (COMP)	40µF, 370VAC	-	1
8-2	2301-001375	C-OIL (MOTOR)	1.0µF, 450VAC	1	1
8-3	DB33-00481A	ASS'Y LEAD WIRE	V2 P/D, HEATPUMP	1	1
8-4	DB33-00007C	SOLENOID ASS'Y	220-240, 6W, LB81 RANCO	1	1
8-5	DB65-40049D	TERMINAL BLOCK	4P, (N1), 1, 2, 3, AWG16, 67.5 x 29.4	1	1
9	DB72-00453A	CLOTH-COMP	T8, 425, 225, 44F COMP	1	1
10	44B080 JW1EL	ROTARY COMP	1Ph, 50Hz	1	-
	44B102 JW1EL	ROTARY COMP	1Ph, 50Hz	-	1
11	DB35-00015F	PROTECTOR O/L	RAC12086-9622	1	-
	DB35-00015B	PROTECTOR O/L	RAC12054-9622	-	1
12	DB73-10004B	GROMMET-ISOLATOR	SILICON	3	3
13	DB60-30018A	NUT-FLANGE	PI0.8, M5, SM20C	1	1
14	DB63-20002A	GASKET	EPDM, T0.8	1	1
15	DB63-10165D	COVER-TERMINAL	PBT	1	1
16	DB60-30028A	NUT-WASHER	HEX, 2C, M8, ZPC	3	3
17	DB96-00554A	ASS'Y TUBE CAPILLARY	ID1.5 x 1100+1/4"	1	1
17-1	DB62-00254B	VALVE-SERVICE	1/4INCH	1	1
18	DB99-00090A	ASS'Y VALVE 4WAY	VK1100B+3/8"	1	1
18-1	DB62-00118A	TUBE-4WAY VALVE	BRASS, 3/8INCH, T1.0, RANCO	1	1
18-2	DB62-40073B	VALVE-SERVICE	C3771BD, 432L/H, 3/8", 30Kg/cm2G	1	1
19	DB75-00029A	ASS'Y COND	1.5D-FIN, COATTING 620mm	1	1
20	DB64-60171B	CABINET-SIDE	SECC-P, T 0.8, A-P/J	1	1
21	DB67-90024A	HANDLE-CABI LF	ABS	1	1
22	DB63-10443C	COVER-E, PARTS ASS'Y	SC-90073R	1	1

Outdoor Unit

- SH07ZA7(8)X/UQ07A7(8)ME
- SH09ZA7(8)X/UQ09A7(8)ME

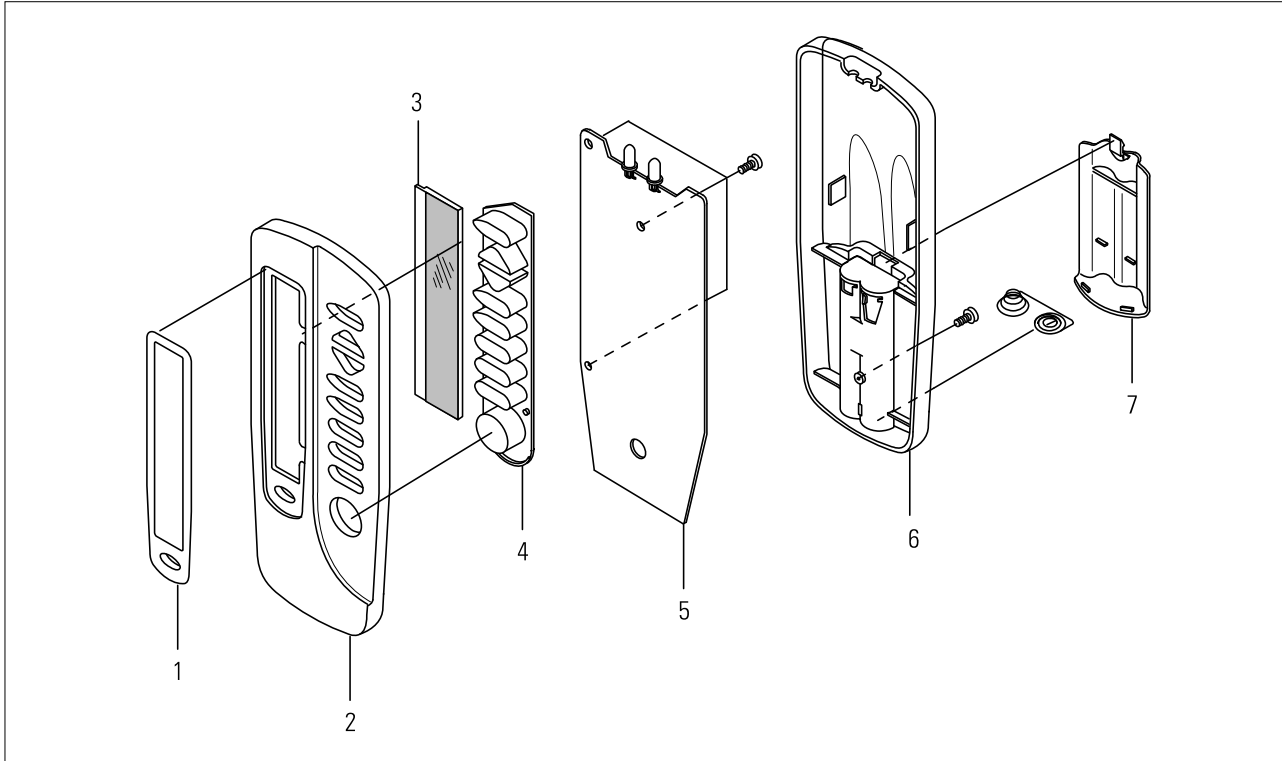


■ Parts List

No.	CODE NO	Description	Q'TY	
			Mold	
			SH09ZA7(8)X UQ09A7(8)ME	SH07ZA7(8)X UQ07A7(8)ME
1	DB90-00262A	ASS'Y BASE OUT	1	1
2	DB94-00045A	ASS'Y PARTITION; 7K,9K	1	1
3	DB73-10004B	GROMMET ISOLATOR(SILICON)	3	3
4	44B102JW1EL	ROTARY COMP	1	-
	44B080JW1EL	ROTARY COMP	-	1
4-1	DB67-60020A	SPRING OLP	1	1
4-2	DB35-00010E	PROTECTOR O/L;MRA12110-12008	1	-
	DB35-00010F	PROTECTOR O/L;MRA12086-12008	-	1
4-3	DB63-20002A	GASKET;EPDM	1	1
4-4	DB63-10165D	COVER TERMINAL	1	1
4-5	DB60-30018A	NUT FLANGE	1	1
5	DB60-30028A	NUT WASHER	3	3
6	DB72-00453A	CLOTH COMP SIDE	1	1
7	DB61-00168A	BRAKET VALVE	1	1
8	DB75-00029A	CONDENSER ASS'Y	1	1
9	DB96-00093A	ASS'Y 4WAY VALVE	1	1
9-1	DB33-00002A	SOLENOIDE COIL ASS'Y	1	1
10	DB96-00195A	ASS'Y TUBE CAPLLARY	1	1
11-1	DB90-00110A	ASS'Y BRACKET MOTOR	1	1
11-2	DB31-00034A	MOTOR FAN OUT	1	1
11-3	DB67-00036A	FAN PROPELLER	1	1
11-4	DB60-30004A	NUT FLANGE	1	1
12	DB90-00109A	ASS'Y CABI SIDE	1	1
13	DB93-00433A	ASS'Y CONTROL OUT;9K	1	-
	DB93-00433B	ASS'Y CONTROL OUT;7K,12K	-	1
13-1	2501-001229	C OIL;40 μ F,370VAC	1	-
	2501-001228	C OIL;35 μ F,370VAC	-	1
13-2	DB93-00413A	ASS'Y-LEAD WIRE	1	1
13-3	DB61-00174A	HOLDER CAPACITOR	1	1
13-4	DB65-40049D	TERMINAL BLOCK;4P	1	1
13-5	2301-001375	C OIL;1.5 μ F, 450VAC	1	1
14	DB90-00108C	ASS'Y CABI FRONT	1	1
14-1	DB63-00099A	GUARD FAN WIRE	1	1
14-2	DB61-00173A	GUIDE BELL MOUTH	1	1
15	DB90-00152A	ASS'Y COVER CONTROL	1	1
16	DB94-00021A	ASS'Y COVER VALVE	1	1

6-3 Remote Control & PCB Box

6-3-1 ASS'Y REMOCON : DB93-00251L

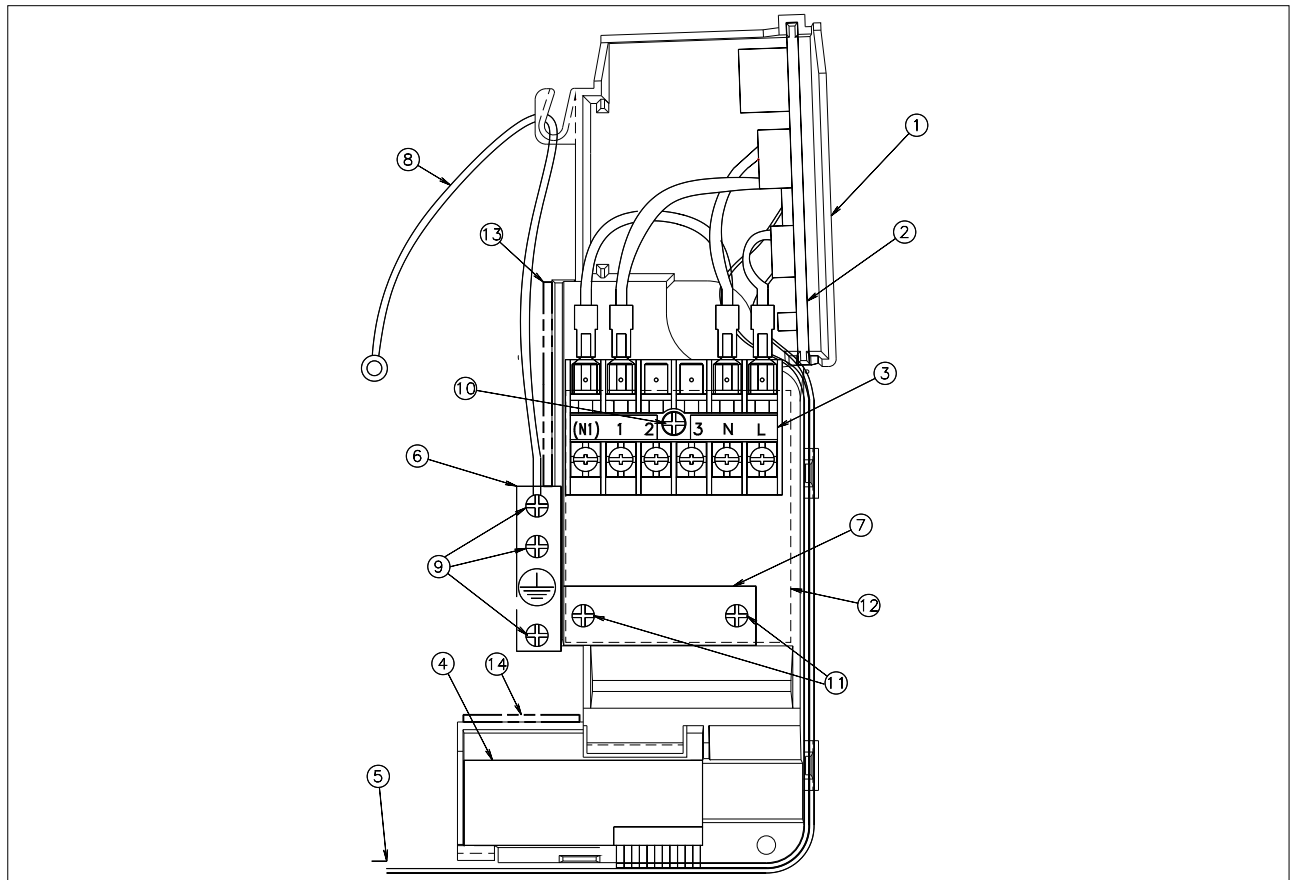


■ Parts List

No	Description	Q'TY	Remark
1	INLAY LCD	1	
2	CASE TOP	1	
3	LCD	1	
4	KEY RUBBER	1	
5	ASS'Y PCB REMOCON	1	
6	CASE LOW	1	
7	BATTERY COVER	1	

6-4 Indoor Control Unit

6-4-1 ASS'Y CONTROL-IN : DB93-00255A

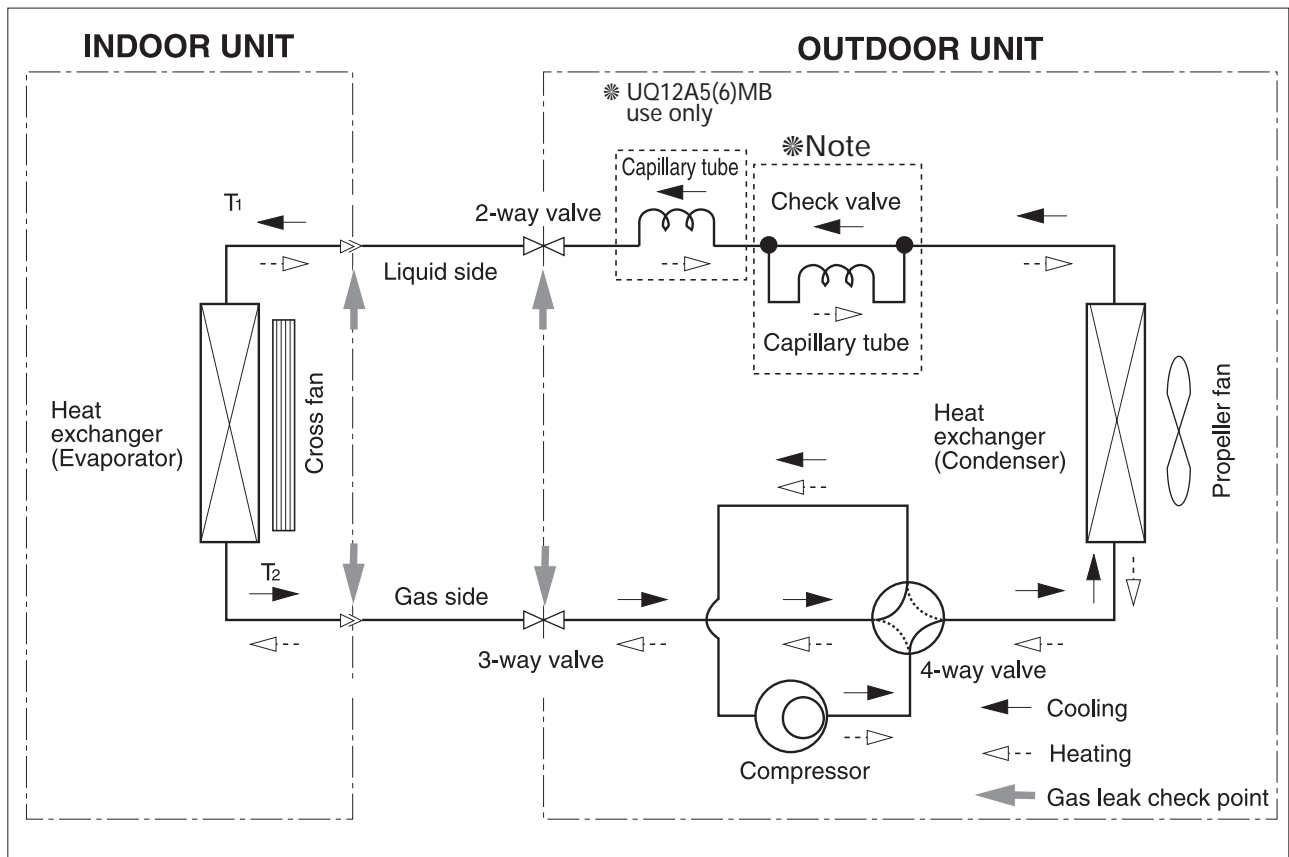


■ Parts List

No	Description	Specification	Remark
1	HOLDER CONTROL	ABS	
2	ASS'Y MAIN PCB	AS09A3ME	
3	ASS'Y TERMINAL BLOCK	-	
4	ASS'Y DISPLAY PCB	AS09A3ME	
5	CONNECTOR WIRE PCB U/D	-	
6	BRACKET EARTH	SGCC-M	
7	HOLDER WIRE CLAMP	-	
8	CONNECTOR WIRE EARTH	AWG#16	
9	SCREW	WP, TH + M4 × L8, ZPC(WHT), T.C	
10	SCREW	PH, M3 × L22	
11	SCREW	TH + M4 × L16, ZPC(WHT), SWRCH	
12	HOLDER CLAMP IN	-	
13	SEAL PANEL FRONT RH	-	
14	SEAL H/CONTROL FRONT	-	

7. Block Diagrams

7-1 Refrigerating Cycle Block Diagram



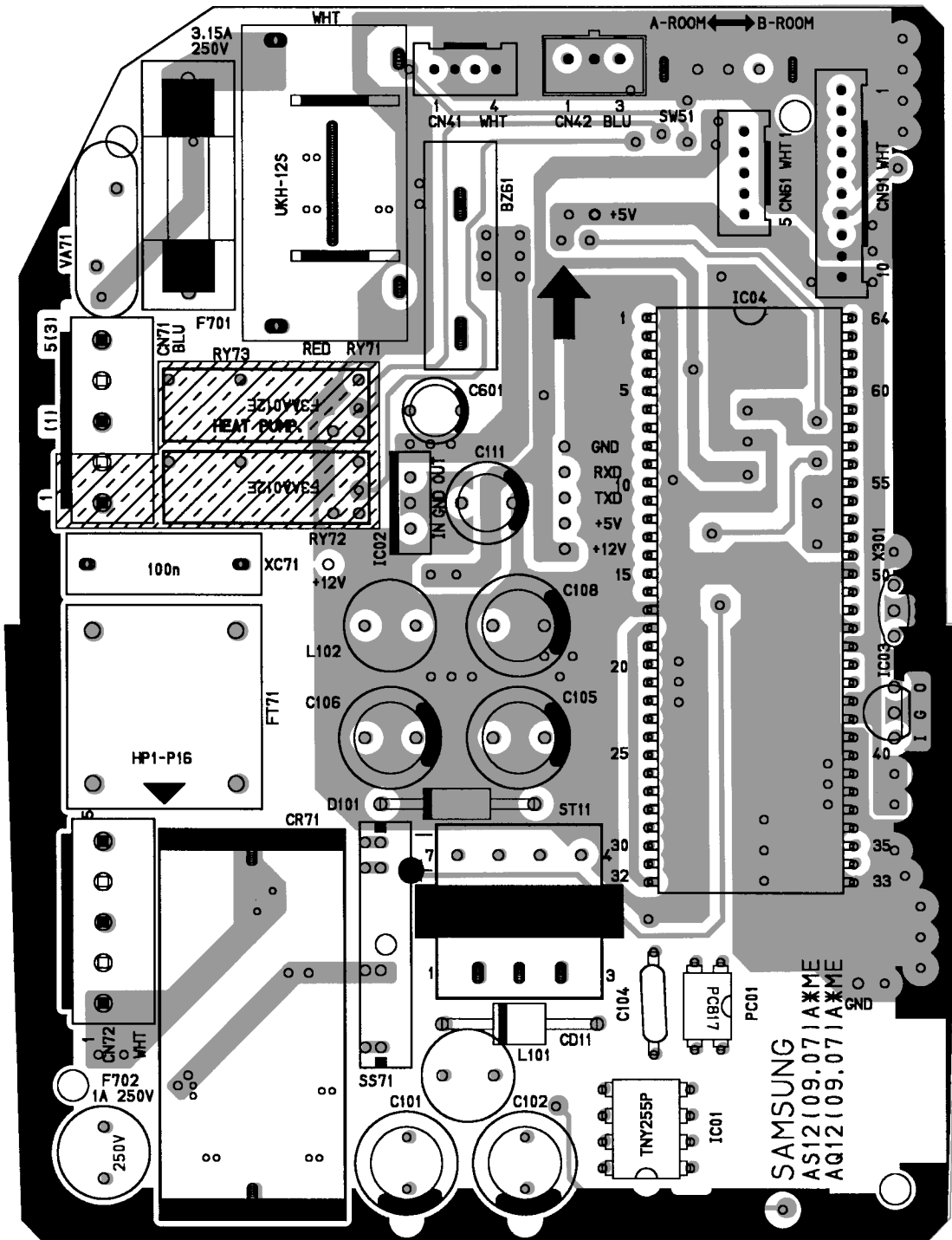
* Note

- The check valve is applied only to UQ12A5(6)ME/SH12ZA5(6)X as below

8. PCB Diagrams

8-1 ASS'Y MAIN PCB;DB93-00267A

■ TOP PATTERN

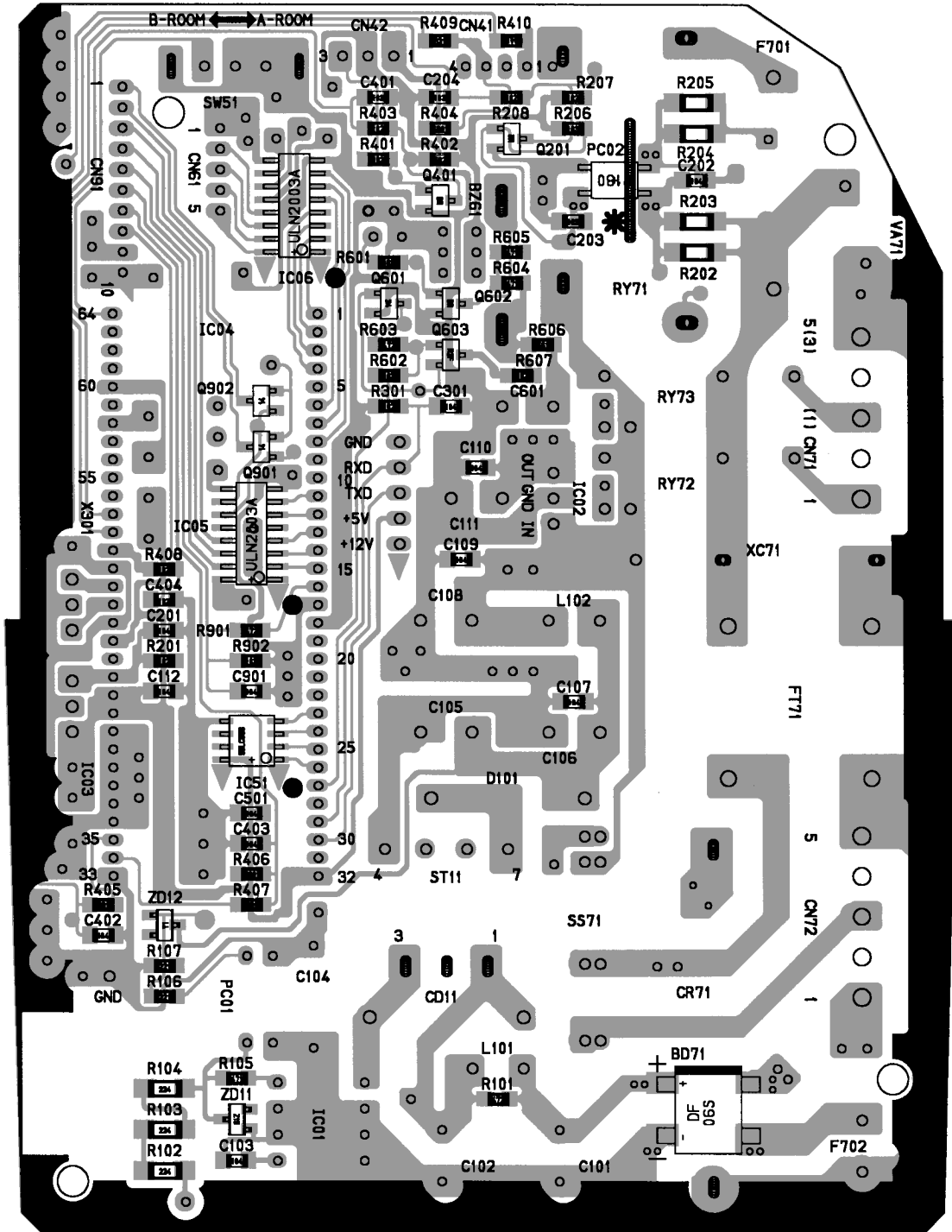


■ Parts List

No	Description	LOCATION NO.	Specification
1	PCB		120 x 93
2	IC-MCU	IC04	UPD780024CW
3	SSR	SSS71	G3MB202PL
4	IC VOLT REGULATOR	IC02	KA7805A
5	IC-RESET	IC03	KA7533Z
6	PHOTO-COUPLER	PC01	PC817
7	FR0DIODE	D101	UG2B
8	R.V.S	CD11	ST02D-200
9	VARISTOR	VA71	INR14D471K-BS
10	RESONATOR	X301	4MHz
11	SW TRANS	ST11	V2(JT1916-1701P)
12	FILTER NOISE	FT71	HP1-P10
13	COIL	L101	5mH, 50mA
14	COIL	L102	4.7uH 0.5A
15	RELAY MINIATURE	RY72, RY73	FTR-F3AA012E
16	RELAY POWER	RY71	UKH-12S
17	BUZZER	BZ61	CBE2220BA
18	HOLDER FUSE	F701	FB58(FH-51H)
19	FUSE	F701	250V, 3.15A
20	FUSE	F702	250V, 1A
21	CONNECTOR HEADER	CN71	YW396-05AV BLU
22	CONNECTOR HEADER	CN72	YW396-03AV WHT
23	CONNECTOR HEADER	CN91	SMW200-10P WHT
24	CONNECTOR HEADER	CN61	SMW200-05P WHT
25	CONNECTOR HEADER	CN42	SMW250-03P BLUE
26	CONNECTOR HEADER	CN41	SMW200-4P WHT
27	C-FILM	CR71	1.2μF 450V
28	C-AL	C105, C106, C108	SD 470μF 25V
29	C-AL	C601	47μF 50V
30	C-AL	C111	470V 16V
31	C-ELEC	C101, C102	SD 6.8V 450V
32	C-CERAMIC	C104	SDE2G222M12BL1
33	C-FILM	XC71	100NK 275Vx 2
34	TR SWITCH	IC01	TNY 255P

8-2 ASS'Y MAIN PCB;DB93-00267A

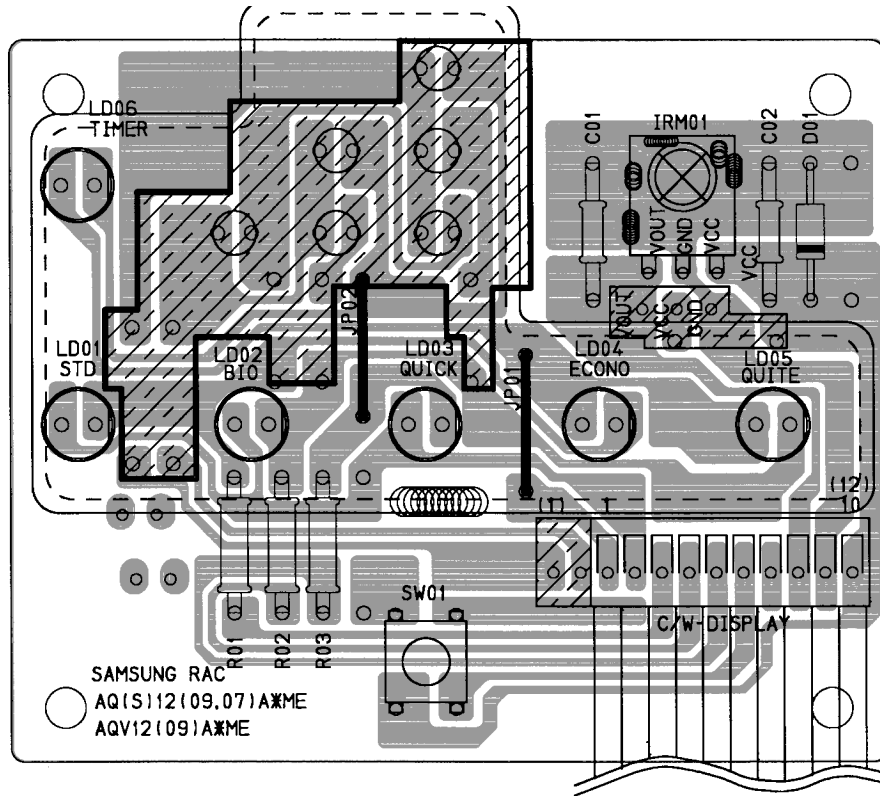
■ BOTTOM PATTERN



■ Parts List

No	Description	LOCATION NO.	Specification
1	TR SMALL SIGNAL	Q603	MMST29074A
2	TR SMALL SIGNAL	Q201,Q401,1602	2SC2412K
3	TR DIGITAL	Q901,Q902	DTA114EKA
4	TR DIGITAL	Q601	DTC114EKA
5	IC DRIVE	IC05,IC06	ULN2003AFW
6	C-CHIP	C103,C107,C109,C110, C112,C201,C202,C301, C402,C403,C501,C901	CS2012Y54104Z500
7	C-CHIP	C203,C204,C401	CS2012Y5V103Z500
8	C-CHIP	C404	CS2012X7R102K500
9	R-CHIP	R102,R103,R104	R3216 220k Ω \pm 5
10	R-CHIP	R402	R2012 6.8k Ω \pm 5
11	R-CHIP	R202,R203,R204,R205	R3216 100k Ω \pm 5
12	R-CHIP	R405,R407,R409	R2012 330k Ω \pm 5
13	R-CHIP	R101,R901,R603	R2012 4.7k Ω \pm 5
14	R-CHIP	R107,R106	R2012 220k Ω \pm 5
15	R-CHIP	R105,R604,R605	R2012 470k Ω \pm 5
16	R-CHIP	R206,R601,R602,R902	R2012 10k Ω \pm 5
17	R-CHIP	R404,R406	R2012 6.8k Ω \pm 5
18	R-CHIP	R201,R207,R208, R301, R401, R403, R408, R607	R2012 1k Ω \pm 5
19	R-CHIP	R410	R2012 0 \pm 5
20	R-CHIP	R606	R2012 560 Ω \pm 5
21	DIODE DRIDGE	RD71	DF06S
22	PHOTO COUPLER	PC02	TLP180(GB-TPL)
23	ZENER DIODE	ZD12	BZX84-C11
24	ZENER DIODE	ZD11	BZX84-C3V6
25	EEPROM	IC51	93LC56B-I/SN

8-3 ASS'Y MAIN PCB;DB93-00267A

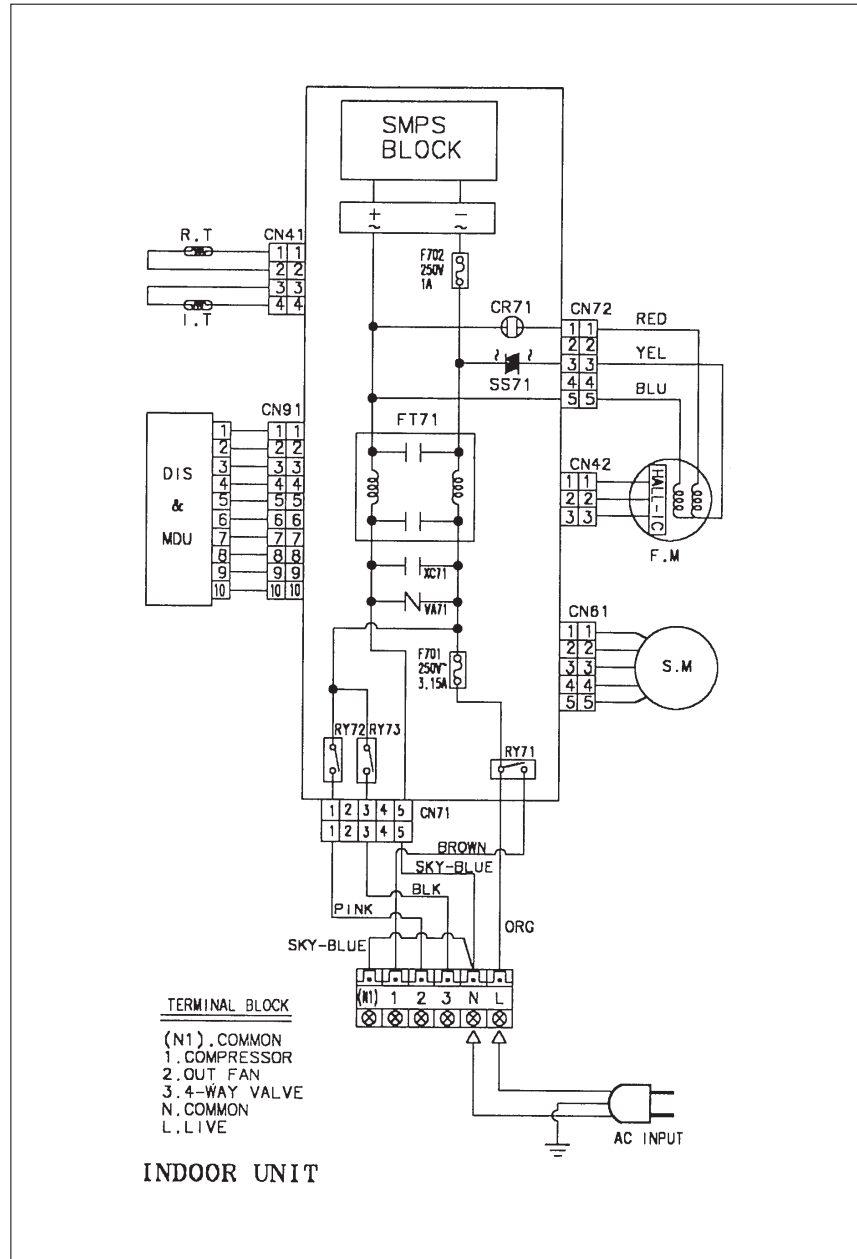


■ Parts List

No	Description	LOCATION NO.	Specification	Q'TY	Remark
1	PCB-DISPLAY		64.5x53	1	
2	LED-LAMP	LD01,LD02,LD03,LD04,LD05	SO5511	5	
3	LED-LAMP	LD06	SY5511	1	
4	MODULE REMOCON	IRM01	PNA4612M00HB	1	
5	DIODE SWITCHING	D01	IN4148	1	
6	R-CARBON	R01,R02,R03	470 1/2W 5%	3	
7	CONNECTOR WIRE	C/W-DISPLAY	SMAW200-10P	1	
8	TACT SWITCH	SW01	KPT-1105A	1	
9	C-CERAMIC	C02	104Z	1	
10	C-CERAMIC	C01	102K	1	
11	JUMP	JP-1,JP02	10mm	2	
12	COVER DISPLAY UP		ABS(V2)	1	

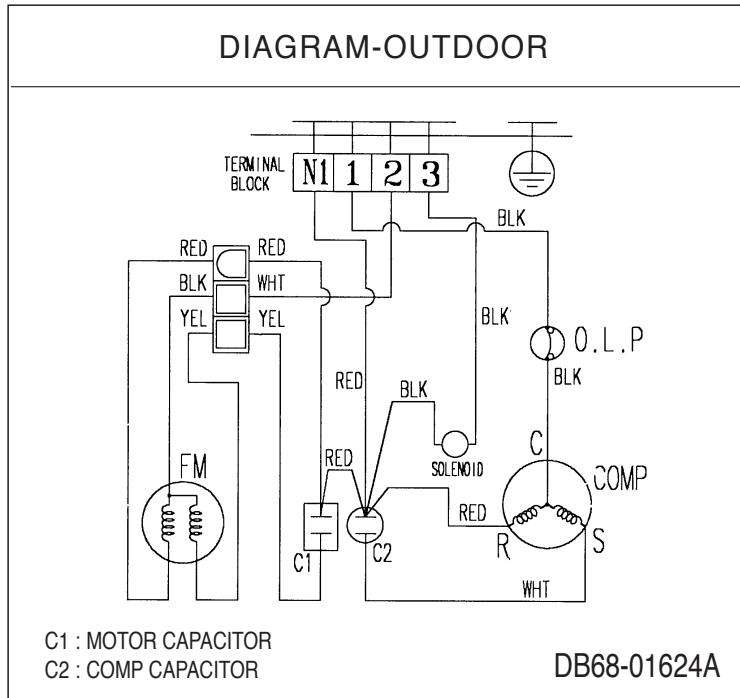
9. Wiring Diagrams

9-1 Indoor Unit

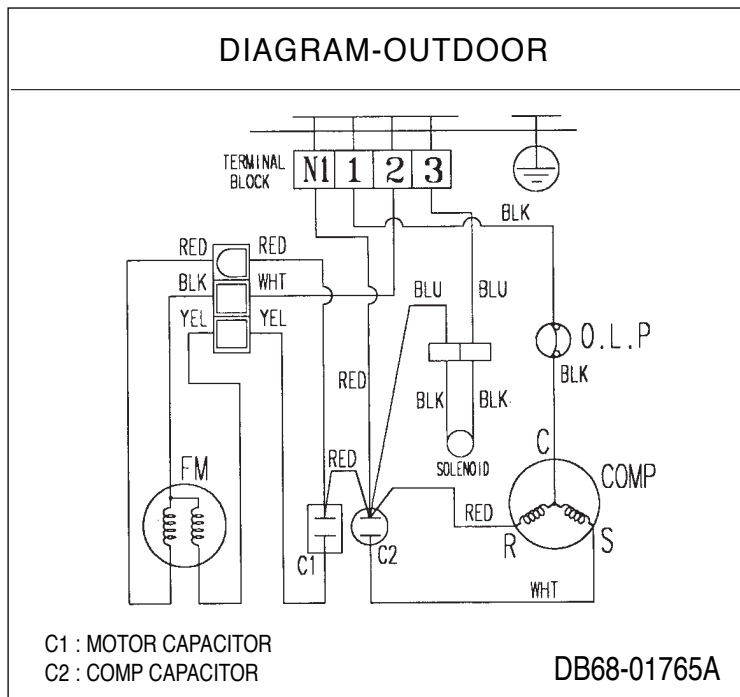


9-2 Outdoor Unit

• UQ**A5(6)**



• UQ**A7(8)** / SH**ZA7(8)X



UPDATE LOG SHEET

Application date	Page	Part#	Note(Cause & Solution)	S/Bulletin#

Use this page to keep any special servicing information. (Service Bulletin, etc.)
 If only parts number changes, Just change parts number directly on parts list.
 And if you need more information, please see the service bulletin

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10. Schematic Diagrams

10-1 Indoor Unit

