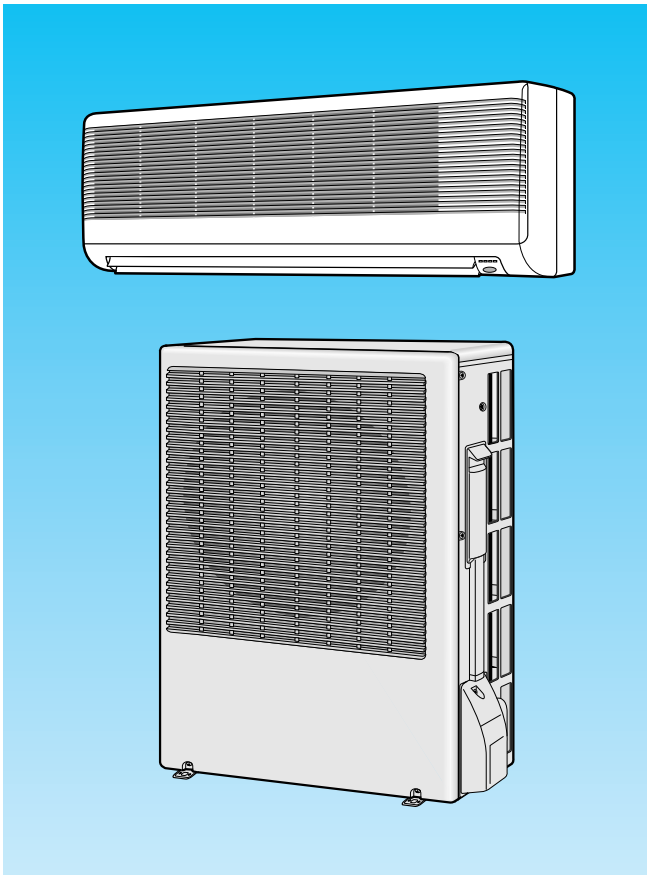
SAMSUNG

ROOM AIR CONDITIONER

ASH-0906ER
ASH-1206ER

SERVICE Manual

AIR CONDITIONER



CONTENTS

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.

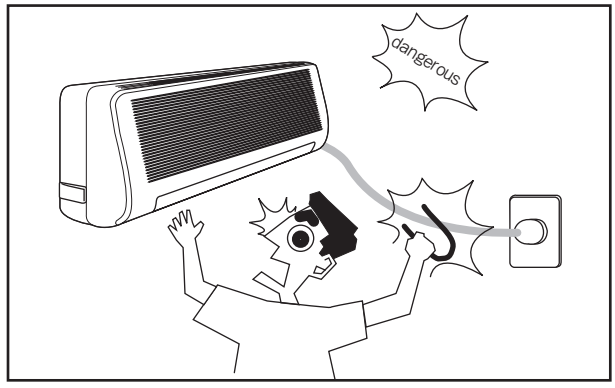


Fig. 1-1 Avoid Dangerous Contact

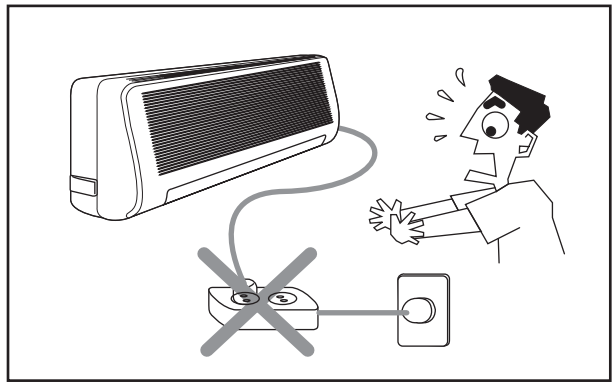


Fig. 1-2 No Tapping and No Extension Cords

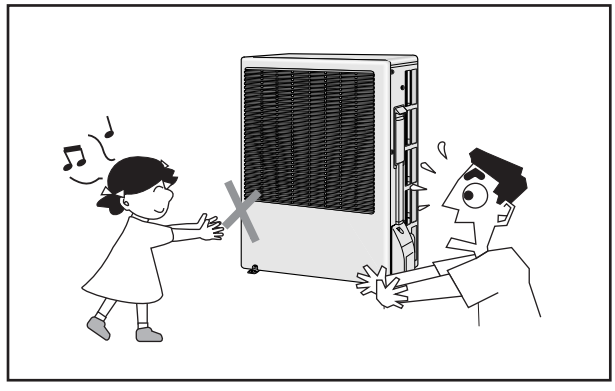


Fig. 1-3 No Kids Nearby!

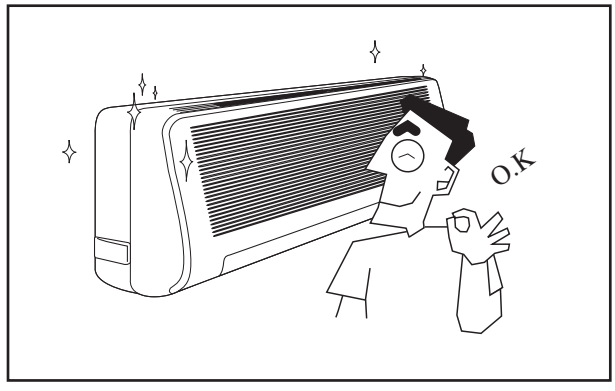


Fig. 1-4 Clean the Unit

Memo

2. Product Specifications

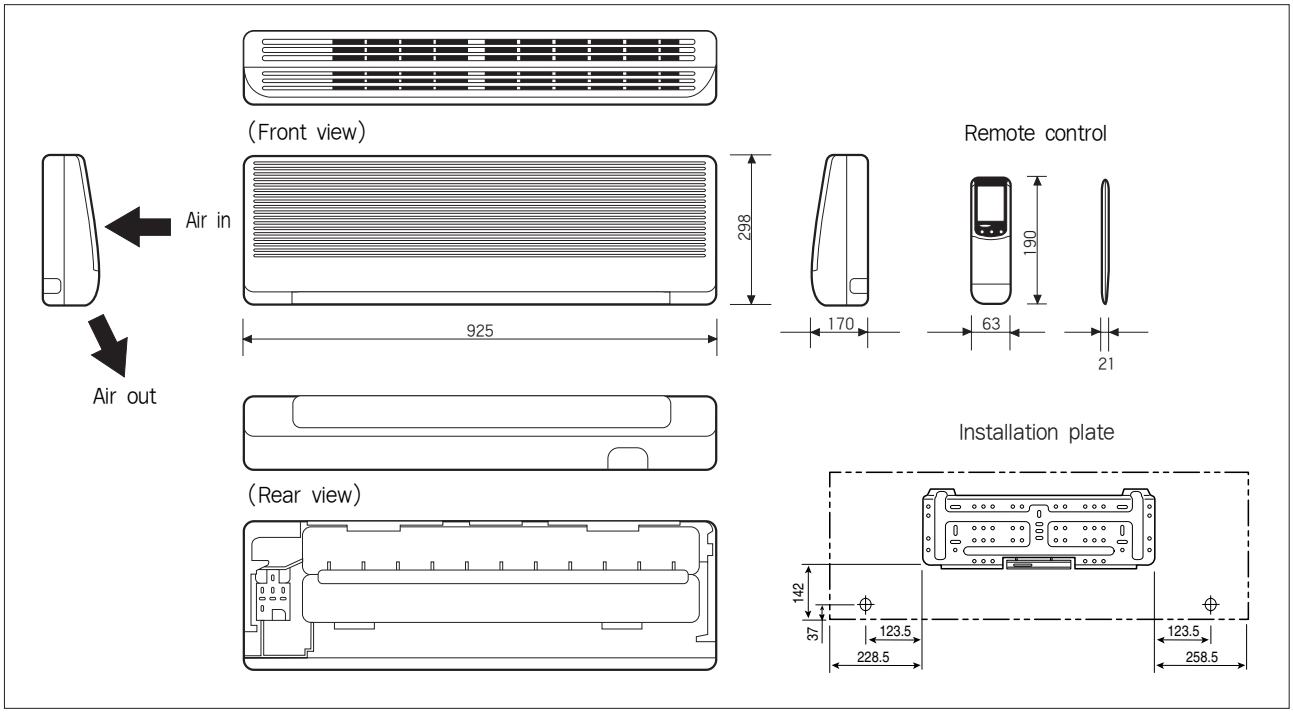
2-1 Table

Item				Model	ASH-0906ER		ASH-1206ER	
					Indoor unit	outdoor unit	Indoor unit	outdoor unit
Type				-	Wall-mounting		Wall-mounting	
Perfor-mance	Cooling			BTU/h	9,000		12,000	
	Dehumiditying			l/h	1.7		1.7	
	Heating			BTU/h	10,000		12,500	
	Low temp. heating			BTU/h	-		-	
	Air volume	Cooling		m^3/min	7.0		8.3	
		Heating		m^3/min	7.5		8.9	
	Noise	Cooling		dB	40	51	40	51
		Heating		dB	40	51	40	51
	Energy efficiency ratio	Cooling		BTU/h.W	10.0		10.0	
		Heating		BTU/h.W	9.8		9.7	
	Power			ø -V-Hz	1-220/240-50		1-220/240-50	
Power	Power consumption Operating current	Cooling		W	900		1,200	
		Heating		W	940		1,300	
		Cooling		A	4.0		5.0	
		Heating		A	4.4		5.6	
	Power factor	Cooling		%	93.8		100	
		Heating		%	89		96.7%	
	Starting current			A	20		25	
	Power cord	Length		m	2	-	2	-
		Number of core wire			250V 10/16A		250V 10/16A	
	Fuse capacity			A	3.15	-	3.15	-
Size	Outer dimension	Width x Height x Depth		mm	925x298x170	530x750x245	925x298x170	530x750x245
				inch	36.43x11.73x6.69	20.87x29.53x9.65	36.43x11.73x6.69	20.87x29.53x9.65
	Weight			kg	11.5	29	11.9	33
	Refrigerant pipe	Liquid		OD(mm)x L(m)	ø 6.35 x 5		ø 6.35 x 5	
		GAS			ø 9.52x 5		ø 12.7x 5	
	Drain hose			ID(mm) x L(mm)	ø 17x 2000		ø 17x 2000	
	Compressor	Type			-	Rotary	-	Rotary
		Motor	Type		-	-	-	-
			Rated output	W	-	-	-	-
	Blower	Type			Cross-fan	Propeller	Cross-fan	Propeller
		Motor	Type		Resin	Die casting	Resin	Die casting
			Rated output	W	35	20	35	20
Heat exchanger					2Row 11Step	1Row 28Step	2Row 11Step	1Row 28Step
Refrigerant control unit					-		-	
Freezer oil capacity				cc	-		-	
Refrigerant to change(R-22)				g	920		1000	
Protection device					-	MRA12037 -12007	-	MRA12030 -12008

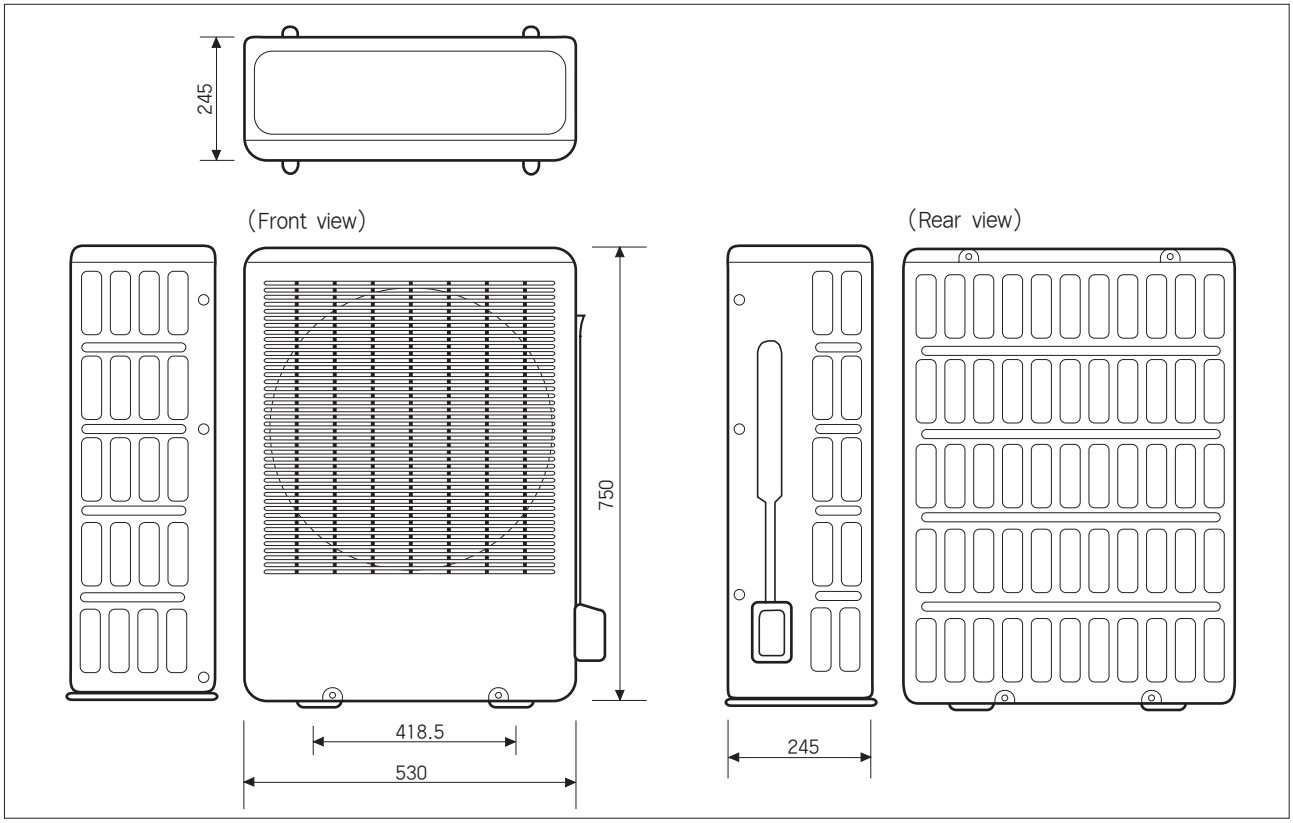
• Standard Conditions : ISO R5151 standards (indoor: 27℃ DB, 19℃ WB, outdoor: 35℃ DB, 24℃ WB)

2-2 Dimensions

2-2-1 Indoor Unit



2-2-2 Outdoor Unit



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	ON/OFF		▷ Use this button to start and stop air conditioner.	ONE SHOT KEY
2	MODE		▷ Each time you press this button, MODE is changed in the following order. "AUTO"→ "COOL"→ "DRY"→ "FAN"→ "HEAT"	ONE SHOT KEY OR CONTINUOUS KEY
3	TURBO		▷ Use this button to provide heavy duty cooling(heat) for 30 minutes.	ONE SHOT KEY
4	MILD		▷ Use this button to provide pleasant cooling(heat) for 3 hours.	ONE SHOT KEY
5	Q. TIMER		▷ Set up the reserve or cancel the timer on and timer off quickly	ONE SHOT KEY OR CONTINUOUS KEY
6	FAN SPEED		▷ Each time you press this button, FAN SPEED is changed in the following order. "AUTO"→ " ▮ (L)" → " ▮▮▮ (ME)"→ " ▮▮▮▮ (HI)"→ NATURAL	ONE SHOT KEY OR CONTINUOUS KEY
7	SWING	SET	▷ Adjusts air flow vertically. Each time you press this button, BLADE-H rotates by 11° (Changable range 70°)	ONE SHOT KEY OR CONTINUOUS KEY
		AUTO	▷ Each time you press this button, BLADE-H rotates within 35° and stop.	ONE SHOT KEY
8	TIME		▷ Without regard to ON/OFF condition in remote controller, use this button to set current time. Adjust the current time using ▲ TIME ▼ button. (Data can be transmitted after setting up the time)	ONE SHOT KEY
9	TIMER/CANCEL		▷ Use this button to reserve or cancel the timer on and timer off.	ONE SHOT KEY
10	TIMER	ON	▷ Set up the time that operation start.	ONE SHOT KEY
		OFF	▷ Set up the time that operation stop.	ONE SHOT KEY
11	TIME	▲ (UP)	▷ If the ▲ TIME button is pressed once, the time increase by one minute during the time set mode, and ten minutes during the timer set mode.	ONE SHOT KEY OR CONTINUOUS KEY
		▼ (DOWN)	▷ If the TIME ▼ button is pressed once, the time decrease by one minute during the time set mode, and ten minutes during the timer set mode.	ONE SHOT KEY OR CONTINUOUS KEY
12	TEMP	▲ (UP)	▷ If the ▲ button is pressed once, the setting temperature is increased by 1˚C	ONE SHOT KEY OR CONTINUOUS KEY
		▼ (DOWN)	▷ If the ▼ button is pressed once, the setting temperature is decreased by 1˚C	
13	SLEEP		▷ Use this button for sleep operation. (The SLEEP mode can be selected at COOL and HEAT mode.)	ONE SHOT KEY

3-1-2 Main controller function.

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

Room Temp	Operation Type
Tr≥ 21℃+△T	Cool Operation (Set Temp:AUTO SETTING)
21℃ +△T 〉Tr	Heat Operation (Set Temp : 22℃+△T)

△T= -1℃, -2℃, 0℃ +1℃ +2℃
△T 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.
The setting temperature is compensated by the room humidity. (18℃~30℃)

3. HEAT MODE : The unit operates according to the difference between the setting and room temperature.
The setting temperature is not compensated by the room humidity. (16℃~30℃)
* 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(650 rpm), then switch to the selected fan speed. This period is to allow the indoor unit's heat-exchanger to prewarm before emitting warm air.
* Protective function : High temperature release.
* De-ice : Deicing operation is controlled by indoor unit's heat exchanger temperature and room temperature and accumulating time of compressor's operation.

4. DRY MODE : Has 4 states, each determined by room temperature and humidity.
When the room temperature is below the setting temperature and the room relative humidity below 60% RH, the unit operates in FAN 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 only in AUTO, COOL, HEAT 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 and humidity.
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.

6. MILD MODE : This mode is available only in AUTO, COOL, HEAT mode
When this button is pressed at first, the air conditioner is operated in its current state for 3 hours.
When this button is pressed again or when the operating time is 3 hours, mild operation mode is canceled and returned to the previous mode.

7. 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℃ each 1hour
When the temperature has been raised by total of 2℃, that temperature is maintained.
* In HEAT mode : The setting temperature is automatically droped by 1℃ each 1hour.
When the temperature has been droped by total of 2℃, that temperature is maintained.

8. DE-ICE Operation : De-ice operation is controlled by sensing the indoor unit's heat-exchanger temperature and timer.
   De-ice ends by sensing of the processing time by de-ice condition.

9. FAN SPEED : Manual (3 step), Auto (5 step), Natural
   Fan speed automatically varies depending on both the difference between setting and the room temperature and room humidity.

10. 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.

11. 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 auto : The BLADE-H can rotate within about 15° in the original position set by the SWING SET button.
    * Swing set : Press the SWING SET button, then the blade rotates vertically by 11℃
    The BLADE-H location is dispalyed on REMOTE CONTROL. (total 7 steps)

12. Q.TIMER: Q. timer(quick timer) allows reservation or cancel the timer on and timer off quickly
    When Q.timer button is pressed at operating state, LCD displays the polling state sequentially.
    The LCD also displays the time remaining.

13. TIMER : The air conditioner is turned ON/OFF at a specified time using TIMER ON/OFF.
    * ON TIMER : Only timer LED lights on.
    * OFF TIMER : Both timer and operation LED lights on.
    * 3 minutes delay timer.

14. SELF TEST
    * Interruption of electric power and Power on.
    * Abnormal condition of the room sensor.
    * Indoor unit fan motor lock.
    * Abnormal condition of the indoor unit's heat exchanger sensor.

15. TIME SHORTENING : If the "Time short" connector pin is shorted on the main P. C. B, the compressor's three minutes delay function is cancelled, and each operation time is shortened to one fiftieth of its original time.

16. 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"

3-2 Installation

3-2-1 Selecting Area for Installation

Select an area for installation that is suitable to the customer's needs.

3-2-1(a) Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation. It must not be blocked by an obstacle affecting the airflow near the air inlet and the air outlet.
2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.
3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby.
4. Make sure that you install the indoor unit in an area from which hot or cool air is spread evenly in a room.
5. Make sure that you install the indoor unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).
6. Make sure that you install the indoor unit in an area which provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.
7. Make sure that you install the indoor unit in an area which is large enough to accomodate the measurements shown in figure on the next page.

3-2-1(b) Outdoor Unit

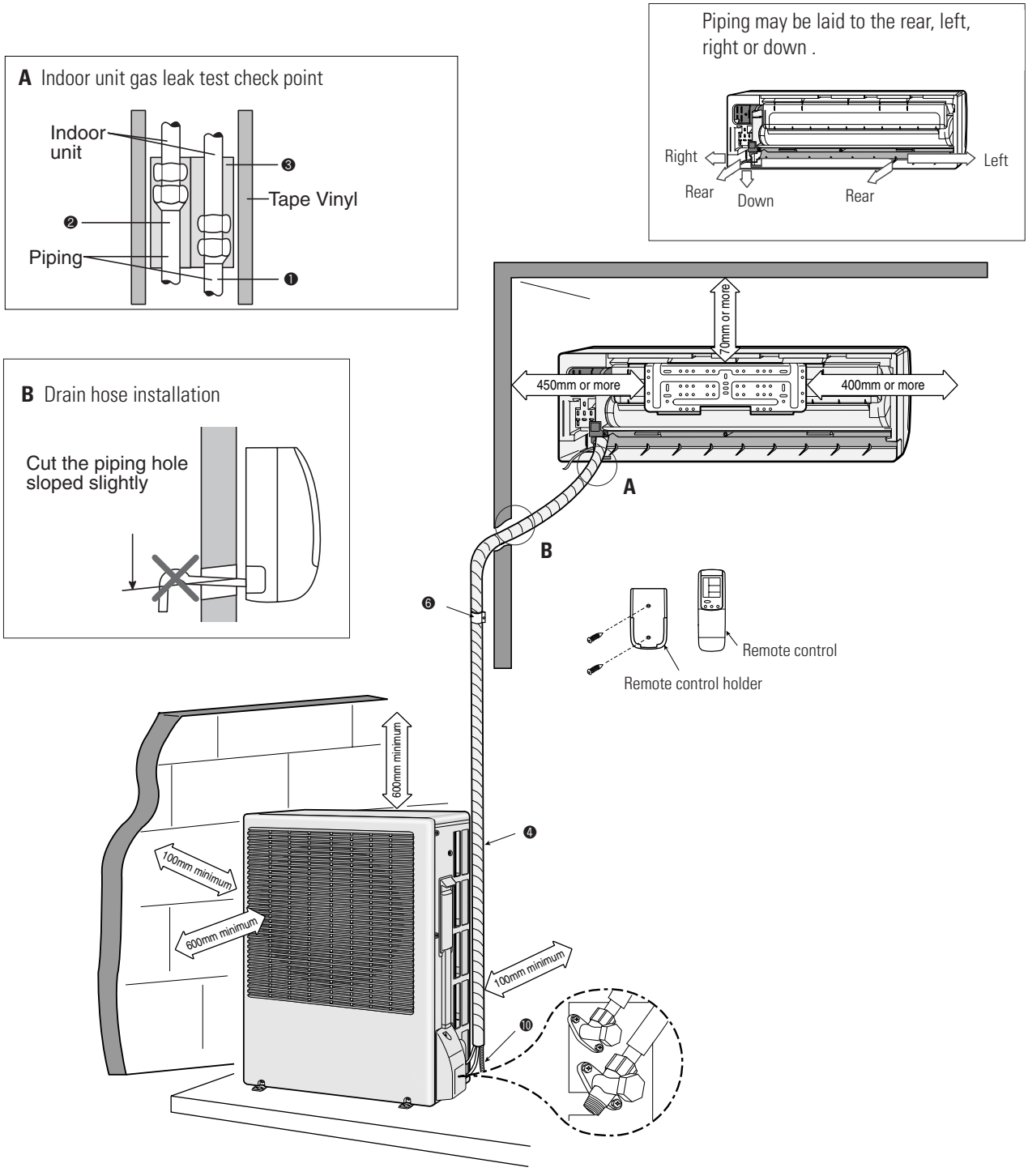
1. Make sure that you install the outdoor unit in area not exposed to the rain or direct sun light.
   (Install a separate sunblind if exposed to direct sun light.)
2. Make sure that you install the outdoor unit in area allowing good air moment, not amplifying noise or vibration, especially to avoid disturbing neighbours.
   (Fix the unit firmly if it is mounted in a high place.)
3. Make sure that you install the outdoor unit in area providing good ventilation and which is not dusty. It must not be blocked by any obstacle affecting the airflow near the air inlet and the air outlet.
4. Make sure that you install the outdoor unit in area free from animals or plants.
5. Make sure that you install the outdoor unit in area not blocking the traffic.
6. Make sure that you install the outdoor unit in area easy to drain condensed water from the indoor unit.
7. Make sure that you install the outdoor unit in area which provides easy connection within the maximum allowable length of a coolant pipe(15 meters).
   Note
   1. Add 10 grams of refrigerant(R-22) for every 1 meter if the pipe length exceeds the standard pipe length of 5 meters.
   2. Maintain a height between the indoor and outdoor units of less than 3 meters.
8. Make sure that you install the outdoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

3-2-1(c) Remote Control Unit

1. Make sure that you install the remote control unit in an area free from obstacles such as curtains etc, which may block signals from the remote control unit.
2. Make sure that you install the remote control unit in an area not exposed to direct sunlight, and where there is no source of heat.
3. Make sure that you install the remote control unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

Caution :
It is harmful to the air conditioner if it is used in the following environments: greasy areas(including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas. Contact your dealer for advice.

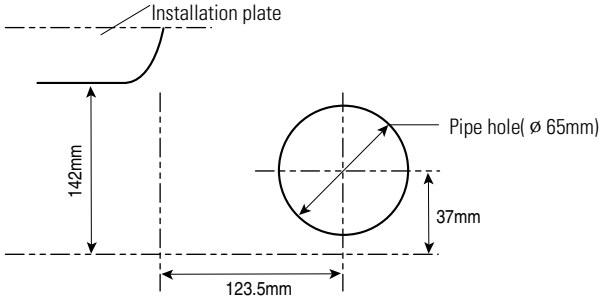
3-2-2 Installation diagram of indoor unit and outdoor unit



❶	Piping (Liquid) 1/4"	❻	Clamper tube
❷	Piping (Gas) 1/2"	❼	Installation plate
❸	Installation tube	❽	Pipe-connection
❹	Vinyl tape	❾	Screw
❺	Putty	❿	Drain hose

3-2-2(a) Cutting a hole and mounting installation plate

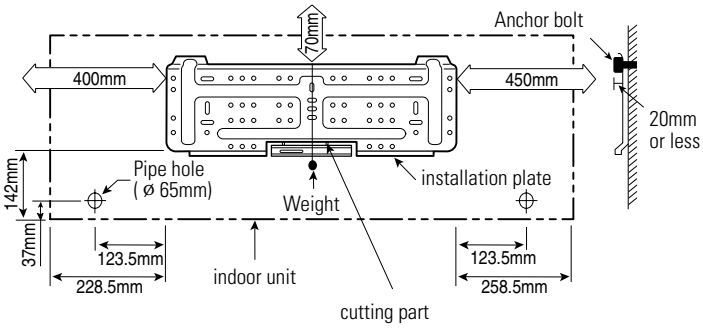
CUTTING A HOLE



Determine the pipe hole position using the paper pattern for installation and drill the pipe hole (65mm inner diameter) so that it slants slightly downward.

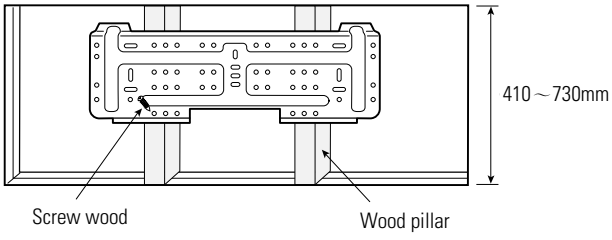
MOUNTING THE INSTALLATION PLATE

- When the installation plate is directly mounted on the wall.



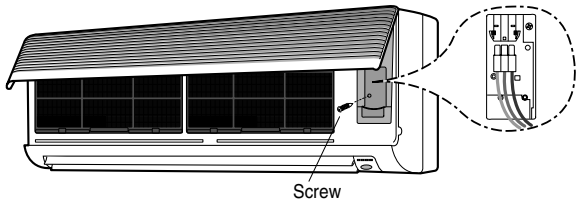
1. Separate the cutting part of the installation plate before installing the installation plate.
2. Install the installation plate horizontally on structural members (studs, etc) in the wall.
3. To mount the installation plate on a concrete wall with anchor bolts, utilize the anchor bolt holes as illustrated in the left figure.
4. When the anchor bolts are already driven in the wall, also utilize the anchor bolts holes to secure the installation plate.(If an anchor bolt is too long, adjust the projecting length to 20mm or less.)

- Mounting at the window frame



1. When mounting installation-plate at the window frame.
   Use the paper patten for installation of the wood pillar.
2. As the left Fig.
   Fix the wood pillar at the wood frame and install installation-plate with screw-tap.
3. Fix the wood pillar with enough strength to bear the weight of the indoor unit.

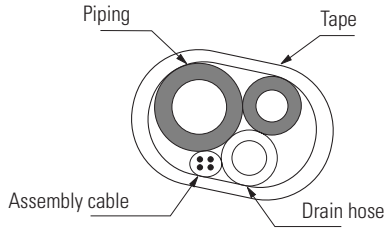
3-2-2(b) Wiring connection (indoor unit)



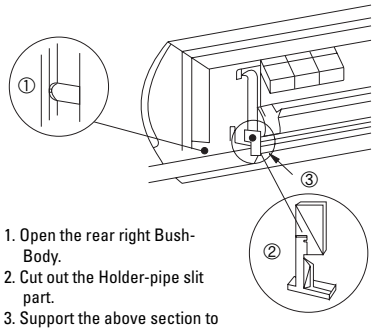
1. Open the Grille and remove the screw securing the cover.
2. Firmly connect the cable connector with EL-connector. (3pin)
3. Assembly every parts by contrary order to disassembly.

3-2-2(c) Piping and drain hose installation

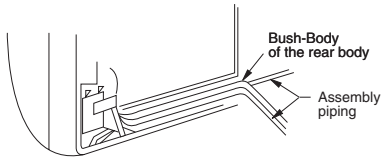
1. Fix the drain hose under the refrigerant piping.
2. Be careful not to allow slack of the drain hose.
3. Do not allow the piping to jut out from the back of the indoor unit.
4. Insulate both of the refrigerant pipes so that dewing and other problems do not occur.
5. Be careful in bending the pipes. The bending radius must be 100mm or larger.



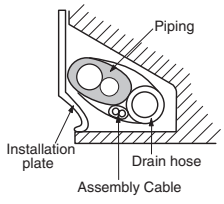
Right-hand connection with piping	Left-hand connection with piping	Under-side connection with piping

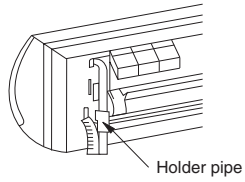


1. Open the rear right Bush-Body.
2. Cut out the Holder-pipe slit part.
3. Support the above section to be bent with your hand and bend the pipes there.



1. Open the rear left Bush-Body.

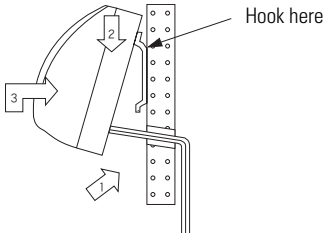


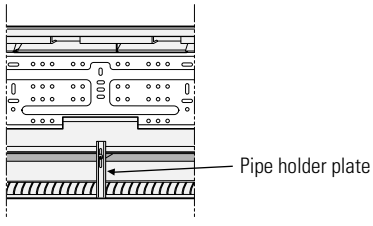


1. Cut out the knock-out piece from the under side of the rear body with a knife, etc. Smooth the cut edges.
2. Cut out the holder pipe on its slit part.

Set the drain hose in the inner part of the indoor unit and the assembly cable in lower part of it. Wind tape round them.

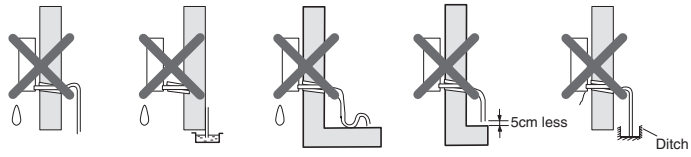
3-2-2(d) Indoor unit installation



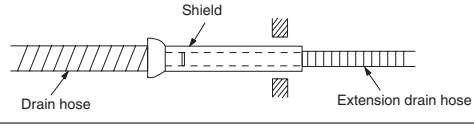


DRAINAGE

1. Run the drain hose sloped downward.
2. Do not install the drain hose as illustrated below.



3. Put water in the drain pan and make sure that the water is drained outdoor.
4. When connecting extension drain hose. insulate the inside part of extension drain hose with shield.

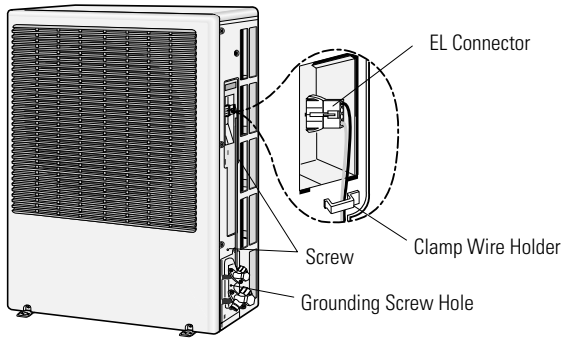


1. To fix the pipe of the indoor unit with the fixing screw, utilize the pipe holder plate as illustrated in the figure.
2. Pass the pipes through the hole in the wall, and hook the indoor unit to the installation plate.
3. Move the indoor unit to the right and left to make sure that the unit is securely hooked on to the installation plate.

3-2-2(e) Outdoor unit installation

Wiring connection

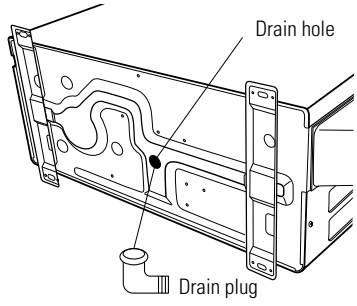
1. Remove the cover-valve.
2. Firmly connect the cable connector with EL-connector. (4. pin)
3. Fasten the M4 ring terminal to the hole marked
4. Firmly fix the ass'y cable with clamp wire holder.
5. Assemble the cover-valve.
6. To prevent the entry of water, form a trap of the ass'y cable as illustrated in the installation diagram of indoor and outdoor unit.



Installation of drain line

In heating and "de-ice" operation, condensed water may be generated.
Install drain line as following procedure.

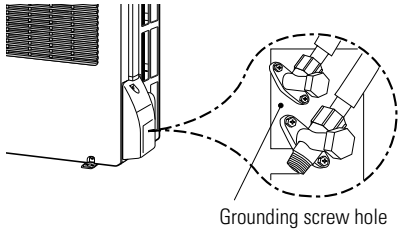
1. Insert drain plug into hole and then connect drain hose to drain plug.
   *Inside diameter of drain hose is 18mm



Grounding

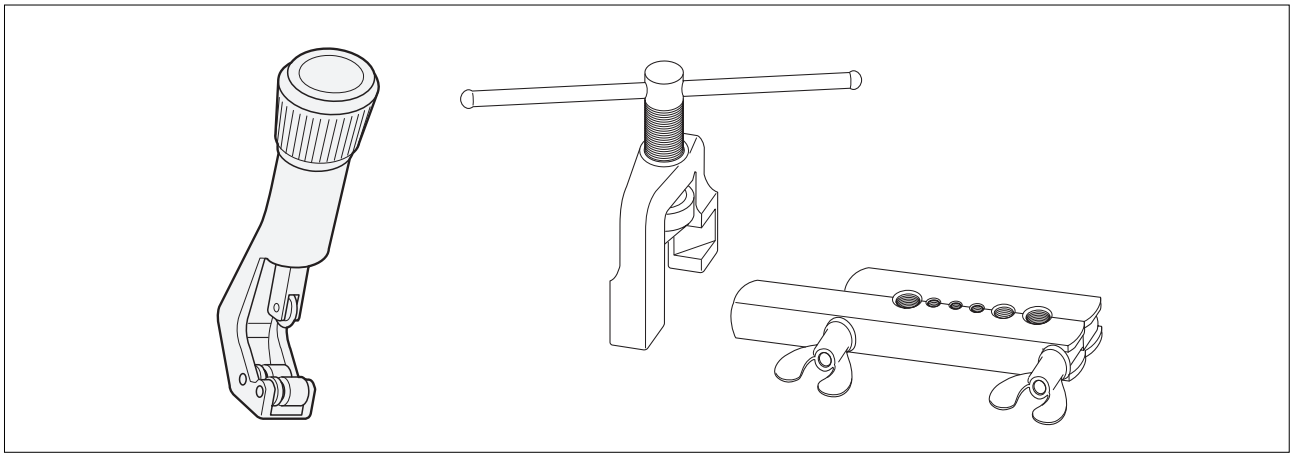
(The parts for this work are optional)

- The grounding screw hole is located in the position shown.
- A grounding terminal can be found on the outdoor unit as illustrated.



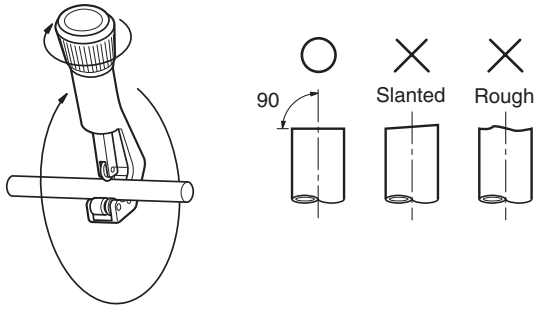
3-2-2(f) Flare Modification

- Tools used



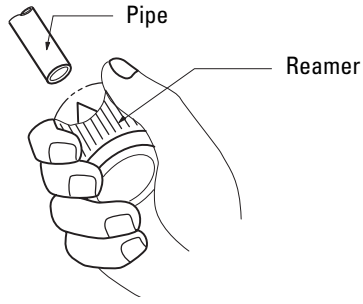
Flare modification procedure

1) Cut the pipe using a pipe cutter.

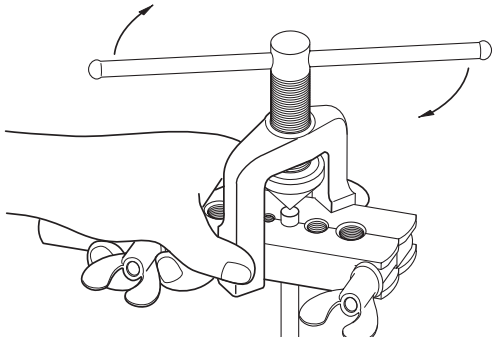


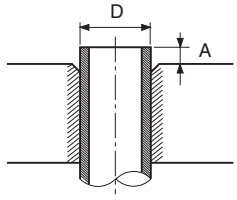
2) Remove burrs at the tip of the pipe cut.

Caution : Burrs not removed may result in leakage of gas.



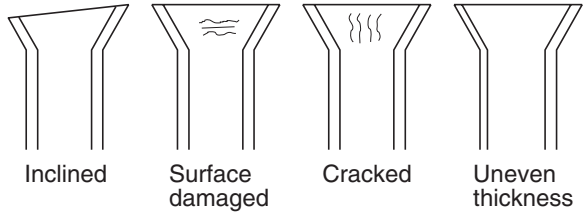
3) Insert a flare nut into the pipe and modifty flare.





Outer diameter	A(mm)
ø 6.35mm	1.3
ø 9.52mm	1.8
ø 12.7mm	2.0

* Unproper flaring



3-2-2(g) Air-Purge Procedure

- Use the refrigerant of the outdoor unit to purge air inside indoor unit and pipe.

1. Remove the caps from the 2-way valve(B) and the 3-way valve(A).

2 Turn the 2-way valve cock approx. 45° counterclockwise to open it. Close it about 10 seconds later.

3 Check refrigerant leakage of each joint parts (A, B, C & D in right figure)

leaking

Leaking
If leaking, tighten the flare nut one more time. If continues to leak, although the pipe fixing area has been tightened again, repair the leaking area.

not leaking

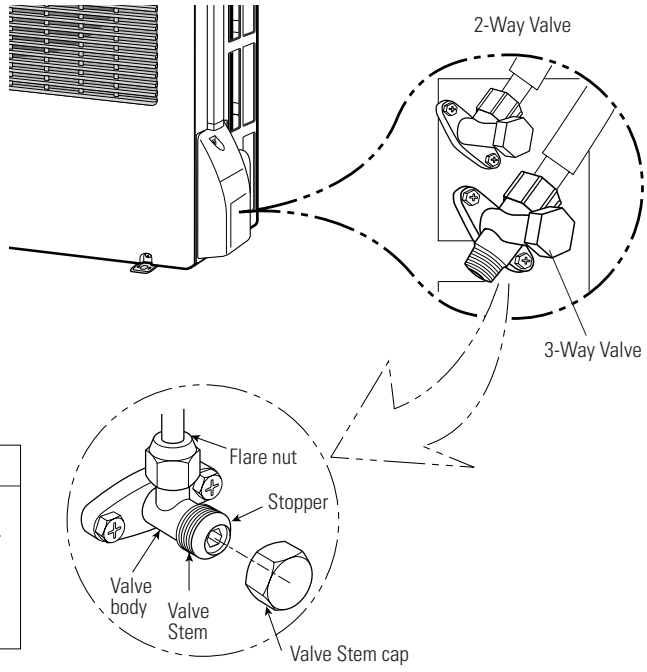
4. Open the 2-way valve again.

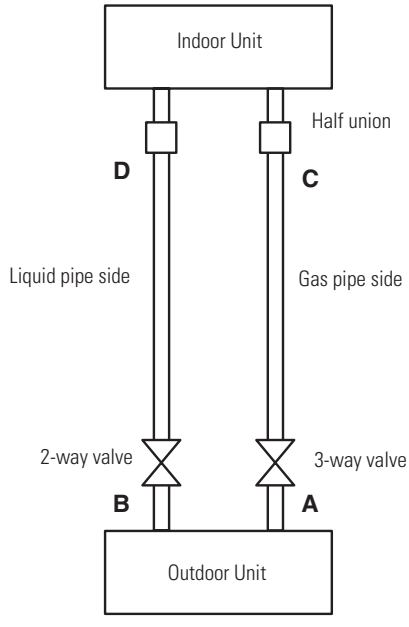
5. Open the service valve cap of the 3-way valve and press the needle valve to discharge gas for 3 seconds and leave it for about 1 minute.
   Repeat the above procedure for 3 times to purge air.

6. Open the 2-way valve and 3-way valve completely

7. Close the cap of each valve.

8. Check each valve for leakage.





3-2-2(h) Refrigerant Refill

- Refill an air-conditioner with refrigerant when refrigerant has been leaked at installing or using

1. Purge air(for new installation only).

↓

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

↓

3. Connect the tank to refill with Refrigerant

↓

4. Set the unit to cool operation mode.

↓

5. Check the pressure indicated by the pressure gauge(low pressure side).
   * Standard pressure is should be 4.5~5.5kg/cm^2 in a regular, high operation mode.

↓

6. Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.
   * It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.

↓

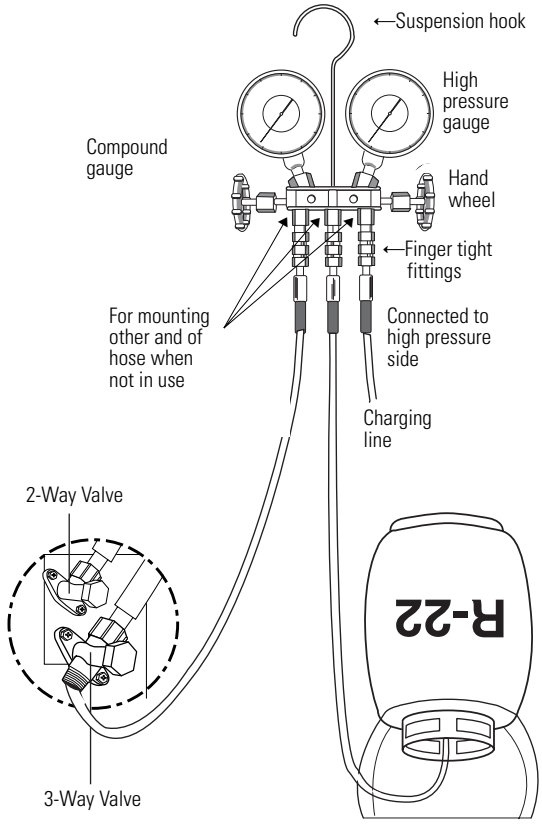
7. Stop operation of the air conditioner.

↓

8. Close the 3-way valve, disconnect the pressure gauge, and open the 3-way valve again.

↓

9. Close the cap of each valve.



3-2-2(i) Refrigerant Adjustment

Class	At installation		At service	
Connection Pipe Length	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
5m Max.	Refer to the detailed Air-Purge Procedure	Unnecessary	Purge air using a vaccum pump or an additional refrigerant cylinder.	refer to specification sheet
5~10m		Add 10g of refrigerant (R-22) for every 1m.		Add 10g of refrigerant (R-22) for every 1m.

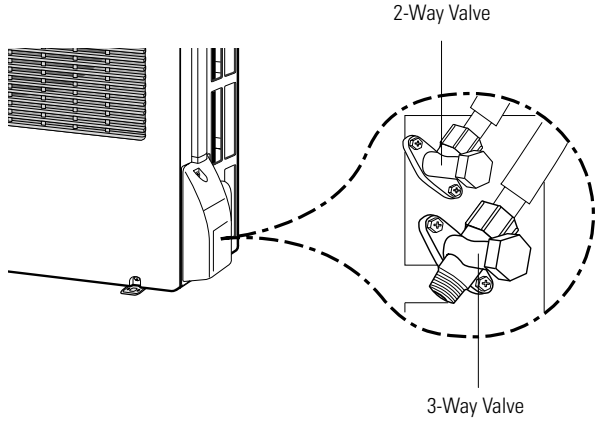
3-2-2(j) Flare unt fixing torque

Outter diameter	Torque (kg-cm)	
	Fixing Torque	Final Torque
ø 6.35 (9000Btu, 12000Btu) (Liquid Side)	160	200
ø 9.52 (9000Btu) (Gas Side)	300	350
ø 12.7 (12000Btu) (Gas Side)	500	550

3-2-2(k) "Pump down" Procedure

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

1. Remove the caps from the 2-way valve and the 3-way valve.
2. Turn the 3-way valve clockwise to close and connect a pressure gauge(low pressure side) to the service valve, and open the 3-way valve again.
3. Set the unit to cool operation mode. (Check if the compressor is operating.)
4. Turn the 2-way valve clockwise to close.
5. When the pressure gauge indicates "0" turn the 3-way valve clockwise to close.
6. Stop operation of the air conditioner.
7. Close the cap of each valve.



Relocation of the air conditioner

- Refer to this procedure when the unit is relocated.

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

Memo

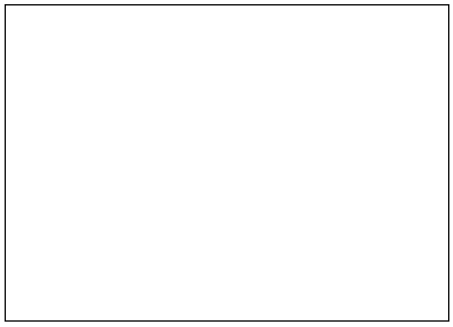
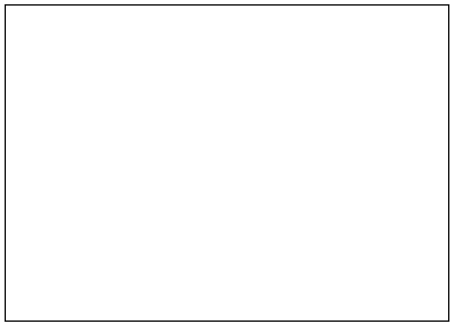
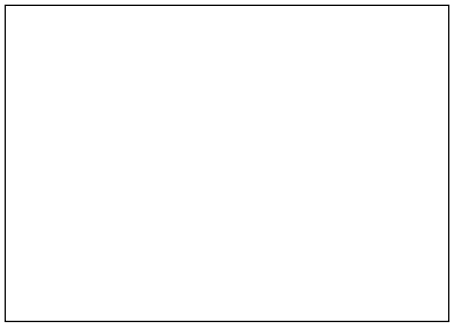
4. Disassembly and Reassembly

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

4-1 Indoor Unit

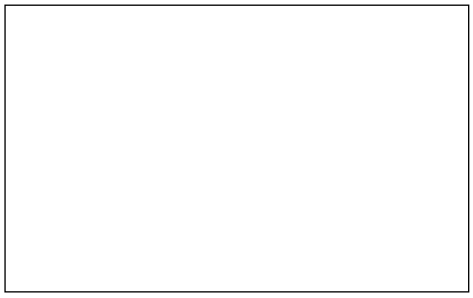
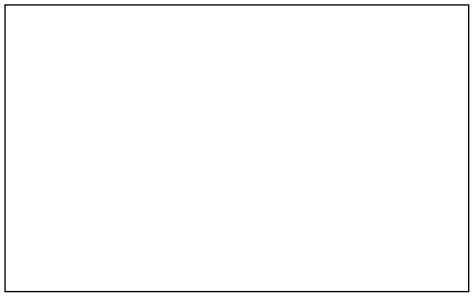
No	Parts	Procedure	Remark
1	Front Grille	1) Stop the air conditioner operation and block the main power. 2) Open the cover screw and loosen three fixing screws of front grille.	
		3) Contract the second finger to the left, and right handle and pull to open the inlet grille. 4) Take the left and right filter out. 5) Take the electroprecipitator out.	
		6) Loosen the two of the fixing screws.	
		7) Loosen one of the right fixing screws and separate the terminal cover.	
		8) Pull the upper center of discharge softly for the outside cover to be pulled out.	

No	Parts	Procedure	Remark
		9) Pull the lower part of discharge and push it up. **Assembling method.** ● Make four brackets of the outer cover to be hunged at the indoor unit ● Make the brackets of the outer cover of upper center of discharge to be hunged securely. ● Take care of not breaking away of the opertion selection switch knob.	
2	Electrical Parts (Main PCB)	1) Do "1", above 2) Take all the connector of PCB upper side out. 3) Take display PCB and all the connector of PCB upper side out 4) If pulling the Main PCB up. it will be taken out.	
3	Heat Exchanger	1) Do 1 and 2, above 2) Separate the holder at the rear side of Indoor unit. 3) Take the display PCB out.	

No	Parts	Procedure	Remark
3	Heat Exchanger	4) Pull the brackets of water bath forward and take the water bath front and keep the distance a little from the indoor unit.	
		5) Loosen the left and right screw of the heat exchanger.	
		6) Pull tray drain out from the Back body.	
		7) Lifting up the heat exchanger a little and open to the left to separate the heat exchanger from the left brackets.	

No	Parts	Procedure	Remark
	Heat Exchanger	8) Lifting the heat exchanger up a little to turn to the counter clockwise fot separation from the indoor unit. **Assembling Method** ● Insert the left and right brackets of the outer cover of indoor unit. If it is not Inserted, the distance of water bate is not constant and the front grill is not assembled.	
4	Fan Motor and Cross Fan	1) Do 1, 2 and 3, above. 2) Loosen the fixing screws of motor and lift the fixing hole up in forward direction and push backward to separate. 3) Loosen the fixing screws of motor fan. (By use of M3 wrench.) Separate the motor from the fan. Separate the fan from the left holder bearing.	

4-2 Outdoor Unit

No	Parts	Procedure	Remark
1	Common Work	1) Loosen the two fixing screws and separate the up, low cover.	
		2) Separate the cable connector and loosen the fixing screw to separate the connector box.	
		3)Loosen the two fixing screws and separate the upper cabinet.	
		4) Loosen eleven fixing screws and separate the front cabinet.	
2	Fan and Motor	1) Do "1", above. 2) Separate the two fixing screws of protection mesh from the front side of the front cabinet.	

No	Parts	Procedure	Remark
		3) Push the brackets of the outer cover to separate the protection mesh from the rear side of front cabinet.	
		4) Remove the nut flange (Turn to the right to remove, as it is a left hand screw) 5) Separate the fan.	
		6) Loosen four fixing screws to separate the motor.	
3	Heat Exchanger	1) Do "1", above. 2) Loosen three fixing screws of left and front side and separate the front cabinet. 3) Disassemble the inlet and outlet pipe by welding. 4) Loosen one fixing screw of right side and separate the heat exchanger.	
4	Compressor	1) Do "1", 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) Disassemble the inlet and outlet pipe of condenser by welding	
		5) Remove the nut flange and separate the compressor.	

5. Troubleshooting

5-1. Items to be checked first

1) The input voltage should be 198-264VAC.
   The air conditioner may not operate properly if the voltage is out of this range.
2) The indoor unit and the outdoor unit shall be linked by 3 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables. Otherwise the air conditioner may not operate properly.
3) If a problem occurs as described in the table below, it is a symptom not related to the malfunction of the air conditioner.

NO	Operation of air conditioner	Explanation
1	The COOL 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 compressor should operate. · In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that the compressor and 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 micom.
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 7 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.

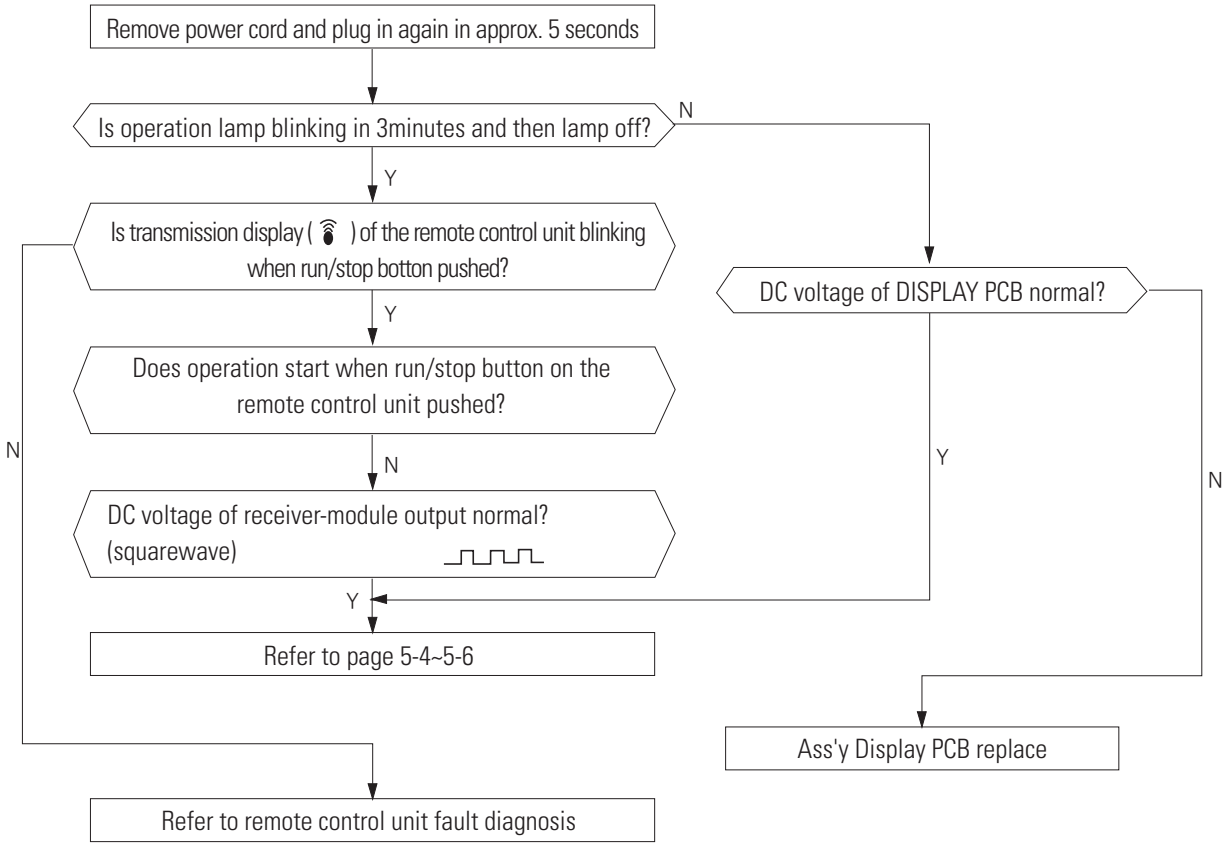
NO	Display	Self Diagnosis
1	COOL operation LED(GREEN)blinking (1Hz)	Restore from power failure (input initial power)
2	TIMER LED(YELLOW) blinking (5Hz)	Temperature sensor defective(open, short)
3	COOL(GREEN), TIMER LED(YELLOW) blinking (5Hz)	Indoor heat exchanger sensor defective(open, short)
4	FAN(GREEN) LED blinking (5Hz)	Indoor fan malfunction (inoperative within 15 sec - less than 600rpm)

5-2 Fault Diagnosis by Symptom

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

1) Checklist :
   (1) Is input voltage normal?(198-264V~)
   (2) Is AC power linked correctly?
   (3) Are connections between primary side, secondary side of the power transformer and PCB good.
   (4) Is output voltage of DC regulator IC KA7812(IC05) normal? (11.5VDC-12.5VDC)
   (5) Is output voltage of DC regulator IC KA7805(IC06) normal? (4.5VDC-5.5VDC)

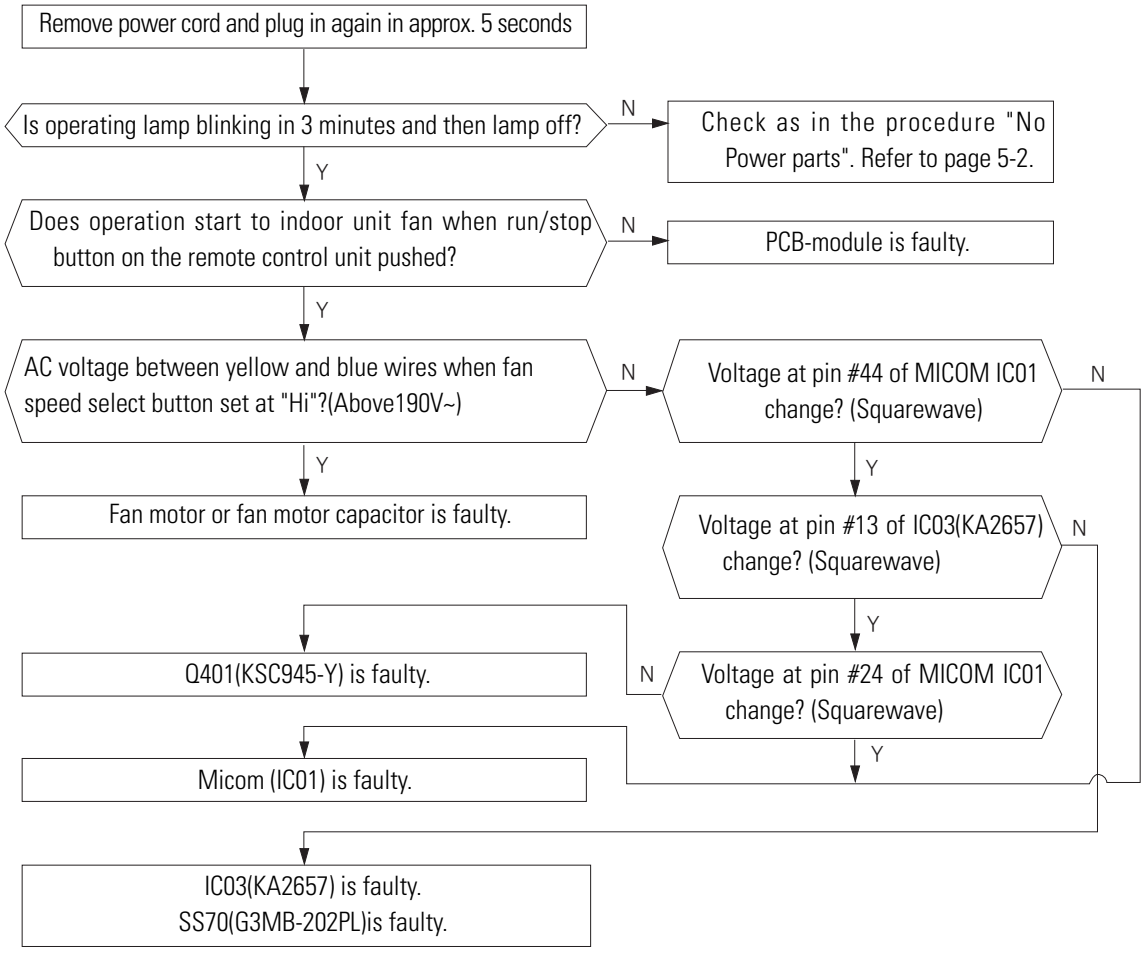
2) Troubleshooting procedure



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

1) Checklist :
   (1) Is input voltage normal? (198-264V~)
   (2) Is the indoor unit fan properly connected(CN74)?
   (3) Is running condenser properly connected(CN75)?
   (4) Is HALL IC in indoor fan motor properly connected(CN44)?
   (5) When in operation mode, does the indoor unit fan operate?

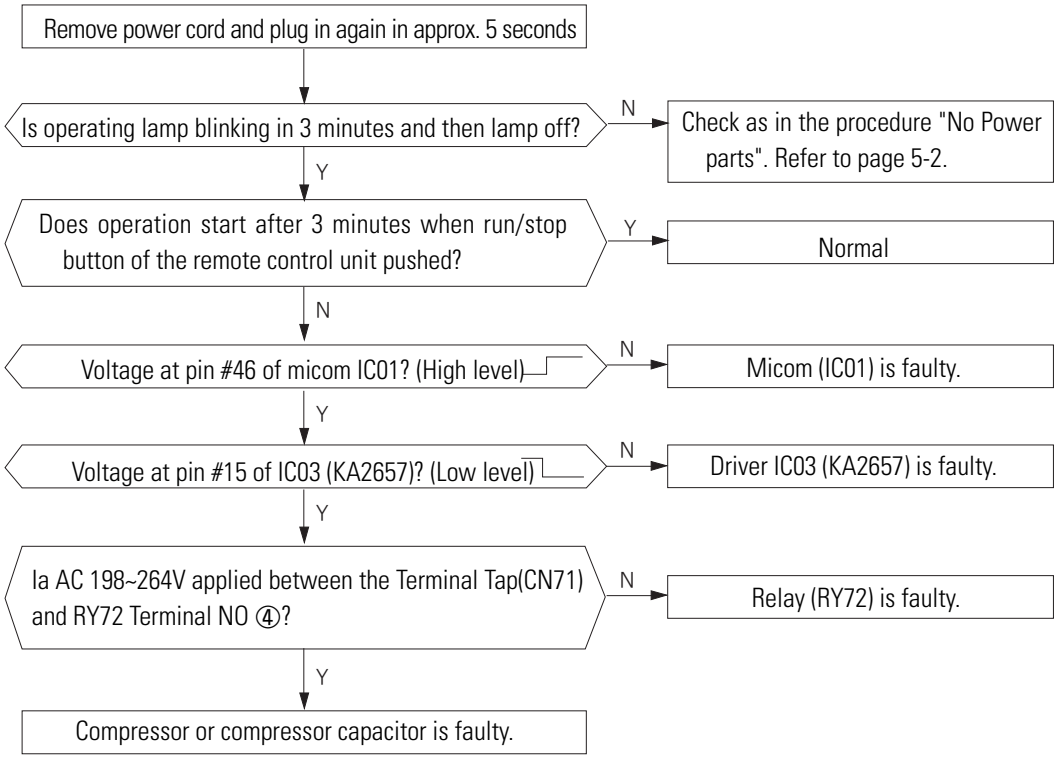
2) Troubleshooting procedure



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

1) Checklist :
   (1) Is input voltage normal? (198-264V~)
   (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 indoor unit wire properly connected with the outdoor unit wire?

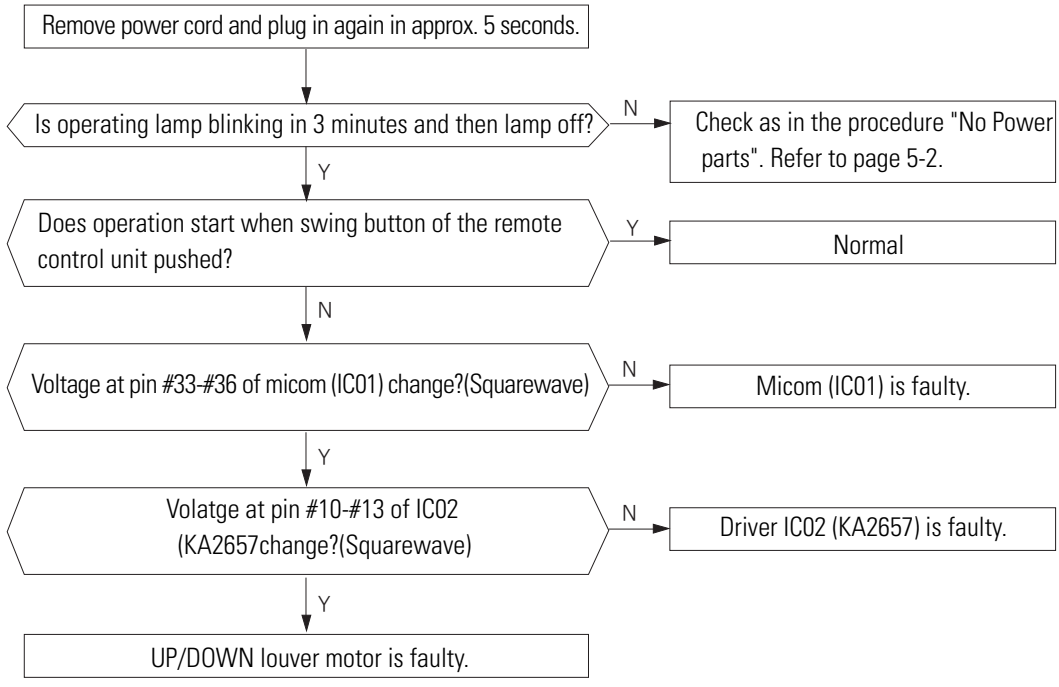
2) Troubleshooting procedure



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

1) Checklist :
   (1) Is input voltage normal? (198-264V~)
   (2) Is the UP/DOWN louver motor properly connected with the connector (CN61)?

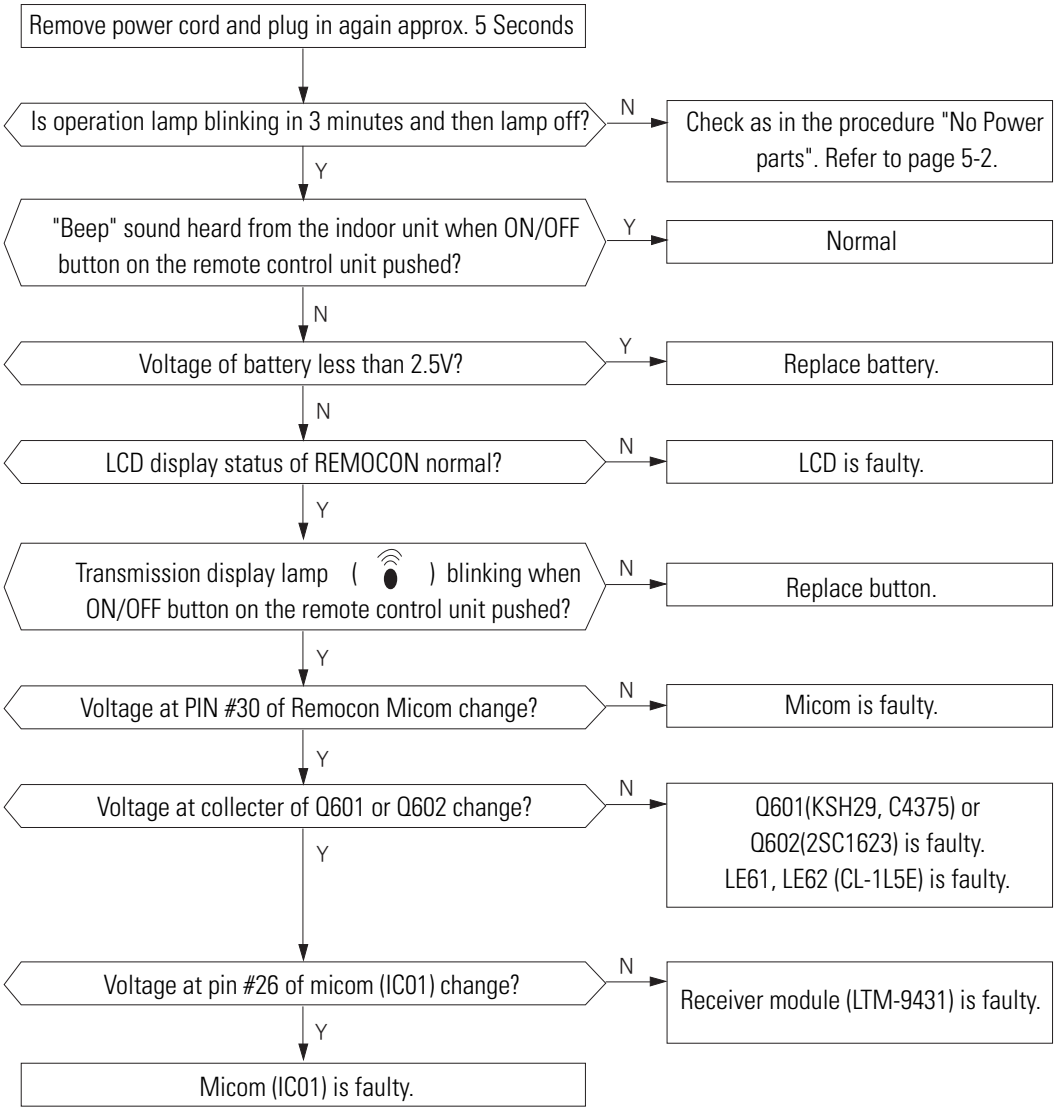
2) Troubleshooting procedure



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

1) Checklist :
(1) Is operation selector switch of the indoor unit set at "REMOTE"?

2) 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 matallic 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 solding 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.

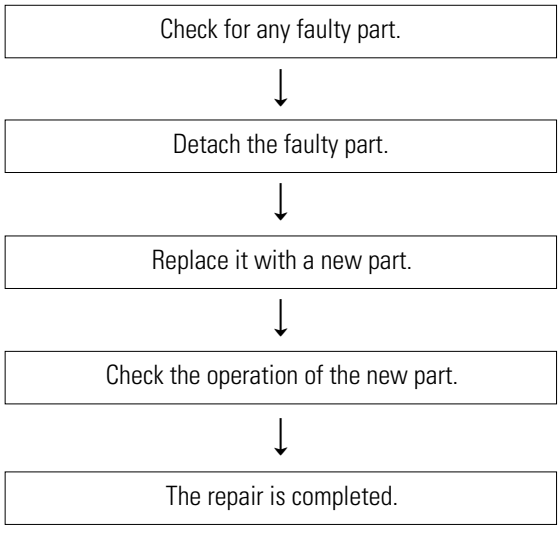
6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).

7. The heat of the soldering iron should be transfered 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 check the fuse on the PCB assembly	1. Is the fuse blown?	1. Voltage over 2. Indoor unit fan motor short-circuit.
2	Ture the power on. If lamp blinks trouble is not related to the items 1 through 4 on the right.	Voltage check	
		1. AC voltage at both end of transformer Primary? 198 - 264V~	1. Irregular power code or power fuse, or poor wiring.
		2. AC voltage at both end of transformer secondary? 15- 25V~	2. Transformer is faulty.
		3. DC voltage at OUT and GND of IC05 (KA7812)? 12VDC	3. Power circuit is faulty.
		4. DC voltage at OUT and GND of IC06? 5VDC	4. Power circuit is faulty.
		5. DC voltage at Q201 Base and GND change? squarewave	5. Q201 is faulty. D701~D704 (IN4002*4) is faulty.
3	Set operating mode when RMC switch pushed. Except for [FAN] and [TIMER] mode.	Voltage check	
		1. Voltage of relay (RY72) coil Voltage at pin#15, pin#9 of IC03 : 12VDC	1. Relay (RY 72) coil is open. IC03 (KA2657) is faulty.
		2. Voltage at Terminal Tap (CN71) and RY72 Terminal N0④. 198- 264V~	2. Relay (RY 72) contactor is faulty.
4	Set operating mode when RMC switch pushed. 1. COOL mode 2. Fan speed [AUTO] 3. Set temperature lower than room temperature 4. Continuous operation.	1. Compressor does not operate.	1. Temperature of Heat exchange is lower.
			2. PCB is faulty.
5	Set operating mode when RMC switch pushed. 1. HEAT mode 2. Fan speed [AUTO] 3. Set temperature higher than room temperature 4. Continuous operation	1. Compressor does not operate	1. Temperature of Heat exchange is higher. 2. PCB is faulty.
6	Set operating mode when RMC switch pushed. 1. [FAN] mode 2. Fan speed [HI] 3. Continuous operation	1. Voltage at ③⑤ both ends of CN73 : above 190V~	1. Indoor unit fan motor is faulty.
		2. Indoor unit fan motor does not operate.	2. Poor connection of indoor fan motor and connector of RPM sensing (CN42)

5-4 Fault Diagnosis of Major Parts

<table>
<tr><th>Parts</th><th colspan="2">Diagnosis</th></tr>
<tr><td>Temp.Sensor
Heat ex. Sensor
Outdoor Sensor</td><td colspan="2">Measure resistance with a tester.</td></tr>
<tr><td></td><td>Normal</td><td>8㏀~27㏀ at ambient temperature (+0˚C ~ +30˚C)</td></tr>
<tr><td></td><td>Abnormal</td><td>∞, 0 Ω …open or short</td></tr>
<tr><td>Indoor Fan Motor</td><td colspan="2">Measure resistance between terminals (CN73) with a tester</td></tr>
<tr><td></td><td>Normal</td><td>At ambient temperature (10˚C ~ 30˚C)
<table><tr><th>between</th><th>Resistance</th></tr><tr><td>Red, Yellow</td><td>175±10 Ω</td></tr><tr><td>Red, Blue</td><td>315±15 Ω</td></tr></table></td></tr>
<tr><td></td><td>Abnormal</td><td></td></tr>
<tr><td></td><td colspan="2">Measure the voltage between ground and signal wire of the fan motor</td></tr>
<tr><td></td><td>Normal</td><td><table><tr><th>between</th><th>voltage</th></tr><tr><td>Gray, Orange</td><td>0.5V ~4.5V</td></tr><tr><td>Yellow, Orange</td><td>5V</td></tr></table></td></tr>
<tr><td></td><td>Abnormal</td><td>Abnormal if voltage does not change from 0V to 5V.</td></tr>
<tr><td>Outdoor Fan Motor</td><td>Normal</td><td>At ambient temperature (10˚C ~ 30˚C)
<table><tr><th>between</th><th>resistance</th></tr><tr><td>Black, White</td><td>160±10 Ω</td></tr><tr><td>Black, Red</td><td>151±10 Ω</td></tr></table></td></tr>
<tr><td></td><td>Abnormal</td><td>∞, 0 Ω …open or short</td></tr>
<tr><td>Stepping Motor
(UP/DOWN swing motor)</td><td colspan="2">Measure resistance between red wire and each terminal.</td></tr>
<tr><td></td><td>Normal</td><td>Approx. 380 Ω at ambient temperature (20˚C ~30˚C)</td></tr>
<tr><td></td><td>Abnormal</td><td>∞, 0 Ω …open or short</td></tr>
</table>

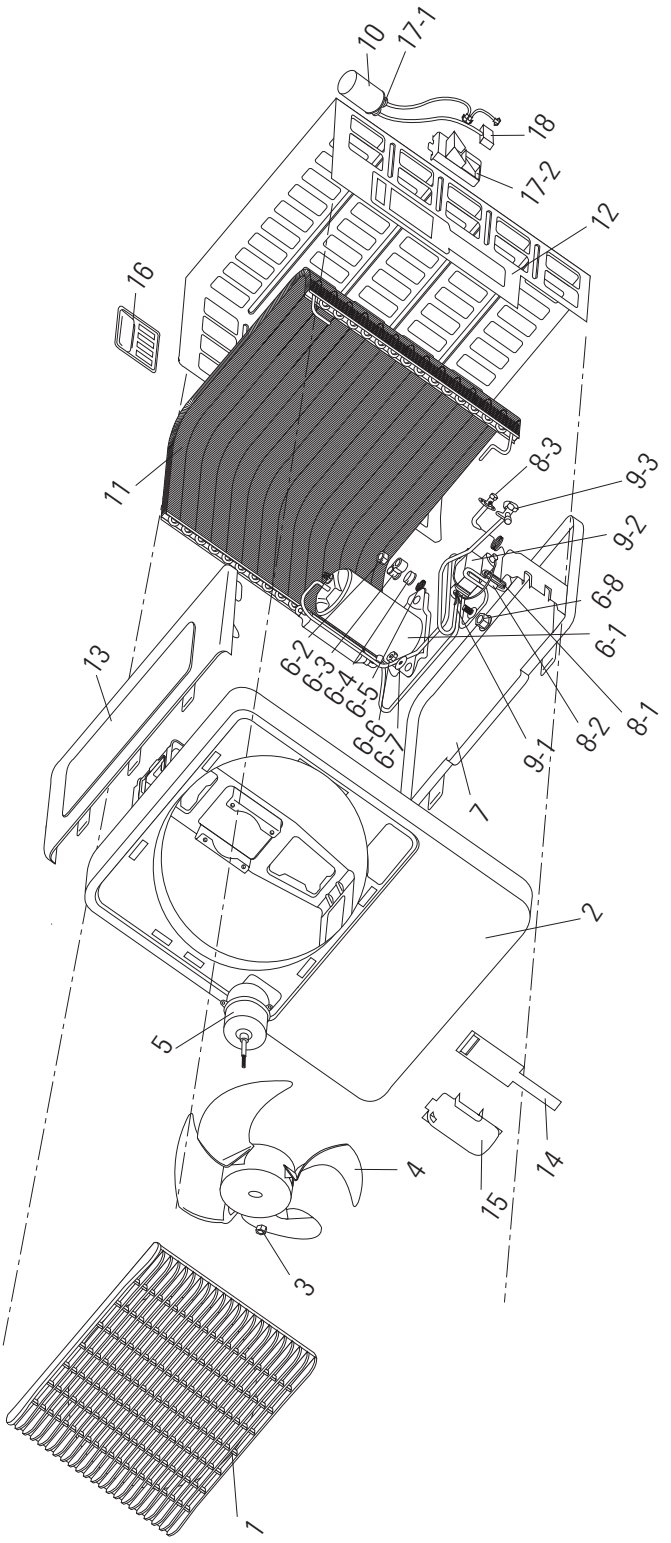
6. Exploded Views and Parts List

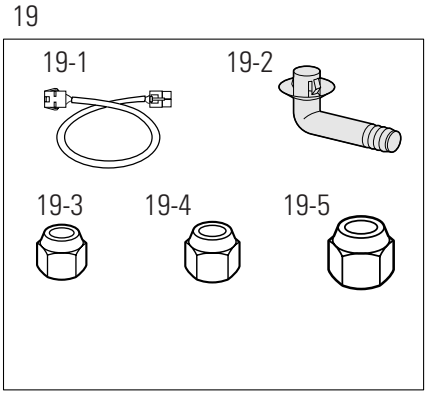
6-1 Indoor unit

◦ · Parts List

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
1	P9001-2082-04	Ass'y-panel (F)	ABS SC-93438R	1	1	
	P2064-0044-00	Panel LED(V)	PC	1	1	
	P4014-0092-01	Inlay switch	ART 90	1	1	
	A3006-0087	SW-Slide	2C2P NSH	1	1	
	P6032-0024-01	Thermistor-Ass'y	103AT	1	1	
2	P2242-0033-00	Guard-air filter	PP	2	2	
3	P9001-2338-01	Ass'y-tray drain	ABS SC-93438R	1	1	
	P1632-0032-00	Blade (H. LW)	ABS	1	1	
	P1632-0033-00	Blade (H. UP)	ABS	1	1	
	P1632-0035-00	Blade (V)	PP	9	9	
	P1632-0050-00	Blade	PP	3	3	
	P1632-0040-00	Blade connector	ABS	3	3	
3-1	P6823-0007-01	Motor-louver	MITSUBISHI MP35EA	1	1	
4	P1111-0071-00	Ass'y-evaporator	ASH-1205ER	-	1	
	P1111-0076-00	Ass'y-evaporator	ASH-0905ER	1	-	
5	P9003-0222-14	Ass'y-power cord	UCP2	1	1	
6	P2022-0042-00	Band-motor	PP	1	1	
7	P6434-0275-00	Connector wire outdoor	AWG18	1	1	
8	P9409-0509-00	Ass'y-main PCB	ASH-1206ER	-	1	
	P9409-0510-00	Ass'y-main PCB	ASH-0906ER	1	-	
9	P3312-0228-01	Cover-PCB	pp	1	1	
10	P3313-0225-00	Terminal cover	ABS	1	1	
11	P9403-0445-00	Ass'y-display PCB	ASH-1205ER	1	1	
12	P4084-0029-00	Knob-switch	ABS	1	1	
13	P6822-0118-00	Motor-fan in	AMPAS-040WTVA	1	1	⚠
14	P1612-0032-00	Ass'y-fan cross	AS-966	1	1	
15	P3323-0113-01	Holder-bearing Ass'y		1	1	
15-1	P1423-0006-00	Bearing	POLY SLIDER PG5	1	1	
15-2	P1423-0008-00	Bearing-mold	CR	1	1	
15-3	P3322-0092-01	Holder-bearing	HIPS	1	1	
16	P9002-2076-01	Ass'y-back body	AS-966	1	1	
17	P3323-0083-00	Holder-pipe	PP	1	1	
18	P3473-0151-00	Plate-hanger	SGCC-M	1	1	

6-2 Outdoor Unit



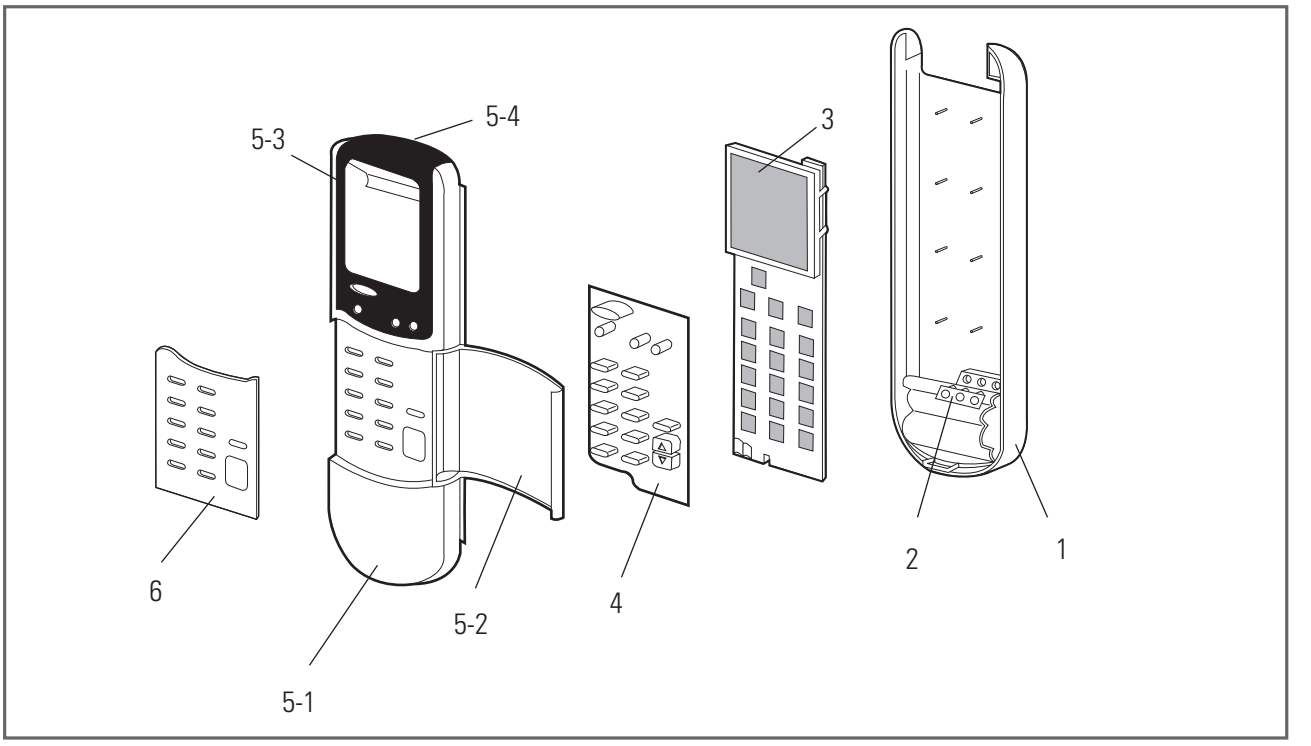


◦ · Parts List

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
1	P2241-0034-00	Guard-fan	PP/ABS	1	1	
2	P9001-2294-00	Ass'y-cabi front	AS-966	1	1	
3	P7224-210-510	Nut-flange	M6 LF	1	1	
4	P1611-0028-00	Fan-propeller	AS+G/F 20%	1	1	
5	P6822-0096-02	Motor-fan out	AMASS-020WTAV	1	1	△!
6-1	P7041-0015-21	Compressor	48H124JV1E4	-	1	
	P7041-0037-11	Compressor	44H092SW1E4	1	-	
6-2	P7223-200-010	Nut-flange	SM20C M5	1	1	
6-3	P6052-222-211	Terminal-cover	GE NORYL	1	1	
6-4	P4723-203-120	Relay-over load	MRA12030-12008	-	1	
	P4723-209-037	Relay-over load	MRA12037-12007	1	-	
6-5	P6674-237-110	Olp-spring	STS304-WPA	1	1	
6-6	P7208-118-001	Nut-hex	1-M8	3	3	
6-7	P7334-200-420	Washer-comp	SBC1	3	3	
6-8	P3393-0030-00	Isolator-grommet	EPDM	3	3	
	P3403-0011-00	Gasket	EDPM	1	1	
7	P9002-2293-00	Ass'y-base comp	Ass'y	-	1	
	P9002-2293-01	Ass'y-base comp	Ass'y	1	-	
8-1	P0802-1260-00	Ass'y-check v/v	ASH-1206ER	-	1	
	P0802-1260-01		ASH-0906ER	1	-	
8-2	P0903-0046-00	Valve-check	30MG/CM2G	-	1	
8-3	P0903-0056-00	Valve-Packed(1/4)	P16.35	1	-	
9-1	P0802-1254-00	Ass'y-4 way v/v	ASH-1206ER	-	1	
	P0802-1254-01		ASH-0906ER	1	-	
9-2	P0903-0047-00	Valve-4 way	SAGINOMIA	1	1	
9-3	P5443-206-220	Valve-Packed(1/2● ›)	ASH-1206ER	-	1	
	P5443-206-111	Valve-Packed(3/8● ›)	ASH-0906ER	1	-	
10	P6523-0006-12	Capacitor-dual	450V 1.5/30● ÏF	-	1	△
	P6523-0006-20	Capacitor-dual	370V 1.5/30● ÏF	1	-	△
11	P1101-0100-00	Ass'y cond	ASH-1206/0906	1	1	△
12	P2001-8178-00	Cabi Side	AS-966	1	1	△
13	P2002-0158-00	Cabi upper	AS-966	1	1	
14	P3311-0283-00	Cover-Valve up	AS-966	1	1	
15	P3311-0282-00	Cover-Valve low	AS-966	1	1	
16	P4033-0012-00	Handle cabi side	AS-966	1	1	
17	P9002-2423-00	Control out Ass'y	ASH-1206ER	-	1	
	P9002-2423-01	Control out Ass'y	ASH-0906ER	1	-	
17-1	P6482-0144-00	Wire control out Ass'y	ASH-1206/0906ER	1	1	
17-2	P4053-0018-00	Control out	ABS	1	1	
18	P6643-0007-02	Solenoid Coil	SAGINOMIYA	1	1	
19	P9002-2216-37	Ass'y cable bag	-	-	1	
	P9002-2216-38	Ass'y cable bag	-	1	-	
19-1	P6433-0301-01	Connector wire Ass'y	-	1	1	
19-2	P2313-0016-00	Drain plug (out)	PE WHT	1	1	
19-3	P7024-200-910	Flare nut	1/4● ›	2	2	
19-4	P7024-200-920	Flare nut	3/8● ›	-	2	
19-5	P7024-200-930	Flare nut	1/2● ›	2	-	

6-3 Remote Control & PCB Box

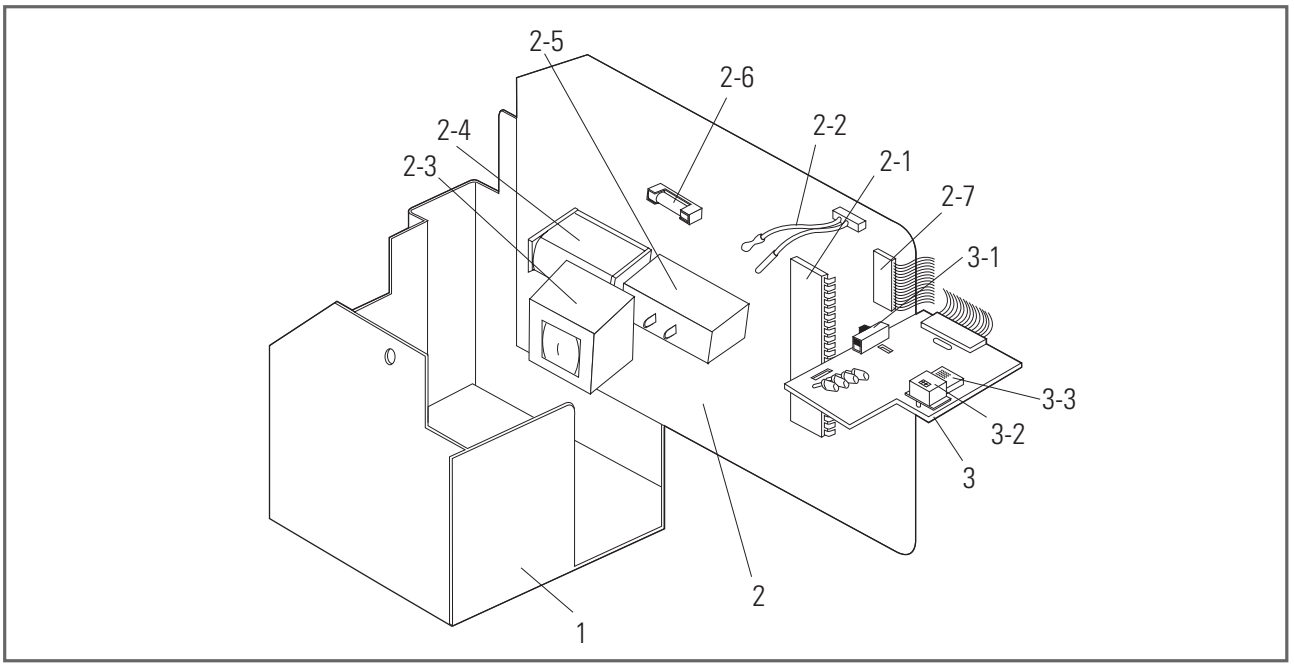
6-3-1 Remote Control



∘ · Parts List

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
	P9002-2092-03	Ass'y-remocon	ASH-1206ER	1	1	
1	P2030-0134-00	Case-remocon(LW)	ABS	1	1	
2	P3394-0042-00	Rubber-button(B)	NBR	1	1	
3	B4155-0067	LCD	HLC8707	1	1	
	B4155-0076	LCD	AT-025ZAR	1	1	
4	P3392-0041-02	Rubber-button(A)	NBR	1	1	
5-1	P2031-0135-00	Case remocon(UPP)	ABS	1	1	
5-2	P4042-0011-00	Door-remocon	ABS	1	1	
5-3	P4073-0011-01	Window-remocon	PC	1	1	
5-4	P0873-0031-00	Filter-remocon	PC	1	1	
6	P4014-0085-02	Inlay-remocon	ABS	1	1	
	P3322-0096-00	Holder remocon	ABS	1	1	

6-3-2 PCB Box



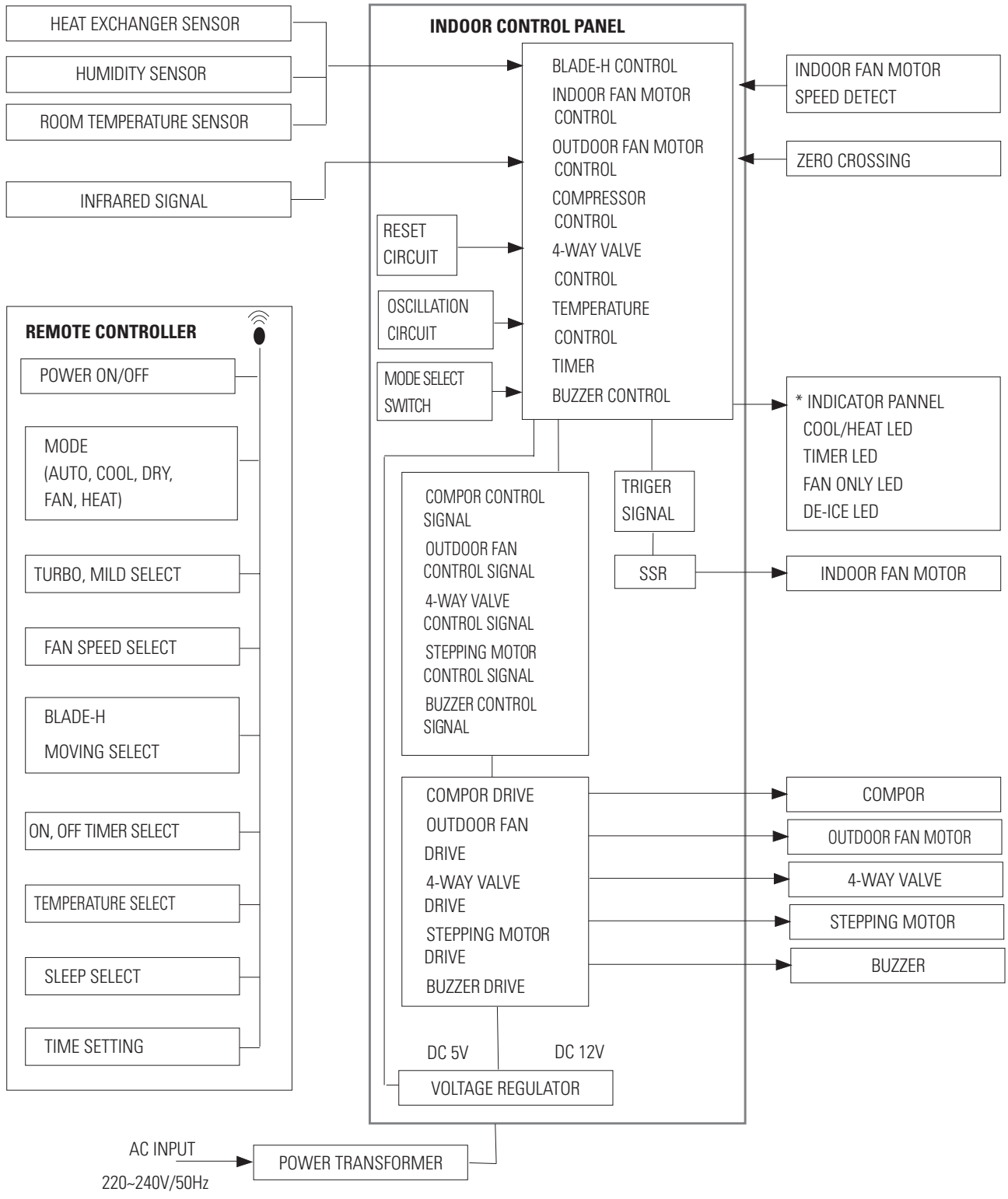
∘ · Parts List

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
1	P3312-0228-00	COVER-PCB		1	1	
2-1	P7199-0010-00	MICOM	MB89635R-180	1	1	
2-2	P6032-0024-01	THERMISTOR-ASS'Y	103AT 240/240	1	1	
2-3	77203-0109-00	TRANS-POWER	EF33 X 41	1	1	
2-4	A1102-0413	C-FILM	1.5ß fi/400VAC	1	1	
2-5	B3068-0041	POWER-RELAY	G4A-1A 250V	1	1	
2-6	A3065-0147	FUSE	250V 3.15A	1	1	
2-7	A6010-1530	CONNECTOR-WAFER	SMAW 250-12	1	1	
3	P9403-0445-00	ASS'Y-DISPLAY PCB	ASH-1205ER	1	1	
3-1	A3006-0087	SWITCH-SLIDE	2C2P	1	1	
3-2	B1294-0040	MODULE-REMOCON	LTM-9431-38	1	1	
3-3	P6219-0006-00	SENSOR-HUMIDITY	C3-M3 1.4VAC	1	1	

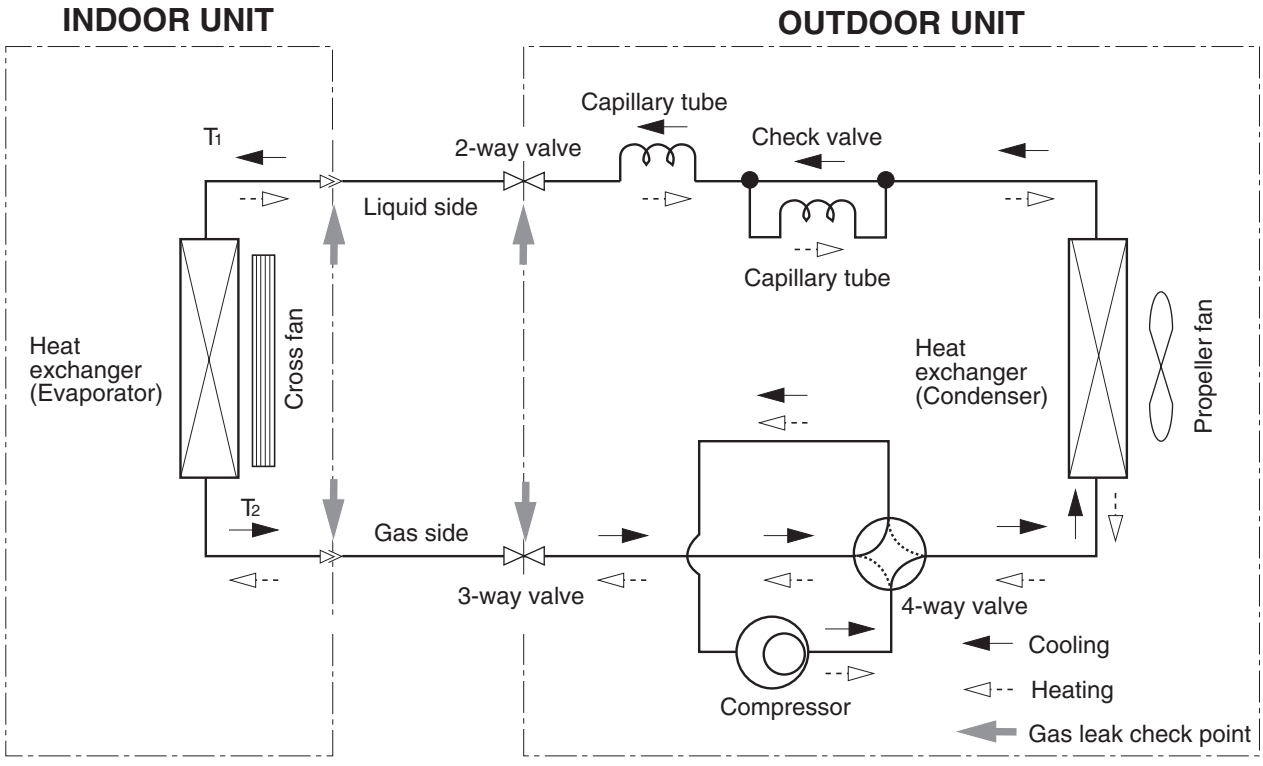
Memo

7. Block Diagrams

7-1 Micro Computer Block Diagram



7-2 Refrigerating Cycle Block Diagram



Refrigerating cycle temperature and pressure

Operating Condition		STD Pressure (kg/cm^2G) 3-WAY V/V	Piping Temp.		UseTemp. Condition (°C)			
			T1	T2	Indoor		Outdoor	
					DB	WB	DB	WB
Cooling	Standard	4.5~5.5	10~12	10~12	27	19	35	24
	Max over load	-	16~18	14~18	32	23	43	26
	Low temp	-	1~4	1~4	21	16	21	16
Heating	Standard	18~20	32~36	60~70	20	-	7	6
	Max over load	-	36~40	65~75	27	-	21	16
	Deice	-	28~32	40~45	20	-	2	1

Memo

8. PCB Diagrams

8-1 Main PCB

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
	P9409-0510-00	ASS'Y MAIN PCB	ASH-0905ER	1	-	
	P9409-0509-00	ASS'Y MAIN PCB	ASH-1205ER	-	1	
F701	A3065-0147	FUSE	FSF250V 3.15A	1	1	
RY71,RY73	A3068-0009	RELAY	UT205-12S 250V3A	2	2	
SS70	B4190-0016	THYRISTOR	SSR B3MB-202PL	1	1	
IC05	A4008-0178	IC VOLT REGU	KA7812A	1	1	
IC06	A4008-1092	IC VOLT REGU	KA7805A	1	1	
	70509-0010-00	SCREW-PH	M3X6 FEFZY	1	1	
	71124-0035-00	HEAT SINK	AL H25	1	1	
CR70	A1102-0308	C-FILM	99N 400VAC 155K	1	1	
R901,R902,R903,R904,R905	A1000-0407	R-CARBON	RD 1/2T 821-J	5	5	
R201,R204,R205, R409,R411,R906,R909	A1000-0151	R-CARBON	RD 1/4T 102-J	7	7	
R202,R501~R511, R601,R907,R908	A1006-0246	R-CARBON	RD 1/4T 103-J	15	15	
R602	A1000-0624	R-CARBON	RD 1/2T 621-J	1	1	
R410	A1000-0181	R-CARBON	RD 1/4T 682-J	1	1	
R407,R408	A1000-0102	R-CARBON	RD 1/4T 331-J	2	2	
R203	A1006-0281	R-CARBON	RD 1/4T 332-J	1	1	
R405,R406	A1004-0261	R-METAL FILM	RM 1/4T 682-F	2	2	
R402,R403,R404	A1006-0452	R-METAL FILM	RM 1/4T 472-F	3	3	
R401	A1006-0638	R-METAL FILM	RM 1/4T 183-F	1	1	
C071	A1151-0015	COIL LINE FILTER	LC204270 270mH	1	1	
C701	A1102-0183	C-FILM	CFS 250V 224K	1	1	
C204,C401,C402,C403	A1100-0547	C-CERAMIC	OAF 50V T103-Z	4	4	
C901	A1100-0829	C-CERAMIC	CK 50V T102-Z	1	1	
C102,C201,C202,C203 C501,C503,C902	A1100-0340	C-CERAMIC	OA 50V T104-Z	7	7	
C103	A1104-0088	C-ELECTROLYTIC	25V T222-M	1	1	
C104	A1104-0012	C-ELECTROLYTIC	25V T471-M	1	1	
C101	A1104-0641	C-ELECTROLYTIC	35V 102-M	1	1	
C502	A1104-0006	C-ELECTROLYTIC	25V T101-M	1	1	
Q901,Q902	A4060-0011	TR-W/RESISTOR	KSR 2002	2	2	
Q601	A4060-0012	TR-W/RESISTOR	KSR 1002	1	1	
Q201,Q401	A4150-0026	TR GENERAL	KSC945Y	2	2	
RY72	B3068-0041	POWER-RELAY	G4A-1A 250V 20A	1	1	
X501	B1283-0039	RESONATOR-CERAMIC	10MHz	1	1	
IC01	P7199-0010-00	IC-MCU	MB89635R-180	1	1	
J1~J24	A6040-0011	WIRE-SO COPPER	PI 0.6 SN T52MM	24	24	
SW01,HR01,HR03, HR04,LR02,LR04,0P02	A6040-0011	WIRE-SO COPPER	PI 0.6 SN T52MM	-	7	
SW01,HR02,HR03,HR04, 0P01,LR01,LR02,LR04	A6040-0011	WIRE-SO COPPER	PI 0.6 SN T52MM	8	-	
IC04	B4008-0750	IC	MN 1280DIP	1	1	
IC02,IC03	A4012-0005	IC-LINEAR	KA 2657N DIP	2	2	
FH71	A3064-0021	HOLDER-FUSE	FH-51H 7.5A	1	1	
BZ01	A1305-0012	BUZZER	CBE 2220BA	1	1	
CN71	A6014-0073	CONNECTOR-TERMINAL	GP881191-2	2	2	
CN72	A6010-1352	CONNECTOR-WAFER	YW396-03AV(BLK)	1	1	
CN73	A6010-0469	CONNECTOR-WAFER	YW-396-05AV(WHT)	1	1	
CN91	A6010-1530	CONNECTOR-WAFER	SMAW 250-12(WHT)	1	1	
CN42	A6010-1390	CONNECTOR-WAFER	SMW250-03BLU	1	1	
CN41	A6010-1392	CONNECTOR-WAFER	SMW250-04WHT	1	1	
CN61	A6010-1402	CONNECTOR-WAFER	SMW250-06WHT	1	1	
TN71	77203-0109-00	TRANS-POWER	EF33.0 x 41.0	1	1	
D101,D102,D701,D702,D703,D704	A4104-0053	DIODE-RECT	IN4002	6	6	

8-2 Display PCB (ASS'Y CODE NO:P9403-0445-00)

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
LE01	B4150-0284	LED LAMP	LTL-52EG(ORG/GRN)	1	1	
LE02	B4150-0261	LED LAMP	LTL4254-011(YEL)	1	1	
LE03	B4150-0260	LED LAMP	LTL 4234-011(GRN)	1	1	
LE04	B4150-0262	LED LAMP	LTL 4294-011(ORG)	1	1	
HTH	P6219-0006-00	HUMIDITY-SENSOR	C3-M3	1	1	
MODULE	B1294-0040	MODULE REMOCON	LTM-9431-38	1	1	
	A6010-1530	CONNECTOR-WAFER	SMAW250-12	1	1	
	P6434-0275-00	C/W DISPLAY	ASH-1205ER	1	1	
	A3006-0087	SWITCH-SLIDE	KSA 2241	1	1	
	A6040-0011	WIRE SO COPPER	PI 0.6 SN T 52MM	1	1	
	P2203-0049-00	BASE LED-V	ABS	1	1	
	P6029-0275-00	PCB-DISPLAY	ASH-1205ER	1	1	
		HOT-MELT				

8-3 Remote Control PCB (ASS'Y CODE NO:P9402-0452-00)

● TOP SILK

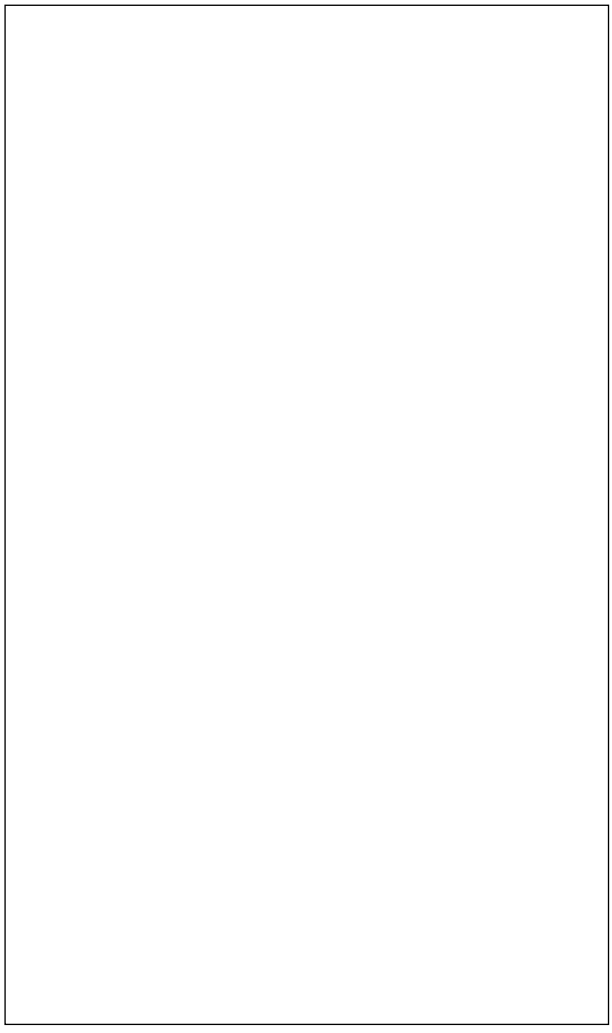
● BOTTOM SILK

No	CODE NO	Description	Specification	Q'TY		Remark
				9000Btu	12000Btu	
R501-R507,R514		CHIP RESISTOR	MCR18EZH F 60.4K	8	8	
R515		CHIP RESISTOR	MCR18EZH F 120K	1	1	
R508-R513		CHIP RESISTOR	MCR18EZH F 30KF	6	6	
R601,R602		CHIP RESISTOR	MCR18EZH J 2.0	2	2	
R517		CHIP RESISTOR	MCR18EZH F 6.8K	1	1	
R603		CHIP RESISTOR	MCR18EZH J 68	1	1	
R604		CHIP RESISTOR	MCR18EZH J 1.2K	1	1	
R516		CHIP RESISTOR	MCR18EZH F 50K	1	1	
		CHIP RESISTOR	MCR18EZH J 5.6K	1	1	
C502-C506,C510		CHIP RESISTOR	MCH315A 104Z	6	6	
C511		CHIP CAPACITOR		1	1	
C512		CHIP CAPACITOR	MCH315A 103Z	1	1	
C101,C102		C-ELECTRONIC	SE 47 μF/6.3V	2	2	
C508,C509		CHIP CAPACITOR	MCH315A 101K	2	2	
C507		CHIP CAPACITOR	MCH315A 150K	1	1	
C501		C-ELECTRONIC	SE 1 μF/50V	1	1	
TH01		ROOM THERMISTOR	103AT-2	1	1	
Q601		CHIP-TR	KSH-29,KSH-29C,C4375	1	1	
Q602		CHIP-TR	C1623-Y	1	1	
X502		CRYSTAL	455KHz	1	1	
X501		CRYSTAL	32.768KHz	1	1	
LE01		IR-LED	CL-1L5EU	1	1	
LE02		IR-LED	CL-1L5EU	1	1	
MICOM	B4002-0639	MICOM	SMC621A	1	1	
LCD	B4155-0076	LCD	AT-025ZAR	1	1	

Memo

9. Wiring Diagrams

9-1 Indoor Unit



RED	RED
RED	RED
RED	RED
RED	RED
RED	RED
RED	RED
RED	RED
RED	RED
RED	RED

9-2 Outdoor Unit

CAPACITOR	ASH-0906ER:1.5/30㎌ × 370VAC
	ASH-1206ER:1.5/30㎌ × 450VAC

Memo

10. Schematic Diagrams

10-1 Indoor Unit

Printed in Korea.
Code No. P4739-0520-00(2)