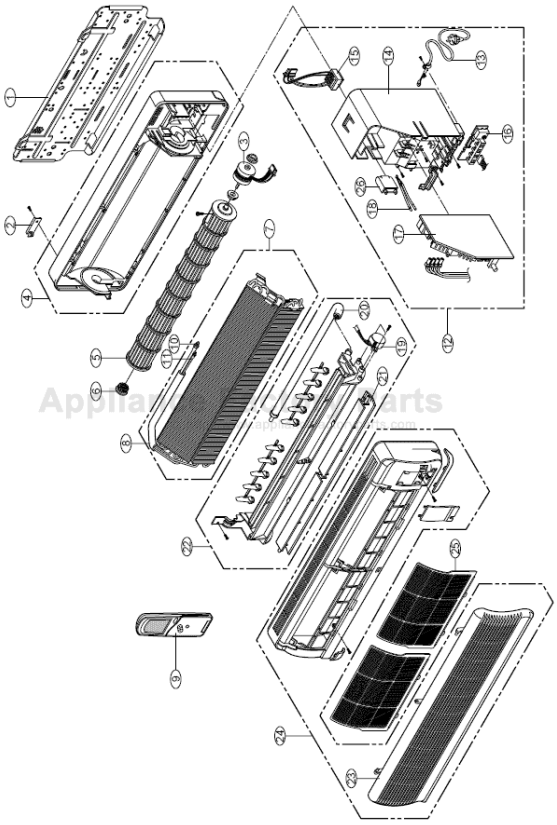
LG HMH009WAE/WAC Owner's Manual



-------- Manual continues below --------

Room Air Conditioner

SERVICE MANUAL

MODEL : LS-B0760CM/B0760HM
LS-B0960CM/B0960HM
LS-B0962CM/B0962HM
LS-B0962CD/B0962HD
LS-B0960CD/B0960HD
LS-C1260CM/C1260HM
LS-C1260CD/C1260HD
LS-C1120CM/C1420CM
LS-C1420CN

CAUTION

BEFORE SERVICING THE UNIT,
READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.

Contents

Functions

Indoor Unit

Operation ON/OFF by Remote controller

Sensing the Room Temperature

• Room temperature sensor(THERMISTOR).

Room temperature control

• Maintains the room temperature in accordance with the Setting Temp.

Starting Current Control

• Indoor fan is delayed for 5 seconds at the starting.

Time Delay Safety Control

• Restarting is inhibited for approx. 3 minutes.

Indoor Fan Speed Control

• High, Med, Low, Chaos or Auto

Operation indication Lamps (LED)

⏻ --- Lights up in Operation
☆ --- Lights up in Sleep Mode
◷ --- Lights up in Timer Mode
✳ --- Lights up in Deice Mode or Hot Start Mode (only Heating Model)
OUT DOOR --- Lights during in compressor running (for Cooling Model)

Soft Dry Operation Mode

• Intermittent operation of fan at low speed

Sleep Mode Auto Control

• The fan is switched to low(Cooling), med(Heating) speed.
• The unit will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.

Auto Air Control by CHAOS Logic

• The fan is switched to intermittent or irregular operation.
• The fan speed is automatically switched from high to low speed.

Airflow Direction Control

• The louver can be set at the desired position or swing up and down, right and left (not on all models) automatically.

AUTO Wind

• The fan speed is automatically switched from high to low speed.

Deice(defrost) control(Heating)

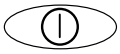
• Both the indoor and outdoor fan stops during deicing.
• Hot start after deice ends.

Hot-start Control(Heating)

• The indoor fan stops until the evaporator piping temperature will be reached at 28°C.

Remote Controller

Operation ON/OFF



Operation Mode Selection

Cooling Operation Mode (❋) Auto Operation Mode (▲)

Soft Dry Operation Mode (💧) Heating Operation Mode (☼)

Fan Speed Selection

(Low) (Med) (High)

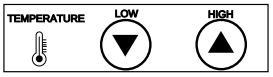
AUTO (AUTO WIND)

CHAOS (CHAOS)

Room, Temperature Display

: High: 39°C ◄——► LOW : 11°C

Temperature Setting



Cooling — Down to 18°C / Up to 30°C,

Heating — Down to 16°C / Up to 30°C,

Setting the Time or timer

Timer Selection

: OFF, ON, OFF ◄——► ON

Timer Setting

Timer Cancel

: Cancel Sleep Mode, Timer ON or Timer OFF

Sleep Operation

: 1, 2, 3, 4, 5, 6, 7, Off Timer

Airflow Direction Control

Fan Operation Mode

: Fan Operates without cooling or heating.

Reset

Product Specifications (Cooling Only)

Item \ Model Name / Unit			LS-B0760CM	LS-B0960CD LS-B0960CM	LS-B0962CD LS-B0962CM	LS-C1120CM	LS-C1260CD LS-C1260CM	LS-C1420CM LS-C1420CN
Cooling Capacity		BTU/h(kcal/h)	7,300(1,840)	8,700(2,190)	8,700(2,190)	11,000(2,770)	12,000(3,020)	14,000(3,528)
Moisture Removal		ℓ /h	1.0	1.2	1.2	1.2	1.7	1.7
Power Source		Ø, V, Hz	1Ø, 220-240V, 50Hz			1Ø, 220V~,60Hz	1Ø, 220-240V,50Hz	1Ø, 220V~,60Hz
Air Circulation	Indoor	m^3/min	4.85	5.3	5.3	8.5	10.2	9.5
	Outdoor		25	25	25	25	25	25
Noise Level	Indoor	dB(A)	36±3	39±3	38±3	39±3	41±3	41±3
	Outdoor		47±3	49±3	49±3	49±3	50±3	50±3
Input		W	755	920	920	1,050	1,140	1,270
Runnig Current		A	3.2	4.0	4.0	4.9	5.0	5.9
E.E.R.		BTU/h-W	9.7	9.5	9.5	10.5	10.5	11
Motor Output	Indoor	W	7	10	10	10	15	15
	Outdoor		25	25	25	25	25	25
Dimensions (W x H x D)	Indoor	mm	810 x 220.5 x 152			900 x 290 x 183		
	Outdoor		660 x 540 x 260			801 x 555 x 262		
Net. Weight	Indoor	kg	6.5	6.5	6.5	10	10	10
	Outdoor		27	27	27	33	33	35
Refrigerant(R-22)		g	540	670	690	1,080	840	980
Airflow Direction Control (Up & Down)			O	O	O	O	O	O
Remocon type			L.C.D Wireless					
Service valve	Liquid		1/4"(6.35)		1/4"(6.35)			
	Gas		3 /8"(9.52)		3/8"(9.52)	1/2"(12.7)		
Sleeping Operation			O	O	O	O	O	O
Drain Hose			O		O	O	O	O
Connecting Cable			1.0mm^2					
Power Cord			1.0mm^2					

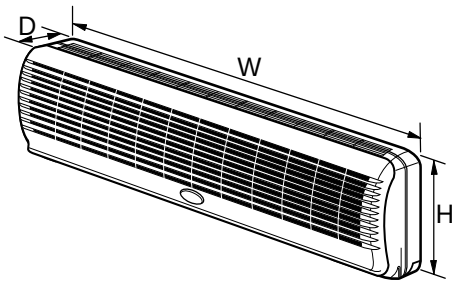
Product Specifications (Cooling & Heating)

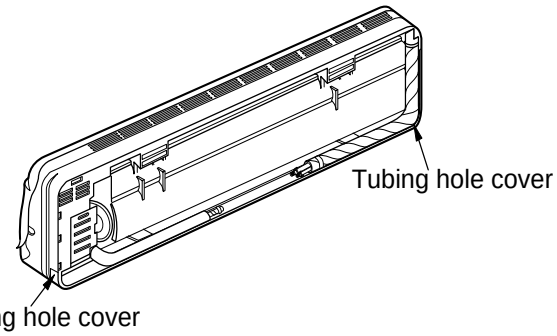
Item \ Model Name / Unit			LS-B0760HM		LS-B0960HD LS-B0960HM	LS-B0962HD LS-B0962HM	LS-C1260HD LS-C1260HM
Cooling Capacity		BTU/h(kcal/h)	7,000(1,764)		8,500(2,142)	8,500(2,142)	12,000(3,020)
Heating Capacity			7,500(1,890)		9,500(2,394)	9,500(2,394)	12,500(3,150)
Moisture Removal		ℓ /h	1.0		1.2	1.2	1.7
Power Source		Ø, V, Hz	1Ø, 220-240V, 50Hz				
Air Circulation		m^3/min	Indoor	4.85	5.3	5.6	10.2
			Outdoor	25	25	25	25
Noise Level		dB(A)	Indoor	36±3	39±3	40±1	41±3
			Outdoor	47±3	49±3	50±1	51±3
Input	Cooling	W	760		940	895	1,250
	Heating		780		1,030	950	1,100
Runnig Current	Cooling	A	3.2		4.1	3.8	5.5
	Heating		3.3		4.4	4.1	4.8
E.E.R.	Cooling	BTU/h·W	9.2		9.0	9.5	9.6
C.O.P	Heating	W/W	2.82		2.7	2.76	3.3
Motor Output		W	Indoor	7	10	10	15
			Outdoor	25	25	25	25
Dimensions (W x H x D)		mm	Indoor	810 x 220.5 x 152			900 x 290 x 183
			Outdoor	660 x 540 x 260			810 x 555 x 262
Net. weight		kg	Indoor	6.5	6.5	6.5	10
			Outdoor	30	30	30	35
Refrigerant(R-22)		g	590		690	720	810
Airflow Direction Control (Up & Down)			O		O	O	O
Remocon Type			L.C.D Wireless				
Service Valve			Liquid	1/4"(6.35)			
			Gas	3/8"(9.52)			1/2"(12.7)
Sleeping Operation			O		O	O	O
Drain Hose			O		O	O	O
Connecting Cable			1.0mm^2				
Power Cord			1.0mm^2				

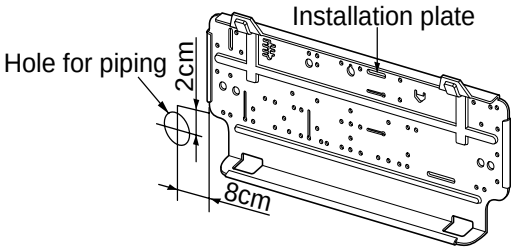
Dimensions

(1) Indoor Unit

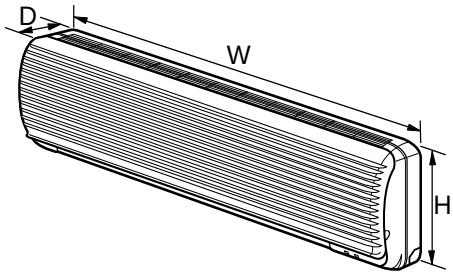
(7K, 9K)

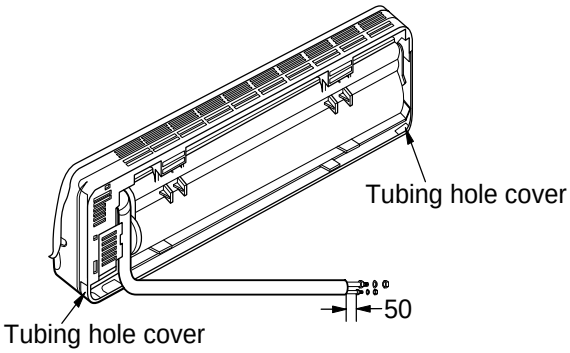


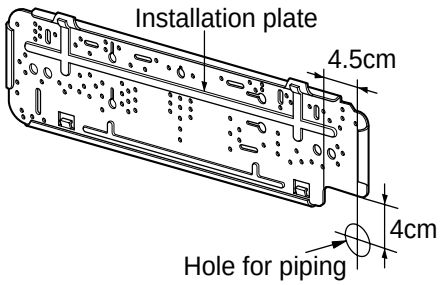




(11K, 12K, 14K)

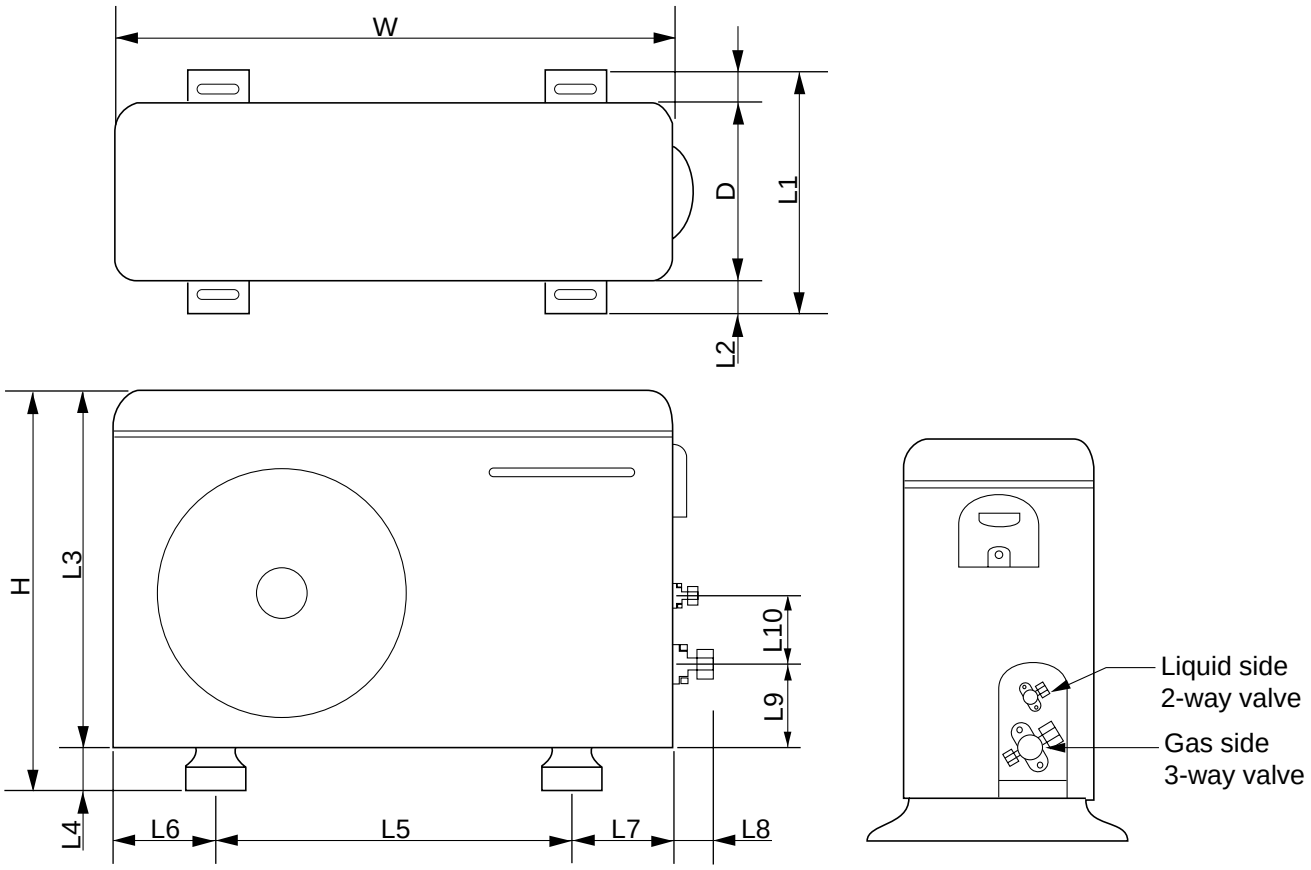






DIM	MODEL	7K, 9K BTU Series	11K, 12K, 14K BTU Series
W	mm	810	900
H	mm	220.5	290
D	mm	152	183

(2) Oudoor Unit (7K, 9K, 11K, 12K, 14K)

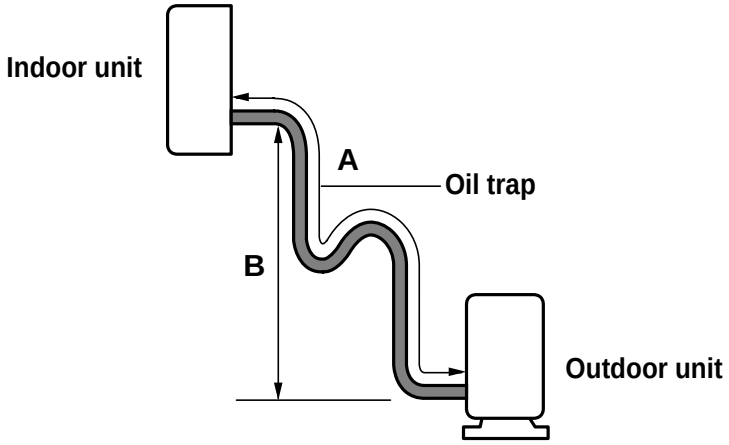


DIM \ MODEL		7K, 9K, 11K BTU Series	12K, 14K BTU Series
W	mm	660	801
H	mm	540	555
D	mm	260	262
L1	mm	297	339
L2	mm	18.5	37
L3	mm	523	543.6
L4	mm	17	11.4
L5	mm	447	591
L6	mm	76.5	105
L7	mm	76.5	105
L8	mm	66	72.5
L9	mm	82	86.4
L10	mm	77	77

Maximum Length of Pipe and Freon Extra Charge

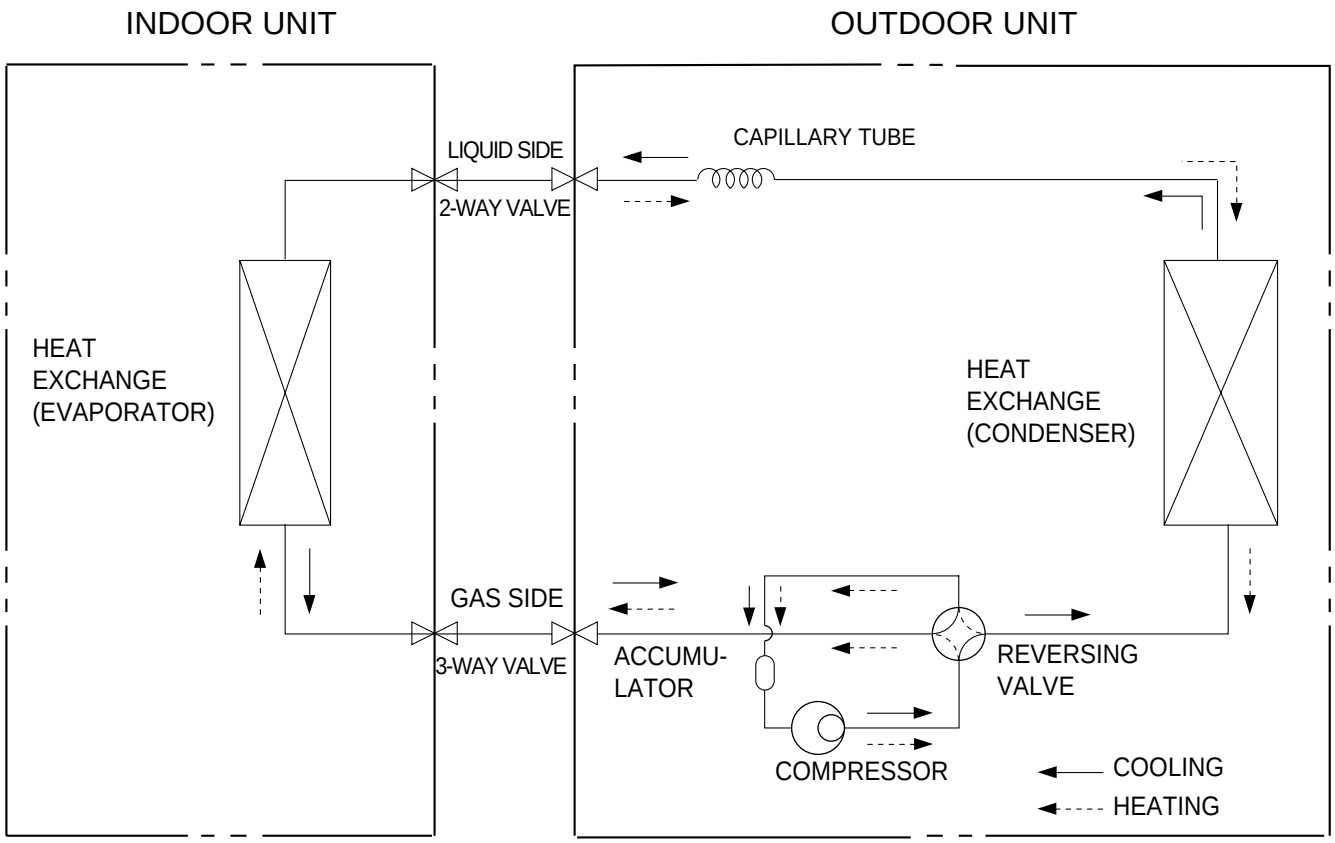
Charge amount per 1m

Capacity (Btu/h)	STANDARD LENGTH(m)	MAXIMUM LENGTH		Charge amount (g) per 1m
		A	B	
~7000	4	7	15	20
~9000	4	7	15	20
~12000	4	7	15	20
~18000	5	15	30(25)	40
~24000	5	15	25	40



* A, B mean indoor unit higher located than outdoor unit
* Capicity is based on standard length and maximum allowance length is the basis of reliability.
* Oil trap should be installed per 10 meters.
* Numerical value in "( )" is for Rotary Comp. model.

Refrigeration Cycle Diagram

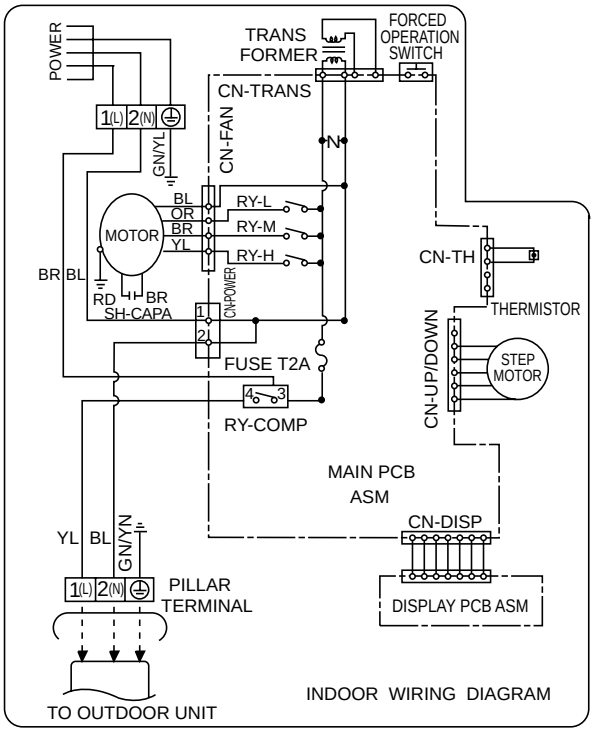


Wiring Diagram

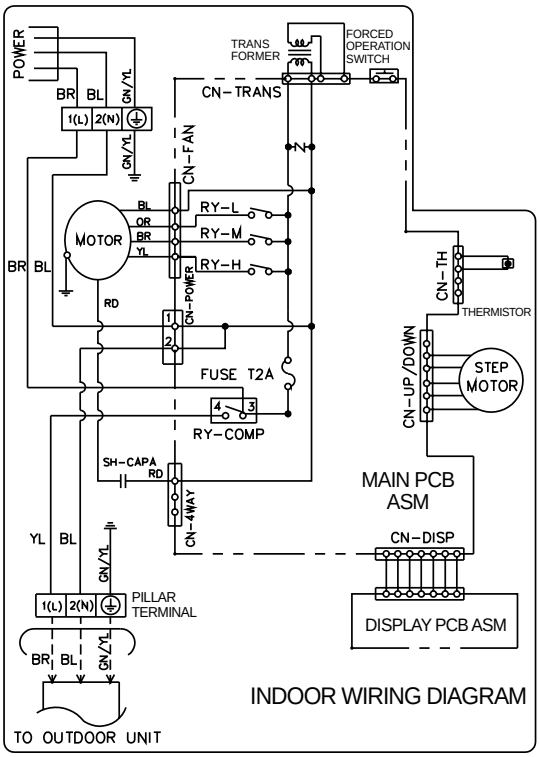
(1) 7K, 9K, 11K, 12K, 14K BTU Cooling Only

1. Indoor Unit

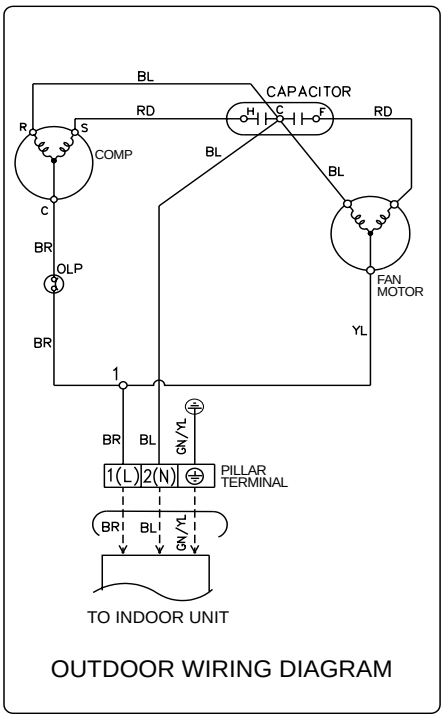
(11K, 14K)



(7K, 9K, 12K)

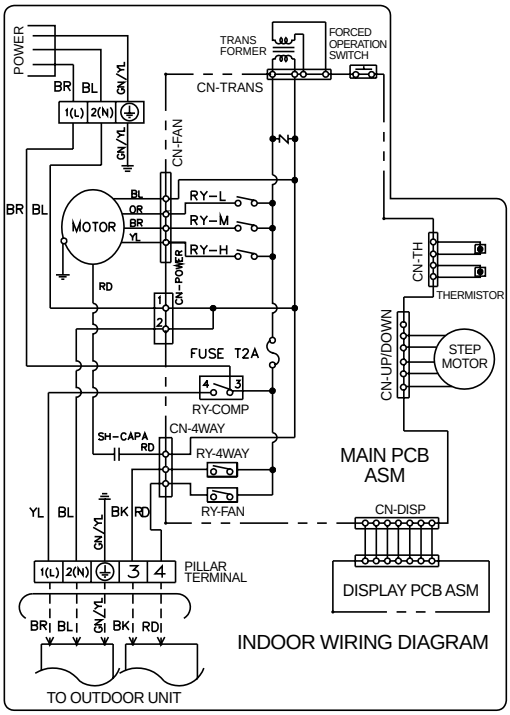


2. Outdoor Unit

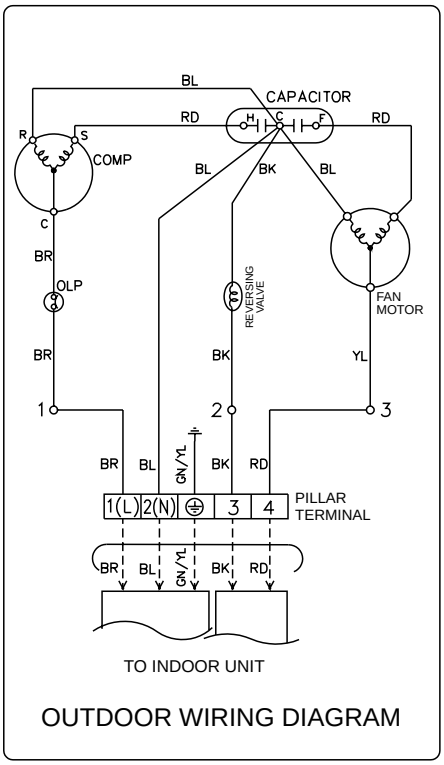


(2) 7K, 9K, 12K BTU Cooling & Heating

1. Indoor Unit



2. Outdoor Unit



Operation Details

(1) The function of main control

1. Time Delay Safety Control

- 3min··· The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle. (Protection of compressor)
- 2sec··· The indoor fan is ceased for 2sec. to prevent relay noise. (Protection of fan relay and micro chip)
- 30sec··· The 4-way valve is ceased for 30sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode.

2. Airflow Direction Control

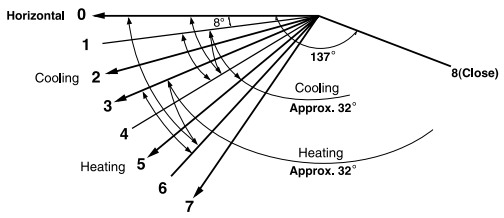
- This function is to swing the louver up and down automatically and to set it at the desired position.
- The procedure is as the following.

1st ;Press the ON/OFF Button to operate the product.

2nd ;Press the Airflow Direction Control Button to swing the louver up and down automatically.

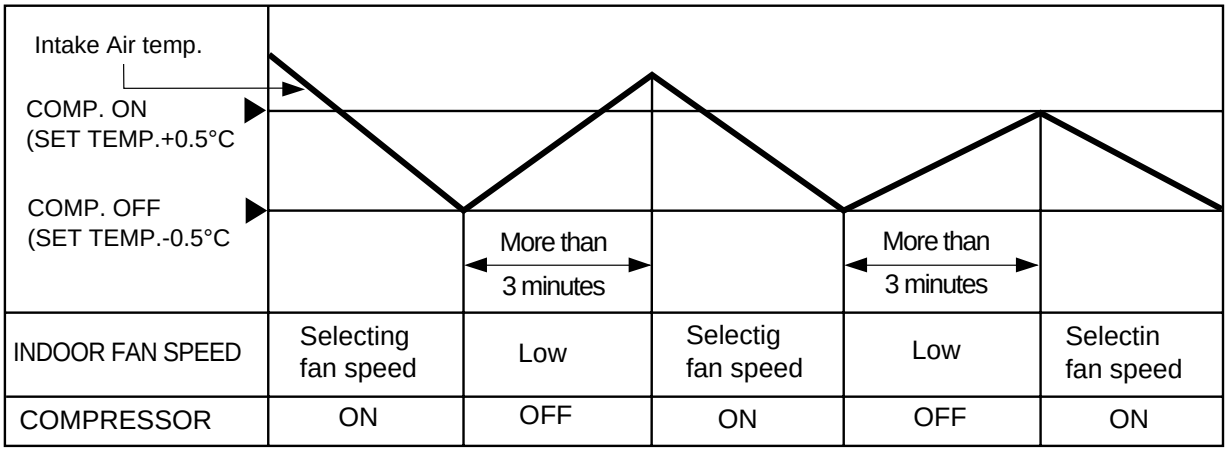
3rd ;Repress the Airflow Direction Control Button to set the louver as the desired position.

Operating Mode		Louver Position
Cooling	Start	2
	Auto. Swing	1 4
Heating	Start	5
	Auto. Swing	3 6



3. Cooling Mode Operation

- When selecting the Cooling (❄) Mode Operation, the unit will operate according to the setting by the remote controller and the operation diagram is as following.

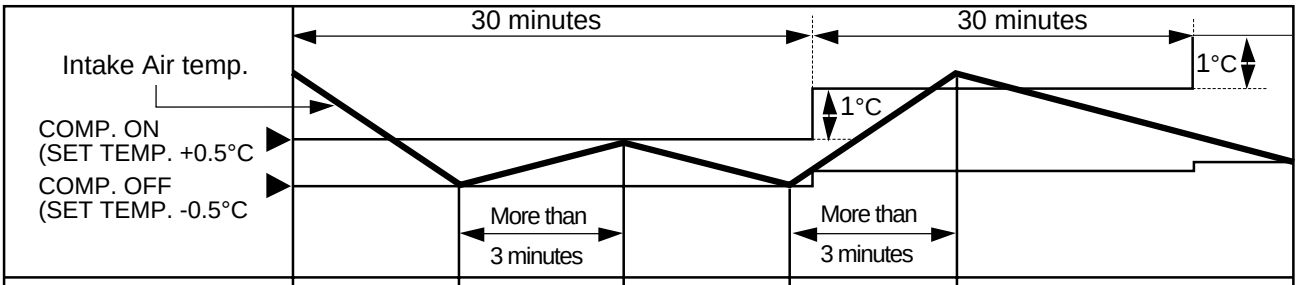


4. Cooling or Heating Mode with Sleep Mode Auto Operation

- When selecting the Cooling(❄) or the Heating(☼) combined with the Sleep Mode Auto Operation(☆), the operation diagram is as following.

• Cooling Mode with the Sleep Mode

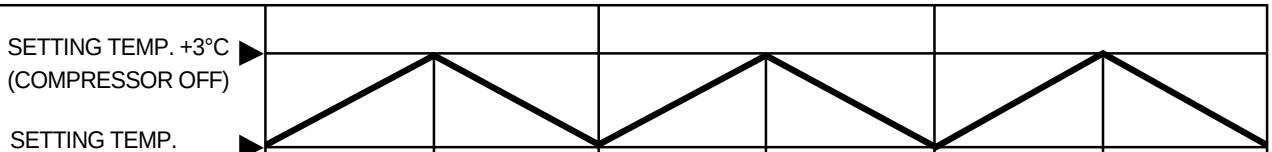
- The setting temperature will be raised by 1°C 30minutes later and by 2°C 1 hour later.
- The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



INDOOR FAN SPEED	Low	Low	Low	Low	Low
COMPRESSOR	ON	OFF	ON	OFF	ON

• Heating Mode with the Sleep Mode.

- The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



INDOOR FAN SPEED	Med.	Low or OFF	Med.	Low or OFF	Med.	Low or OFF
COMPRESSOR	ON	OFF	ON	OFF	ON	OFF

5. Auto Operation

• The operation procedure is as following.

Press Start/Stop Button

↓

Select Auto Operation Mode

↓

Check the Room temperature

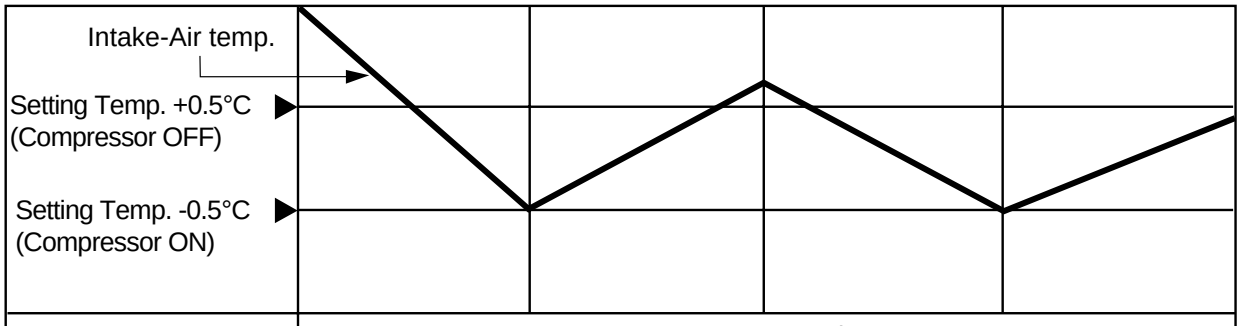
↓

Operation mode, Indoor fan speed, Setting temperature — are automatically decided by Fuzzy rule.			
Intake-air temperature	below 21°C	Over 21°C ~ below 24°C	Over 24°C
Operation Mode	Heating	Soft Dry	Cooling

※ If initial mode is decided, that mode is continued despite of the room temperature changing.

• **Auto Operation for Cooling**

Operation Condition	Intake-air Temperature	Setting Temperature	Fan Speed	Air DirectionControl
When Auto Operation initial start	Over 26°C	25°C	Controlled by Fuzzy logic	1/f rhythm
	Over 24°C~below 26°C	Intake air -1°C		
	Over 22°C~below 24°C	Intake air -0.5°C		
	Over 20°C~below 22°C	Intake air temperature		
	below 20°C	20°C		
When Switch to Auto Operation	Over 20°C~below 30°C	Fuzzy control		
	below 20°C	20°C		
	over 30°C	30°C		



INDOOR FAN SPEED	Fuzzy Speed			
COMPRESSOR	ON	OFF	ON	OFF

■ **Auto Operation for Soft Dry**

The Setting temperature will be same that of the current intake-air temperature.
- Compressor ON temperature; Setting temperature +1°C
- Compressor OFF temperature; Setting temperature -0.5°C

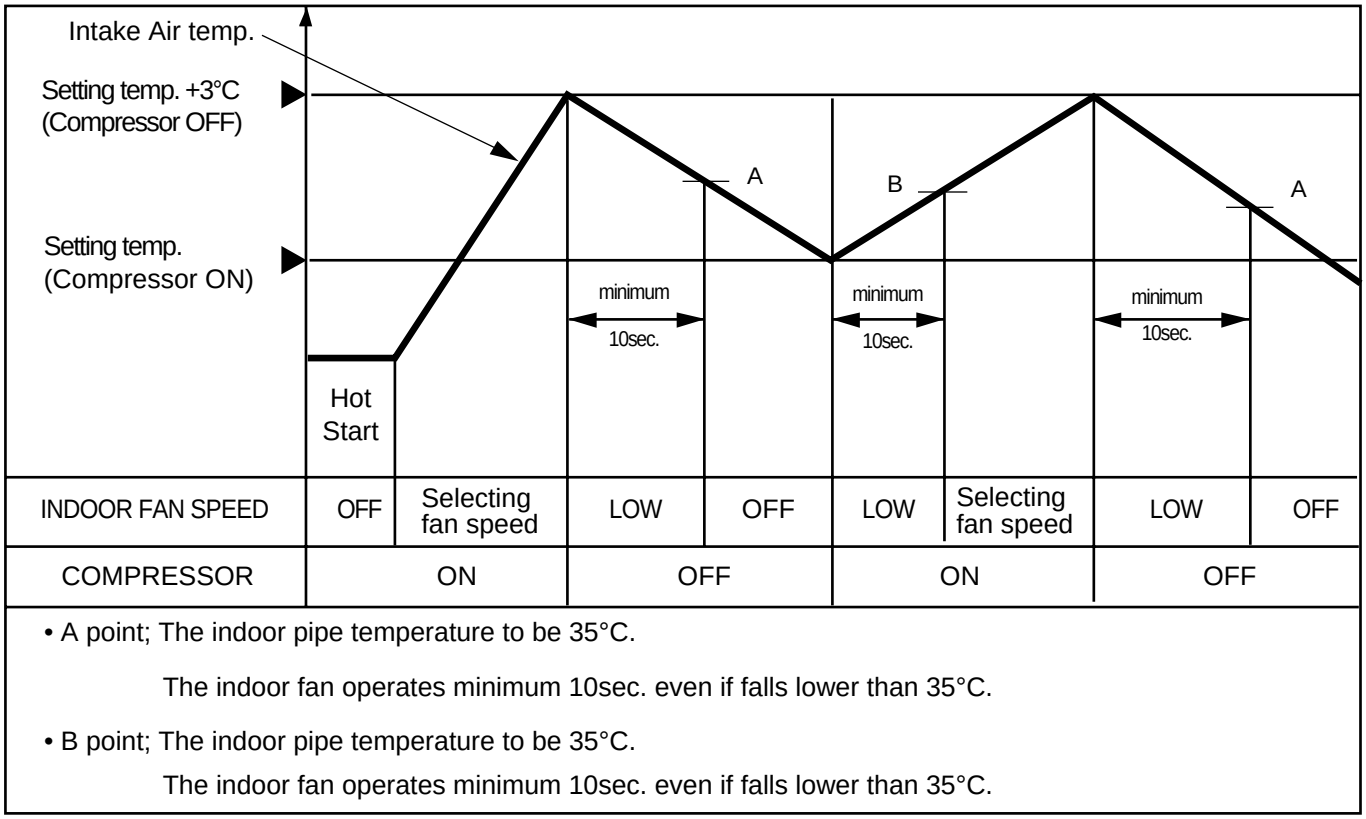
■ **Auto Operation for Heating**

Intake Air temp.	below 20°C	Over 20°C~below 21°C
Setting temp.	20°C	Intake air temperature +0.5°C

6.Heating Mode Operation

The unit will operate according to the setting by the remote controller and the operation diagram is shown as following.

For 9K, 12K Models



• A point; The indoor pipe temperature to be 35°C.

The indoor fan operates minimum 10sec. even if falls lower than 35°C.

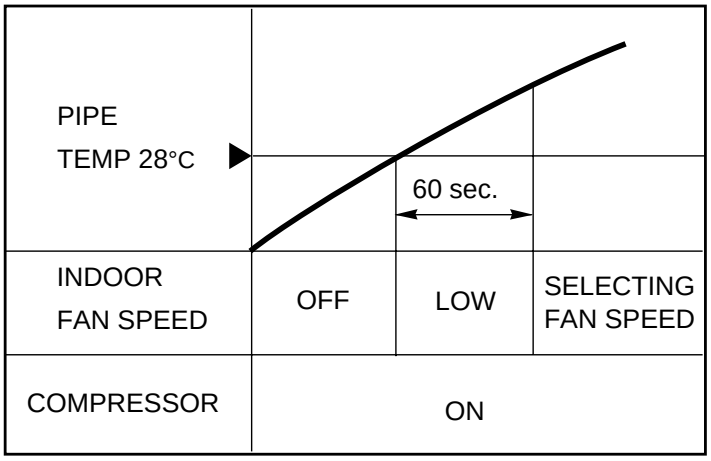
• B point; The indoor pipe temperature to be 35°C.

The indoor fan operates minimum 10sec. even if falls lower than 35°C.

7. Hot-Start Control

• The indoor fan stops until the evaporator piping temperature will be reached at 28°C. (BY TEMPERATURE)

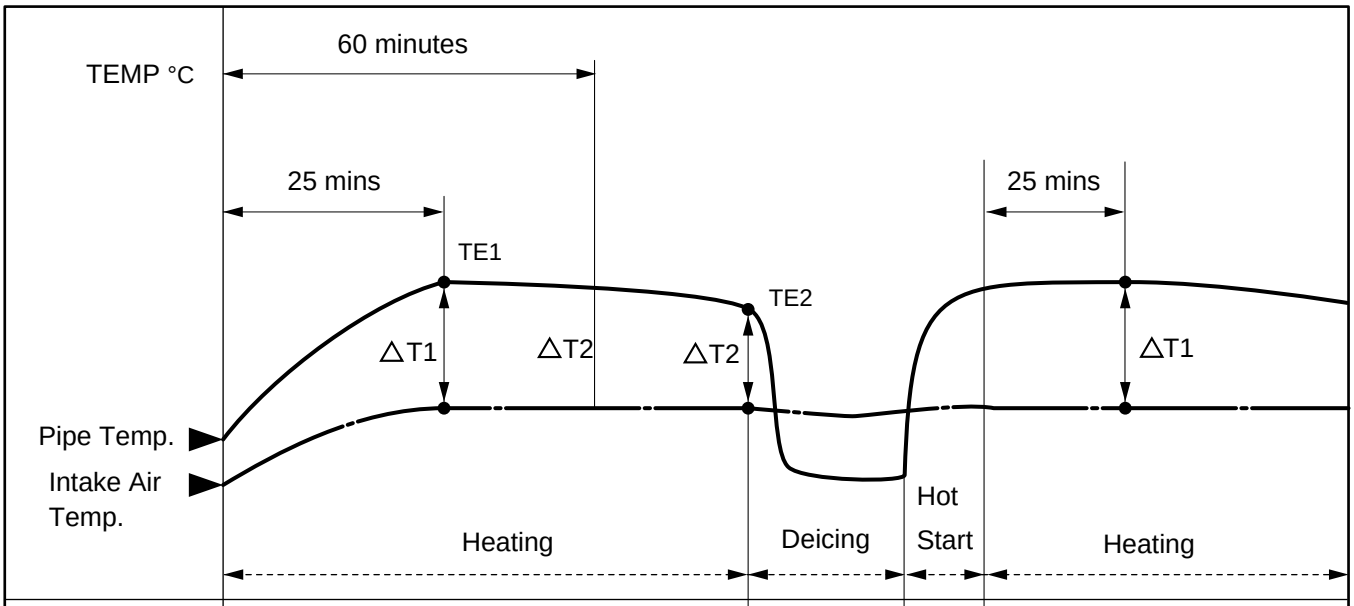
• The operation diagram is as following.



HOT-START BY TEMPERATURE

8. Deice Control

- Deicing operation is controlled by timer and sensing the indoor pipe temperature.
- Deicing operation checks the indoor pipe temperature and Intake-air temperature at 25 minutes and 60 minutes on starting of heating operation, and discriminates by temperature difference.
- When the heating operation passed 25 minutes, the temperature (△T1=TE1–TR1) is checked and memorized with checking the indoor pipe temperture (TE1) and the indoor Intake-air temperature (TR1).
- When the heating operation passed 60 minutes, deicing operation checks the indoor pipe temperature (TE2) and the indoor Intake-air temperature (TR2), and checks indoor pipe temperature(TE2), the temperature difference (△T2=TE2–TR2) and the temperature difference △Td(=△T1–△T2) of △T1, △T2.
  If temperature of indoor pipe is below 32°C Deicing function operates at the priority I condition.
  If temperature of indoor pipe is over 32°C Deicing function operates at the priority II condition.
  If the temperature difference (△Td) become more than the option temperature, deicing operation starts.
- At that time, deicing operation time is decided.
- The deicing operation time starts after deicing operation started.
- If deicing operation start, above heating operation time is reset, so if deicing operation is finished, the heating operation time is recounted.
- The deicinig time and the operation diagram are as following.



COMPRESSOR	ON	ON	ON	ON
4-WAY VALVE	ON(Heating Operation)	OFF	ON	ON
OUTDOOR FAN	ON	OFF	ON	ON
INDOOR FAN	ON	OFF		ON
DEICE LED	OFF	ON		OFF

(DEICING DIAGRAM)

① **Priority I**

TE2	below 30°C	30~31°C	31~32°C	Over 32°C
Deicing Time	12mins	11mins	10mins	Heating Operation

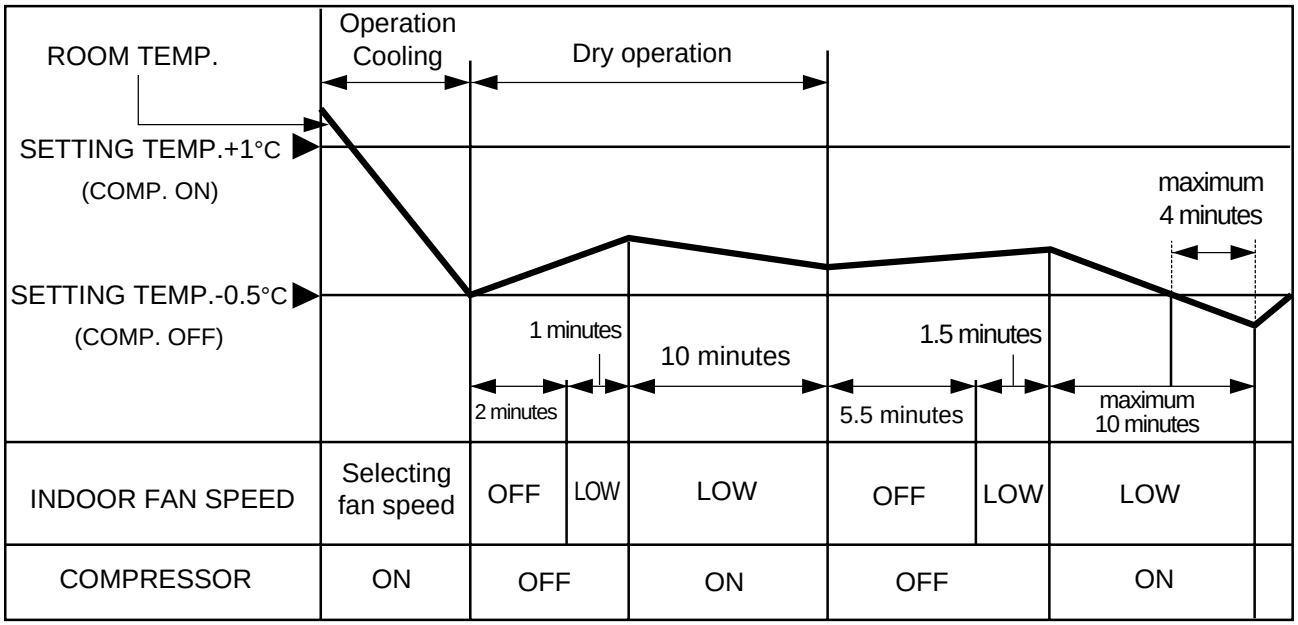
② **Priority II**

◓T1-◓T2 =◓Td	Over 3.5°C	3.0 3.5°C	2.5 3.0°C	2.0 2.5°C	below 2.0°C
Deicing Time	12mins	11mins	10mins	9mins	Heating Operation

9. Soft Dry Operation.

- During Soft Dry Operation, the compressor ON temperature is the setting temperature plus 1°C, the compressor OFF temperature is the setting temperature minus 0.5°C.
- When the room temperature rises over the compressor ON temperature, the operation mode is switched to the cooling mode.
- When the room temperature falls between the compressor ON temperature and OFF temperature, the operation mode is switched to the Soft Dry Operation.

  In this temperature range, 10min. Dry operation, 5.5min operation OFF, 1.5min. only fan operation repeat. During 10min Dry operation, even if the room temperature falls below compressor OFF temperature, 10min(MAX) Compressor ON from starting of Dry operation which includes 4 min. Compressor ON operation below the compressor OFF temperature.
- In micom dehumidify mode, control of fan speed is as following.



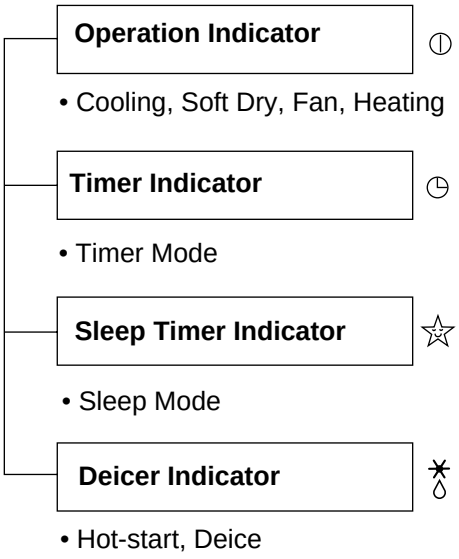
10. Forced operation

- If you lose wireless remote controller, you can operate the unit with forced operation switch.
- The standard conditions are as following.

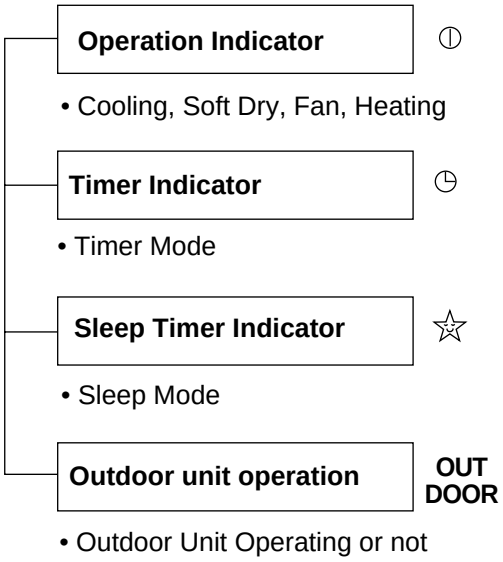
	Cooling Model	Heat pump Model		
		Room Temp ≥ 24°C	21°C ≤Room Temp < 24°C	Room Temp < 21°C
Operation Mode	Cooling	Cooling	Soft Dry	Heating
Indoor Fan Speed	High	High	Low	High
Setting Temp.	22°C	22°C	Room Temp.	24°C

Display Function

1. Heating Model



2.Cooling Model



Self-diagnosis Function

1. Protection of the eveporator pipe from frosting

If the temperature of the indoor pipe is below 0°C after 7 mins from starting the compressor, the compressor and the outdoor fan is stopped, and then after 3 mins delay of the compressor and the temperature of the indoor pipe is over 7°C, the compressor and the outdoor fan is reoperated.

2. Thermistor Cut Off of Short

Cut Off/Short : Blinks on and off the operation mode LED. (0.5 sec ON/3 sec OFF)

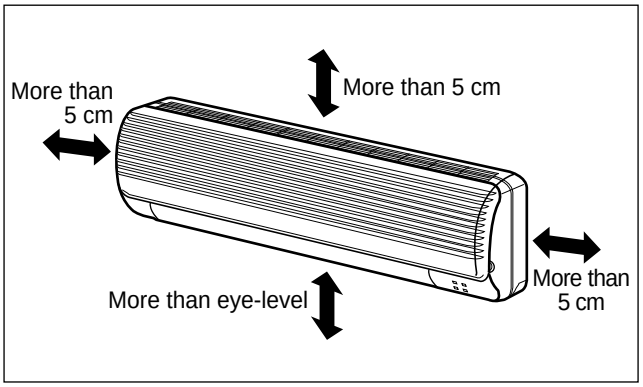
Installation

1. Installation of Indoor, Outdoor unit

1) Selection of the best location

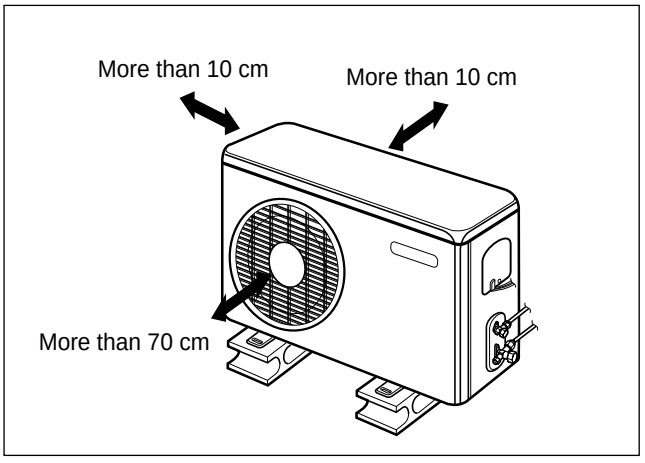
1. Indoor unit.

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.



2. Outdoor unit.

- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat radiation from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.

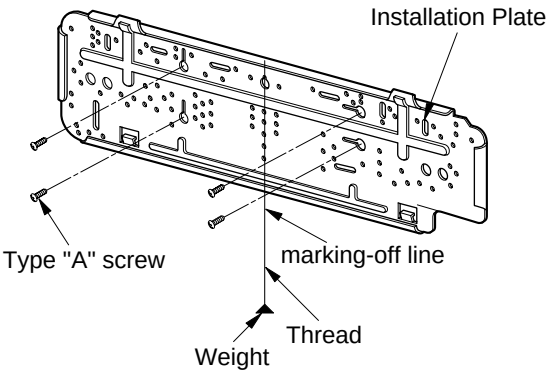


2) Indoor Unit Installation

The mounting wall should be strong and solid enough to prevent it from the vibration.

1. Mount the installation plate on the wall with four Type "A" screws.

• Always mount the Installation plate horizontally by aligning the marking-off line with using the thread and a level.

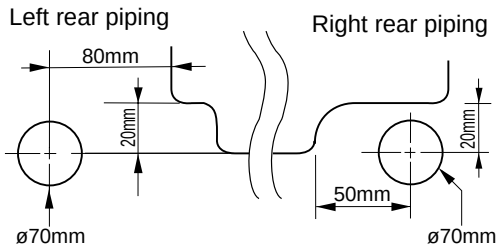


2. Drill the piping hole with 70mm dia. holecore drill.

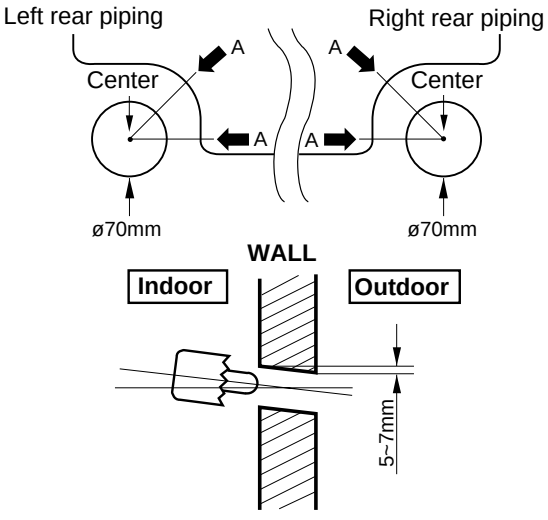
• Drill the piping hole at either the right or the left and the hole should be slightly slant to the outdoor side.

The lower left and right side of Installation Plate

<7K, 9K BTU>



<11K, 12K, 14K BTU>

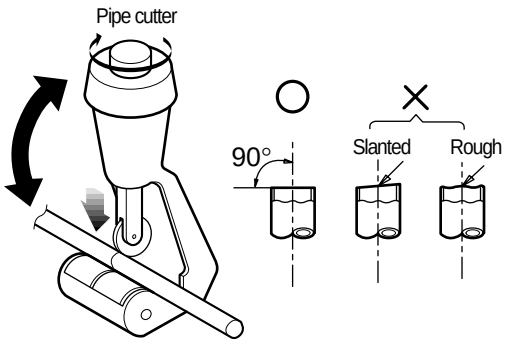


2. Piping and Drainage of Indoor Unit

1) Preparation of pipings

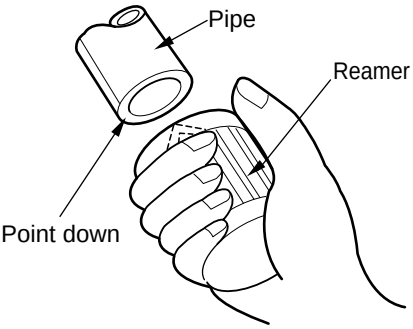
1. Cut the pipes and the cable.

- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5m longer than the length of the pipe.



2. Remove burrs.

- Remove burrs from cut edges of pipes.
- Turn the pipe end toward down to avoid the metal powder entering the pipe.

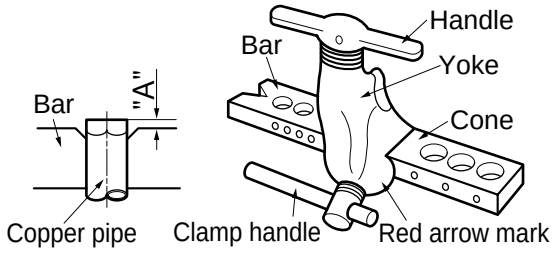


Caution:
If burrs are not removed, they may cause a gas leakage.

3. Flaring the pipes.

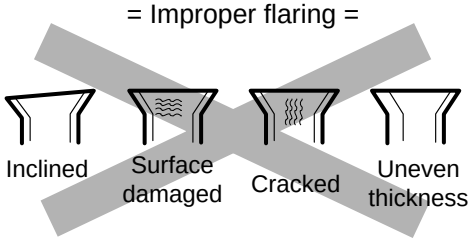
- Insert the flare nuts, mounted on the connection ports of both indoor and outdoor unit, onto the copper pipes. Some refrigerant gas may leak, when the flare nuts are removed from the indoor unit, as some gas is charged to prevent the inside of the pipe from rusting.
- Fit the copper pipe end into the Bar of flare tool about 0.5~1.0mm higher. (See illustration)
- Flare the pipe ends.

"A"; ø12.7mm (1/2") → 0.7 mm
ø9.52mm (3/8") → 0.7 mm
ø6.35mm (1/4") → 1.0mm



4. Tape the flaring portion to protect it from the dust or damages.

= Improper flaring =

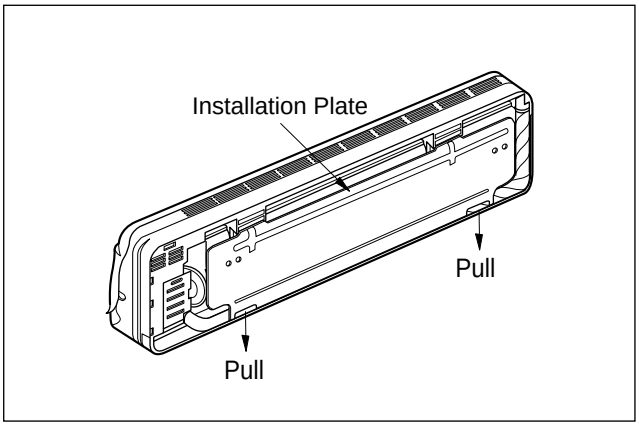


When properly flared, the internal surface flare will evenly shine and be of even thickness.
Since the flare part comes into contact with the connectors, carefully check the flare finish.

2) Connection of Pipings (7K,9K BTU)

1. Remove the installation plate.

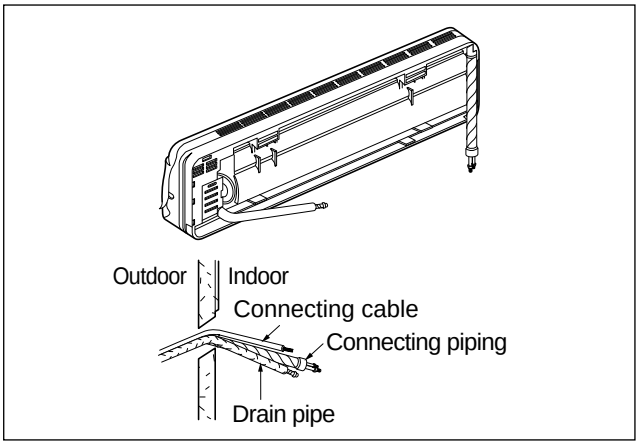
- Pull the two '◓'marked portion of bottom of the chassis and pull the installation plate out of chassis.



2. Route the drain hose and the indoor tubing.

For right rear piping

3. Insert the pipings, the connecting cables and the drain pipe throught the piping hole on the wall.



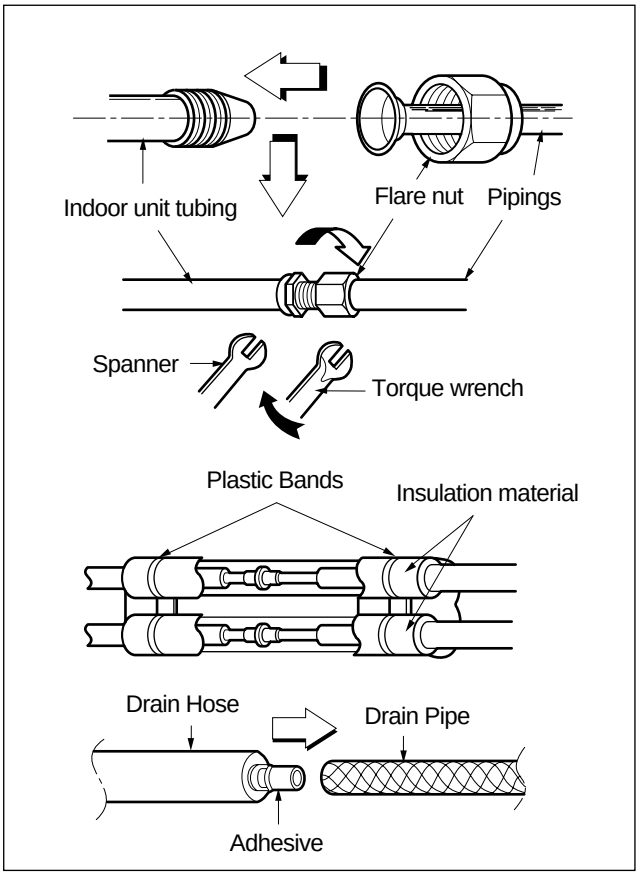
4. Connect the pipings and the indoor tubing, and drain hose and drain pipe.

- Do not connect the cable to the indoor unit.

Pipe Size	Torque
Liquid Side (1/4")	1.8kg.m
Gas Side (3/8")	4.2kg.m

- Wrap the insulation material around the connecting portion.

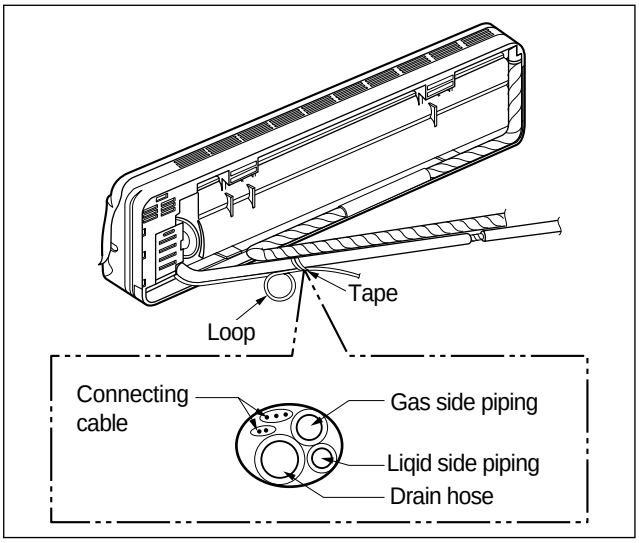
- Glue up the connection portion of drain hose and drain pipe.



5. Bend the tubing as shown in the figure and bind the pipings, the connecting cables and the drain hose altogether.

• Make a small loop for easy connection later.

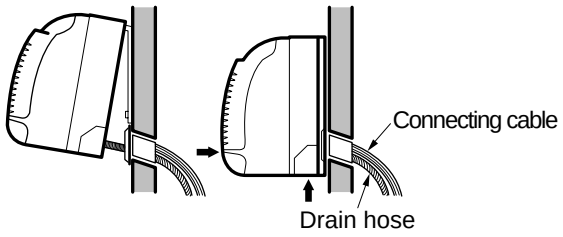
6. Wrap the tubing, the drain hose and the connecting cable.



7. Indoor unit installation

• Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)
Ensure the hooks are properly seated on the installation plate by moving it in left and right.

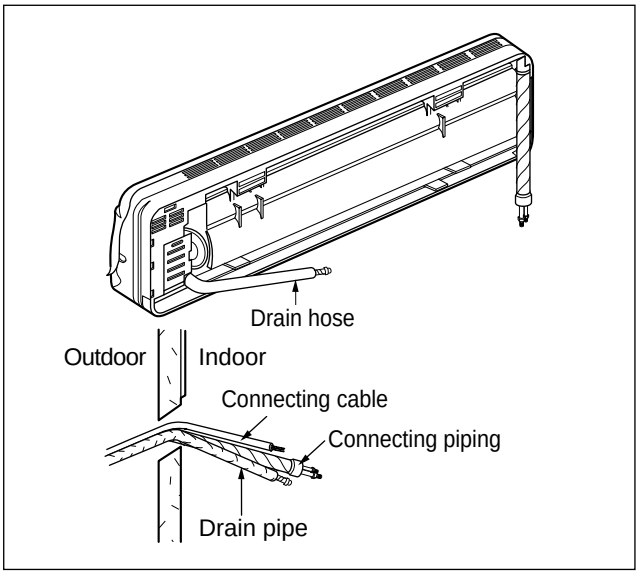
CAUTION: Take care to arrange the pipings, drain hose and cables as the feature 24 page for inserting it into the indoor unit and mount the indoor unit on the installation plate.



Press the lower left and right side of the unit against the Installation Plate until the lower hooks engages with their slots(sound click).

For left rear pipings

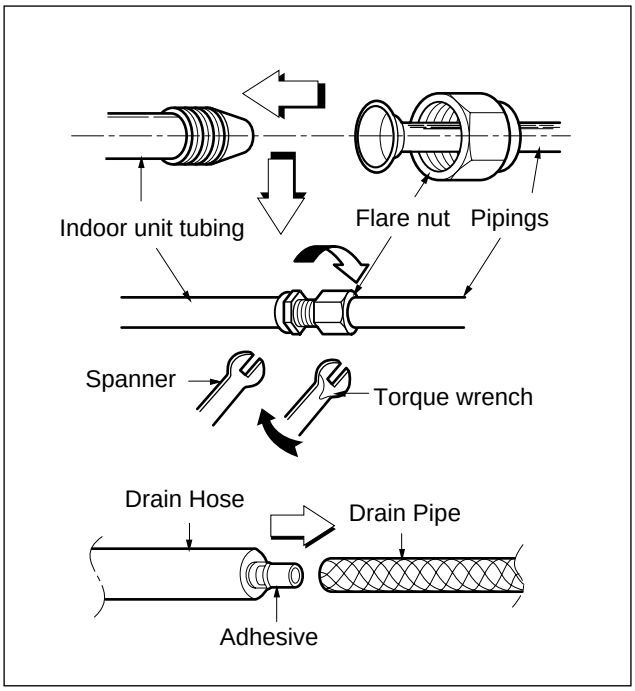
3. Insert the connecting cables, the drain pipe and connecting pipings through the piping hole on the wall.



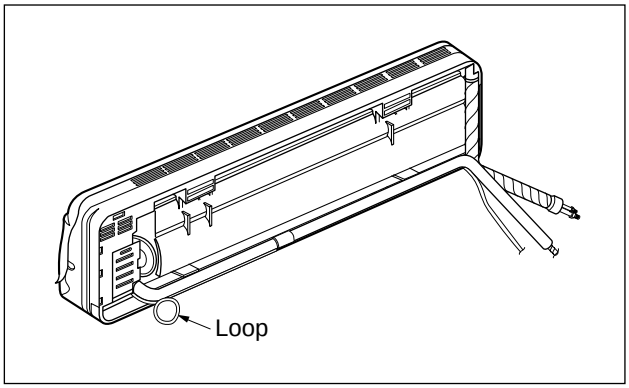
4. Connect connecting pipings and indoor tubing, and the drain hose and the drain pipe and place the drain pipe into the chassis.

- Don't connect the cable to the indoor unit.
- Make a small loop for easy conection later.
- Glue up the connection portion of drain hose and drain pipe.

Pipe Size	Torque
Liquid Side (1/4")	1.8kg.m
Gas Side (3/8")	4.2kg.m

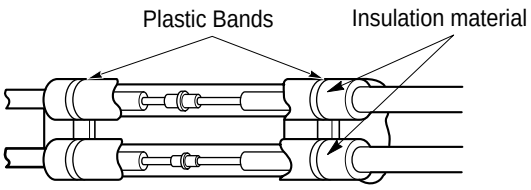


5. Bend the drain hose as shown in the figure and bind the drain hose, the pipings and the connecting cables altogether.



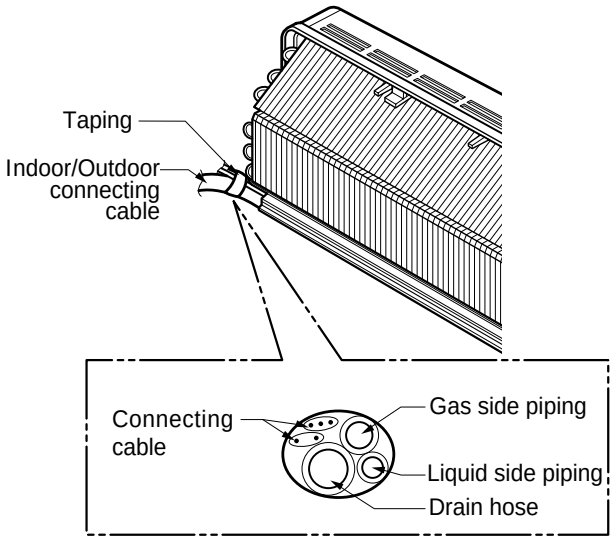
6. Wrap the insulation material around the connecting portion.

CAUTION: Take care to arrange the pipings, drain hose and cables as the feature on page 6 for inserting it into the indoor unit and mount the indoor unit on the installation plate.



Wrap the insulation material around the connecting portion

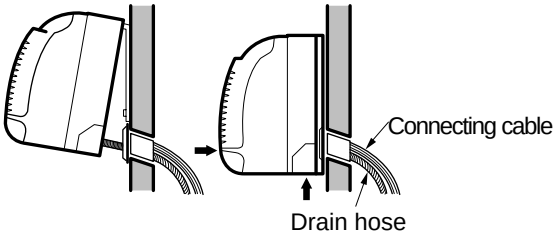
7. Wrap the tubing, the drain hose and the connecting cable with tape.



8. Indoor unit installation.

- Hook the indoor unit onto the upper position of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

  Insure the hooks are properly seated on the installation plate by moving it in left and right.



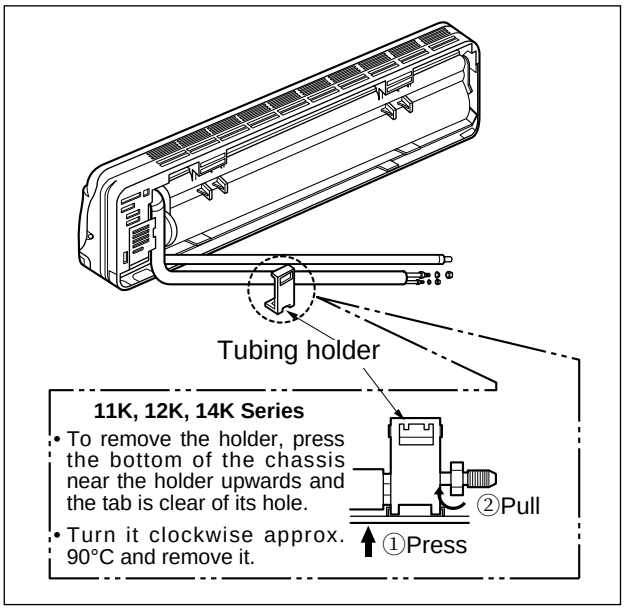
Press the lower left and right side of the unit against the Installation Plate until the hooks engages with their slots(sound click).

3) Connection of Pipings(11K,12K, 14K BTU)

1. Remove the indoor tubing with Drain hose to the hole

• Remove tubing holder and pull the tubing out of the chassis.

2. Refix the tubing holder into original position.



For right rear piping

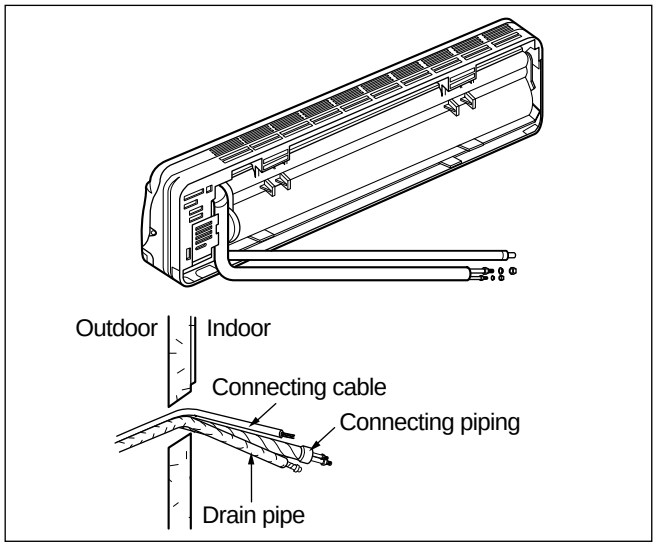
3. Route the tubing and the drain hose straight backwards(see figure).

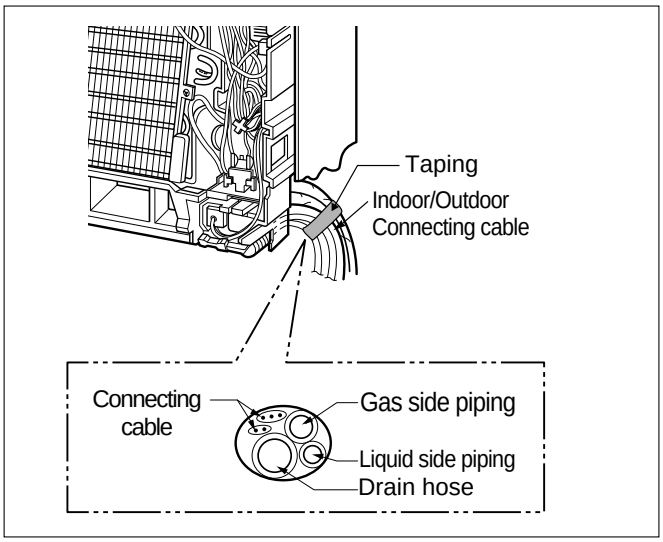
4. Insert the connection cable into the indoor unit through the piping hole.

• Do not connect the cable to the indoor unit.

• Make a small loop with the cable for easy connection later.

5. Tape the tubing, drain hose and the connecting cable.

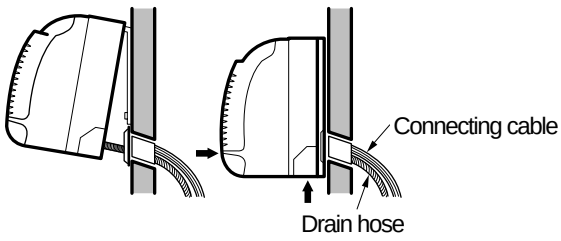




6. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

  Ensure the hooks are properly seated on the installation plate by moving it in left and right.

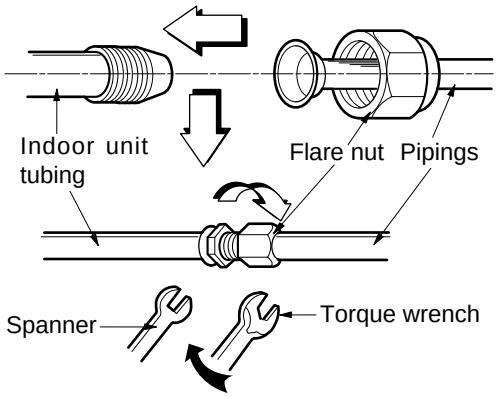


Press the lower left and right side of the unit against the Installation Plate until the hooks engages with their slots (sound click).

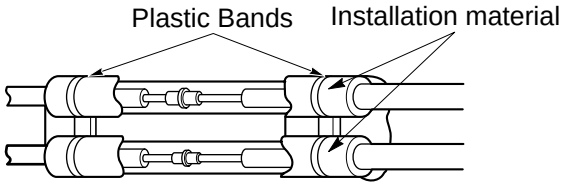
7. Connecting the pipings to the indoor unit.

- Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.
  Wrench tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrows on the wrench.

Pipe Size	Torque
Liquid Side (1/4")	1.8kg.m
Gas Side (3/8")	4.2kg.m
Gas Side (1/2")	5.5kg.m



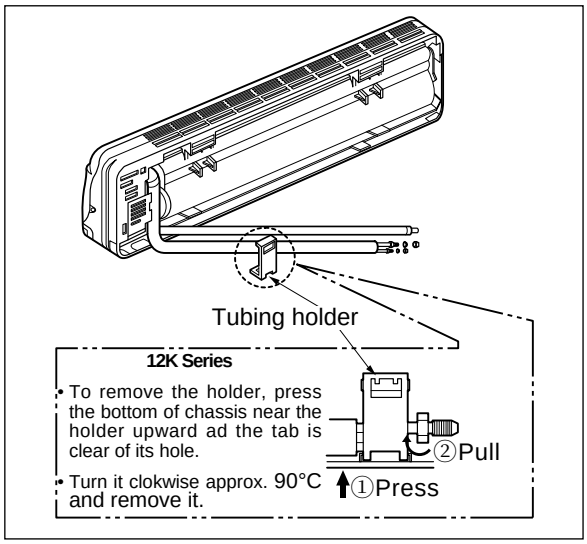
8. Wrap the insulation material around the connecting portion.



Wrap the isulation material around the connecting portion.

For the left pipings

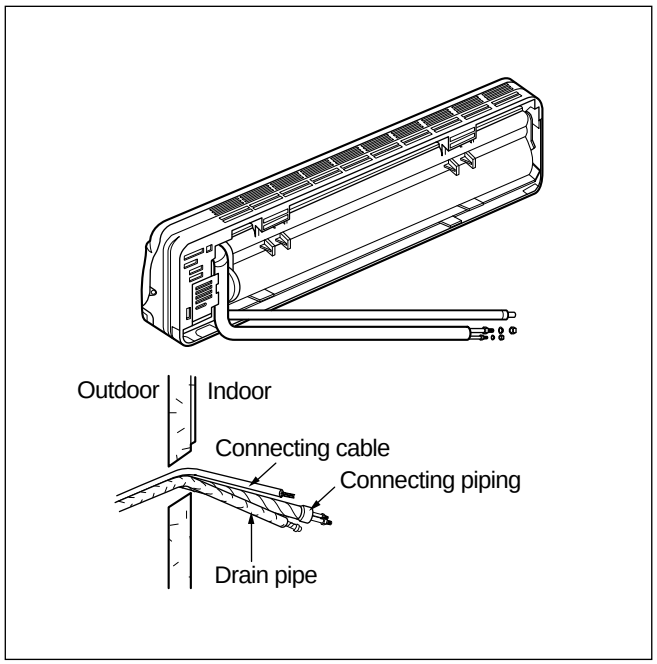
3. Route the indoor tubing with the drain hose to the piping hole as desired position.



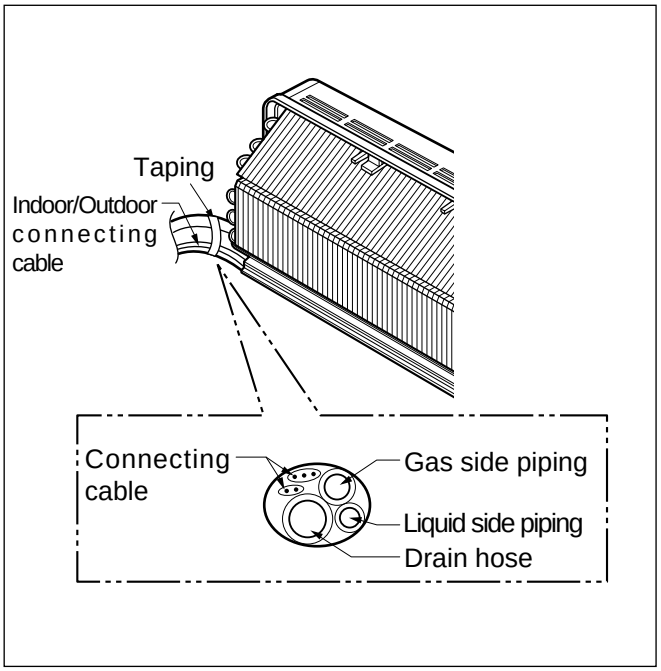
4. Insert the pipings and the connecting cable into the piping hole.

5. Insert the connecting cable into the indoor unit.

- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection later.



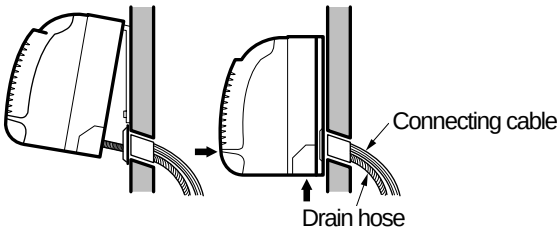
6. Tape the tubing, drain hose and the connecting cable.



7. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indor unit with the upper edge of the installation plate.)

  Ensure the hooks are properly seated on the installation plate by moving it in left and right.



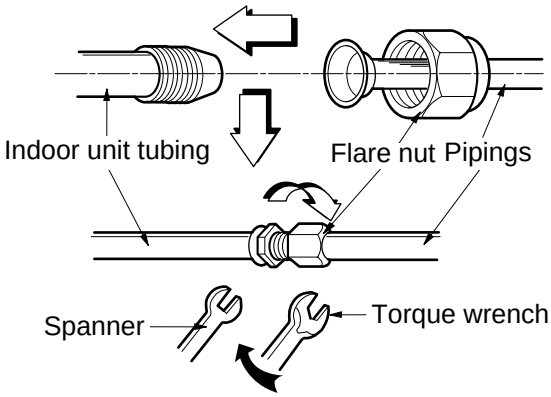
Press the lower left and right side of the unit against the Installation Plate until the hooks engages with their slots (sound click).

8. Connecting the pipings to the indoor unit.

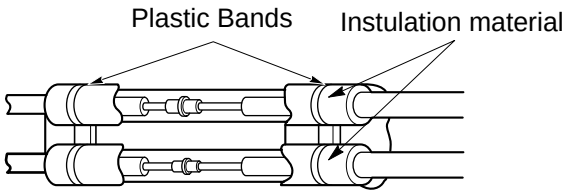
- Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- Finally, tightening the flare nut with torque wrench until the wrench clicks.

  Wrench tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrows on the wrench.

Pipe Size	Torque
Liquid Side (1/4")	1.8kg.m
Gas Side (3/8")	4.2kg.m
Gas Side (1/2")	5.5kg.m

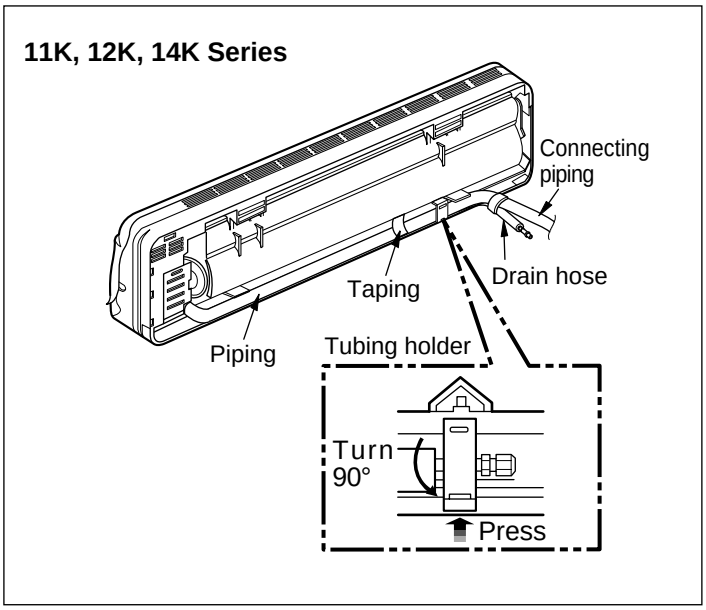


9. Wrap the insulation material around the connecting portion.



Wrap the insulation material around the connecting portion.

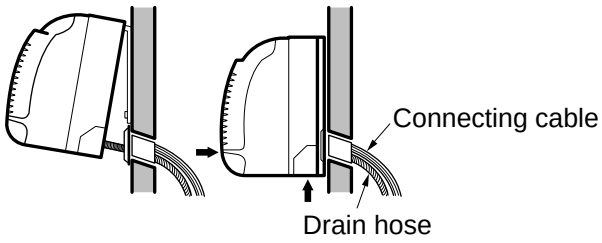
10. Set the pipings and the connecting cable to the back of the chassis with the tubing holder.



11. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

  Ensure the hooks are properly seated on the installation plate by moving it in left and right.



Press the lower left and right side of the unit against the Installation Plate until the hooks engages with their slots(sound click).

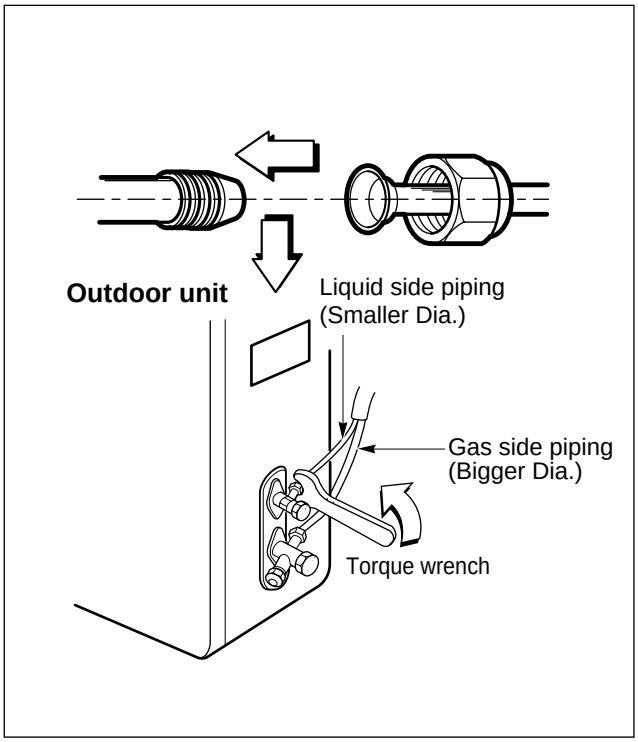
3. Connecting Pipings and the cable to Outdoor unit

1) Connecting the piping to the Outdoor unit

1. Align the center of the pipings and sufficiently tighten the flare nut with fingers.

2. Finally, tighten the flare nut with torque wrench until the wrench clicks.
- When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

Pipe Size	Torque
Liquid Side (1/4")	1.8kg . m
Gas Side (3/8")	4.2kg . m
Gas Side (1/2")	5.5kg . m

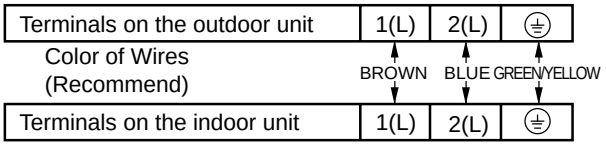


2) Connecting of the cable

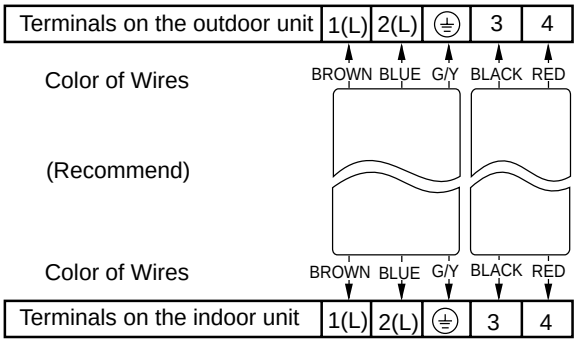
1. Remove the cover control from the unit by loosening the screw.

2. Check the connection of each wiring of the outdoor and the indoor unit having the same number (1(L), 2(L), ⏚, 3, 4,) on pillar terminal label.
Connect the wires to the terminals on the control board individually as the following.

1) Cooling only type



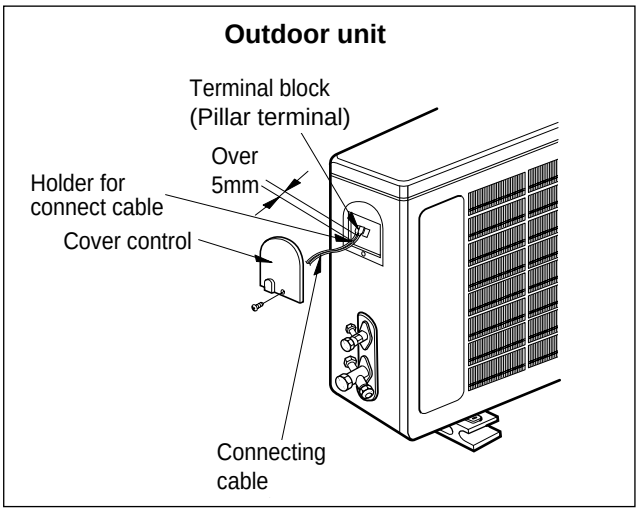
2) Cooling & Heating type



3. Secure the cable onto the control board with the holder (clamper).

4. Refix the cover control to the original position with the screw.

*The connecting cable for installation of indoor and outdoor unit must be approved by TÜV standard or equivalent.

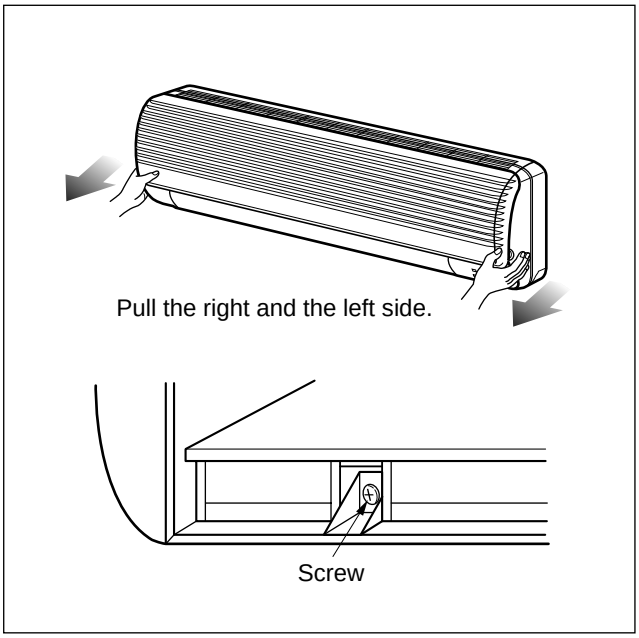


4. Checking the Drainage and Pipe forming

1) Checking the Drainage

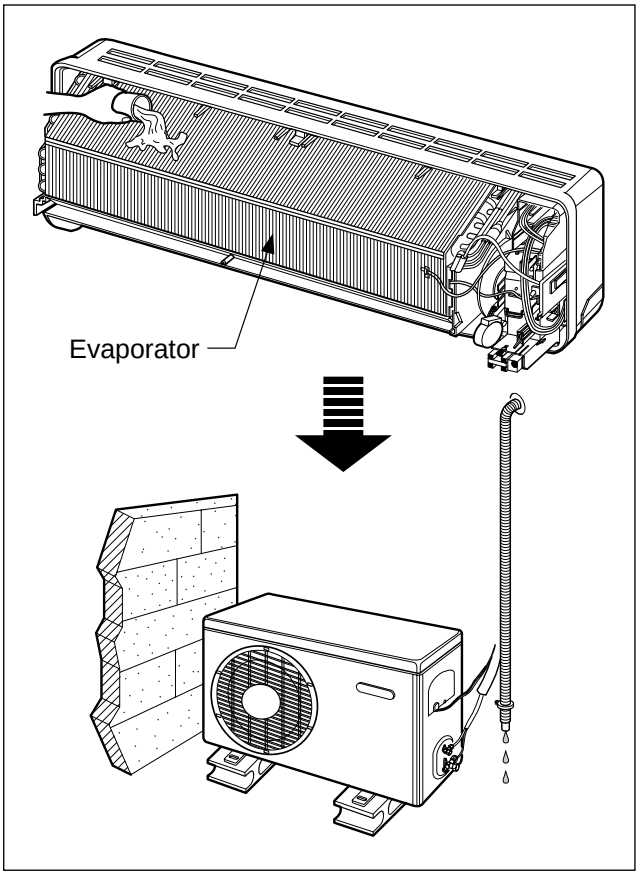
1. Remove the Grille from the cabinet.

- Set the up-and-down air direction louver to open position (horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull lower the left and right side of the grille toward you (slightly tilted) and lift it straight upward.



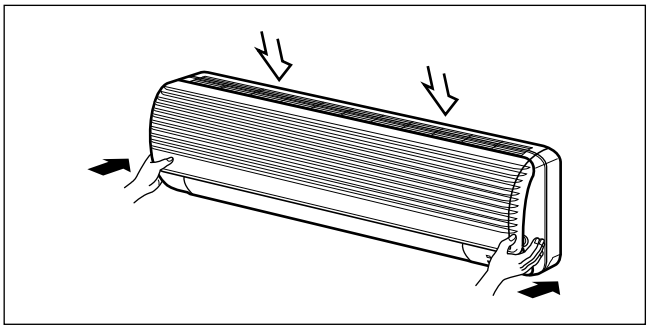
2. Check the drainage.

- Pour a glass of water on the evaporator.
- Ensure if water flows drain hose of indoor unit.



3. Attach the Grille onto the cabinet.

- Grasp lower the left and right side of the Grille and engage two tabs on the top in side edge of the grille with two slots on the cabinet's top front edge.
- Press the grille toward the cabinet until it will be back into place.
- Secure the grille to the cabinet with two screws.



2) Form the pipings

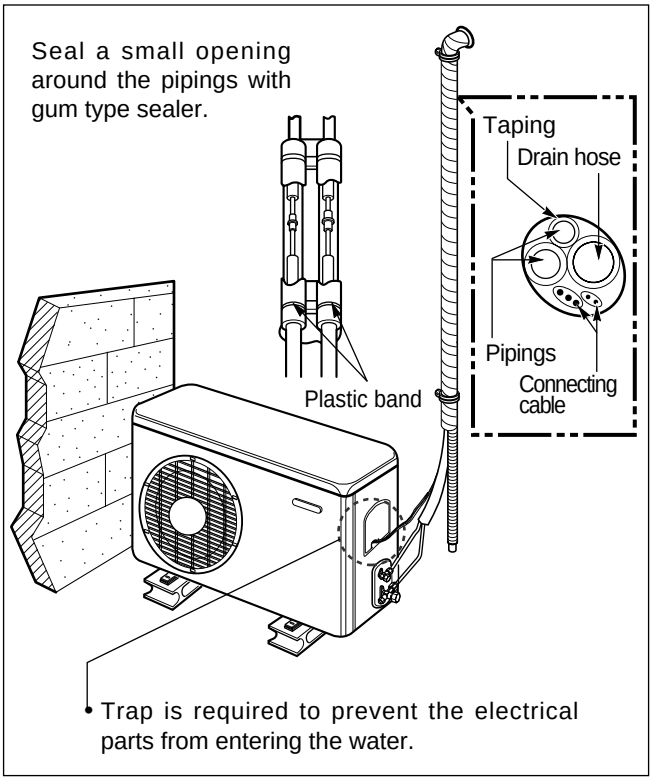
1. Wrap the connecting portion of indoor unit with the Insulation material and secure it with two Plastic Bands.(for the right pipings)

- If you want to connect an additional drain hose, the end of the drain-outlet should be off the ground.(Do not dip it into water, and fix it on the wall to avoid swinging in the wind.)

In case of the Outdoor unit to be installed below the position of the Indoor unit.

2. Tape the Pipings, drain hose and Connecting Cable from down to up.

3. Form the pipings gathered by taping along the exterior wall and fix it onto the wall by saddle or equivalent.

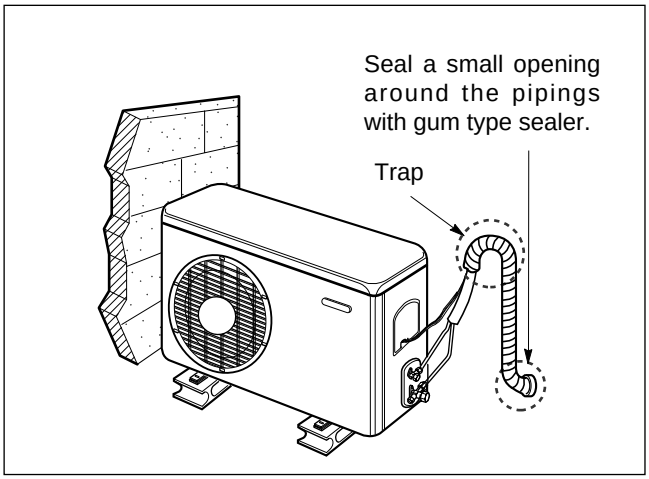


In case of the Outdoor unit being installed upper position of the Indoor unit.

2. Tape the Pipings and Connecting cable from down to up.

3. Form the pipings gathered by taping along the exterior wall, make the Trap to be required to prevent the room from entering the water.

4. Fix the pipings onto the wall by saddle or equivalent.



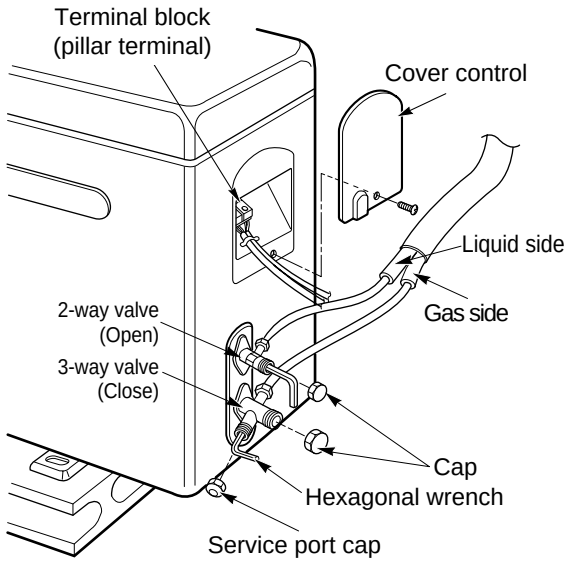
5. Air Purging

1) Air purging

The air remaining which contains moisture in the refrigeration cycle may cause a malfunction on the compressor.

1. Remove the caps from the 2-way and 3-way valves.
2. Remove the service-port cap from the 3-way valve.
3. To open the valve, turn the valve stem of 2-way valve counter-clockwise approx. 90 ° and hold it there for five seconds, then close it.
4. Check a gas-leakage of the connecting portion of the pipings.

CAUTION: Do not leak the gas in the air during air purging, with vacuum pump as possible as you can.



No leakage found

5. To open 2-way valve again, turn the valve stem counter-clockwise until it stops.

Result

Leakage found

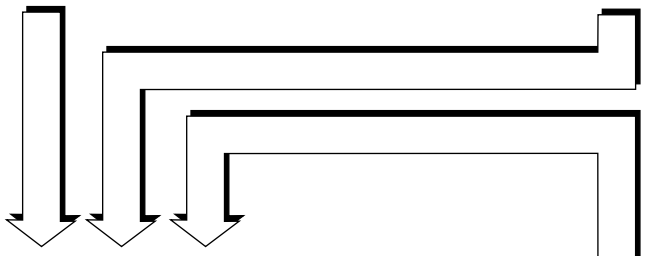
- Re-tighten the connecting portion with torque wrenches.

Leakage ceased

Leakage persists

Repair

Leakage ceased



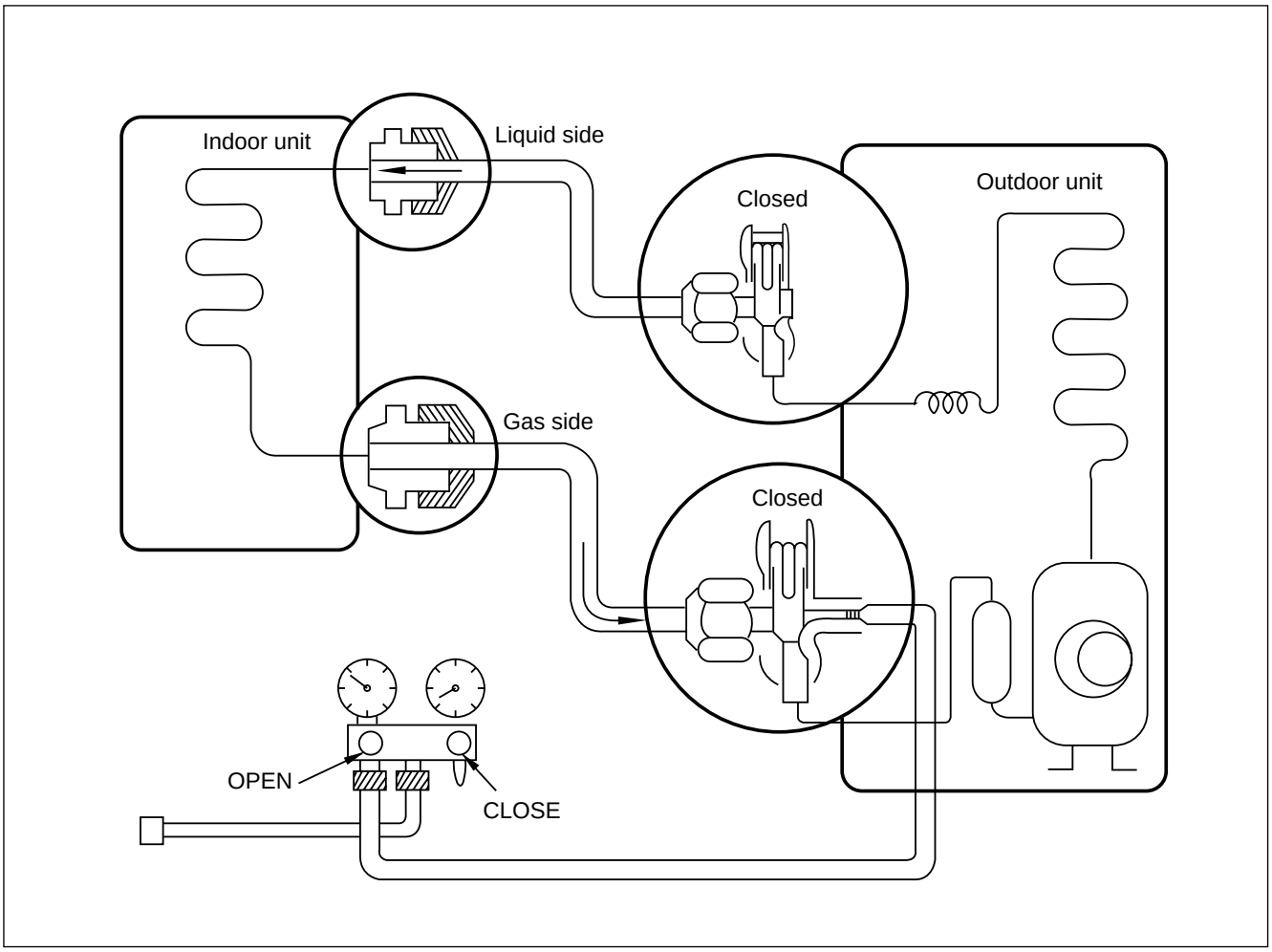
6. To purge the air, push the pin on the service port of 3-way valve for three seconds with a hexagonal wrench and set it free for one minute.

7. Set both liquid and gas side valves to open position with the Hexagonal wrench for the unit operation.

8. Checking a gas leakage

(1) Connect the manifold gauge to the service port of 3-way valve.
Measure the pressure.

(2) Keep it for 5-10 minutes.
Ensure if the pressure indicated on the gauge is as same as that of measured at first time.



NOTE:

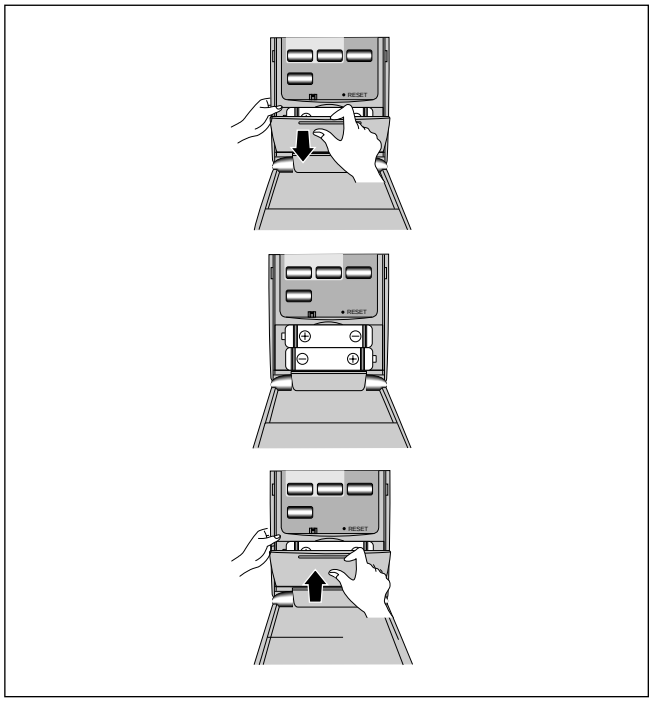
The additional gas for air purping has been charged in the outdoor unit.

However, if the flare connections have not been done correctly and there gas leaks, a gas cylinder and the charge set will be needed.

CAUTION : Do not leak the gas in the air during air purging. Use vaccum pump as far as possible

6. Test running

1) Connection of power supply

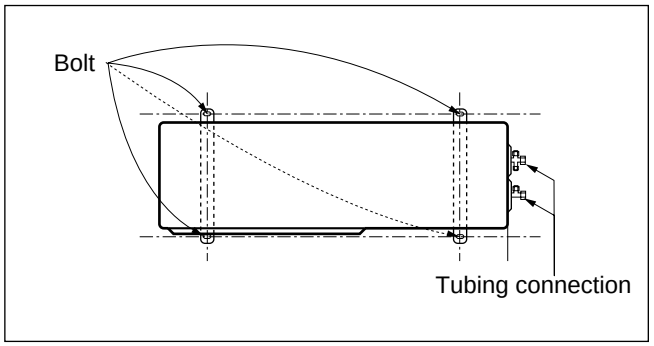


1. **Connect the power supply cord to the independent power supply.**
   • Circuitbreaker is required.
2. **Prepare the remote controller.**
   • Insert two batteries provided.
   Remove the battery cover from the remote controller.
   • Slide the cover according to the arrow direction.
   Insert two batteries.
   (Two "R03" or "AAA" dry-cell batteries or equivalent.)
   • Be sure that the (+) and (-) directions are correct.
   • Be sure that both batteries are new.
   Re-attach the cover.
   • Slide it back into position.
3. **Operate the unit for fifteen minuites or more.**

CAUTION
This appliance must be installed in accordance with current National Wiring Regulations.

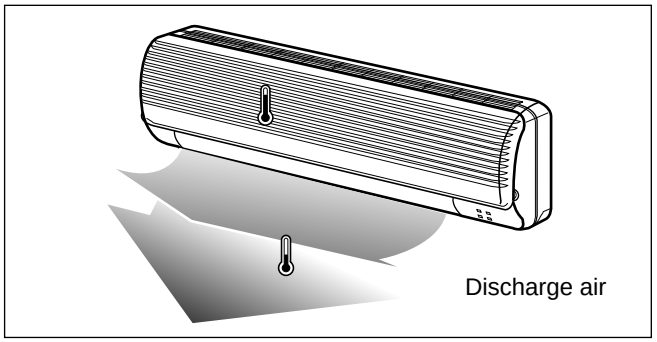
Connecting cable between indoor unit and outdoor unit shall be approved and the size of conductor shall be in accordance with local law.

Settlement of Outdoor Unit



- Anchor the outdoor unit with a bolt and nut (ø10cm) tightly and horizontally on a concrete or rigid mount.
- When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.
- In the case when the vibration of the unit is conveyed to the house, settle the unit with an anti-vibration rubber.

2) Evaluation of the performance



1. **Measure the temperature of the intake and discharge air.**
2. **Ensure the difference between the intake temperature and the discharge one is more than 8 °C(Cooling) or reversely (Heating).**

Operation

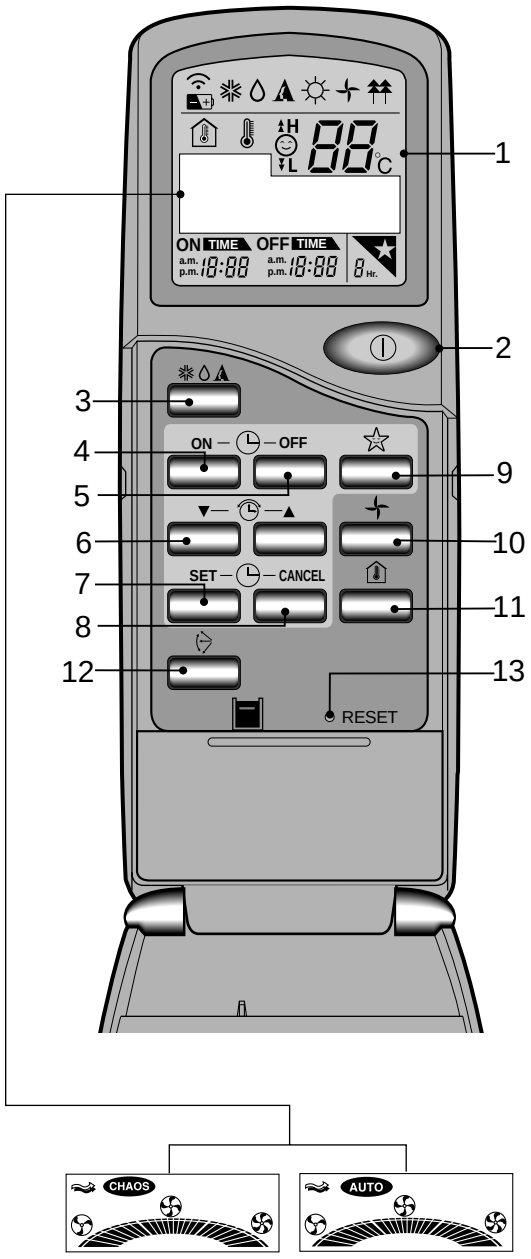
(1) Name and Function-Remote Control

1) Cooling Model

Remote Controller

Signal trasmitter

Transmits the signals
to the room air conditioner.



☐ **Operation display**
Displays the operation conditions.

☐ **Start/Stop Button**
Operation starts when this button is pressed, and stops when the button is pressed again.

☐ **Operation Mode Selection Button**
Used to select the operation mode.
- Cooling Operation Mode.
- Soft Dry Operation Mode.
- Auto Operation Mode.

☐ **ON Timer Button**
Used to set the time of starting operation.

☐ **OFF Timer Button**
Used to set the time of stopping operation.

☐ **Time Setting Button**
Used to adjust the time.

☐ **Timer Set Button**
Used to set the timer when the desired time is obtained.

☐ **Timer CANCEL Button**
Used to cancel the timer operation.

☐ **Sleep Mode Auto Button**
Used to set Sleep Mode Auto Operation.

] **Fan Operation Button**
Used to circulate room air without cooling.

] **Room Temperature Checking Button**
Used to check the room temperature.

] **Airflow Direction Control Button**
Used to set the desired vertical airflow direction.

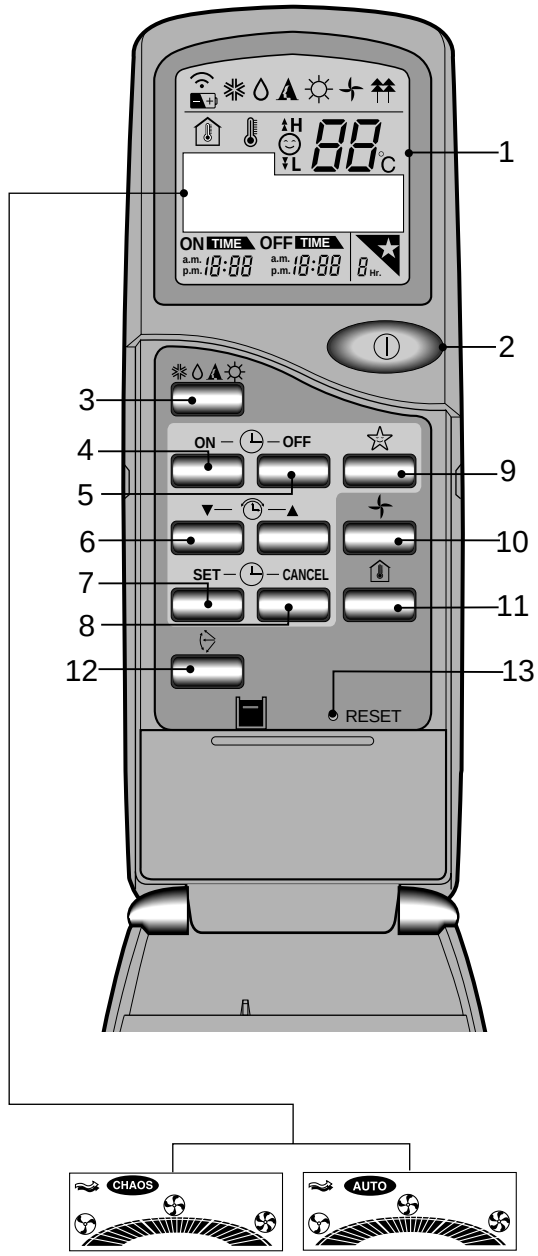
] **Reset Button**

2) Heating Model

Remote Controller

Signal trasmitter

Transmits the signals
to the room air conditioner.



☐ **Operation display**
Displays the operation conditions.

☐ **Start/Stop Button**
Operation starts when this button is pressed, and stops when the button is pressed again.

☐ **Operation Mode Selection Button**
Used to select the operation mode.
- Cooling Operation Mode.
- Soft Dry Operation Mode.
- Auto Operation Mode.
- Heating Operation.

☐ **ON Timer Button**
Used to set the time of starting operation.

☐ **OFF Timer Button**
Used to set the time of stopping operation.

☐ **Time Setting Button**
Used to adjust the time.

☐ **Timer Set Button**
Used to set the timer when the desired time is obtained.

☐ **Timer CANCEL Button**
Used to cancel the timer operation.

☐ **Sleep Mode Auto Button**
Used to set Sleep Mode Auto Operation.

] **Fan Operation Button**
Used to circulate room air without heating.

] **Room Temperature Checking Button**
Used to check the room temperature.

] **Airflow Direction Control Button**
Used to set the desired vertical airflow direction.

] **Reset Button**

Disassembly of the parts(Indoor unit)

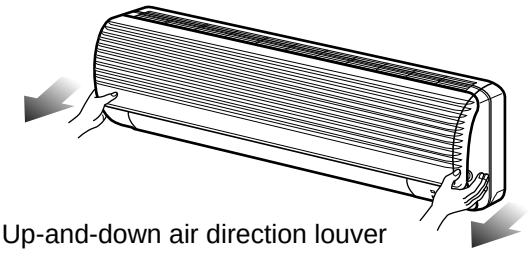
Warning:

Disconnect the unit from power supply before making any checks.

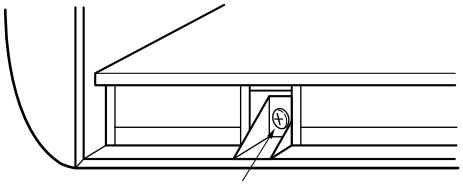
Be sure the power switch is set to "OFF".

To remove the Grille from the Chassis.

- Set the up-and-down air discharge louver to open position (horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.

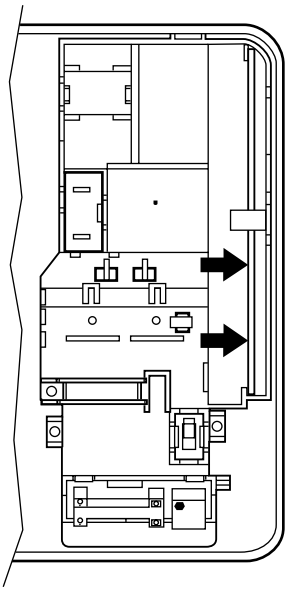


Up-and-down air direction louver



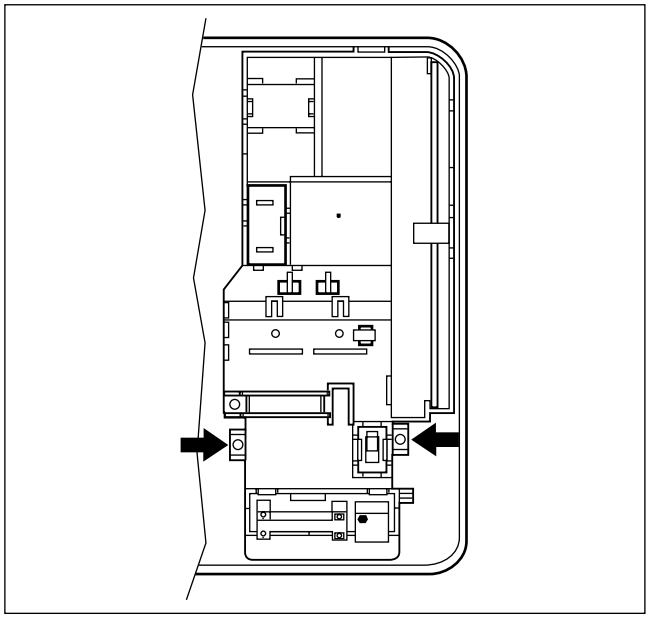
Screw

1. To remove the sensor, housing connect, earth conductor & step motor conductor with sensor holder, Motor, Evaporator & P.C.B.



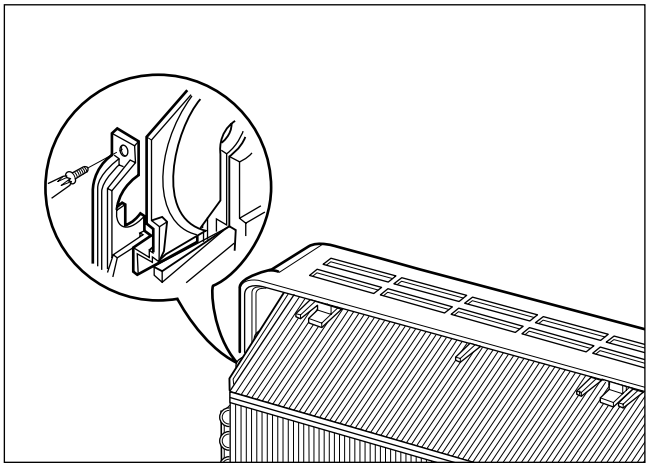
2. To remove the Control Box

- Remove 2 or 4 securing screws.
- Pull the control box out from the chassis carefully.

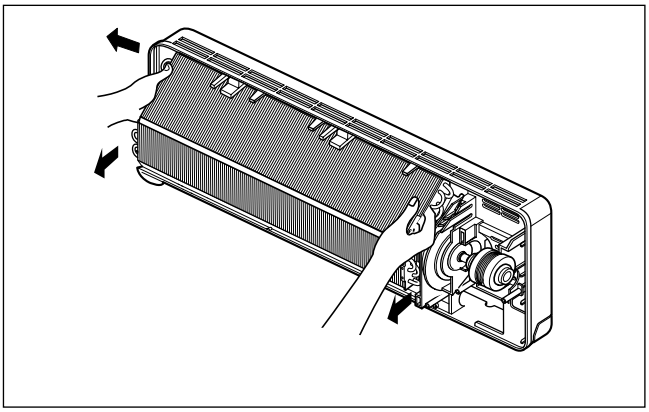


3. To remove the Discharge Grille.

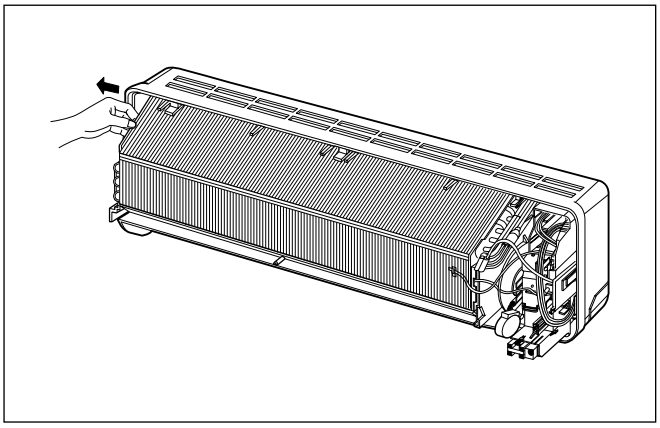
- Remove the securing screw.
- Pull the discharge grille out from the chassis carefully.



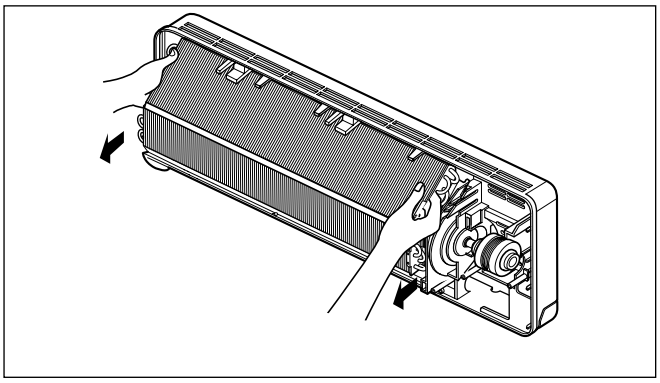
4. To remove the Evaporator.



- Unhook the tab on the left inside edge of the chassis by pressing it outwards and at the same time, slightly pull the evaporator until the tab is clear of the end-plate.
- Remove the evaporator from the chassis carefully.

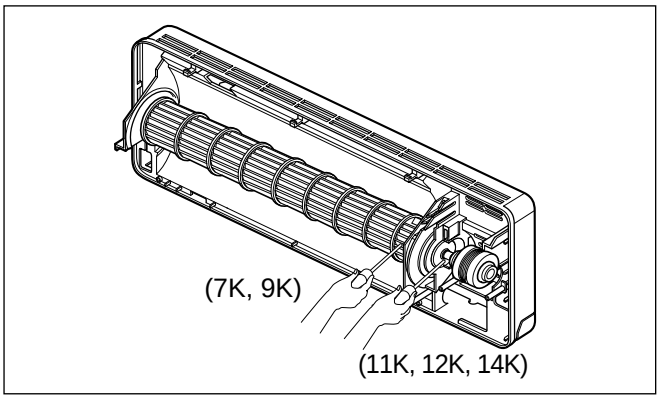


- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.

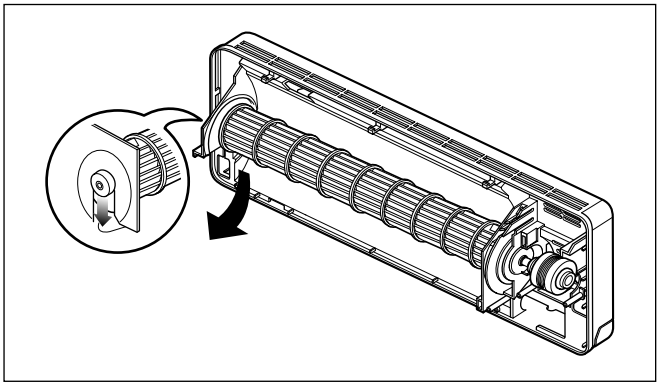


5. To remove the Cross-Flow Fan

- Loosen the screw securing the cross-flow fan to the fan motor(do not remove).



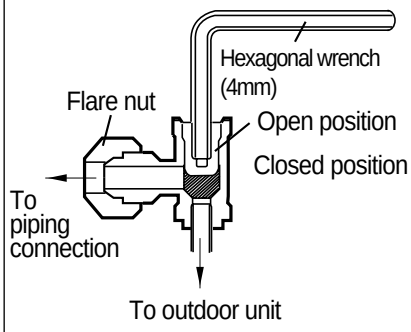
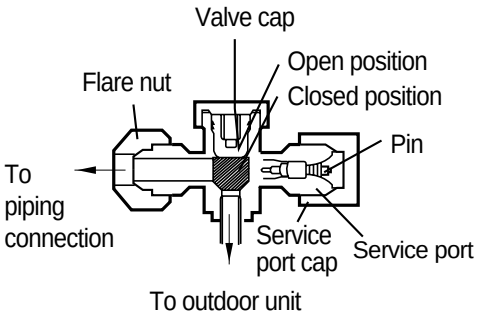
- Pull the left end of the cross-flow fan with the selfaligning bearing out the groove.
- Remove the cross-flow fan by sliding it out from the shaft of fan motor.



6. To remove the Fan Motor

- Pick it up from the groove. (Do not remove a black rubber as a spacer).

2-way, 3-way Valve

		2-way Valve (Liguid Side)	3-way Valve (Gas Side)	
				
Works		Shaft position	Shaft position	Service port
Shipping		Closed (with valve cap)	Closed (with valve cap)	Closed (with cap)
1.	Air purging (Installation)	Open (counter-clockwise)	Closed (clockwise)	Open (push-pin or with vacuum pump)
Operation		Open (with valve cap)	Open (with valve cap)	Closed (with cap)
2.	Pumping down (Transfering)	Closed (clockwise)	Open (counter-clockwise)	Open (connected manifold gauge)
3.	Evacuation (Servicing)	Open	Open	Open (with charging cylinder)
4.	Gas charging (Servicing)	Open	Open	Open (with charging cylinder)
5.	Pressure check (Servicing)	Open	Open	Open (with charging cylinder)
6.	Gas releasing (Servicing)	Open	Open	Open (with charging cylinder)

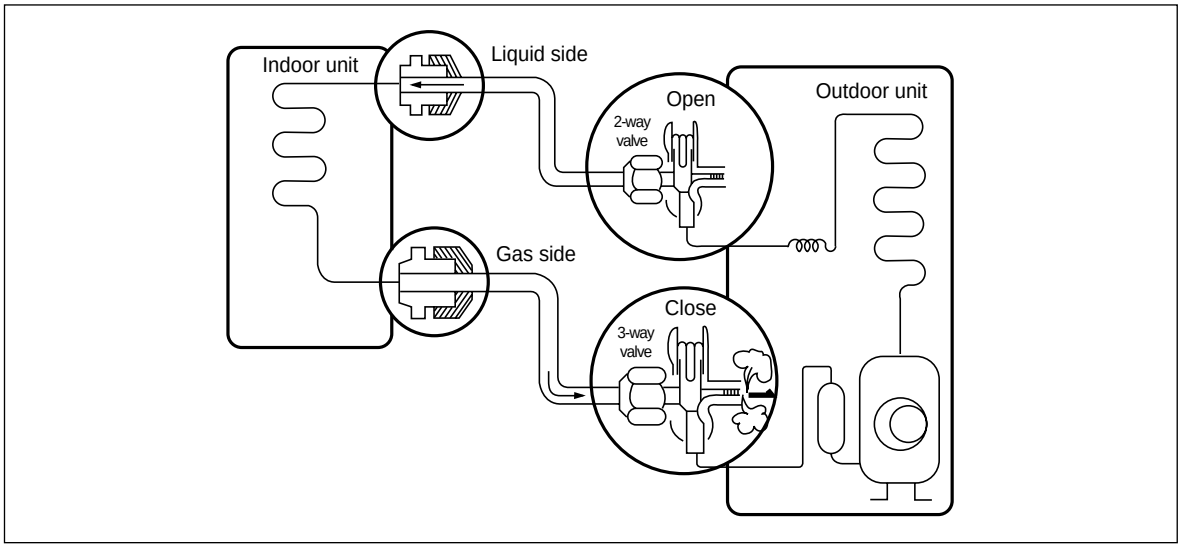
1. Air purging

Required tools: Hexagonal wrench, adjustable wrench, torque wrenches, wrench to hold the joints, and gas leak detector.

The additioner gas for air purging has been charged in the outdoor unit.

However, if the flare connections have not been done correctly and there gas leaks, a gas cylinder and the charge set will be needed.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce to cooling capacity, and could lead to a malfunction.



Service port nut.

Be sure, using a torque wrench to tighten the service port nut (after using the service port), so that it prevents the gas leakage from the refrigeration cycle.

CAUTION: Do not leak the gas in the air during Air purging.

• Procedure

(1) Recheck the piping connections.

(2) Open the valve stem of the 2-way valve counter-clockwise approximately 90°, wait 10 seconds, and then set it to closed position.
- Be sure to use a hexagonal wrench to operate the valve stem.

(3) Check for gas leakage.
-Check the flare connections for gas leakage.

(4) Purge the air from the system.
- Set the 2-way valve to the open position and remove the cap from the 3-way valve's service port.
- Using the hexagonal wrench to press the valve core pin, discharge for three seconds and then wait for one minute. Repeat this three times.

(5) Use torque wrench to tighten the service port nut to a torque of 1.8kg.cm.

(6) Set the 3-way valve to the back seat.

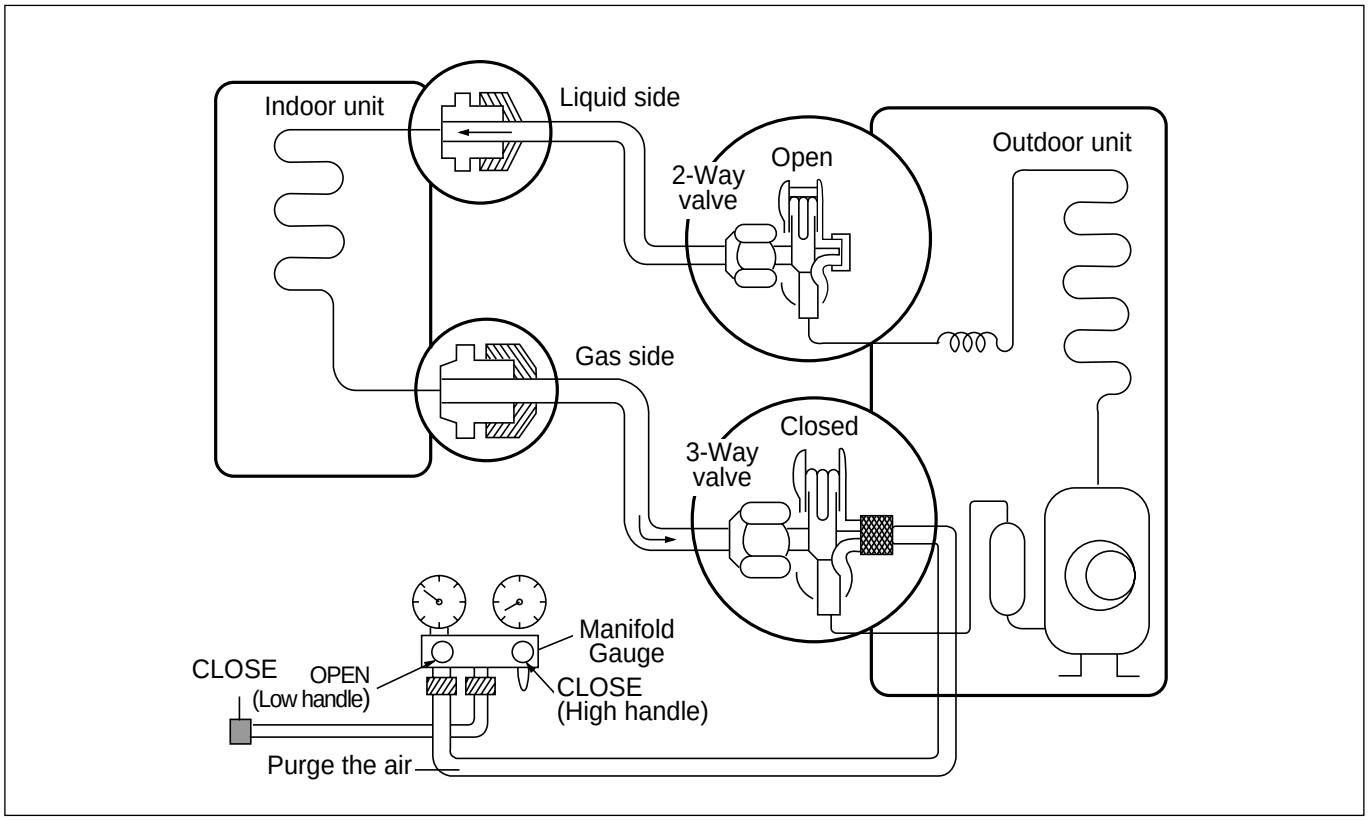
(7) Mount the valve stem nuts to the 2-way and 3-way valves.

(8) Check for gas leakage.
- At this time, especially check for gas leakage from the 2-way and 3-way vlave's stem nuts, and from the service port nut.

Caution

If gas leakage are discovered in step (3) above, take the following measures:
If the gas leaks stop when the piping connections are tightened further, continue working from step (4).
If the gas leaks do not stop when the connections are retightened, repair the location of the leak, discharge all of the gas through the service port, and then recharge with the specified amount of gas from a gas cylinder.

2. Pumping down



• Procedure

(1) Confirm that both the 2-way and 3-way valves are set to the open position.
- Remove the valve stem caps and confirm that the valve stems are in the raised position.
- Be sure to use a hexagonal wrench to operate the valve stems.

(2) Operate the unit for 10 to 15 minutes.

(3) Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.
- Connect the charge hose with the push pin to the service port.

(4) Air purging of the charge hose.
- Open the low-pressure valve on the charge set slightly to air purge from the charge hose.

(5) Set the 2-way valve to the closed position.

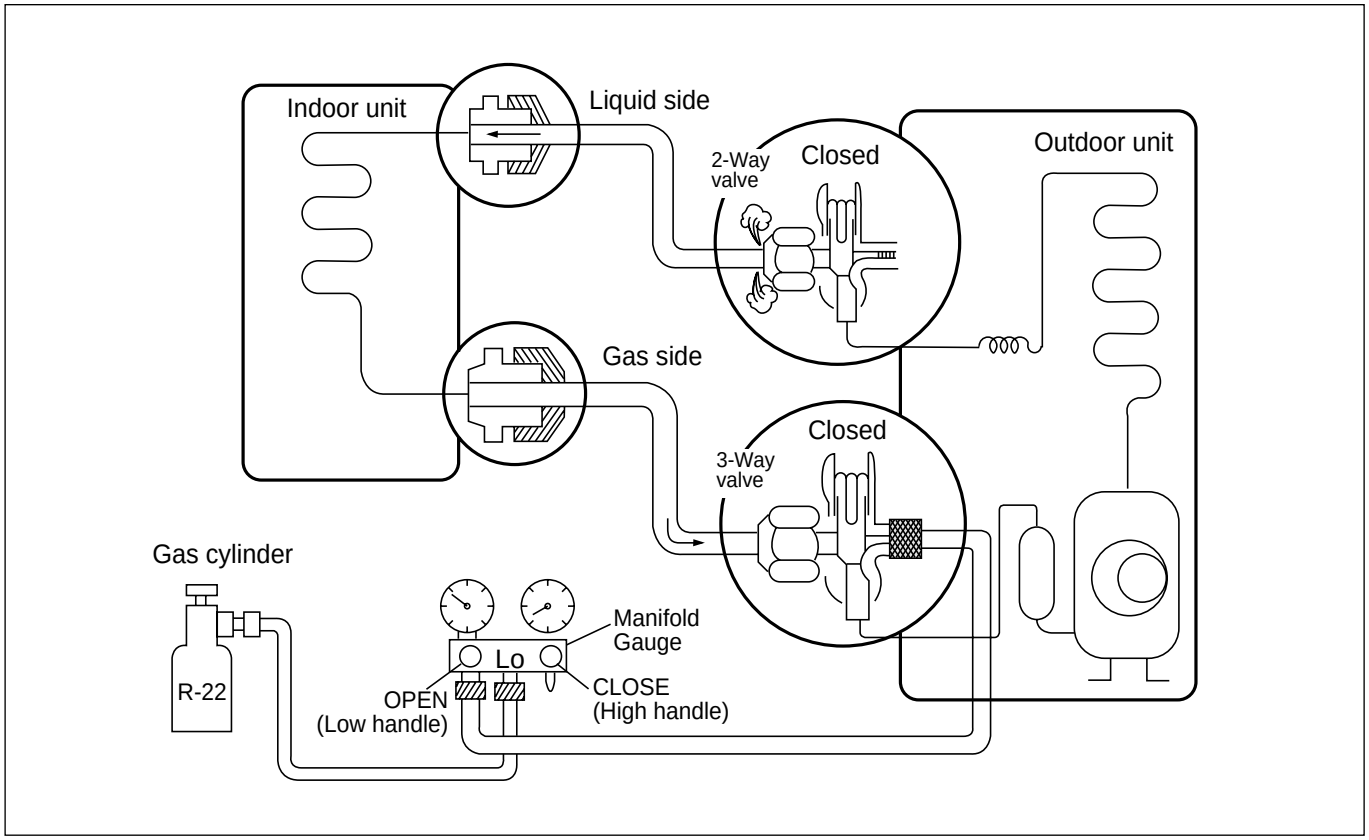
(6) Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 1kg/cm²g.

(7) Immediately set the 3-way valve to the closed position.
- Do this quickly so that the gauge ends up indicating 3 to 5kg/cm²g.

(8) Disconnect the charge set, and mount the 2-way and 3-way valve's stem nuts and the service port nut.
- Use torque wrench to tighten the service port nut to a torque of 1.8kg.m.
- Be sure to check for gas leakage.

1) Re-air purging

(Re-installation)



• Procedure

(1) Confirm that both the 2-way valve and the 3-way valve are set to the closed position.

(2) Connect the charge set and a gas cylinder to the service port of the 3-way valve.

- Leave the valve on the gas cylinder closed.

(3) Air purging.

- Open the valves on the gas cylinder and the charge set. Purge the air by loosening the flare nut on the 2-way valve approximately 45° for 3 seconds then closing it for 1 minute; repeat 3 times.
- After purging the air, use a torque wrench to tighten the flare nut on the 2-way valve.

(4) Check for gas leakage.

- Check the flare connections for gas leakage.

(5) Discharge the refrigerant.

- Close the valve on the gas cylinder and discharge the refrigerant until the gauge indicates 3 to 5 kg/cm^2g.

(6) Disconnect the charge set and the gas cylinder, and set the 2-way and 3-way valves to the open position.

- Be sure to use a hexagonal wrench to operate the valve stems.

(7) Mount the valve stem nuts and the service port nut.

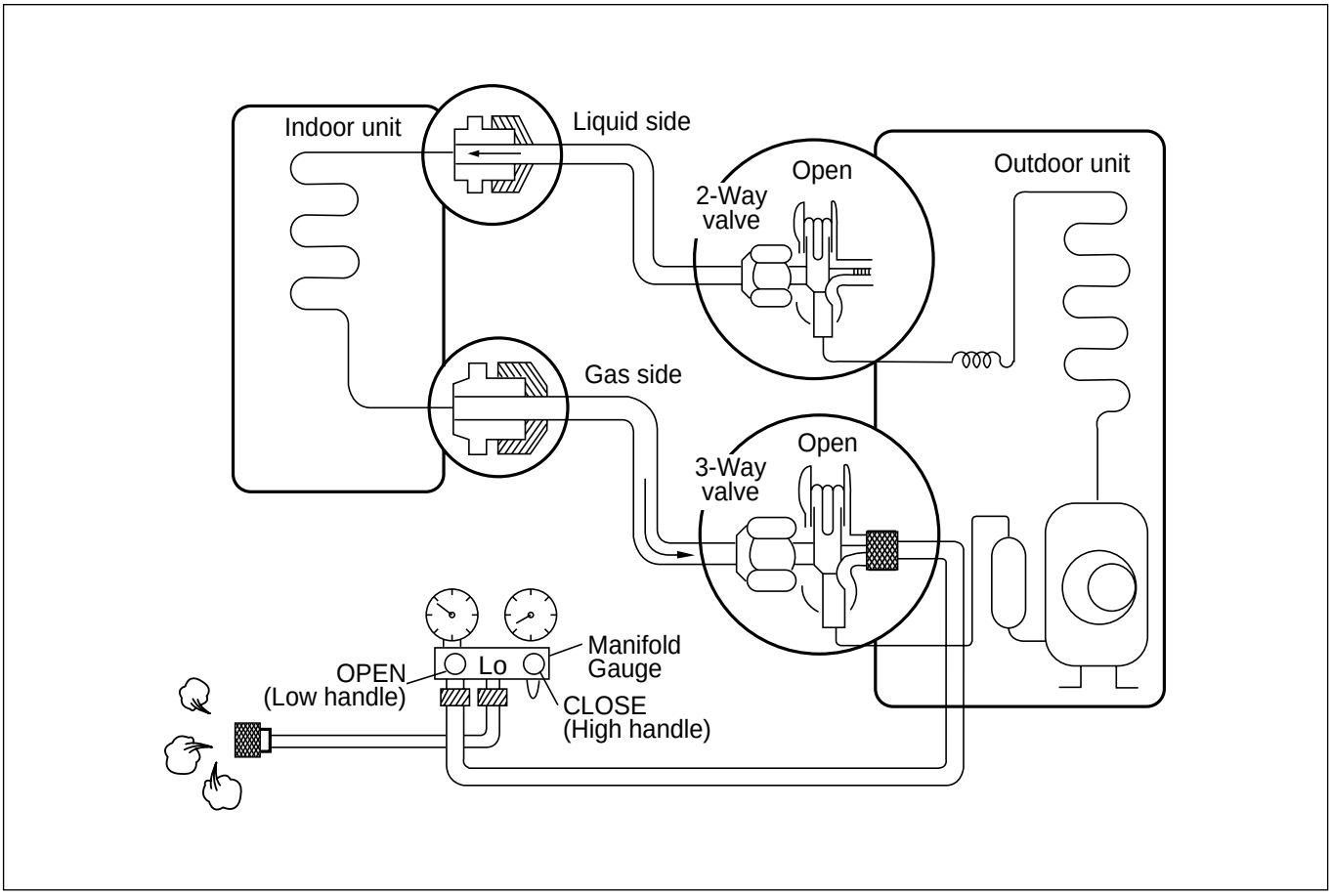
- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.

CAUTION:

Do not leak the gas in the air during Air Purging.

2) Balance refrigerant of the 2-way, 3-way valves

(Gas leakage)



• Procedure

(1) Confirm that both the 2-way and 3-way valves are set to the back seat.

(2) Connect the charge set to the 3-way valve's port.

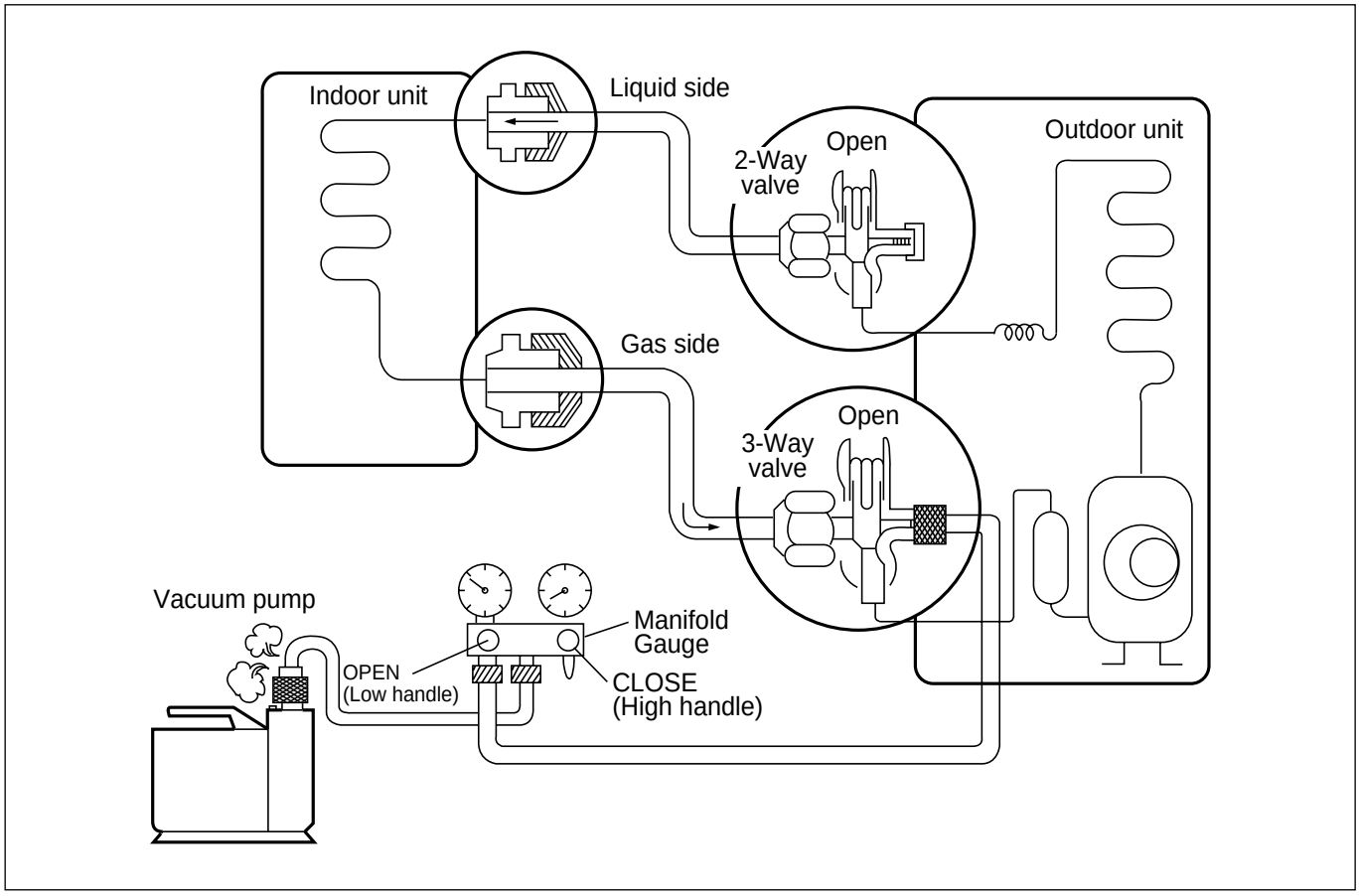
- Leave the valve on the charge set closed.
- Connect the charge hose with the push pin to the service port.

(3) Open the valve (Low handle) on the charge set and discharge the refrigerant until the gauge indicates 0 kg/cm²G.

- If there is no air in the refrigerant cycle (the pressure when the air conditioner is not running is higher than 1 kg/cm²G), discharge the refrigerant until the gauge indicates 0.5 to 1 kg/cm²G. If this is the case, it will not be necessary to apply an evacuation.
- Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will also be discharged.

3. Evacuation

(All amount of refrigerant leaked)



• Procedure

(1) Connect the vacuum pump to the charge set's center hose

(2) Evacuation for approximately one hour.

- Confirm that the gauge needle has moved toward -76cmHg (vacuum of 4 mmHg or less).

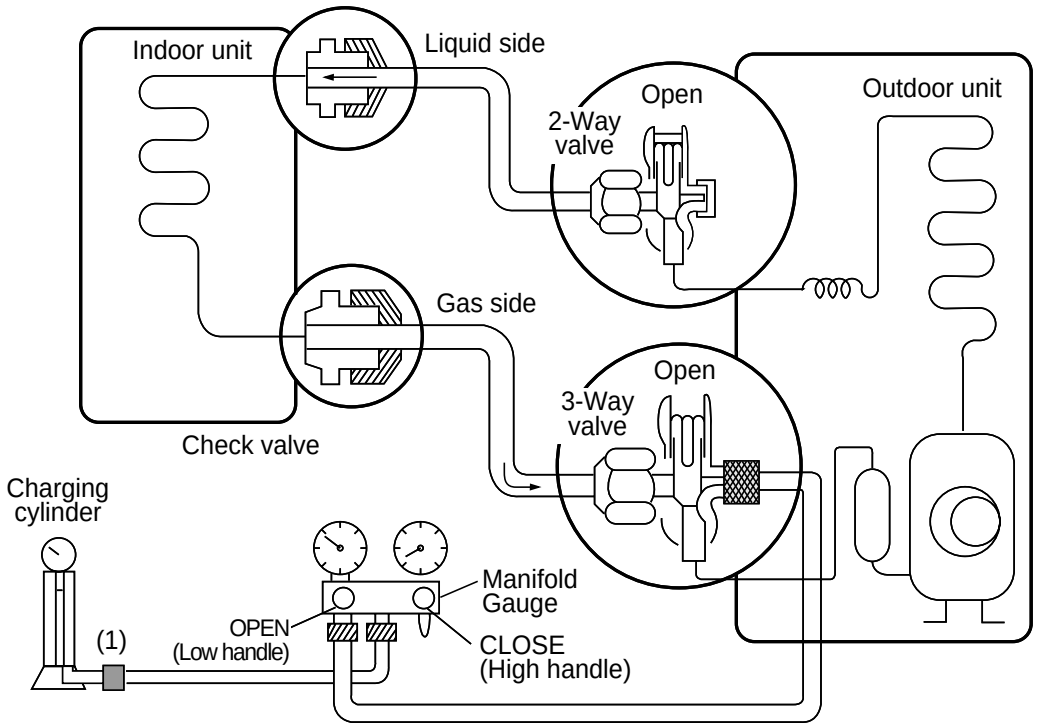
(3) Close the valve (Low handle) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).

(4) Disconnect the charge hose from the vacuum pump.

- Vacuum pump oil.
  If the vacuum pump oil becomes dirty or depleted, replenish as needed.

4. Gas Charging

(After Evacuation)



• Procedure

(1) Connect the charge hose to the charging cylinder.

- Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged with liquid.

(2) Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

(3) Open the valve (Lo side) on the charge set and charge the system with liquid refrigerant.

- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure (pumping down-pin).

This is different from previous procedures.
Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

(4) Immediately disconnect the charge hose from the 3-way valve's service port.

- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner turn off the air conditioner before disconnecting the hose.

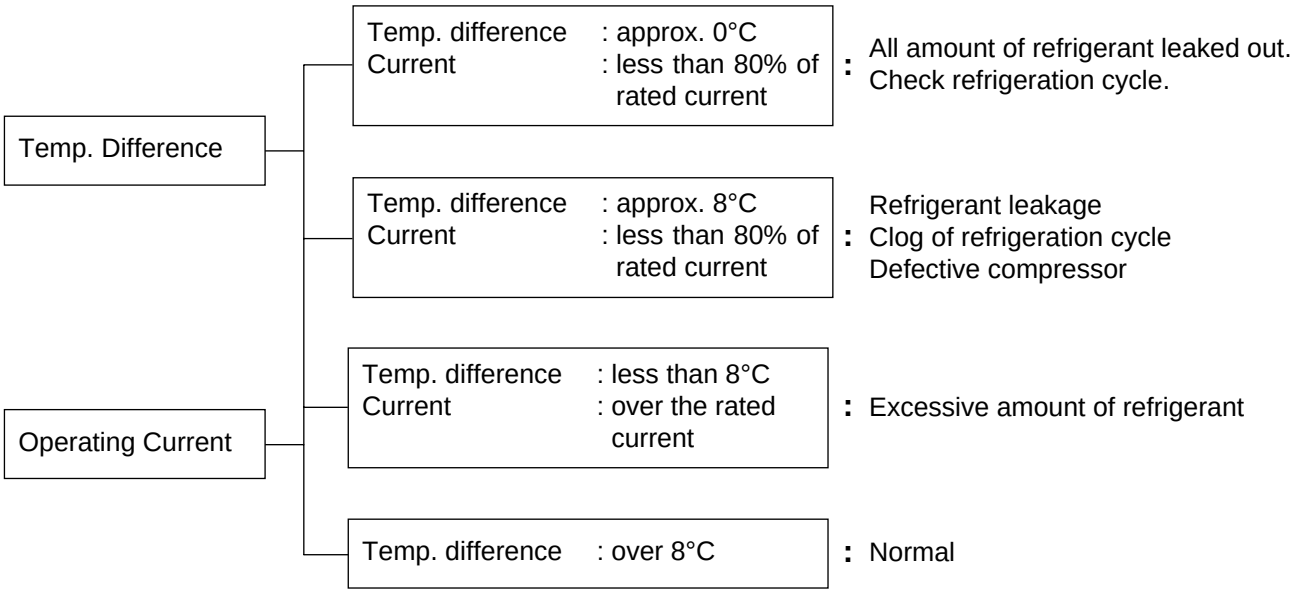
(5) Mount the valve stem nuts and the service port nut.

- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.

Cycle Troubleshooting Guide

Trouble analysis

1. Check temperature difference between intake and discharge air and operating current.



Notice:
Temperature difference between intake and discharge air depends on room air humidity. When the room air humidity is relativery higher, temperature difference is smaller. When the room air humidity is relatively lower temperature difference is larger.

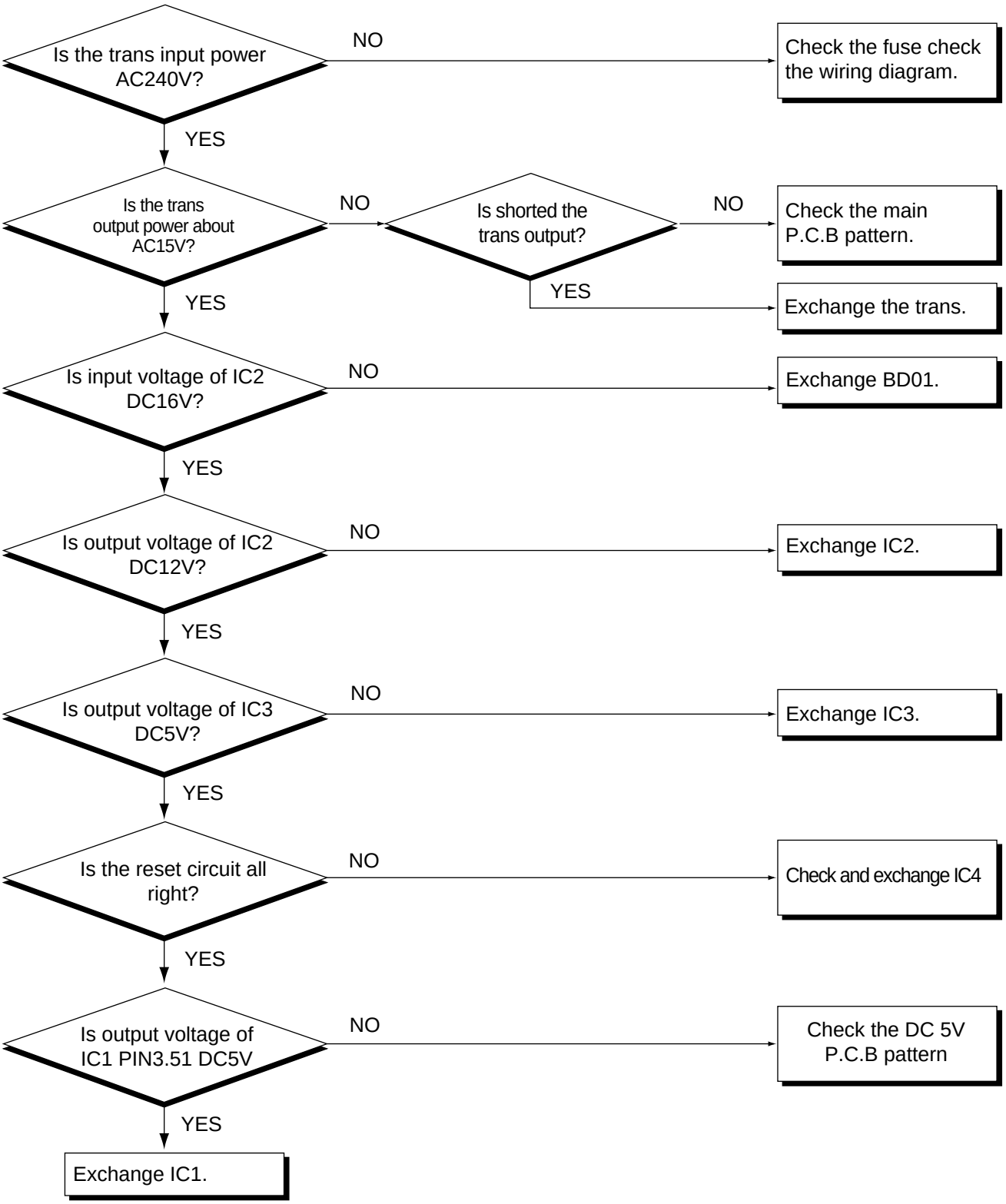
2. Check temperature and pressure of refrigeration cycle.

Suction pressure (Compared with the normal value)	Temperature (Compared with the normal valve)	Cause of Trouble	Description
Higher	High	Defective compressor Defective 4-way reverse valve	Current is low.
	Normal	Excessive amount of refrigerant	High pressure does not quickly rise at the beginning of operation.
Lower	Higher	Insufficient amount of refrigerant(Leakage) Clogging	Current is low. Current is low.

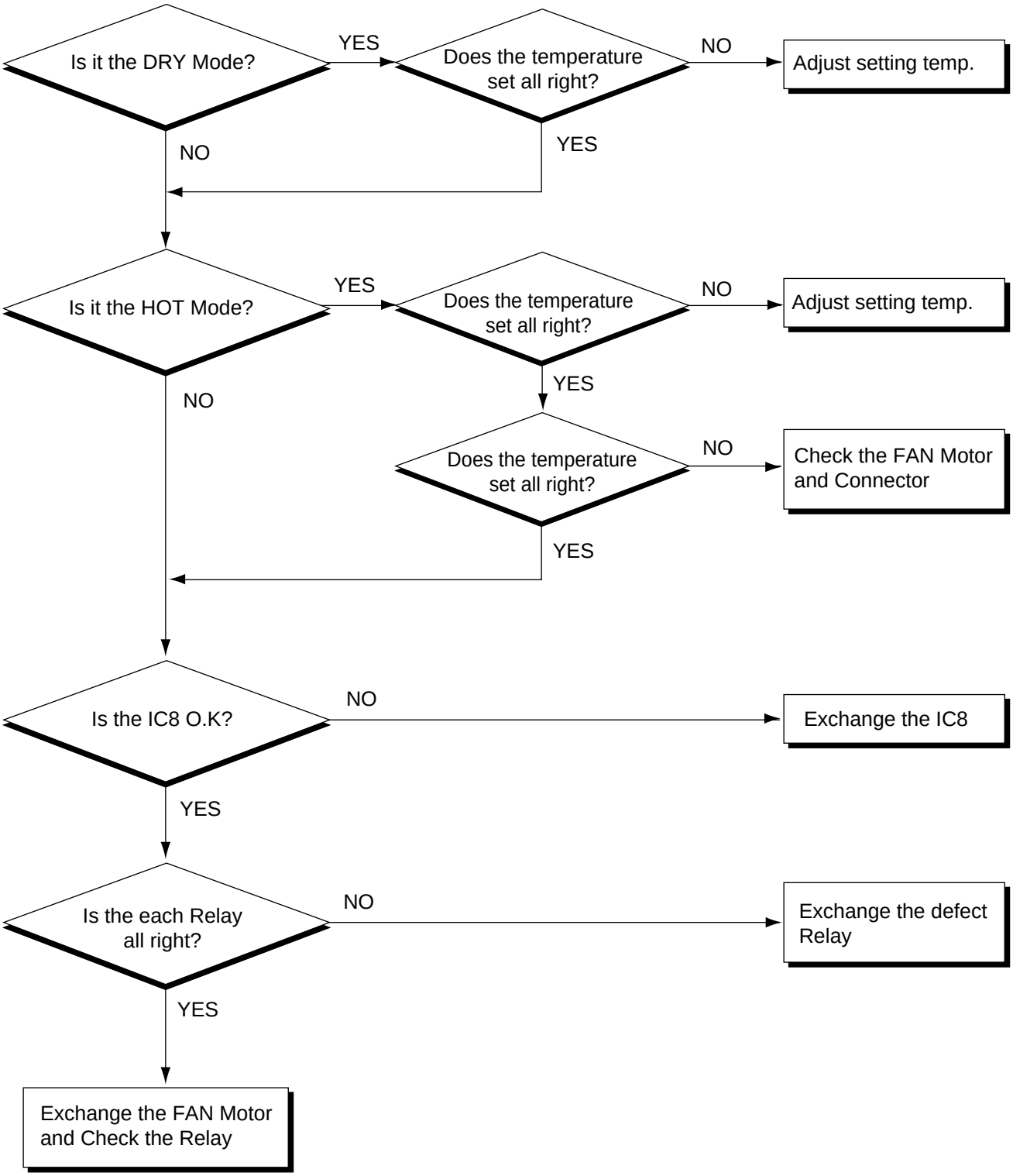
Notice:
1. The suction pressure is usually 4.5~6.0 kg/cm^{2}G at normal condition.
2. The temperature can be measured by attaching the thermometer to the low pressure tubing and wrap it with putty.

Electronic Parts Troubleshooting Guide

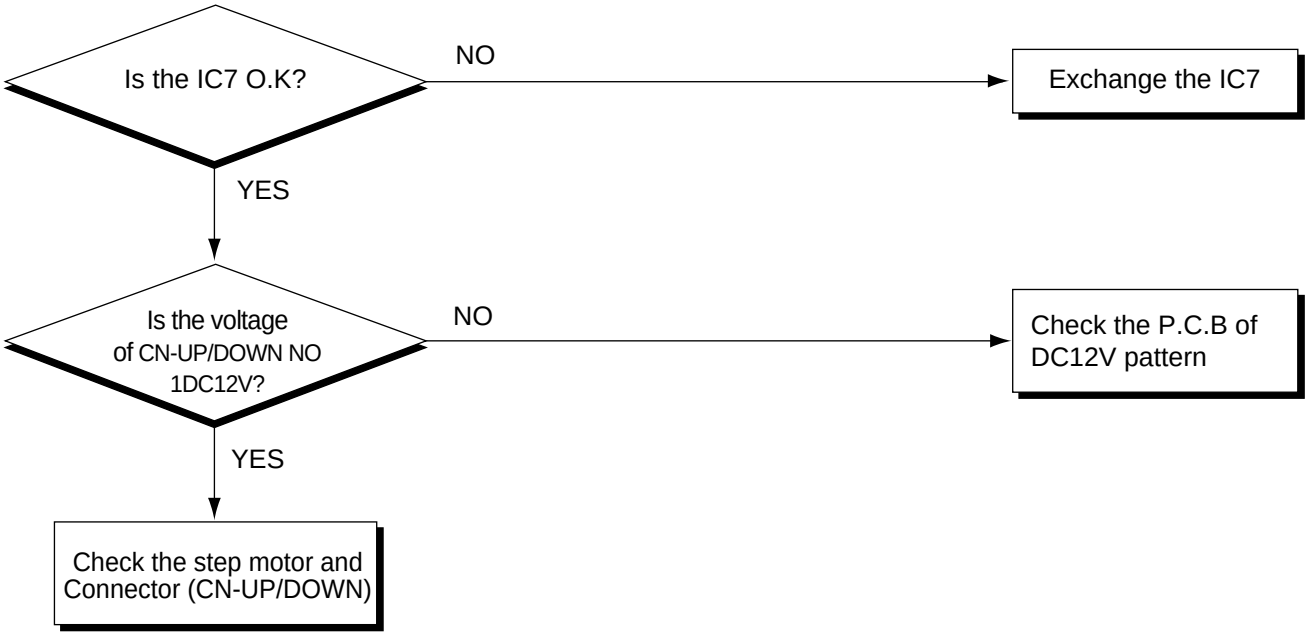
Possible Trouble 1 : The unit does not operate.



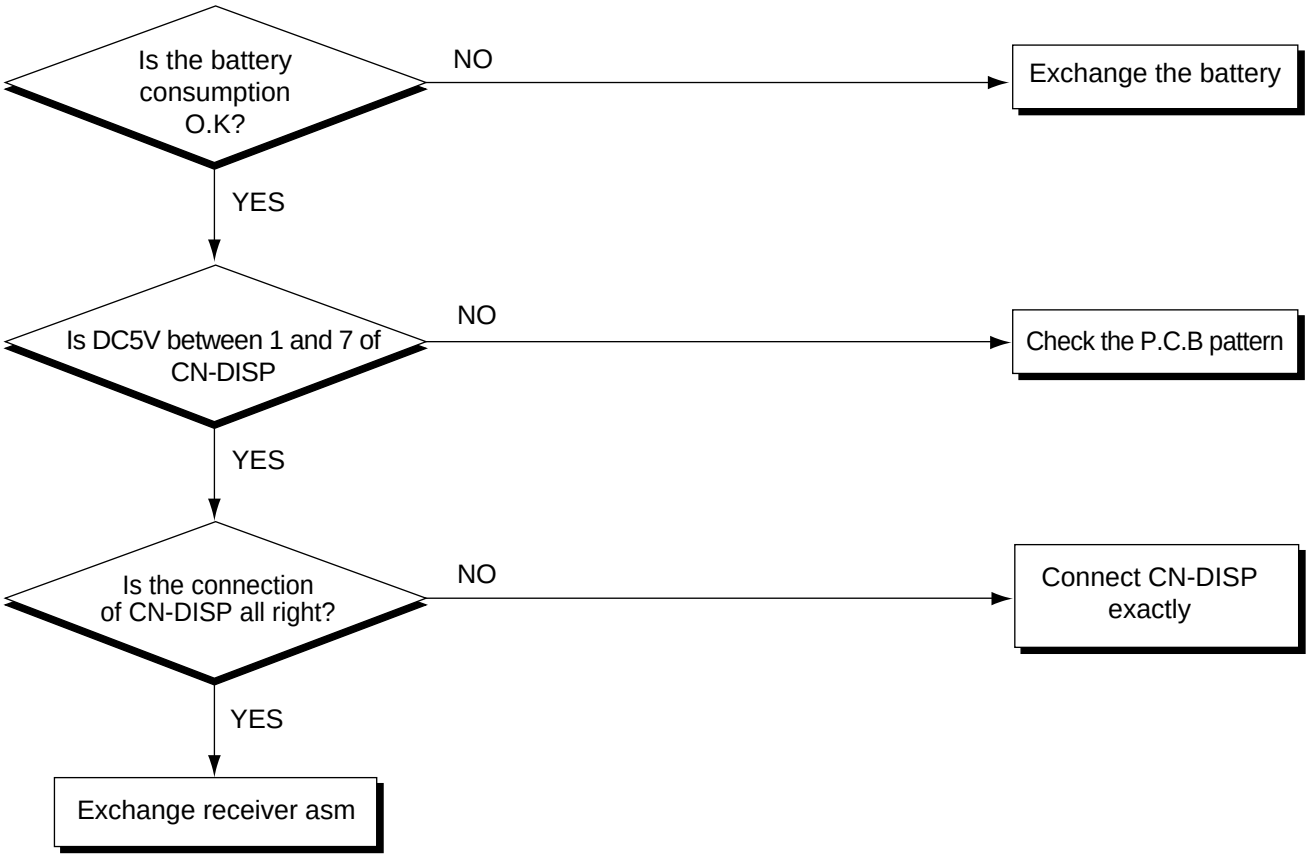
Possible Trouble 2 : Fan does not operate.



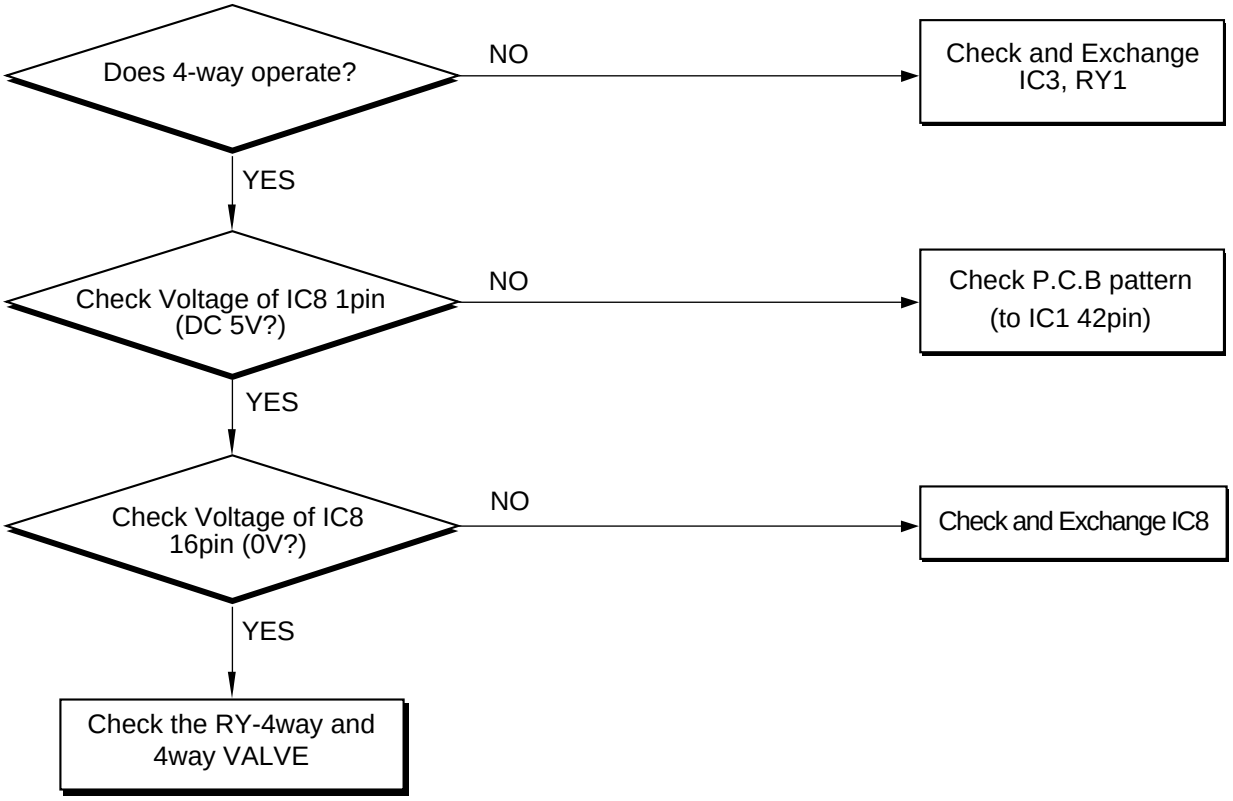
Possible Trouble 3 : Up/Down Air direction louver does not operate.



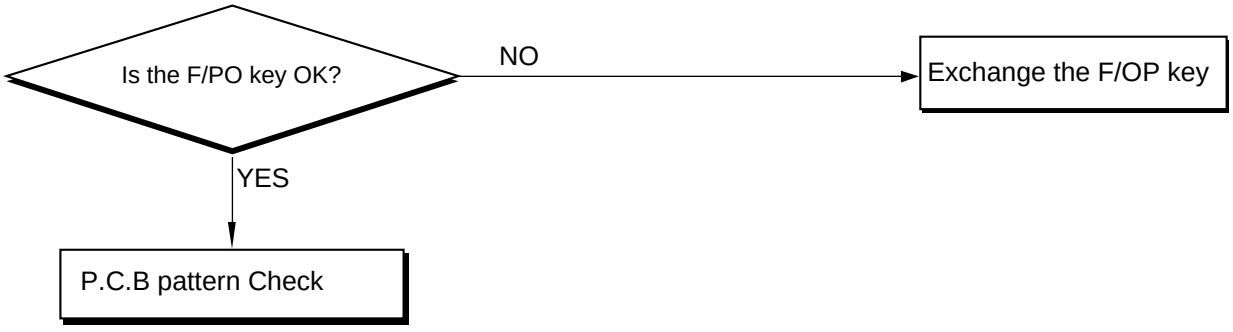
Possible Trouble 4 : Remote controller does not operate.



Possible Trouble 5 : Ineffective Heating

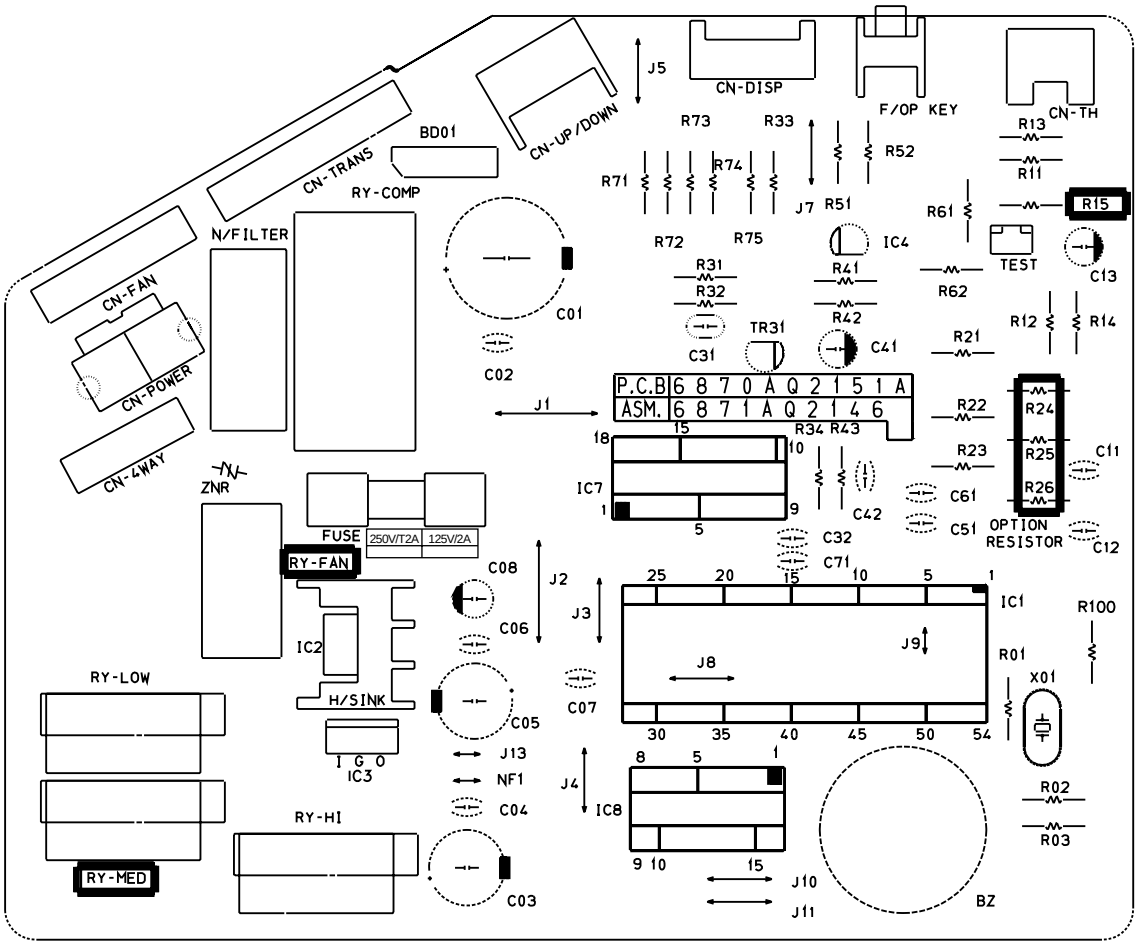


Possible Trouble 6 : It does not operate forced operation.



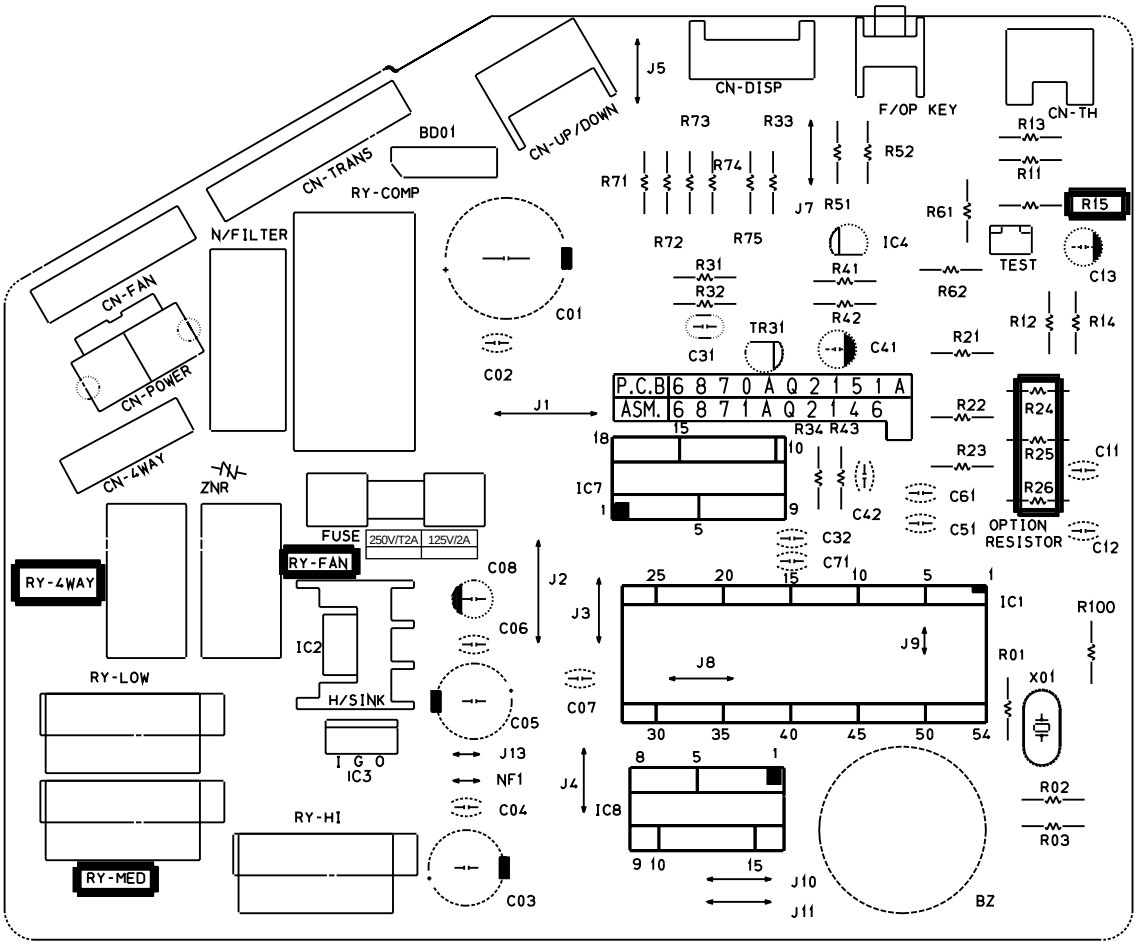
Electronic Control Device

(1) MAIN P.C.B ASM : 7K, 9K, 11K, 12K, 14K BTU Cooling Only Series



	P.C.B ASM P/NO.
7K, 9K	6871AQ2146E
11K, 12K, 14K	6871AQ2146B
LS-C1420CN	6871AQ2146W

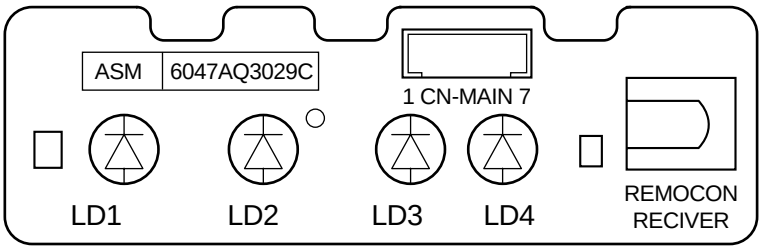
(2) MAIN P.C.B ASM : 7K, 9K, 12K BTU Cooling & Heating Series



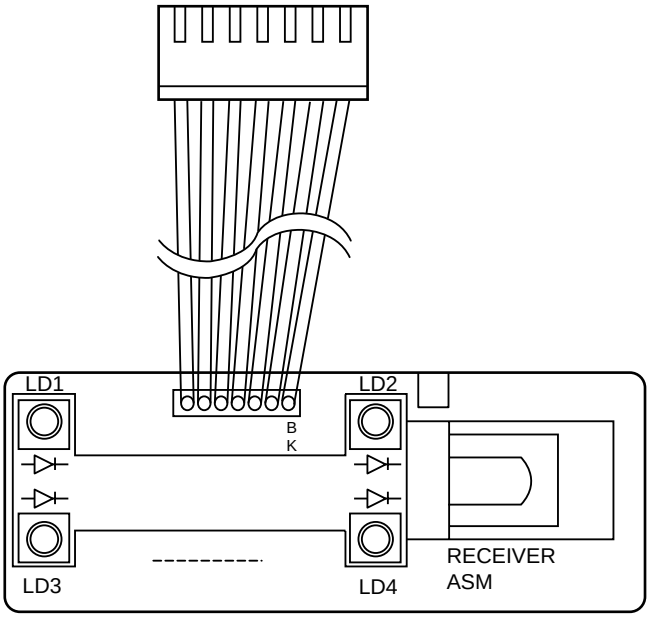
	P.C.B ASM P/NO.
7K, 9K	6871AQ2146D
12K	4871AQ2146A

(3) DISPLAY P.C.B ASM

(7K, 9K BTU Series)

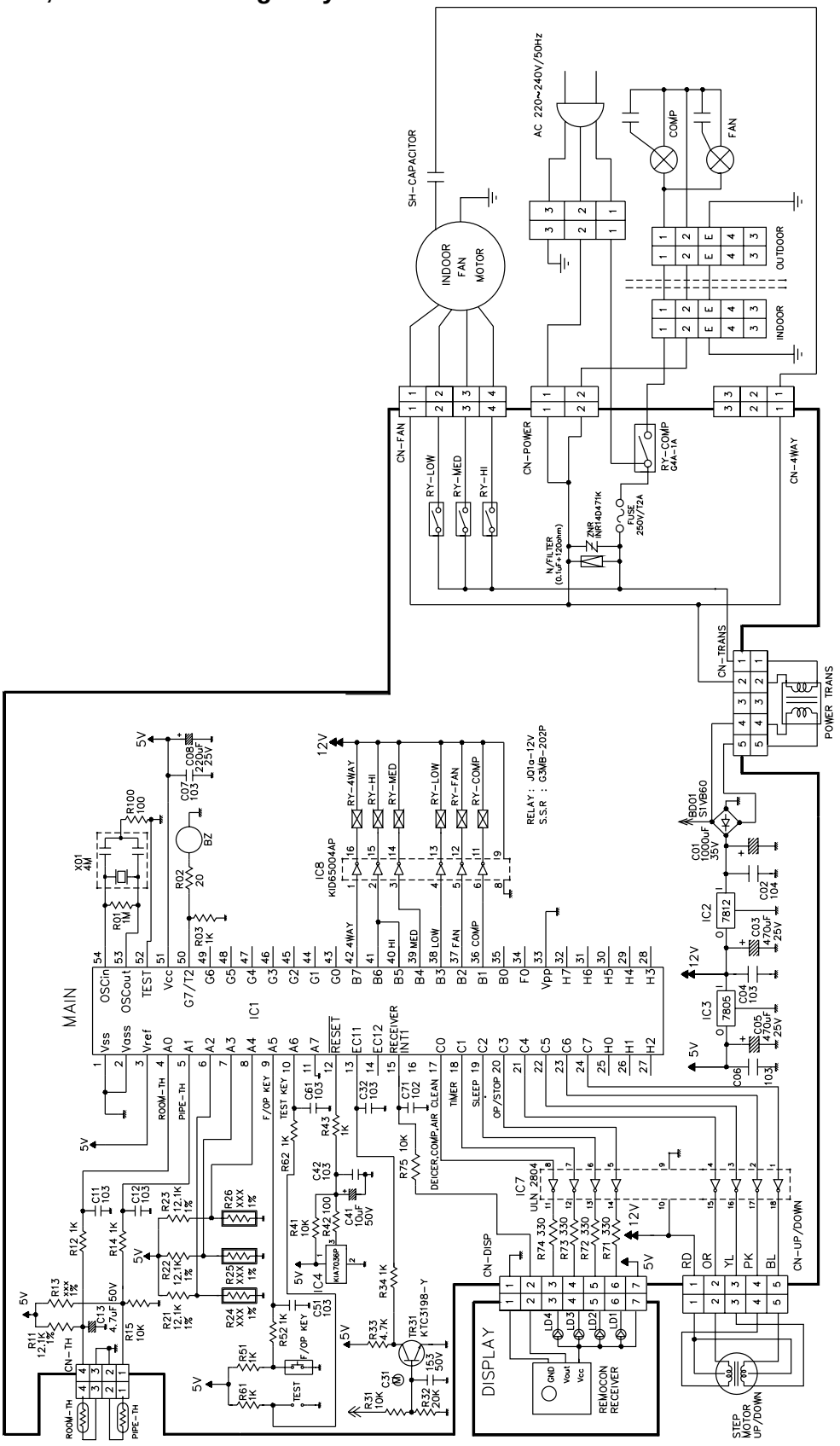


(11K, 12K, 14K BTU Series)

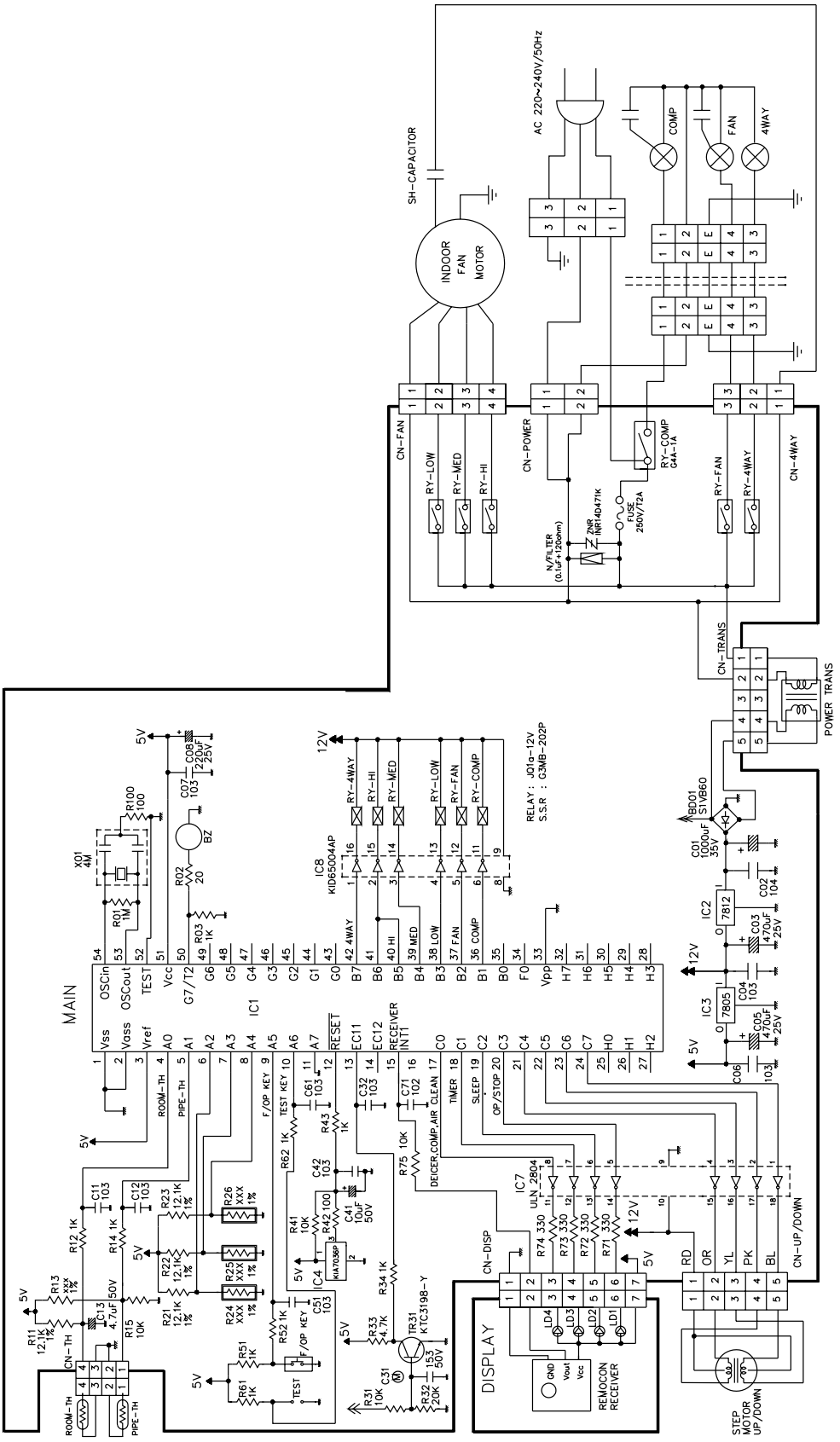


Schematic Diagram

7K, 9K, 11K, 12K, 14K BTU Cooling Only Series

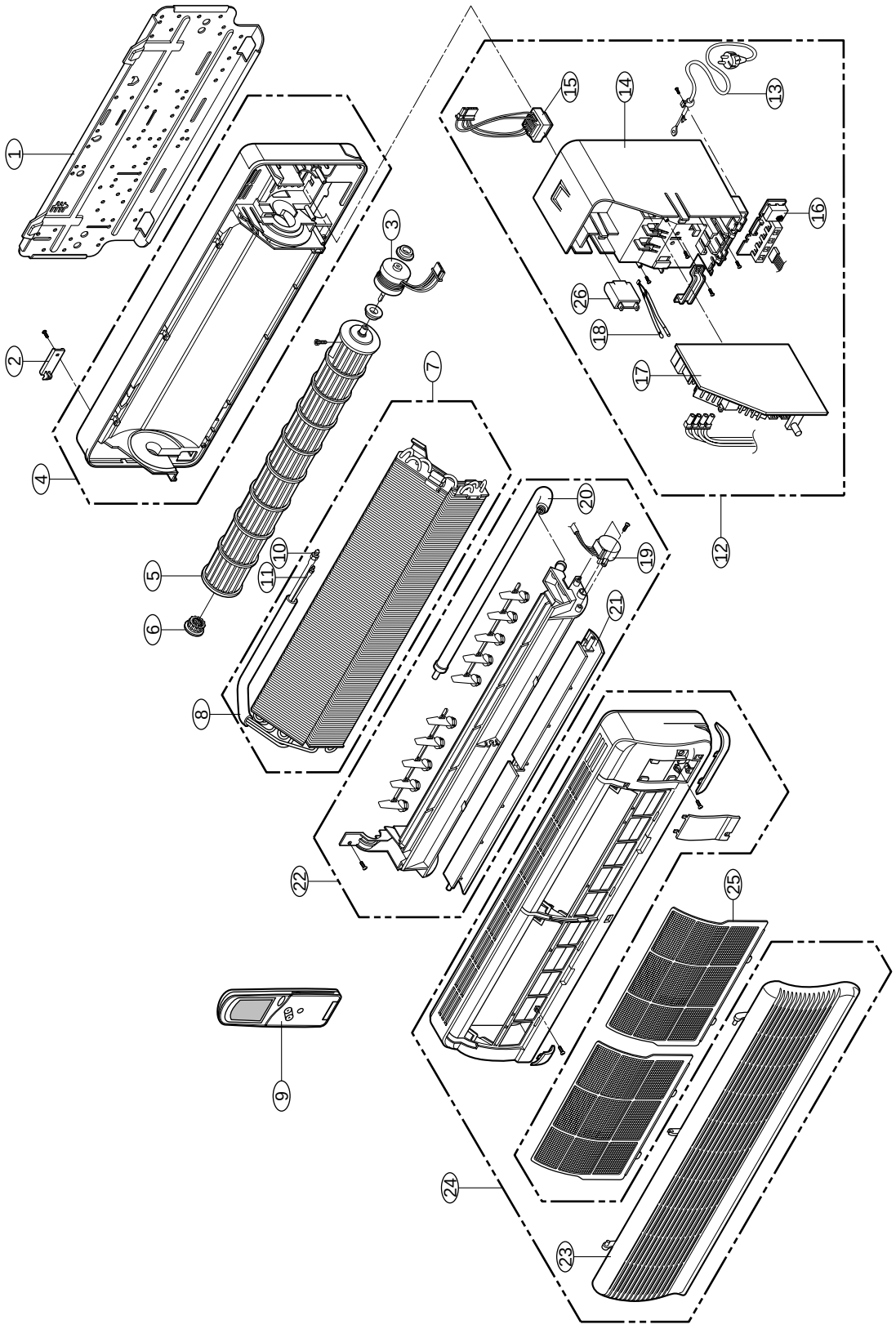


7K, 9K, 12K BTU Cooling & Heating Series



Exploded View & Replacement Parts List

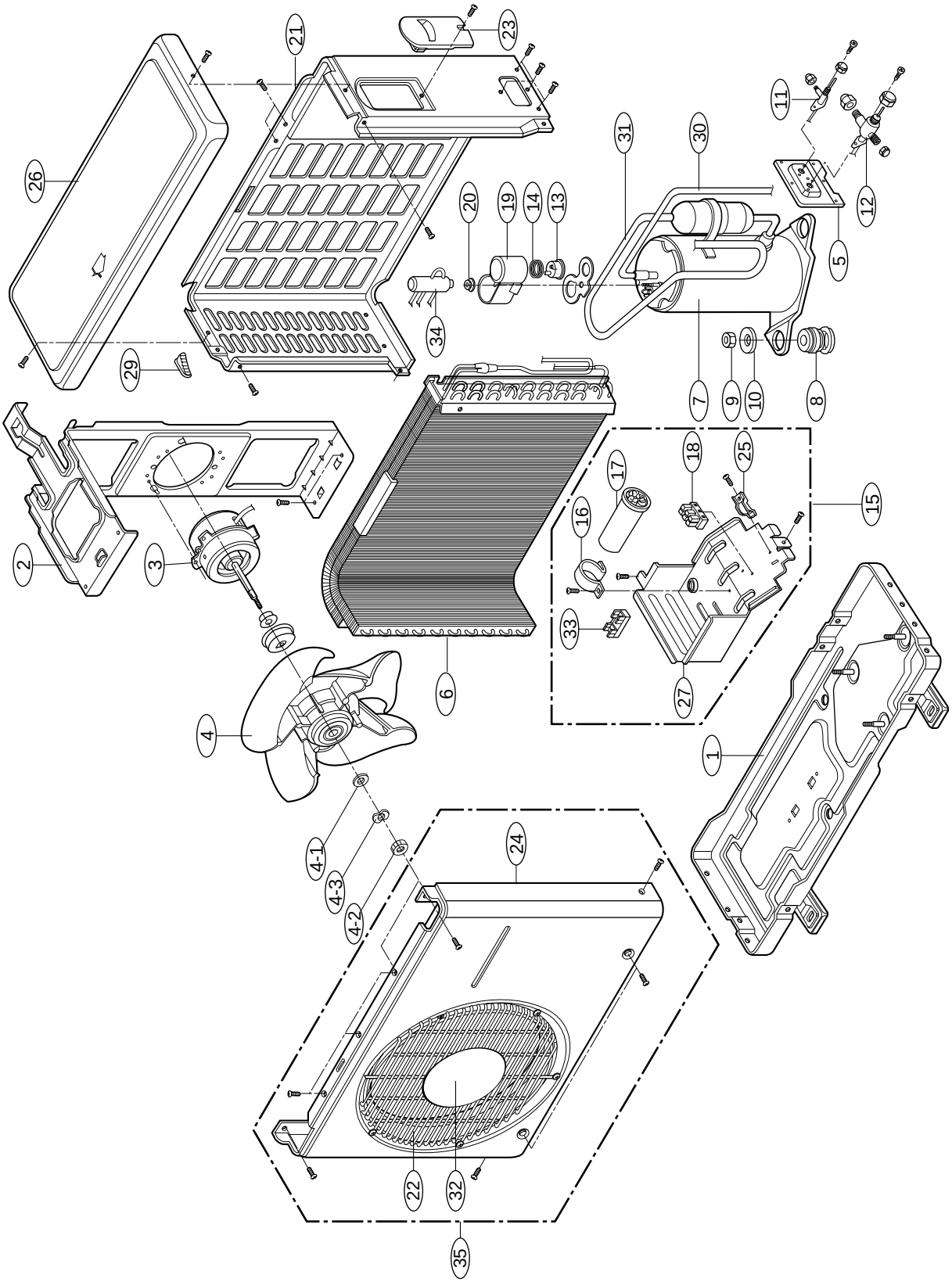
1. Indoor Unit (7K, 9K BTU series)



Parts List (7K, 9K, Indoor Unit)

No.	PARTS NAME	PART No.	Q,TY						REMARK
			LS-B0760CM	LS-B0760HM	LS-B0960CD LS-B0960CM	LS-B0962CD LS-B0962CM	LS-B0960HD LS-B0960HM	LS-B0962HD LS-B0962HM	
1	PLATE INSTALLATION	3300AR1008A	1	1	1	1	1	1	R
2	HOLDER, TUBE	4930AR3015A	1	1	1	1	1	1	
3	MOTOR BLOWER	4680AR2033	1E	1E	1D	1M	1D	1M	R
4	CHASSIS ASM	3141AR2466A	1	1	1	1	1	1	R
5	BLOWER ASS'Y	5835AR2034A	1	1	1	1	1	1	R
6	BEARING ASM	3H02821A	1	1	1	1	1	1	R
7	EVAPORATOR ASS'Y	5421AR2035	1F	1F	1F	1Q	1F	1Q	
8	TUBE ASS'Y	5211AR2042A	1	1	1	1	1	1	
9	REMOTE CONTROLLER ASM	6711AR2853	1A	1B	1A	1A	1B	1B	R
10	BOLT, SOCKET FLARE	4010AR3071A	1	1	1	1	1	1	
11	SOCKET FLARE	3A00357D	1	1	1	1	1	1	R
12	CONTROLLER ASM	4781AR1186	1C	1A	1C	1C	1A	1B	
13	POWER CORD ASSY	3H02255U	1	1	1	1	1	1	R
14	CONTROL BOARD	4994AR0051A	1	1	1	1	1	1	
15	POWER TRANS	6171AQ2147	1B	1B	1B	1B	1B	1B	R
16	DISPLAY PCB ASM	6047AQ3029C	1	1	1	1	1	1	R
17	MAIN PCB ASM	6871AQ2146	1E	1D	1E	1E	1D	1D	R
18	THERMISTOR ASM	3Q35099A	1	1	1	1	1	1	R
19	STEP MOTOR ASM	2H01803B	1	1	1	1	1	1	R
20	DRAIN HOSE ASS'Y	5250AR2044A	1	1	1	1	1	1	R
21	VANE ASM	5991AR3512A	1	1	1	1	1	1	R
22	DISCHARGE GRILLE ASS'Y	5009AR1190A	1	1	1	1	1	1	R
23	GRILLE, INLET	5236AR1158A	1	1	1	1	1	1	R
24	GRILLE ASS'Y, FRONT	3531AR1286A	1	1	1	1	1	1	R
25	FILTER, AIR	5230AR2003A	2	2	2	2	2	2	R
26	SH CAPACITOR	3H01487A	1	1	1	1	1	1	R

2. Outdoor Unit (7K, 9K, 11K BTU series)

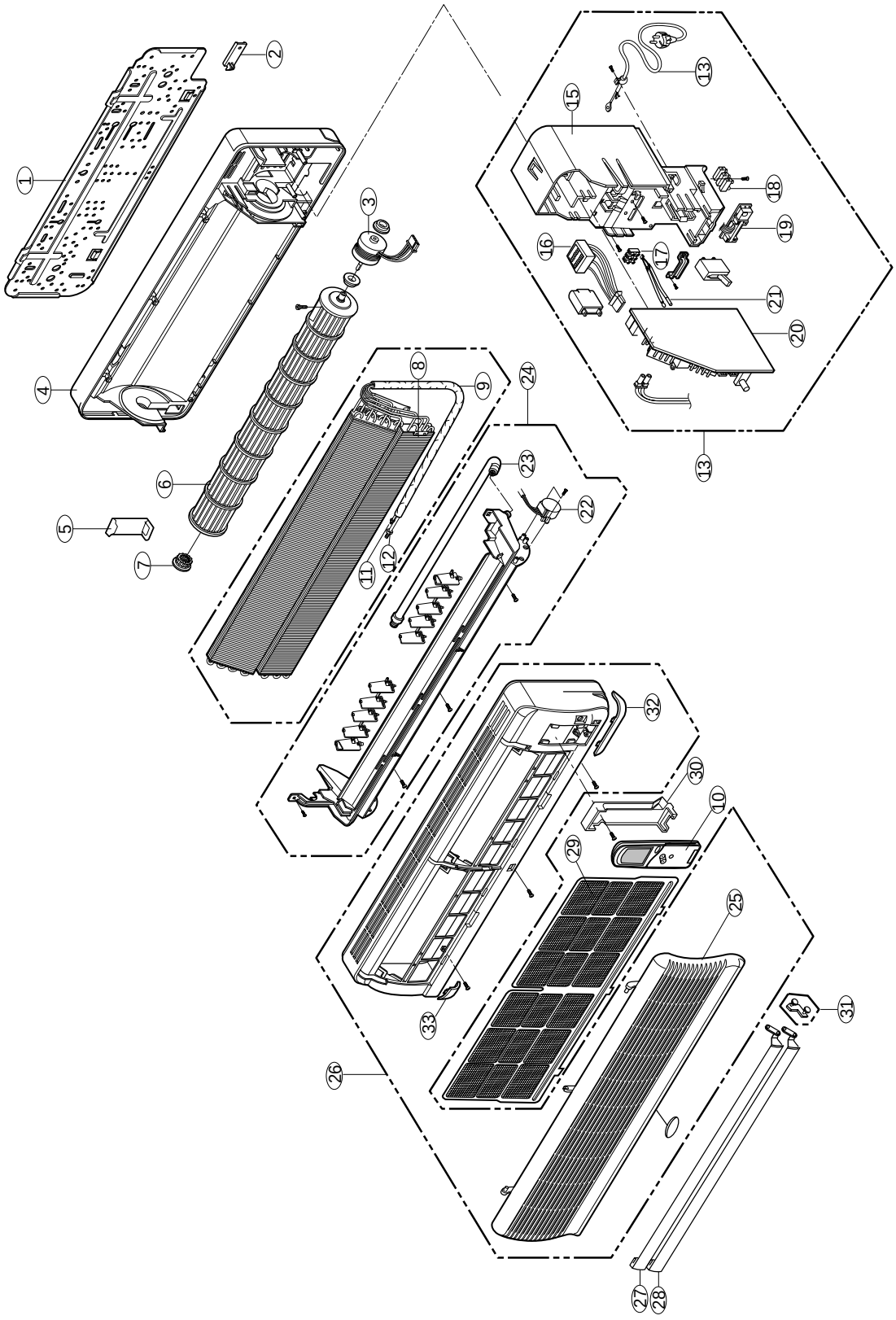


Parts List (7K, 9K, 11K Outdoor Unit)

NO	PART NO.	PART NAME	Q,TY							RE-MARKS
			LS-B0760CM	LS-B0960CD LS-B0960CM	LS-B0962CD LS-B0962CM	LS-C1120CM	LS-B0760HM	LS-B0960HD LS-B0960HM	LS-B0962HD LS-B0962HM	
1	2H02435B	BASE PAN WELD ASM	1	1	1	1	1	1	1	
2	1H00838A	MOUNT, MOTOR	1	1	1	1	1	1	1	R
3	1H00853	MOTOR, FAN	1K	1K	1K	1B	1K	1K	1D	R
4	5900AR1119A	FAN	1	1	1	1	1	1	1	R
4-1	1WPA0600014	PLAIN WASHER	1	1	1	1	1	1	1	R
4-2	4H02861A	FAN NUT	1	1	1	1	1	1	1	R
4-3	4A01405C	LOCKER	1	1	1	1	1	1	1	
5	2H02383B	SUPPORT, VALVE	1	1	1	1	1	1	1	R
6	5403AR2389	CONDENSER ASM	1H	1D	1D		1F	1B	1B	
	2H02382					1B				
7	2H02466	COMPRESSOR						1J	1R	
	5416AR2308					1J				R
	1H00408		1M	1N	1N		1M			
8	4H00982	ANTI-VIBRATION BUSH	3A	3A		3C	3A	3A		
	4984AR4361A				3				3	
9	1NHA0801206	HEXAGON NUTS(D8.0)	3	3	3	3	3	3	3	
10	4H00972D	WASHER	3	3			3	3		
	4810AR4155					3				
	4H01811C				3				3	
11	2H02479B	SERVICE VALVE(ø6.35)	1	1	1	1	1	1	1	R
12	2A00393F	SERVICE VALVE(ø9.52)	1	1	1		1	1	1	R
	2H01890H	SERVICE VALVE(ø12.7)				1				
13	6750-CL013A	OVERLOAD PROTECTOR	1	1	1		1	1	1	R
	6750U-L004A					1				
	6750U-L010A									
14	5300-CL101	O.L.P SPRING	1A	1A	1A		1A	1A		
	4970U-L002					1A			1A	
15	4995AR2361	CONTROL PANEL ASM					1D	1B	1B	
	4781AR2098		1E	1E	1E	1C				
16	4H01008A	CLAMP, CAPACITOR					1	1	1	
	4H01017A		1	1	1	1				
17	2A00986	SH CAPACITOR	1Q	1Q	1Q	1N	1Q			R
	2H01451						1P	1P		
18	4H03048	PILLAR TERMINAL	1A	1A	1A	1A	1C	1J	1J	R
19	3550-CL001A	TERMINAL COVER	1	1	1		1	1		R
	3550U-L002D					1			1	
20	4H00947	NUT, TERMINAL COVER	1A	1A	1A	1A	1A	1A	1A	R
21	1H00836	REAR PANEL	1B	1D	1D	1B	1B	1D	1D	
22	1H00850C	DISCHARGE GRILLE	1	1	1	1	1	1	1	
23	2H02448	CONTROL COVER ASM	1D	1D	1D	1D	1E	1E	1E	R
24	1H00835A	FRONT PANEL	1	1	1		1	1		
	2H02424N					1			1	
25	4H02958B	CLAMP CORD	1	1	1	1	1	1	1	
26	3H03714A	TOP COVER ASM	1	1	1	1	1	1	1	
27	1H00839A	CONTROL PANEL	1	1	1		1	1	1	
	4781AR2098C					1				

NO	PART NO	PART NAME.	Q,TY							RE-MARKS
			LS-B0760CM	LS-B0960CD LS-B0960CM	LS-B0962CD LS-B0962CM	LS-C1120CM	LS-B0760HM	LS-B0960HD LS-B0960HM	LS-B0962HD LS-B0962HM	
29	3H03168A	HANDLE	1	1	1	1	1	1	1	
30	5210AR2135A	TUBE DISCHARGE						1		
	5210AR2482						1A		1B	
	5211AR2428		1B	1A	1A					
	2H02444C					1				
31	5210AR2136A	TUBE SUCTION						1	1	
	5210AR2481A						1			
	5210AR2429A		1	1	1					
	5210AR3418D					1				
32	2H02385F	COVER GRILLE	1	1	1	1	1	1	1	
33	3H00390	TERMINAL BLOCK	1B	1B	1B	1B	2A	2A	2A	
34	3A02028G	COIL, REVERSING					1	1	1	R
	5220AR3084A	VALVE, REVERSING					1	1	1	
35	2H02424N	PANEL ASSY, FRONT	1	1	1	1	1	1	1	

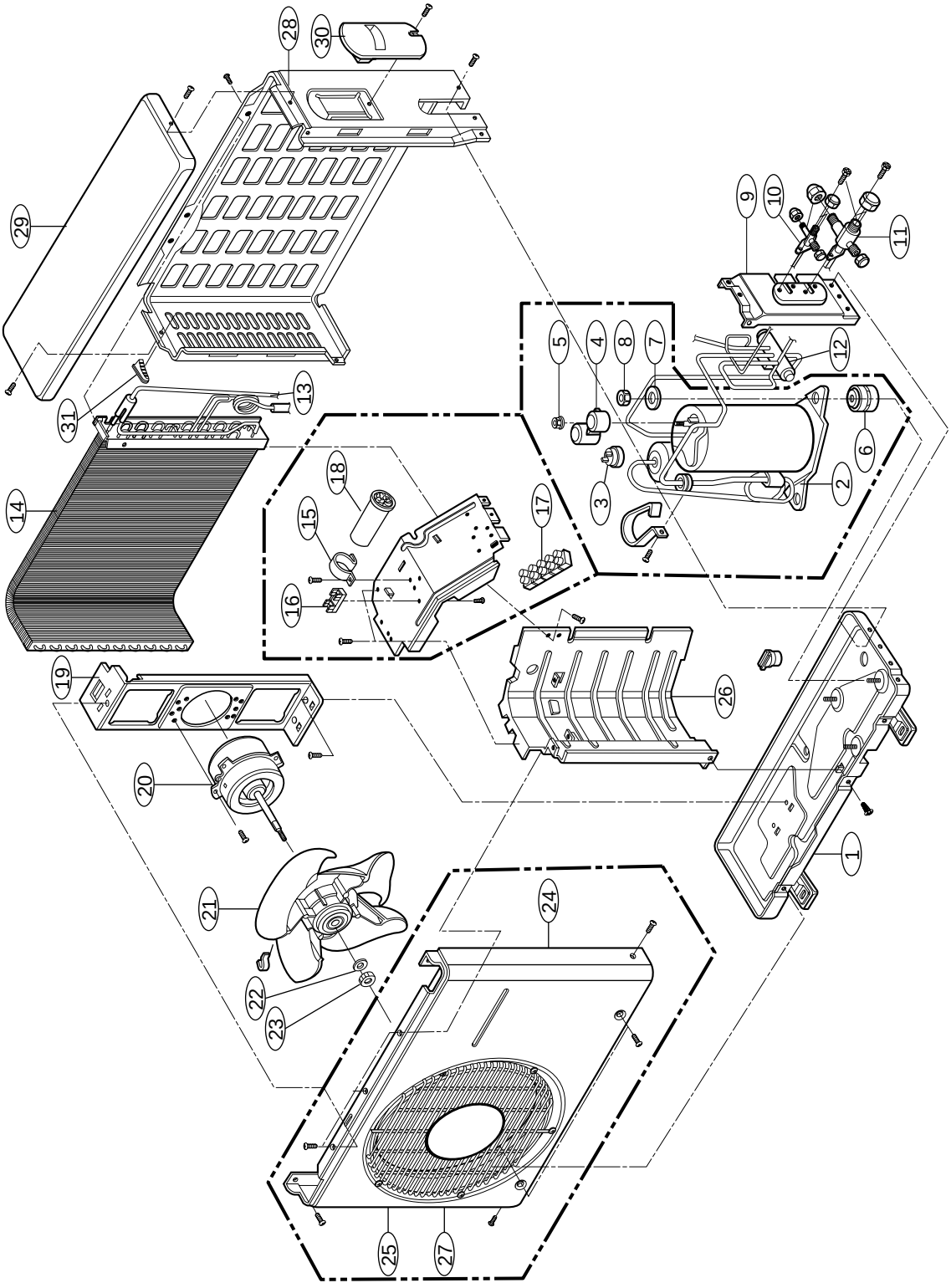
3. Indoor Unit (11K, 12K, 14K BTU Series)



Parts List (11K, 12K, 14K Indoor Unit)

NO	PART NO.	PART NAME	Q,TY				REMARKS
			LS-C1120CM	LS-C1260CM LS-C1260CD	LS-C1420CM (LS-C1420CN)	LS-C1260HD LS-C1260HM	
1	1H00843A	PLATE INSTALLING	1	1	1	1	
2	3H03651A	HOLDER, TUBE	1	1	1	1	
3	4680AR2385	MOTOR, BLOWER	1J	1A	1H	1A	R
4	3141AR2261A	CHASSIS ASM	1	1	1	1	R
5	3H03652A	COVER, TUBE	1	1	1	1	
6	2H02426A	CROSS FLOW FAN	1	1	1	1	R
7	3H02821A	BEARING ASM	1	1	1	1	R
8	5420AR2407A	EVAPORATOR		1		1	R
	5420AR2505B		1		1		
9	2H02449A	TUBING ASM	1	1	1	1	R
	5211AR2072B		1				
10	6711AR2853	REMOTE CONTROLLER	1A	1A	1A	1B	R
	6711AR2664				(1C)		
11	3A00375D	SOCKET FLARE	1	1	1	1	R
12	3H01420A	SOCKET FLARE	1	1	1	1	R
13	4995AR1187	CONTROLLER ASM	1Z	1D	1Z	1B	
	4781AR1169				(1A)		
14	3H02255U	POWER CORD ASM	1	1	1	1	R
15	4994AR1236A	CONTROL BOARD	1	1	1	1	R
16	6171AQ2147B	POWER, TRANS	1	1	1	1	R
17	4H03048H	PILLAR TERMINAL	1	1	1	1	R
18	4H03048	PILLAR TERMINAL	1H	1H	1H	1J	R
19	6047AQ3021C	DISPLAY PCB ASM	1	1	1	1	R
20	6871ZQ2146	MAIN PCB ASM	1B	1B	1B(1W)	1A	R
21	3Q35099	THERMISTOR ASM	1E	1E	1E	1A	R
22	4681AR2727B	STEPPING MOTOR	1	1	1	1	R
23	5250AR2044D	DRAIN HOSE ASM		1		1	R
	5251AR1222		1C		1C		
24	5009AR1179	DISCHARGE GRILLE ASM	1E	1A	1A(1N)	1A	R
25	3530AR1116A	INLET GRILLE		1	1	1	R
	3530AR1118S		1				
	5236AR1383A				(1)		
26	3531AR1178	FRONT GRILLE ASM		1B		1A	R
	3531AR1387		1M		1M		
	3531AR1458				(1B)		
27	5990AR3299	VANE-1	1B	1B	1B(1C)	1B	R
28	5990AR3300A	VANE-2	1	1	1	1	R
29	5230AR1151A	AIR FILTER	1	1	1	1	R
30	3530AR3301A	CONTROL COVER	1	1	1	1	R
31	4025AR4107A	LINK	1	1	1	1	R
32	3509AR3459	DECORATION-R ASM	1B	1B	1B	1A	R
	3508AR2666				(1B)		
33	3508AR2243	DECORATION-L	1A	1A	1A(1D)	1A	R

4. Outdoor Unit (12K, 14K BTU Series)



Parts List (12K, 14K Outdoor Unit)

No.	PARTS NAME	PART No.	Q,TY			REMARK
			LS-C1260CD LS-C1260CM	LS-C1420CM (LS-C1420CN)	LS-C1260HD LS-C1260HM	
1	BASE PAN W. ASM	2H02079	1E	1E	1F	
2	COMPRESSOR	5417AR2256A			1	R
		5416AR2300		1H		R
		2H02466L	1			
3	O.L.P	6750-CL005A		1	1	R
	(OVER LOAD PROTECTOR)	6750U-L017	1			R
4	TERMINAL COVER	3550-CL001C		1	1	R
		3550U-L002D	1			
5	NUT TERMINAL COVER	4H00947A	1	1	1	R
6	ANTI VIBRATION BUSH	4H00982A	3	3	3	R
7	WASHER	4H00972D	3	3	3	R
8	HEXAGON NUT-1	1NHA0801206	3	3	3	R
9	SUPPORT VALVE	2H02019B	1	1	1	R
10	SERVICE VALVE	2H01225D(2H02479B)	1	1	1	R
11	SERVICE VALVE	2H02150A	1	1	1	R
12	REVERSING VALVE	5220AR3084A			1	R
	REVERSING VALVE COIL	3A02028N			1	R
13	CAPILLARY FINAL ASM	5425AR2160B			1	
		5425AR2485A	1			
		5425AR2705A		1	1	
14	CONDENSER ASM	5403AR2409	1D		1B	(R)
		5403AR2389		1K		
15	CLAMP CAPACITOR	4H01008A	1	1	1	
16	TERMINAL BLOCK	3H00390A			1	R
		3H00390B	1	1	1	R
17	PILLAR TERMINAL	4H03048H	1	1		R
		4H03048J			1	R
18	SH CAPACITOR	2H01451	1T		1P	R
		6120AR2194		1H		
19	MOUNT, MOTOR	1H00838A	1	1	1	
20	MOTOR, FAN	1H00853	1D	1R	1D	R
21	FAN	5900AR1119A	1	1	1	R
22	PLAIN WASHER	1WPA0800014	1	1	1	R
23	FAN NUT	4H02861A	1	1	1	R
24	FRONT PANEL ASSY	3721AR2400C	1	1	1	R
25	DISCHARGE GRILLE	1H00850C	1	1	1	R

No.	PARTS NAME	PART No.	Q,TY			REMARK
			LS-C1260CD LS-C1260CM	LS-C1420CM (LS-C1420CN)	LS-C1260HD LS-C1260HM	
26	BARRIER ASM	3H03466A	1	1	1	R
27	COVER GRILLE	2H02385	1F	1F(1D)	1F	R
28	REAR PANEL	1H00697C	1	1	1	
29	TOP COVER ASM	3H03465A	1	1	1	
30	COVER CONTROL ASM	2H02082A	1	1	1	
31	HANDLE	3H03168A	1	1	1	R

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