LG

Inverter

Multi Type Room Air Conditioner

SERVICE MANUAL

INDOOR UNINT

- **ROOM TYPE**
  - HPWI-C20E(AMNN076MQA0)
  - HPWI-C25E(AMNN096MQA0)
  - HPWI-C35E(AMNN126MRA0)
  - HPWI-C50E(AMNN186MTA0)
  - HPWI-C70E(AMNN246MTA0)
- **CONVERTIBLE TYPE**
  - HPFI-C50E(AMNN186VBA0)
- **CASSETTE TYPE**
  - HPCI-C50E(AMNN186TEA0)
  - HPCI-C35E(AMNN126TEA0)
- **DUCT TYPE**
  - HPDI-C25E(AMNN096BTG0)
  - HPDI-C35E(AMNN126BTG0)
  - HPDI-C50E(AMNN186BHA0)

OUTDOOR UNINT

- HPI-C2077(A2UN186FA0)
- HPI-C3077(A3UN216FA0)
- HPI-C4108(A4UN306FA0)

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

• Room/Art Cool/Convertible Type Indoor Unit: High, Med, Low, Chaos
• Cassette Type Indoor Unit: High, Mde, Low, Auto

Operation indication Lamps (LED)

• Room/Art Cool/Convertible type Indoor Unit

-- Lights up in operation

-- Lights up in Sleep Mode

-- Lights up in Timer Mode

-- Lights up in Deice Mode

• Cassette type Indoor Unit

-- Lights up in Operation

-- Lights up in Filter replacement

-- Lights up in Timer Mode

-- Lights up in Defrost Mode or Hot Start Operation.

-- Operation procedures when the remote control can't be used.

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.

Natural 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 automatically.

PLASMA

• The function will be operated while in any operation mode with selecting the function.
• The function is to be stopped while it is operating with selecting the function.

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.

Outdoor Unit

Power relay control

- If power is on, it will operate to chage capacitor on controller and power relay will operate after about 10sec.

Comp. Freq. control

- The final operating freq. of comp. is set the lowest freq. that limited outdoor temp., discharge pipe temp., target freq., owing to CT.

Overheatng. Protection(Power module)

Freq. speed control(up/down speed)

V/F control

- It will be changed the drive voltage of comp. according to operating frequency.

Total current control (over current protection)

DC peak current control

4 way valve control

- It is only operated in the heating operation mode except defrosting operation.

Outdoor fan motor control

- High speed/Low speed

Discharge pipe temp. control

Overpressure protection

Remote Controller

Operation ON/OFF

Operation Mode Selection

Cooling Operation Mode.(❄) Auto Operation Mode.(A)

Healthy Dehumidification Operation Mode.(💧) Heating Operation Mode.(☼)

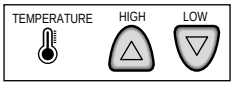
Fan Speed Selection

(Low) (Med) (High) (CHAOS)

Room, Temperature Display

: (High: 39°C ◄——► LOW : 11°C)

Temperature Setting



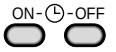
Cooling — Down to 18°C / Up to 30°C

Heating — Down to 16°C / Up to 30°C

JET COOL

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

● RESET

Product Specifications

Item \ Model		Indoor	HPWI-C20E (AMNN076MQA0)	HPWI-C25E (AMNN096MQA0)	HPWI-C35E (AMNN126MRA0)	HPWI-C50E (AMNN186MTA0)
		Outdoor	HPI-C2077(A2UN186FA0), HPI-C3077(A3UN216FA0)			
Cooling Capacitor (Indoor)		Btu/h	7,000	9,000	12,000	18,000
		W	2,051	2,637	3,517	5,274
Max. Cooling Capacitor (Outdoor)		Btu/h	23,400			
		W	6,856			
Heating Capacitor (Indoor)		Btu/h	8,000	10,000	13,000	19,000
		W	2,344	2,930	3,809	5,567
Max. Heating Capacitor (Outdoor)		Btu/h	25,200			
		W	7,384			
Moisture Removal		l/h	1.0	1.2	1.7	2.0
Power Supply		Ø, V, Hz	1, 220-240, 50			
Air Circulation	Indoor, Max	CMM	6.5	7.0	9.5	13
	Outdoor, Max		56			
Noise Level (1m)	Indoor, High	dB(A)±1	35	37	40	43
	Indoor, Med		33	34	36	40
	Indoor, Low		30	31	32	37
	Outdoor, Max		54			
Input	Cooling	W	880~2,660			
	Heating		1,210~2,360			
Running Current	Cooling	A	4.6~12.1			
	Heating		6.1~11.1			
Motor Output	Indoor	W	5.3	8.4	14.4	22
	Outdoor		68			
Dimensions	Indoor	mm	824 x155 x 260	824 x155 x 260	900 x 156 x 285	1090 x 172 x 314
	Outdoor	(W*D*H)	870 x 320 x 655			
Net Weight	Indoor	Kg	7	7	8	12
	Outdoor		64			
Refrigerant	R-410A	g	1600(at 7.5m)			
Airflow Direction Control(Up & Down)			O	O	O	O
Remocon Type			L.C.D Wireless			
Service Valve	Luquid	inch(mm)	1/4"(6.35)			
	Gas		3/8"(9.52)	3/8"(9.52)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O			
Connection Cable			4 x 0.75(Includes earth)			

Item \ Model		Indoor	HPWI-C20E (AMNN076MQA0)	HPWI-C25E (AMNN096MQA0)	HPWI-C35E (AMNN126MRA0)	HPWI-C50E (AMNN186MTA0)	HPWI-C70E (AMNN246MTA0)
		Outdoor	HPI-C4108(A4UN306FA0)				
Cooling Capacitor (Indoor)		Btu/h	7,000	9,000	12,000	18,000	23,000
		W	2,051	2,637	3,517	5,274	6,739
Max. Cooling Capacitor (Outdoor)		Btu/h	31,000				
		W	9,083				
Heating Capacitor (Indoor)		Btu/h	8,000	10,000	13,800	19,000	26,000
		W	2,344	2,930	4,044	5,567	7,618
Max. Heating Capacitor (Outdoor)		Btu/h	34,000				
		W	9,962				
Moisture Removal		l/h	1.0	1.2	1.7	2.0	2.5
Power Supply		Ø, V, Hz	1, 220-240, 50				
Air Circulation	Indoor, Max	CMM	6.5	7.0	9.5	13	14
	Outdoor, Max		60				
Noise Level (1m)	Indoor, High	dB(A)±1	35	37	40	43	47
	Indoor, Med		33	34	36	40	44
	Indoor, Low		30	31	32	37	40
	Outdoor, Max		58				
Input	Cooling	W	1,430~3,800				
	Heating		1,950~3,910				
Running Current	Cooling	A	7.0~19.5				
	Heating		9.3~20.0				
Motor Output	Indoor	W	5.3	8.4	14.4	22	29
	Outdoor		68				
Dimensions	Indoor	mm (W*D*H)	824 x 155 x 260	824 x 155 x 260	900 x 156 x 285	1090 x 172 x 314	1090 x 172 x 314
	Outdoor		870 x 320 x 800				
Net Weight	Indoor	Kg	7	7	8	12	12
	Outdoor		75				
Refrigerant	R-410A	g	2,000(at 7.5m)				
Airflow Direction Control(Up & Down)			O	O	O	O	O
Remocon Type			L.C.D Wireless				
Service Valve	Luquid	inch(mm)	1/4"(6.35)				
	Gas		3/8"(9.52)	3/8"(9.52)	1/2"(12.7)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O				
Connection Cable			4 x 0.75(Includes earth)				

Item \ Model		Indoor	HPCI-C35E (AMNN126TEA0)	HPCI-C50E (AMNN186TEA0)	HPFI-C50E (AMNN186VBA0)
		Outdoor	HPI-C2077(A2UN186FA0), HPI-C3077(A3UN216FA0)		
Cooling Capacitor (Indoor)		Btu/h	12,000	18,000	18,000
		W	3,517	5,275	5,275
Max. Cooling Capacitor (Outdoor)		Btu/h	23,400		
		W	6,856		
Heating Capacitor (Indoor)		Btu/h	13,800	19,000	19,000
		W	4,044	5,567	5,567
Max. Heating Capacitor (Outdoor)		Btu/h	25,200		
		W	7,384		
Moisture Removal		l/h	1.5	3.3	2.5
Power Supply		Ø, V, Hz	1, 220-240, 50		
Air Circulation	Indoor, Max	CMM	9.25	13.5	14
	Outdoor, Max		56		
Noise Level (1m)	Indoor, High	dB(A)±1	41	47	49
	Indoor, Med		39	45	47
	Indoor, Low		37	43	45
	Outdoor, Max		54		
Input	Cooling	W	880~2,660		
	Heating		1,210~2,360		
Running Current	Cooling	A	4.6~12.1		
	Heating		6.1~11.1		
Motor Output	Indoor	W	18.3	25	-
	Outdoor		64		
Dimensions	Indoor	mm (W*D*H)	570 x 570 x 269	570 x 570 x 269	1,200 x 205 x 615
	Outdoor		870 x 320 x 655		
Net Weight	Indoor	Kg	19	19	30
	Outdoor		64		
Refrigerant	R-410A	g	1,600		
Airflow Direction Control(Up & Down)			O	O	O
Remocon Type			L.C.D Wireless		
Service Valve	Luquid	inch(mm)	1/4"(6.35)		
	Gas		1/2"(12.7)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O		
Connection Cable			4 x 0.75(Includes earth)		

Item \ Model		Indoor	HPCI-C35E (AMNN126TEA0)	HPCI-C50E (AMNN186TEA0)	HPFI-C50E (AMNN186VBA0)
		Outdoor	HPI-C4108(A4UN306FA0)		
Cooling Capacitor (Indoor)		Btu/h	12,000	18,000	18,000
		W	3,517	5,275	5,275
Max. Cooling Capacitor (Outdoor)		Btu/h	23,400		
		W	6,856		
Heating Capacitor (Indoor)		Btu/h	13,800	19,000	19,000
		W	4,044	5,567	5,567
Max. Heating Capacitor (Outdoor)		Btu/h	25,200		
		W	7,384		
Moisture Removal		*l*/h	1.5	3.3	2.5
Power Supply		Ø, V, Hz	1, 220-240, 50		
Air Circulation	Indoor, Max	CMM	9.25	13.5	14
	Outdoor, Max		60		
Noise Level (1m)	Indoor, High	dB(A)±1	41	47	49
	Indoor, Med		39	45	47
	Indoor, Low		37	43	45
	Outdoor, Max		58		
Input	Cooling	W	1,430~3,800		
	Heating		1,950~3,910		
Running Current	Cooling	A	7.0~19.5		
	Heating		9.3~20.0		
Motor Output	Indoor	W	18.3	25	-
	Outdoor		64		
Dimensions	Indoor	mm (W*D*H)	570 x 570 x 269	570 x 570 x 269	1,200 x 205 x 615
	Outdoor		870 x 320 x 655		
Net Weight	Indoor	Kg	19	19	30
	Outdoor		64		
Refrigerant	R-410A	g	2,000(at 7.5m)		
Airflow Direction Control(Up & Down)			O	O	O
Remocon Type			L.C.D Wireless		
Service Valve	Luquid	inch(mm)	1/4"(6.35)		
	Gas		1/2"(12.7)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O		
Connection Cable			4 x 0.75(Includes earth)		

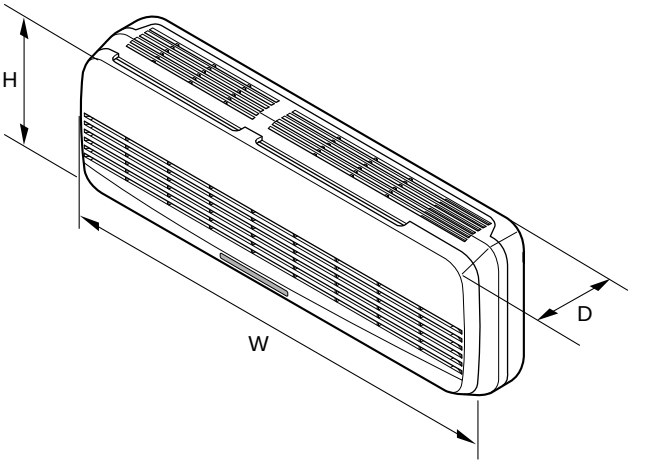
Item \ Model		Indoor	HPDI-C25E (AMNN096BTG0)	HPDI-C35E (AMNN126BTG0)	HPDI-C50E (AMNN186BHA0)
		Outdoor	HPI-C2077(A2UN186FA0), HPI-C3077(A3UN216FA0)		
Cooling Capacitor (Indoor)		Btu/h	9,000	12,000	18,000
		W	2,637	3,517	5,274
Max. Cooling Capacitor (Outdoor)		Btu/h	23,400		
		W	6,856		
Heating Capacitor (Indoor)		Btu/h	10,000	13,000	19,000
		W	2,930	3,809	5,567
Max. Heating Capacitor (Outdoor)		Btu/h	25,200		
		W	7,384		
Moisture Removal		l/h	1.0	1.2	1.6
Power Supply		Ø, V, Hz	1, 220-240, 50		
Air Circulation	Indoor, Max	CMM	8.0	10.0	16.0
	Outdoor, Max		56		
Noise Level (1m)	Indoor, High	dB(A)±1	36	39	45
	Indoor, Med		34	35	42
	Indoor, Low		30	31	39
	Outdoor, Max		54		
Input	Cooling	W	880~2,660		
	Heating		1,210~2,360		
Running Current	Cooling	A	4.6~12.1		
	Heating		6.1~11.1		
Motor Output	Indoor	W	35	35	118
	Outdoor		68		
Dimensions	Indoor	mm (W*D*H)	650 x 535 x 230	650 x 535 x 230	880 x 450 x 260
	Outdoor		870 x 320 x 655		
Net Weight	Indoor	Kg	22	22	34
	Outdoor		64		
Refrigerant	R-410A	g	1600(at 7.5m)		
Airflow Direction Control(Up & Down)			-	-	-
Remocon Type			L.C.D Wired		
Service Valve	Luquid	inch(mm)	1/4"(6.35)		
	Gas		3/8"(9.52)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O		
Connection Cable			4 x 0.75(Includes earth)		

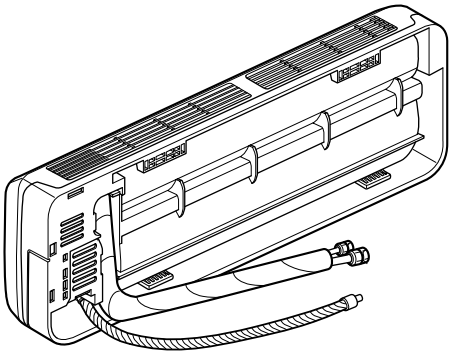
Item \ Model		Indoor	HPDI-C25E (AMNN096BTG0)	HPDI-C35E (AMNN126BTG0)	HPDI-C50E (AMNN186BHA0)
		Outdoor	HPI-C4108(A4UN306FA0)		
Cooling Capacitor (Indoor)		Btu/h	9,000	12,000	18,000
		W	2,637	3,517	5,274
Max. Cooling Capacitor (Outdoor)		Btu/h	31,000		
		W	9,083		
Heating Capacitor (Indoor)		Btu/h	10,000	13,800	19,000
		W	2,930	4,044	5,567
Max. Heating Capacitor (Outdoor)		Btu/h	34,000		
		W	9,962		
Moisture Removal		l/h	1.0	1.2	1.6
Power Supply		Ø, V, Hz	1, 220-240, 50		
Air Circulation	Indoor, Max	CMM	8.0	10.0	16.0
	Outdoor, Max		60		
Noise Level (1m)	Indoor, High	dB(A)±1	36	39	45
	Indoor, Med		34	35	42
	Indoor, Low		30	31	39
	Outdoor, Max		58		
Input	Cooling	W	1,430~3,800		
	Heating		1,950~3,910		
Running Current	Cooling	A	7.0~19.5		
	Heating		9.3~20.0		
Motor Output	Indoor	W	35	35	118
	Outdoor		68		
Dimensions	Indoor	mm	650 x 535 x 230	650 x 535 x 230	880 x 450 x 260
	Outdoor	(W*D*H)	870 x 320 x 800		
Net Weight	Indoor	Kg	22	22	34
	Outdoor		75		
Refrigerant	R-410A	g	2,000(at 7.5m)		
Airflow Direction Control(Up & Down)			O	O	O
Remocon Type			L.C.D Wired		
Service Valve	Luquid	inch(mm)	1/4"(6.35)		
	Gas		3/8"(9.52)	1/2"(12.7)	1/2"(12.7)
Sleeping Operation			O		
Connection Cable			4 x 0.75(Includes earth)		

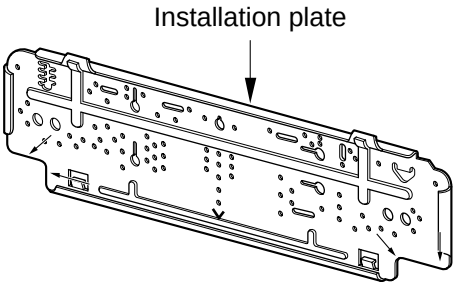
Dimensions

1. Indoor Unit

• Room Type Indoor Unit

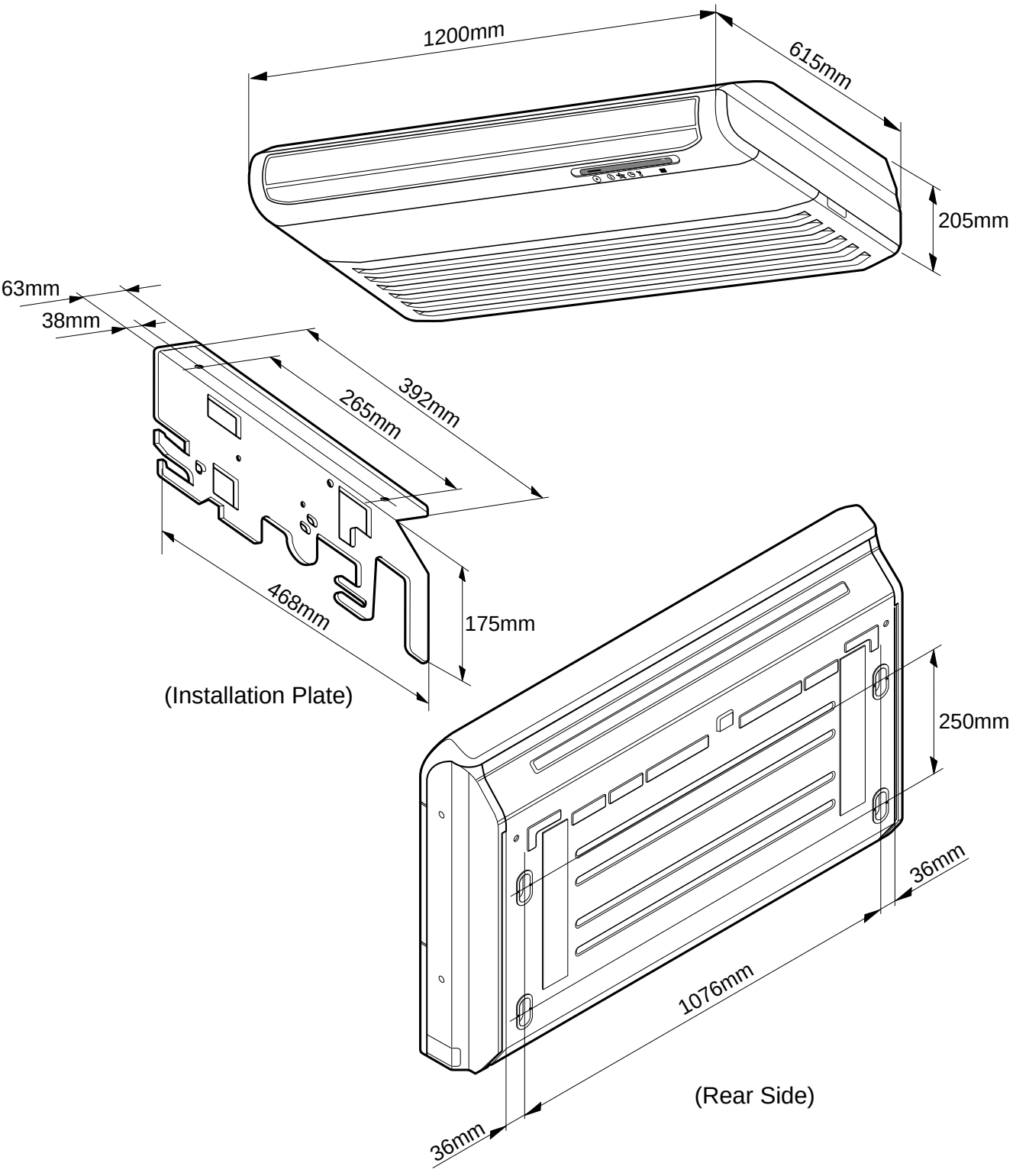




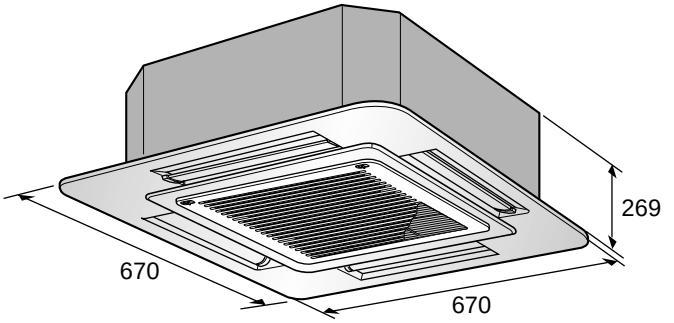


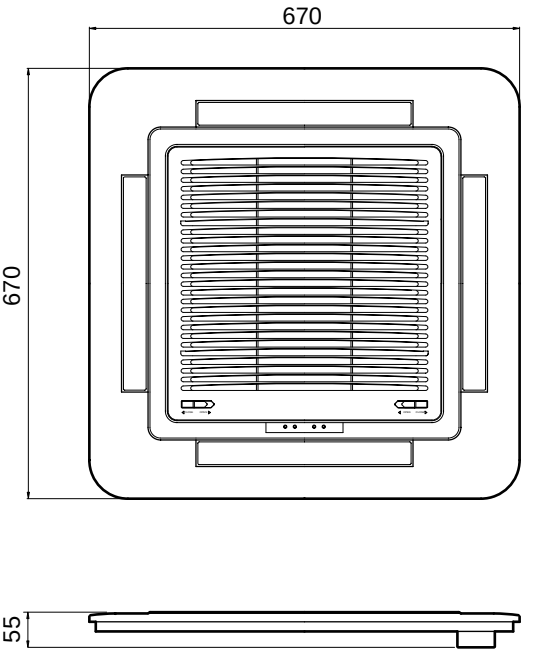
DIM \ MODEL		HPWI-C20E(AMNN076MQA0) HPWI-C25E(AMNN096MQA0)	HPWI-C35E(AMNN126MRA0)	HPWI-C50E(AMNN186MTA0) HPWI-C70E(AMNN246MTA0)
W	mm	824	900	1,090
H	mm	260	285	314
D	mm	155	156	172

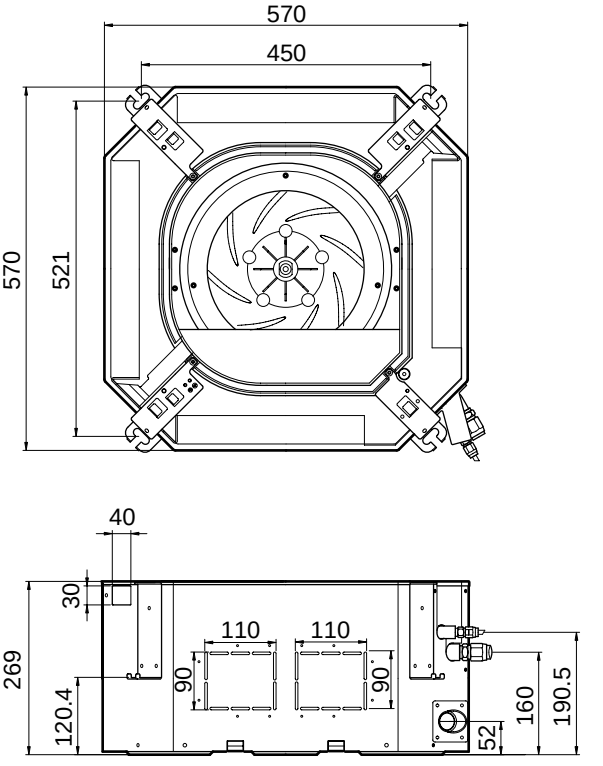
• Convertible Type Indoor Unit



- **Cassette Type Indoor Unit**

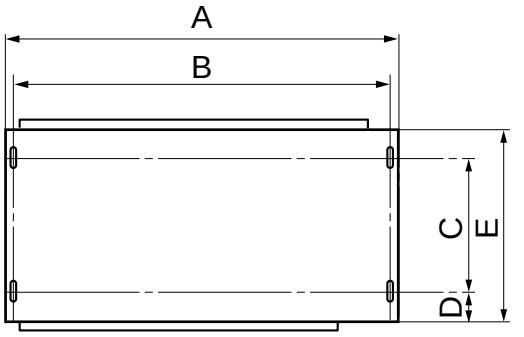


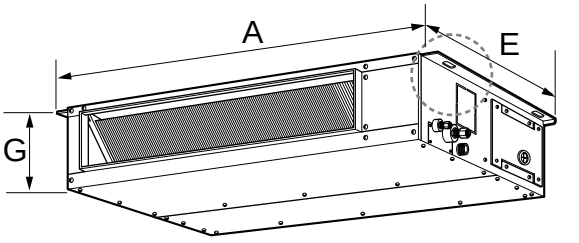


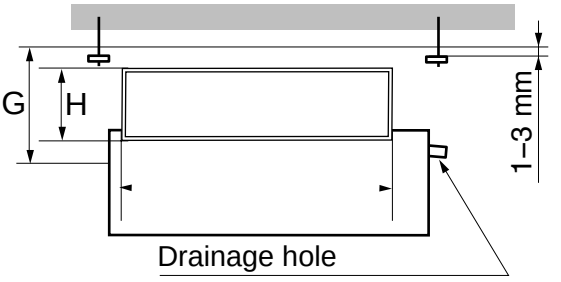


• **Duct Type Indoor Unit**

-9k/12k



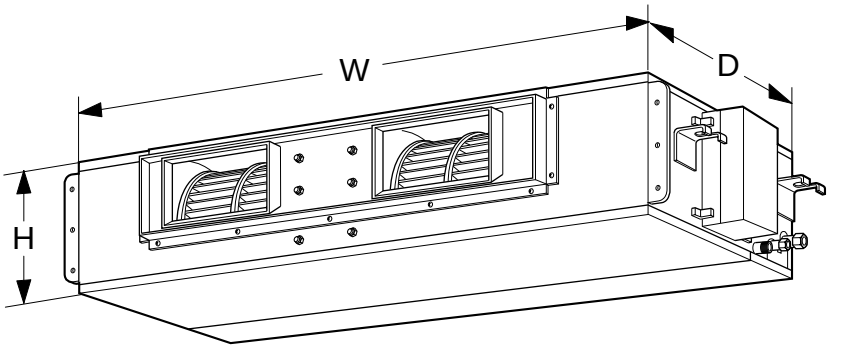




(Unit:mm)

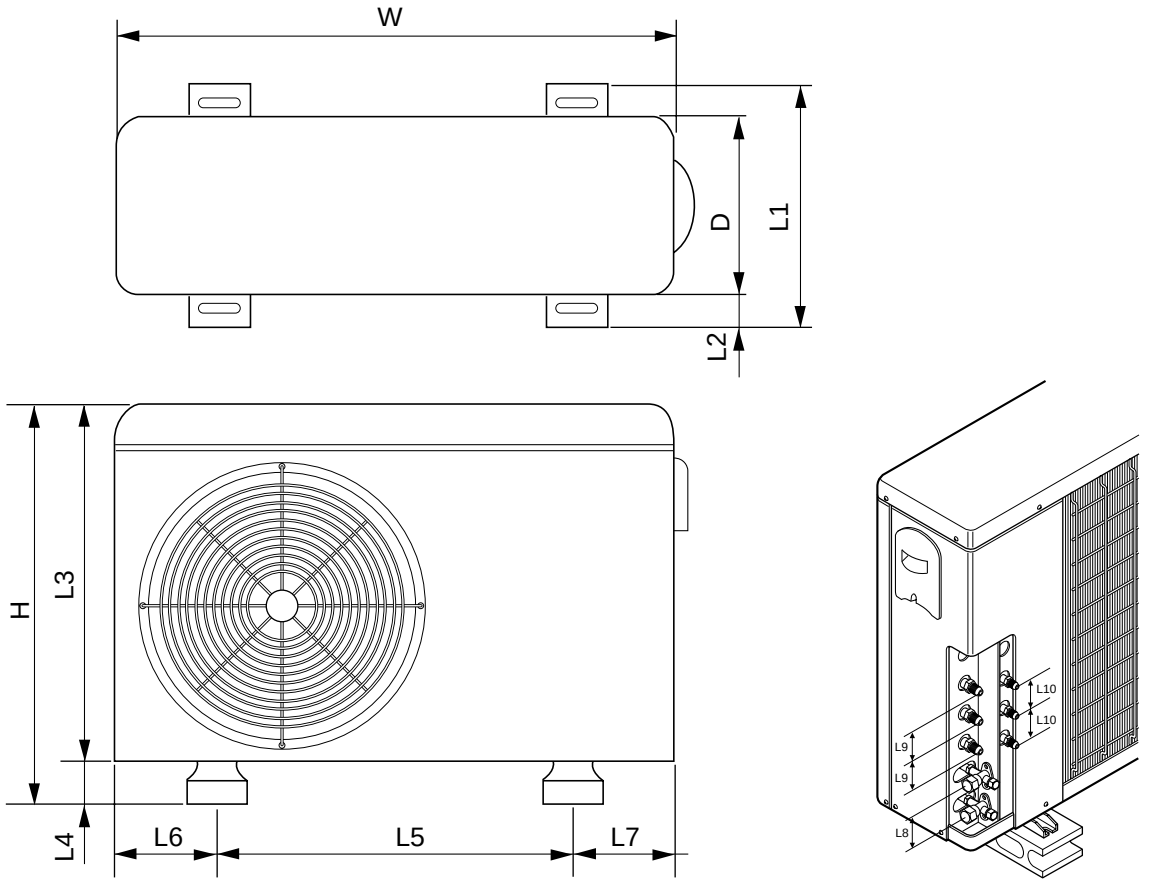
Dimension / Capacity	A	B	C	D	E	F	G	H
9/12K	708	678	434	51	537	455	230	172

-18k



Dimension / Capacity	W(mm)	H(mm)	D(mm)
18k	880	260	450

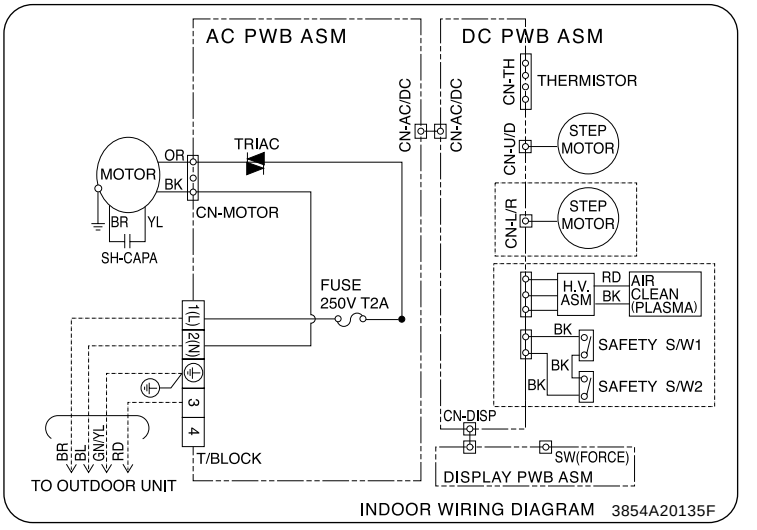
2. Outdoor Unit



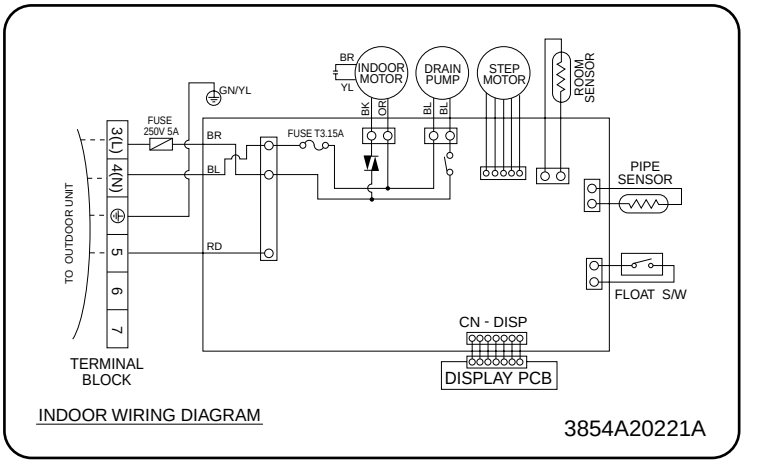
DIM \ MODEL		HPI-C2077(A2UN186FA0) HPI-C3077(A3UN216FA0)	HPI-C4108(A4UN306FA0)
W	mm	870	870
H	mm	655	800
D	mm	320	320
L1	mm	370	370
L2	mm	25	25
L3	mm	630	775
L4	mm	25	25
L5	mm	546	546
L6	mm	160	160
L7	mm	160	160
L8	mm	53	53
L9	mm	50	50
L10	mm	40	40

Wiring Diagram

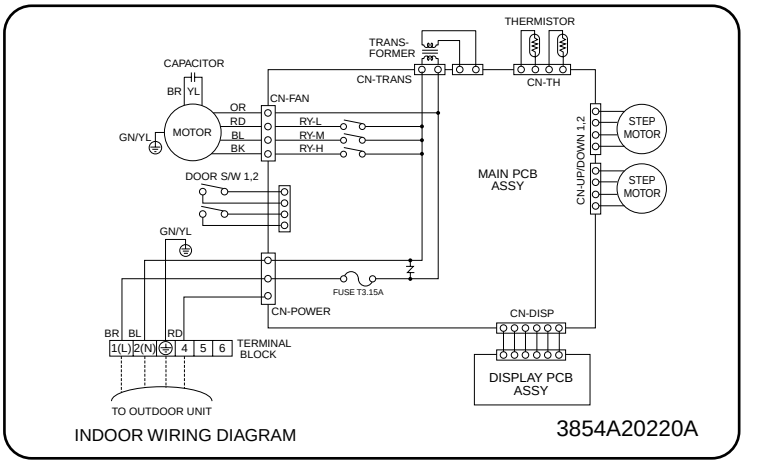
1. Room Type Indoor Unit



2. Cassette Type Indoor Unit

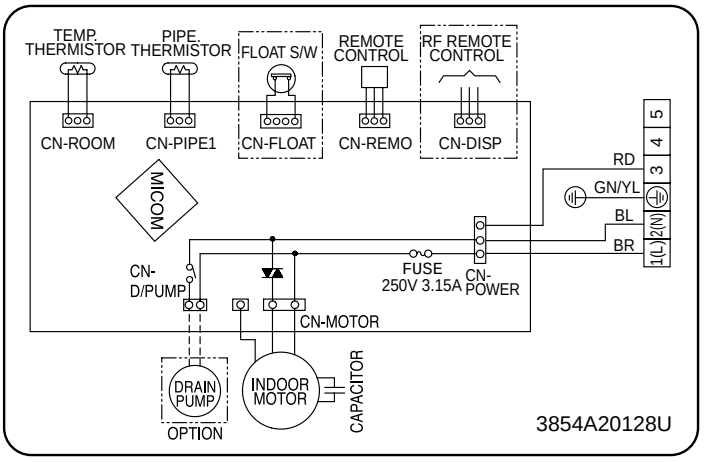


3. Convertible Type Indoor Unit

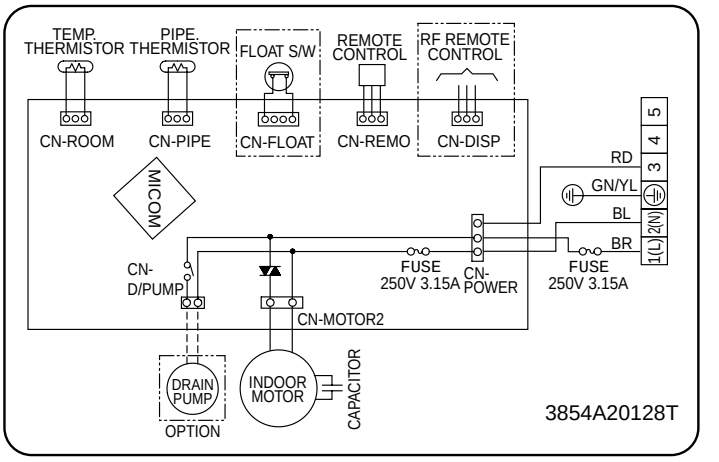


4. Duct Type Indoor Unit

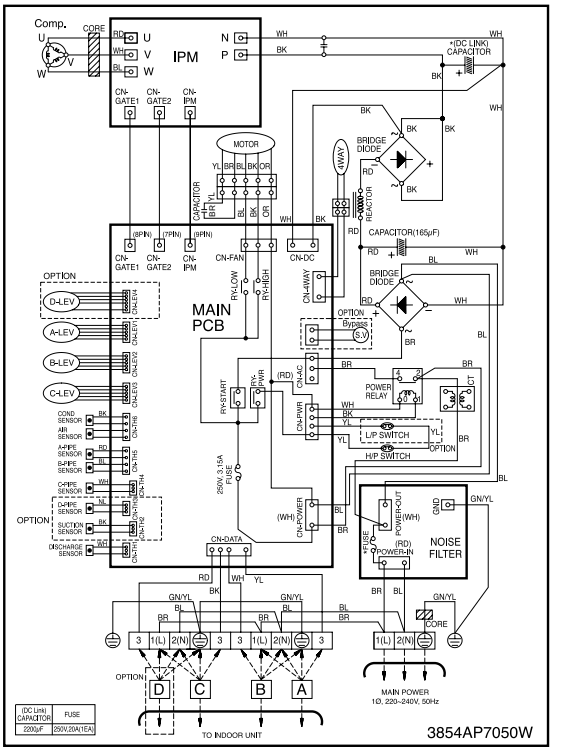
-9k/12k

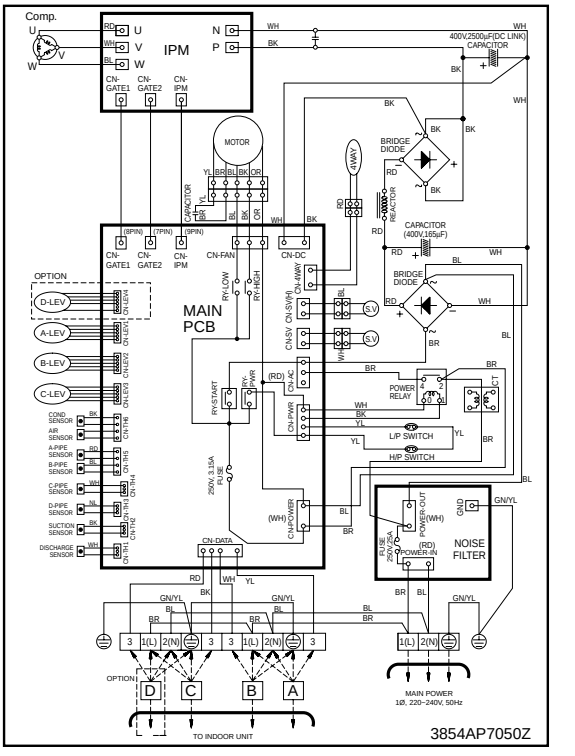


-18k



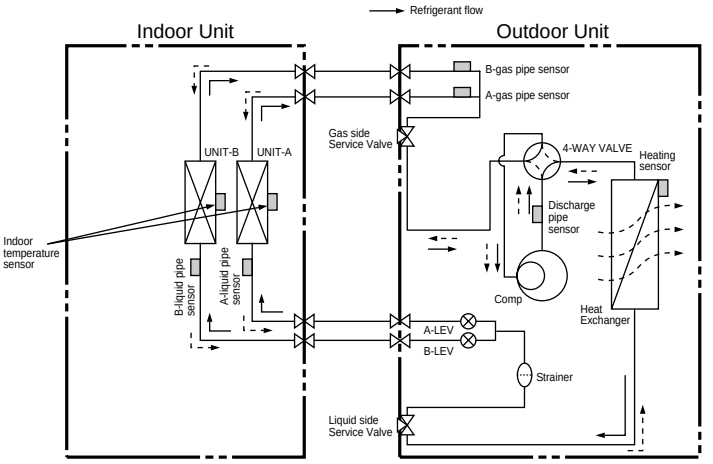
5. Outdoor Unit



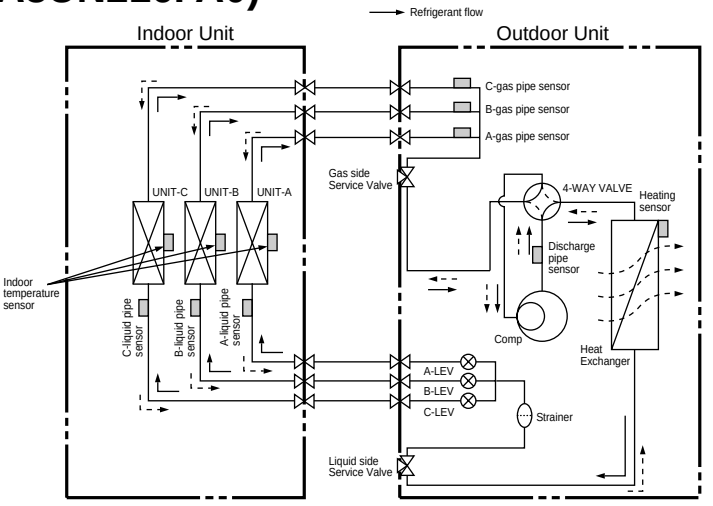


Refrigeration Cycle Diagram

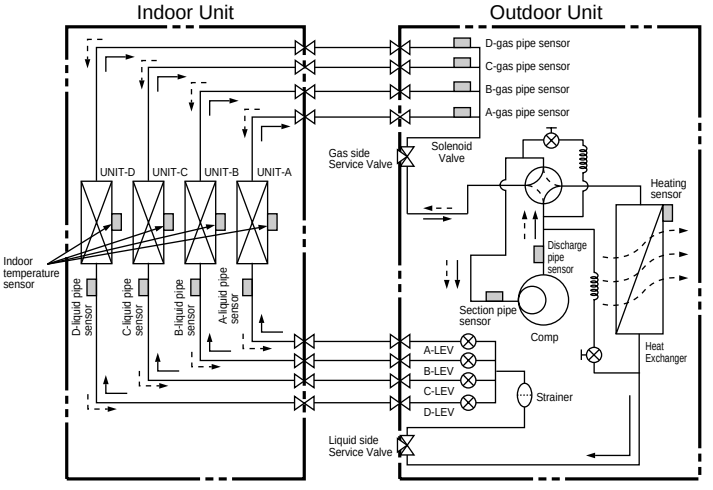
1. HPI-C2077(A2UN186FA0)



2. HPI-C3077(A3UN216FA0)



3. HPI-C4108(A4UN306FA0)



ex)

⊗	Solenoid valve	——→	Cooling & Deice
—⊗—	LEV	- - - - - →	Heating
∿∿∿	Capillary tube		

Operation Details

1. Room Type Indoor Unit

(1) The Function of main control

• DISPLAY

Operation Indicator

- On while in appliance operation, off while in appliance pause
- Flashing while in disconnection or short in Thermistor (3 sec off / 0.5 sec on)

Sleep Timer Indicator

- On while in sleep timer mode, off when sleep timer cancel or appliance operation pause

Timer Indicator

- On while in timer mode (on/off), off when timer mode is completed or canceled

Defrost Indicator

- Off except when hot start during heating mode operation or while in defrost control

■ Cooling Mode Operation

- When the intake air temperature reaches 0.5°C below the setting temp, the compressor and the outdoor fan stop.
- When it reaches 0.5°C above the setting temp, they start to operate again.
  Compressor ON Temp ➲ Setting Temp+0.5°C
  Compressor OFF Temp ➲ Setting Temp-0.5°C
- While in compressor running, operating with the airflow speed set by the remote control. While in compressor not running, operating with the low airflow speed regardless of the setting.

■ Soft Dry Operation Mode

- When the dehumidification operation input by the remote control is received, the intake air temperature is detected and the setting temp is automatically set according to the intake air temperature.
  26°C ≤ Intake Air Temp ➲ 25°C
  24°C ≤ Intake Intake Air Temp<26°C ➲ Intake Air Temp-1°C
  18°C ≤ Intake Intake Air Temp<24°C ➲ Intake Air Temp-0.5°C
  Intake Air Temp<18°C ➲ 18°C
- While in compressor off, the indoor fan repeats low airflow speed and pause.
- While the intake air temp is between compressor on temp. and compressor off temp., 10-min dehumidification operation and 4-min compressor off repeat.
  Compressor ON Temp. ➲ Setting Temp+0.5°C
  Compressor OFF Temp. ➲ Setting Temp-0.5°C
- In 10-min dehumidification operation, the indoor fan operates with the low airflow speed.

■ Heating Mode Operation

- When the intake air temp reaches +3°…above the setting temp, the compressor is turned off. When below the setting temp, the compressor is turned on.
  Compressor ON Temp. ➲ Setting Temp.
  Compressor OFF Temp. ➲ Setting Temp.+3°C
- While in compressor on, the indoor fan is off when the indoor pipe temp. is below 26°C, when above 28°C , it operates with the low or setting airflow speed.

- While in compressor off, the indoor fan is off when the indoor pipe temp is below 33°C, when above 35°C , it operates with the low airflow speed.
- If overloaded while in heating mode operation, in order to prevent the compressor from OLP operation, the outdoor fan is turned on/off according to the indoor pipe temp.
- While in defrost control, both of the indoor and outdoor fans are turned off.

■ Defrost Control

- Defrost operation is controlled by timer and sensing temperature of outdoor pipe.
- The first defrost starts only when the outdoor pipe temperature falls below -5°C after 40 minutes passed from starting of heating operation and more than 10 minutes operation of compressor.
- Defrost ends after 12 minutes passed from starting of defrost operation or after the outdoor fan operates within max. 2 minutes 30 seconds when the outdoor pipe temperature rises over 12°C even it before 12 minutes.
- The second defrost starts only when the outdoor pipe temperature falls below -5°C after 40 minutes passed from ending of the first defrost and more than 10 minutes operation of compressor.

■ Fuzzy Operation

- When any of operation mode is not selected like the moment of the power on or when 3 hrs has passed since the operation off, the operation mode is selected.
- When determining the operation mode, the compressor, the outdoor fan, and the 4 way valve are off and only the indoor fan is operated for 15 seconds. Then an operation mode is selected according to the intake air temp at that moment as follows.

  24°C ≤ Inatake Air Temp ➲ Fuzzy Operation for Cooling
  21°C ≤ Inatake Air Temp<24°C ➲ Fuzzy Operation for Dehumidification
  Inatake Air Temp<21°C ➲ Fuzzy Operation for Heating
- If any of the operation modes among cooling / dehumidification / heating mode operations is carried out for 10 sec or longer before Fuzzy operation, the mode before Fuzzy operation is operated.

1) Fuzzy Operation for Cooling

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 0.5°C or more below the setting temp, the compressor is turned off. When 0.5°C or more above the setting temp, the compressor is turned on.

  Compressor ON Temp ➲ Setting Temp +0.5°C
  Compressor OFF Temp ➲ Setting Temp – 0.5°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.

  26°C≤ Intake Air Temp ➲ 25°C
  24°C≤ Intake Air Temp<26°C ➲ Intake Air Temp – 1°C
  22°C≤ Intake Air Temp<24°C ➲ Intake Air Temp – 0.5°C
  18°C≤ Intake Air Temp<22°C ➲ Intake Air Temp
  Intake Air Temp<18°C ➲ 18°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan is automatically selected according to the temperature.

2) Fuzzy Operation for Dehumidification

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 0.5°C or more below the setting temp, the compressor is turned off. When 0.5°C or more above the setting temp, the compressor is turned on.

  Compressor ON Temp ➲ Setting Temp + 0.5°C
  Compressor OFF Temp ➲ Setting Temp – 0.5°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.

  26°C ≤ Intake Air Temp ➲ 25°C
  24°C ≤ Intake Air Temp<26°C ➲ Intake Air Temp – 1°C
  22°C ≤ Intake Air Temp<24°C ➲ Intake Air Temp – 0.5°C
  18°C ≤ Intake Air Temp<22°C ➲ Intake Air Temp
  Intake Air Temp<18°C ➲ 18°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan repeats the low airflow speed or pause as in dehumidification operation.

3) Fuzzy Operation for Heating

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 3°C or more above the setting temp, the compressor is turned off. When below the setting temp, the compressor is turned on.

  Compressor ON Temp ➲ Setting Temp
  Compressor OFF Temp ➲ Setting Temp + 3°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.

  20°C≤Intake Air Temp ➲ Intake Air Temp + 0.5°C
  Intake Air Temp<20°C ➲ 20°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan is set to the high or the medium according to the intake air temperature and the setting temperature.

■ Airflow Speed Selection

- The airflow speed of the indoor fan is set to high, medium, low, or chaos (auto) by the input of the airflow speed selection key on the remote control.

■ On-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance starts to operate.
- The timer LED is on when the on-timer is input. It is off when the time set by the timer is reached.
- If the appliance is operating at the time set by the timer, the operation continues.

While in Fuzzy operation, the airflow speed of the indoor fan is automatically selected according to the temperature.

■ Off-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance stops operating.
- The timer LED is on when the off-timer is input. It is off when the time set by the timer is reached.
- If the appliance is on pause at the time set by the timer, the pause continues.

■ Off-Timer <=> On-Timer Operation

• When the set time is reached after the on/off time is input by the remote control, the on/off-timer operation is carried out according to the set time.

■ Sleep Timer Operation

• When the sleep time is reached after <1,2,3,4,5,6,7,0(cancel) hr> is input by the remote control while in appliance operation, the operation of the appliance stops.
• While the appliance is on pause, the sleep timer mode cannot be input.
• While in cooling mode operation, 30 min later since the start of the sleep timer, the setting temperature increases by 1°C. After another 30 min elapse, it increases by 1°C again.
• When the sleep timer mode is input while in cooling cycle mode, the airflow speed of the indoor fan is set to the low.
• When the sleep timer mode is input while in heating cycle mode, the airflow speed of the indoor fan is set to the medium.

■ Chaos Swing Mode

• By the Chaos Swing key input, the upper/lower vane automatically operates with the Chaos Swing or they are fixed to the desired direction.
• While in Chaos Swing mode, the angles of cooling and heating cycle operations are different.

■ Chaos Natural Wind Mode

• When the Chaos Natural Wind mode is selected and then operated, the high, medium, or low speed of the airflow mode is operated for 2~15 sec. randomly by the Chaos Simulation.

■ Jet Cool Mode Operation

• While in heating mode or Fuzzy operation, the Jet Cool key cannot be input. When it is input while in the other mode operation (cooling, dehumidification, ventilation), the Jet Cool mode is operated.
• In the Jet Cool mode, the indoor fan is operated at super-high speed for 30 min at cooling mode operation.
• In the Jet Cool mode operation, the room temperature is controlled to the setting temperature, 18°C.
• When the sleep timer mode is input while in the Jet Cool mode operation, the Jet Cool mode has the priority.
• When the Jet Cool key is input, the upper/lower vanes are reset to those of the initial cooling mode and then operated in order that the air outflow could reach further.

■ Auto Restarting Operation

• When the power is restored after a sudden power failure while in appliance operation, the mode before the power failure is kept on the memory and the appliance automatically operates in the mode on the memory.
• The slide switch on the main unit of the appliance should be on the Auto Restarting position in order that the Auto Restarting operation is available.
• Operation Mode that is kept on the memory
  - State of Operation ON/OFF
  - Operation Mode/Setting Temp/Selected Airflow Speed
  - Sleep Timer Mode/Remaining Time of Sleep Timer (unit of hour)
• Incase the power comes on again after a power failure,
  Auto Restarting operation is the function to operate procedures
  automatically to the previous operating conditions. (Art Cool Type)

■ Forced Operation

- To operate the appliance by force in case that the remote control is lost, the forced operation selection switch is on the main unit of the appliance to operate the appliance in the standard conditions.
- When the power is supplied while the slide switch is on the forced operation position, or when the slide switch position is switched to the Auto Restarting (or test operation) position or switched from the remote control position to the forced operation position while the power is on, the forced operation is carried out.
- When the slide switch position is switched from the forced operation position to the Auto Restarting position or the remote control position, the forced operation is canceled and the appliance stops operating.
- In the forced operation mode, the indoor fan is operated at low speed for around 15 sec and then the operation condition is set according to the intake air temperature as follows.

  24°C≤Intake Air Temp ➲ Cooling Mode Operation, 22°C, High Speed
  21°C≤Intake Air Temp<24°C ➲ Dehumidification Operation, 23°C, High Speed
  Intake Air Temp<21°C ➲ Heating Mode Operation, 24°C, High Speed

■ Remote Control Operation Mode

- When the remote control is selected by the slide switch on the main unit, the appliance operates according to the input by the remote control.

■ Protection of the evaporator pipe from frosting

- If the indoor pipe temp is below 0°C in 7 min. after the compressor operates without any pause while in cooling cycle operation mode, the compressor and the outdoor fan are turned off in order to protect the indoor evaporator pipe from frosting.
- When the indoor pipe temp is 7°C and higher after 3 min. pause of the compressor, the compressor and the outdoor fan is turned on according to the condition of the room temperature.

■ Buzzer Sounding Operation

- When the appliance-operation key is input by the remote control, the short "beep-beep-" sounds.
- When the appliance-pause key is input by the remote control, the long "beep—" sounds.

2. Cassette Type Indoor Unit

(1) The function of main control

■ Time Delay Safety Control

- 3 min··· The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle. (Protection of compressor)
- 5 sec··· Vertical air flow direction control louvers open in 5 seconds to prevent noise between louvers and wind.
- 5 sec··· The 4-way valve is ceased for 5 sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode when compress is off. While compressor is running, it takes 3~5 seconds to switch.

■ Auto Swing Control

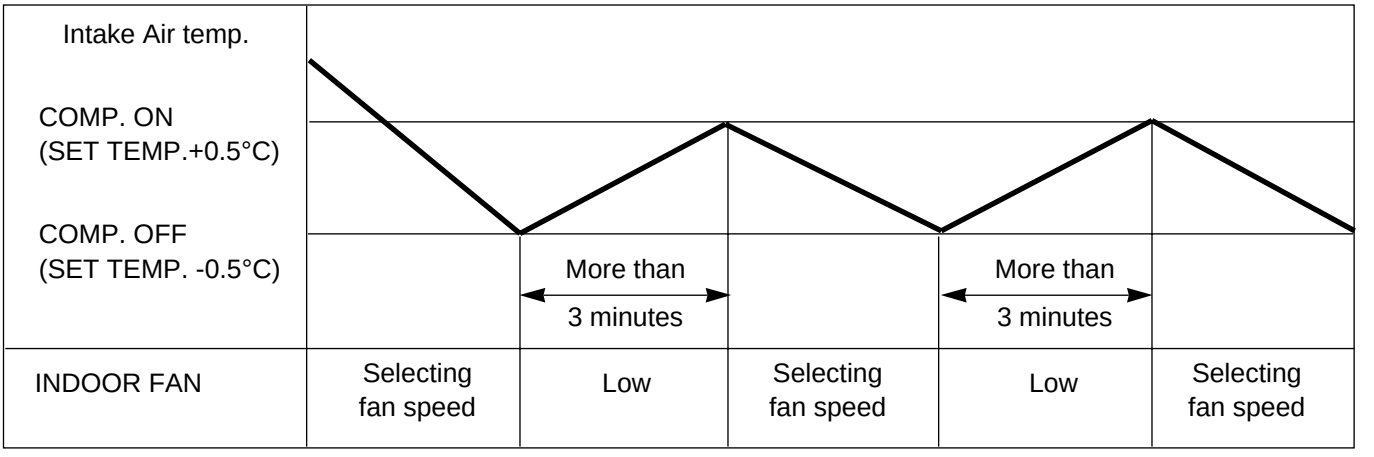
- This function is to swing the louver up and down automatically.

■ Soft-Dry Operation

- The indoor fan speed is automatically set to the low, so the shift of the indoor fan speed is impossible because of already being set to the best speed for Dry Operation by Micom Control.

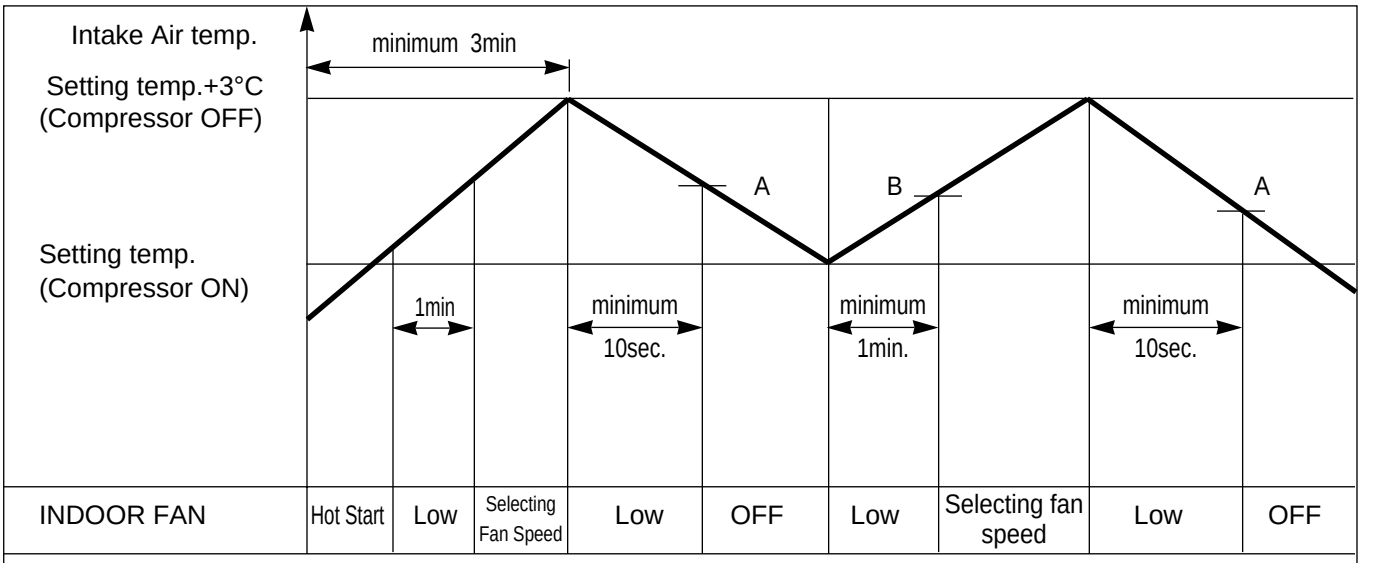
■ Cooling Mode Operation

- 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



■ Heating Mode Operation

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

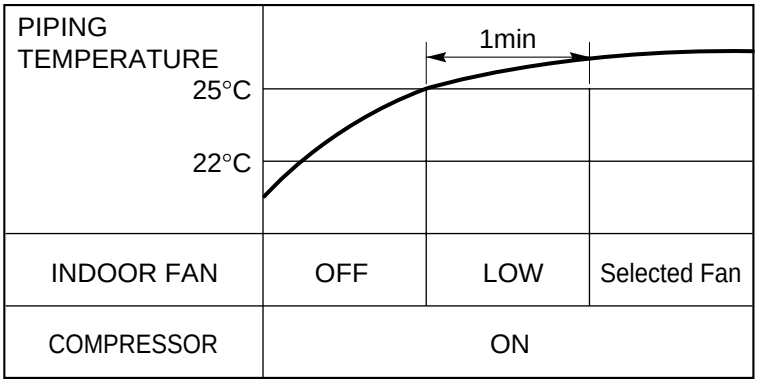


INDOOR FAN	Hot Start	Low	Selecting Fan Speed	Low	OFF	Low	Selecting fan speed	Low	OFF

- A point; While the indoor Heat-Exchanger temperature is higher than 40°C fan operates at low speed, when it becomes lower than 40˚C fan stops.
- B point; When the indoor Heat-Exchanger temperature is higher than 31°C, fan operates at selected fan speed, when it becomes lower than 31°C, the fan operates at low speed for 10sec, after 10sec, it operates at selected fan speed.

■ Hot-Start Control

- The indoor fan stops until the evaporator piping temperature will be reached to 25°C.
- The operation diagram is as following.



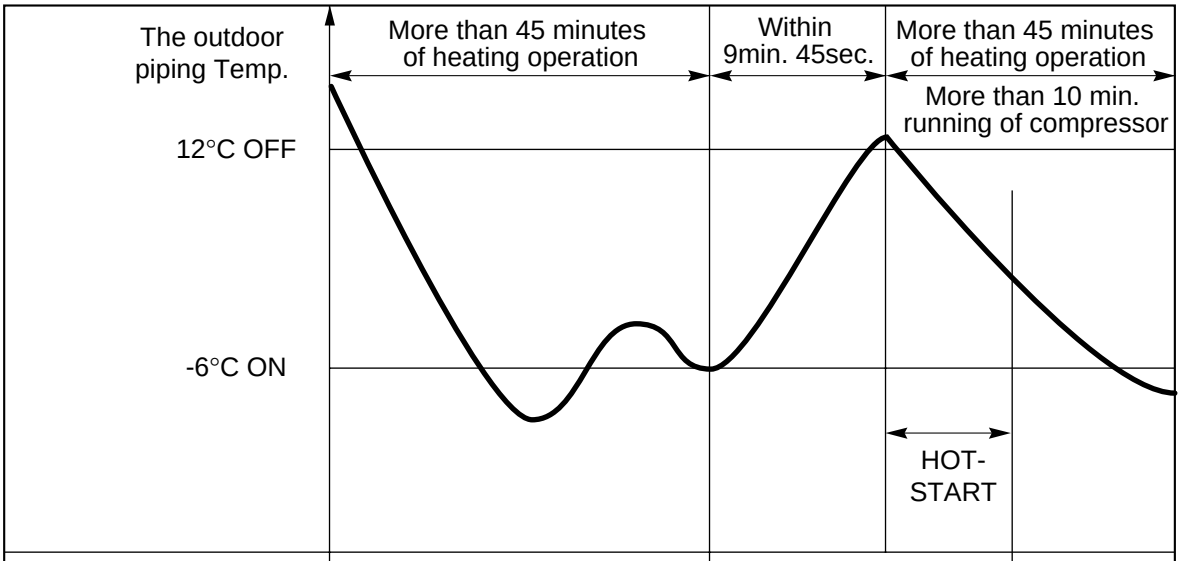
■ Defrost Control

- While in heating mode operation in order to protect the evaporator pipe of the outdoor unit from freezing, reversed to cooling cycle to defrost the evaporator pipe of the outdoor unit.
- Defrost control is available 45 min. later since heating mode operation started, and it will not prolong over 10 min.
- Defrost control is carried out according to the following priority order while in heating mode operation.

  1st priority : Defrost control is carried out according to the indoor pipe temp 60 min. later since heating mode operation started.

  2nd priority : The temp differences between the indoor pipe temp and the intake air temp 25 min. later(ΔT1) and 45 min. later (ΔT2) since heating mode operation started are measured, then defrost control is carried out according to the dirrerence (ΔT=ΔT1-ΔT2)

  3rd priority : Defrost control is carried out according to the temp difference (E=TE1-TE2) between the indoor pipe temperatures of 25 min later(TE1) and 45 min later (TE2) after heating mode operation started.
- When the indoor pipe temp is 41°C or above, defrost control is not carried out even if the condition is one of the defrost conditions above.
- While in defrost control, the compressor is on and the indoor fan, the outdoor fan, and the 4 way valve are off.



INDOOR FAN	ON	OFF	ON
COMPRESSOR	ON		
4-WAY VALVE	ON	OFF	ON

3. Convertible Type Indoor Unit

(1) The function of main control

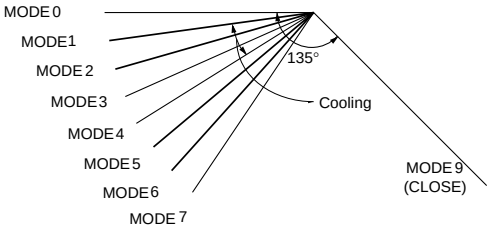
■ Time Delay Safety Control

- 3min… The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle. (Protection of compressor)
- 5sec… Vertical air flow direction control louvers open in 5 seconds to prevent noise between louvers and wind.
- 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 while compress is off. While compressor is running, it takes 3~5 seconds to switch.

■ Airflow Direction Control

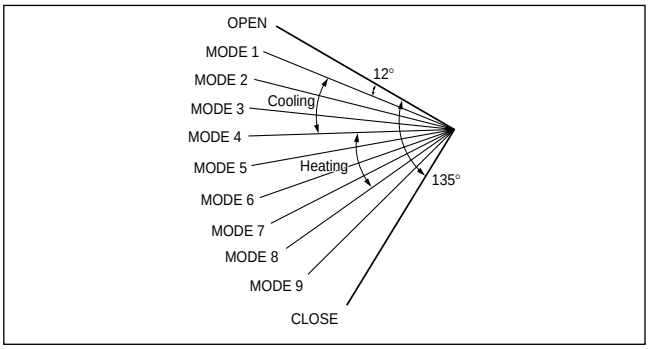
- This function is to swing the louver up and down automatically and to set it at the desired position.
- The procedure is as the following.

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

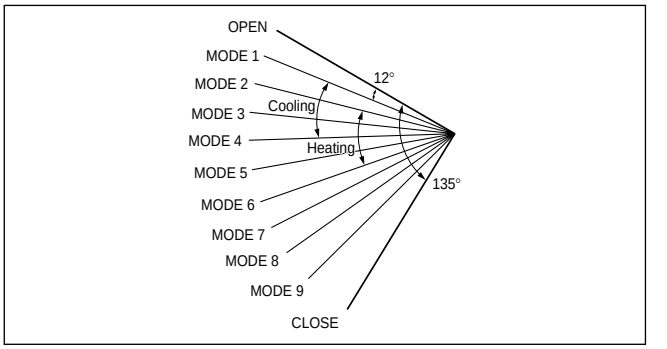


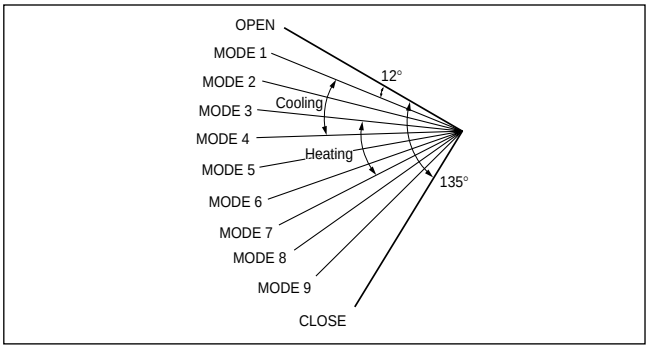
※ For Heating Model

- Airflow direction control figure when installed on the floor.



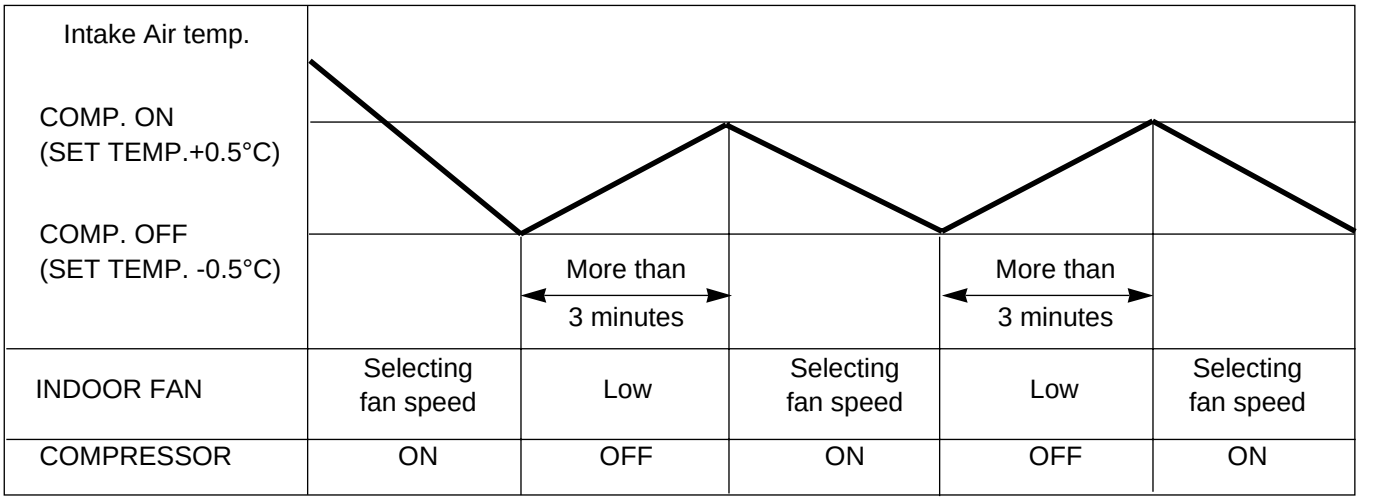
- Airflow direction control figure when installed under the ceiling.





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



INDOOR FAN	Selecting fan speed	Low	Selecting fan speed	Low	Selecting fan speed
COMPRESSOR	ON	OFF	ON	OFF	ON

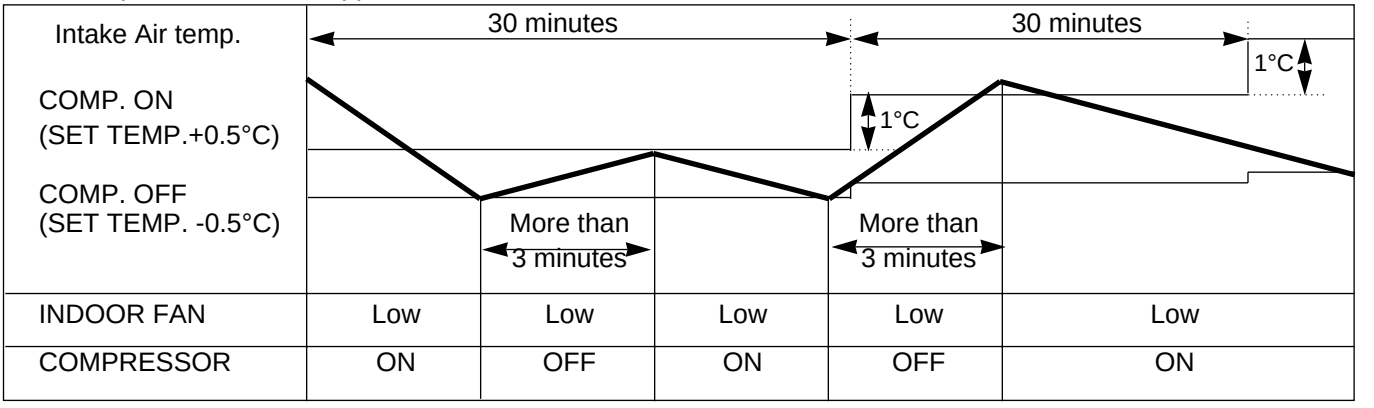
4. Cooling or Heating Mode with Sleep Mode Auto Operation

• 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.

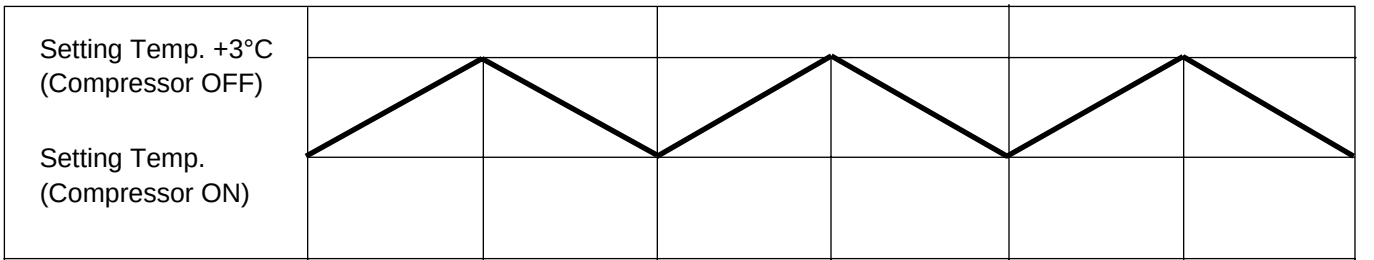
• The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



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

■ **Heating Mode with the Sleep Mode.**

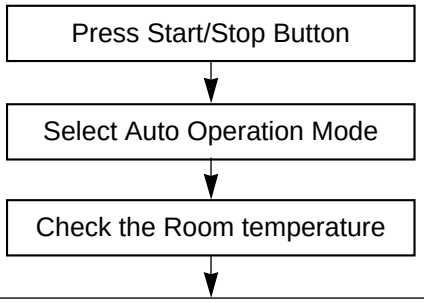
• The operation will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.



Indoor Fan	Low.	Low.	Low.	Low.	Low.	Low.
Compressor	ON	OFF	ON	OFF	ON	OFF

5. Auto Operation

• The operation procedure is as following. (Cooling & Heating Model)



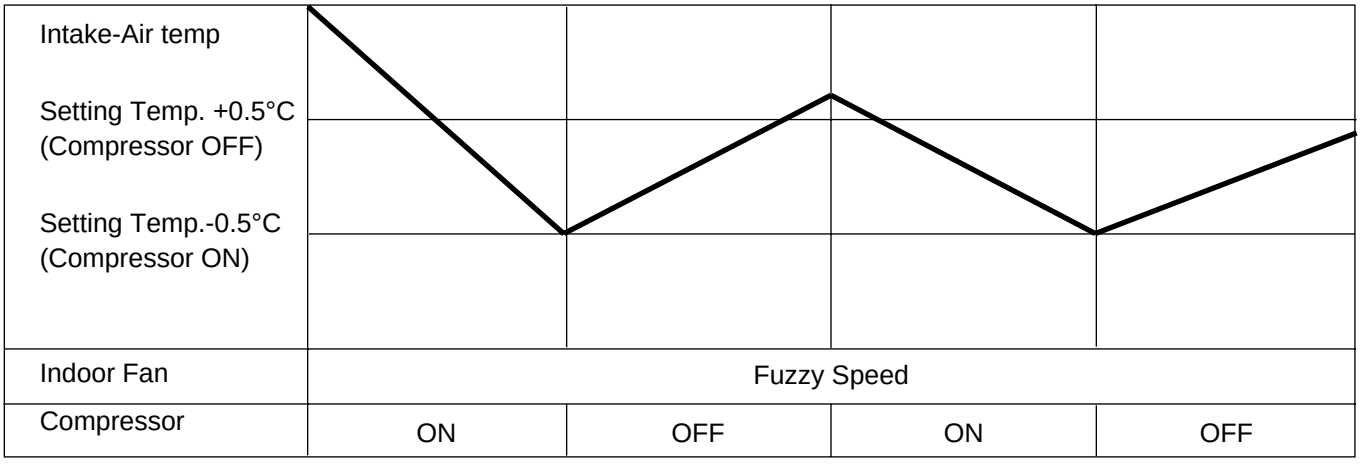
Operation mode
Indoor fan speed
Setting temperature
are automatically decided by Fuzzy rule.

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 without the room temperature changing.
∗ For cooling operation mode over 24°C setting temperature and fan speed are same as cooling only model.

• Auto Operation for Cooling. (Cooling only Model)

Operation Condition	Intake-air Temperature	Setting temperature	Fan speed	Air Direction Control
When Auto Operation initial start	Over 26°C	25°C	Controlled by Fuzzy logic	In this mode, when pressing the vertical air diretion control. Button, louvers moves to 1/f rhythm (refer to page 17)
	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 temperture		
	below 20°C	20°C		
When pressing room temperature setting button during Auto Operation	Over 20°C~below 30°C	Fuzzy control		
	below 20°C	20°C		
	over 30°C	30°C		



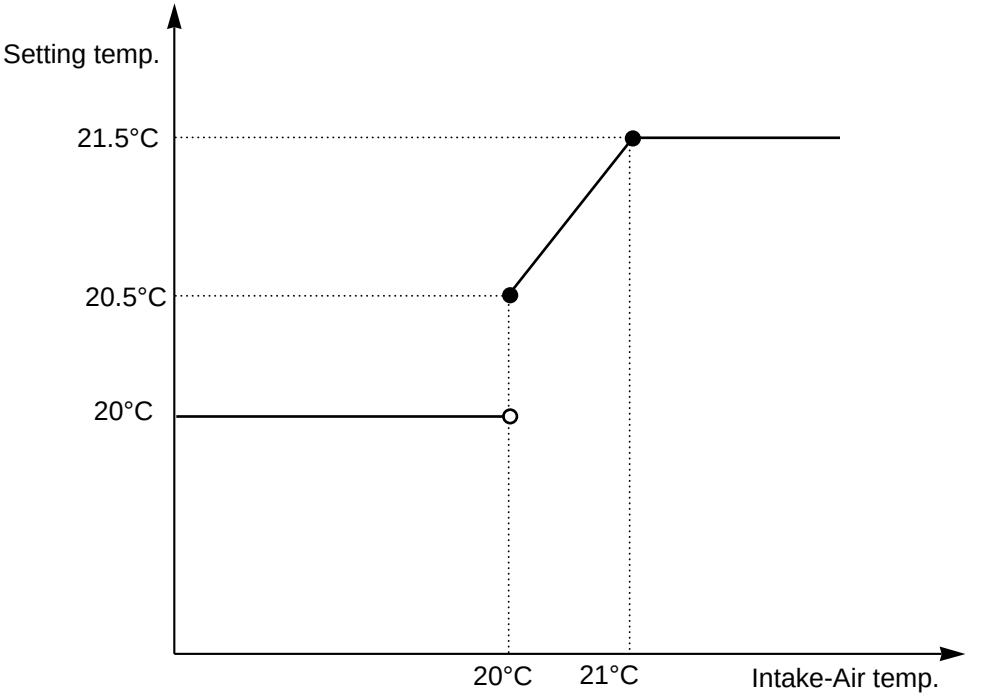
• Auto Operation for Soft Dry

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

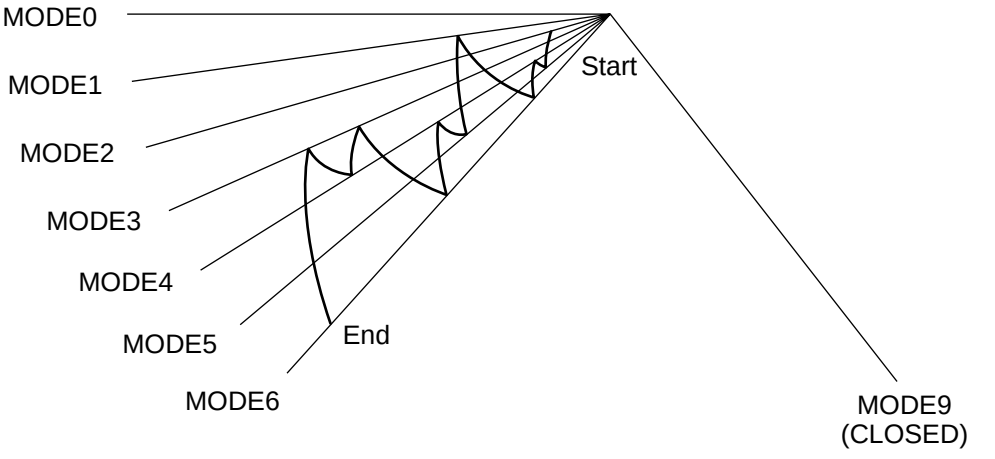
• Auto Operation for Heating.

Intake Air temp.	below 20°C	over 20℃~below 21°C
Setting temp.	20°C	Intake air temp. +0.5°C

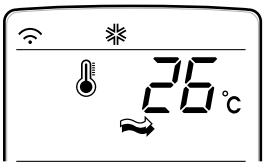
- Compressor ON temperature; Setting temperature
- Compressor OFF temperature; Setting temperature +3°C



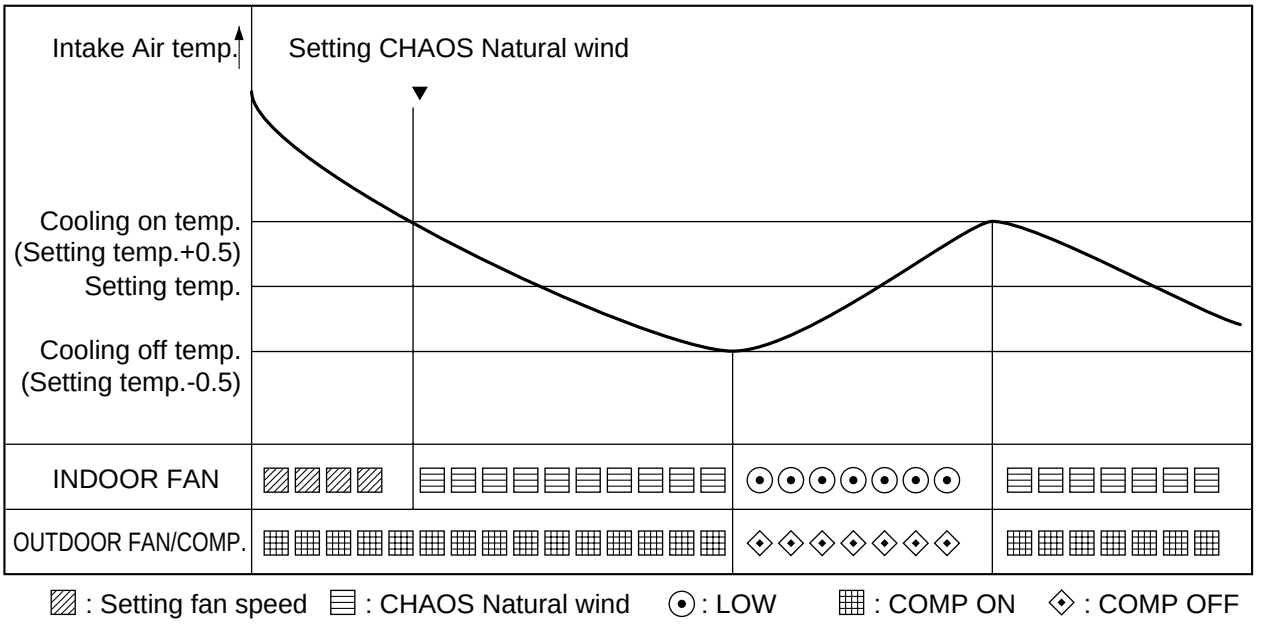
• 1/f rhythm louver operation : In Auto operation mode, when pressing the vertical air direction control button, louver moves as following cycle.



6. Natural wind by CHAOS logic

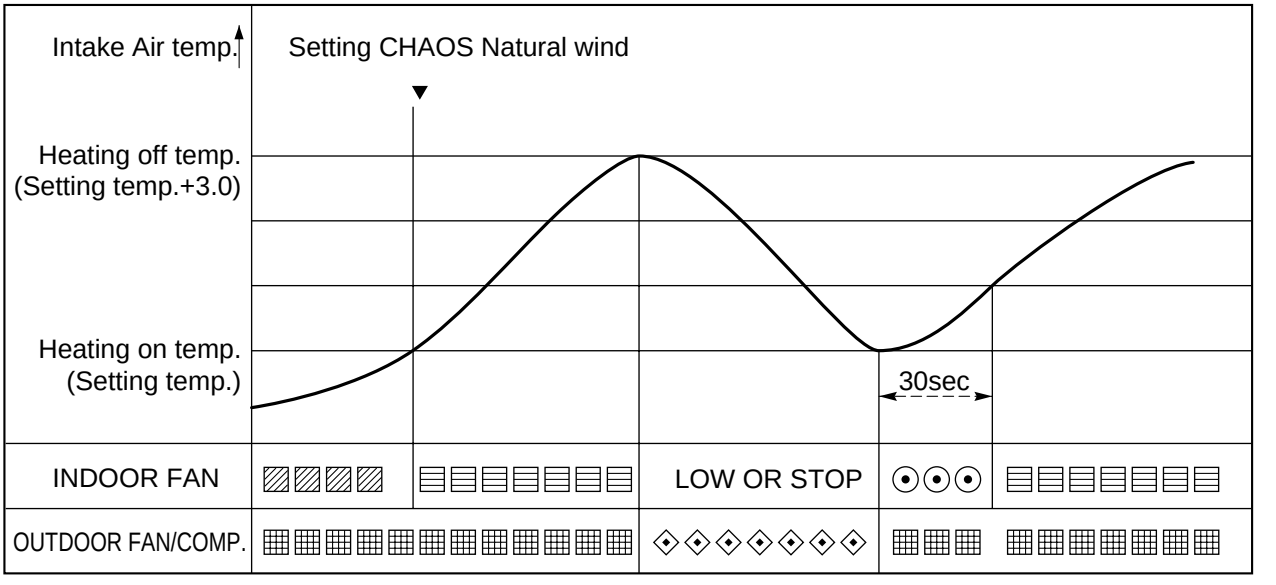


For more fresh feeling than other fan speed mode, press the indoor fan Speed Selector and set to CHAOS mode. In this mode, the wind blows like natural breeze by automatically changing fan speed according to the CHAOS logic.



▨ : Setting fan speed ▤ : CHAOS Natural wind ⊙ : LOW ▦ : COMP ON ◈ : COMP OFF

GRAPH of Natural wind by the CHAOS logis (During Cooling operation)



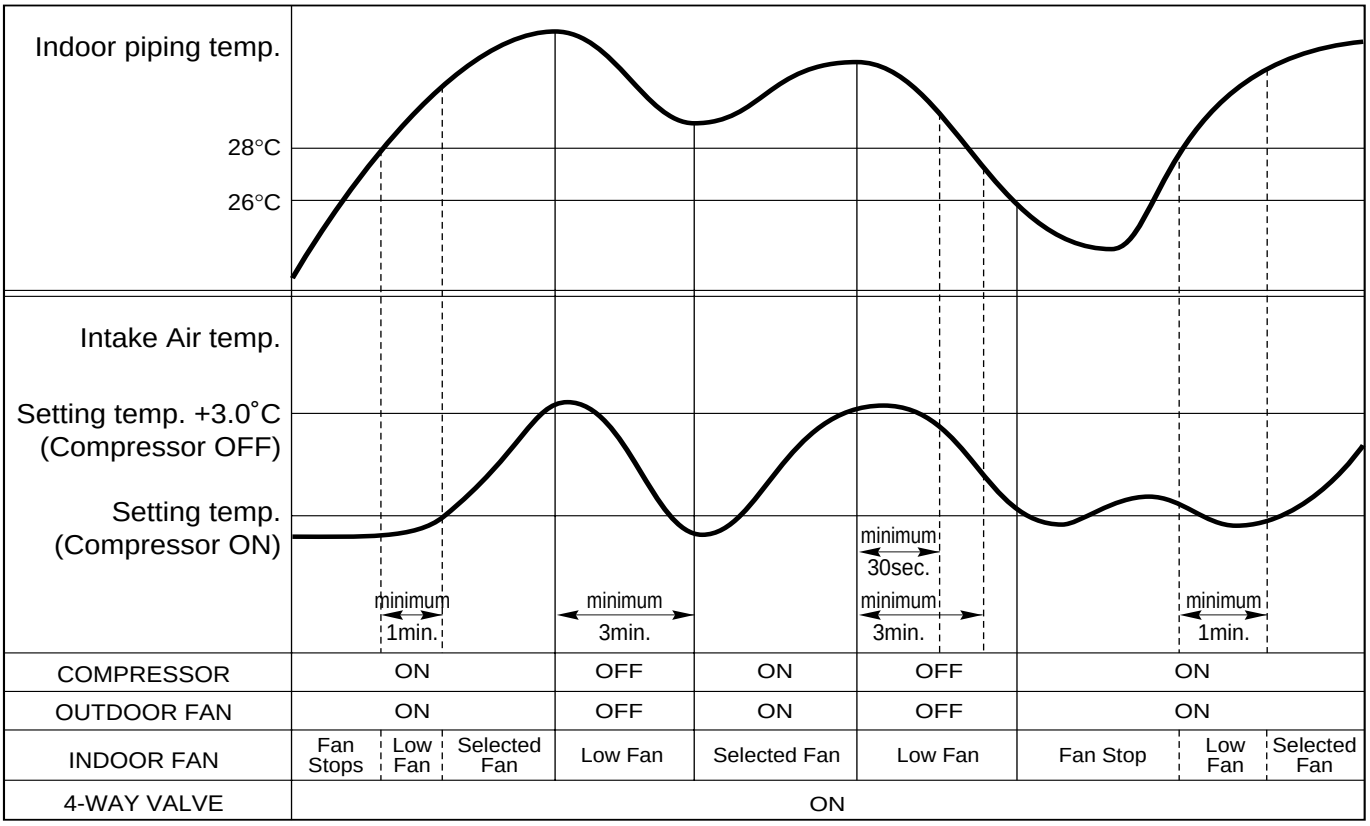
▨ : Setting fan speed ▤ : CHAOS Natural wind ⊙ : LOW ▦ : COMP ON ◈ : COMP OFF

GRAPH of Natural wind by the CHAOS logis (During Heating operation)

7. Heating Mode Operation

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

• For Heating Model



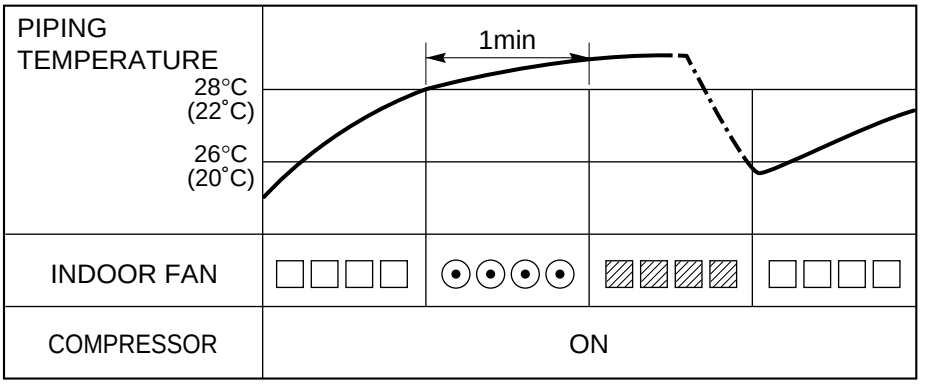
COMPRESSOR	ON			OFF	ON	OFF	ON		
OUTDOOR FAN	ON			OFF	ON	OFF	ON		
INDOOR FAN	Fan Stops	Low Fan	Selected Fan	Low Fan	Selected Fan	Low Fan	Fan Stop	Low Fan	Selected Fan
4-WAY VALVE	ON								

8. Hot-Start Control

• The indoor fan stops until the evaporator piping temperature will be reached to 28℃.

• During heating operation, if piping temperatures falls below 26°C fan stops.

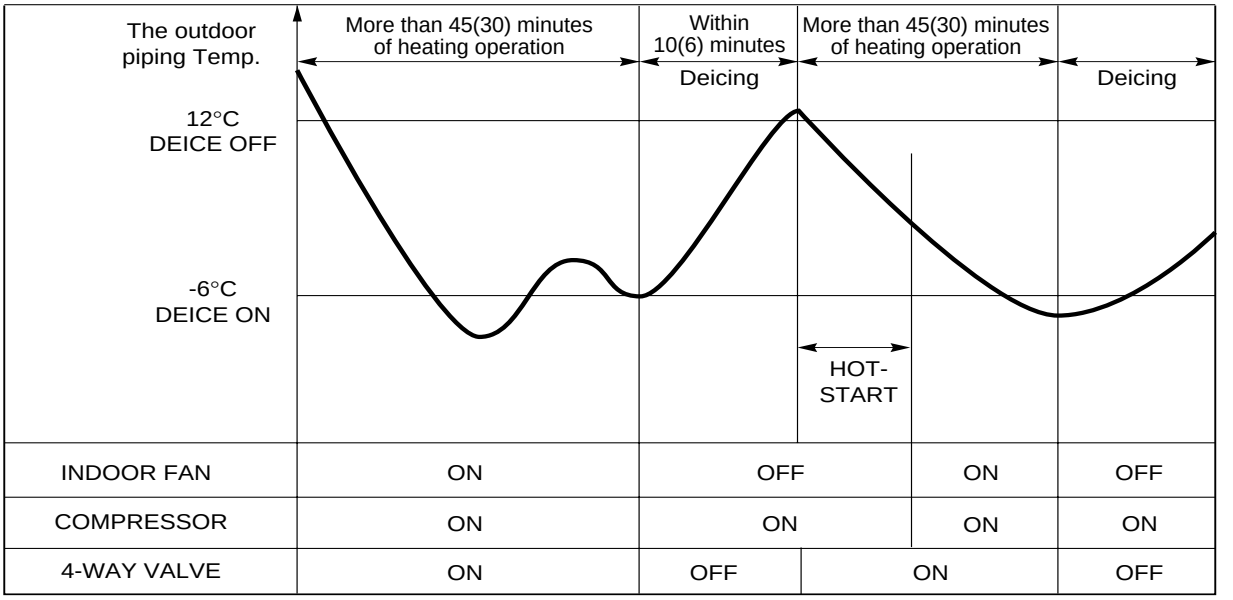
• The operation diagram is as following.



▨ : Selected Fan ⊙ : Low Fan □ : Fan Stop

9. Deice Control

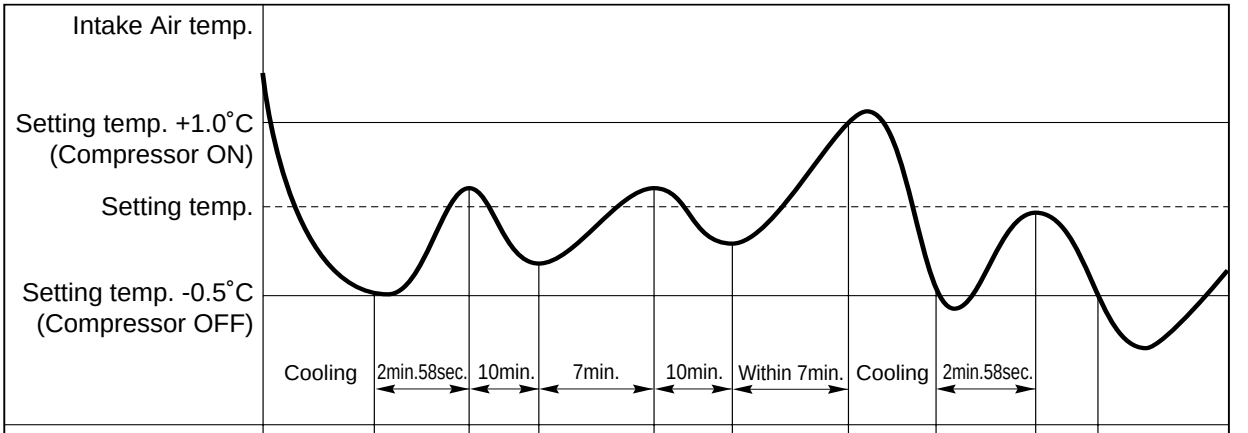
- Deicing operation is controlled by timer and sensing the outdoor piping temperature.
- The first deicing starts only when the outdoor pipe temperature falls below -6°C after 45(30) minutes passed from starting of heating operation.
- Deicing ends after 10(6) minutes passed from starting of deice operation or when the outdoor pipe temperature rises over 12°C even if before 10(6) minutes.
- The second deicing starts only when the outdoor pipe temperture falls below -6°C after 45(30) minutes passed from ending of the first deicing.



INDOOR FAN	ON	OFF	ON	OFF
COMPRESSOR	ON	ON	ON	ON
4-WAY VALVE	ON	OFF	ON	OFF

10. 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, 7min operation OFF. During 10min Dry operation, if the room temperature falls below compressor OFF temperature, Compressor OFF.
- In micom dehumidify mode, control of fan speed is as following.



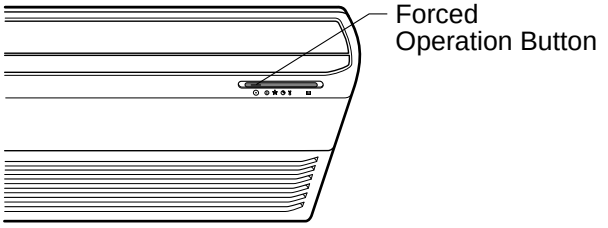
COMPRESSOR	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
OUTDOOR FAN	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
INDOOR FAN	Selected Fan	Low Fan					Selected Fan	Low Fan		

11. Forced operation

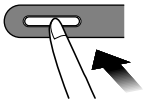
- If you lose wireless remote controller, you can operate the unit with forced operation switch.
- The standard conditions are as following.

	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
FAN Speed	High	High	Soft Dry Rule	High
Setting Temp.	24°C	22°C	Air Intake Temperature	24°C

- Unit operates in low fan mode for first 15 seconds, then switched to proper operation mode according to intake Air temperature.



Press the Forced Operation Button.



•Press the Forced Operation Button once again to stop operation.

12. Protection of the evaporator pipe from frosting

If the temperature of the indoor coil is below 0°C after 7 minutes from starting the compressor, the compressor and the outdoor fan is stopped, and then after 3 minute delay of the compressor and the temperature of the indoor coil is over 7°C, the compressor and the outdoor fan is reoperated. Indoor fan operates at low speed (comp. OFF) or at selected speed (comp. ON)

13. Inlet grille open

Once the inlet grille is opened during operation of the unit, the unit automatically stops operation and the lamps will be turned-off. But memorized functions are still available.
When the inlet grille is closed again, the unit become waiting state for operation. From then, the unit can be operated by forced operation button or Start/Stop button of remote controller.

14. Test Operation

- When pressing forced operation switch about 3 seconds, the unit operates in cooling mode at high speed fan regardless of room temperature and resets in 18 min.
- During test operation, if remote controller signal is received, the unit operates as remote controller sets.

15. Auto Restarting Operation

- When the power is restored after a sudden power failure while in appliance operation, the mode before the power failure is kept on the memory and the appliance should be on the automatically operates in the mode on the memory.
- Operation Mode that is kept on the memory
  - State of Operation ON/OFF
  - Operation Mode/Setting Temp/Selected airflow Speed
  - Sleep Timer Mode/Remaining Time of Sleep Timer(unit of hour)

4. Cassette Type Indoor Unit

(1) The function of main control

■ Time Delay Safety Control

• 3 min··· The compressor is ceased for 3minutes to balance the pressure in the refrigeration cycle. (Protection of compressor)

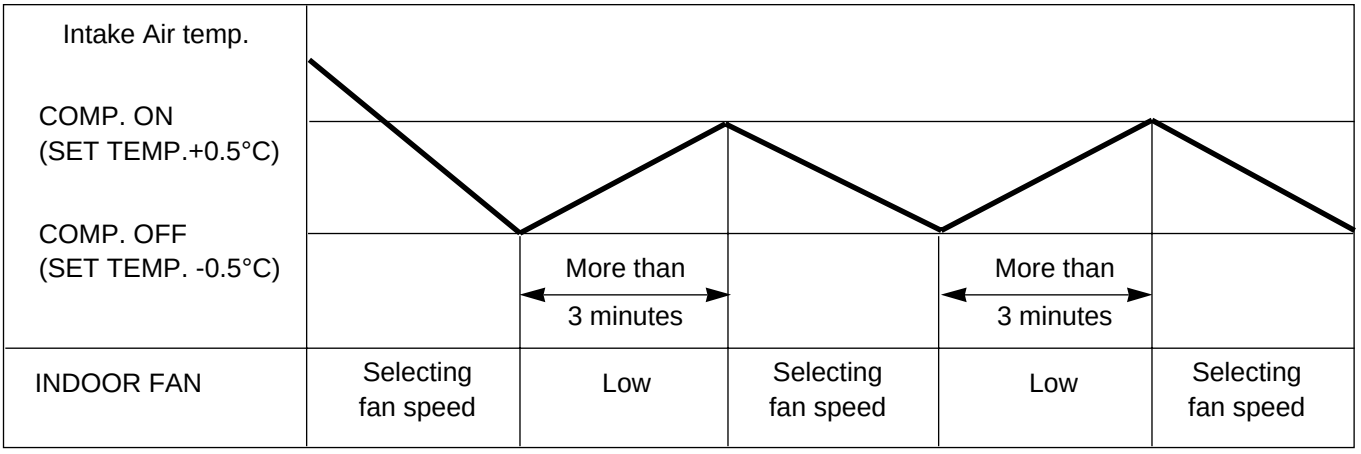
• 5 sec··· The 4-way valve is ceased for 5 sec. to prevent the refrigerant-gas abnormal noise when the Heating operation is OFF or switched to the other operation mode when compress is off. While compressor is running, it takes 3~5 seconds to switch.

■ Soft-Dry Operation

• The indoor fan speed is automatically set to the low, so the shift of the indoor fan speed is impossible because of already being set to the best speed for Dry Operation by Micom Control.

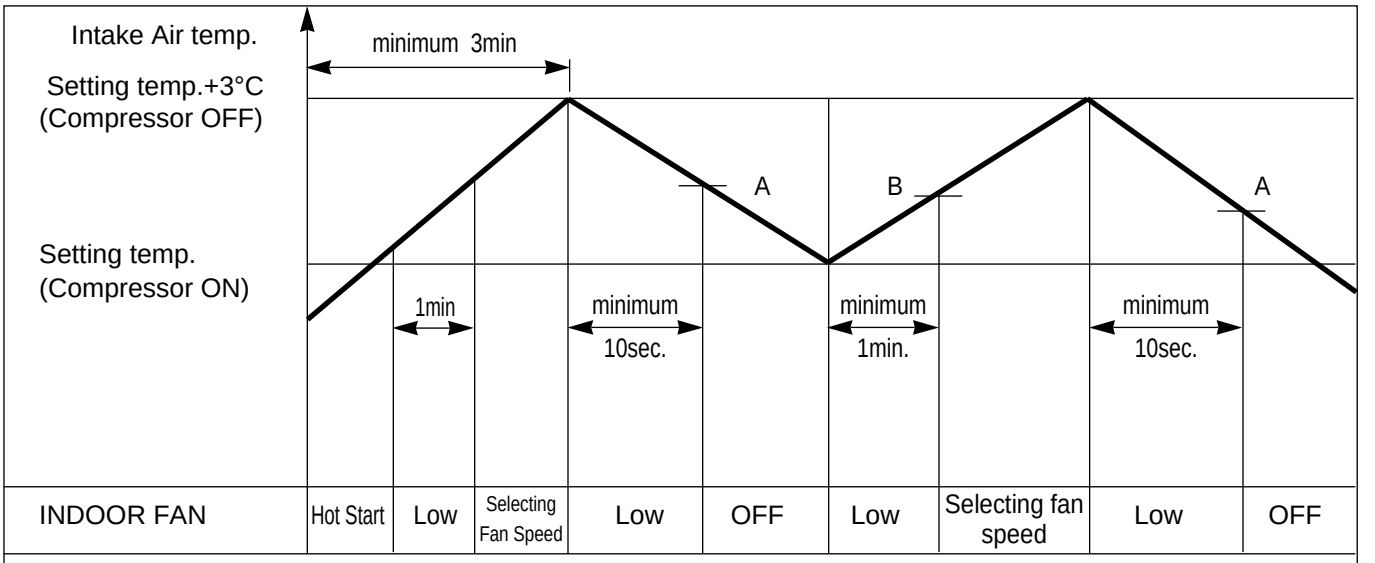
■ Cooling Mode Operation

• 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



■ Heating Mode Operation

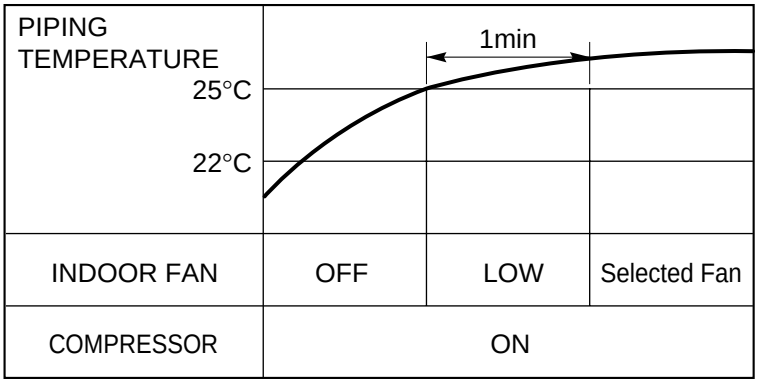
The unit will operate according to the setting by the remote controller and the operation diagram is shown as following.



- A point; While the indoor Heat-Exchanger temperature is higher than 40°C fan operates at low speed, when it becomes lower than 40˚C fan stops.
- B point; When the indoor Heat-Exchanger temperature is higher than 31°C, fan operates at selected fan speed, when it becomes lower than 31°C, the fan operates at low speed for 10sec, after 10sec, it operates at selected fan speed.

■ Hot-Start Control

- The indoor fan stops until the evaporator piping temperature will be reached to 25°C.
- The operation diagram is as following.



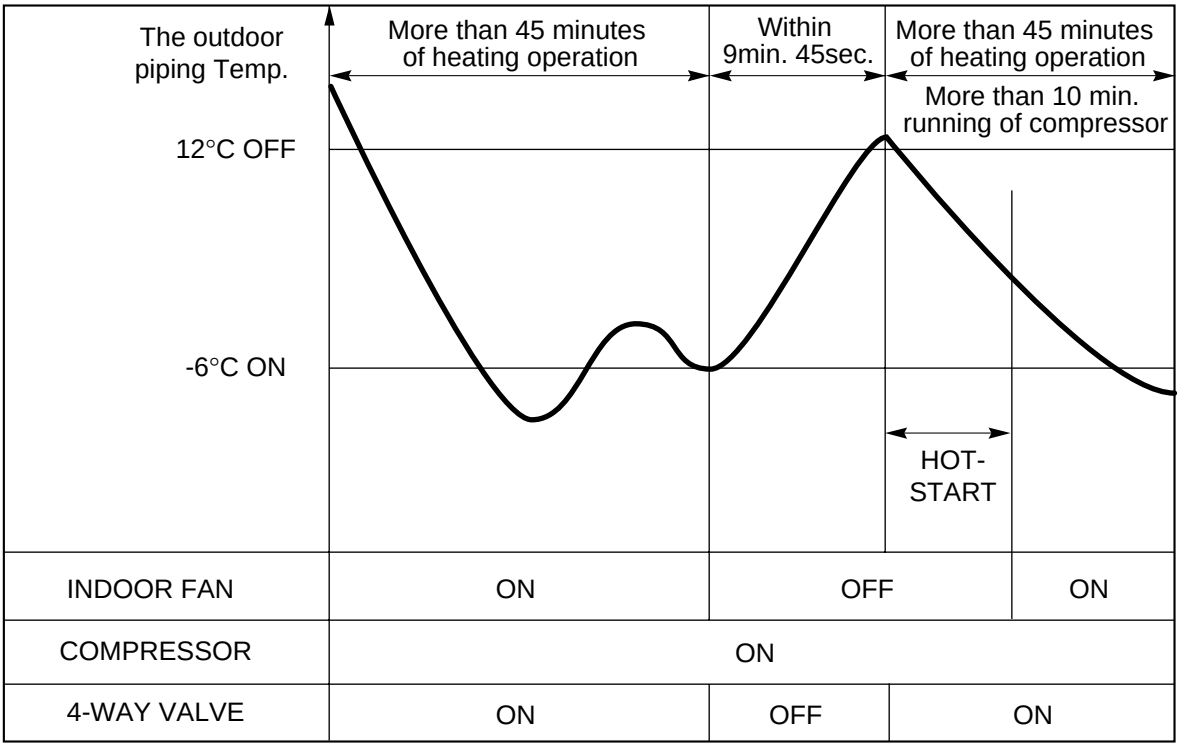
■ Defrost Control

- While in heating mode operation in order to protect the evaporator pipe of the outdoor unit from freezing, reversed to cooling cycle to defrost the evaporator pipe of the outdoor unit.
- Defrost control is available 45 min. later since heating mode operation started, and it will not prolong over 10 min.
- Defrost control is carried out according to the following priority order while in heating mode operation.

  1st priority : Defrost control is carried out according to the indoor pipe temp 60 min. later since heating mode operation started.

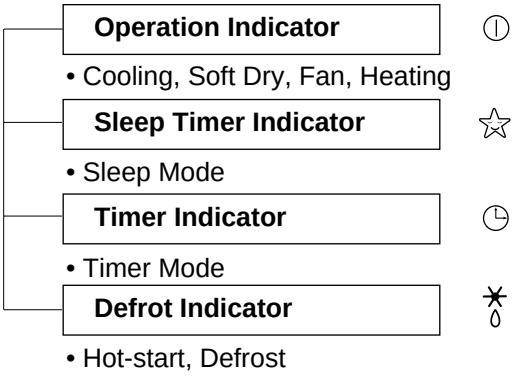
  2nd priority : The temp differences between the indoor pipe temp and the intake air temp 25 min. later(ΔT1) and 45 min. later (ΔT2) since heating mode operation started are measured, then defrost control is carried out according to the dirrerence (ΔT=ΔT1-ΔT2)

  3rd priority : Defrost control is carried out according to the temp difference (E=TE1-TE2) between the indoor pipe temperatures of 25 min later(TE1) and 45 min later (TE2) after heating mode operation started.
- When the indoor pipe temp is 41°C or above, defrost control is not carried out even if the condition is one of the defrost conditions above.
- While in defrost control, the compressor is on and the indoor fan, the outdoor fan, and the 4 way valve are off.



INDOOR FAN	ON	OFF	ON
COMPRESSOR	ON		
4-WAY VALVE	ON	OFF	ON

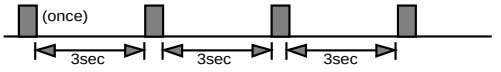
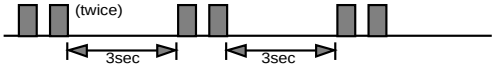
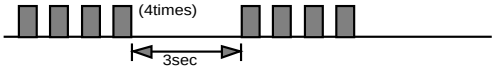
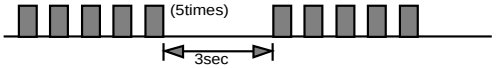
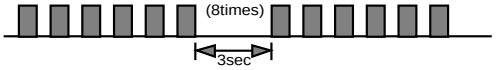
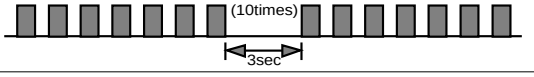
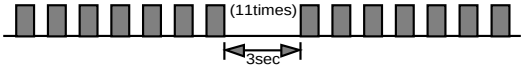
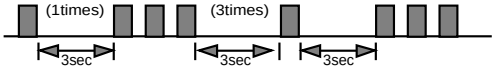
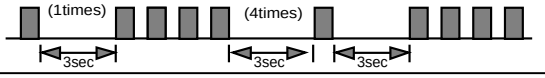
Display Function



Self-diagnosis Function

■ Error Indicator

- The function is to self-diagnoisis airconditioner and express the troubles identifically if there is any trouble.
- Error mark is ON/OFF for the operation LED of evaporator body in the same manner as the following table.
- If more than two troubles occur simultaneously, primarily the highest trouble fo error code is expressed.
- After error occurrence, if error is released, error LED is also released simultaneously.
- To operate again on the occurrence of error code, be sure to turn off the power and then turn on.
- Having or not of error code is different from Model.

Error Code	Error LED (Indoor body operation LED)	Error contents	SVC check point
1		• Indoor temperature thermistor open/short. • Indoor pipe temperature thermistor open/short.	• Indoor TH ass'y check
2		• Outdoor temperature thermistor open/short. • Outdoor pipe temperature thermistor open/short.	• Outdoor TH ass'y check
3		• Wired remocon communication error	• Wired remocon check
4		• Drain pump error	• Drain pump check
5		• Poor communication	• Communication line/circuit
7		• Difference Operation	• Indoor unit operating mode check
8		• CT / Current error	• Main PCB CT check • Wiring and PWM cable check
9		• DC Peak	• Excessive amount of refrigerant • Blocking condenser
10		• DC low voltage	• Outdoor wiring check
11		• High pressure/Instantaneous power failure	• Pressure check • Main power check
13		• Overload combination	• Indoor unit combination check
14		• Discharge pipe temperature overheating	• Refrigerant leakage • Check refrigeration cycle

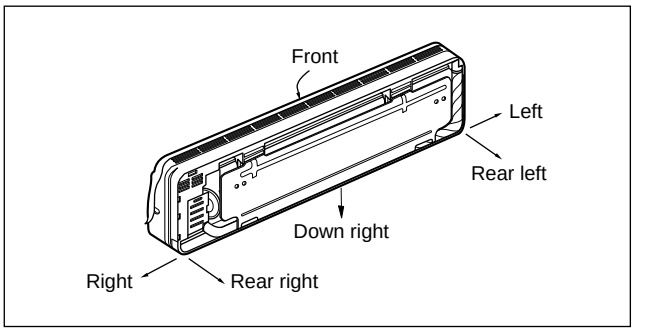
Installation of Indoor, Outdoor Unit

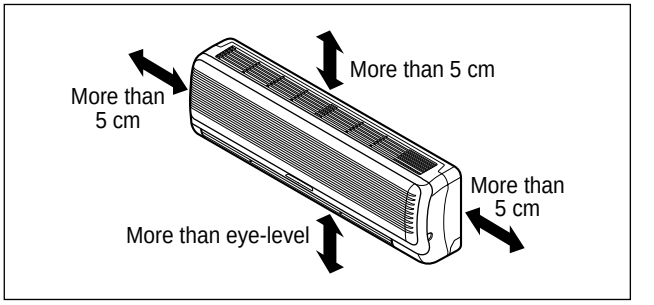
1. Selection of the best location

(1) Indoor unit

1. Room Type Indoor Unit

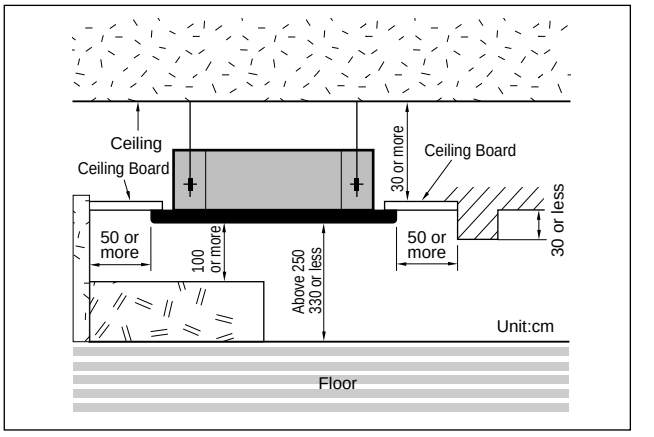
- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
-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





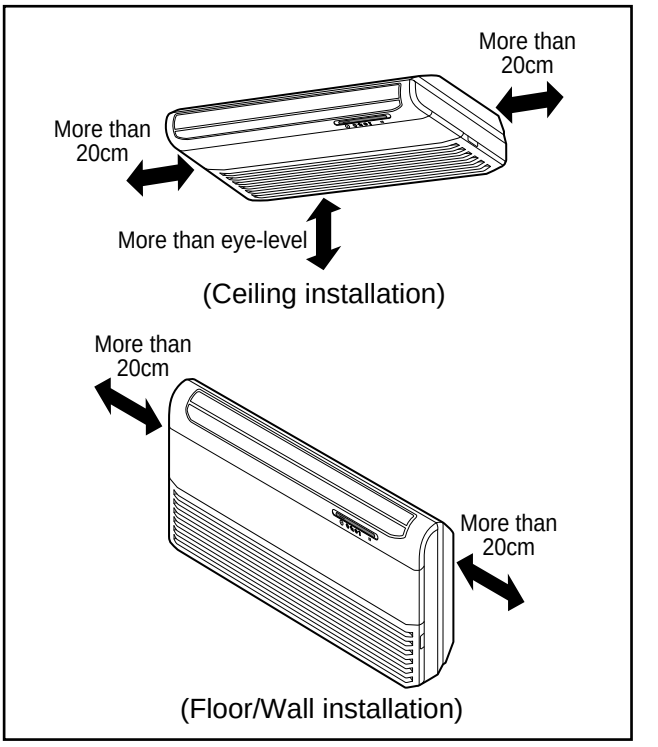
2. Cassette Type Indoor Unit

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to 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, or other obstacles.
- The indoor unit must have the maintenance space around.



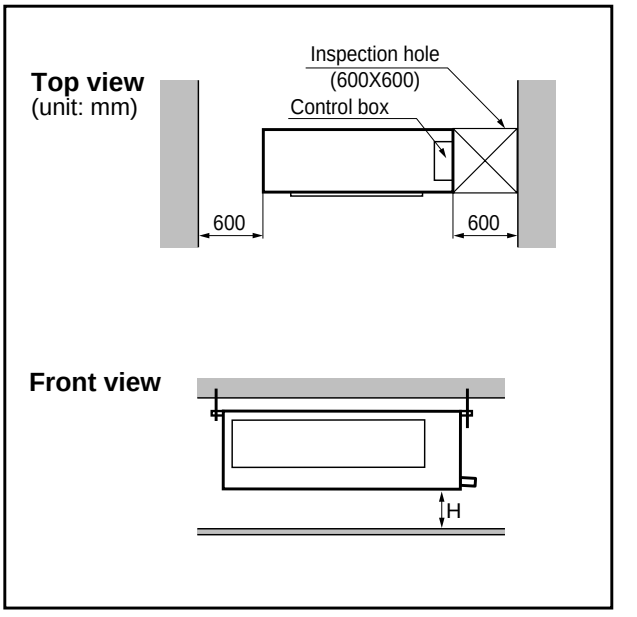
3. Convertible Type Indoor Unit

- 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, or other obstacles.



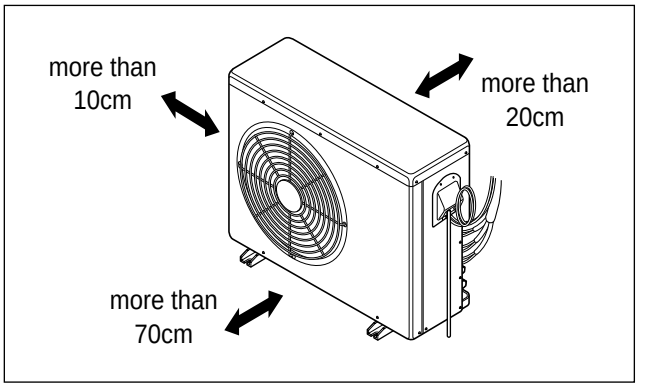
4. Duct Type Indoor Unit

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.(Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit



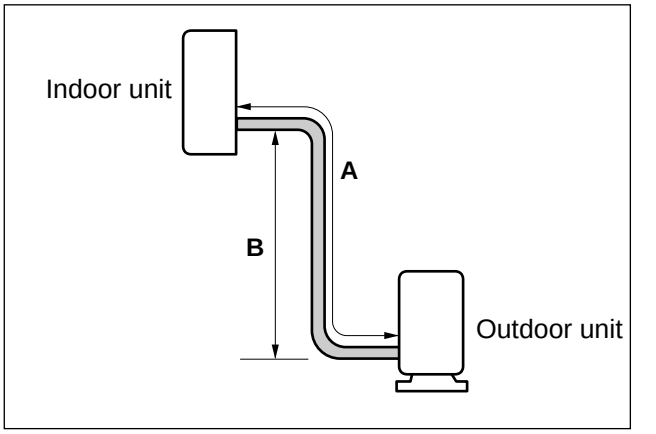
(2) Outdoor unit

- 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.



(3) Piping length and the elevation

Pipe Size		Max. piping length A (m)	Max. Elevation B (m)
GAS	LIQUID		
1/2"(3/8")	1/4"	15	5~7

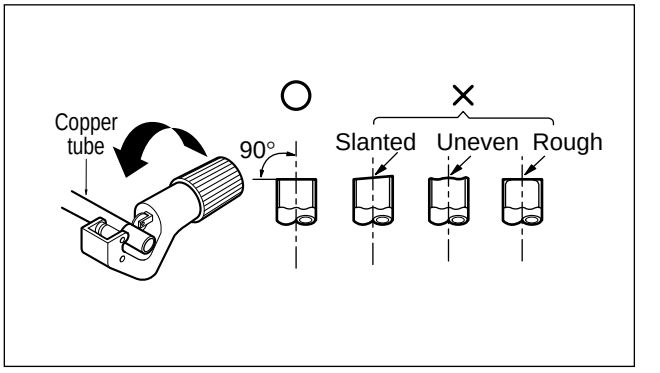


2. Piping and Drainage of Indoor Unit

(1) Preparation of pipings

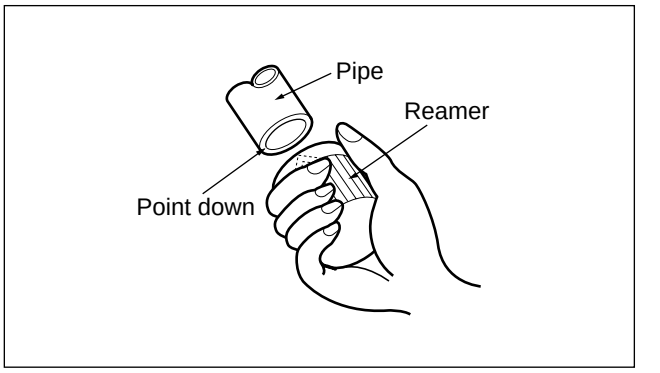
1. Cut the pipes and the cable.

- 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 the 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.

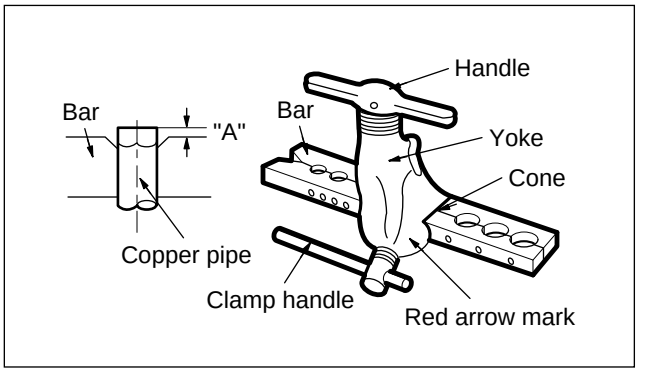


⚠ CAUTION

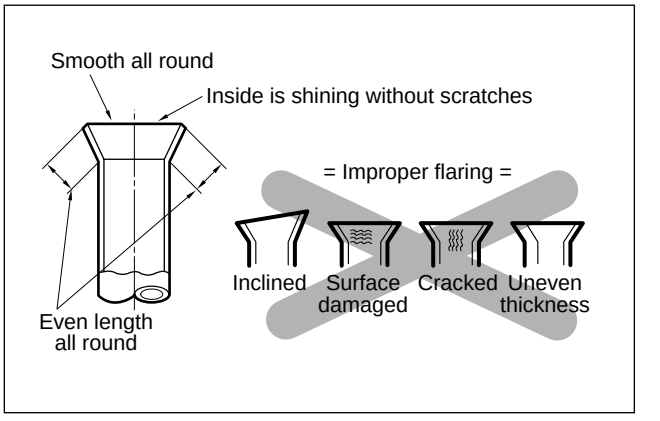
- If burrs are not removed, they may cause a gas leakage.

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.



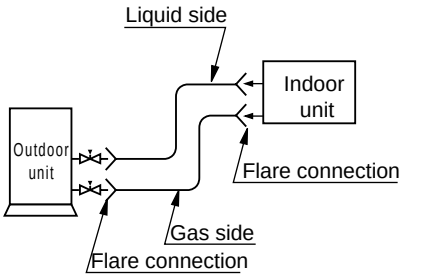
Outside diameter		A
mm	inch	mm
ø6.35	1/4	0.5~0.8
ø9.52	3/8	0.5~0.8
ø12.7	1/2	0.5~0.8
ø15.88	5/8	0.8~1.0



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

Piping Connection

1. Form the piping according to its routing. Avoid bending and bending back the same piping point more than three times. (This will result in hardening the pipe.)
2. After deforming the piping, align centers of the union fitting of the indoor unit and the piping, and tighten them firmly with wrenches.
3. Connect pipe to the service valve or ball valve which is located below the outdoor unit.
4. After completing the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.



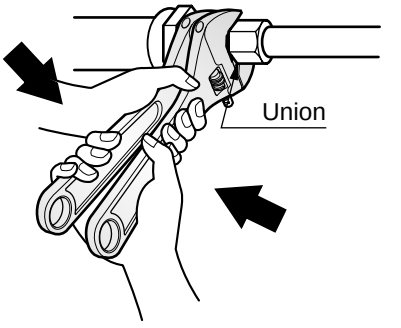
Vacuum drying

After completing the piping connection, execute vacuum drying for the connecting piping and the indoor unit.
The vacuum drying must be carried out using the service ports of both the liquid and gas side valves.

⚠ CAUTION

Use two wrenches and tighten with regular torque.

Flare nut fastening torque	
Ø6.35mm(1/4")	1.8kg·mm
Ø9.52mm(3/8")	4.0kg·mm
Ø12.7mm(1/2")	5.5kg·mm
Ø15.88mm(5/8")	6.6kg·mm



3. The Indoor Unit Installation

(1) Room Type Indoor Unit

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

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

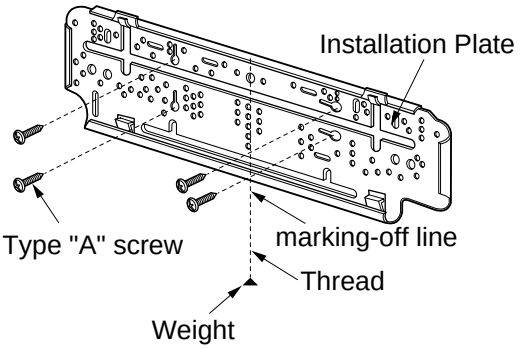
(If mounting the unit on the concrete wall, consider using anchor bolts.)

- Always mount the Installation plate horizontally by aligning the marking-off line by means of the thread and a level.

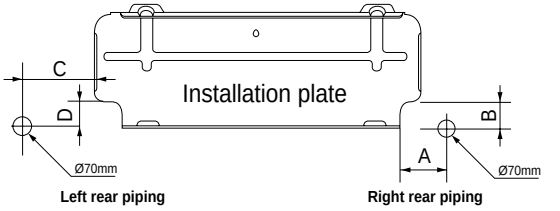
2. Drill the piping hole with 70mm dia. holecore drill.

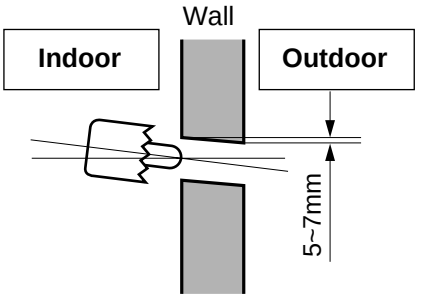
- Line according to the arrows marked on lower the left and the rght side of the Installation Plate. The meeting point of the extended line is the center of the hole.
- Drill the piping hole at either the right or the left and the hole should be slightly slant to the outdoor side.

CHASSIS (Grade)	Distance (mm)			
	A	B	C	D
SQ	75	12	80	12
SR	0	40	20	40
ST	105	0	210	0



The lower left and the right side of Installation Plate

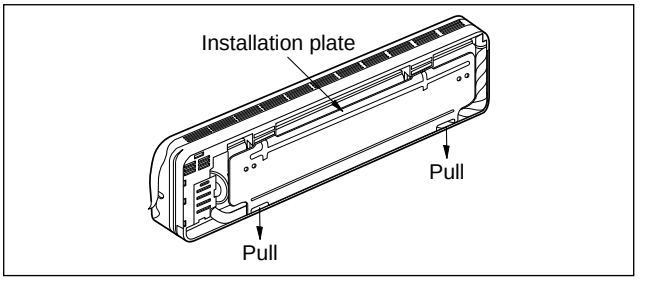




1) Connection of Pipings

1. Remove the installation plate

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



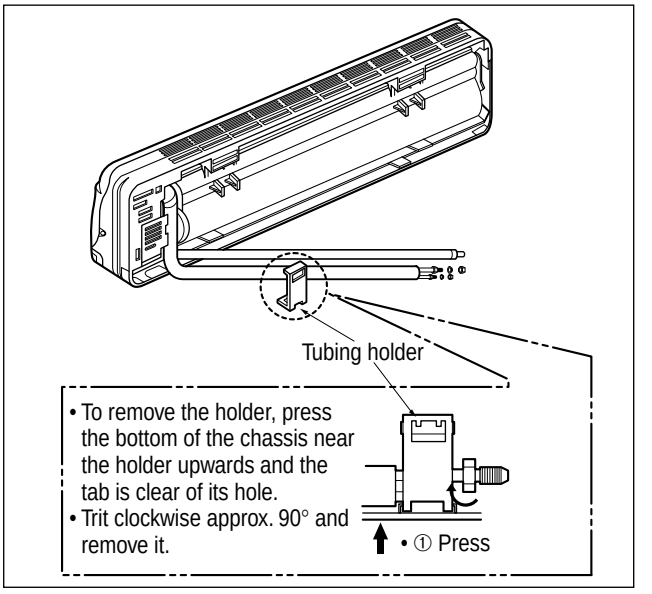
2. Route the drain hose and the indoor tubing.

For left rear piping

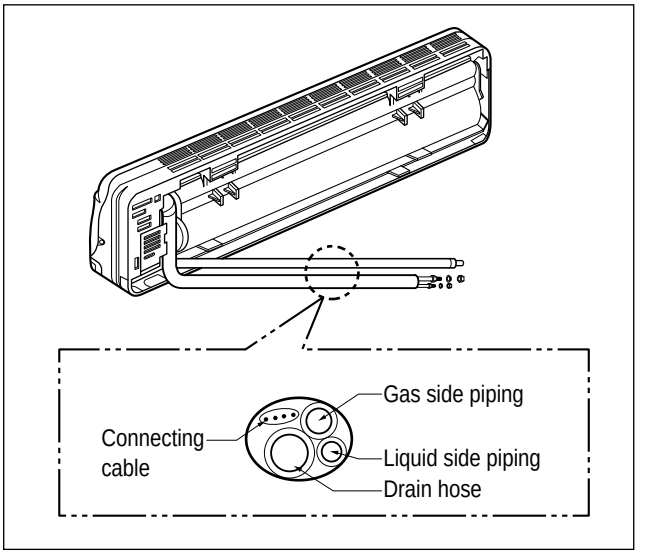
3. Route the tubing and the drain hose straight backwards(see figure).

4. Insert the connecting 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.

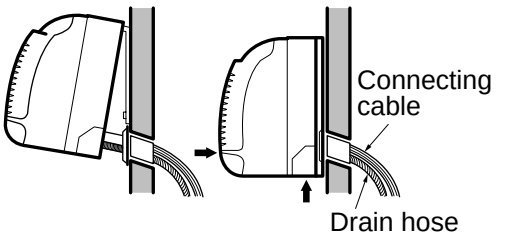


5. Tape the tubing, drain hose and the connecting cable. Be sure that drain hose locates at the lowest side of the bundle.
Locating at the upper side can be a reason that drain water overflows drain pan inside the unit.



6. Indoor unit installation.

- Hook the indoor unit onto the upper position of the 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.

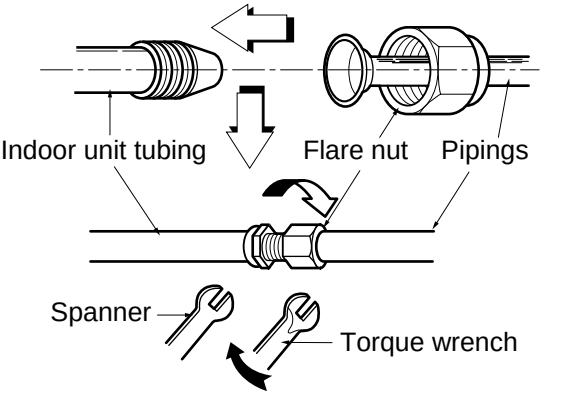


Press the lower left and right side of the unit against the Installation Plate until the hooks engage with their slots (sound click).

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 forque wrench, ensure the direction for tightening follows the arrows on the wrench.

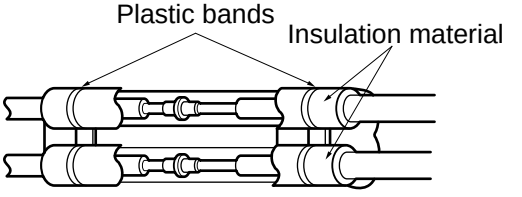
Outside diameter		A
mm	inch	mm
ø6.35	1/4	0.5~0.8
ø9.52	3/8	0.5~0.8
ø12.7	1/2	0.5~0.8
ø15.88	5/8	0.8~1.0



8. Wrap the insulation material around the connecting portion.

⚠ CAUTION

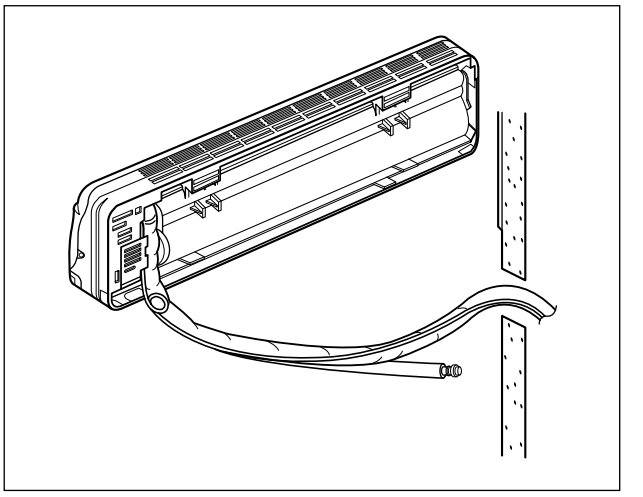
- Take care to arrange the pipings, drain hose and cables as the right upper picture for inserting it into the indoor unit and refixing the tubing holder easily.

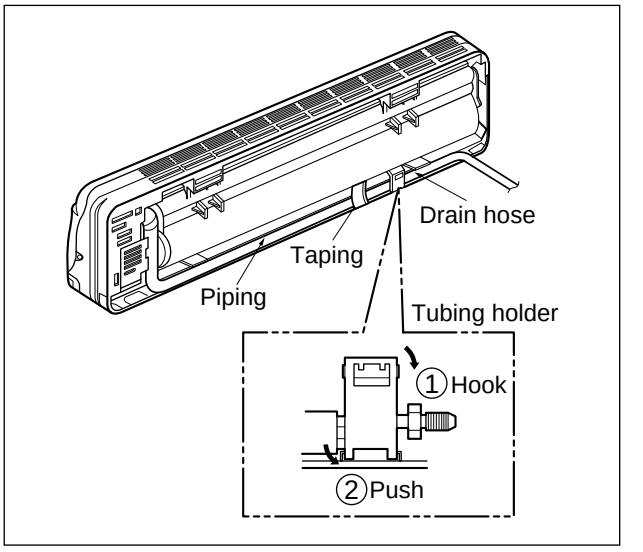


Wrap the insulation material around the connecting portion.

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

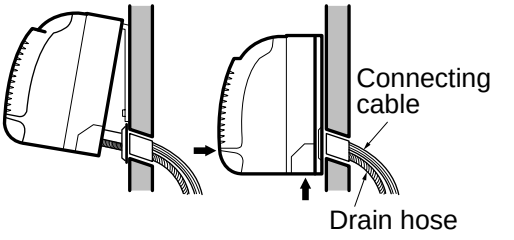
- Hook the edge of tubing holder to tap on chassis and push the bottom of tubing holder to be engaged in the bottom of chassis.





10. 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.

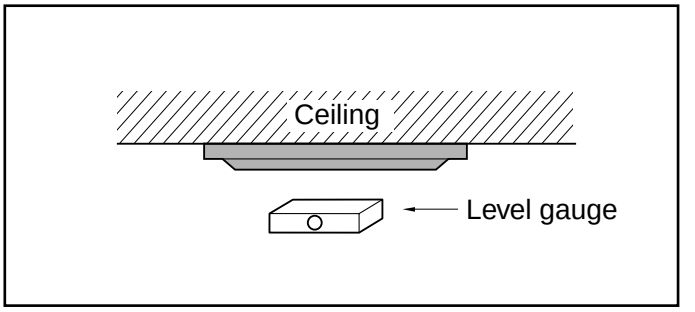


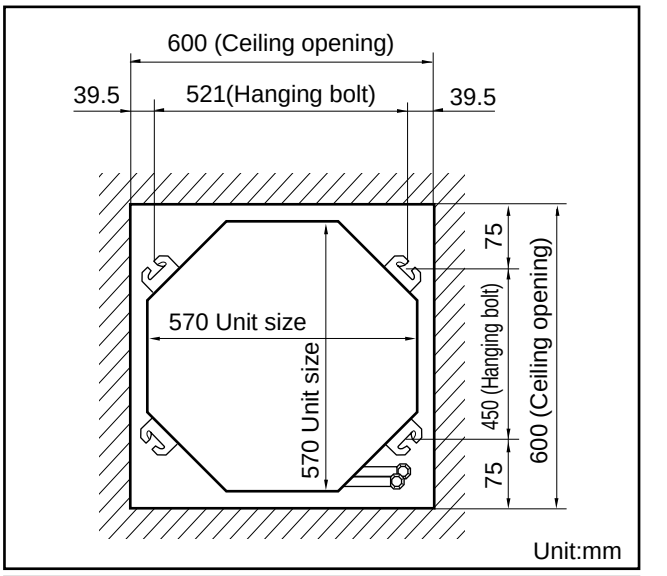
Press the lower left and right side of the unit against the Installation Plate until the hooks engages with their slots (sound click).

(2) Cassette Type Indoor Unit

1) Ceiling opening dimensions and hanging bolt location

• The dimensions of cardboard for installing are the same as those of the ceiling opening dimensions.

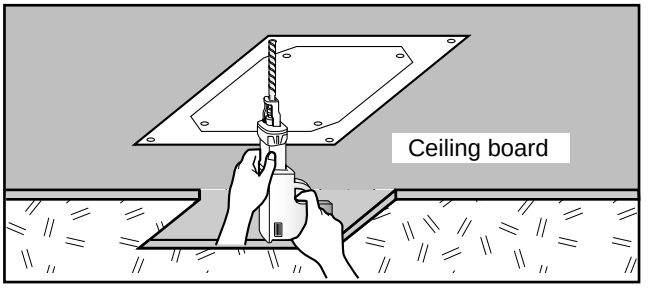




⚠ CAUTION

- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, be careful not to damage electric wires.

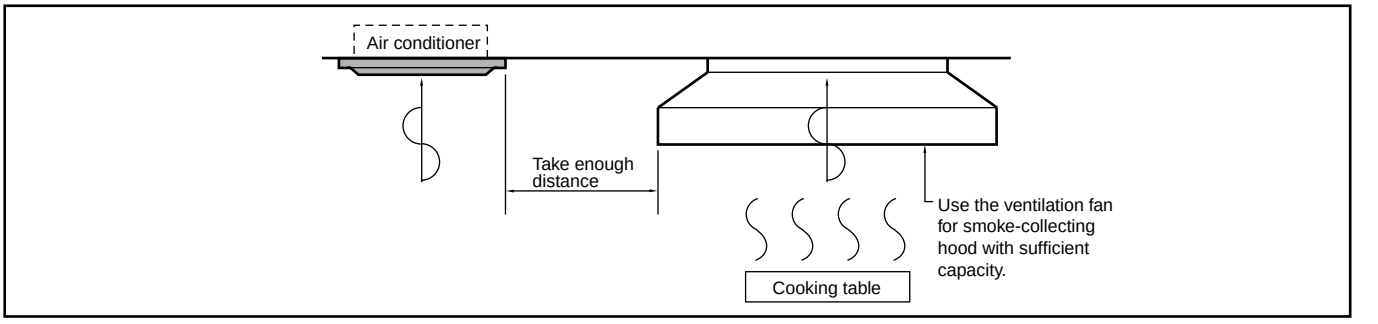
- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the wall.



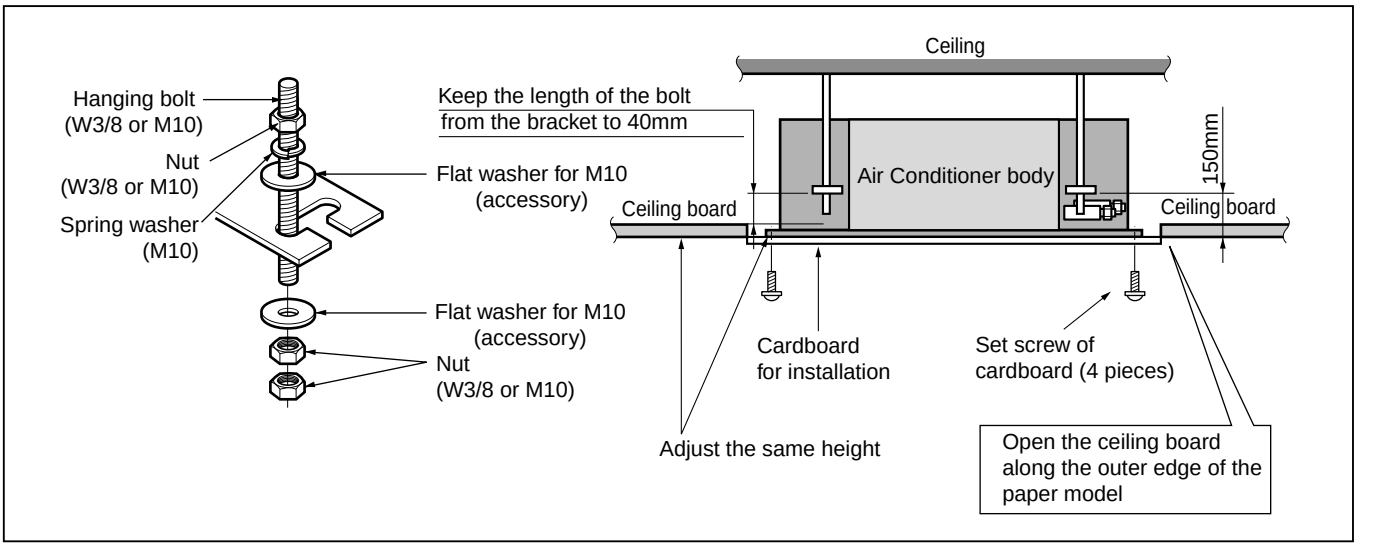
NOTE:

• Avoid the following installation location.

1. Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated.
   These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function.
   In these cases, take the following actions;
   - Make sure that ventilation fan is enough to cover all noxious gases from this place.
   - Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.



2. Avoid installng air conditioner in such places where cooking oil or iron powder is generated.
3. Avoid places where inflammable gas is generated.
4. Avoid place where noxious gas is generated.
5. Avoid places near high frequency generators.



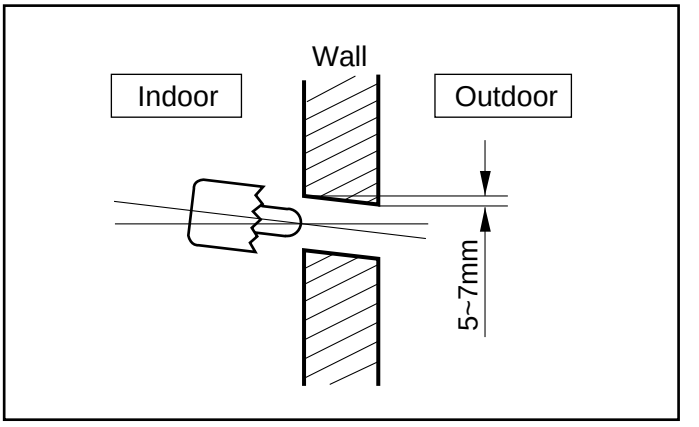
• The following parts are local purchasing.

① Hanging Bolt - W 3/8 or M10
② Nut - W 3/8 or M10
③ Spring Washer - M10
④ Plate Washer - M10

⚠ CAUTION

• Tighten the nut and bolt to prevent the unit from falling off.

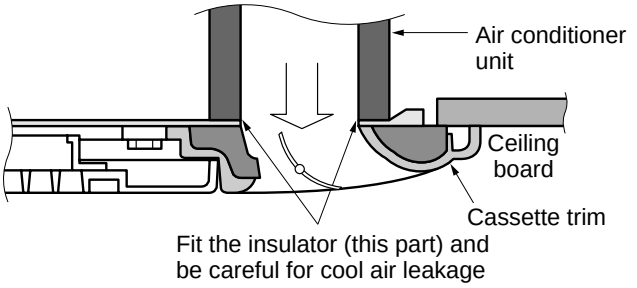
• Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.



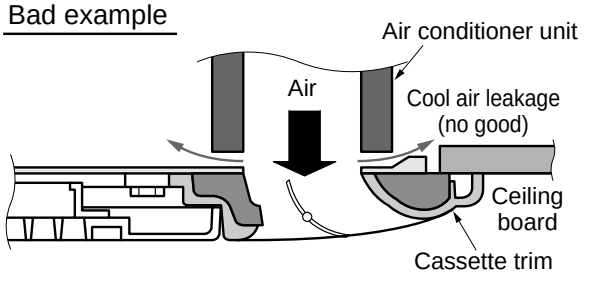
⚠ CAUTION

• Install certainly the cassette trim.
• Cool air leakage causes sweating. ⇨ Water drops fall.

Good example



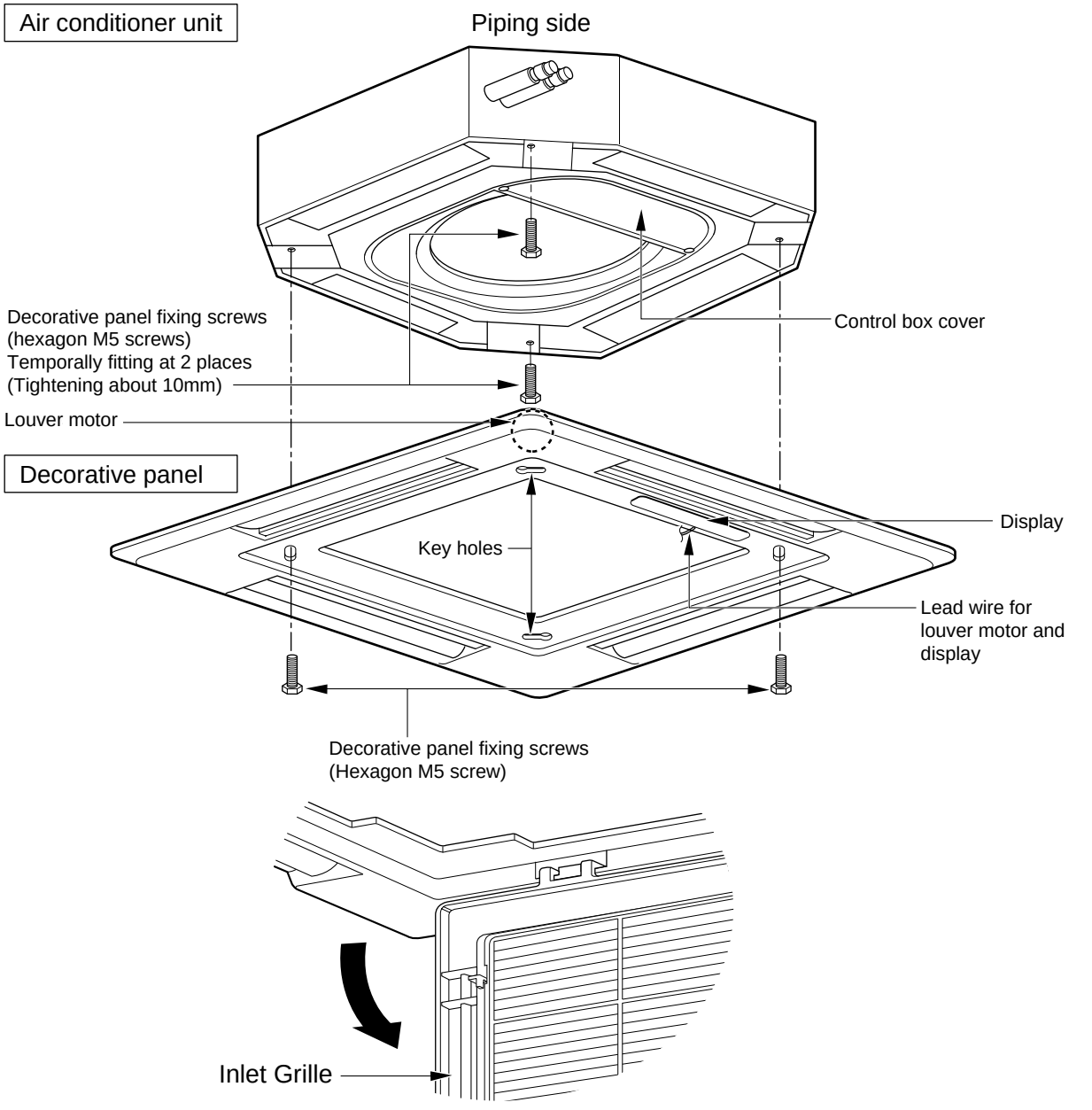
Bad example



2) Installation of Decorative Panel

The decorative panel has its installation direction.	**Before installing the decorative panel, always remove the paper template.**

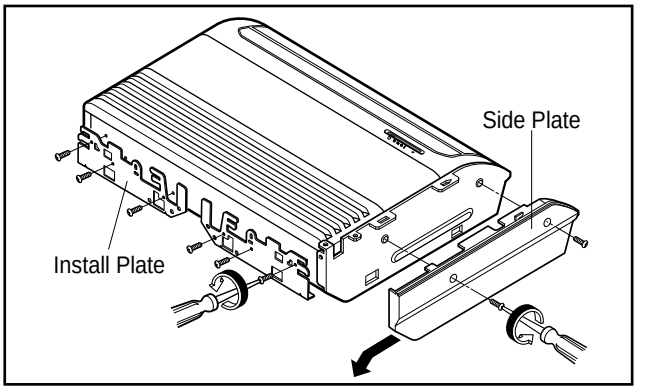
1. Temporarily fix two decorative panel fixing screws (hexagon M5 screw) on the unit body. (Tighten by amount 10mm in length.)
   The fixing screws (hexagon M5 screw) are included the indoor unit box.
2. Remove the air inlet grille from the decorative panel. (Remove the hook for the air inlet grille cord.)
3. Hook the decorative panel key hole (⊂⊃) on the screws fixed in step above, and slide the panel so that the screws reach the key hole edge.
4. Retighten completely two temporarily fixed screws and other two screws. (Total 4 screws)
5. Connect the louver motor connector and display connector.
6. After tightening these screws, install the air inlet grille (including the air filter).

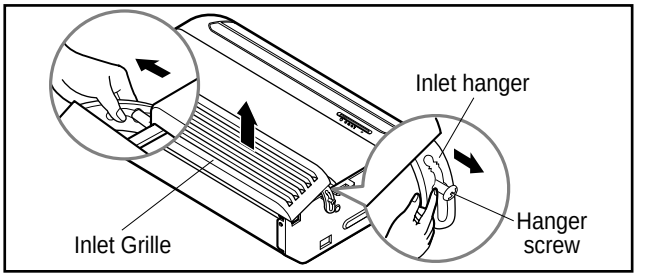


(3) Convertible Type Indoor Unit

■ Before Installing, prepare Installation Plates

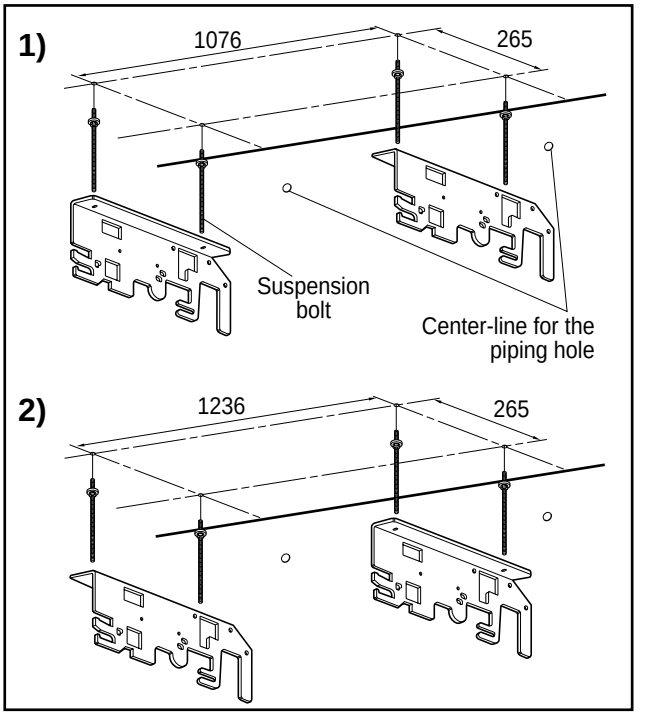
- 'Installation Plates' are attached at the bottom of indoor unit.
  Detach them by removing each 3 screws at both sides.
- Detach 'Side Plate (R,L)' by removing each 2 screws on both sides.
- Pull the upper right and left side of 'Inlet Grille' to the front, and it will stop at slightly tilted position.
- Unhook the 'Inlet hanger' from the 'Hanger screw' on the both left and right side.
- Detach the 'Inlet Grille' from the Indoor Unit.





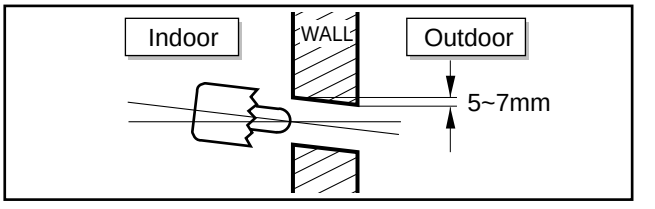
1) Installation on the ceiling

- Measure and mark the position for the Suspension bolts and the piping hole.
- Drill the hole for anchor nut on the ceiling.

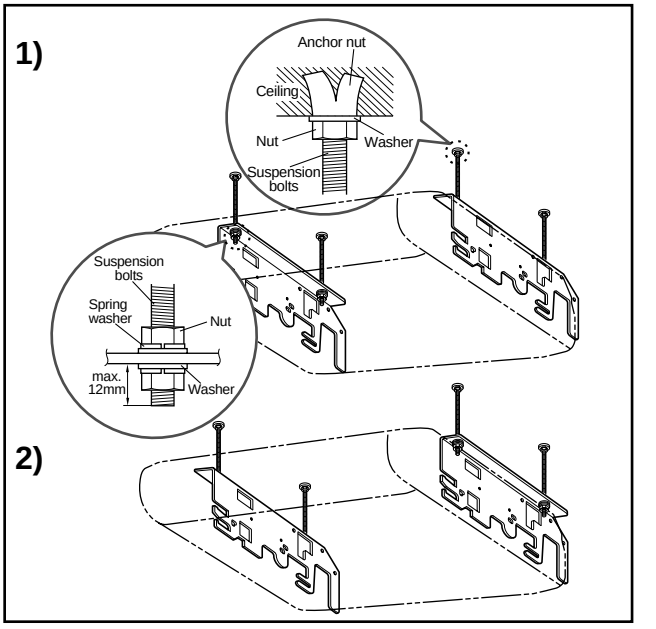


※ **Before secure the Installation Plates, select the bent direction of the Installion Plate to the inside or the outside according to the installation circumstances.**

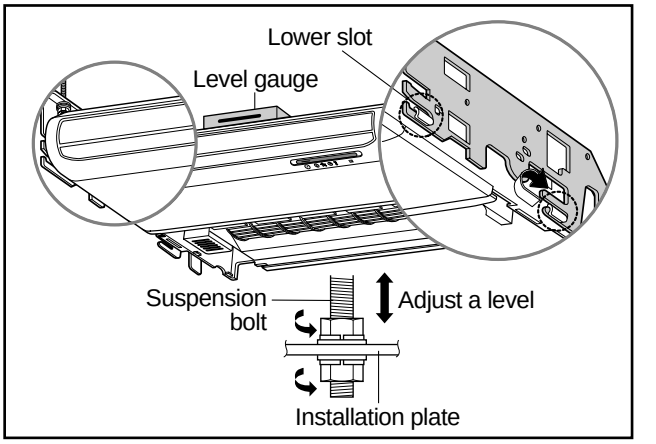
- Drill the piping hole on the wall slightly tilted to the outdoor side using a ø70 hole-core drill.

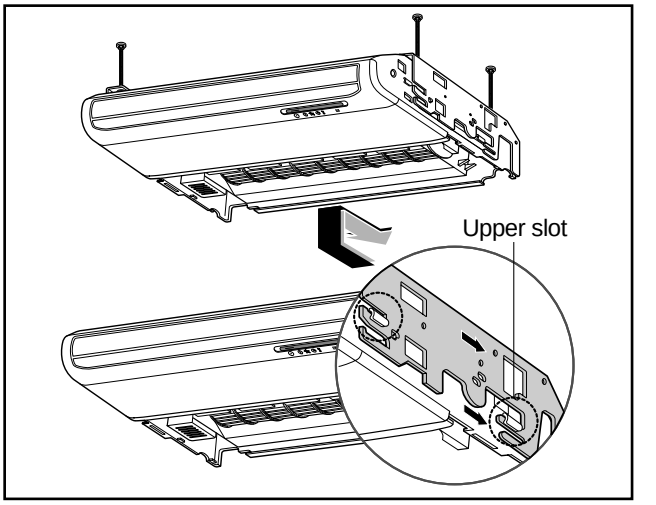


- Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the anchor-nuts firmly.
- Secure the Installation plates onto the Suspension bolts (adjust level roughly.) using nuts, washers and spring washers.



- Engage 2 hooks on the both left and right side of the unit to the lower slot of Installation Plates.
- Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- Move the hooks on the unit to the upper slot of Installation Plates. Then the unit will be declined to the bottomside so as to drain well.



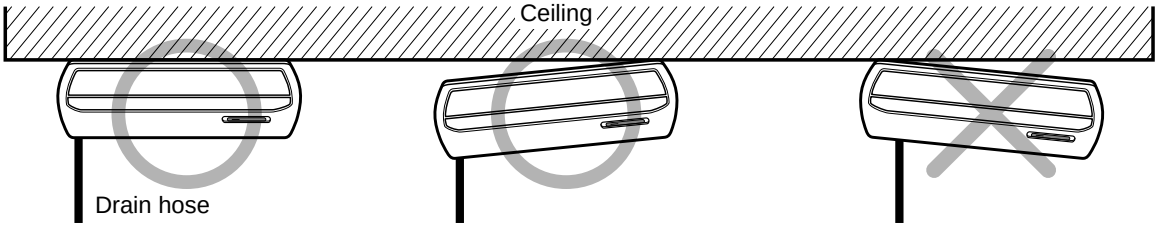


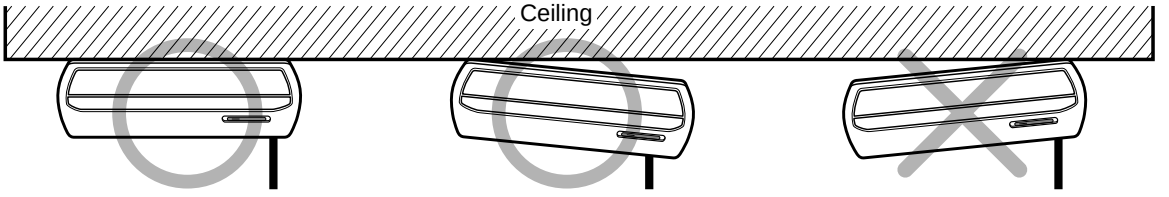
CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the convertible type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 7mm.
3. If the Installation Plates are fixed to horizontal line, the indoor unit after installing will be declined to the bottomside.

Front of view

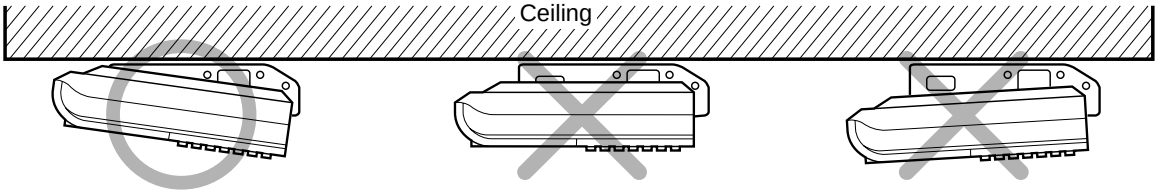
• The unit must be horizontal or declined to the drain hose connected when finished installation.



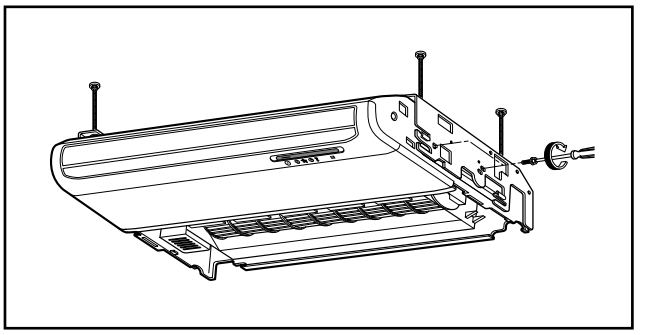


Side of view

• The unit must be declined to the bottomside of the unit when finished installation.

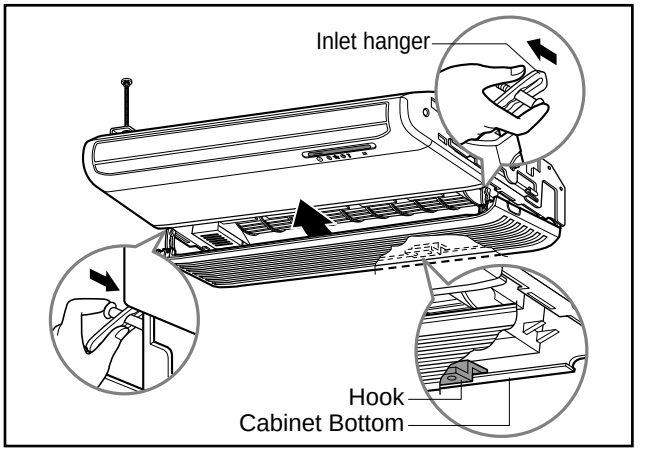


• Secure the unit to the Installation Plates with four M8 bolts and washers.

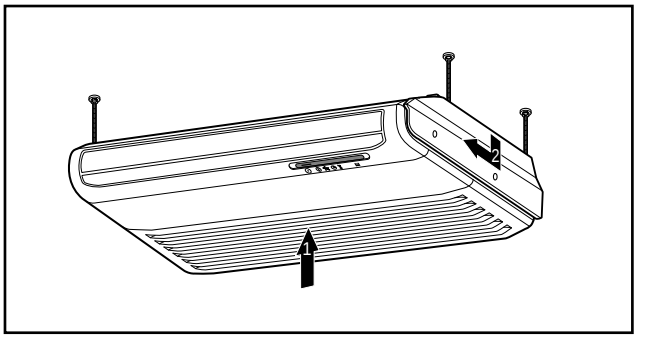


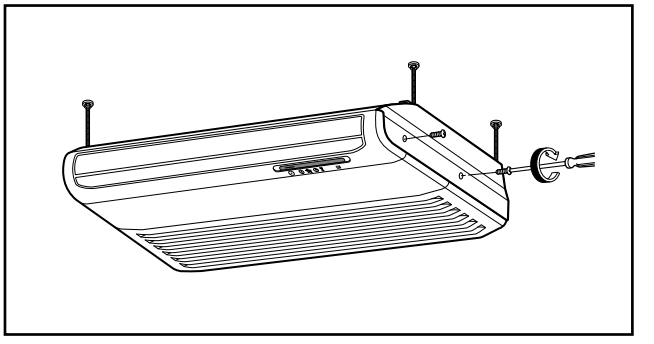
• Before working, refer to "Connecting pipe and cable to Indoor Unit" on page 60.

• Hook up the Inlet Grille Hook to the cabinet.
• Hang the Inlet Hanger to the screw.



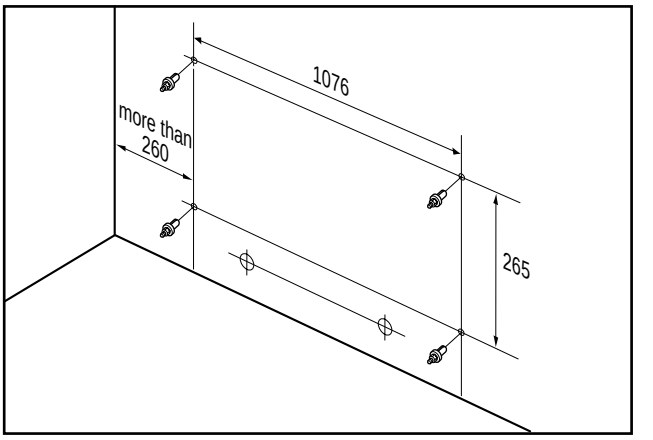
• Fit the projection hooks of the side plates to the 'Side Panel' and the 'Front Panel' by lifting it.
• Fasten the screws.



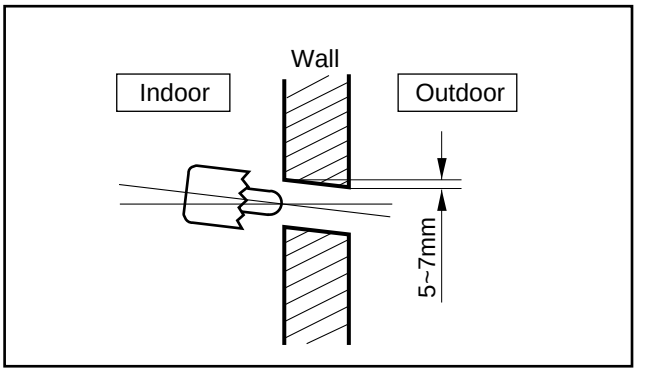


2) Installation on the Wall

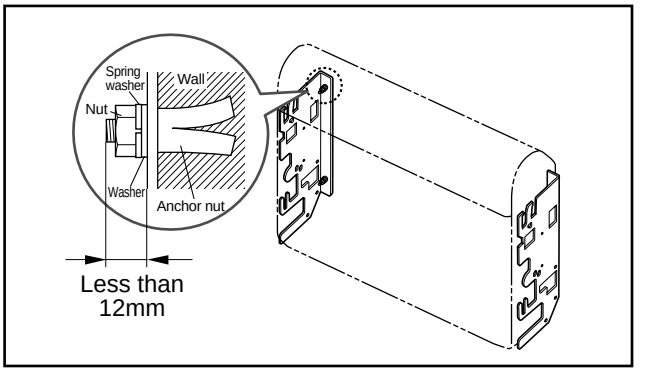
- Select and mark the position for fixing bolts and piping hole.
  Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor nut on the wall.



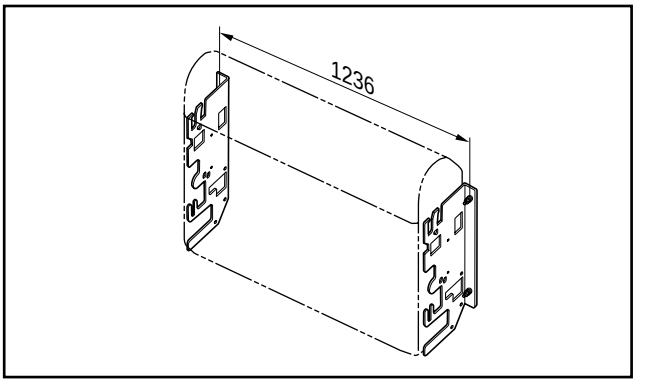
- Drill the piping hole on the wall slightly tilted to the outdoor side using a ø70 hole-core drill.



- Secure the 'Install Plate' onto the wall with four anchor bolts, washers and spring washers.

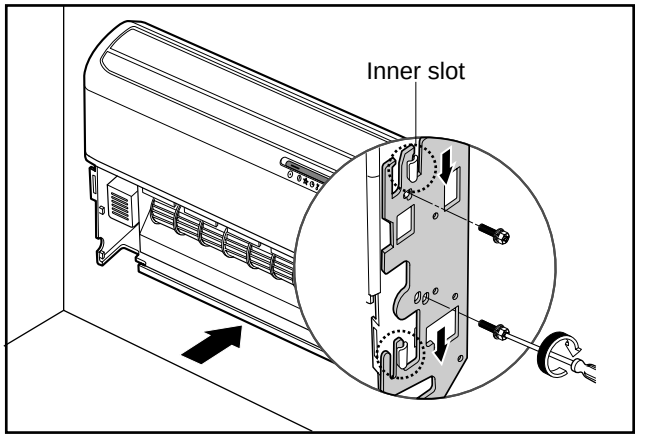


※ Before secure the Install Plates, select the bent direction of the 'Install Plate' to the inside or outside according to the installation circumstances.



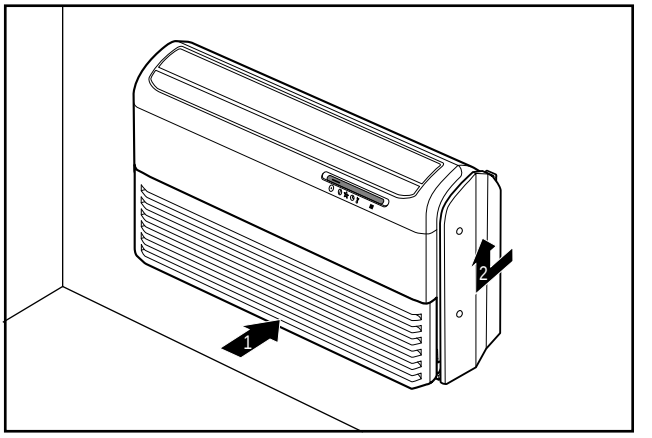
Install the Indoor unit onto Installation Plate.

- Insert 2 hooks on the both left and right side of the unit to the inner slot (wall side) of the Installation Plate.
- Secure the unit to the Installation Plate with four M8 bolts and washers.

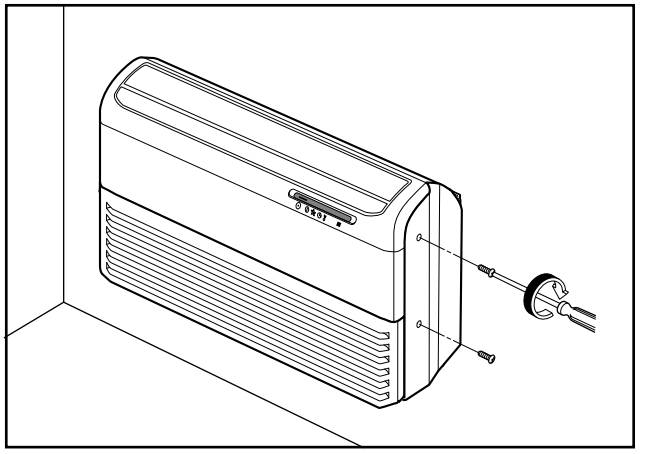


• Before working, refer to "Connecting pipe and cable to Indoor Unit" on page 60.

- Hook up the Inlet Grille Hook to the cabinet.
- Hang the Inlet Hanger to the screw.



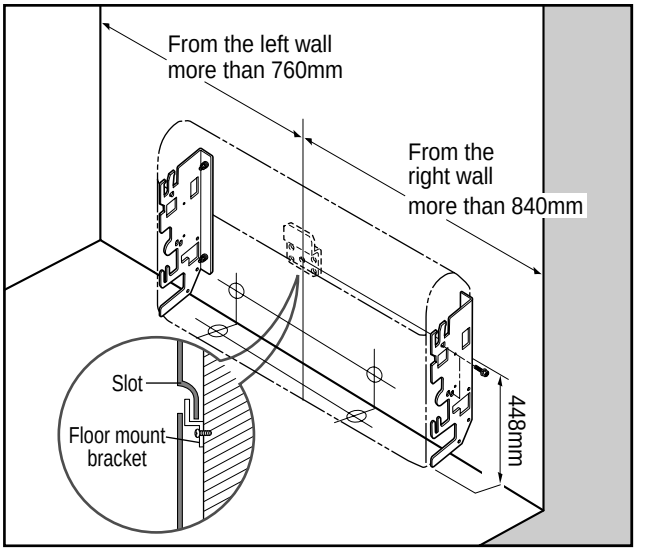
- Fit the projection hooks of the side plates to the 'Side Panel' and the 'Front Panel' by lifting it.
- Fasten the screws.



3) Installation on the floor

Installation of Mount Bracket.

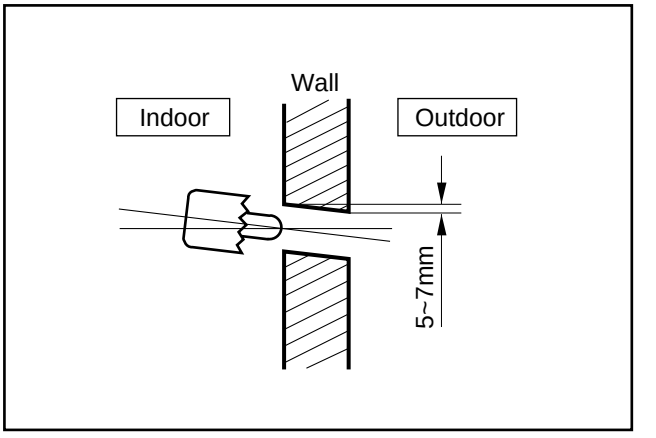
- Select and mark the position for Mount Brackets and the piping hole.
- Drill the hole for the anchor nut on the wall.
- Drill the piping hole using a ø70 hole-core drill.
- Secure the Mount Brackets on the wall with four M4 screws.



Install the indoor unit onto the Mount Brackets.

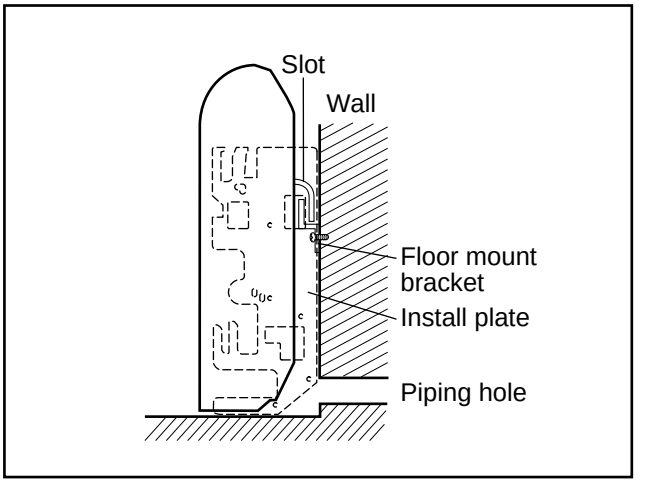
- Engage the slot at the back of the unit with Mount Bracket.

- Drill the piping hole with 70mm dia, hole core drill.
- Piping hole should be slightly slant to the outdoor side.



After Installing, reassemble detached parts.

- Hang the 'Inlet Grille' and hook the 'Inlet Hanger' to the Hanger Screw.
- Assemble the 'Side Plates(R,L)' with 2 screws on both left and right side.

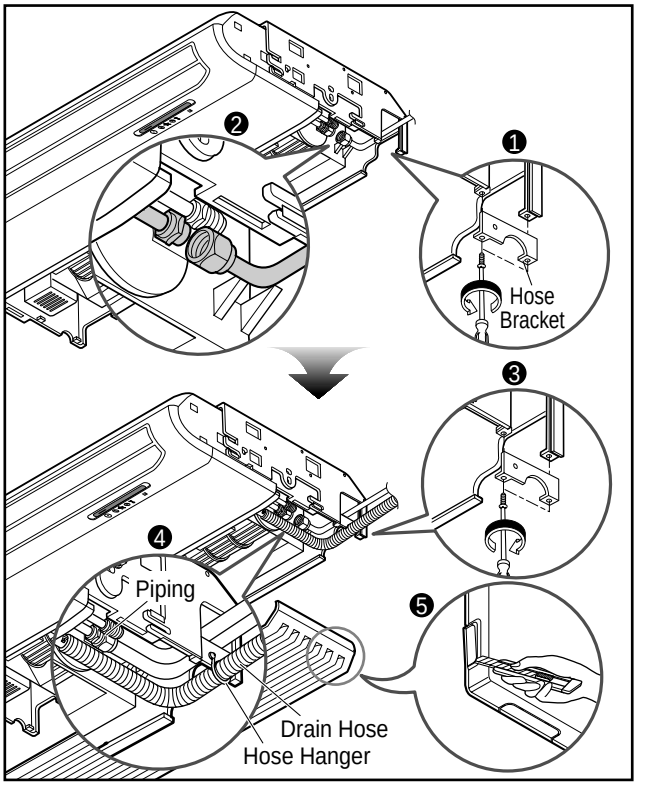


4) Connecting the pipes to the indoor unit (Installation on the ceiling)

The pipe can be connected to right side, bottom or back of the unit.

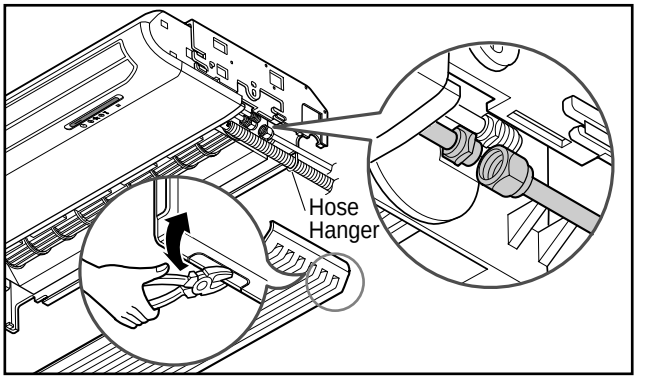
1. For the Right Side Piping

- After bending an end of the connecting tube, 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.
- Connect the Drain Hose insulated to the drain outlet. Drain hose should be go through under the Hose Bracket as shown in figure ❹.
- Hang the drain hose on the hose hanger and fix it to the hole of the hose bracket with a screw.



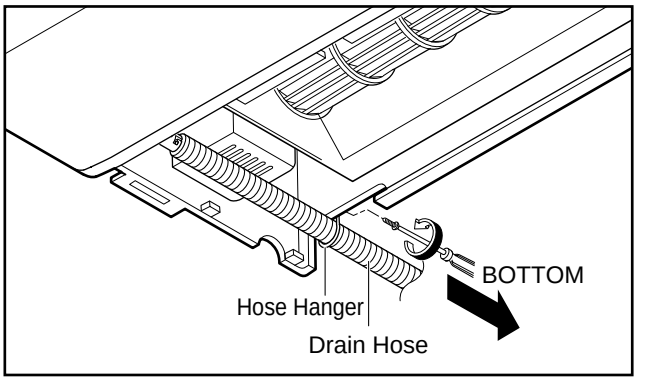
2. For the Bottom Side Piping

- Remove the knock-out on the bottomside of Inlet Grille
- 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.
- Connect the Drain Hose insulated to the drain outlet.
- Hang the drain hose on the hose hanger and fix it to the hole of cabinet bottom with a screw.



5) Connecting the Drain Hose

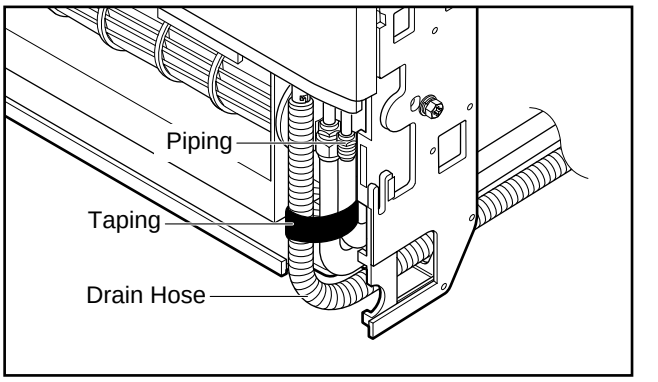
- The drain hose can be connected to not only the right side but also left side of the unit.
- If the drain hose is connected to the left side, it should go through the cabinet bottom.
- Hang the drain hose on the hose hanger and fix it to the hole of cabinet bottom with a screw.



6) Connecting the pipes to the indoor unit (Installation on the wall or floor)

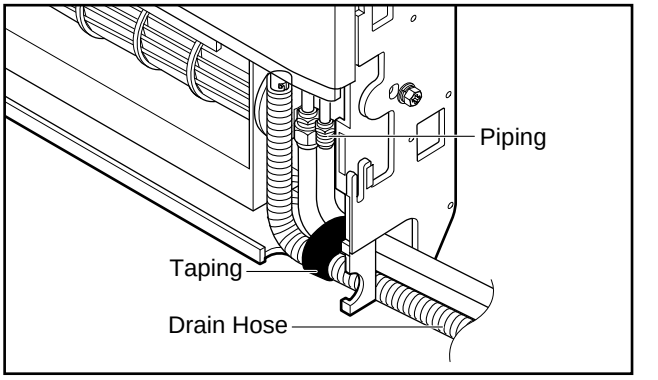
1. For the Right Rear Piping

- Remove the knock-out at the back side of the cabinet.
- After bending an end of the connecting tube, 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.
- Connect the Drain Hose insulated to the drain outlet.
- Tape the Drain Hose to the pipings to avoid coming off the drain-outlet.



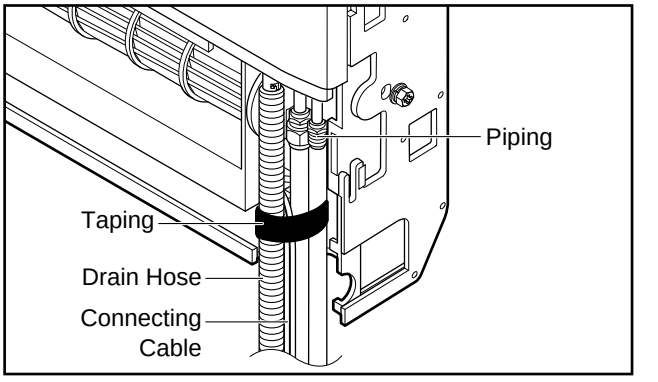
2. For the Right Side Piping

- After bending an end of the connecting tube, 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.
- Connect the Drain Hose insulated to the drain outlet.
- Tape the Drain Hose to the pipings to avoid coming off the drain-outlet.



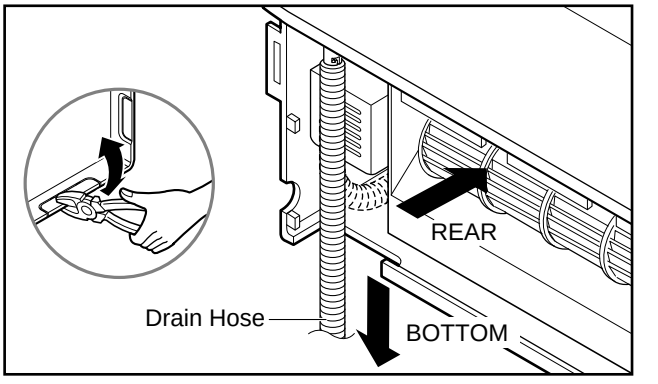
3. For the Right Bottom Piping

- 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.
- Connect the Drain Hose insulated to the drain outlet.



7) Connecting the Drain Hose

- The drain hose can be connected to not only right side but also left side of the unit.



(4) Duct Type Indoor Unit

■ **Installation of Unit**

Install the unit above the ceiling correctly.

CASE 1

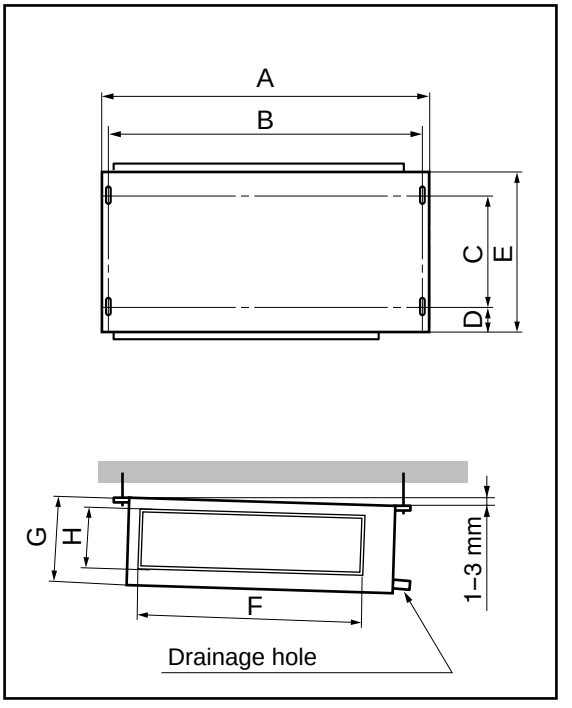
POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

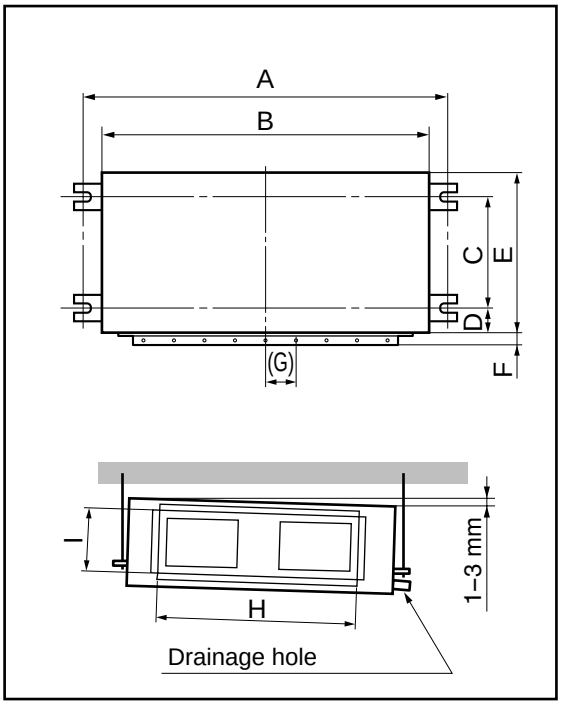
(Unit:mm)

Dimension / Capacity	A	B	C	D	E	F	G	H	I
9/12K	708	678	434	51	537	455	230	172	-
18k	932	882	355	45.5	450	30	87	750	163

9/12k



18k



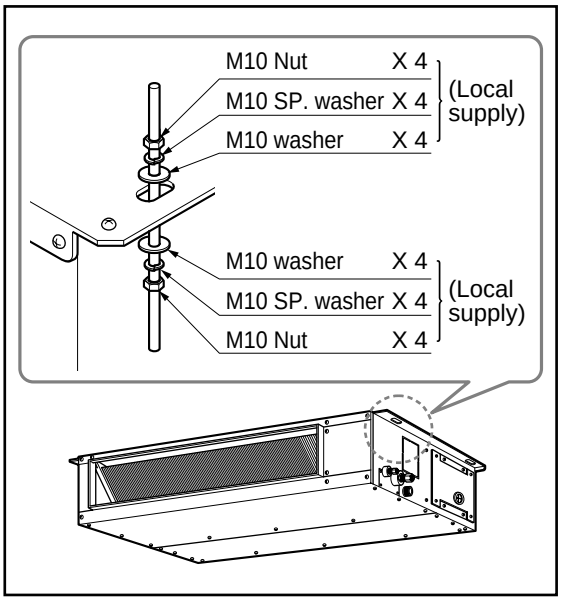
CASE 2

• Install the unit leaning to a drainage hole side as a figure for easy water drainage.

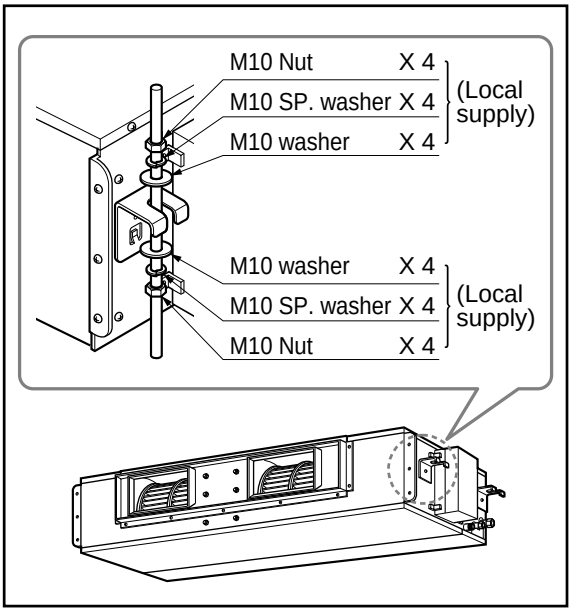
POSITION OF CONSOLE BOLT

• A place where the unit will be leveled and that can support the weight of the unit.
• A place where the unit can withstand its vibration.
• A place where service can be easily performed.

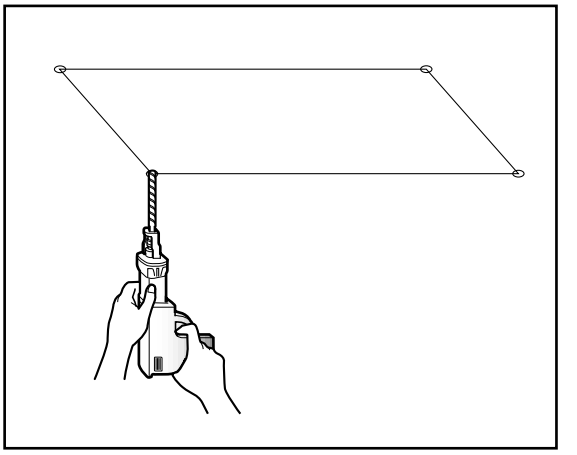
9/12k



18k

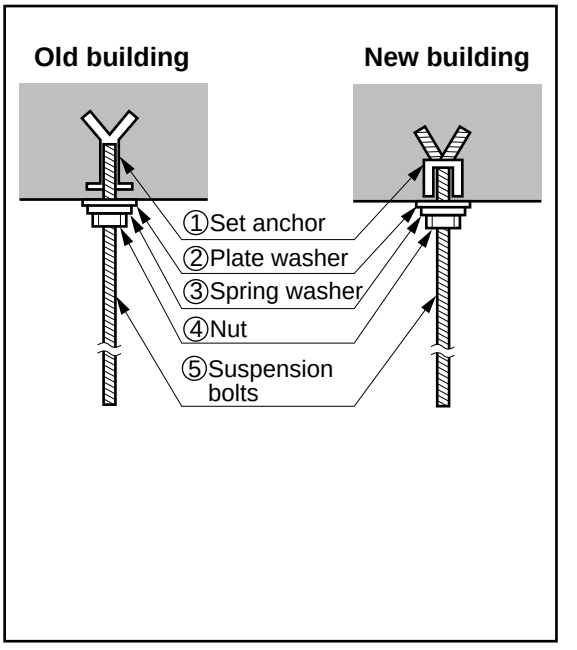


• Select and mark the position for fixing bolts.
• Drill the hole for set anchor on the face of ceiling.



• Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
• Mount the suspension bolts to the set anchor firmly.
• Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

⚠ CAUTION: Tighten the nut and bolt to prevent unit falling

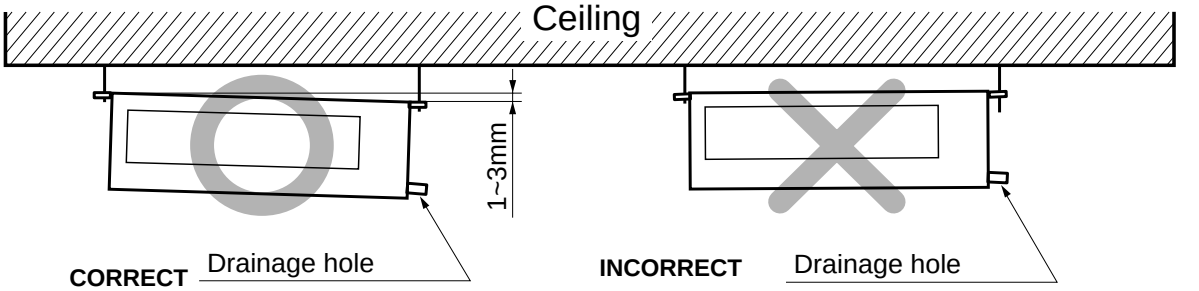


CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 5mm.

Front of view

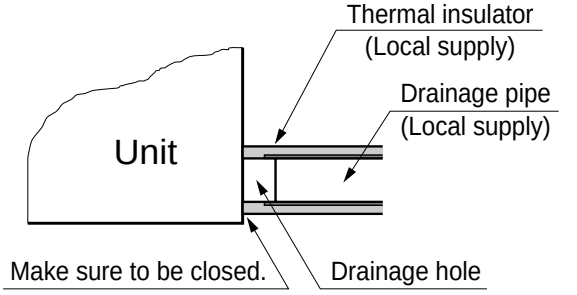
• The unit must be horizontal or declined to the drain hose connected when finished installation.

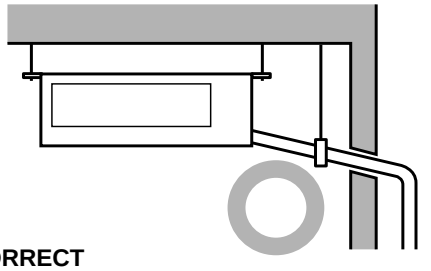


CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING

Lay the drain hose with a downward inclination so water will drain out.

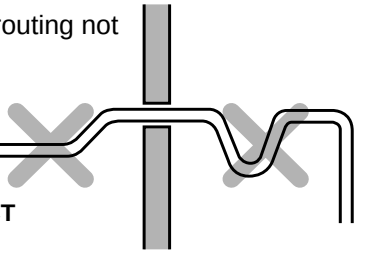
- Always lay the drain with downward inclination (1/50 to 1/100).
  Prevent any upward flow or reverse flow in any part.
- 5mm or thicker formed thermal insulator shall always be provided for the drain pipe.





CORRECT

• Upward routing not allowed

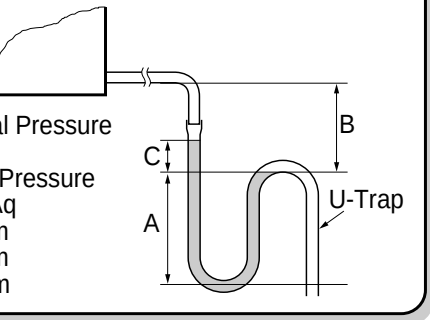


INCORRECT

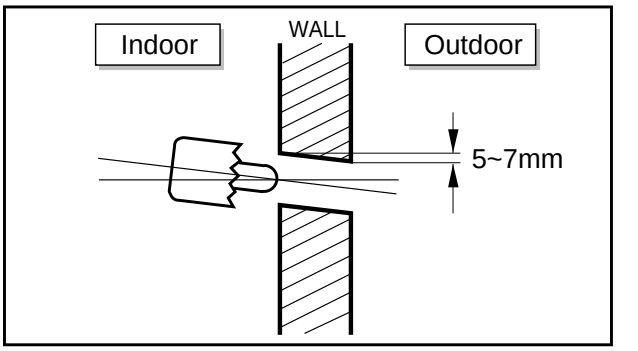
- Install the P-Trap (or U-Trap) to prevent a water leakage caused by the blocking of intake air filter.

Applied U-Trap Dimension

A ≥ 70mm
B ≥ 2C
C ≥ 2 x SP
SP = External Pressure (mmAq)
Ex) External Pressure = 10mmAq
A ≥ 70mm
B ≥ 40mm
C ≥ 20mm



- Drill the piping hole with 70mm dia, hole core drill.
- Piping hole should be slightly slant to the outdoor side.

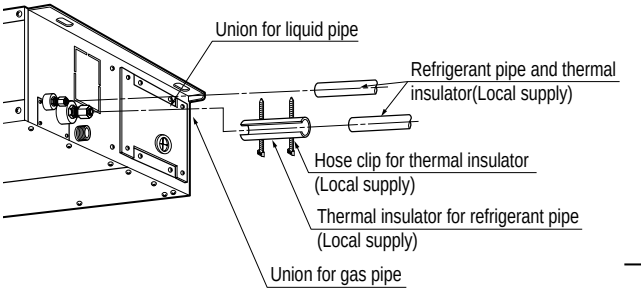


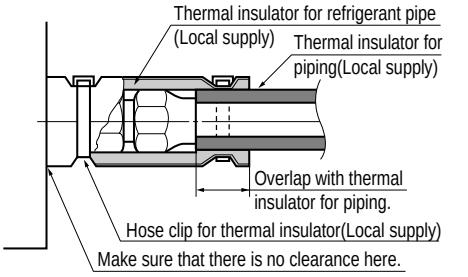
INSULATION, OTHERS

Insulate the joint and tubes completely.

THERMAL INSULATION All thermal insulation must comply with local requirement.

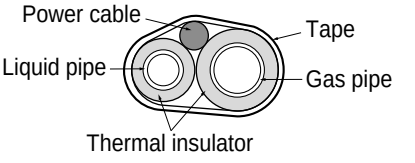
INDOOR UNIT





REFRIGERANT PIPE

- Insulate and tape both the gas pipe and liquid pipe.



TEST AND CHECK

■ *After all workings are finished, check the working and operation.*

- Air distribution ——— Is the air circulation good?
- Drain ——— Is the drainage smoothly and no sweating?
- Gas leakage ——— Is the piping connection correctly?
- Wiring ——— Is the wiring connection correctly?
- Service Valve Lock-bolt —— Is the lock-bolt of Service Valve loosened?

INSTALLATION OF REMOTE CONTROLLER

Install the remote control box and cord correctly.

POINT OF REMOTE CONTROLLER INSTALLATION

- Although the room temperature sensor is in the indoor unit, the remote control box should be installed in such places away from direct sunlight and high humidity.

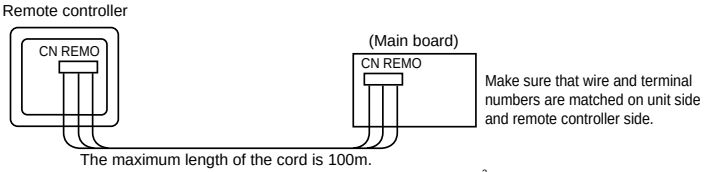
INSTALLATION OF THE REMOTE CONTROLLER

- Select places that is not splashed by water.
- Select control position after receiving customer approval.
- The room temperature sensor of the thermostat for temperature control is built in the indoor unit.
- This remote controller equipped with liquid crystal display. If this position is higher or lower, display is difficult to see.
  (The standard height is 1.2~1.5m high)

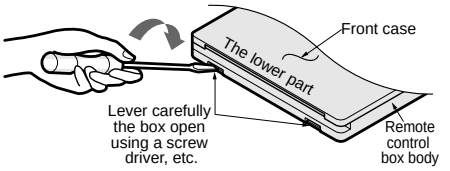
ROUTING OF THE REMOTE CONTROL CORD

- Keep the remote control cord away from the refrigerant piping and the drain piping.
- To protect the remote control cord from electrical noise, place the cord at least 5cm away from other power cables. (Audio equipment, Television set, etc)
- If the remote control cord is secured to a wall, provide a trap at the top of the cord to prevent water droplets from running.

ELECTRICAL WIRING TO THE INDOOR UNIT



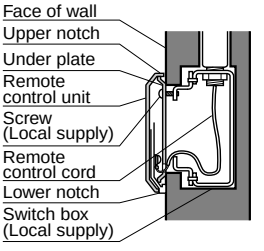
DISASSEMBLING THE REMOTE CONTROLLER



WHEN THE REMOTE CONTROLLER IS INSTALLED WITH THE CORD BURIED.

PROCEDURE OF INSTALLATION

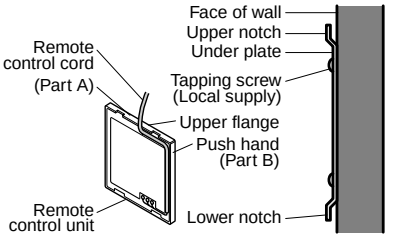
1. Fix the under plate on the switch box by screws(Local supply). In this case, fit the under plate on the wall, and be careful of deformation.
2. Receive the remote control cord in the switch box.
3. Hook the remote control unit on the under plate.



WHEN THE REMOTE CONTROLLER IS INSTALLED WITH THE CORD EXPOSED.

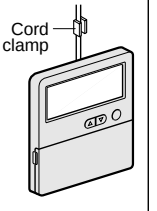
PROCEDURE OF INSTALLATION

1. Fix the under plate on the wall by self tapping screws (accessory).
2. Make a slit (Part A) at the top side of the remote controller by nipper.
3. Rout the cord as shown in the following figure. In this case, push the cord into the around of case(Part B).
4. Hook the remote control unit on the under plate.



FIXING OF REMOTE CONTROL CORD

1. Fix the cord clamps on the wall by ø3 tapping screws(Local supply).
2. Fix the remote control cord.



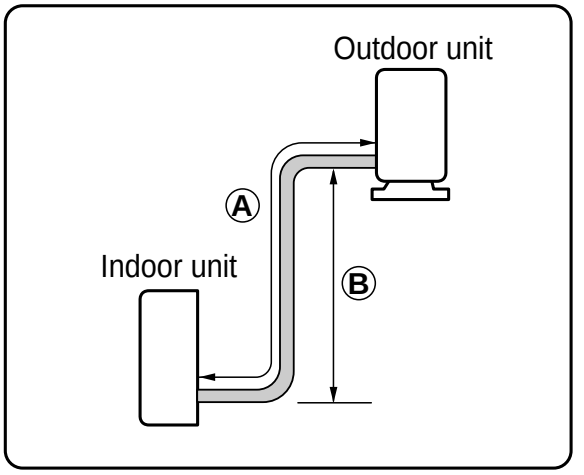
PIPING LENGTH AND ELEVATION

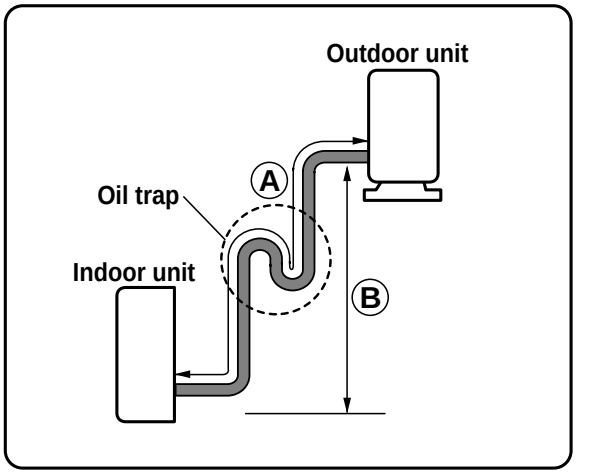
Capicity (Btu/h)	Pipe Size		Min. Length Ⓐ (m)	Standard Length Ⓐ (m)	Max. Length Ⓐ (m)	Max. Elevation Ⓑ (m)	Additional Refrigerant (g/m)
	GAS	LIQUID					
9K	3/8"	1/4"	3	7.5	15	7	20
12K	1/2"	1/4"	3	7.5	15	7	20
18K	1/2"	1/4"	3	7.5	15	7	30

(Rated performance at standard pipe length.)

■ Please note that the minimum pipe length must be kept according to the table above.

■ Total maximum pipe length for 2 and 3 room outdoor unit should be less than 45m
4 room outdoor unit should be less than 60m.





CAUTION:

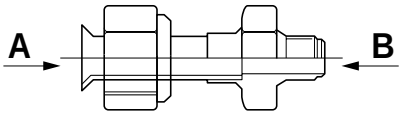
- **Capacity is based on standard length and maximum allowance length is on the basis of reliability.**
- **Oil trap should be installed every 5~7 meters.**

(5) Connecting Pipings and the cable to Outdoor unit

1) Connecting the pipings to the Outdoor unit

1. When piping installation work you must be used the connector.

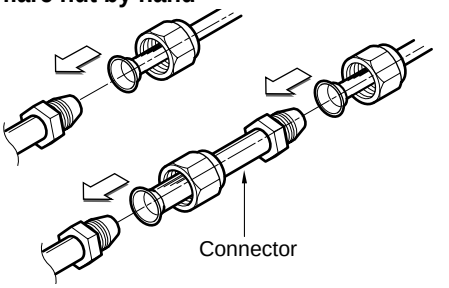
Indoor Units	Gas		Liquid	
	A	B	A	B
12K 18K 24K	Ø9.52→Ø12.7		Not necessary	



***Connecting pipe size**

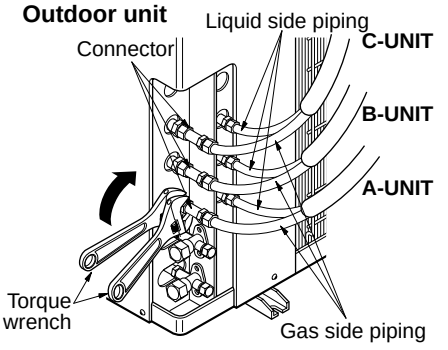
Indoor Units	Gas side	Liquid side
7K	Ø9.52(3/8)	Ø6.35(1/4)
9K	Ø9.52(3/8)	Ø6.35(1/4)
12K	Ø12.7(1/2)	Ø6.35(1/4)
18K	Ø12.7(1/2)	Ø6.35(1/4)
24K	Ø12.7(1/2)	Ø6.35(1/4)

2. Align the center of the pipings and sufficiently tighten the flare nut by hand



3. 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.



CAUTION

After the confirmation of the above conditions, prepare the wiring as follows:

1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted on the inside of control box cover.

2) The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase) conductors.

3) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)

4) Specification of power source.

5) Confirm that electrical capacity is sufficient.

6) See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.

7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)

8) Never fail to equip a leakage breaker where it is wet or moist.

9) The following troubles would be caused by voltage drop-down.

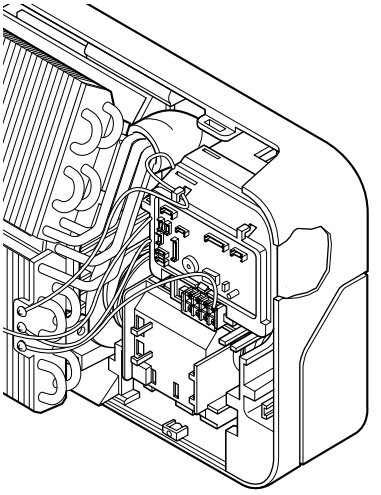
• Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.

• Proper starting power is not given to the compressor.

2) Connection of the cable

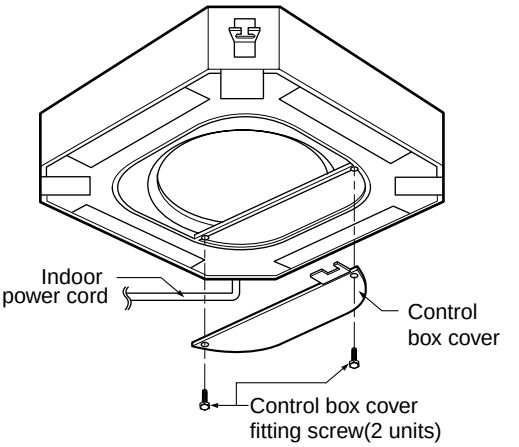
1. Room Type Indoor Unit

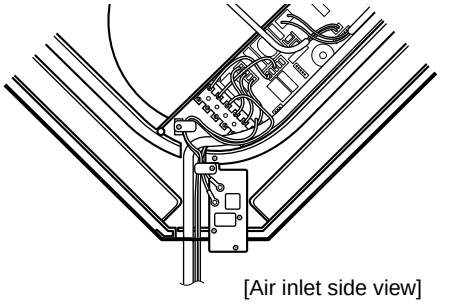
- Remove the cover control from the unit by loosening the screw.
  Connect the wires to the terminals on the control board individually.
- Secure the cable onto the control board with the holder (clamper).
- Refix the cover control to the original position with the screw.
- Use a recongnized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.



2. Cassette Type Indoor Unit

- Open the control box cover and connect the Indoor power wires.

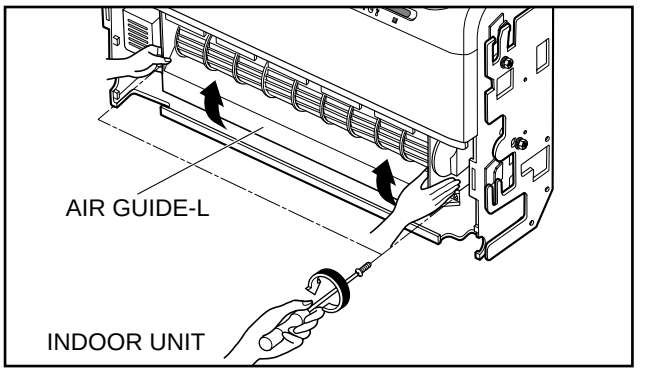


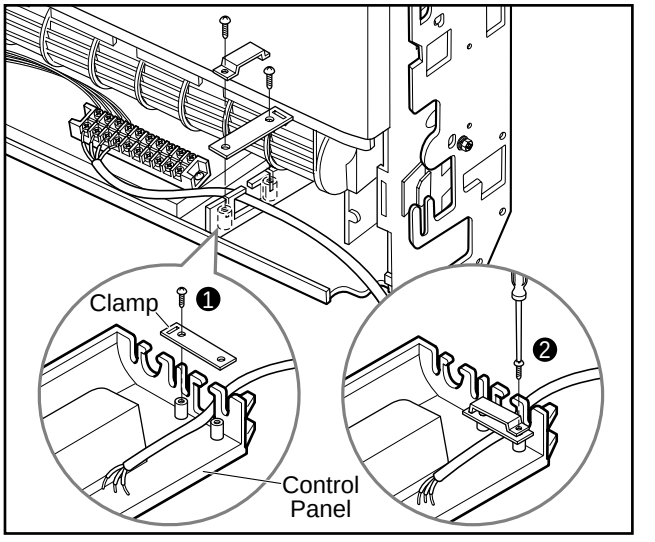


[Air inlet side view]

3. Convertible Type Indoor Unit

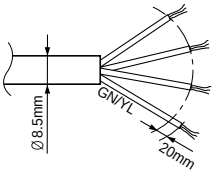
1) Remove the Air guide - L by loosening 2 screws after removing the Inlet grille from the Indoor unit.
2) Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
   • Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively





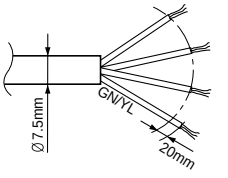
⚠ CAUTION

The power cord connected to the outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA 3.5mm²

The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA 0.75mm²

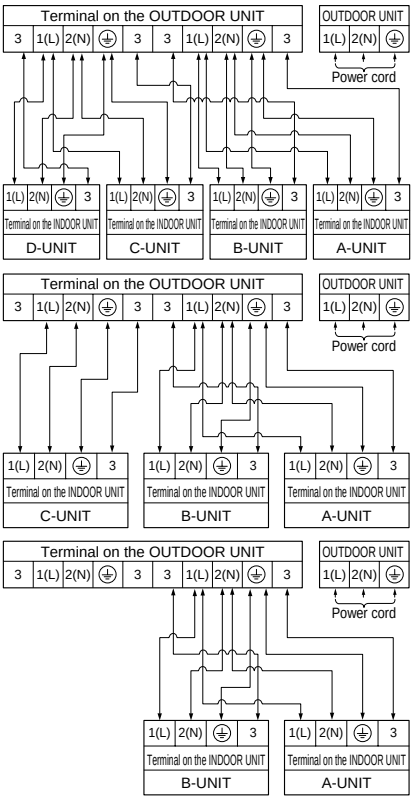
If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

⚠ WARNING

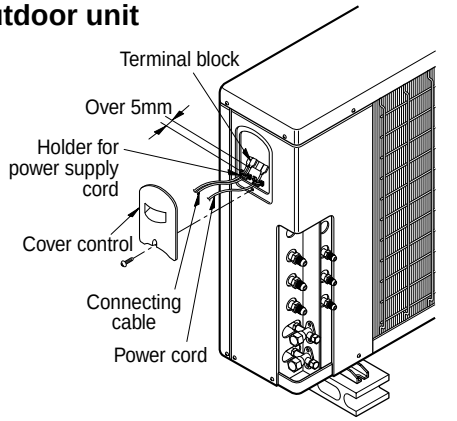
Make sure that the screws of the terminal are free from looseness.

3) Electrical Wiring

1. Remove the cover control from the unit by loosening the screw.
   Connect the wires to the terminals on the control board individually as the following.



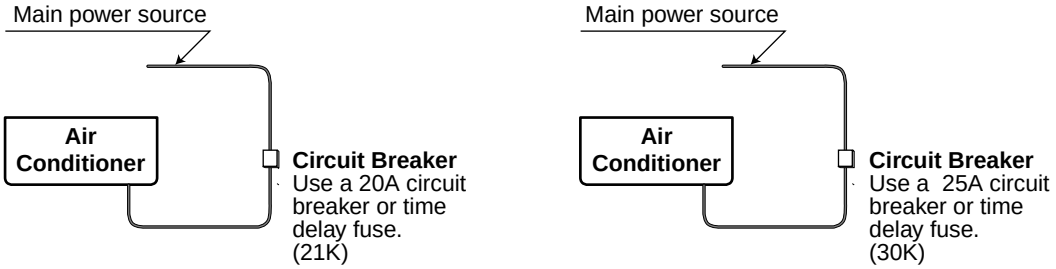
Outdoor unit



2. Secure the cable onto the control board with the holder (clamper).
3. Refix the cover control to the original position with the screw.
4. Use a recongnized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.

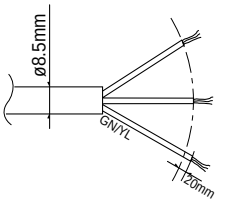
CAUTION

If a power plug is not to be used, provide a circuit breaker between power source and the unit as shown below.



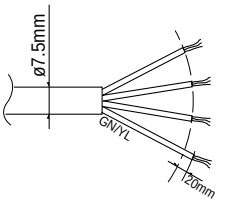
CAUTION

The power cord connected to the outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA
3.5mm²

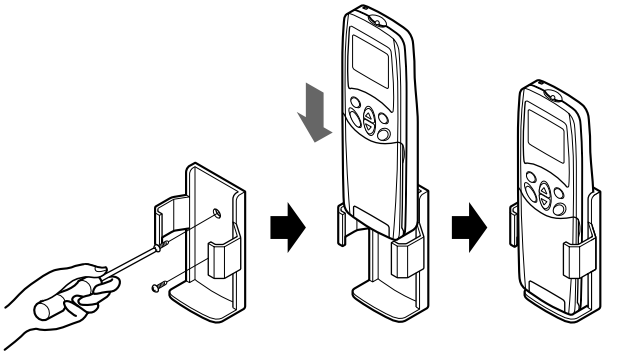
The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H07RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA
0.75mm²

4. Remote Controller Installationa

HOW TO MOUNT ONTO A WALL

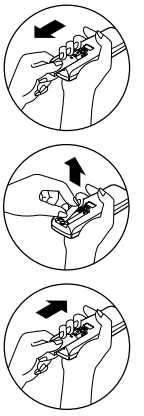


HOW TO INSERT BATTERIES

Remove the battery cover from the remote controller.
• Slide the cover according to the arrow direction.

Insert the two batteries.
• Be sure that the (+) and (-) directions are correct.
• Be sure that both batteries are new.

Re-attach the cover.
• Slide it back into position.



• Do not use rechargeable batteries, such batteries differ from standard dry cells in shape, dimensions, and performance.
• Romove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

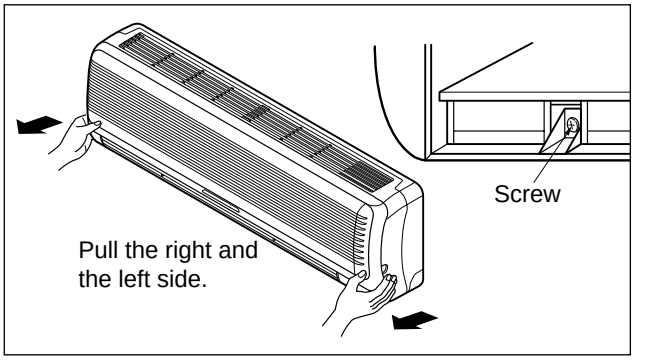
5. Checking the Drainage and Pipe forming

(1) Checking the Drainage

1) Room Type Indoor Unit

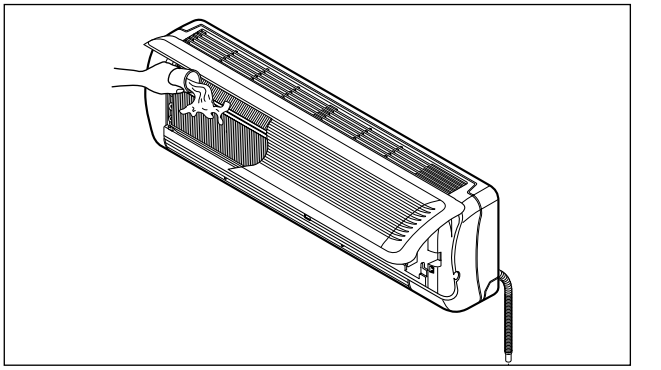
1. Remove the Grille from the cabinet

- 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 without any leakage.



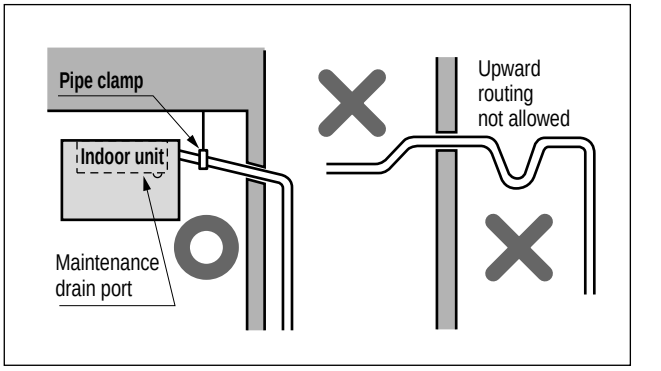
2) Cassette Type Indoor Unit

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm.

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

- Be sure to execute heat insulation on the drain piping.

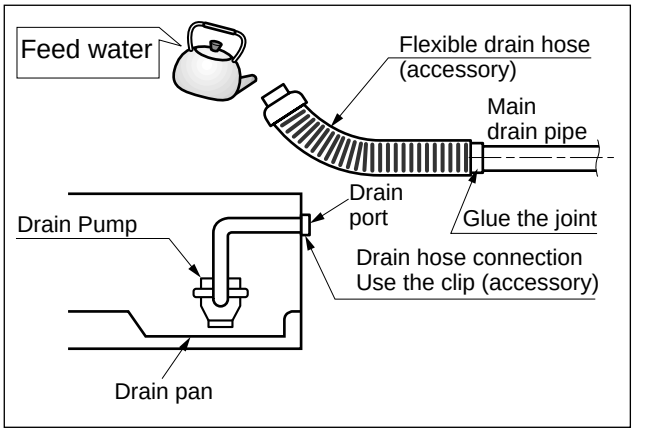
Heat insulation material: Polyethylene foam with thickness more than 8 mm.



Drain Test

The air conditioner uses a drain pump to drain water. Use the following procedure to test the drain pump operation:

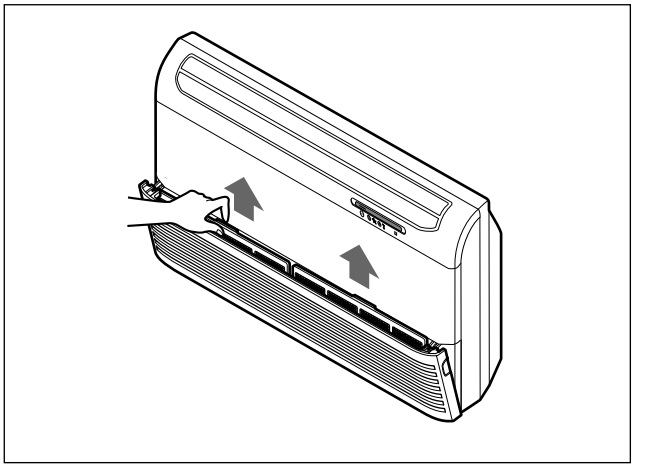
- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



3) Convertible Type Indoor Unit

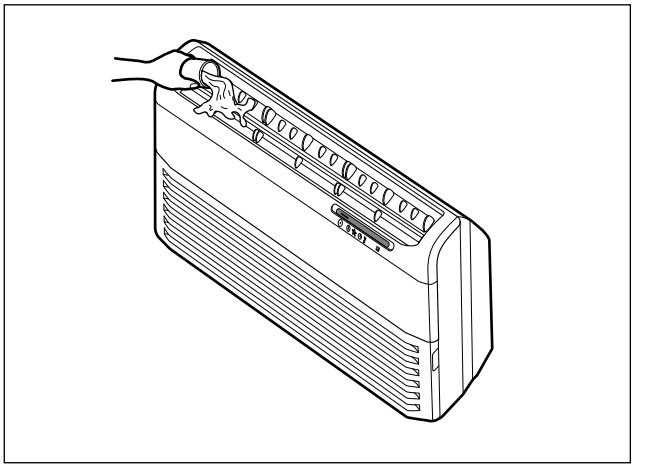
1. Remove the Air Filter.

- To remove air filter, take hold of tab and pull slightly upwards.



2. Check the drainage.

- Spray one or two glasses of water upon the evaporator.
- Ensure that water flows drain hose of indoor unit without any leakage.



(2) Form the pipings

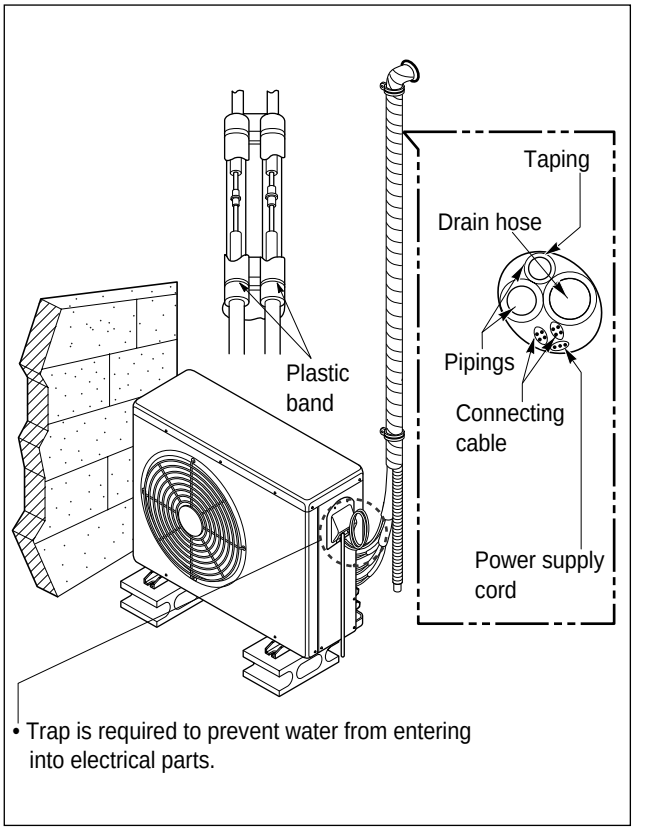
1. Wrap the connecting portion of indoor unit with the Insulation material and secure it with two Plastic Bands(for the left pipings).

- If you want to connect an additional drain hose, the end of the drain-outlet should keep distance from 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 is installed bellow 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.

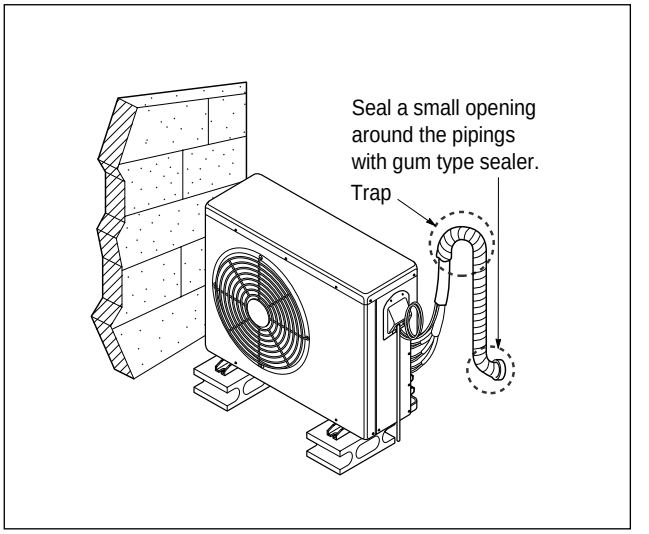


In case of the Outdoor unit is installed upper position of the Indoor unit.

1. Tape the Pipings and Connectiong cable from down to up.

2. Form the pipings gathered by taping along the exterior wall and the Trap to be required to prevent the room from entering the water.

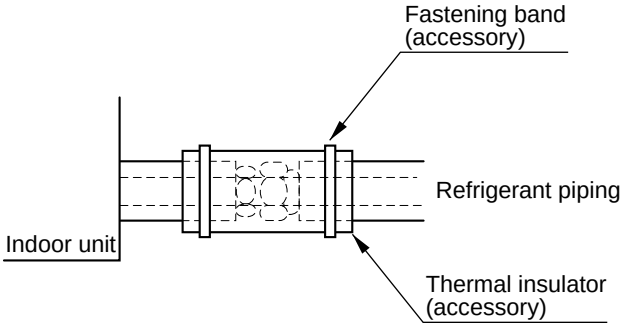
3. Fix the pipings onto the wall by saddle or equivalent.



(3) Heat Insulation

1. Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120°C).

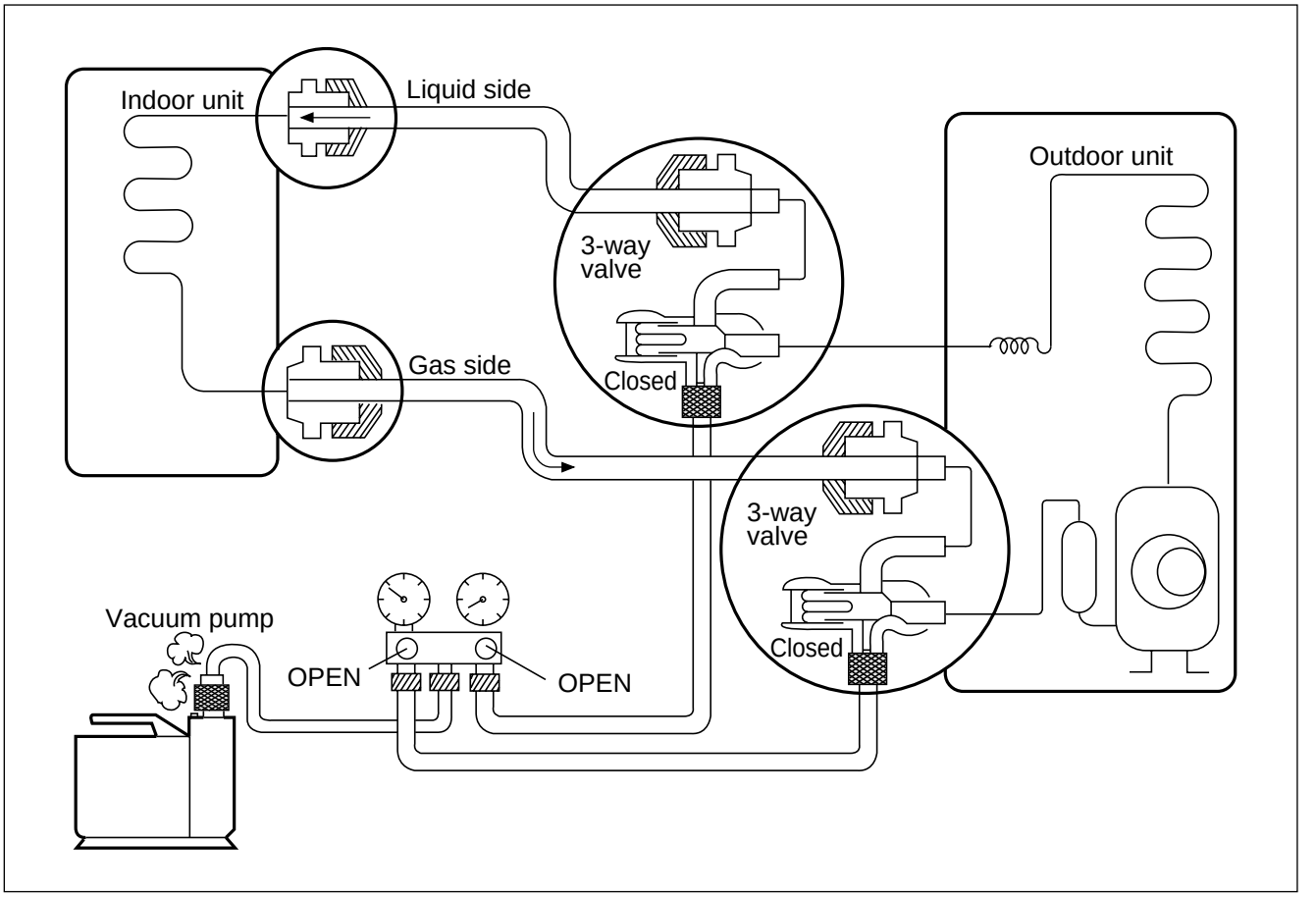
2. Precautions in high humidity circumstance:
   This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
   - Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20mm.
   - Stick glass wool on all air conditioners that are located in ceiling atmosphere.
   - In addition to the normal heat insulation (thickness: more than 8mm) for refrigerant piping (gas piping: thick piping) and drain piping, add further 10mm to 30mm thickness material.



(4) Air Purging of the Pipings and indoor unit

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

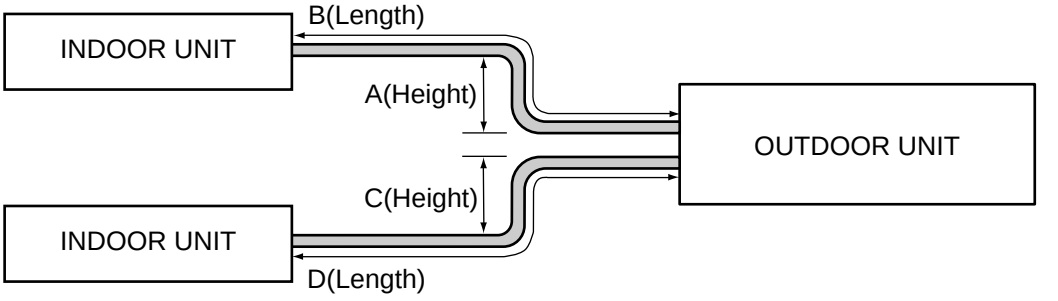
1. **Confirm that both the liquid side valve and the gas side valve are set to the closed position.**
2. **After connecting the piping, check the joints for gas leakage with gas leak detector.**
3. **Remove the service port nut, and connect the gauge manifold and the vacuum pump to the service port by the charge hose.**
4. **Vacuum the indoor unit and the connecting pipes until the pressure in them lowers to below-76cmHg.**
5. **Disconnect the charge hose and fit the nut to the service port.**
   (Tightening torque: 1.8kg·m)
6. **Remove the valve stem nuts, and fully open the stems of the Liquid and Gas side service valves with a hexagon wrench.**
7. **Tighten the valve stem nuts of the Liquid and Gas side service valve.**



(5) Maximum Length of Pipe and Freon Extra Charge

Charge amount per 1m

Capacity (Btu/h)	STANDARD LENGTH(m)	CONNECTION TYPE				Charge am't(g) per 1m
		A	B	C	D	
~7000	7.5	7	15	7	15	20
~9000	7.5	7	15	7	15	20
~12000	7.5	7	15	7	15	20
~24000	7.5	7	15	7	15	30



** A, B mean indoor unit higher located than outdoor unit.
C, D mean outdoor unit higher located than indoor unit.

6. Test Running

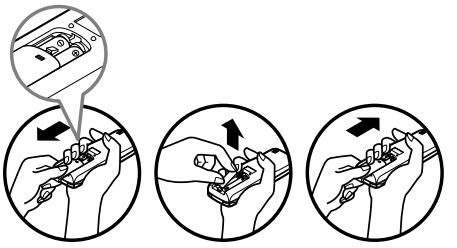
1. Check that all tubing and wiring have been properly connected.
2. Check that the gas and liquid side service valves are fully open.

(1) Prepare remote controller

❶ Remove the battery cover by pulling it according to the arrow direction.

❷ Insert new batteries making sure that the (+) and (–) of battery are installed correctly.

❸ Reattach the cover by pushing it back into position.



NOTE:

- Use 2 AAA(1.5volt) batteries. Do not use rechargeable batteries.
- Remove the batteries from the remote controller if the system is not going to be used for a long time.

(2) Precautions in test run

■ The initial power supply must provide at least 90% of the rated voltage.
Otherwise, the air conditioner should not be operated.

■ For test run, carry out the cooling operation firstly even during heating season. If heating operation is carried out firstly, it leads to the trouble of compressor. Then attention must be paid.

■ Carry out the test run more than 5 minutes without fail. (Test run will be cancelled 18 minutes later automatically)

■ The forced operation is started by pressing button for 2 seconds. (Cassette Type)
The test run is started by pressing button for 5 seconds. (Cassette Type)
The test run is started by pressing timer cancel button five times continuously. (Room type)

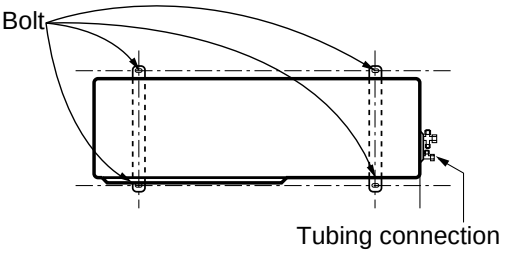
■ To cancel the test run, press any button.

(3) Settlement of outdoor unit

■ Anchor the outdoor unit with a bolt and nut(ø10mm) tightly and horizontally on a concrete or rigid mount.

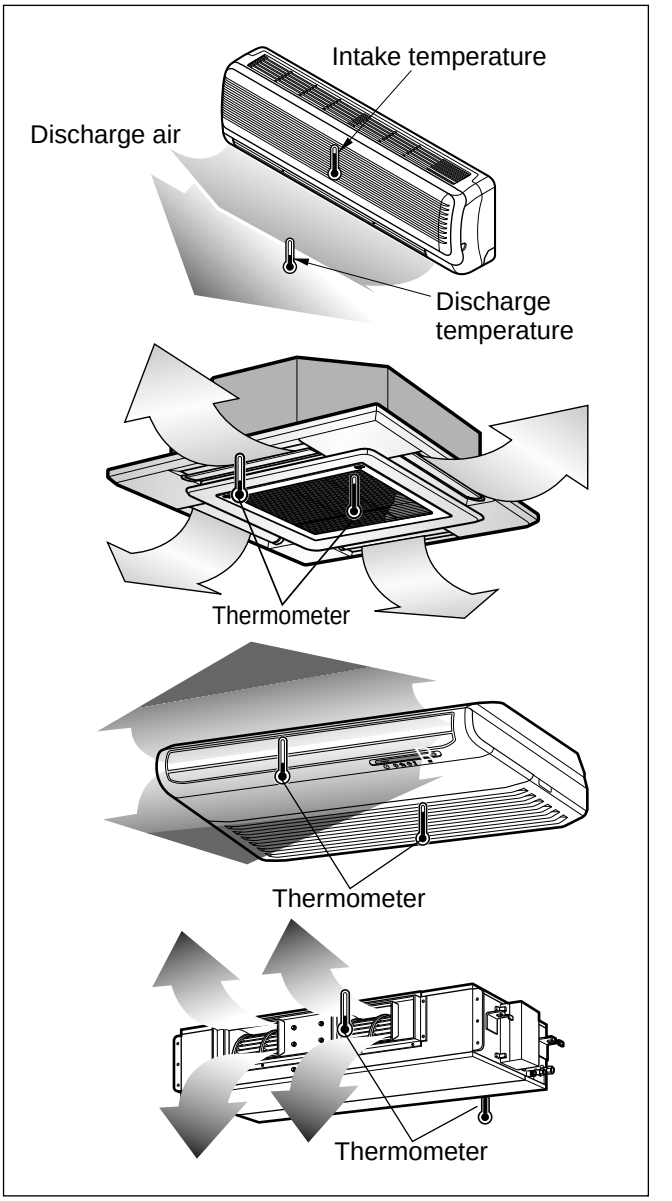
■ When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.

■ In the case when the vibration of the unit is conveyed to the hose, secure the unit with an anti-vibration rubber.



(4) 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.
3. For reference; the gas side pressure of optimum condition is as below.(Cooling)



⚠ CAUTION

After the confirmation of the above conditions, prepare the wiring as follows:

1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted on the inside of control box cover.

2) Provide a circuit breaker switch between power source and the unit.

3) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)

4) Specification of power source

5) Confirm that electrical capacity is sufficient.

6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.

7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)

8) Never fail to equip a leakage breaker where it is wet or moist.

9) The following troubles would be caused by voltage drop-down.

- Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
- Proper starting power is not given to the compressor.

HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.).

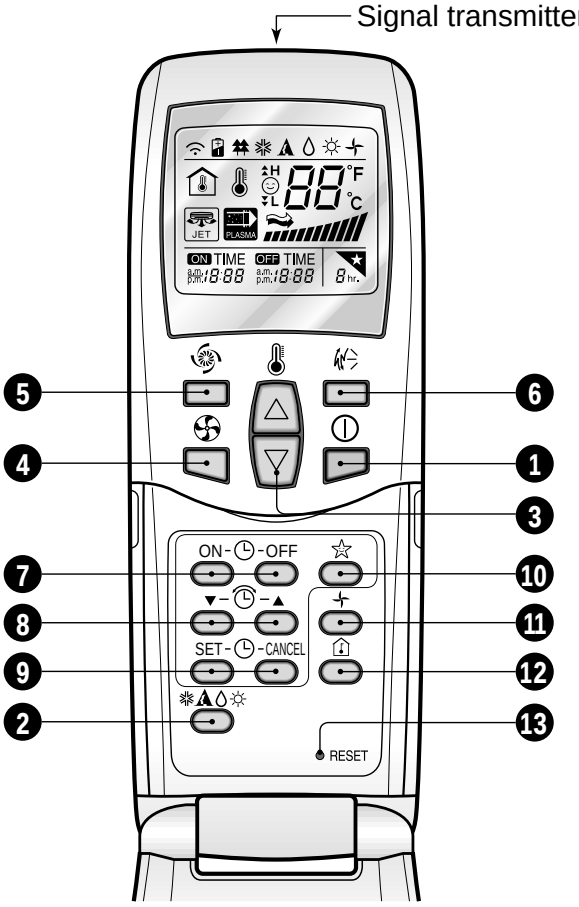
Operation

■ Room type Indoor Unit

1. Name and Function-Remote Controller(Door Opened)

The remote control transmits the signals to the system.

Remote Control



Operation Mode

- Cooling Operation
- Auto Operation
- Healthy Dehumidification Operation
- Heating Operation

1 START/STOP BUTTON
Operation starts when this button is pressed and stops when the button is pressed again.

2 OPERATION MODE SELECTION BUTTON
Used to select the operation mode.

3 ROOM TEMPERATURE SETTING BUTTONS
Used to select the room temperature.

4 INDOOR FAN SPEED SELECTOR
Used to select fan speed in four steps low, medium, high, or CHAOS.

5 JET COOL
Used to start or stop the speed cooling. (Speed cooling operates super high fan speed in cooling mode.)

6 CHAOS SWING BUTTON
Used to stop or start louver movement and set the desired up/down airflow direction.

7 ON/OFF TIMER BUTTONS
Used to set the time of starting and stopping operation.

8 TIME SETTING BUTTONS
Used to adjust the time.

9 TIMER SET/CANCEL BUTTONS
Used to set the timer when the desired time is obtained and to cancel the Timer operation.

10 SLEEP MODE AUTO BUTTON
Used to set Sleep Mode Auto operation.

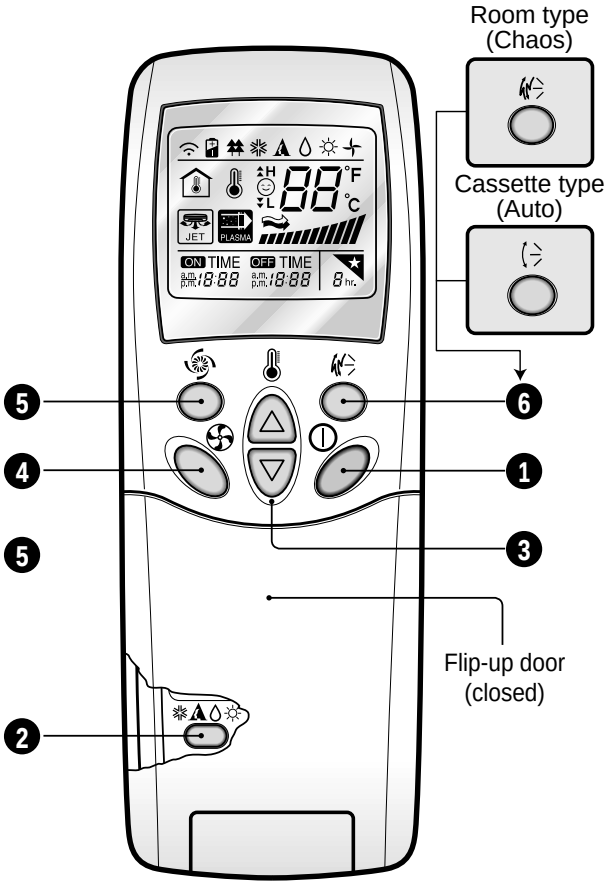
11 AIR CIRCULATION BUTTON
Used to circulate the room air without cooling or heating (turns indoor fan on/off).

12 ROOM TEMPERATURE CHECKING BUTTON
Used to check the room temperature.

13 RESET BUTTON
Used prior to resetting time or after replacing batteries.

■ Cassette Type Indoor Unit

1. Name and funcition-Remote Controller (Door Closed)



1 START/STOP BUTTON

Operation starts when this button is pressed and stops when the button is pressed again.

2 OPERATION MODE SELECTION BUTTON

Used to select the operation mode.

3 ROOM TEMPERATURE SETTING BUTTONS

Used to select the room temperature.

4 INDOOR FAN SPEED SETTING BUTTONS

Used to select fan speed in four steps low, medium, high, or chaos/auto.

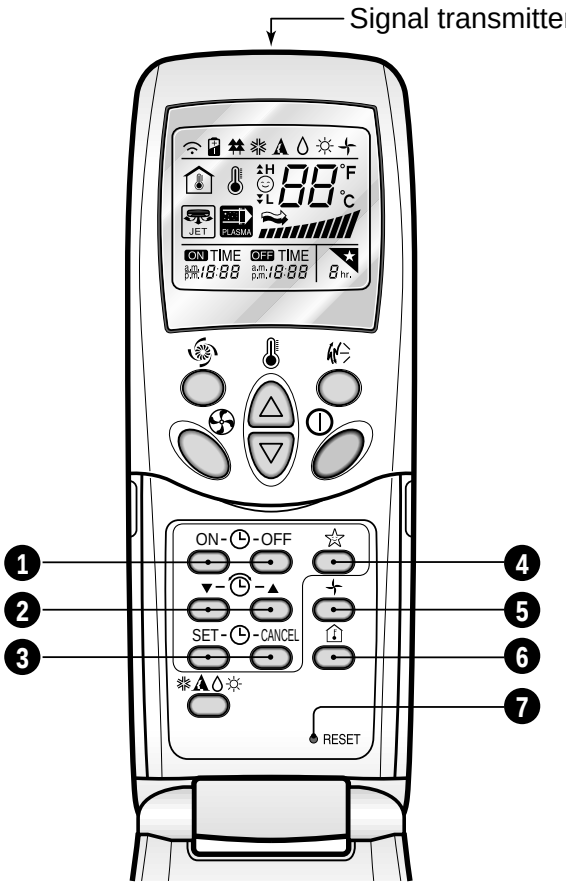
5 JET COOL

Used to start or stop the speed cooling. (Speed cooling operates super high fan speed in cooling mode.)

6 CHAOS/AUTO SWING BUTTON

Used to stop or start louver movement and set the desired up/down airflow direction.

2. Name and Function-Remote Control (Door Opened)



1 ON/OFF TIMER BUTTONS
Used to set the time of starting and stopping operation.

2 TIME SETTING BUTTONS
Used to adjust the time.

3 TIMER SET/CANCEL BUTTONS
Used to set the timer when the desired time is obtained and to cancel the Timer operation.

4 SLEEP MODE AUTO BUTTON
Used to set Sleep Mode Auto operation.

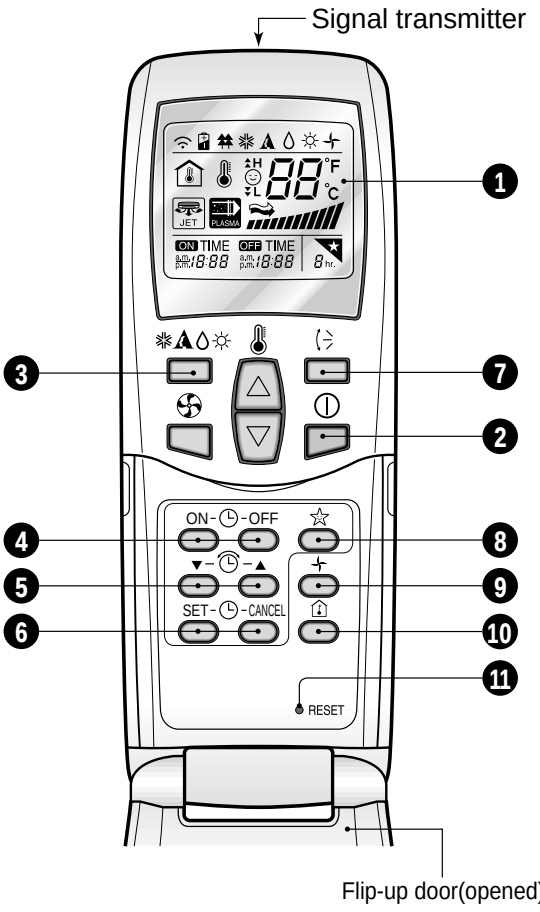
5 AIR CIRCULATION BUTTON
Used to circulate the room air without cooling or heating (turns indoor fan on/off).

6 ROOM TEMPERATURE CHECKING BUTTON
Used to check the room temperature.

7 RESET BUTTON
Used prior to resetting time or after replacing batteries.

■ Convertible Type Indoor Unit

1. Name and funcition-Remote Controller (Door Opened)



1 OPERATION DISPLAY
Displays the operation conditions.

2 START/STOP BUTTON
Operation starts when this button is pressed and stops when the button is pressed again.

3 OPERATION MODE SELECTION BUTTON
Used to select the operation mode.

4 ON/OFF TIMER BUTTONS
Used to set the time of starting and stopping operation.

5 TIME SETTING BUTTONS
Used to adjust the time.

6 TIMER SET/CANCEL BUTTONS
Used to set the timer when the desired time is obtained and to cancel the Timer operation.

7 AIR FLOW DIRECTION START/STOP BUTTON
Used to stop or start louver movement and set the desired up/down airflow direction.

8 SLEEP MODE AUTO BUTTON
Used to set Sleep Mode Auto operation.

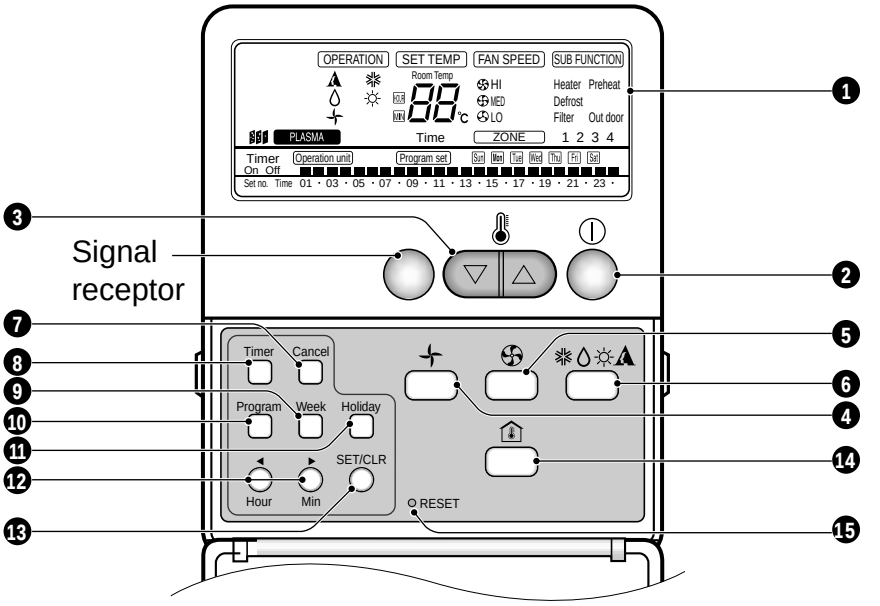
9 AIR CIRCULATION BUTTON
Used to circulate the room air without cooling or heating (turns indoor fan on/off).

10 ROOM TEMPERATURE CHECKING BUTTON
Used to check the room temperature.

11 RESET BUTTON
Used prior to resetting time or after replacing batteries.

■ Duct Type Indoor Unit

1. Name and funcition-Remote Controller (Door Opened)



1 Operation display
Displays the operation conditions.

2 On/Off Button
Operation starts when this button is pressed, and stops when the button is pressed again.

3 Set Temperature Button
Used to set the temperature when the desired temperature is obtained.

4 FAN Operation Button
Used to circulate room air without cooling or heating.

5 Fan Speed Button
Used to set desired fan speed.

6 Operation Mode Selection Button
Used to select the operation mode.
- Auto Operation Mode.
- Cooling Operation Mode.
- Soft Dry Operation Mode.
- Heating Operation Mode.(except cooling model)

7 Timer Cancel Button
Used to cancel the timer.

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

9 Week Button
Used to set a day of the week.

10 Program Button
Used to set the weekly timer.

11 Holiday Button
Used to set a holiday of the week.

12 Time Set Button
Used to set the time of the day and change the time in the weekly timer Function.

13 Set and Clear Button
Used to set and clear the weekly timer.

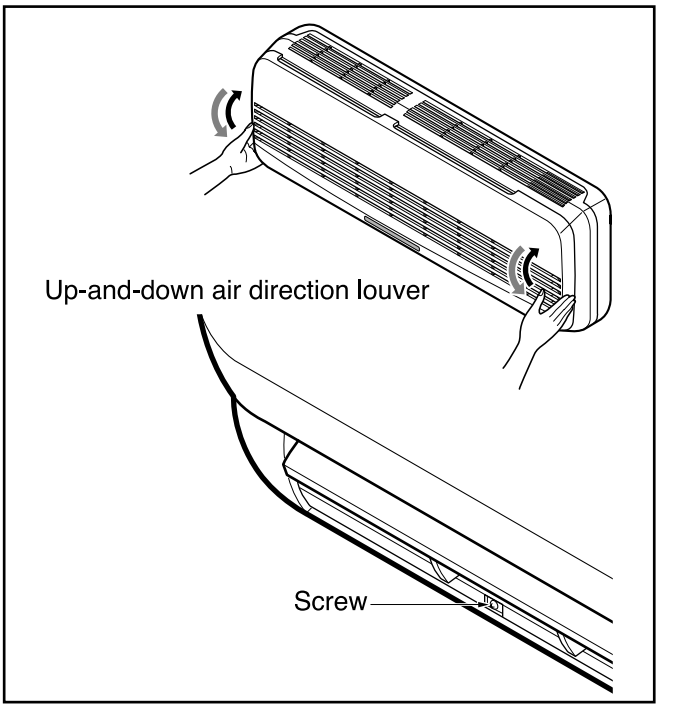
14 Room Temperature Checking Button
Used to check the room temperature.

15 Reset Button
Used to set the current time and clear the setting time.

Disassembly of the parts (Indoor unit)

(1) Room Type Indoor Unit

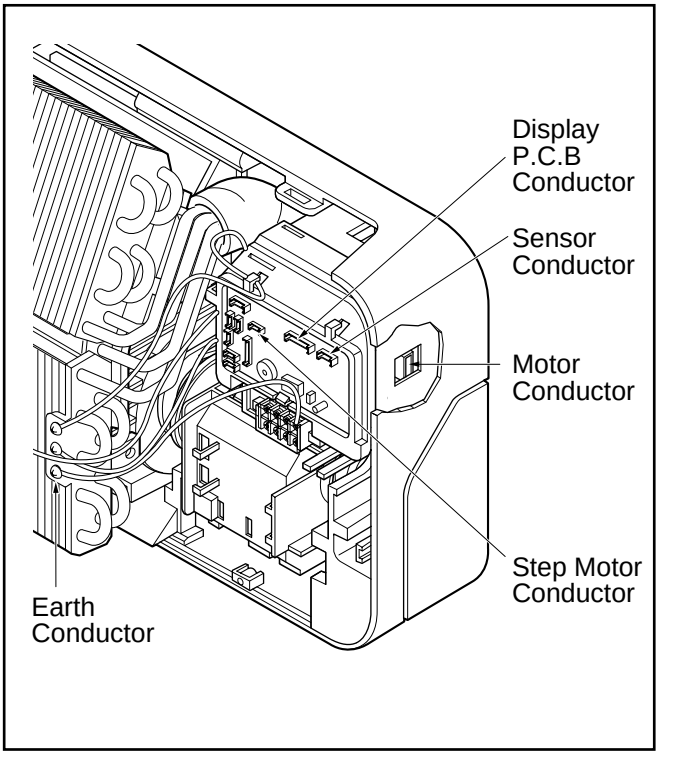
Warning :
Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to “OFF”.



To remove the Grille from the Chassis.

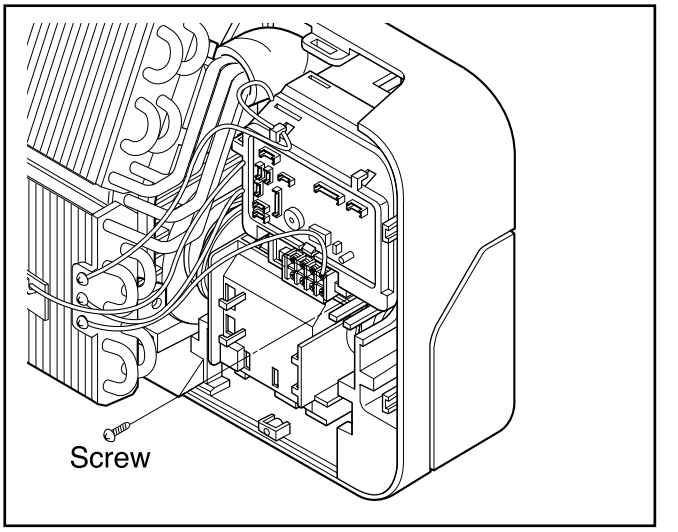
- Set the up-and-down air discharge louver to open position (horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.

1. Before removing the control box, be sure to take out the wire screwed at the other end.



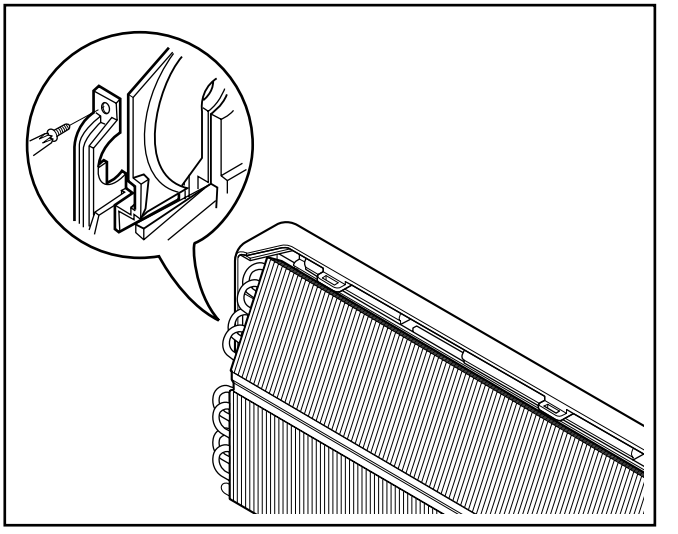
2. To remove the Control Box.

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



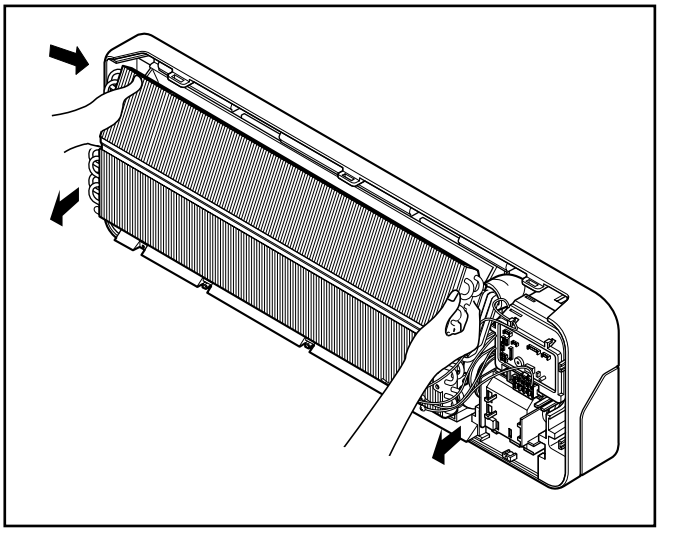
3. To remove the Discharge Grille.

- Unhook the discharge grille and pull the discharge grille out from the chassis carefully.

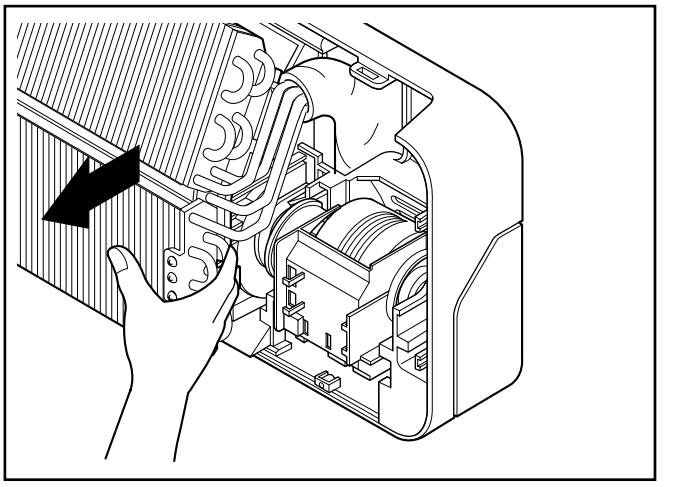


4. To remove the Evaporator.

- Remove 3 screws securing the evaporator(at the left 2EA in the Eva Holder, at the right 1EA).

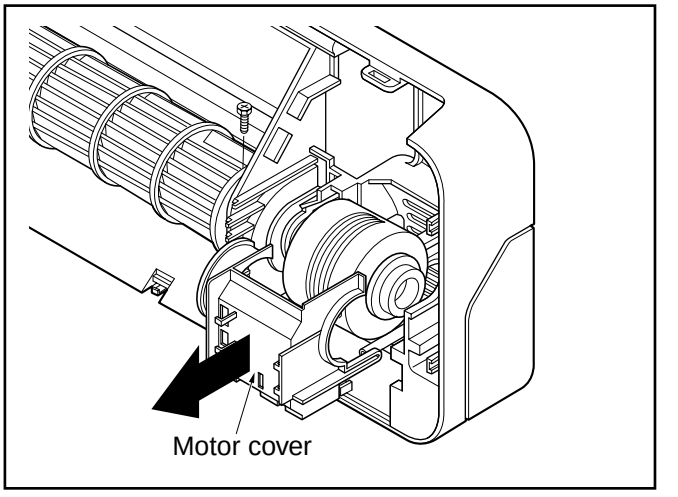


- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.



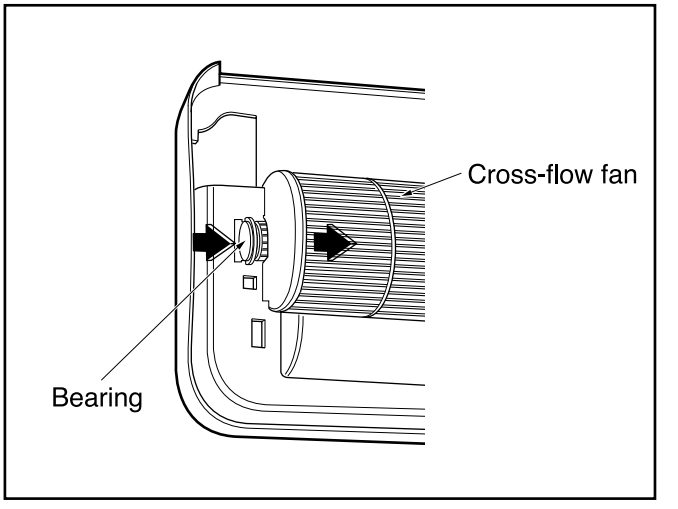
5. To remove the Motor Cover

- Remove 2 securing screw.
- Pull the motor cover out from the chassis carefully.



6. To remove the Cross-Flow Fan

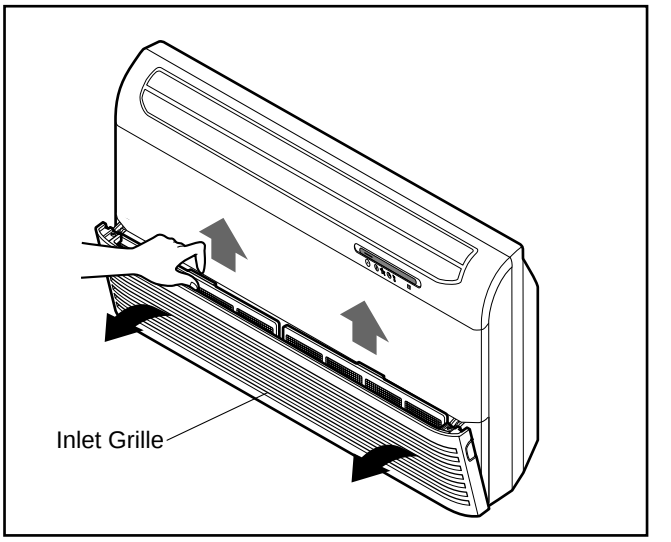
- Loosen the screw securing the cross-flow fan to the fan motor (do not remove).
- Lift up the right side of the cross-flow fan and the fan motor, separate the fan motor from the cross-flow fan.



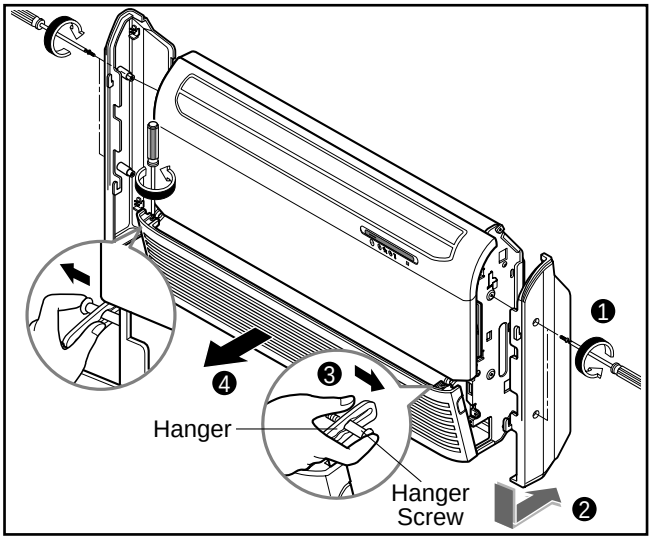
- Remove the left end of the cross-flow fan from the self-aligning bearing.

(2) Convertible Type Indoor Unit

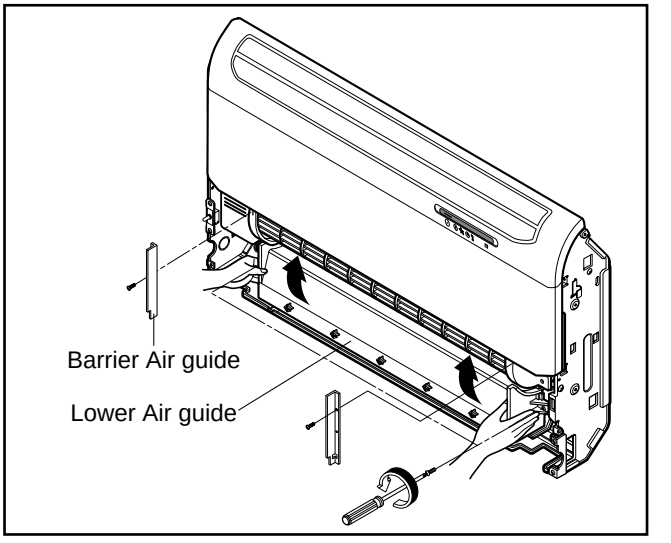
Warning :
Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to “OFF”.



1. Remove the air filter.
- Pull the inlet grille slightly toward you.
- Pull out the air filter. (2 pieces)



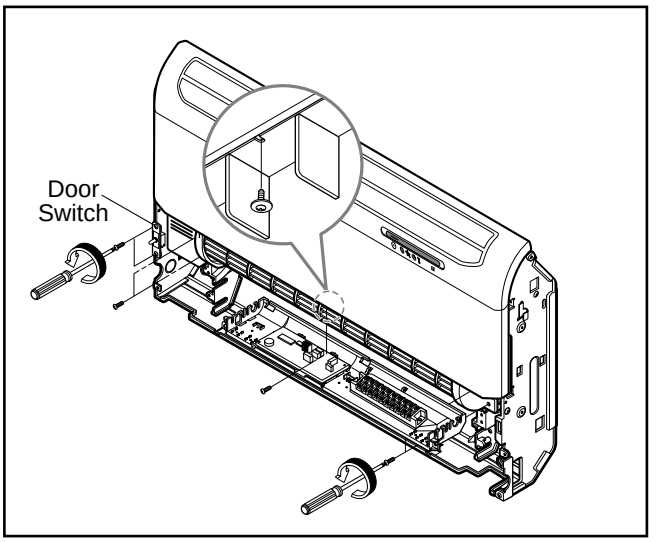
2. Remove the girlle from chassis
- Remove the screws securing the side plate and push to the bottom-side.
- Unhook the hanger from the hanger screw at the left and the right side.
- Pick out the inlet grille.



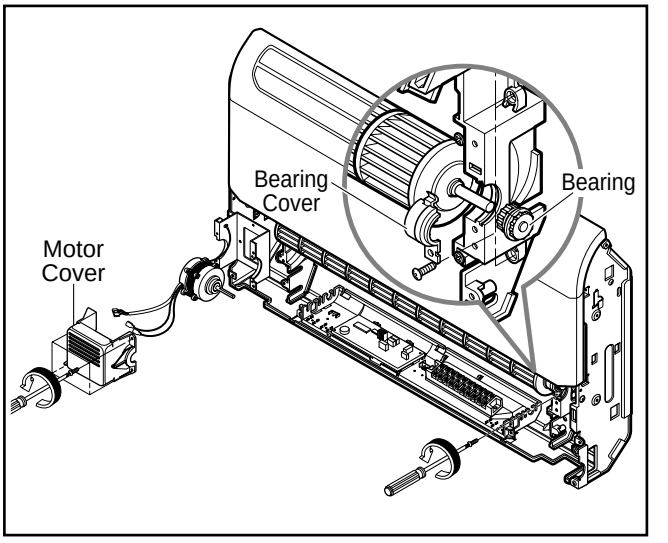
3. Remove the lower air guide
- Remove a screw of both side fixing "barrier air-guide".
- Remove the screws of both sides of the lower air-guide.
- Remove the lower air-guide toward “arrow mark” by turning upwards as shown in figure.

4. Remove air guide upper, crossflow fan and motor.

- Remove the screws of both sides and center securing the upper air-guide.
- Remove 2 screws fastening the bracket of door switch.

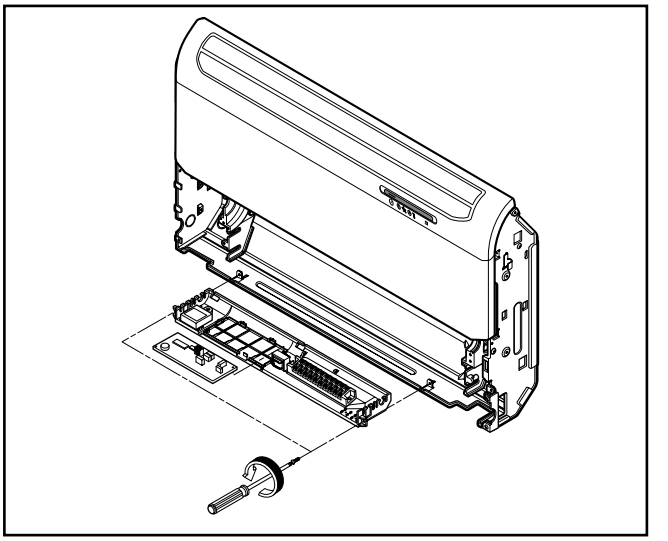


- Remove a bearing assembly by removing a screw and the bearing cover.
- Remove 4 screws securing the motor cover.
- Loosen the screw securing the crossflow fan to the fan motor shaft. (do not remove)
- Remove the crossflow fan by sliding it out from the shaft of fan motor.



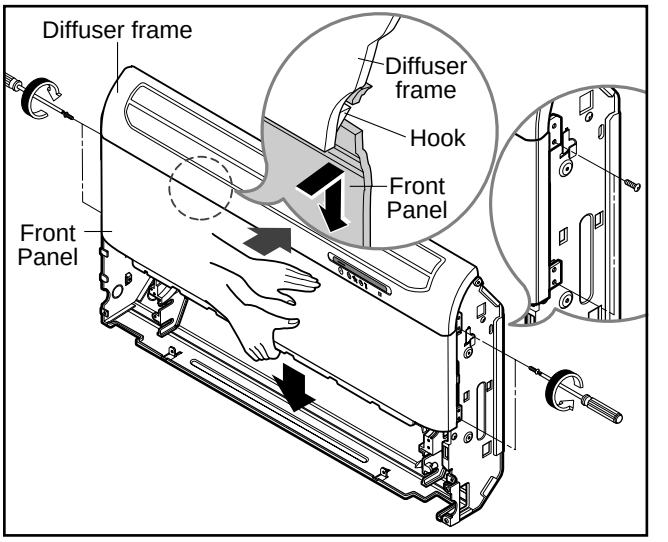
5. Remove the control box Assembly.

- Disconnect the step motor connector, fan motor connector, display PCB connector, thermistor connector and door switch connector from the main PCB.
- If necessary, disconnect power supply cord and connecting cable from the terminal block and remove the cord clamp screw.
- Remove 2 screws securing the control box and pick out the control box carefully.



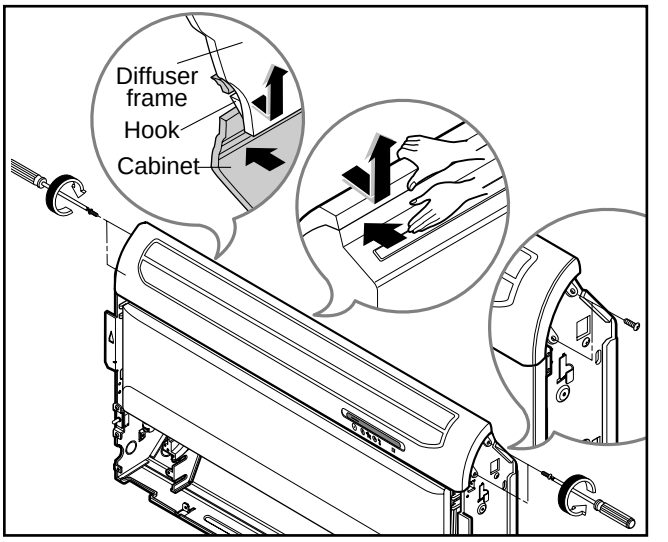
6. Remove the front panel.

- Remove the screws of both sides fixing the front panel.
- Push the upper side of front panel strongly to pull out the front panel from the inner hook of diffuser frame.
- Pull down the front panel carefully not so as to harm the display PCB wires and thermistor wires.



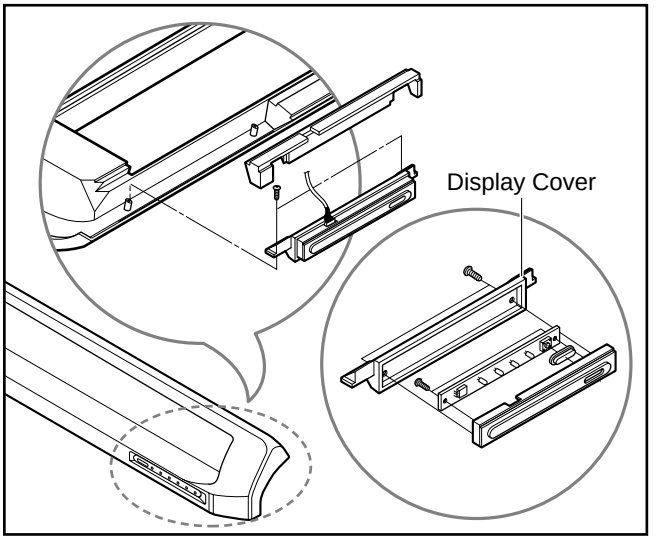
7. Remove the diffuser assembly.

- Remove the screws of both side of diffuser assembly. (4 pieces)
- Push the upper side of cabinet strongly to pull out the inner hook of diffuser frame from the cabinet hole.
- Take up the diffuser frame carefully not so as to harm the display PCB wires and the step motor wires.



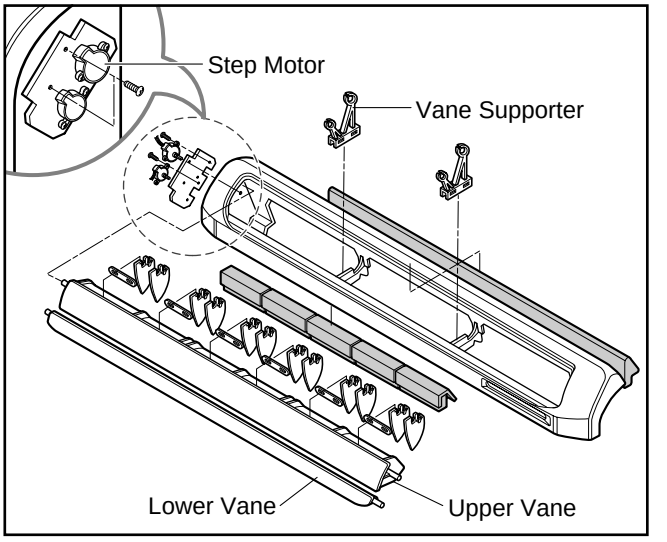
8. Remove display PCB assembly.

- Remove the screws at the both side of display cover.
- If necessary, disconnect the display PCB connector from PCB assembly.
- Remove 2 screws of PCB assembly.



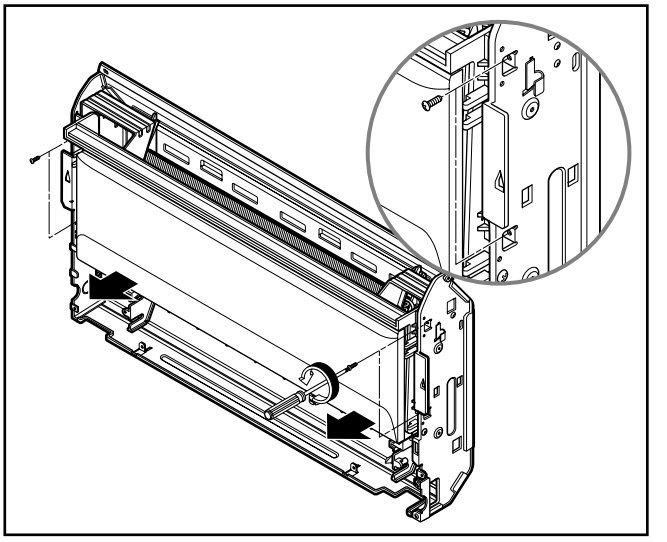
9. Remove the vane-upper, vane-lower and step motor.

- Remove 2 screws securing the step motor assembly and pull it out from the vanes carefully.
- Unhook the vanes from the vane supporter and remove the upper vane and lower vane by pulling the center of vanes with care.



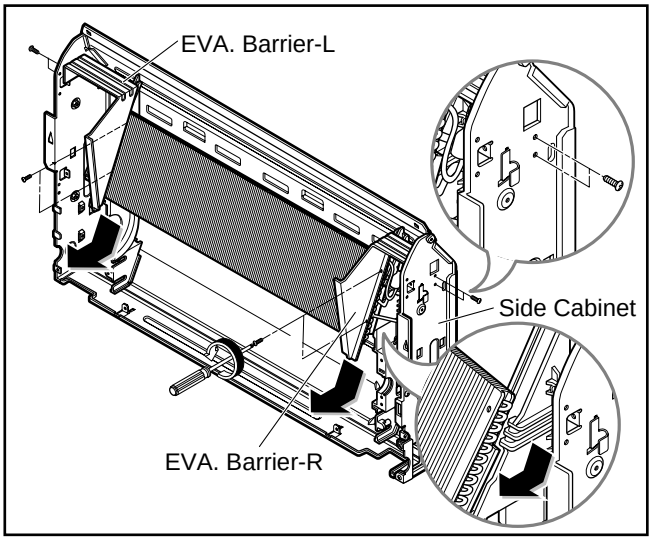
10. Remove the drain pan assembly.

- Remove the both side of screws. (4 pieces)
- Pull out the drain pan assembly.
- Be careful not to harm to the EPS packing of drain pan and the tubings of evaporator.

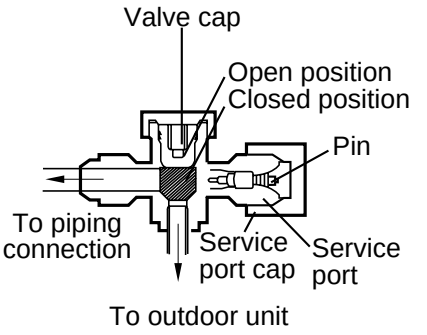
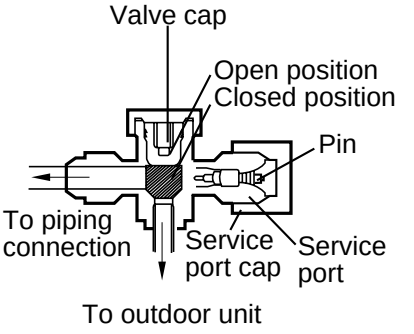


11. Remove the evaporator.

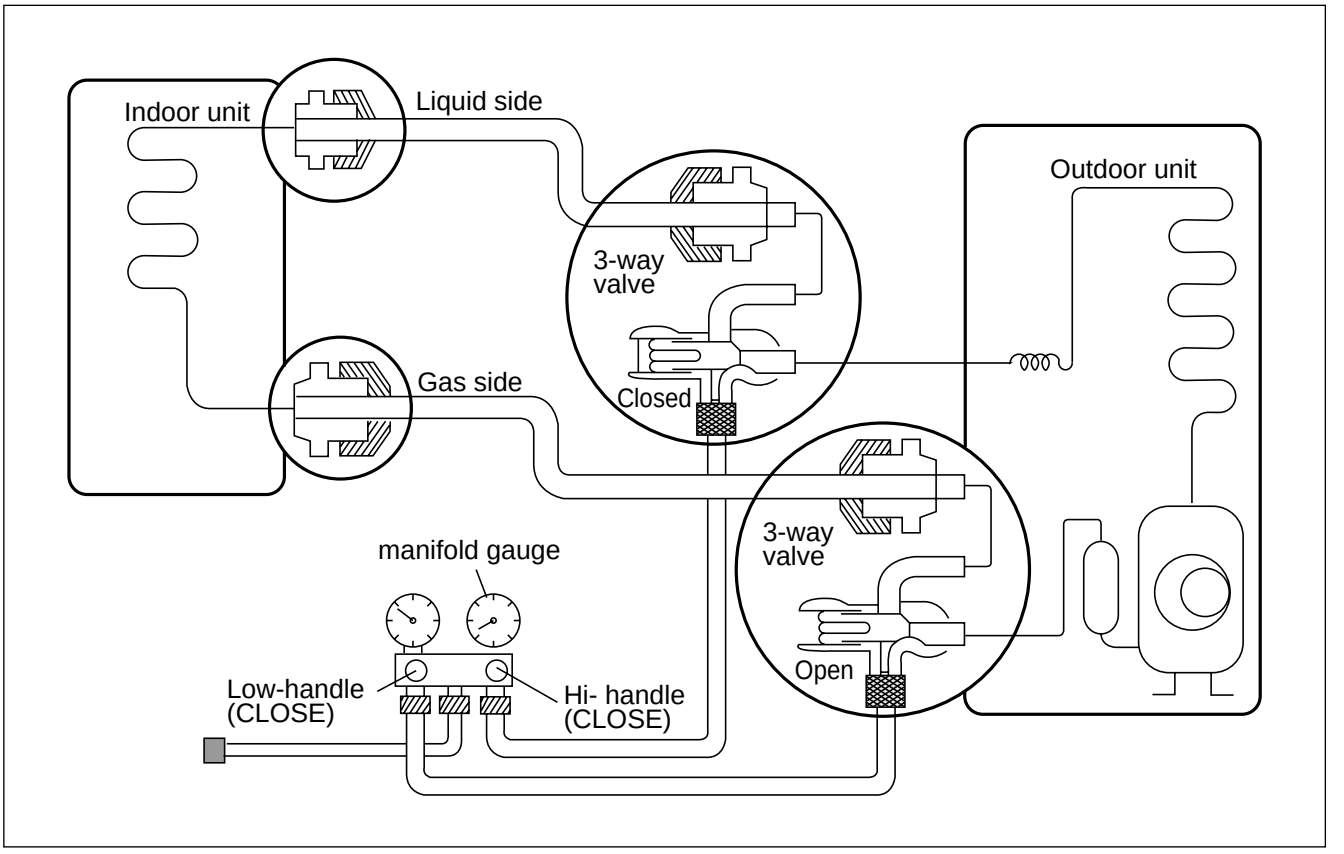
- Remove the screws of both sides securing the EVA barrier-R/L on the side cabinet.
- Remove the screws which fasten the barrier on the evaporator and take out the barrier assembly.
- Remove the evaporator assembly by sliding toward arrow mark. (As shown in figure)



Valve Service (3-way)

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

(1) Pumping down

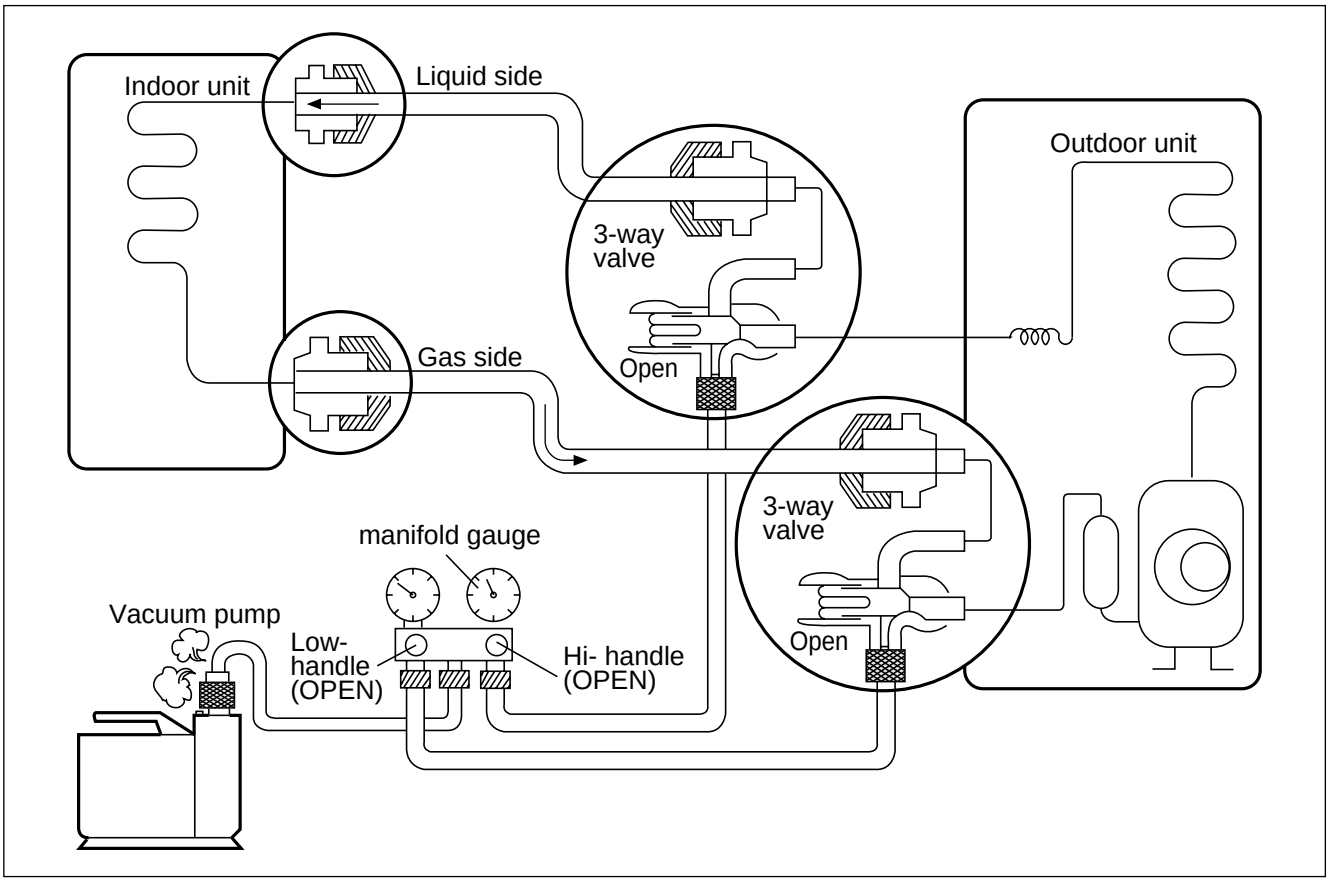


• Procedure

1. **Confirm that both the gas side and liquid side 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 manifold gauge to the service port of the gas side valve.**
   - Connect the hose of the gauge with the push pin to the service port.
4. **Air purging of the charge hose.**
   - Open the Low-handle valve on the gauge slightly to air purge from the hose.
5. **Set the liquid side 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 gas side valve to the closed position.**
   - Do this quickly so that the gauge ends up indicating 1kg/cm²g.
8. **Disconnect the charge set, and mount the liquid side and gas side valve caps and the service port nut.**
   - Use torque wrench to tighten the service port nut to a torque of 1.8kg.m.(4.2kg.m/5.5kg.m)
   - Be sure to check for gas leakage.

(2) Evacuation

(All amount of refrigerant leaked)

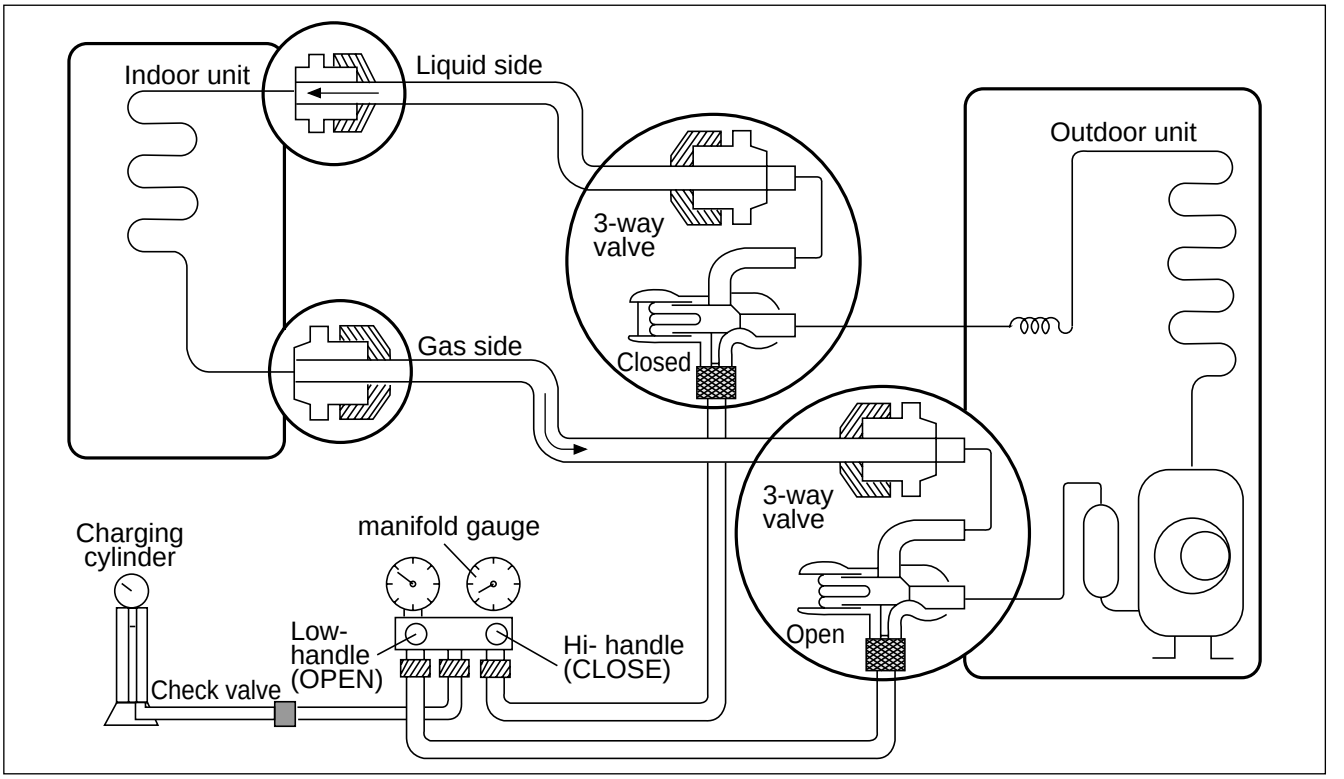


• Procedure

1. **Confirm that both the liguid side valve and gas side valve are set to the opened position.**
2. **Connect the vaccum pump to the center hose of the manifold gauge.**
3. **Connect the service port of the gas side valve to the low side of the gauge.**
4. **Evacuation for approximately one hour.**
   - Confirm that the gauge needle has moved toward-76 cmHg (vacuum of 4 mmHg or less).
5. **Close the Low handle of the gauge turn off the vacuum pump, and confirm that the gauge needle does not move(approximately 5 minutes after turning off the vacuum pump).**
6. **Disconnect the charge hose from the vacuum pump.**
   - Vacuum pump oil.
     If the vacuum pump oil becomes dirty or depleted,replenish as needed.
7. **Mount the valve caps and the service port caps.**

(3) Gas Charging

(After Evacuation)



• Procedure

1. Connect the gauge 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 low handle on the gauge 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).

4. Immediately disconnect the charge hose from the gas side valve's service port.

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.

- 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.(4.2kg.m/5.5kg.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.

Temp. Difference / Operating Current	Temp. difference : approx. 0°C Current : less than 80% of rated current	All amount of refrigerant leaked out. Check refrigeration cycle.
	Temp. difference : approx. 8°C Current : less than 80% of rated current	Refrigerant leakage Clog of refrigeration cycle Defective compressor
	Temp. difference : less than 8°C Current : near the rated current	Excessive amount of refrigerant
	Temp. difference : over 8°C	Normal

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 value)	Cause of Trouble	Description
Higher	High	Defective compressor	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.

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

※ Refer to electronic contorol device drawing & schematic diagram.

Trouble 1 The Product doesn't operate at all.

Turn off the main power and wait to 5 seconds

⇩

Turn on the main power again.

⇩

Does "Beeping" sound is made from the indoor unit?

NO ⇩

Check the voltage of power(AC220V/AC240V, 50Hz).

- The voltage of main power.
- The voltage applied to the unit.
- The connecting method of Indoor/Outdoor connecting cable (each color)
- The P.W.B. Ass'y

(Fuse, Noise Filter, Power Transformer, IC01D, IC02D, etc.)

YES ⇩

- Primarily, the operating condition of Micom is O.K.

⇩

- Check CN-DISP1

The operation check of the P.C.B. Ass'y

Procedure	Specification	Remedy
1) The input voltage of power transformer.	1) AC230V ± 30V : Check the rated voltage	1) Replace power transfomer.
2) The output voltage of power transformer.	2) 14V ± 3V	2) Replace power transfomer.
3) IC01D(7812)	3) DC12V	3) Replace IC01D.
4) IC02D(7805)	4) DC5V	4) Replace IC02D.
5) IC01A(KIA7036)	5) The voltage of micom pin 29 : DC4.5V↑	5) Replace IC01A.

Trouble 2 Product doesn't operate with the remote controller.

Turn on main power.

While the compressor has been stopped, the compressor does not operate owing to the delaying function for 3 minutes after stopped.

When the compressor stopped Indoor Fan is driven by a low speed.
At this point the wind speed is not controlled by the remote controller.
(When operated in the Sleeping Mode, the wind speed is set to the low speed as force.)

Caused by the remote controller.

When the mark () is displayed in LCD screen, replace battery.

When the detect switch (double key) inside the remote controller door is fault, it is impossible to operate temperature regulating(▲ / ▼) and wind speed selecting.

Check the Display PWB Ass'y

Caused by other parts except the remote controller

Check the contact of CN-DISP 1 connector

Check DISP PWB Ass'y
-Voltage between CN1 ① - ⑦ : DC +5V

• Check receiver ass'y

Trouble 3 The Compressor/Outdoor Fan are unable to drive.

Turn on the main power.

⇩

Operate Cooling Mode by setting the disired temperature of the remote controller is less than one of the Indoor temperature by 1°C at least.

⇩

When in air circulation mode, compressor/outdoor fan is stopped.

⇩

Check the sensor for Indoor temperature is attatched as close as to be effected by the themperature of Heat Exchange (EVA.)

⇩

When the sensor circuit for Indoor temperature and connector are in bad connection or are not engaged, Compressor/Outdoor fan is stopped.

- Check the related circuit of R02H(12.1K), R01H(1K), R04H(6.2K), R03H(1K), C01H(102), C02H(102), Micom(pin No. ⑪, ⑫).
- Check the Indoor temperature sensor is disconnected or not (about 10K at 25°C).

⇩

Check the Relay(RY-PWR, RY-START) for driving Compressor.

- Check the voltage between brown and blue cable of terminal to connect the Outdoor (About AC220V / 240V).
- Check the related circuit of relay in Outdoor PCB Ass'y.

Check Point	Comp. ON	Comp. OFF
Between Micom(No. 19) and GND	DC 5V	DC 0V
Between IC01M(No. 10) and GND	DC 1V↓	DC 12V

⇩

Turn off main power.

⇩

Check the electrical wiring diagram of Outdoor side.
Check the open or short of connecting wires between Indoor and Outdoor.

Trouble 4 When indoor Fan does not operate.

Turn off main power.

⇩

Check the connection of CN-FAN.

⇩

Check the Fan Motor.

⇩

Check the Fuse(AC250V, T2A).

⇩

Check the related circuit of indoor Fan Motor.

- The pin No. ㊳ of micom and the part for driving SSR.(Q01M)
- Check the related pattern.
- Check the SSR.
  - SSR Open: Indoor Fan Motor never operate.
  - SSR short: Indoor Fan Motor always operates in case of ON or OFF.

⇩

Turn on the main power

⇩

Check the SSR high speed operation by remote control.
(the Indoor Fan Motor is connected)

The voltage of Pin No 1(orange) and 3(black) of CN-FAN.

⇩

About AC 160V over	About AC 50V over
⇩	⇩
SSR is not damaged	Check SSR

Trouble 5 When the vertical louver does not operate.

- Confirm that the vertical louver is normally geared with the shaft of Stepping Motor.
- If the regular torque is detected when rotating the vertical louver with hands ⇒ Normal

⇩

- Check the connecting condition of CN-U/D Connector
- Check the soldering condition(on PCB) of CN-U/D Connector

⇩

Check the operating circuit of the vertical louver

- Confirm that there is DC +12V between pin ① of CN-U/D and GND.
- Confirm that there is a soldering short at following terminals.
  - Between ①, ②, ③ and ④ of MICOM
  - Between ④, ⑤, ⑥ and ⑦ of IC01M
  - Between ⑰, ⑱, ⑲ and ⑳ of MICOM
  - Between ⑤, ⑥, ⑦ and ⑧ of IC01M

⇩

If there are no problems after above checks.

- Confirm the assembly condition that are catching and interfering parts in the link of the vertical louver

Trouble 6 The Outdoor Unit does not operate at all.

Does the Operating LED of indoor unit blink when Operation's ON?

YES → Refer to the self-diagnosis function.

NO ↓

Is the Connection between CN-Power of indoor unit and terminal block?

NO → Check the connecting state of connector

YES ↓

Is the connection of cable between indoor and outdoor unit right?

NO →

Indoor	Outdoor
1(Brown)	1(Brown)
2(Blue)	2(Blue)
3(Green/YL)	3(Green/YL)
4(Red)	4(Red)

YES ↓

Is the voltage of CN-POWER ①, ③ in outdoor PCB Ass'y about AC220V / 240V ?

NO → Check the Fuse of Outdoor PCB Ass'y. Check the connecting state of wires.

YES ↓

Is the operation of outdoor Ass'y right? (IC04D, IC01A)

NO → Replace the parts.

NO ↓

Replace the PCB Ass'y.

Trouble 7-1 When compressor does not operate normally.

■ **Communication error between Indoor and Outdoor (Error Code ⑤)**

Does the operating LED in display PCB Ass'y blink 5 times?

NO → • Check the state of connecting cable (4 line) bewteen indoor and outdoor unit .

YES ↓

Is the connecting state of connector outdoor PCB Ass'y right.

NO → • Electrical wiring diagram(Colors)
• Check the connecting state of connectors in outdoor PCB Ass'y (CN_Data - Terminal Block.)

YES ↓

Is the connection of CN-DATA between indoor and outdoor unit right?

NO → • Reconnect the cable to terminal block.
• Check the PCB pattern(Resoldering).

YES ↓

Replace the PCB Ass'y.

• Main PCB Ass'y (Indoor/Outdoor)

Trouble 7-2 When compressor does not operate normally.

■ **CT Error (Error Code ⑧)**

Does the operating LED in Display PCB Ass'y blink 8 times?

NO → • Check the state of connecting cable (3 line) bewteen Indoor and Outdoor Unit .
• Check fuse, Noise Filter, PTC, etc.

YES ↓

Is the current transformer(CT) in Main PCB Ass'y right?

NO → Check the PCB pattern(resoldering)

YES ↓

Is the connecting state of connectors right? (CN-IPM, U.V.W and Compressor wires)

NO → Check the state of connecting wires.

YES ↓

Is the indoor/outdoor fan locked?

NO → Check the indoor/outdoor fan motor.

YES ↓

Is the discharge temperature of Indoor unit right(11°C~17°C) in the cooling mode?

NO → Check the compressor.

YES ↓

Is the refrigerant pressure right?

NO → Supply the refrigerant

YES ↓

Replace the PCB Ass'y.

- Main PCB Ass'y(Outdoor)
- Control Box Ass'y(Outdoor)

Trouble 7-3 When compressor does not operate normally.

■ **DC Peak Error(Error Code ⑨)**

Does the operating LED in display PCB Ass'y blink 9 times?

YES

NO

• Electrical wiring diagram (Colors)
• Check the connecting state of connectors in PCB Ass'y(Main/Sub)
• If CN-UWV is connected, the comprressor can be operated a opposite direction.

Is the connecting state of connectors in out-door Sub. PCB Ass'y right?
(CN-UVW, CN-IPM, CN-Gate 1, CN-Gate 2)

YES

NO

• Check the short P-N P-U, V, W, and N-U, V, W of IPM and then collector, emiter of IGBT
• Replace the Sub PCB Ass'y.

Is the power module in Sub PCB Ass'y right?

YES

NO

Check the supplied voltage.

Is the voltage of CN-AC over than AC170V?

YES

NO

• Check CN-IPM connector(Pin No. 12)
• Replace the Sub PCB Ass'y.

Is the voltage of CN-DC over than about DC260V?

YES

Replace the PCB Ass'y.

• Main PCB Ass'y
• Sub PCB Ass'y
• Control Box Ass'y

Trouble 7-4 When compressor does not operate normally.

■ DC Low Voltage Error (Error Code ⑩)

Does the operating LED in display PCB Ass'y blinks 10 times?

YES

Is the connecting state of connectors in outdoor PCB Ass'y right?
(CN-DC, CN-AC)

NO → Reconnect the connector.

YES

Is the voltage of capacitor over 187Vdc?

NO → Check the wiring state.

YES

Is the connecting state of wires in outdoor unit?

NO → Check the electrical wiring diagram (Colors)

YES

Replace the PCB Ass'y.

- Main PCB Ass'y (Outdoor)

Trouble 7-5 When compressor does not operate normally.

■ **High press Error (Error Code ⑪)**

Does the operating LED in display PCB Ass'y blink 11 times?

YES

Is the installation condition of outdoor unit right.

NO → Check the installation condition.

YES

Is the indoor/outdoor fan locked?

NO → Check the indoor/outdoor fan motor.

YES

Is the refrigerant pressure right?

NO → Remove or supply the refrigerant.

YES

Replace the PCB Ass'y.

• Main PCB Ass'y (Outdoor)

■ The problem of missing the connector (INDOOR MAIN PCB ASSY)

Connectors	Condition	Problem (error mode)
CN-POWER (1,2)	OPEN	• Malfunctions all indoor & outdoor unit. • Malfunctions remocon, force, test operation mode.
CN-POWER (3)	OPEN	• Malfunctions outdoor unit. • Stop compressor and outdoor fan motor. • The operation LED blinks 5 times. • Communicaion error.
CN-FAN	OPEN	• Malfunctions indoor fan motor.
CN-DISP1	OPEN	• Malfunctions remote controller. • Don't operate the power display module.
CN-TH	OPEN/SHORT	• The operation LED blinks once. • Enable to receive remote singnal.
CN-U/D	OPEN	• Malfunctions UP/DOWN step motor. • Don't operate louver.

■ The problem of missing the connector (OUTDOOR MAIN PCB ASSY)

Connectors	Condition	Problem (error mode)
CN-POWER	OPEN	• Malfunctions outdoor unit. • Stop compressor and outdoor fan.
CN-AC	OPEN	• Malfunctions outdoor unit. • Stop compressor and outdoor fan. • The operation LED blinks 10 times.
CN-DC	OPEN	• Malfunctions outdoor unit. • Stop compressor and outdoor fan. • The operation LED blinks 10 times.
CN-IPM	OPEN	• Malfunctions inverter circuit. • Stop compressor and outdoor fan. • The operation LED blinks 8 times.
CN-Gate 1, 2	OPEN	• Malfunctions inverter circuit • The operation LED blinks 9 times.
CN-GND	OPEN	• Malfunctions EMI /EMS
CN-FAN	OPEN	• Malfunctions fan.
CN-TH	OPEN/SHORT	• The operation LED blinks twice.
CN-COMP	OPEN/SHORT	• The LED01K blinks 10 times. • Continue Comp. operation. (when the discharge pipe TH opens) • Stop Comp. operation (when the discharge pipe TH shorts)

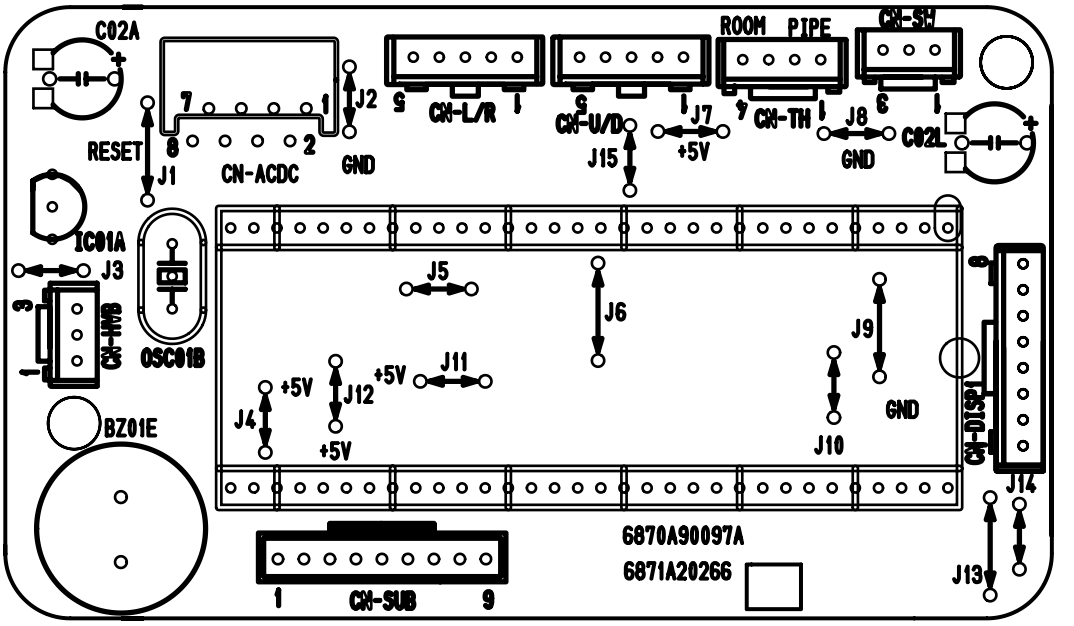
■ The problem of missing the connector (SUB PCB ASSY)

Connectors	Condition	Problem (error mode)
CN-UVW	OPEN	• Stop compressor.
CN-IPM	OPEN	• Malfunctions inverter circuit. • Stop compressor and outdoor fan. • The operation LED blinks 8 times.
CN-Gate 1, 2	OPEN	• Malfunctions inverter circuit • The operation LED blink 9 times.

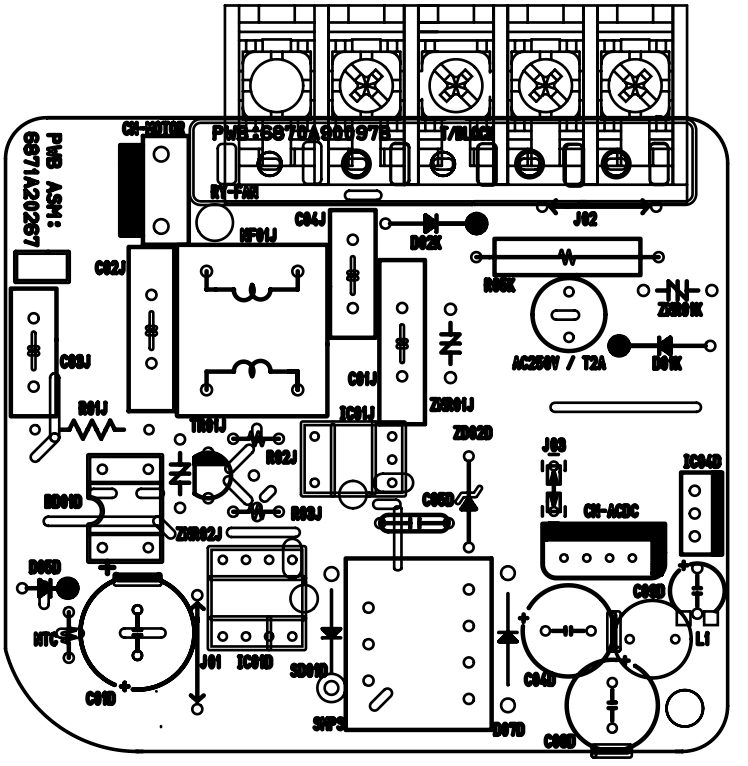
Electronic Control Device

1. Room Type Indoor Unit

• MAIN P.C.B DC ASM

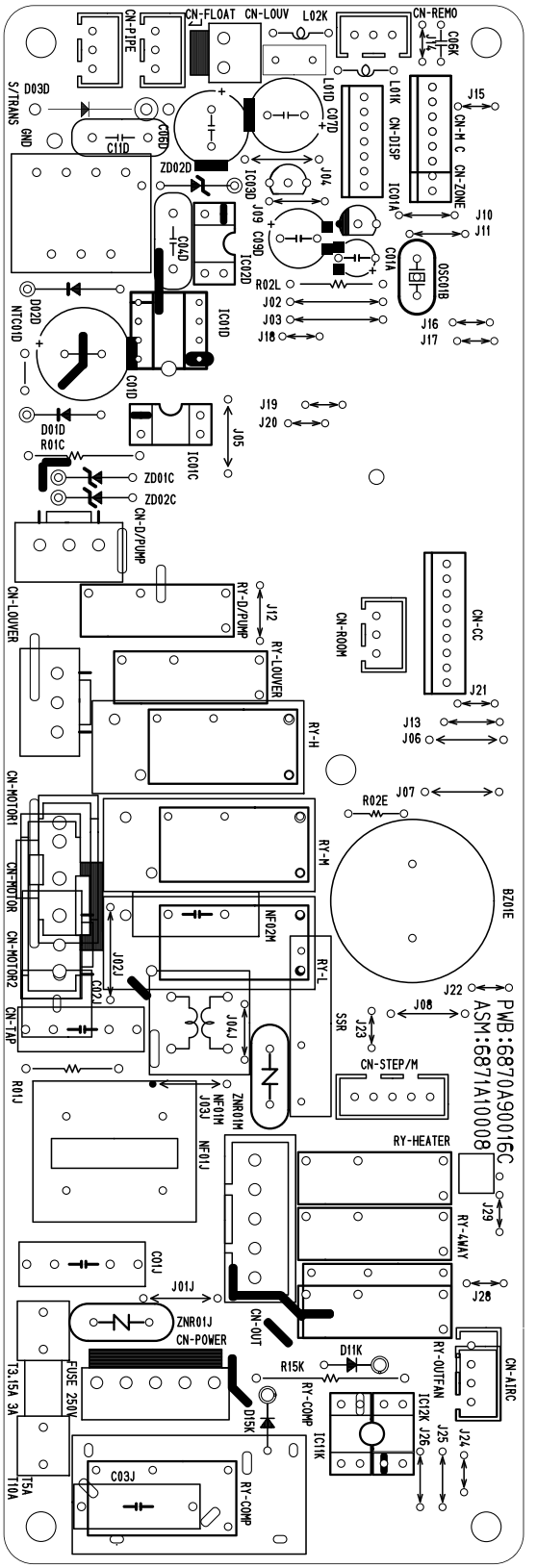


• MAIN P.C.B AC ASM

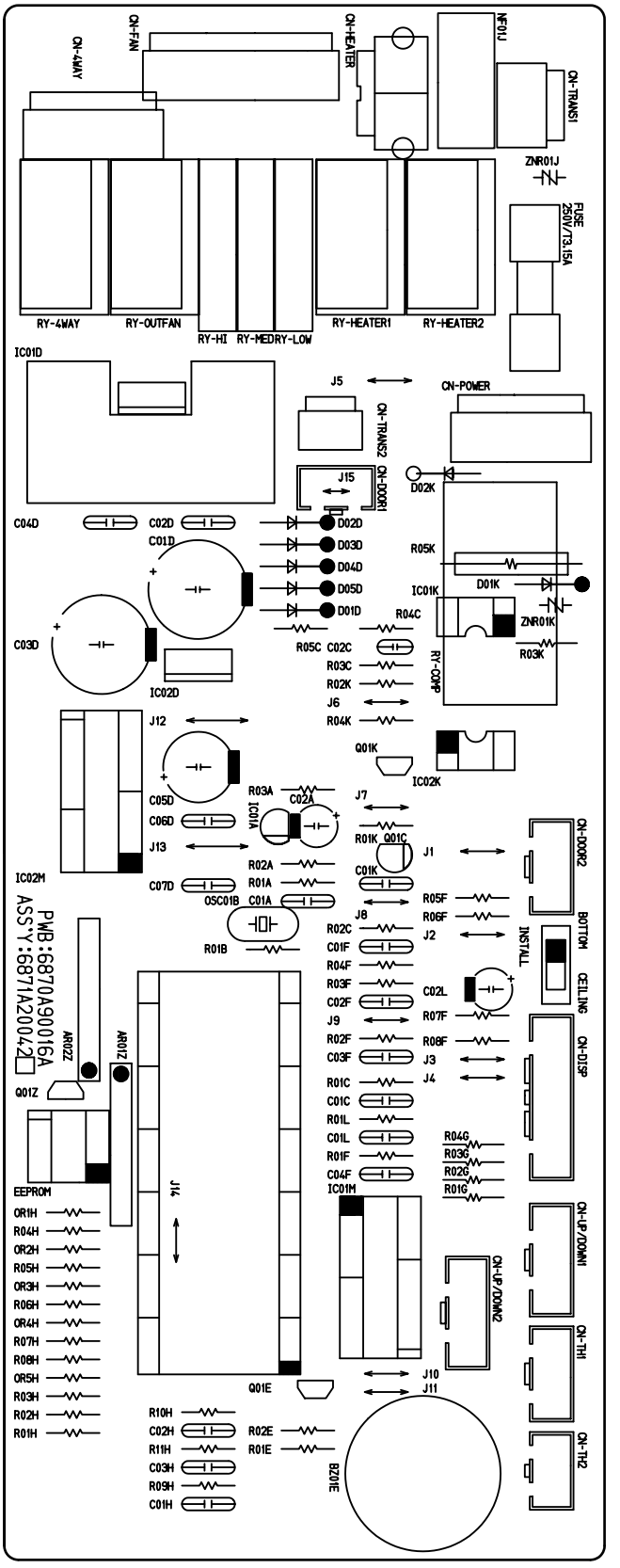


2. Cassette Type Indoor Unit

• MAIN P.C.B DC ASM

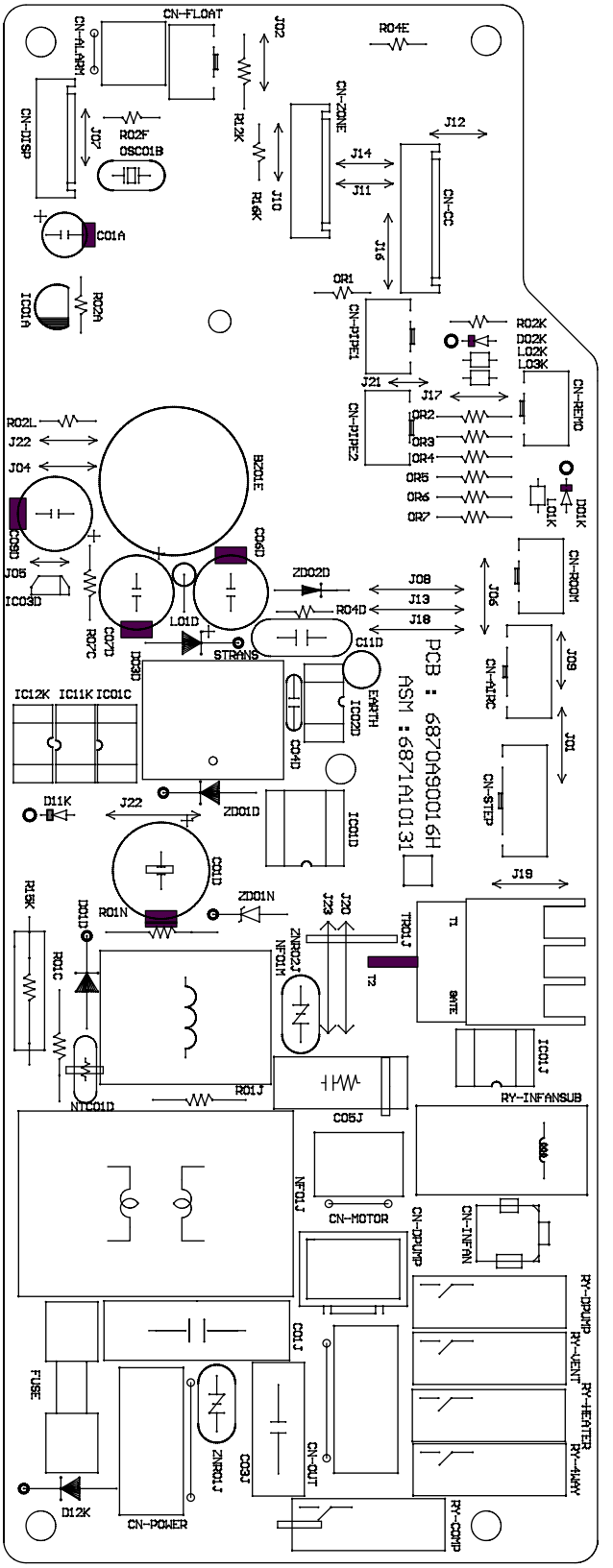


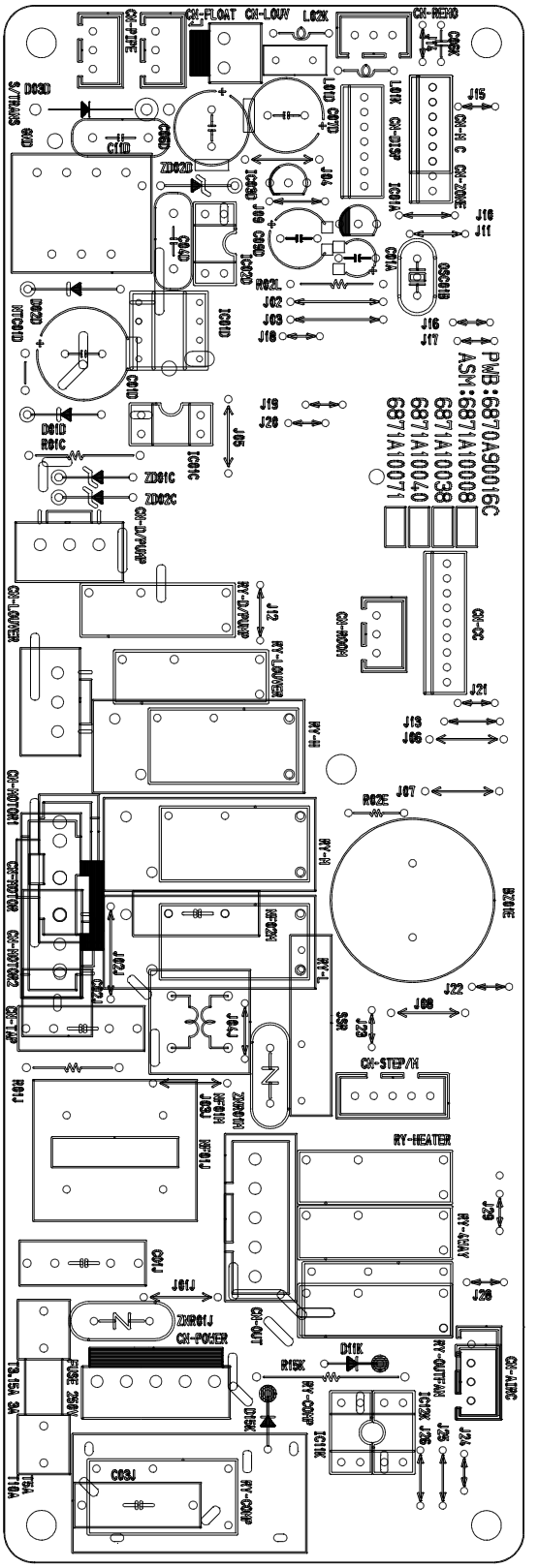
3. Convertible Type Indoor Unit



4. Duct Type Indoor Unit

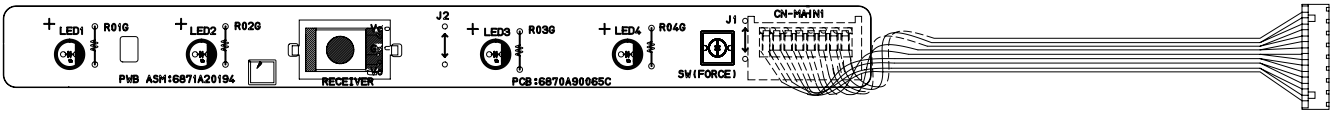
- 9/12k



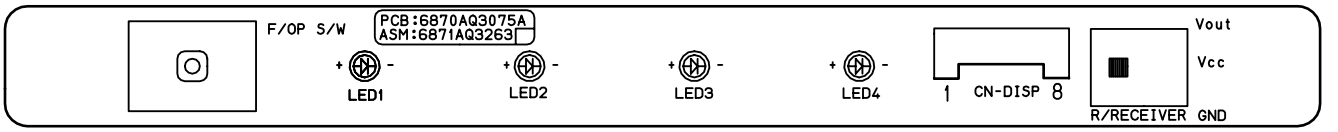

PWB:6870A90016C
ASM:6871A10038
6871A10008
6871A10040
6871A10071
CN-FLOAT
CN-LOUV
CN-REMO
CN-ZONE
CN-DUMP
CN-LOUVER
CN-ROOM
CN-CC
CN-MOTOR1
CN-MOTOR2
CN-TRANS
CN-STEP/M
RY-HEATER
RY-4WAY
RY-OUTFAN
RY-COMP
CN-OUT
CN-POWER
CN-AUX
RY-H
RY-L
RY-LOUVER
RY-DUMP
FUSE 250V
T3.15A 3A
T15A T16A

5. Display ASSY

• Room Type Indoor Unit

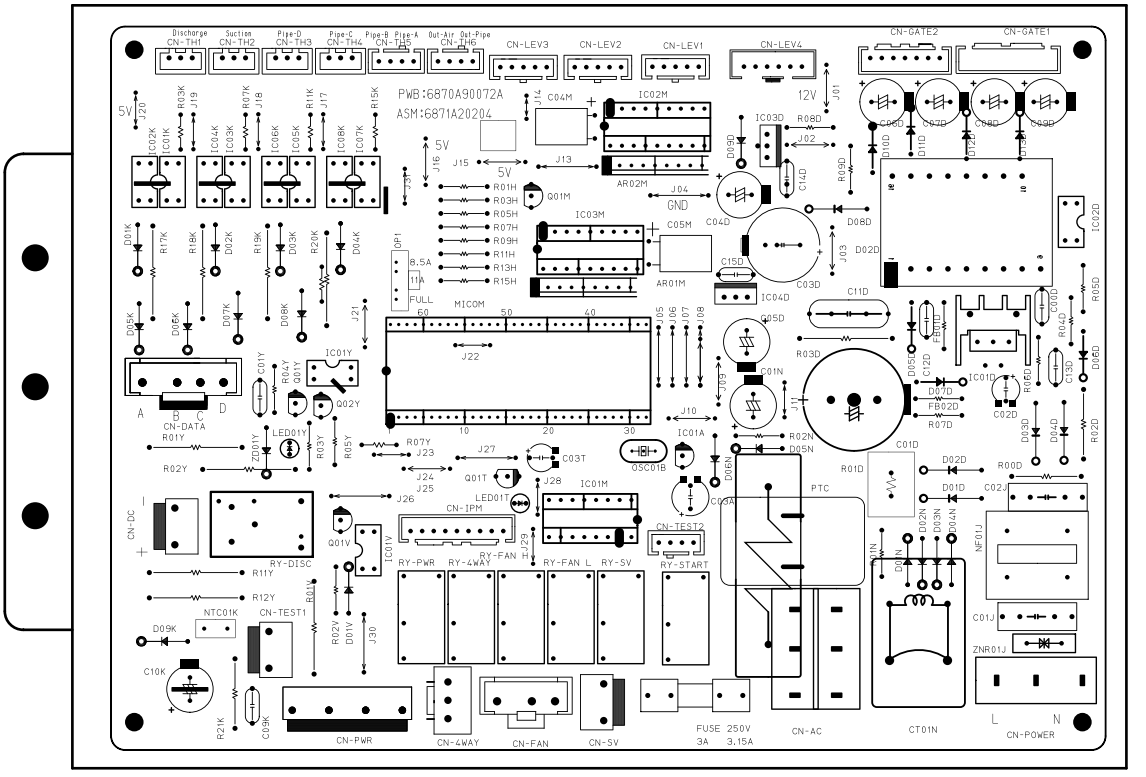


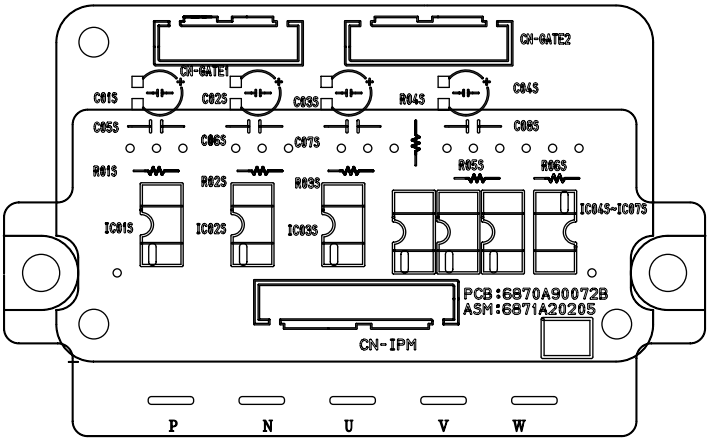
• Convertible Type Indoor Unit



6. Outdoor Unit

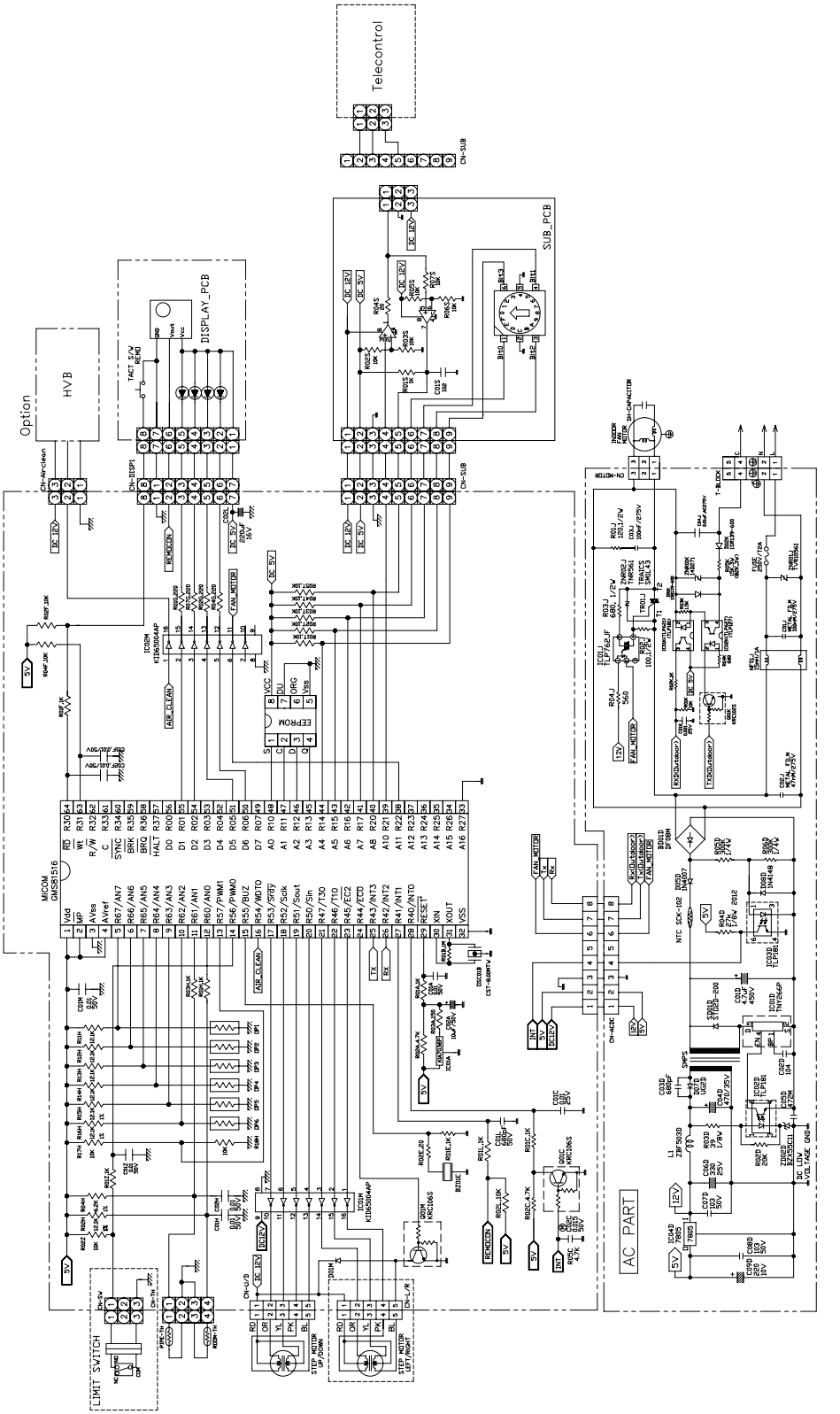
• MAIN P.C.B ASM



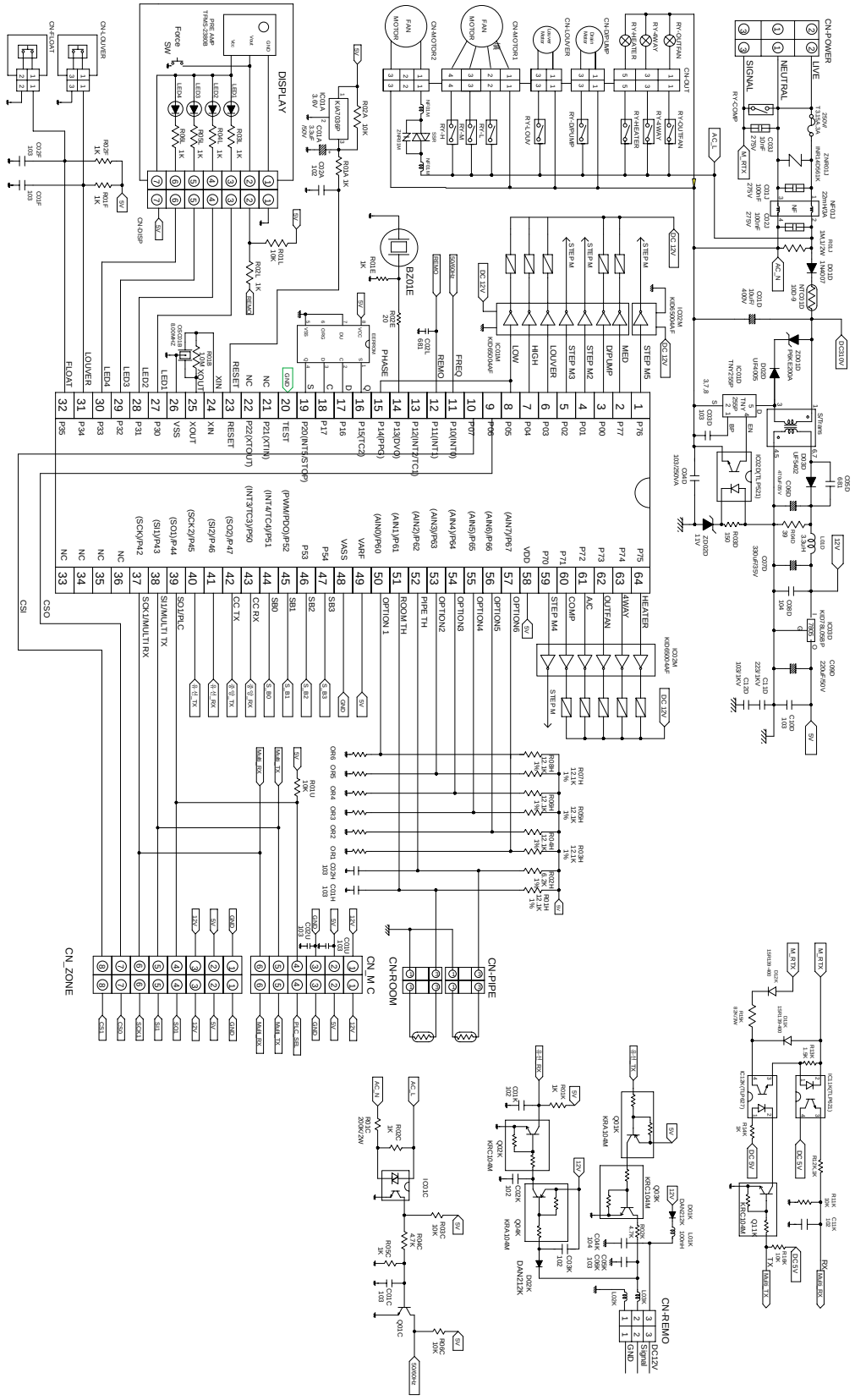


Schematic Diagram

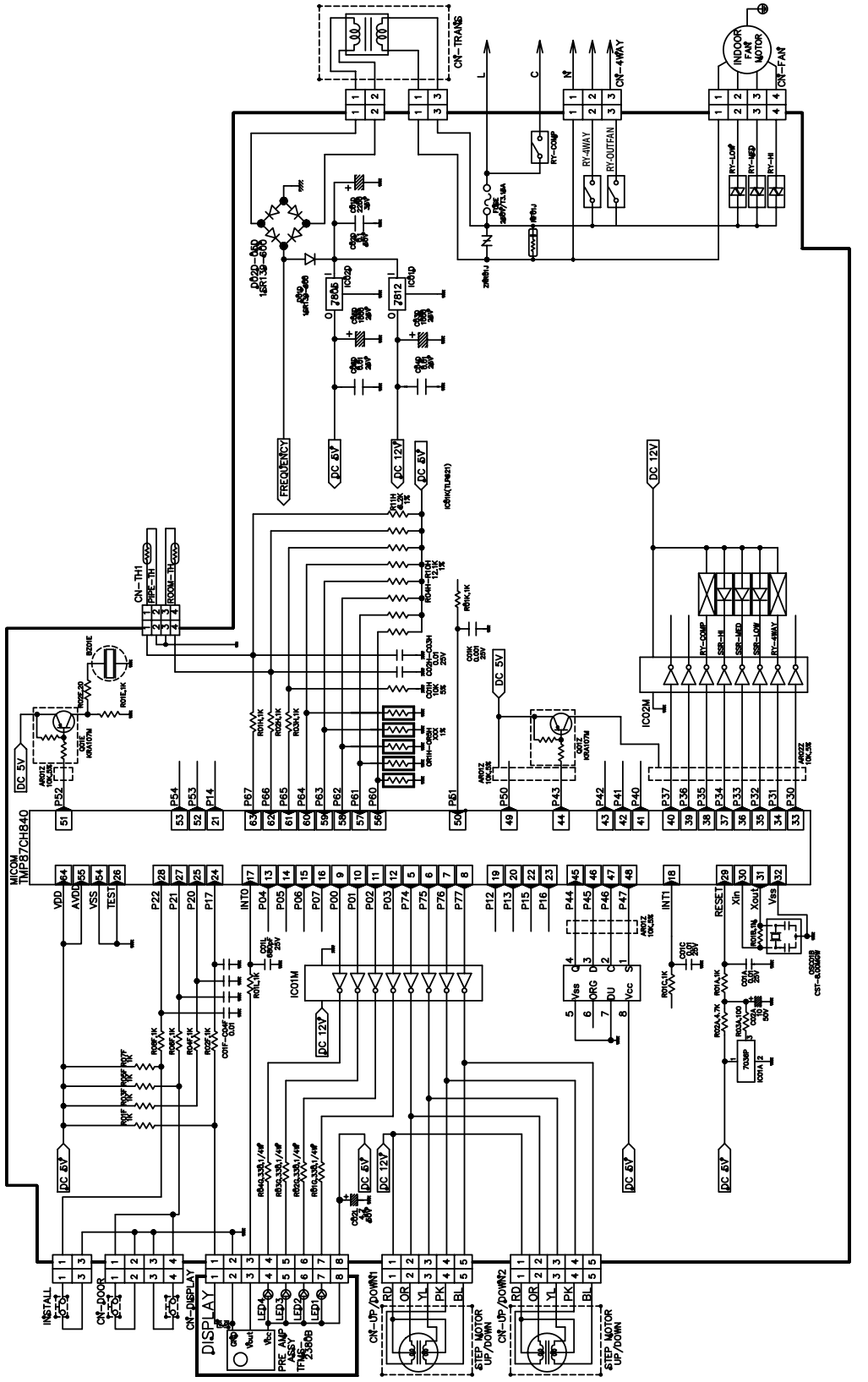
1. Room Type Indoor Unit



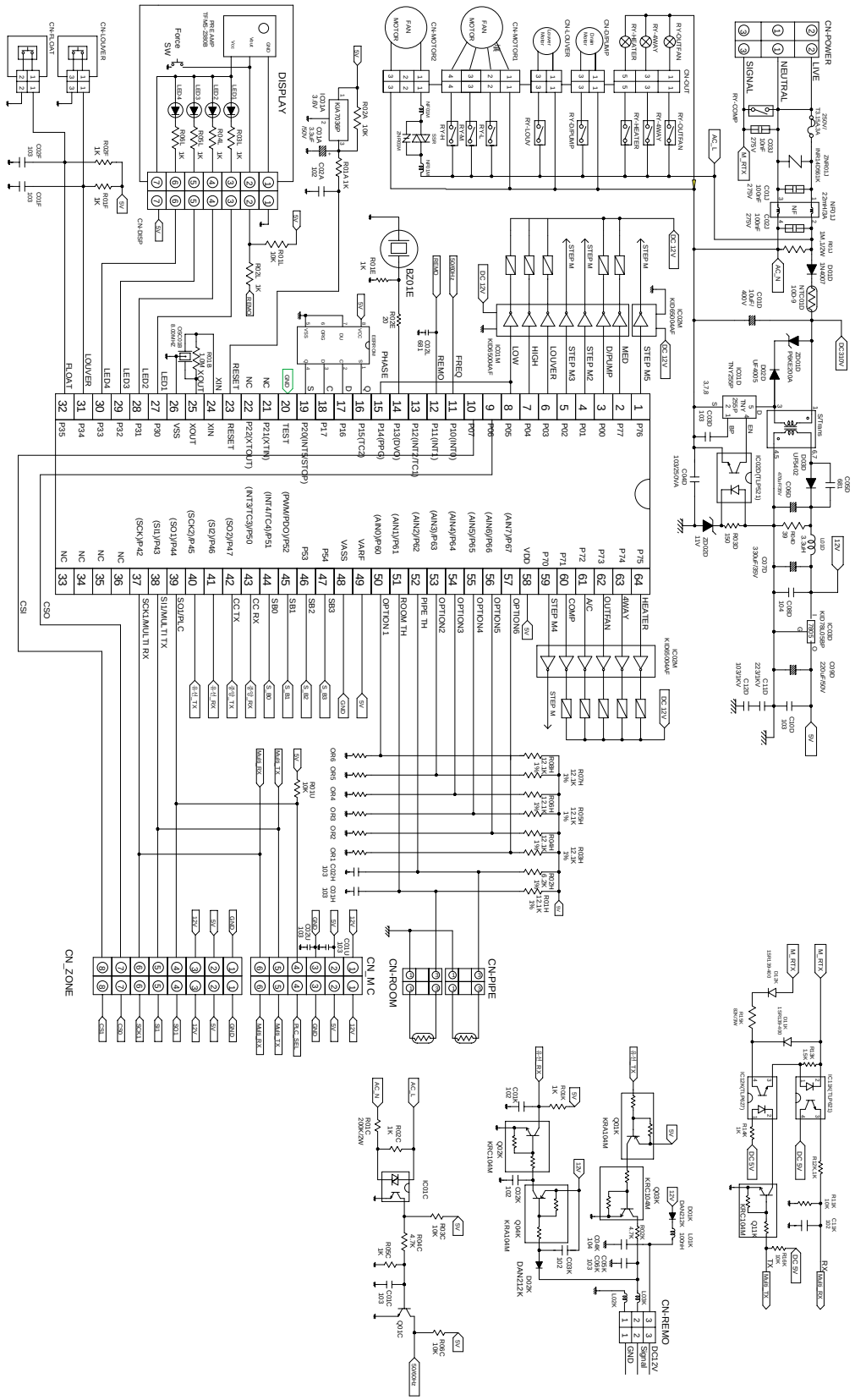
2. Cassette Type Indoor Unit



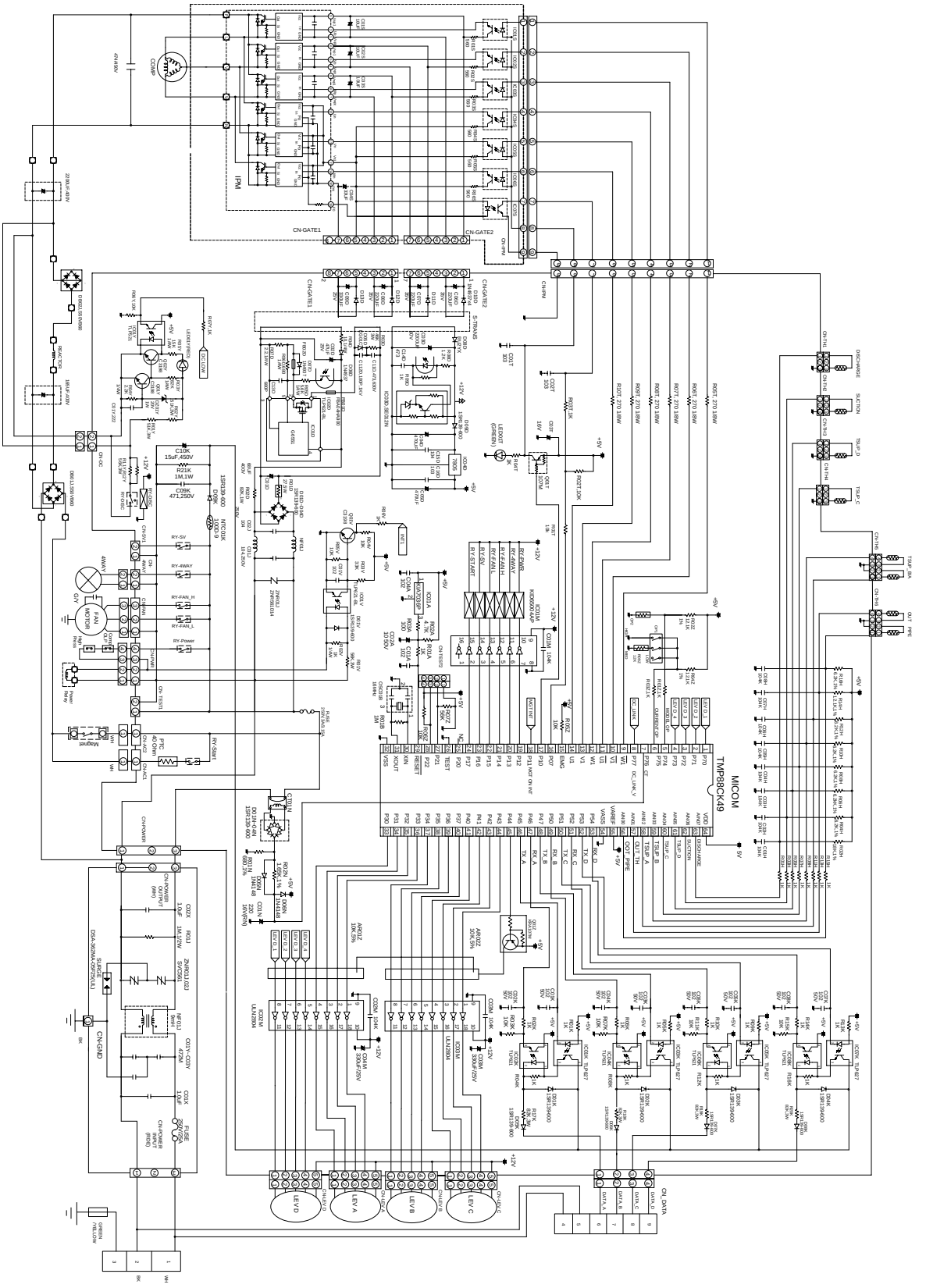
3. Convertible Type Indoor Unit



4. Duct Type Indoor Unit

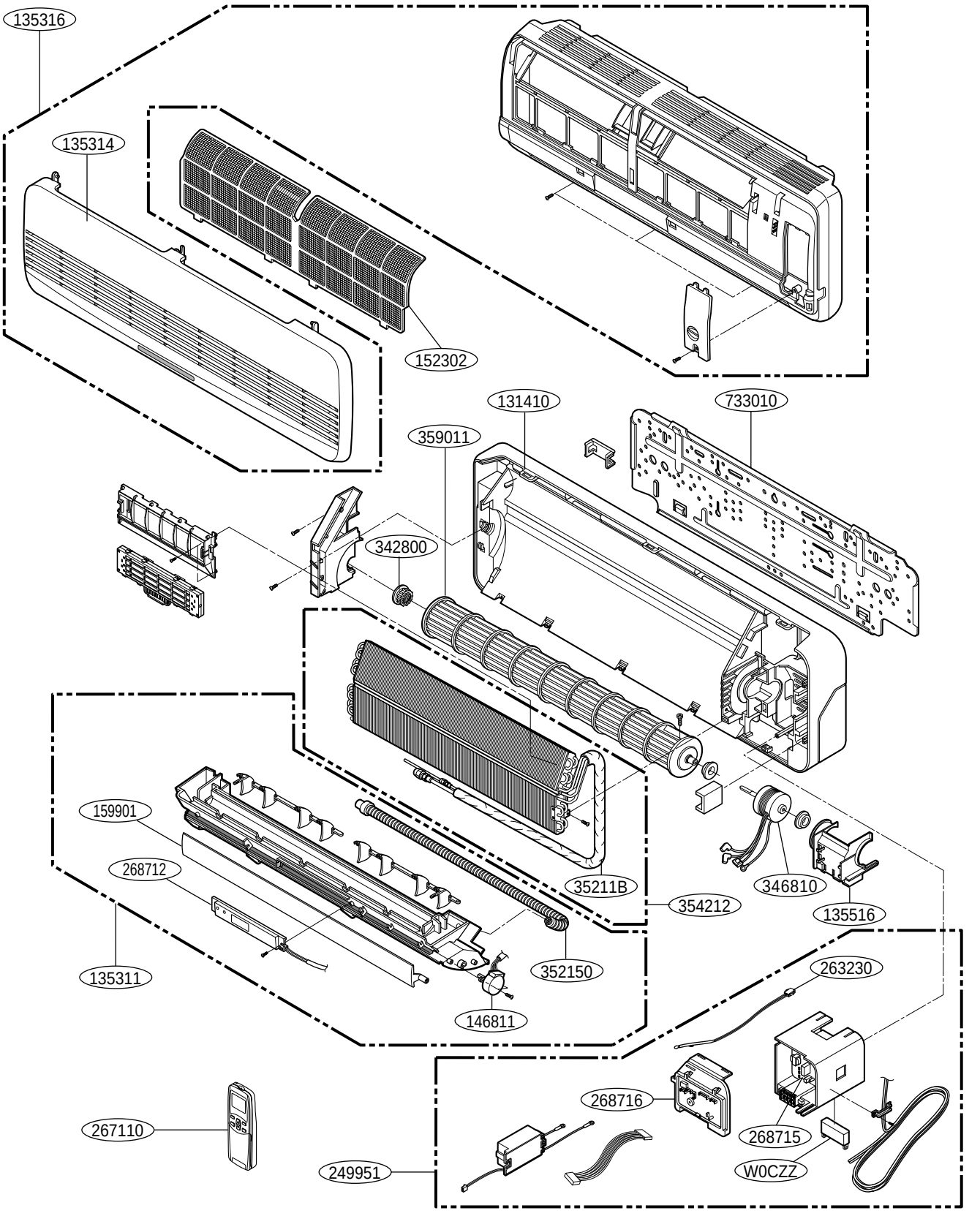


5. Outdoor Unit



Exploded View & Replacement Parts List

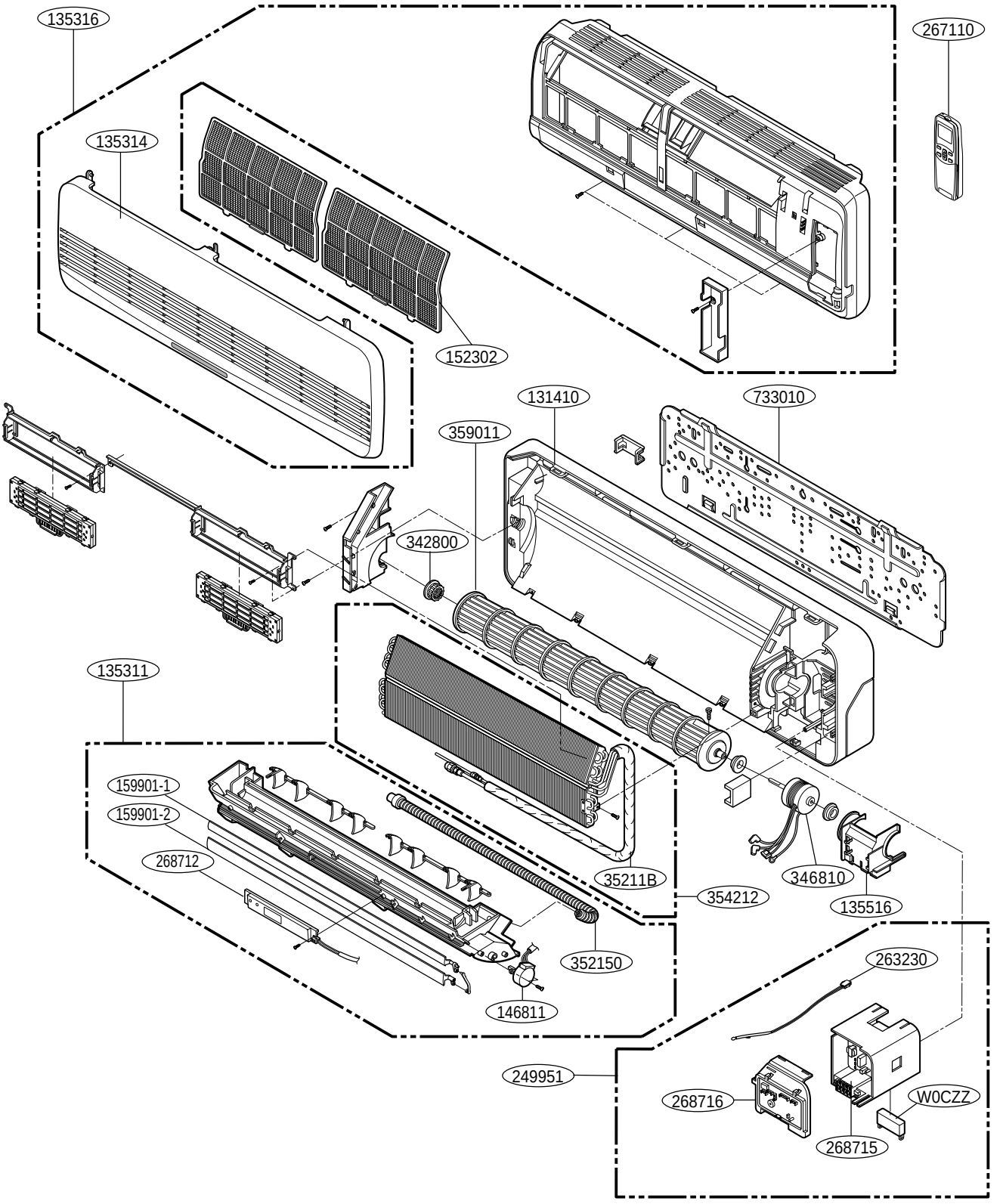
1. Room Type Indoor Unit (7K, 9K, 12K Btu Models)



Parts List (Indoor Unit)

LOCATION No.	DESCRIPTION	PART No.			REMARKS
		HPWI-C20E (AMNN076MQA0)	HPWI-C25E (AMNN096MQA0)	HPWI-C35E (AMNN126MRA0)	
131410	CHASSIS ASSEMBLY	3141A20006C	3141A20006C	3141A20005G	R
135311	GRILLE ASSEMBLY,DISCHARGE	3531A10222A	3531A10222A	3531A10192S	R
135314	GRILLE ASSEMBLY,INLET SUB	3531A20142P	3531A20142P	3531A20143X	R
135316	GRILLE ASSEMBLY,FRONT	3531A10167R	3531A10167R	3531A10168Z	R
135516	COVER ASSEMBLY,MOTOR	3551A20050P	3551A20050P	3551A20099A	R
146811	MOTOR ASSEMBLY,STEP	4681A20055A	4681A20055A	4681A20055A	R
152302	FILTER(MECH),A/C	5230A10005A	5230A10005A	5230A20014A	R
159901	VANE,HORIZONTAL	5990A10005B	5990A10005B	5990A20007B	R
249951	CONTROL BOX ASSEMBLY,INDOOR	4995A20213U	4995A20213V	4995A20213W	R
263230	THERMISTOR ASSEMBLY	6323A20004A	6323A20004A	6323A20004A	R
267110	REMOTE CONTROLLER	6711A20026B	6711A20026B	6711A20026B	R
268712	PWB(PCB) ASSEMBLY,DISPLAY	6871A20194A	6871A20194A	6871A20194A	R
268715	PWB(PCB) ASSEMBLY,MAIN(AC)	6871A20267A	6871A20267A	6871A20267A	R
268716	PWB(PCB) ASSEMBLY,MAIN(DC)	6871A20370A	6871A20370B	6871A20370C	R
342800	BEARING	4280A20004A	4280A20004A	4280A20004A	R
346810	MOTOR ASSEMBLY,INDOOR	4681A20062D	4681A20062A	4681A20048A	R
35211B	TUBE ASSEMBLY,TUBING	5211AR7066P	5211AR7066P	5211AR7066N	R
352150	HOSE ASSEMBLY,DRAIN	5251AR2575F	5251AR2575F	5251AR2575F	R
354212	EVAPORATOR ASSEMBLY,FINAL	5421A10035A	5421A10035B	5421A20087M	R
359011	FAN ASSEMBLY,CROSS FAN	5901A20007B	5901A20007B	5901A20007A	R
733010	PLATE ASSEMBLY,INSTALL	3301A10003A	3301A10003A	1H00843A	R
W0CZZ	CAPACITOR,DRAWING	3H01487A	3H01487A	3H01487A	R

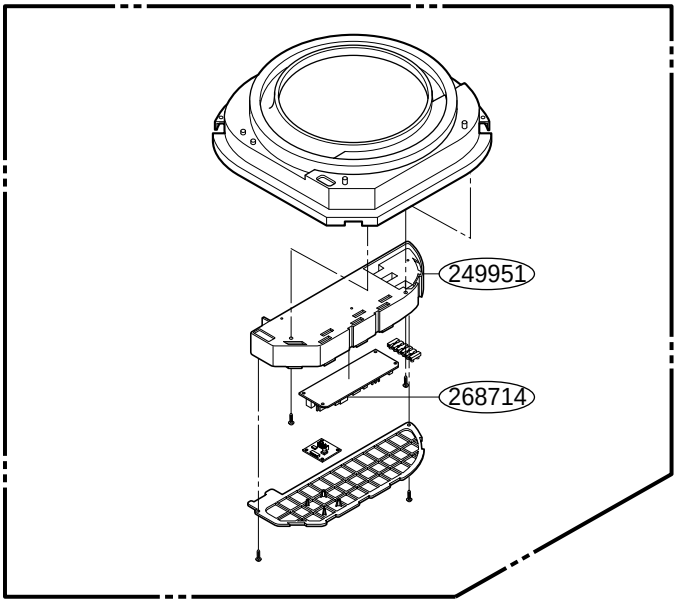
2. Room Type Indoor Unit (18K, 24K Btu Models)

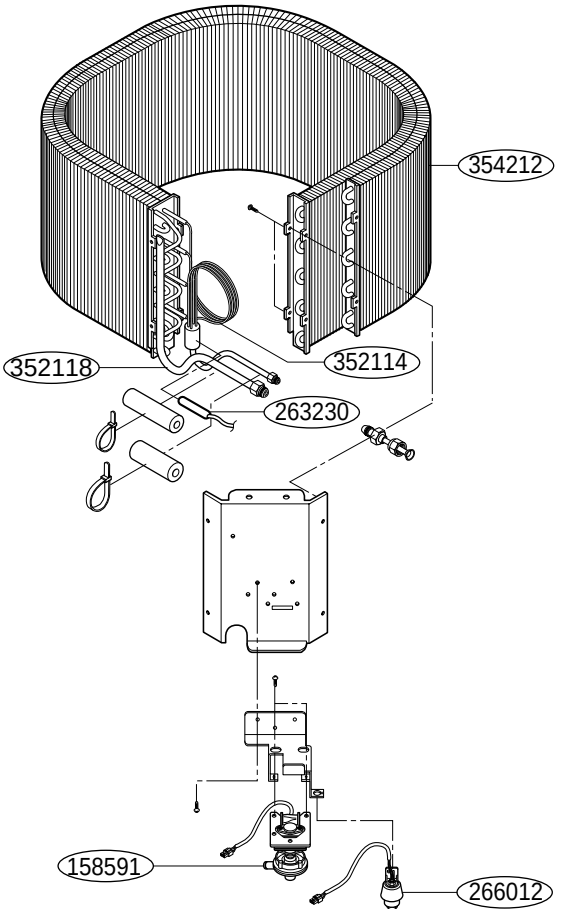


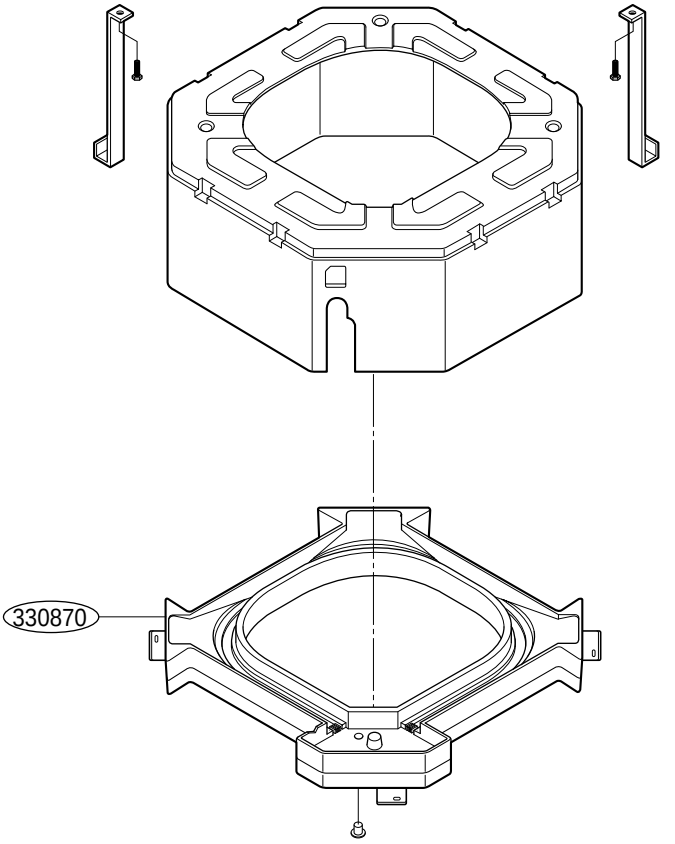
Parts List (Indoor Unit)

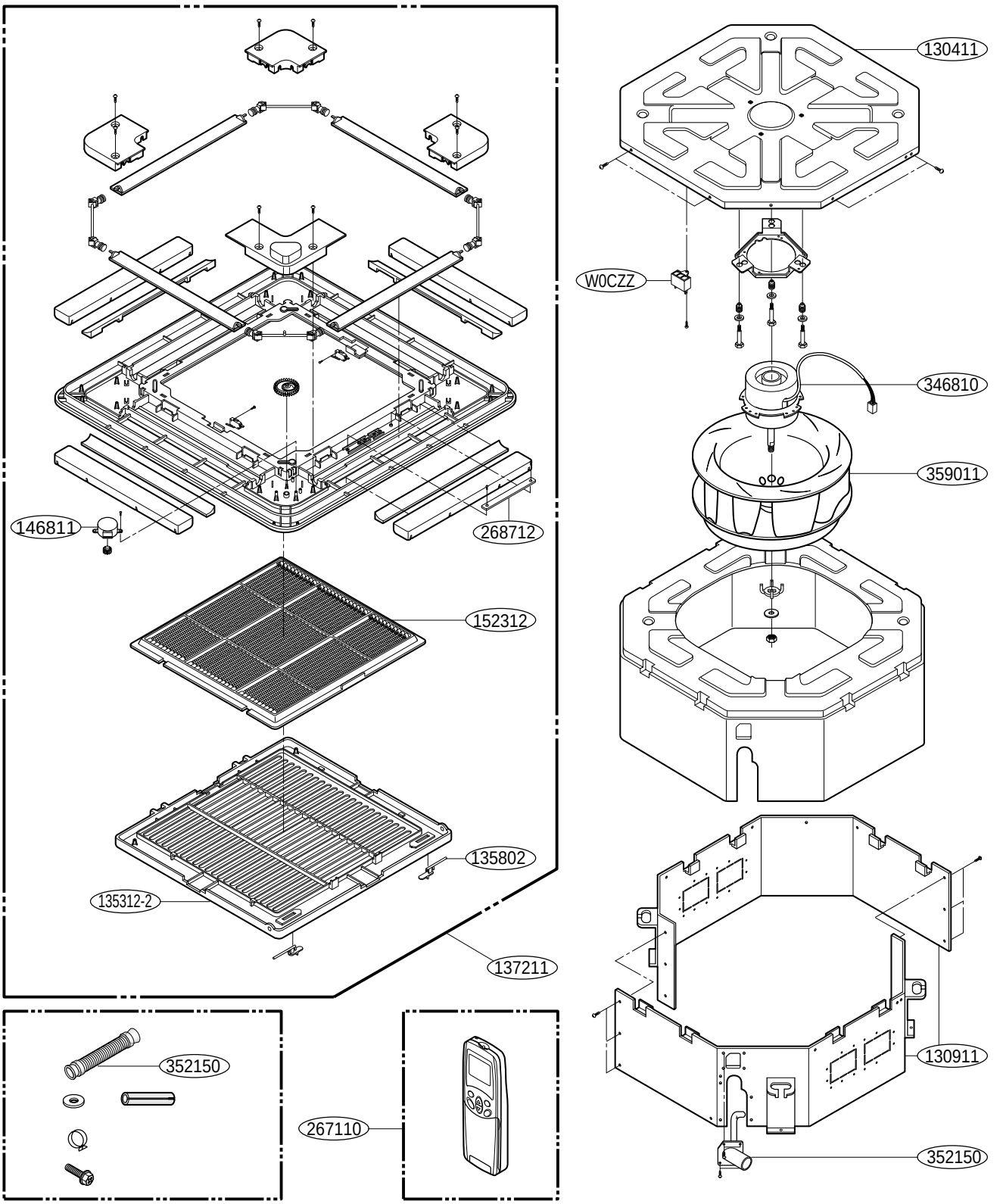
Location No.	Description	Part No.		Remarks
		HPWI-C50E (AMNN186MTA0)	HPWI-C70E (AMNN246MTA0)	
131410	CHASSIS ASSEMBLY	3141A10002H	3141A10002H	R
135311	GRILLE ASSEMBLY,DISCHARGE	3531A10224A	3531A10224A	R
135314	GRILLE ASSEMBLY,INLET SUB	3531A20144Q	3531A20144Q	R
135316	GRILLE ASSEMBLY,FRONT	3531A10169Q	3531A10169Q	R
135516	COVER ASSEMBLY,MOTOR	3551A20099C	3551A20099C	R
146811	MOTOR ASSEMBLY,STEP	4681A20055A	4681A20055A	R
152302	FILTER(MECH),A/C	5230A20001A	5230A20001A	R
159901-1	VANE,HORIZONTAL	5990A20008B	5990A20008B	R
159901-2	VANE,HORIZONTAL	5990A20009B	5990A20009B	R
249951	CONTROL BOX ASSEMBLY,INDOOR	4995A20213X	4995A20213Y	R
263230	THERMISTOR ASSEMBLY	6323A20004A	6323A20004A	R
267110	REMOTE CONTROLLER	6711A20026B	6711A20026B	R
268712	PWB(PCB) ASSEMBLY,DISPLAY	6871A20194B	6871A20194B	R
268715	PWB(PCB) ASSEMBLY,MAIN(AC)	6871A20267A	6871A20267A	R
268716	PWB(PCB) ASSEMBLY,MAIN(DC)	6871A20370D	6871A20370E	R
342800	BEARING	4280A20004A	4280A20004A	R
346810	MOTOR ASSEMBLY,INDOOR	4681A20003D	4681A20067A	R
35211B	TUBE ASSEMBLY,TUBING	5211A30439E	5211A30439J	R
352150	HOSE ASSEMBLY,DRAIN	5251AR2575F	5251AR2575F	R
354212	EVAPORATOR ASSEMBLY,FINAL	5421A20116Q	5421A20116R	R
359011	FAN ASSEMBLY,CROSS FAN	5901A20008A	5901A20008A	R
733010	PLATE ASSEMBLY,INSTALL	3301A10002A	3301A10002A	R
W0CZZ	CAPACITOR,DRAWING	3H01487G	3H01487G	R

3. Cassette Type Indoor Unit (12K, 18K Btu Models)





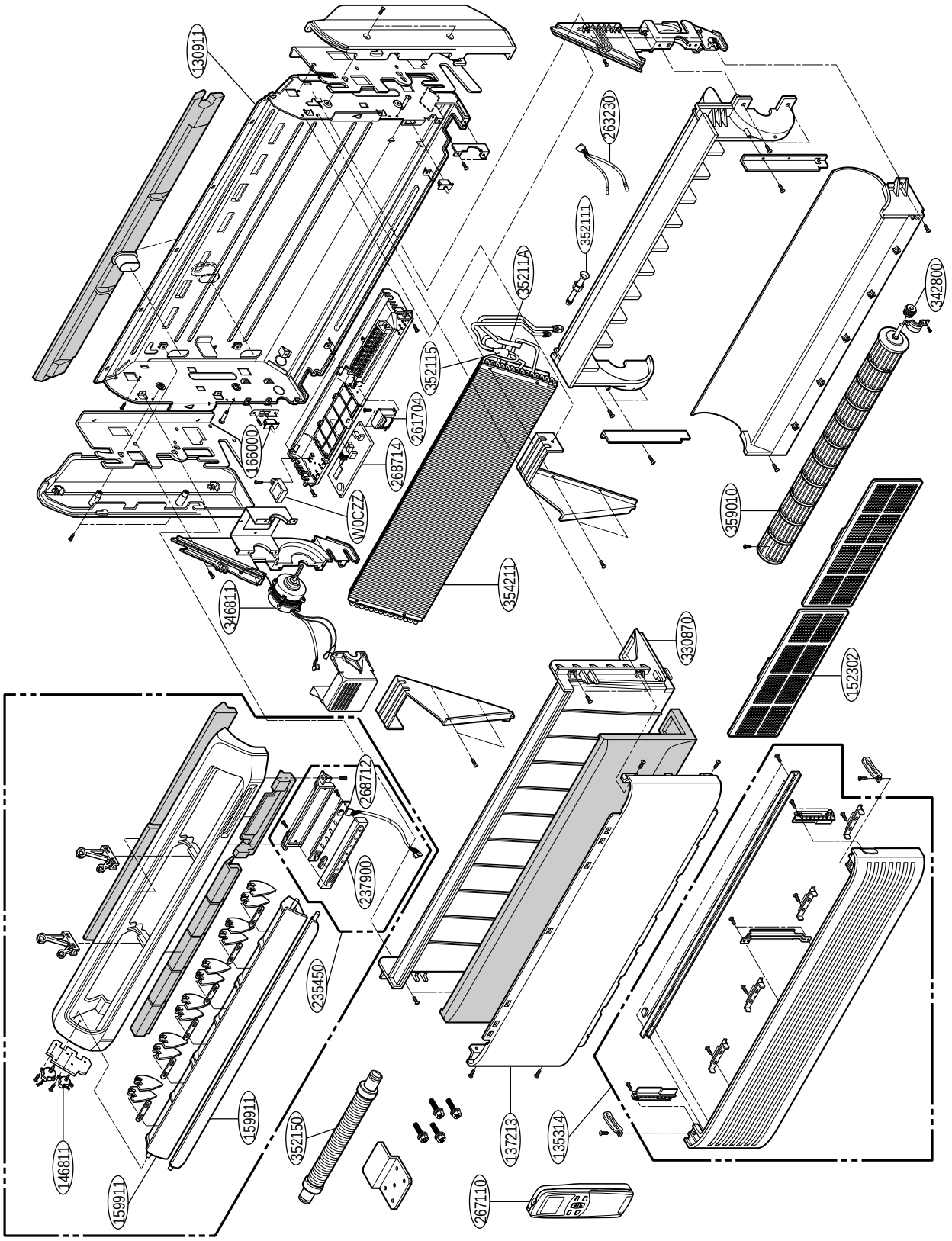



130411
W0CZZ
346810
359011
146811
268712
152312
135802
135312-2
137211
130911
352150
352150
267110

Parts List (Indoor Unit)

LOCATION No.	DESCRIPTION	PART No.		REMARKS
		HPCI-C35E (AMNN126TEA0)	HPCI-C50E (AMNN186TEA0)	
354212	EVAPORATOR ASSY	5421A10007Q	5421A10007F	R
352114	TUBE ASSY, DISTRIBUTOR	5211A10225A	5211A10225A	R
352118	TUBE ASSY, MANIFOLD	5211A20241Q	5211A20241Q	R
158591	PUMP ASSY, WATER	5859A20001C	5859A20001C	R
266012	SWITCH ASSY, FLOAT	6601A20001F	6601A20001F	R
330870	DRAIN PAN ASSY	3087A10002A	3087A10002A	R
249951	CONTROL BOX ASSY, INDOOR	4995A10026L	4995A10026V	R
268714	PWB(PCB) ASSY, MAIN	6871A10040Z	6871A10038E	R
130411	BASE ASSY, WELD INDOOR	3041A10013A	3041A10013A	R
346810	MOTOR ASSY, SINGLE	4681AC2026E	4681AC2026D	R
359011	FAN TURBO	5900A10004A	5900A10004A	R
140570	LOCKER	4056A20001A	4056A20001A	R
130911	CABINET ASSY, INDOOR	3091A10023A/B	3091A10023A/B	R
352150	DRAIN ASSY, TUBE	5251A20002A	5251A20002A	R
137211	PANEL ASSY, FRONT(INDOOR)	3721A10021M	3721A10021M	R
146811	MOTOR ASSY, STEP	4681AP2968D	4681AP2968D	R
268712	PWB(PCB) ASSY, DISPLAY	6871A20096C	6871A20096C	R
152312	FILTER ASSY	5231A10005A	5231A10005A	R
135802	DOOR, LOCK	3580A20005A	3580A20005A	R
267110	REMOTE CONTROLLER	6711A10004E	6711A10004E	R
263230	THERMISTOR ASSY	6323AQ3226F	6323AQ3226F	R
W0CZZ	CAPACITOR, DRAWING	3H00660N	3H00660N	R
352150	DRAIN TUBE ASSY	5251AP2954A	5251AP2954A	R
135312-2	INLET GRILLE	3530A10065A	3530A10065A	R
352111	TUBE ASSY, CONNECTOR	5211A20514C	5211A20514C	R
738290	MANUAL, OWNERS	3828A20284L	3828A20284L	R

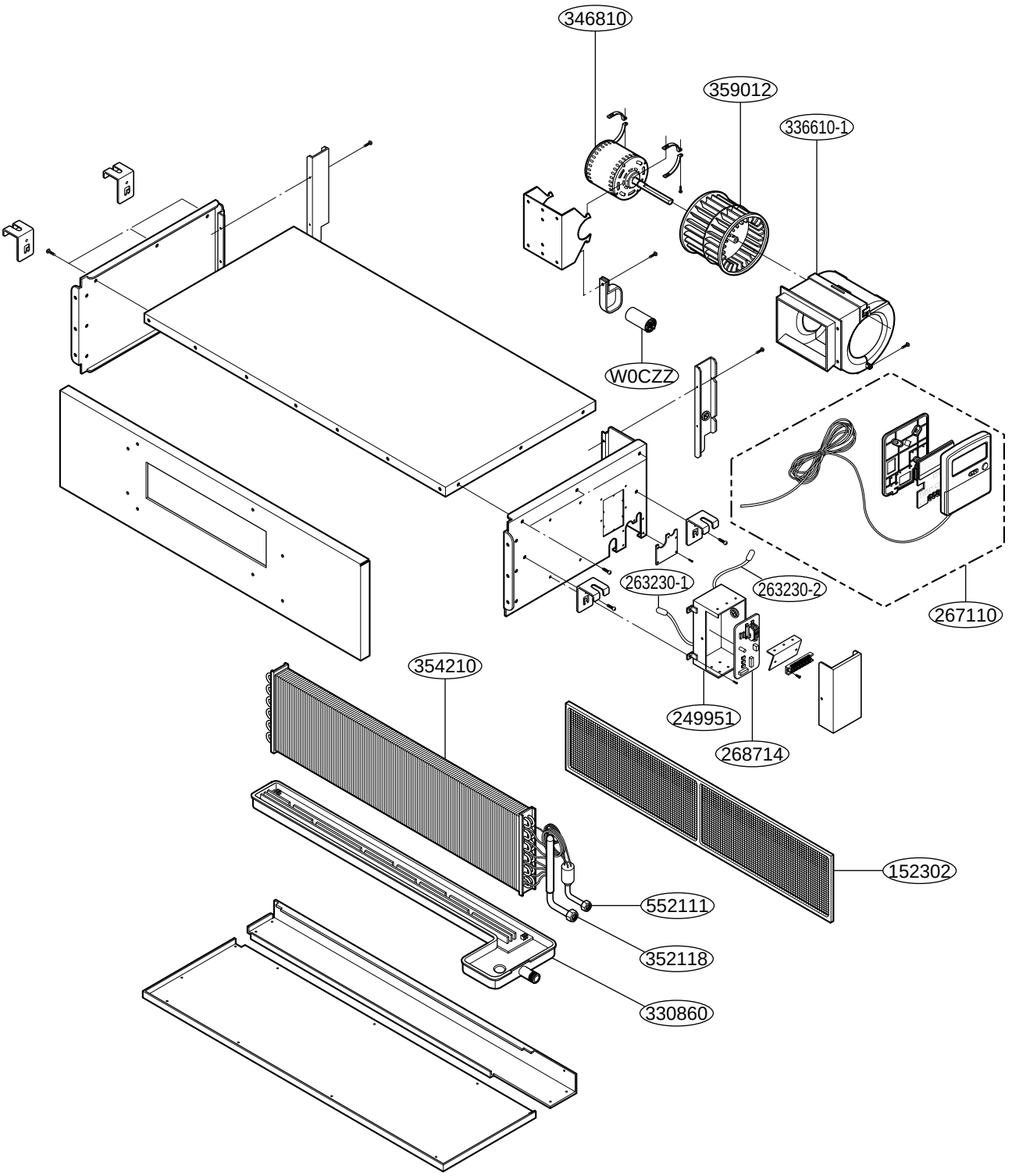
4. Convertible Type Indoor Unit (18K Btu Models)



Parts List(Indoor Unit)

Location No.	Description	Part No.	Remarks
		HPFI-C50E(AMNN186VBA0)	
130911	CABINET ASSY	3091AP2533A	R
135314	GRILLE ASSY, INLET SUB	5237AP2817B	R
137213	PANEL ASSY, SIDE	3720AP2767P	R
268714	PWB(PCB) ASSY, MAIN	6871A20042W	R
146811	MOTOR ASSY, STEP	4681AR2727G	R
152302	FILTER(MECH), A/C	5230AP7093A	R
159911	VANE ASSY, HORIZONTAL	5991AP2867B	R
159911	VANE ASSY	5991AP7334C	R
166000	SWITCH, PUSH	6600AP2059B	R
235450	DISPLAY ASSY (MECH)	3545AP7224A	R
237900	WINDOW, DISPLAY	3790AP7080A	R
261704	TRANSFORMER, POWER	6171AQ3198E	R
263230	THERMISTOR ASSY	6323AQ2333J	R
267110	REMOTE CONTROLLER ASSY	6711A20075B	R
268712	PWB(PCB) ASSY, DISPLAY	6871AQ3263A	R
330870	DRAIN PAN ASSY	3087AP7233A	R
342800	BEARING	3H02821A	R
346811	MOTOR ASSY, INDOOR	4681AP2306G	R
352115	TUBE ASSY, EVA-IN	5211AP2810C	R
35211A	TUBE ASSY, SUCTION INDOOR	5211AP2813C	R
352150	HOSE ASSY, DRAIN	5251AP2460B	R
354211	EVAPORATOR ASSY	5421AP2812B	R
359010	FAN ASSY, CROSS FLOW	5901AR2351E	R
W0CZZ	CAPACITOR	3H00671A	R
352111	TUBE ASSY, CONNECTOR	5211A20514B	R
738290	MANUAL OWNERS	3828A20284K	R

5. Duct Type Indoor Unit (9K/12K Btu Models)

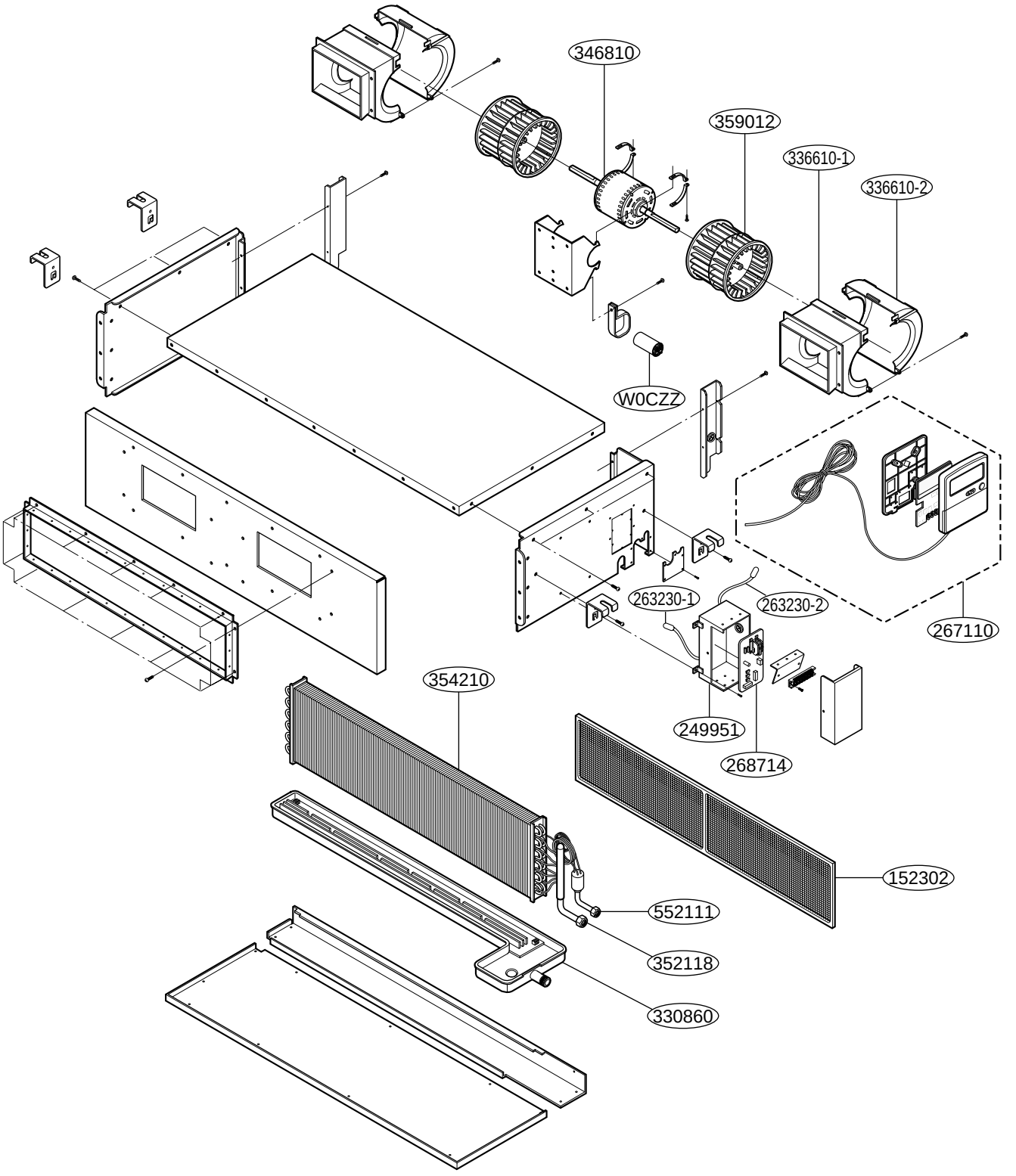


Parts List(Indoor Unit)

• 9K/12K

Location No.	Description	Part No.		Remarks
		HPDI-C25E (AMNN096BTG0)	HPDI-C35E (AMNN126BTG0)	
152302	FILTER(MECH), A/C	5230A30001Q	5230A30001Q	R
249951	CONTROL BOX ASSY(INDOOR)	4995A20338F	4995A20338E	R
263230-1	THERMISTOR ASSY	6323AQ3226G	6323AQ3226G	R
263230-2	THERMISTOR ASSY	6323AQ3214E	6323AQ3214E	R
267110	REMOTE CONTROLLER ASSY	6711A1008Z	6711A1008Z	R
268714	PWB(PCB) ASSY, MAIN	6871A10131C	6871A10131D	R
330860	DRAIN PAN ASSEMBLY	3087A10015C	3087A10015C	R
336610-1	HOUSING(MECH), WRAPPER	3661A20025A	3661A20025A	R
346810	MOTOR ASSY, INDOOR	4681A10022B	4681A10022B	R
352118	TUBE ASSY, MENIFOLD(INDOOR)	5211A10418B	5211A25011B	R
354210	EVAPORATOR ASSY, FIRST	5421A20153B	5421A21002A	R
359012	FAN ASSY, BLOWER	5901A10038C	5901A10038C	R
552111	TUBE ASSY, CAPILLARY	5211A10417A	5211A25010A	R
WOCZZ	CAPACITOR, DRAWING	3A02157K	3A02157K	R

6. Duct Type Indoor Unit (18K Btu Models)

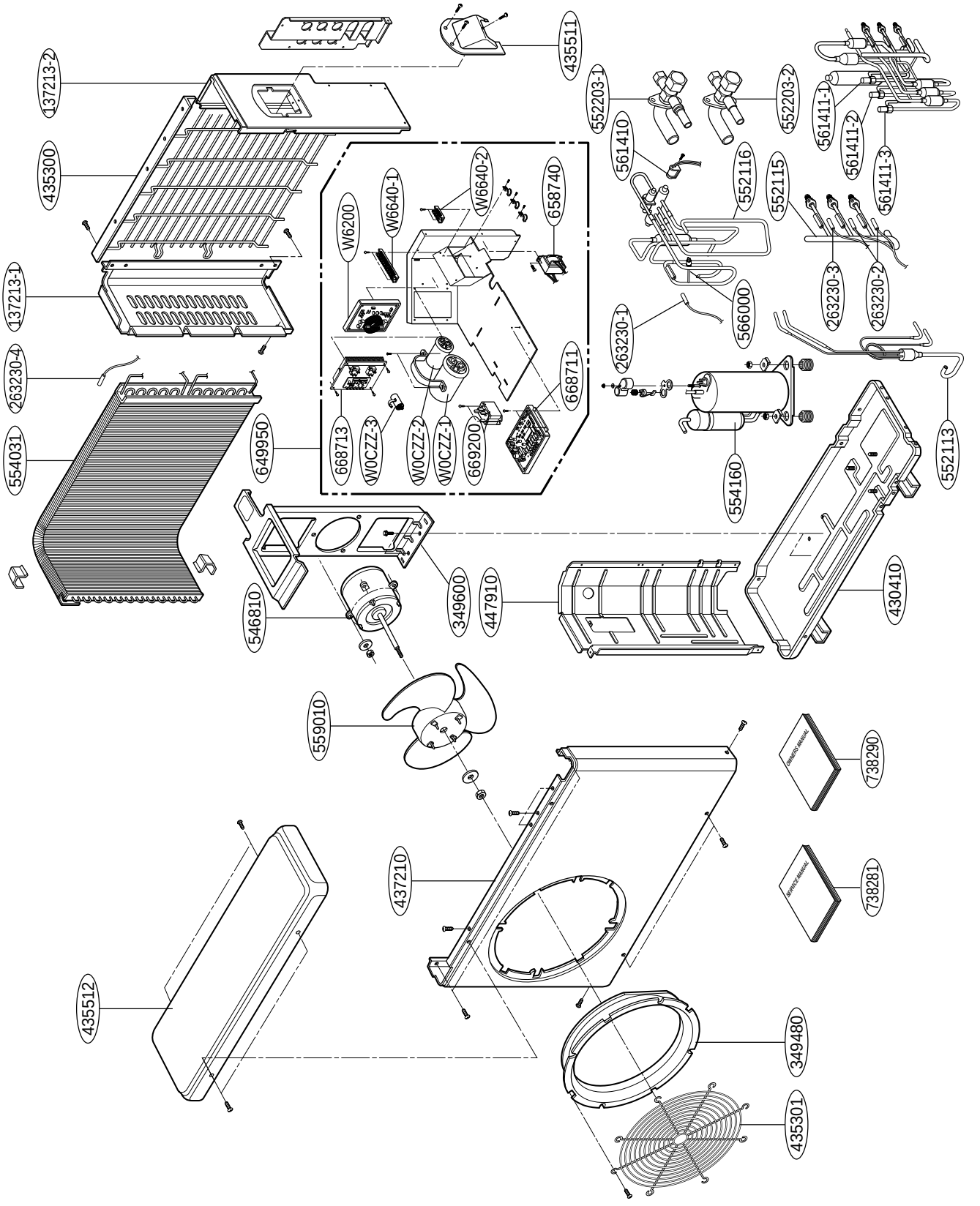


Parts List(Indoor Unit)

• 18K

Location No.	Description	Part No.	Remarks
		HPDI-C50E(AMNN186BHA0)	
152302	FILTER(MECH), A/C	5230A30001M	R
249951	CONTROL BOX ASSY(INDOOR)	4995A20393B	R
263230-1	THERMISTOR ASSY	6323AQ3226G	R
263230-2	THERMISTOR ASSY	6323AQ3214E	R
267110	REMOTE CONTROLLER ASSY	6711A10005G	R
268714	PWB(PCB) ASSY, MAIN	6871A10109R	R
330870	DRAIN PAN ASSEMBLY	3087A10008B	R
336610-1	HOUSING(MECH), WRAPPER	3660A20017A	R
336610-2	HOUSING(MECH), WRAPPER	3660A20018A	R
346810	MOTOR ASSY, INDOOR	4681A10013C	R
352118	TUBE ASSY, MENIFOLD(INDOOR)	5211A20465F	R
354210	EVAPORATOR ASSY, FIRST	5421A20100E	R
359012	FAN ASSY, BLOWER	5901A10028B	R
552111	TUBE ASSY, CAPILLARY	5211A20466F	R
WOCZZ	CAPACITOR, DRAWING	2A00986D	R

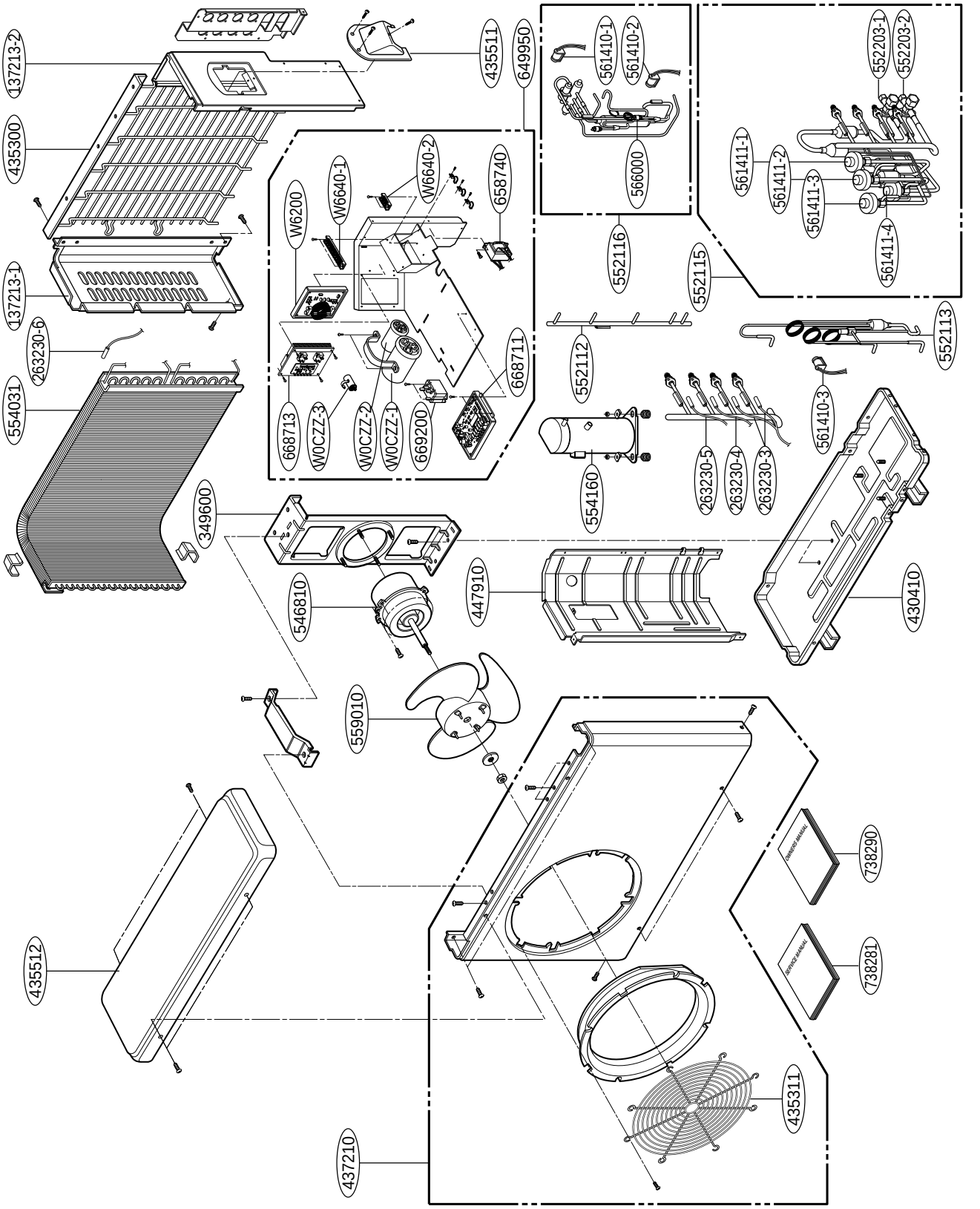
7. Outdoor Unit [HPI-C2077(A2UN186FA0), HPI-C3077(A3UN216FA0)]



Outdoor Unit Parts List [HPI-C2077(A2UN186FA0), HPI-C3077(A3UN216FA0)]

LOCATION No.	DESCRIPTION	PART No.		REMARKS
		HPI-C2077 (A2UN186FA0)	HPI-C3077 (A3UN216FA0)	
137213-1	PANEL ASSEMBLY, SIDE	1A00201D	1A00201D	R
137213-2	PANEL ASSEMBLY, SIDE	3A02284W	3A02284W	R
263230-4	THERMISTOR ASSEMBLY	6323A20002Q	6323A20002Q	R
263230-3	THERMISTOR ASSEMBLY	6323A20002R	6323A20002R	R
263230-2	THERMISTOR ASSEMBLY	-	6323AQ3226K	R
263230-1	THERMISTOR ASSEMBLY	6323A20001A	6323A20001A	R
349480	ORIFICE	4948AP2527A	4948AP2527A	R
349600	MOUNT, MOTOR	4960AP1361A	4960AP1361A	R
430410	BASE ASSEMBLY, WELD(OUTDOOR)	3041A20022B	3041A20022B	R
435300	GRILLE, REAR	1A00207B	1A00207B	R
435301	GRILLE, DISCHARGE	3530A20007B	3530A20007B	R
435511	COVER ASSEMBLY, CONTROL(OUTDOOR)	3551A10003Y	3551A10003Y	R
435512	COVER ASSEMBLY, TOP(OUTDOOR)	3H03266L	3H03266L	R
437210	PANEL ASSY, FRONT SUB	3721A20004L	3721A20004L	R
447910	BARRIER ASSEMBLY, OUTDOOR	2H02110L	2H02110L	R
546810	MOTOR ASSEMBLY, OUTDOOR	4681A20013Z	4681A20013Z	R
552113	TUBE ASSEMBLY, CONDENSER OUT	5211A20954A	5211A20954A	R
552115	TUBE ASSEMBLY, MENIFOLD(OUTDOOR)	5211A20419C	5211A20419A	R
552116	TUBE ASSEMBLY, REVERSING	5211A20949A	5211A20949A	R
552203-1	VALVE, SERVICE	5220A20035A	5220A20035A	R
552203-2	VALVE, SERVICE	5220A20034A	5220A20034A	R
554031	CONDENSER ASSEMBLY, BENT	5403A20072L	5403A20072L	R
554160	COMPRESSOR	2520UTGV2AA	2520UTGV2AA	R
559010	FAN ASSEMBLY, PROPELLER	1A00195B	1A00195B	R
561410	COIL ASSY, REVERSING VALVE	6141AR3509A	6141AR3509A	R
649950	CONTROL BOX ASSEMBLY, OUTDOOR	4995A10053J	4995A10053G	R
561411-1	COIL ASSEMBLY, EXPANSION	6141A30003B	6141A30003B	R
561411-2	COIL ASSEMBLY, EXPANSION	6141A30003C	6141A30003C	R
561411-3	COIL ASSEMBLY, EXPANSION	-	6141A30003D	R
566000	SWITCH, PRESSURE	3A02524F	3A02524F	R
658740	REACTOR	5874A90001E	5874A90001E	R
668711	PWB(PCB) ASSEMBLY, MAIN(OUTDOOR)	6871A20204Q	6871A20204R	R
W6200	FILTER(CIRC), EMC	6200JB8007Q	6200JB8007Q	R
668713	PWB(PCB) ASSEMBLY, SUB	6871A20205A	6871A20205A	R
669200	RELAY	6920AP3400A	6920AP3400A	R
W0CZZ-1	CAPACITOR, DRAWING	0CZZA90001C	0CZZA90001C	R
W0CZZ-2	CAPACITOR, DRAWING	0CZZA90001D	0CZZA90001D	R
W0CZZ-3	CAPACITOR, DRAWING	2A00986D	2A00986D	R
738281	MANUAL, SERVICE	3828A20097S	3828A20097S	R
738290	MANUAL, OWNERS	3828A20154Q	3828A20154Q	R
W6640-1	TERMINAL BLOCK	3A00093A	3A00093A	R
W6640-2	TERMINAL BLOCK	4G00103C	4G00103C	R

Outdoor Unit [HPI-C4108(A4UN306FA0)]



Outdoor Unit Parts List [HPI-C4108(A4UN306FA0)]

Location No.	Description	Part No.	Remarks
		HPI-C4108(A4UN306FA0)	
137213-1	PANEL ASSEMBLY, SIDE	1A00202F	R
137213-2	PANEL ASSEMBLY, SIDE	3A02284X	R
263230-3	THERMISTOR ASSEMBLY	6323A20002S	R
263230-6	THERMISTOR ASSEMBLY	6323A20002Z	R
263230-4	THERMISTOR ASSEMBLY	6323AQ3226L	R
263230-5	THERMISTOR ASSEMBLY	6323AQ3226M	R
349600	MOUNT, MOTOR	1A00206B	R
430410	BASE ASSEMBLY, WELD[OUTDOOR]	3041A20022D	R
435300	GRILLE, REAR	1A00208D	R
435311	GRILLE, DISCHARGE	3530A20007B	R
435511	COVER ASSEMBLY, CONTROL(OUTDOOR)	3550AR2886C	R
435512	COVER ASSEMBLY, TOP(OUTDOOR)	3H03266L	R
437210	PANEL ASSY, FRONT SUB	1A00197C	R
447910	BARRIER ASSEMBLY, OUTDOOR	2A01043T	R
546810	MOTOR ASSEMBLY, OUTDOOR	4681A20013Z	R
552112	TUBE ASSEMBLY, CONDENSER IN	5211A20899A	R
552113	TUBE ASSEMBLY, CONDENSER OUT	5211A21035A	R
552115	TUBE ASSEMBLY, MENIFOLD(OUTDOOR)	5211A20419B	R
552116	TUBE ASSEMBLY, REVERSING(OUTDOOR)	5211A10271B	R
552203-2	VALVE, SERVICE	5220A20035A	R
552203-1	VALVE, SERVICE	5220A20034A	R
554031	CONDENSER ASSEMBLY, BENT	5403A20141A	R
554160	COMPRESSOR SET	2520UUBV2AA	R
559010	FAN ASSEMBLY, PROPELLER	1A00195B	R
561410-1	COIL ASSEMBLY, REVERSING VALVE	6141A20010C	R
561410-2	COIL ASSEMBLY, SOLENOID	6141A20013H	R
561410-3	COIL ASSEMBLY, SOLENOID	6141A20013J	R
561411-1	COIL ASSEMBLY, EXPANSION	6141A30003B	R
561411-2	COIL ASSEMBLY, EXPANSION	6141A30003C	R
561411-3	COIL ASSEMBLY, EXPANSION	6141A30003D	R
561411-4	COIL ASSEMBLY, EXPANSION	6141A30003E	R
566000	SWITCH, PRESSURE	3A02524F	R
649950	CONTROL BOX ASSEMBLY, OUTDOOR	4995A10053H	R
658740	REACTOR	5874A90001G	R
668711	PWB(PCB) ASSEMBLY, MAIN(OUTDOOR)	6871A20204S	R
W6200	FILTER(CIRC), EMC	6200JB8008L	R
668713	PWB(PCB) ASSEMBLY, SUB	6871A20205A	R
W0CZZ-2	CAPACITOR, DRAWING	0CZZA90001D	R
W0CZZ-1	CAPACITOR, DRAWING	0CZZA90001G	R
W0CZZ-3	CAPACITOR, DRAWING	2A00986D	R
W6640-1	TERMINAL BLOCK	3A00093A	R
W6640-2	TERMINAL BLOCK	4G00103C	R
669200	RELAY	6920AP3400A	R
738281	MANUAL, SERVICE	3828A20097S	R
738290	MANUAL, OWNERS	3828A20154Q	R

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