

## **Fresh Air Intake Unit**

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# 1. List of functions

Category	Function	ARNU48GBRZ4, ARNU76GB8Z4, ARNU96GB8Z4
Air flow	Air supply outlet	1
	Airflow direction control(left & right)	-
	Airflow direction control(up & down)	-
	Auto swing(left & right)	-
	Auto swing(up & down)	-
	Airflow steps(fan/cool/heat)	2/2/2
	Chaos swing	-
	Chaos wind(auto wind)	-
	Jet cool(Power wind)	-
	Swirl wind	-
Air purifying	Deodorizing filter	X
	Plasma air purifier	X
	Prefilter(washable / anti-fungus)	O
Installation	Drain pump	O
	E.S.P. control*	O
	Electric heater(operation)	X
	High ceiling operation*	-
Reliability	Hot start	O
	Self diagnosis	O
	Soft dry operation	O
Convenience	Auto changeover	-
	Auto cleaning	X
	Auto operation(artificial intelligence)	O(only heat pump or cooling only)
	Auto restart operation	O
	Child lock*	O
	Forced operation	-
	Group control*	O
	Sleep mode	X
	Timer(on/off)	O
	Timer(weekly)*	O
	Two thermistor control*	X
	External On/Off	O
Individual control	Wide wired remote controller (RS2)	PQRCVSL0/PQRCVSL0QW
	Wide wired remote controller (RS2 Plus)	PREMTB001/PREMTBB01
	Premium wired remote controller	PREMTA000/PREMTA000A/PREMTA000B
	Simple wired remote controller	PQRCVCL0Q(W)
	Wired remote controller(for hotel use)	PQRCHCA0Q(W)
	Wireless LCD remote control*	PQWRH(C)Q0FDB
Special function kit	Zone control	-
	CTIE	-
	Electro thermostat	-
	Remote temperature sensor	PQRSTA0
	Group control wire	PZCWRCG3
	Dry contact	PDRYCB000/PDRYCB300/PDRYCB400/PDRYCB500

## Note

1. O : Applied

X : Not Applied

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

2. Some functions can be limited by remote controller.

3. In case of ducted type indoor units using the wireless remote controller, it needs to connect the wired remote controller for received the signal of that.

4. In case of cassette type indoor units, Plasma kit and Auto Elevation Grille functions are not applicable at the same time.

5. \* : These functions need to connect the wired remote controller.

## 2. Specifications

Type			Fresh Air Intake Unit
Model		Unit	ARNU48GBRZ4
Cooling Capacity		kW	14.1
		kcal/h	12,100
		Btu/h	48,100
Heating Capacity		kW	13.5
		kcal/h	11,620
		Btu/h	46,115
Power Input (H / M / L)		W	169 / 126 / 126
Casing			Galvanized Steel Plate
Dimensions (WxHxD)	Body	mm	1,230 x 380 x 590
		inch	48-7/16 x 14-31/32 x 23-7/32
Coil	Rows x Columns x FPI		3 x 13 x 19
	Face Area	m²	0.38
Fan	Type		Sirocco Fan
	Motor Output x Number	W	195 x 1
	Running Current	A	0.78
	Air Flow Rate(H/M/L) (High static Mode-factory set)	m³/min	18.8 / 14.7 / 14.7
		ft³/min	664 / 519 / 519
	External Static Pressure	mmAq(Pa)	18
	Drive		Direct
	Motor type		BLDC
Temperature Control			Microprocessor, Thermostat for cooling and heating
Sound Absorbing Thermal Insulation Material			Foamed polystyrene
Air Filter			Long Life Filter
Safety Device			Fuse
Pipe Connections	Liquid Side	mm(inch)	Ø9.52(3/8)
	Gas Side	mm(inch)	Ø15.88(5/8)
	Drain Pipe(Internal Dia.)	mm	25
Net Weight		kg(lbs)	45(99)
Sound Pressure Levels (H / M / L)		dB(A)	41 / 40 / 40
Sound Power Levels (H / M / L)		dB(A)	62 / 60 / 60
Power Supply		Ø, V, Hz	1, 220 - 240, 50
			1, 220, 60
Refrigerant Control			EEV
Transmission cable		mm²	1.0 ~ 1.5 x 2C

### Note

1. Capacities are based on the following conditions :

Cooling

- Outdoor temp. 33°C[91.4°F]DB/ 28°C[82.4°F]WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero

Heating

- Outdoor temp. 0°C[32°F]DB/ -2.9°C[26.78°F]WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero

2. Capacities are Net Capacities

3. Due to our policy of innovation some specifications may be changed without prior notification .

4. To be added for more available Models

5. Indoor Unit Connection

No	Connection Condition	Combination
1	Fresh Air Intake Units only are connected with outdoor units	1) The total capacity of Fresh Air Intake Unit should be 50~100% of outdoor unit. 2) The max quantity of Fresh Air Intake unit is 4 Units.
2	Mixture connection with general Indoor unit and Fresh Intake Unit	1) The total capacity of indoor units (standard Indoor Unit + Fresh Air Intake Unit) should be 50~100% of out-door unit. 2) The total capacity of Fresh Air Intake Unit should be less than 30% of the total capacity of indoor units.

6. EEV: Electronic Expansion Valve

7. Sound Level is Standard Mode

(for actual High Mode(factory set) condition, Sound Level may exceed the standard level by 1.5dBA)

8. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.

Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard.

Therefore, these values can be increased owing to ambient conditions during operation.

## 2. Specifications

Type			Fresh Air Intake Unit	
Model		Unit	ARNU76GB8Z4	ARNU96GB8Z4
Cooling Capacity		kW	22.4	28
		kcal/h	19,300	24,100
		Btu/h	76,400	95,900
Heating Capacity		kW	21.4	26.7
		kcal/h	18,410	23,000
		Btu/h	73,080	91,360
Power Input (H / M / L)		W	230 / 200 / 200	360 / 230 / 230
Casing			Galvanized Steel Plate	Galvanized Steel Plate
Dimensions (WxHxD)	Body	mm	1,562 x 460 x 688	1,562 x 460 x 688
		inch	61-1/2 x 18-1/8 x 27-3/32	61-1/2 x 18-1/8 x 27-3/32
Coil	Rows x Columns x FPI		3 x 20 x 19	3 x 20 x 19
	Face Area	m²	0.59	0.59
Fan	Type		Sirocco Fan	Sirocco Fan
	Motor Output x Number	W	375 x 1	375 x 1
	Running Current	A	1.36	2.15
	Air Flow Rate(H/M/L) (High static Mode-factory set)	m³/min	23.7 / 13.2 / 13.2	35.7 / 23.7 / 23.7
		ft³/min	837 / 446 / 446	1,261 / 837 / 837
	External Static Pressure	mmAq(Pa)	22	22
	Drive		Direct	Direct
	Motor type		BLDC	BLDC
Temperature Control			Microprocessor, Thermostat for cooling and heating	
Sound Absorbing Thermal Insulation Material			Foamed polystyrene	Foamed polystyrene
Air Filter			Long Life Filter	Long Life Filter
Safety Device			Fuse	Fuse
Pipe Connections	Liquid Side	mm(inch)	Ø9.52(3/8)	Ø9.52(3/8)
	Gas Side	mm(inch)	Ø19.05(3/4)	Ø22.2(7/8)
	Drain Pipe(Internal Dia.)	mm	25	25
Net Weight		kg(lbs)	73(161)	73(161)
Sound Pressure Levels (H / M / L)		dB(A)	45 / 43 / 43	47 / 45 / 45
Sound Power Levels (H / M / L)		dB(A)	70 / 67 / 67	72 / 70 / 70
Power Supply		Ø, V, Hz	1, 220 - 240, 50	1, 220 - 240, 50
			1, 220, 60	1, 220, 60
Refrigerant Control			EEV	EEV
Transmission cable		mm²	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C

### Note

1. Capacities are based on the following conditions :

Cooling

- Outdoor temp. 33°C[91.4°F]DB/ 28°C[82.4°F]WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero

Heating

- Outdoor temp. 0°C[32°F]DB/ -2.9°C[26.78°F]WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero

2. Capacities are Net Capacities

3. Due to our policy of innovation some specifications may be changed without prior notification .

4. To be added for more available Models

5. Indoor Unit Connection

No	Connection Condition	Combination
1	Fresh Air Intake Units only are connected with outdoor units	1) The total capacity of Fresh Air Intake Unit should be 50~100% of outdoor unit. 2) The max quantity of Fresh Air Intake unit is 4 Units.
2	Mixture connection with general Indoor unit and Fresh Intake Unit	1) The total capacity of indoor units (standard Indoor Unit + Fresh Air Intake Unit) should be 50~100% of out-door unit. 2) The total capacity of Fresh Air Intake Unit should be less than 30% of the total capacity of indoor units.

6. EEV: Electronic Expansion Valve

7. Sound Level is Standard Mode

(for actual High Mode(factory set) condition, Sound Level may exceed the standard level by 1.5dBA)

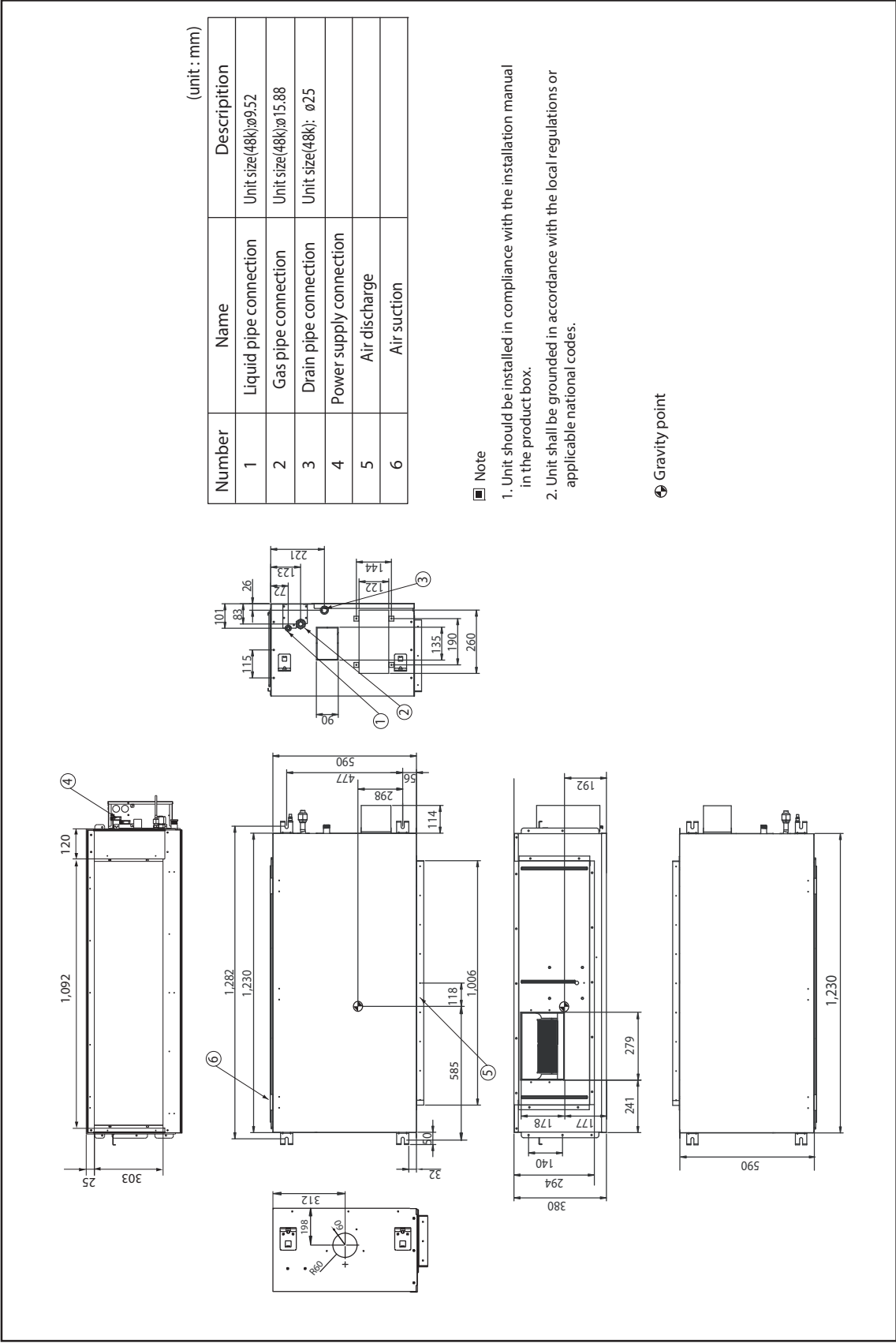
8. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.

Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard.

Therefore, these values can be increased owing to ambient conditions during operation.

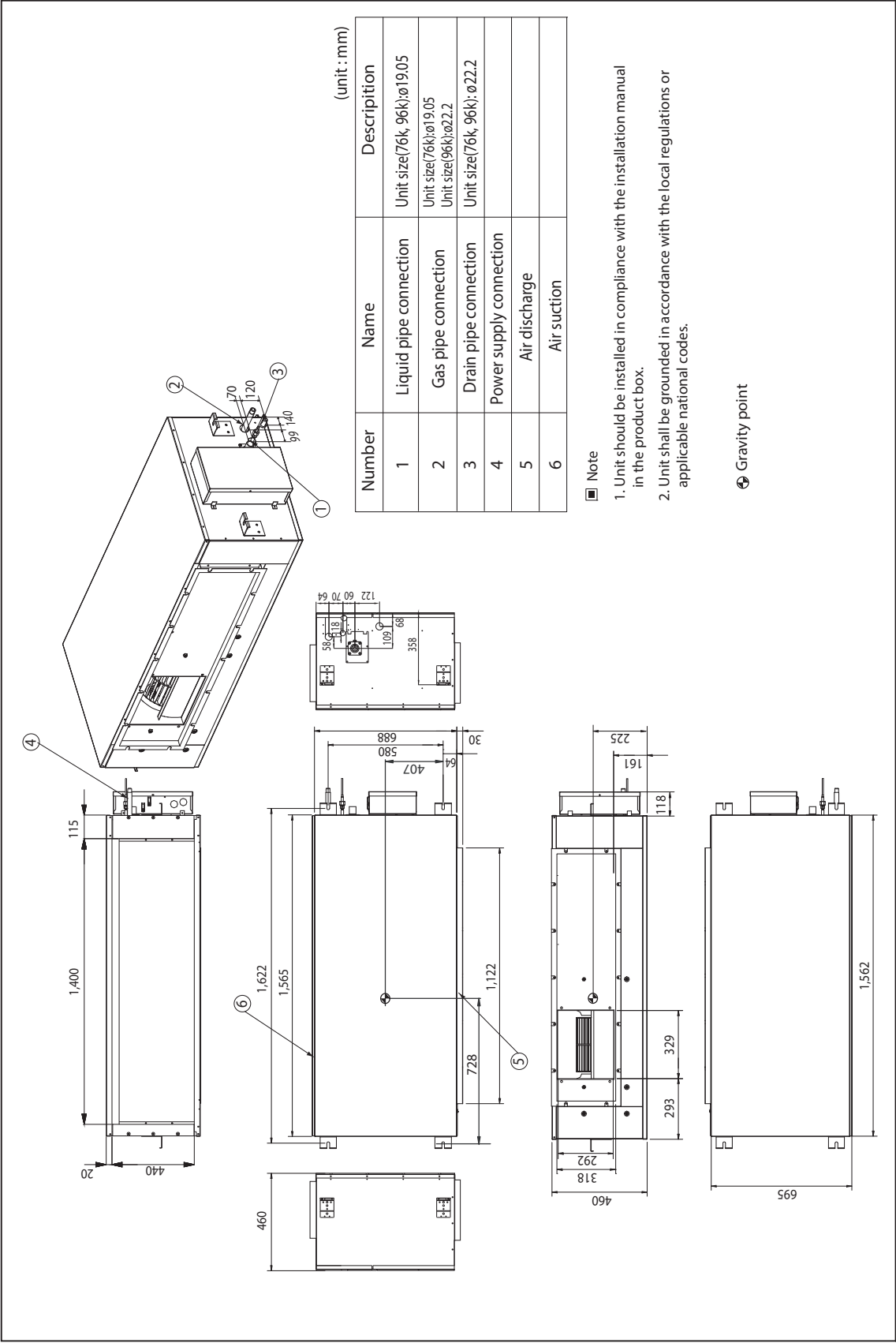
### 3. Dimensions & Gravity point

#### ARNU48GBRZ4

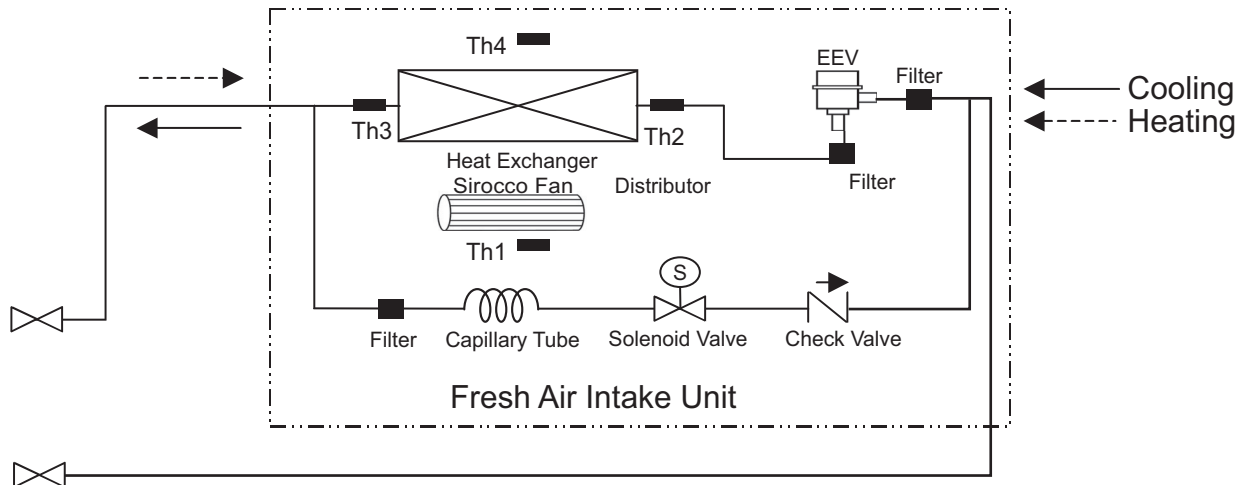


3. Dimensions & Gravity point

ARNU76GB8Z4 / ARNU96GB8Z4



## 4. Piping Diagrams



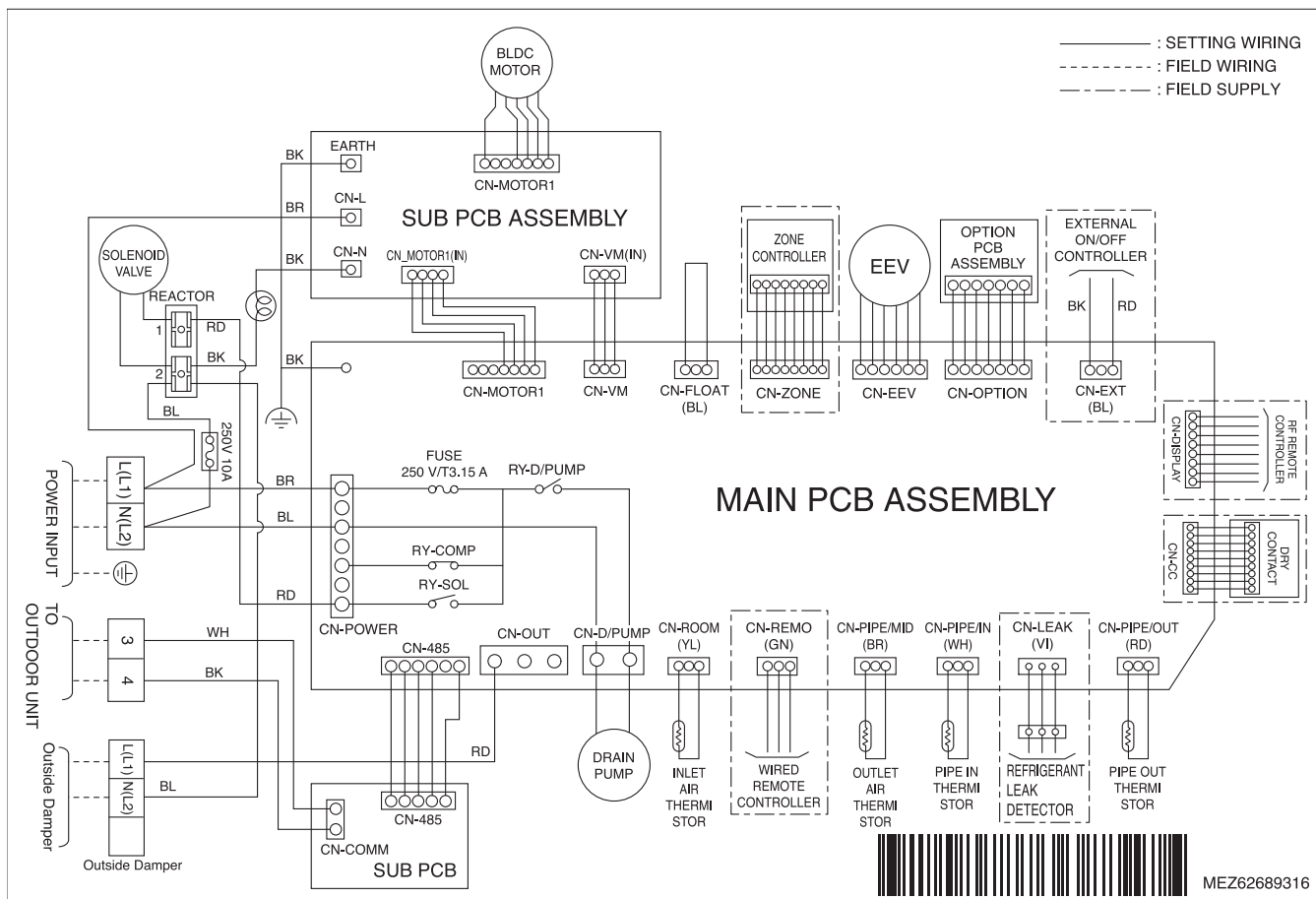
### ◆ Refrigerant pipe connection port diameter

Model	Gas [mm(inch)]	Liquid [mm(inch)]
ARNU48GBRZ4	Ø15.88(5/8)	Ø9.52(3/8)
ARNU76GB8Z4	Ø19.05(6/8)	Ø9.52(3/8)
ARNU96GB8Z4	Ø22.2(7/8)	Ø9.52(3/8)

LOC.	Description
Th1	Inlet Air Thermistor
Th2	Pipe In Thermistor
Th3	Pipe Out Thermistor
Th4	Outlet Air Thermistor

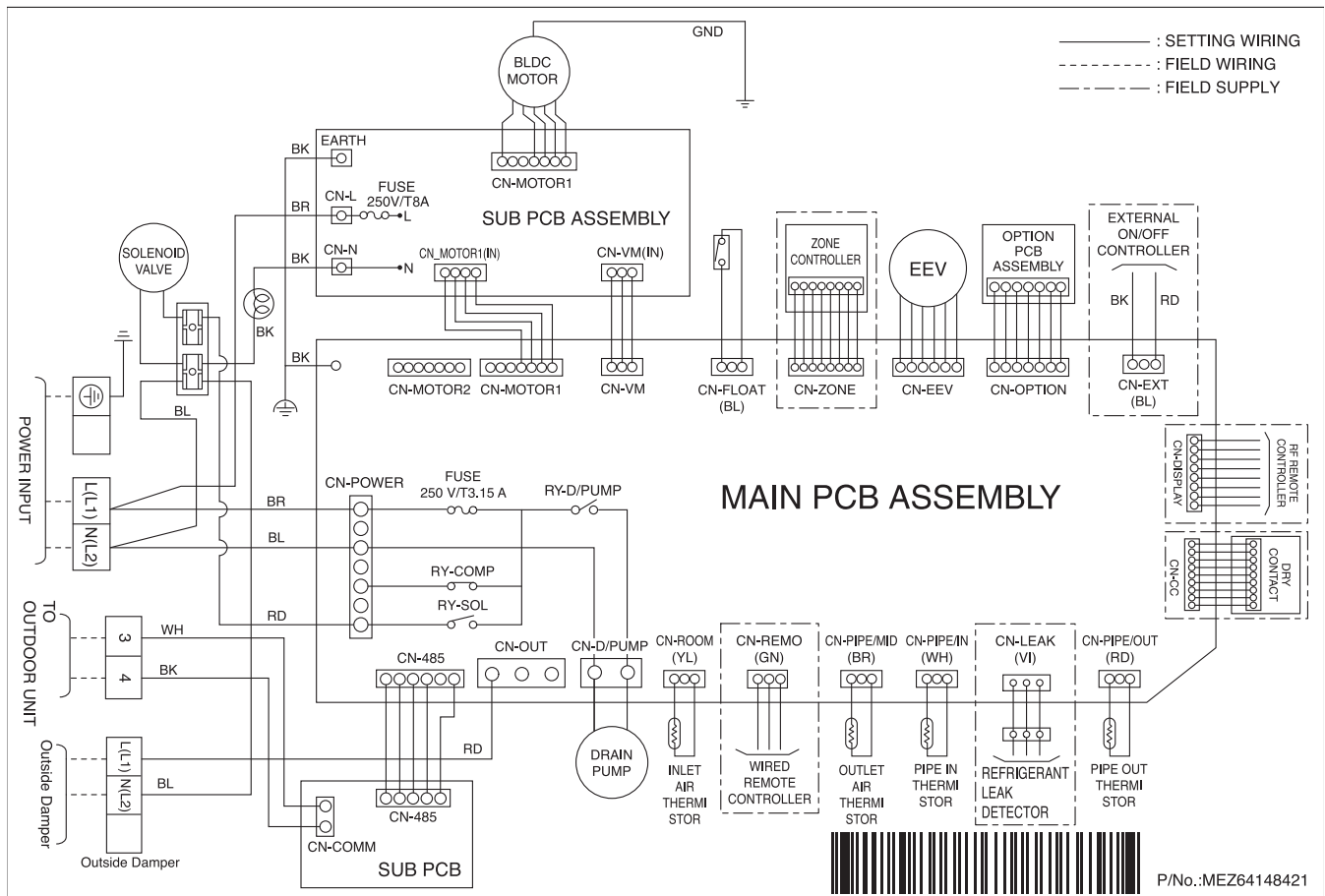
## 5. Wiring Diagrams

### ■ BR Chassis





## ■ B8 Chassis



## 6. Capacity tables and air flow

### 6.1 Capacity tables

#### ■ ARNU48GBRZ4

##### ◆ Cooling

Outdoor air temperature		59°F WB		63°F WB		69°F WB		73°F WB		79°F WB		82°F WB		86°F WB		90°F WB		95°F WB		100°F WB	
		15°C WB		17°C WB		20°C WB		23°C WB		26°C WB		28°C WB		30°C WB		32°C WB		35°C WB		38°C WB	
°F DB	°C DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
70	21	5.1	3.6	5.4	3.2	8.5	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	5.1	4.3	5.2	3.9	8.2	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	25	5.1	5.0	5.2	4.6	8.0	4.4	11.0	4.6	-	-	-	-	-	-	-	-	-	-	-	-
81	27	5.0	5.0	5.1	5.1	7.3	5.1	10.9	4.8	14.0	4.5	-	-	-	-	-	-	-	-	-	-
84	29	4.9	4.9	5.0	5.0	7.0	5.8	10.5	6.5	13.7	4.8	15.5	5.0	-	-	-	-	-	-	-	-
88	31	4.9	4.9	5.0	5.0	6.7	6.5	9.5	6.0	13.3	5.5	15.1	5.3	16.3	4.6	-	-	-	-	-	-
91	33	4.8	4.8	4.9	4.9	6.5	6.3	9.4	6.7	13.0	6.1	14.1	5.6	16.1	4.8	17.7	5.0	-	-	-	-
96	35	4.8	4.8	4.9	4.9	6.4	6.4	9.2	7.4	12.7	6.8	14.0	6.2	15.9	5.5	17.5	5.2	-	-	-	-
99	37	4.7	4.7	4.8	4.8	6.3	6.3	9.1	8.5	11.8	7.4	13.7	6.9	15.3	6.2	17.3	5.6	18.9	5.4	-	-
104	40	4.7	4.7	4.8	4.8	6.2	6.2	9.0	8.8	11.4	8.5	13.4	7.0	15.0	7.2	17.1	6.7	18.7	5.7	21.7	4.6
109	43	-	-	4.7	4.7	6.1	6.1	8.9	8.9	11.0	9.0	13.0	7.5	14.5	8.5	16.5	7.7	18.4	6.7	20.9*	5.5*
113	45	-	-	4.1	4.1	5.7	5.7	8.4	8.4	10.2	9.5	12.2	8.2	13.9	9.2	16.0	8.2	17.1*	7.1*	19.5*	6.0*
118	48	-	-	-	-	5.2	5.2	8.1	8.1	10.5	9.8	11.3	9.2	13.0	9.9	15.2	9.3	16.6*	6.9*	18.5*	6.9*

##### ◆ Heating

Outdoor air temperature		19°F WB	23°F WB	27°F WB	32°F WB	36°F WB	39°F WB	43°F WB	50°F WB	57°F WB
		-7°C WB	-5°C WB	-2.9°C WB	0°C WB	2°C WB	4°C WB	6°C WB	10°C WB	14°C WB
°F DB	°C DB	TC	TC	TC	TC	TC	TC	TC	TC	TC
23	-5	14.7	-	-	-	-	-	-	-	-
27	-3	14.2	14.4	-	-	-	-	-	-	-
32	0	-	14.0	14.2	-	-	-	-	-	-
37	3	-	-	13.6	13.8	14.0	-	-	-	-
45	7	-	-	-	12.3	12.5	12.7	12.6	-	-
52	11	-	-	-	-	10.8	11.0	11.2	11.3	-
59	15	-	-	-	-	-	9.5	9.7	9.9	10.1
64	18	-	-	-	-	-	-	8.7	8.9	9.0
68	20	-	-	-	-	-	-	7.8	8.0	8.1

##### Note

TC: Total Capacity (kW), SHC: Sensible Heat Capacity (kW)WB: Wet Bulb, DB: Dry Bulb

1. The data shown in the table illustrates the supported operating ranges under the following conditions:

- Indoor and Outdoor Unit
- Effective piping length: 7.5 m
- Height differential: 0 m

2. The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.

3. The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

4. \*: Tropical region only.

## 6. Capacity tables and air flow

### ■ ARNU76GB8Z4

#### ◆ Cooling

Outdoor air temperature		59°F WB		63°F WB		69°F WB		73°F WB		79°F WB		82°F WB		86°F WB		90°F WB		95°F WB		100°F WB	
		15°C WB		17°C WB		20°C WB		23°C WB		26°C WB		28°C WB		30°C WB		32°C WB		35°C WB		38°C WB	
°F DB	°C DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
70	21	8.0	5.2	9.5	5.2	12.6	5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	7.9	6.1	9.0	6.1	12.4	5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	25	7.8	7.0	8.7	7.0	12.0	6.7	16.0	6.4	-	-	-	-	-	-	-	-	-	-	-	-
81	27	7.7	7.2	8.8	7.9	11.8	7.5	15.7	6.9	19.6	6.9	-	-	-	-	-	-	-	-	-	-
84	29	7.6	7.4	8.6	8.0	11.5	8.4	15.3	7.7	19.4	7.3	23.5	7.2	-	-	-	-	-	-	-	-
88	31	7.5	7.5	8.5	8.1	11.4	9.4	15.0	8.6	19.2	8.2	23.0	7.7	24.2	7.2	-	-	-	-	-	-
91	33	7.5	7.5	8.4	8.3	11.1	9.7	14.7	9.5	18.9	9.1	22.4	8.5	23.8	7.6	27.0	7.5	-	-	-	-
96	35	7.4	7.4	8.4	8.4	10.9	10.1	14.4	10.4	18.7	9.9	21.5	9.3	23.1	8.3	26.7	8.1	-	-	-	-
99	37	7.4	7.4	8.3	8.3	10.5	10.4	14.0	11.0	18.4	10.8	20.9	10.1	22.9	9.2	26.4	8.7	31.9	8.7	-	-
104	40	7.3	7.3	8.3	8.3	10.5	10.5	13.5	12.1	17.6	12.0	20.8	11.5	22.5	10.5	26.2	10.1	31.2	9.3	34.4	7.2
109	43	-	-	8.1	8.1	10.4	10.4	12.9	12.8	17.0	12.9	20.1	11.9	22.4	11.5	25.2	11.0	30.0	10.3	33.5*	8.7*
113	45	-	-	7.7	7.7	10.1	10.1	12.5	12.5	16.2	13.7	19.5	12.8	21.6	12.1	24.3	11.9	25.2*	9.9*	30.3*	8.9*
118	48	-	-	-	-	9.5	9.5	12.1	12.1	15.7	14.2	18.7	13.4	20.9	12.9	23.6	12.5	21.3*	10.4*	25.3*	9.1*

#### ◆ Heating

Outdoor air temperature		19°F WB	23°F WB	27°F WB	32°F WB	36°F WB	39°F WB	43°F WB	50°F WB	57°F WB
		-7°C WB	-5°C WB	-2.9°C WB	0°C WB	2°C WB	4°C WB	6°C WB	10°C WB	14°C WB
°F DB	°C DB	TC	TC	TC	TC	TC	TC	TC	TC	TC
23	-5	23.8	-	-	-	-	-	-	-	-
27	-3	22.4	22.6	-	-	-	-	-	-	-
32	0	-	21.2	21.4	-	-	-	-	-	-
37	3	-	-	17.9	18.1	18.2	-	-	-	-
45	7	-	-	-	16.1	16.3	16.5	16.7	-	-
52	11	-	-	-	-	14.3	14.5	14.7	14.9	-
59	15	-	-	-	-	-	12.6	12.8	13.0	13.2
64	18	-	-	-	-	-	-	11.4	11.6	11.8
68	20	-	-	-	-	-	-	10.7	10.9	11.1

#### Note

TC: Total Capacity (kW), SHC: Sensible Heat Capacity (kW)WB: Wet Bulb, DB: Dry Bulb

1. The data shown in the table illustrates the supported operating ranges under the following conditions:

- Indoor and Outdoor Unit
- Effective piping length: 7.5 m
- Height differential: 0 m

2. The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.

3. The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

4. \*: Tropical region only.

## 6. Capacity tables and air flow

### ■ ARNU96GB8Z4

#### ◆ Cooling

Outdoor air temperature		59°F WB		63°F WB		69°F WB		73°F WB		79°F WB		82°F WB		86°F WB		90°F WB		95°F WB		100°F WB	
		15°C WB		17°C WB		20°C WB		23°C WB		26°C WB		28°C WB		30°C WB		32°C WB		35°C WB		38°C WB	
°F DB	°C DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
70	21	10.2	6.9	13.2	6.9	17.1	7.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	10.0	8.3	12.8	8.0	16.7	7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	25	9.8	9.0	12.1	9.0	16.1	9.2	22.3	9.0	-	-	-	-	-	-	-	-	-	-	-	-
81	27	9.7	9.2	11.4	10.3	15.6	10.5	21.5	9.5	27.4	9.7	-	-	-	-	-	-	-	-	-	-
84	29	9.5	9.3	11.2	10.6	15.2	11.8	20.9	10.8	26.9	10.1	30.2	9.3	-	-	-	-	-	-	-	-
88	31	9.4	9.4	11.1	10.7	15.2	13.3	20.4	12.1	26.6	11.5	29.8	10.0	33.8	10.1	-	-	-	-	-	-
91	33	9.4	9.4	11.0	10.8	14.8	13.7	20.0	13.5	26.1	12.8	28.0	10.6	33.2	10.6	38.0	11.2	-	-	-	-
96	35	9.3	9.3	11.0	11.0	14.6	14.1	19.5	14.8	25.8	14.1	27.6	11.9	32.1	11.7	37.6	11.7	-	-	-	-
99	37	9.3	9.3	10.9	10.9	14.5	14.3	19.0	15.7	25.4	15.4	26.6	13.1	31.8	13.0	37.0	12.2	44.2	12.9	-	-
104	40	9.2	9.2	10.9	10.9	14.4	14.4	18.7	17.2	24.2	16.8	25.8	15.2	31.2	15.0	36.6	14.3	43.9	13.2	52.3	12.4
109	43	-	-	10.8	10.8	14.3	14.3	18.5	18.0	23.8	17.4	25.0	16.4	29.7	16.0	34.4	15.6	42.4	14.7	50.5*	13.1*
113	45	-	-	10.3	10.3	13.9	13.9	18.0	18.0	22.9	18.2	24.2	17.2	28.8	16.7	33.4	16.2	37.9*	14.9*	45.6*	13.4*
118	48	-	-	-	-	13.4	13.4	17.2	17.2	22.0	19.0	23.4	18.0	27.9	17.8	32.7	17.2	32.3*	15.6*	38.0*	13.7*

#### ◆ Heating

Outdoor air temperature		19°F WB	23°F WB	27°F WB	32°F WB	36°F WB	39°F WB	43°F WB	50°F WB	57°F WB
		-7°C WB	-5°C WB	-2.9°C WB	0°C WB	2°C WB	4°C WB	6°C WB	10°C WB	14°C WB
°F DB	°C DB	TC	TC	TC	TC	TC	TC	TC	TC	TC
23	-5	28.6	-	-	-	-	-	-	-	-
27	-3	28.2	28.4	-	-	-	-	-	-	-
32	0	-	26.5	26.7	-	-	-	-	-	-
37	3	-	-	25.8	26.0	27.7	-	-	-	-
45	7	-	-	-	25.1	25.3	25.0	24.4	-	-
52	11	-	-	-	-	21.7	21.9	22.1	22.5	-
59	15	-	-	-	-	-	19.4	19.6	19.8	19.6
64	18	-	-	-	-	-	-	17.4	17.6	17.9
68	20	-	-	-	-	-	-	16.0	16.2	16.4

#### Note

TC: Total Capacity (kW), SHC: Sensible Heat Capacity (kW)WB: Wet Bulb, DB: Dry Bulb

1. The data shown in the table illustrates the supported operating ranges under the following conditions:

- Indoor and Outdoor Unit
- Effective piping length: 7.5 m
- Height differential: 0 m

2. The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.

3. The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

4. \*: Tropical region only.

## 6. Capacity tables and air flow

### 6.2 Air Flow

#### ■ ARNU48GBRZ4

Setting Value	ESP (mmAq)										
	5	6	8	10	12	14	15	16	17	18	20
70	15.8	-	-	-	-	-	-	-	-	-	-
75	18.7	16.0	-	-	-	-	-	-	-	-	-
80	22.2	19.9	13.6	-	-	-	-	-	-	-	-
85	24.2	23.4	17.8	-	-	-	-	-	-	-	-
87	25.2	24.1	19.6	-	-	-	-	-	-	-	-
90	26.8	25.5	21.9	15.9	-	-	-	-	-	-	-
92	28.1	27.0	22.8	18.2	10.6	-	-	-	-	-	-
94	29.0	27.0	24.0	19.8	13.8	-	-	-	-	-	-
96	30.3	28.5	25.0	22.5	15.8	-	-	-	-	-	-
98	-	29.8	26.5	22.8	17.4	10.7	-	-	-	-	-
101	-	31.8	28.0	24.2	20.5	16.0	-	-	-	-	-
103	-	32.7	29.2	25.9	22.0	16.5	11.8	-	-	-	-
106	-	-	30.9	28.2	24.6	19.9	15.2	11.9	-	-	-
111	-	-	-	30.8	28.3	24.2	20.7	17.7	15.8	14.7	-
116	-	-	-	-	30.7	27.6	25.2	24.2	22.4	18.8	13.4
121	-	-	-	-	-	30.4	29.7	27.2	26.3	25.6	18.7
126	-	-	-	-	-	-	-	28.6	27.6	27.4	25.9
130	-	-	-	-	-	-	-	-	-	-	26.5
135	-	-	-	-	-	-	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-

#### ■ ARNU76GB8Z4, ARNU96GB8Z4

Setting Value	ESP (mmAq)								
	6	9	12	15	18	20	22	23	25
55	25.39	-	-	-	-	-	-	-	-
60	33.65	-	-	-	-	-	-	-	-
65	40.01	30.29	-	-	-	-	-	-	-
70	46.43	35.81	17.31	-	-	-	-	-	-
75	50.93	45.35	35.57	-	-	-	-	-	-
80	55.77	51.91	42.86	26.57	-	-	-	-	-
85	-	54.22	49.74	42.67	20.90	-	-	-	-
88	-	-	52.72	46.44	33.72	-	-	-	-
90	-	-	52.54	48.82	40.09	23.07	-	-	-
92	-	-	-	50.91	44.30	23.46	-	-	-
94	-	-	-	50.90	46.73	39.65	13.87	-	-
96	-	-	-	-	49.84	44.04	24.17	23.63	-
98	-	-	-	-	49.66	48.09	39.72	25.28	14.49
100	-	-	-	-	-	48.23	42.56	40.34	15.47
102	-	-	-	-	-	-	46.41	45.92	38.60
105	-	-	-	-	-	-	-	46.51	45.44

#### Note

Setting Value : ESP value

1. The above table shows the correlation between the air rates and E.S.P.
2. The above table shows the available E.S.P. range.
3. If the E.S.P. of the installed indoor is less than the lowest value(as mention in the table), indoor components can be failed.

## 7. External Static Pressure(E.S.P) & Air Flow

### ◆ ARNU48GBRZ4

Capacity (Btu/h)	Mode		Set value	Standard ESP (mmAq(Pa))	CMM	Lower Limit of External Static Pressure(mmAq(Pa))	Upper Limit of External Static Pressure(mmAq(Pa))
48k	High (factory set)	High	116	18	18.8	10(98)	20(196)
		Mid	110		14.7		

### ◆ ARNU76GB8Z4, ARNU96GB8Z4

Capacity (Btu/h)	Mode		Set value	Standard ESP (mmAq(Pa))	CMM	Lower Limit of External Static Pressure(mmAq(Pa))	Upper Limit of External Static Pressure(mmAq(Pa))
76k	High (factory set)	High	95	22	23.7	12(118)	25(245)
		Mid	93		13.2		
96k	High (factory set)	High	97	22	35.7	12(118)	25(245)
		Mid	95		23.7		

### Note

The above table shows the available E.S.P. range.

## 8. Electric Characteristics

Units					PowerSupply		IFM		PI	
Model	Type	Hz	volts	VoltageRange	MCA	MFA	kW	FLA	Cooling	Heating
ARNU48GBRZ4	BR	50	220-240	Max: 264 Min: 198	1.5	15	0.20	0.78	169	169
ARNU76GB8Z4	B8				2.7	15	0.38	1.36	230	230
ARNU96GB8Z4	B8				3.7	15	0.38	2.15	360	360
ARNU48GBRZ4	BR	60	220	Max: 242 Min: 198	1.5	15	0.20	0.78	169	169
ARNU76GB8Z4	B8				2.7	15	0.38	1.36	230	230
ARNU96GB8Z4	B8				3.7	15	0.38	2.15	360	360

### Symbols

**MCA** : Minimum Circuit Amperes (A)

**MFA** : Maximum Fuse Amperes (A)

**kW** : Fan Motor Rated Output (kW)

**FLA** : Full Load Amperes (A)

**IFM** : Indoor Fan Motor

**PI** : Maximum Power Input (W)

### Note

1. Voltage range

Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above the listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA/MFA

$MCA = 1.25 \times FLA$

$MFA \leq 4 \times FLA$

(Next lower standard fuse rating. Minimum 15A)

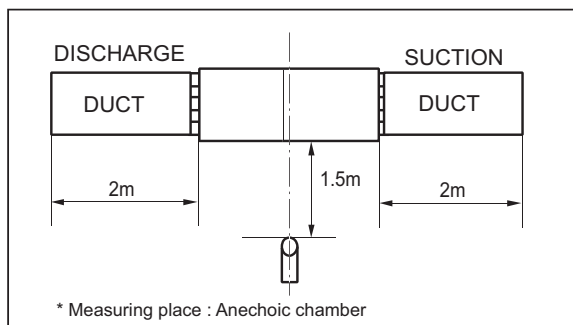
4. Select wire size based on the MCA

5. Instead of fuse, use Circuit Breaker.

## 9. Sound Levels

### 9.1 Sound Pressure Levels

#### Overall

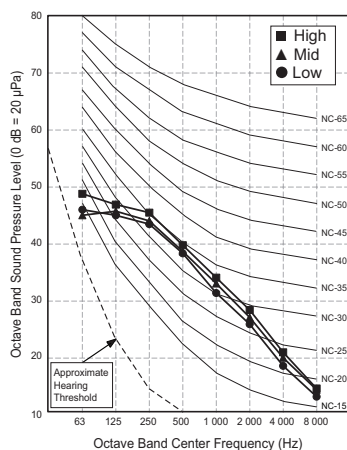


#### Note

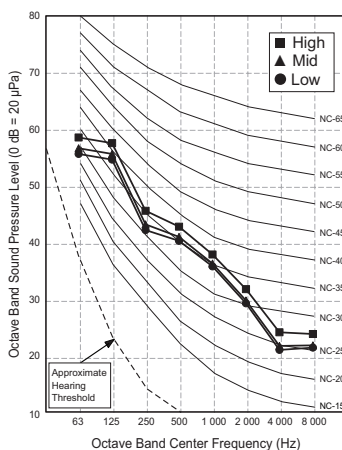
1. Sound measured at some distance away from the center of the unit.
2. Data is valid at free field condition.
3. Reference acoustic pressure 0dB = 20μPa.
4. Data is valid at nominal operation condition.  
Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
5. Sound levels can be increased in accordance with installation and operating conditions. (Static pressure mode, used air guide, Room target temperature setting, etc)
6. Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment is installed.

Model	Sound Pressure Levels [dB(A)]		
	H	M	L
ARNU48GBRZ4	41	40	40
ARNU76GB8Z4	45	43	43
ARNU96GB8Z4	47	45	45

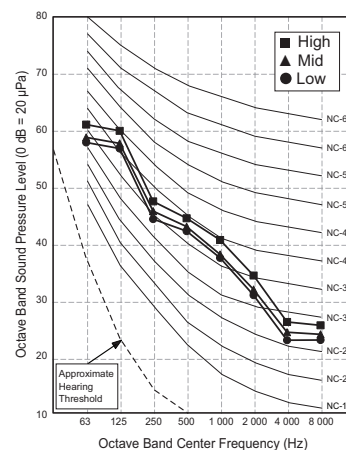
ARNU48GBRZ4



ARNU76GB8Z4



ARNU96GB8Z4





## 9. Sound Levels

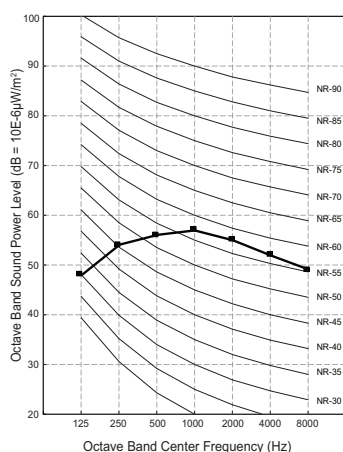
### 9.2 Sound Power Levels

#### Note

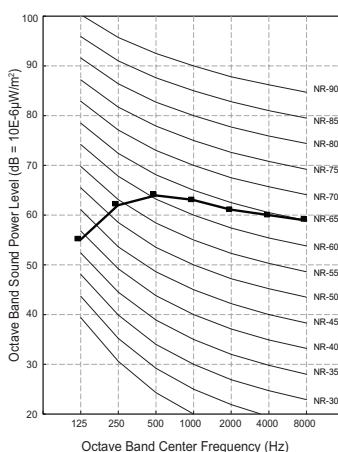
- Data is valid at diffuse field condition
- Data is valid at nominal operating condition
- Sound level can be increased in static pressure mode or used air guide.
- Sound power level is measured on the rated condition in the reverberation rooms.
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
- Reference acoustic intensity  $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$

Model	Sound Power Levels [dB(A)]
	High Fan Speed
ARNU48GBRZ4	62
ARNU76GB8Z4	70
ARNU96GB8Z4	72

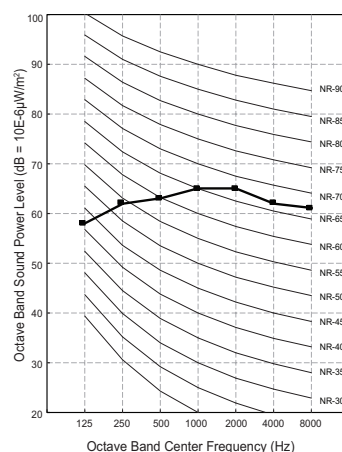
ARNU48GBRZ4



ARNU76GB8Z4



ARNU96GB8Z4

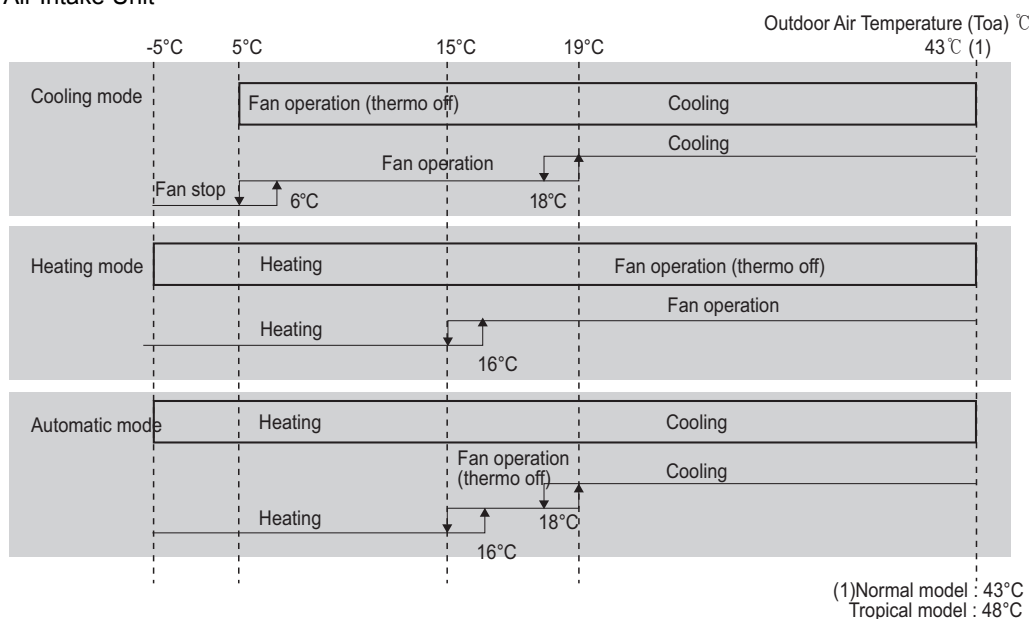


## 10. Operation Details

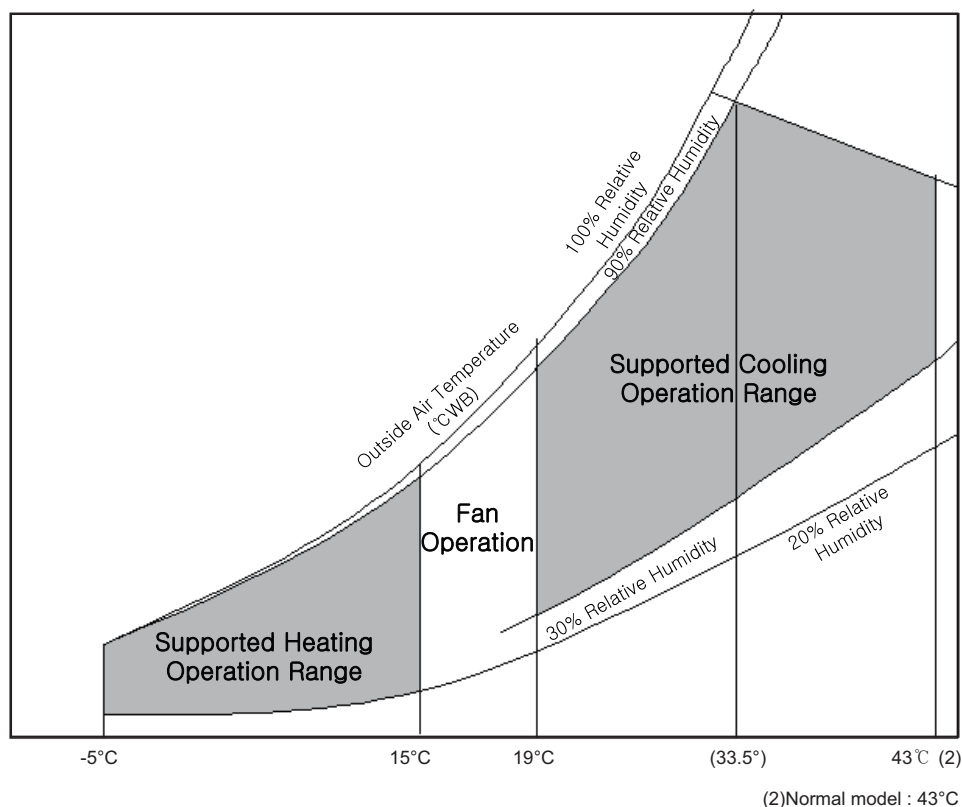
### ◆ Operation range

FAU will operate in the below range. Hot outdoor temperature (over 43°C) or cold outdoor temperature (under -5°C) will make customer feel uncomfortable because FAU outlet discharge temperature might be not enough controlled in that region.

\* FAU : Fresh Air Intake Unit

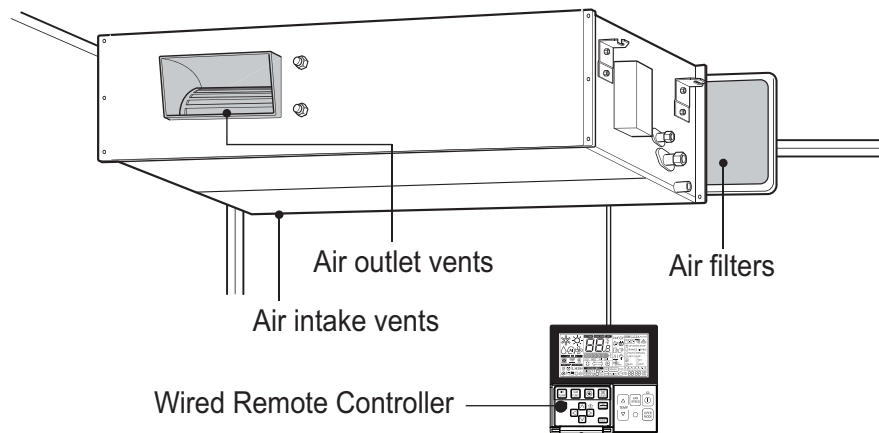


### ◆ Usage Limitations



## 11. Installation

- Please read the instruction sheets completely before installing the product.
- When the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring standards.
- Teach the customer the operation and maintenance procedures, using the operation manual. (air filter cleaning, temperature control, etc.)



# 11. Installation

## 11.1 Installation Limit

Read completely, then follow step by step.

### 1. Fresh Air Intake Unit Combination

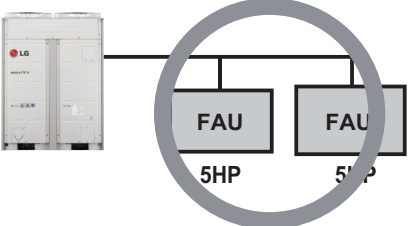
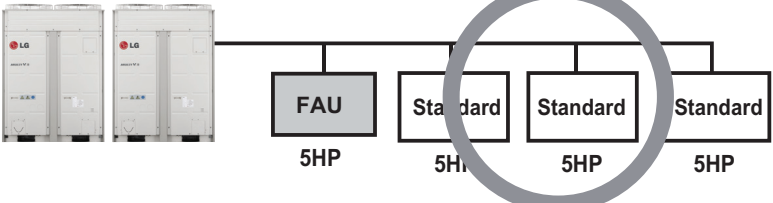
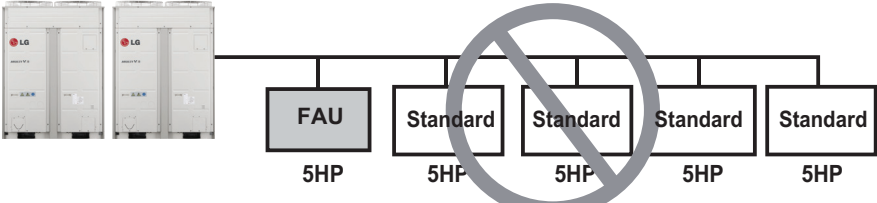
No	Connection Condition	Combination
1	Only Fresh Air Intake Unit installation	1. The total capacity of Fresh Air Intake Unit should be 50~100% of outdoor unit. 2. The max quantity of Fresh Air Intake unit is 4 Units.
2	Mixture Installation with standard indoor units and Fresh Intake Units	1. The total capacity of indoor units (standard Indoor Unit + Fresh Air Intake Unit) should be 50~100% of outdoor unit. 2. The total capacity of Fresh Air Intake Units should be less than 30% the total capacity of indoor units.

### ⚠ CAUTION

Failure to comply with the above connection conditions for installation, it can cause cooling & heating capacity down.

### 2. Connection of the Outdoor Unit

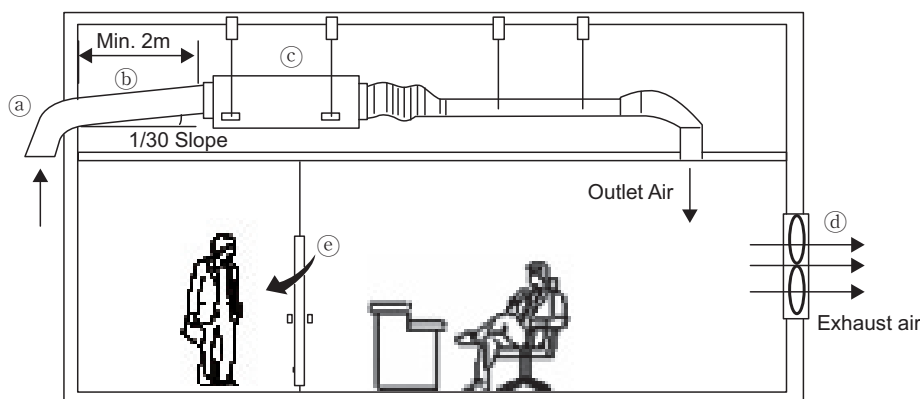
- It is possible to connect Heat Pump Models. It could not be connected to Heat Recovery Models.
- The total capacity of indoor units could not exceed 100% of outdoor unit.

<b>Only Fresh Air Intake Unit install</b>	<b>Outdoor : 10HP</b> 
<b>Mixture Install</b>	<b>Outdoor : 20HP</b> 
<b>Wrong Install</b>	<b>Outdoor : 20HP</b> 

\* FAU : Fresh Air Intake Unit, Standard: Standard Indoor Unit

# 11. Installation

## 3. Installation of intake air duct



### (a) Inlet Hood

Inlet Hood should be installed such that no water enter inside the unit

### (b) Intake Air Duct

The Intake Air Duct must have down-slope about 1/30.

The length of Intake Air Duct should be longer than 2m.

### (c) Fresh Air Intake Unit

If wired remote controller is not connected, it will display strange value to the room temperature

### (d) Exhaust Fan

Fresh Air Intake Unit will make room the positive pressure.

Exhaust fan should be installed to maintain the room pressure.

### (e) Door

It would be possible to raise in the room air pressure because of Fresh Air Intake Unit.

In that case, the door could hurt someone in front of door.

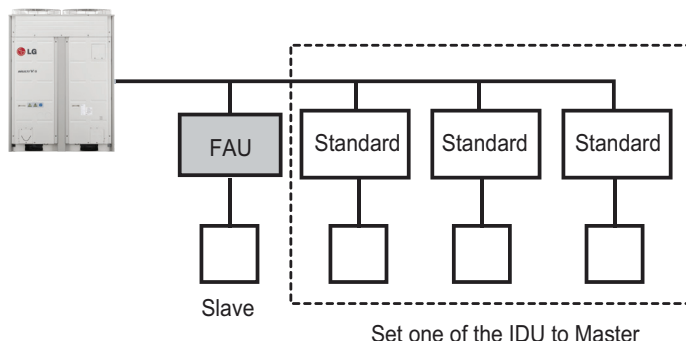
So be careful of the positive pressure to design the door.

## 4. The Control System

### 1) In case of connecting with Standard indoor units, Standard indoor unit should be a master unit.

Separate Fresh Air Intake Unit with Standard indoor units

Set only one Standard indoor units to Master,

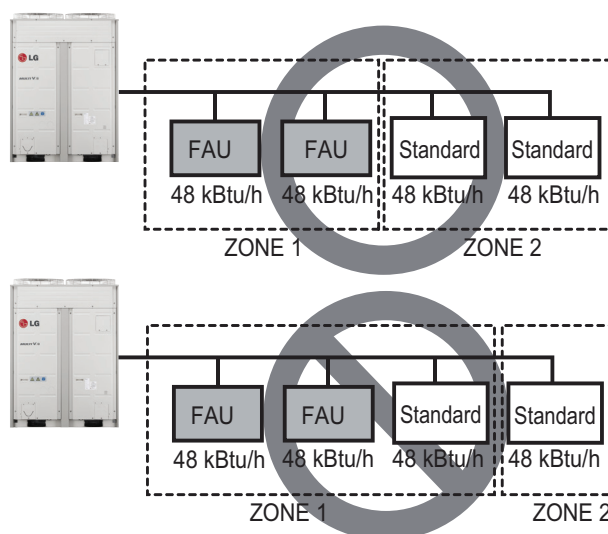


\* FAU : Fresh Air Intake Unit  
Standard: Standard Indoor Unit

### 2) In case of using central remote controller, mixture of indoor units and Fresh Air Intake Unit in same zone is not possible.

Separate Fresh Air Intake Unit zone with Standard indoor units zone.

# 11. Installation



## 5. Cycle check and SVC

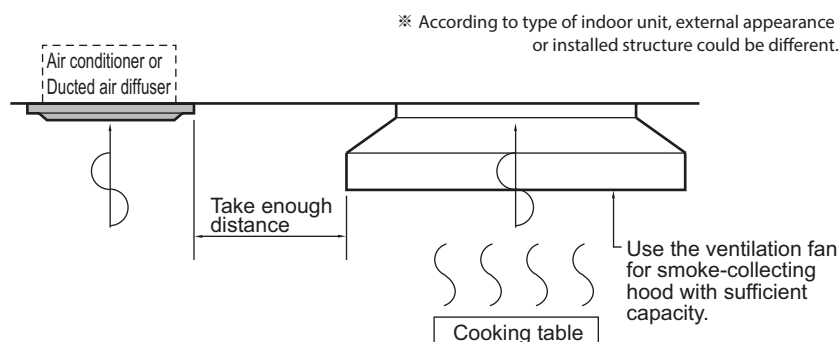
- For Fresh Intake Unit cycle check and SVC, LG MV 5.8 or later version should be used.

## 11.2 Selection of the best location

- The place where room air circulation is good.
- Do not install the unit near the door.
- There should not be any obstacles to the air circulation or installation. Ensure the spaces from the wall, ceiling, or other obstacles.
- The place where the indoor unit can be connected with outdoor unit easily.
- The place where the unit is leveled.
- The place shall allow easy water drainage.
- The place where bear a load exceeding four times of the indoor unit weight.
- The mounting ceiling or wall should be solid enough to protect it from the vibration.
- The place where the unit is not affected by an electrical noise.
- The place where noise prevention is taken into consideration.
- The place where the maintenance space for product is sufficient. (The servicing inspection hole of the ceiling should be larger than the indoor unit.)
- The selection of the servicing inspection hole should be approved by the customer.
- There should not be any heat source or steam near the unit. Avoid the following installation location.
  - 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;

## 11. Installation

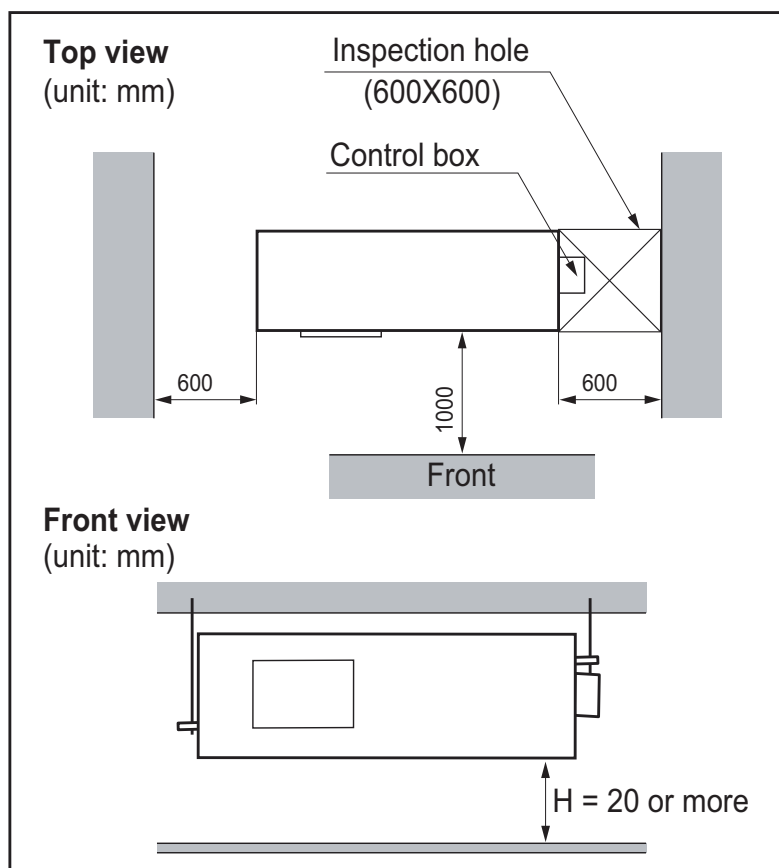
- Make sure that ventilation fan is enough to cover all noxious gases from this place.
- Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.



2. Avoid installing 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.

### ⚠ CAUTION

- If the temperature rise above 30°C or the humidity rise above RH 80%, the dew-protective kit should be equipped or use additional insulation to the indoor unit body.
  - "Dew Protective kit" is sold separately.
  - Use the glass wool material or polyethylene foam and it make sure to be thick of 10mm at least.



## 11. Installation

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### CAUTION

In case that the unit is installed near the sea, the installation parts may be corroded by salt, The installation parts (and the unit) should be taken appropriate anti-corrosion measures.

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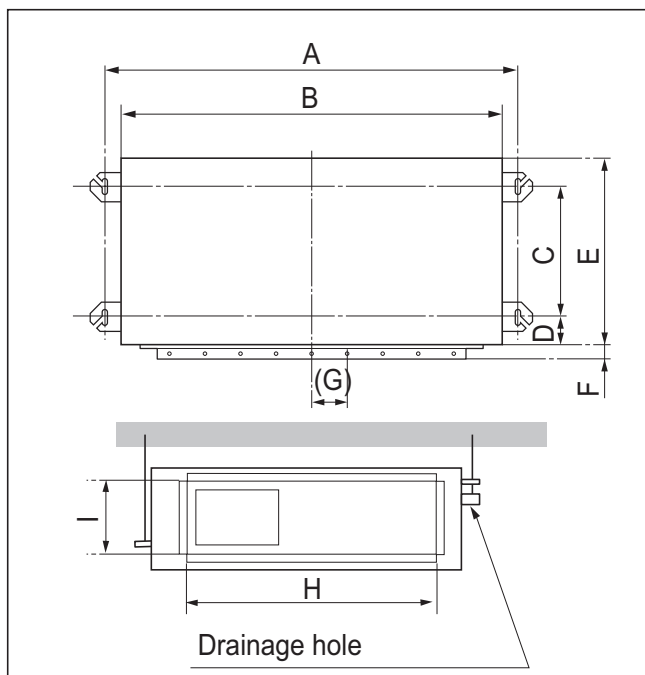
## 11. Installation

### 11.3 Ceiling dimension and hanging bolt location

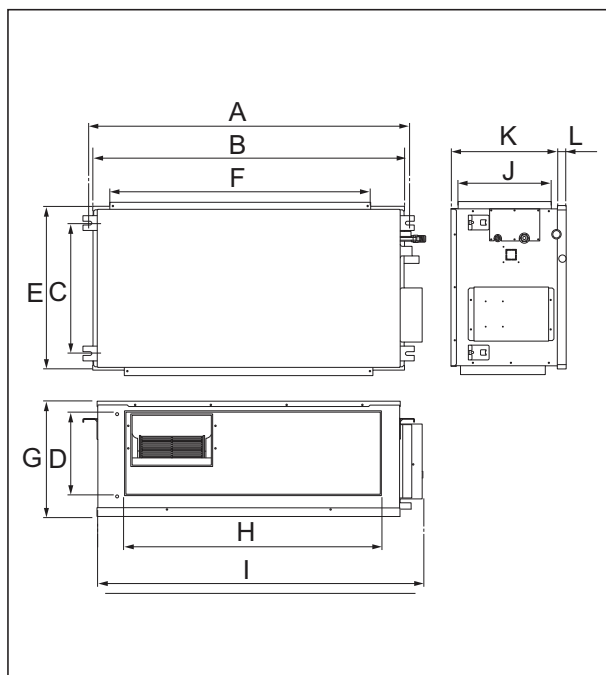
#### ■ Installation of Unit

Install the unit above the ceiling correctly.

**BR Chassis (48k)**



**B8 Chassis (76/96k)**



Capacity(Btu/h)	Dimension (mm)								
	A	B	C	D	E	F	(G)	H	I
<b>BR Chassis(48k)</b>	1282	1230	477	56	590	30	120	1006	294

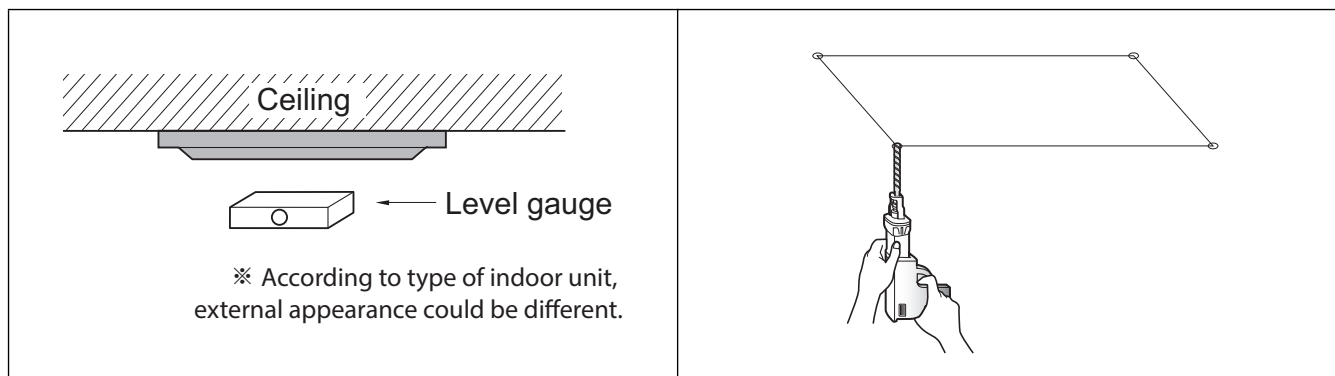
Capacity(Btu/h)	Dimension (mm)											
	A	B	C	D	E	F	G	H	I	J	K	L
<b>B8 Chassis(76/96k)</b>	1622	1565	580	292	695	1400	460	1122	1680	390	445	15

#### 11.3.1 Indoor Unit Installation

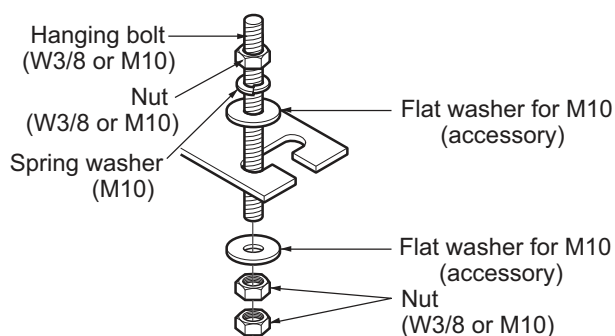
##### ⚠ CAUTION

- During the installation, care should be taken not to damage electric wires.
- In case of using a drain pump, install the unit horizontally using a level gauge.

# 11. Installation



1. The dimensions of the paper model for installation are the same as those of the ceiling opening dimensions.
2. Select and mark the position for fixing bolts and piping hole.
3. Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
4. Drill the hole for anchor bolt on the wall or 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.
5. In case of ducted type unit, apply a joint-canvas between the unit and duct to absorb unnecessary vibration.

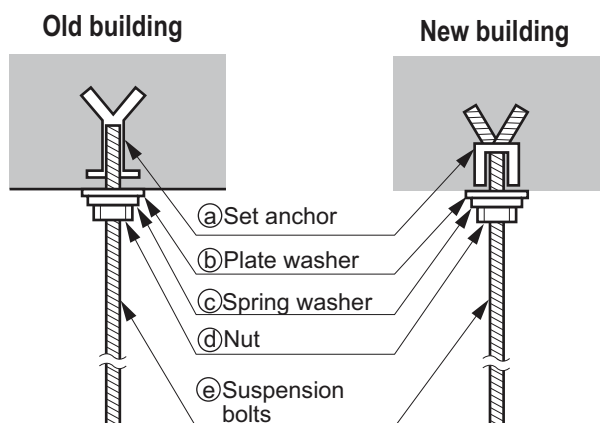


- The following parts are local purchasing.

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.



## 11. Installation

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### 11.4 Wiring Connection

#### 11.4.1 General instructions

- All field supplied parts and materials, electric works must conform to local codes. Use copper wire only.
- Follow the **"WIRING DIAGRAM"** attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down the power supply to the entire system must be installed.

#### CAUTION

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

- Never fail to have separate power specially for the air conditioner.
- Provide a circuit breaker switch between power source and the unit.
- Confirm the Specification of power source.
- Confirm that electrical capacity is sufficient.
- Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- Confirm that the cable thickness is as specified in the power sources specification.  
(Particularly note the relation between cable length and thickness.)
- Do not install the leakage breaker in a place which is wet or moist.  
Water or moist may cause short circuit.
- 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.

#### 11.4.2 Wiring connection

- Connect the wires to the terminals on the control board and visually 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.
- In case of the system with multiple indoor units, mark each indoor unit as unit A, unit B, etc and be sure the terminal board wiring to the outdoor unit and indoor units are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.

#### 11.4.3 Clamping of cables

1. Arrange 2 power cables on the control panel.
2. First, fasten the steel clamp with a screw to the inner boss of control panel.
3. For connecting of communication (transmission) cable, put the 0.75mm<sup>2</sup> cable(or thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel. In case that communication (transmission) cable is not needed to connect, fix the other side of the clamp with a screw strongly.

## 11. Installation

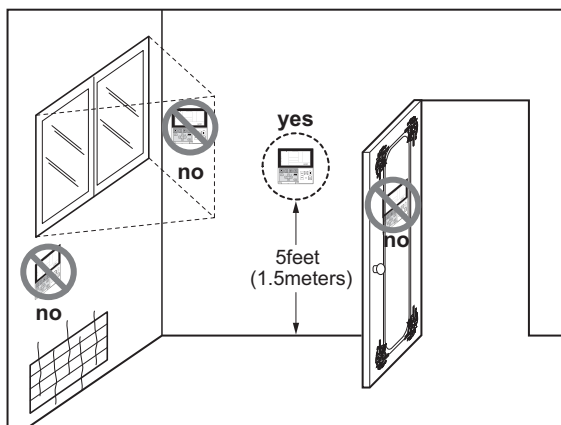
### **! WARNING**

- Make sure that the screws of the terminal are fixed tightly.
- 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.)
- Make sure to attach the sealing material or (field supplied) to hole of wiring to prevent the infiltration of foreign particle from outside. Otherwise a short-circuit may occur inside the electric parts box.
- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the cover on the electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box cover firmly. When attaching the electric parts box cover, make sure no wires get caught in the edges. Pass wiring through the wiring through holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units, and other electrical wiring do not pass through the same locations outside of the unit, separating them properly, otherwise electrical noise (external static) could cause product malfunction.

### 11.4.4 WIRED REMOTE CONTROLLER INSTALLATION

Since the room temperature sensor is in the remote controller, the remote controller box should be installed in a place away from direct sunlight, high humidity and direct supply of cold air to maintain proper space temperature.

Install the remote controller about 5ft(1.5m) above the floor in an area with good air circulation at an average temperature.



#### • Do not install the remote controller where it can be affected by :

- Drafts, or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes and chimneys.
- Uncontrolled areas such as an outside wall behind the remote controller.
- This remote controller is equipped with a seven segment LED. display. For proper display of the remote controller LED's, the remote controller should be installed properly. (The standard height is 1.2~1.5 m from floor level.)

## 11. Installation

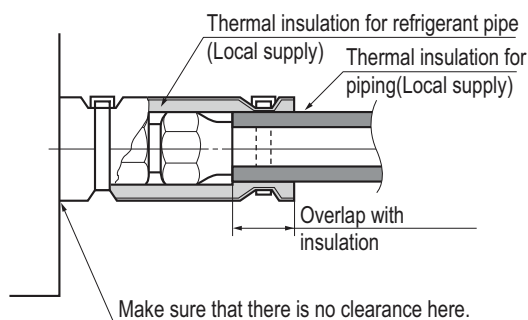
### 11.5 Connecting the refrigerant piping

#### ■ Refrigerant piping work

To detail information for connecting the refrigerant pipes, please refer to the installation manual included with product.

#### ■ Piping insulation work

- Perform heat insulation work completely on both gas and the liquid pipe. Because improper insulation will result condensate formation over pipe.
- Use the heat insulation material for the refrigerant piping which has an excellent heat resistance (over 120°C (248°F)).
- Precautions in high humidity circumstance
  - This air conditioner has been tested according to the "KS Conditions" and confirmed.
  - If it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C(73°F)), water drops are liable to fall. In this case, add heat insulation material according to the following procedure.



- Heat insulation material : Adiabatic glass wool with thickness of 10~20mm (13/32 ~13/16 inch).
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

#### ⚠ CAUTION

- Make sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

### 11.6 Indoor Unit Drain Piping

#### **Important**

- The drain pipe should be at least equal in size to drain conduit of the indoor unit.
- The drain pipe is thermally insulated to prevent the formation of condensation inside the pipe.
- The drain up mechanism should be fitted before the indoor unit is installed and when the electricity has been connected a little of water should be added to the drain pan and the drain pump to check and see if it is functioning correctly.
- All connections should be secure. (Special care is needed with PVC pipe)

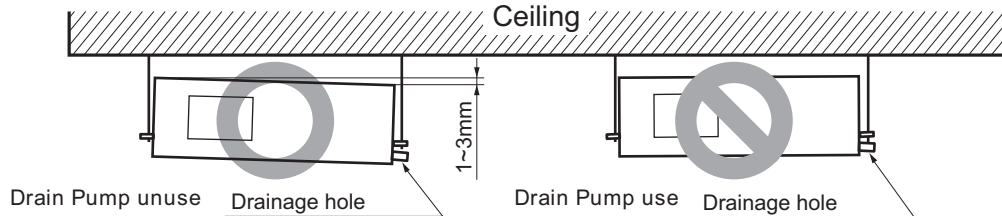
# 11. Installation

## ⚠ 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.

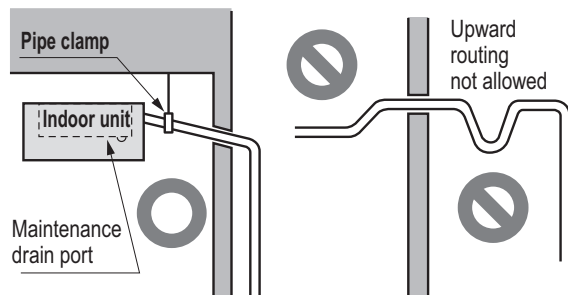
Front of view

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

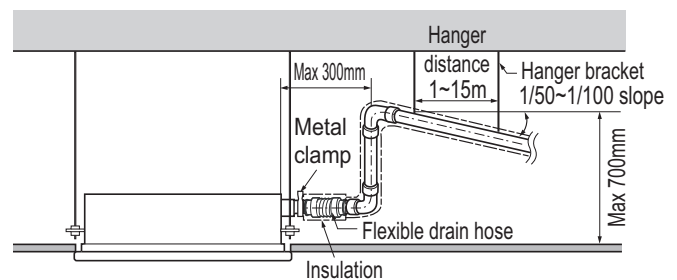


## 11.6.1 Drain piping of indoor unit with drain pump

- 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 force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32 mm (1-1/4 inch).
  - Piping material: Use the Polyvinyl chloride pipe, 25 mm (1 inch) pipe fittings.

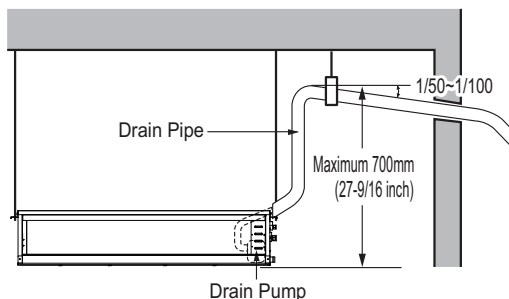


※ According to type of indoor unit, external appearance could be different.

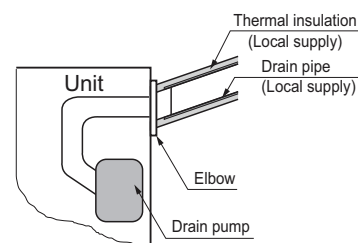


※ According to type of indoor unit, external appearance could be different.

- Possible drain head height is upto 700 mm (27-6/19 inch). So the drain head should be installed below 700 mm (27-6/19 inch).
- Be sure to install heat insulation on the drain piping.
  - Heat insulation material: Polyethylene foam with thickness more than 8 mm (5/16 inch).



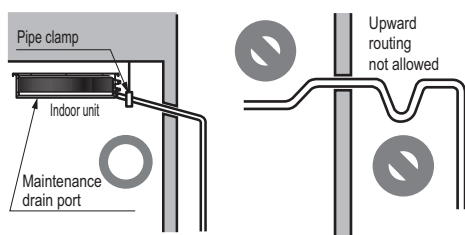
※ According to type of indoor unit, external appearance could be different.



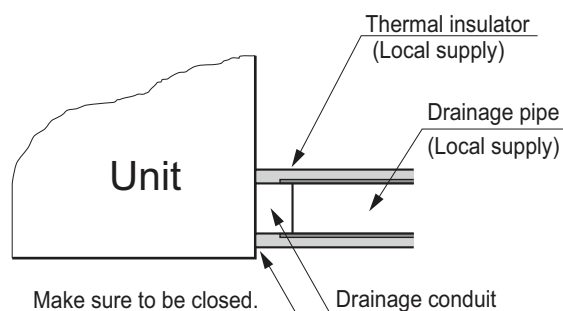
## 11. Installation

### 11.6.2 Drain pipe connection without drain pump

- 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 force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit and drain piping fittings should be referenced from 'Specifications' of each models.
  - Piping material: Use the Polyvinyl chloride pipe.
- Be sure to install heat insulation on the drain piping.
  - Heat insulation material: Polyethylene foam with thickness more than 8 mm (5/16 inch).



\* U-trap is not required for low static model in which the external static pressure is below 50 pa(5mm Aq)



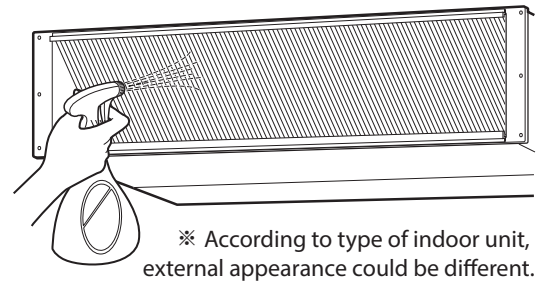
## 11. Installation

### 11.6.3 Method of Drainage test

#### ◆ Drainage test of indoor unit

Use the following procedure to test the drainage.

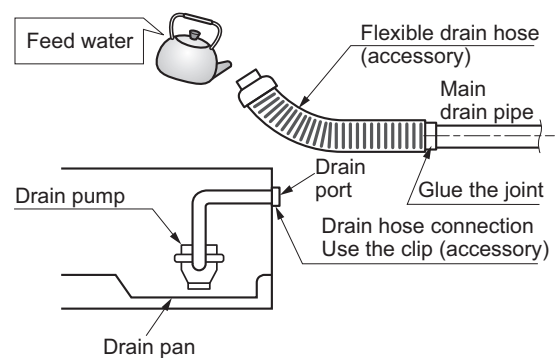
1. In case that there are air filter, remove the air filter first.
2. Spray one or two glasses of water on the evaporator.
3. Check the drainage. Ensure that water flows through drain hose of indoor unit without any leakage.



#### ◆ Drainage test of indoor unit with drain pump

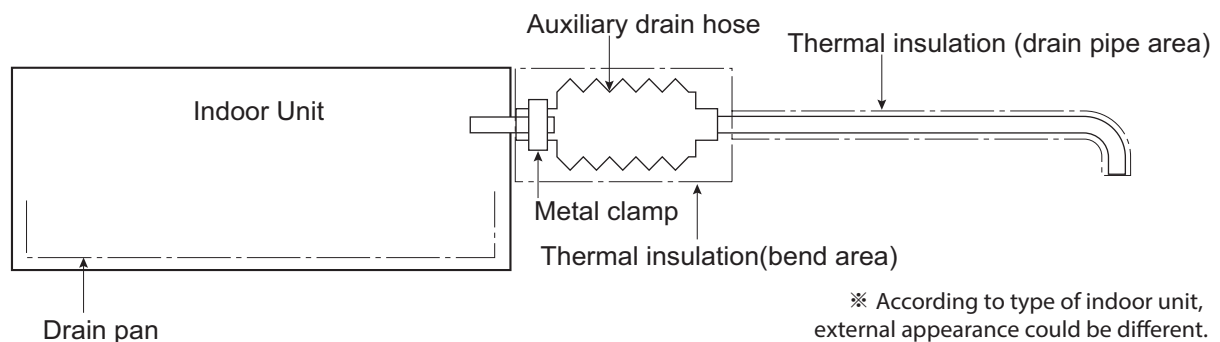
Use the following procedure to test the drain pump operation.

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



### 11.6.4 Connection of an auxiliary(flexible) drain hose

- To connect drain pipe to the drain socket on the indoor unit, an auxiliary flexible drain hose should be used. auxiliary flexible drain hose allows that the drain pipe can be connected to the socket without breaking by excessive strain.



#### ⚠ CAUTION

- The supplied flexible drain hose should not be curved, neither screwed. The curved or screwed hose may cause a leakage of water.
- It is need to insulate the auxiliary drain hose with thermal insulation material.



## 11. Installation

### 11.6.5 Ground drain piping

- It is standard work practice to make connections to the main pipe from above. The pipe down from the combination should be as large as possible.
- The pipe work should be kept as short as possible and the number of indoor units per group kept to a minimum.
- Face the vent pipe opening facing downward to keep foreign matter from penetrating the system.

