Part 4
Installation

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1. Outdoor Unit

1.1 RMX140J

1 SAFETY PRECAUTIONS

- Read these SAFETY PRECAUTIONS carefully to ensure correct installation.
- This manual classifies the precautions into WARNINGS and CAUTIONS.
  Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNINGS	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTIONS	Failure to follow any of CAUTION may in some cases result in grave consequences.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish an earth connection.	⃠	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNINGS

- Installation should be left to the dealer or another professional.
  Improper installation may cause water leakage, electrical shock, or fire.
- Install the air conditioner according to the instructions given in this manual.
  Incomplete installation may cause water leakage, electrical shock, or fire.
- Be sure to use the supplied or specified installation parts.
  Use of other parts may cause the unit to come to lose, water leakage, electrical shock, or fire.
- Install the air conditioner on a solid base that can support the unit's weight.
  An inadequate base or incomplete installation may cause injury in the event the unit falls off the base.
- Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice.
  Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
- For wiring, use a cable long enough to cover the entire distance with no connection.
  Do not use an extension cord. Do not put other loads on the power supply, use a dedicated power circuit.
  (Failure to do so may cause abnormal heat, electric shock or fire.)
- Use the specified types of wires for electrical connections between the BP and outdoor units (indoor and BP units).
  Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating or fire.
- After connecting interconnecting and supply wiring be sure to shape the cables so that they do not put undue force on the electrical covers or panels.
  Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, or fire.

⚠ WARNINGS

- When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R22), such as air.
  (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury.)
- When a unit is installed in a small room, it is necessary to take measures so that the leaked refrigerant amount does not exceed the limit even if it leaks. As for the measures to prevent the leak from not exceeding the limit, please consult with your distributor. If the leaked amount exceeds the limit, it may cause an oxygen deficiency accident.
- If any refrigerant has leaked out during the installation work, ventilate the room.
  (The refrigerant produces a toxic gas if exposed to flames.)



- After all installation is complete, check to make sure that no refrigerant is leaking out.
  (The refrigerant produces a toxic gas if exposed to flames.)



⚠ CAUTIONS

- Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth.
  Incomplete earth may cause electrical shock. A high surge current from lightning or other sources may cause damage to the air conditioner.



- Be sure to install an earth leakage breaker.
  Failure to do so may cause electrical shock.
- Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage.
  If the gas leaks and builds up around the unit, it may catch fire.
- Establish drain piping according to the instructions of this manual.
  Inadequate piping may cause flooding.



- Do not install the air conditioner in places such as the following:
  (a) Where there is mist of mineral oil, oil spray or vapor for example a kitchen.
  Plastic parts may deteriorate, and cause them to fall out or water to leak.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corrosion of copper pipes or soldered parts may cause the refrigerant to leak.
  (c) Where there is machinery which emits electromagnetic waves.
  Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
  (d) Where flammable gases may leak, where carbon fiber or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled.
  Such gases may cause a fire.

- **The refrigerant-charge-less specifications are used. (Do not conduct additional charging.)**
- **The horizontal coupling and stacking are not allowed for installation.**
- **For installations of BP unit and indoor unit, please refer to the installation manuals attached to each unit.**

2 PRECAUTIONS FOR SELECTING THE LOCATION

Selection of installation site

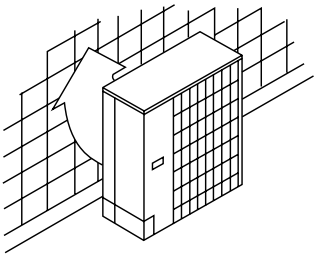
1. Select a site where the following conditions can be satisfied and make sure the customer agrees to it.
   - Where the space is well ventilated.
   - Where the unit does not cause a trouble to the neighbors.
   - Where the unit can be installed safely on a level base which withstand the weight and vibration.
   - Where the rain can be avoided as much as possible.
   - Where the sufficient space for installation is available.
   - Where the piping and wiring length between the indoor (BP) and outdoor unit is within the allowable distance.
   - Where there is no danger of flammable gas leak.
   - A location where the outside thermostat is not in direct sunlight.

   ⚠ **CAUTIONS**
   - Do not install or operate the unit in rooms mentioned below.
     a. Where the air contains high levels of salt such as that near the ocean.
     b. Where sulfurous gas exists such as that in areas of hot spring.
     c. Where voltage fluctuates greatly such as that in factories.
     d. Where oil vapor or spray exists greatly such as that in kitchens.
     e. Where machines generating electromagnetic waves exist.
     f. Where flammable gas or material exist.
     g. Where acidic or alkaline vapor exist.

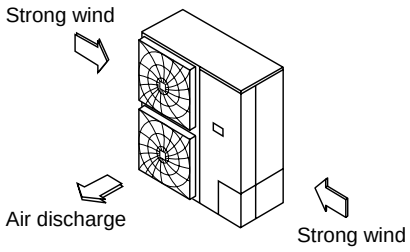
2. If the unit is to be installed where the strong wind may affect the unit, give consideration to the following cautions. When the wind stronger than 5 m/sec blows on the air outlet of the outdoor unit, the air flow rate may decrease or the exhaust air may recirculate (short circuit) and as a consequence the following results may occur.
   - The insufficient capacity
   - The rise of high pressure which cause to stop the operation.
   - Frequent frost acceleration at the time of heating operation.

   If the wind direction is predictable, install the equipment as shown below.

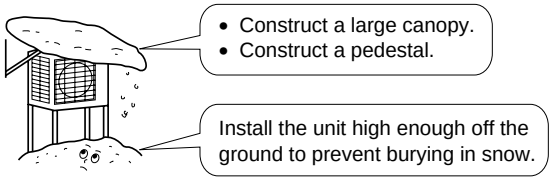
   - Face the air outlet to the wall or windbreak screen.



   - Orient the unit so that the air discharge is at right angles to the wind direction.



3. If the area is subject to heavy snowfall, install the unit as follows.
   - Use as high a base as practicable.
   - Remove the rear suction grille to prevent snow from accumulating on the rear fins.



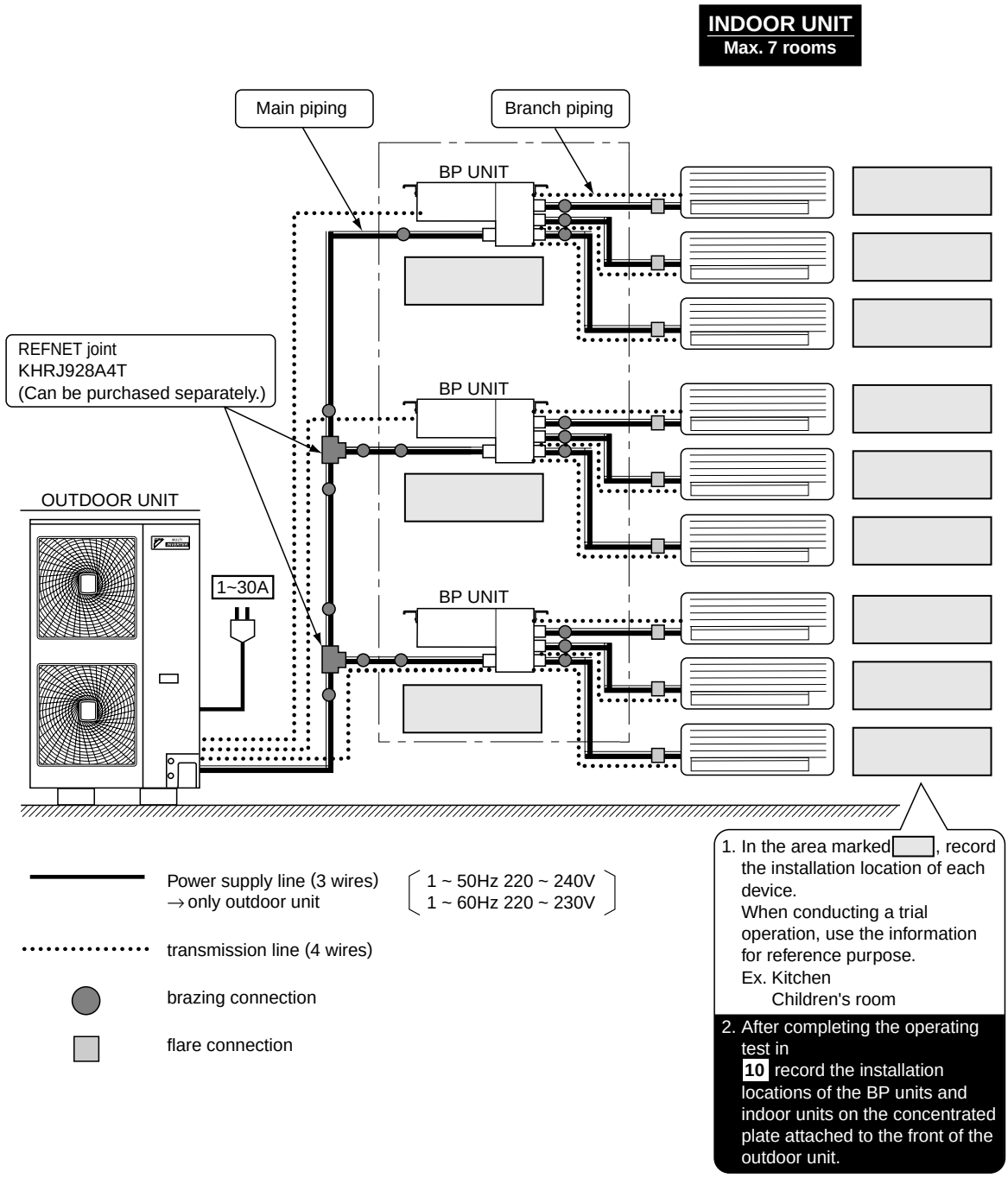
4. If the local codes restrict the installation height from the ground level, follow the local codes at installation.

* For installation restriction, refer to **7**.

3 SYSTEM LAYOUT

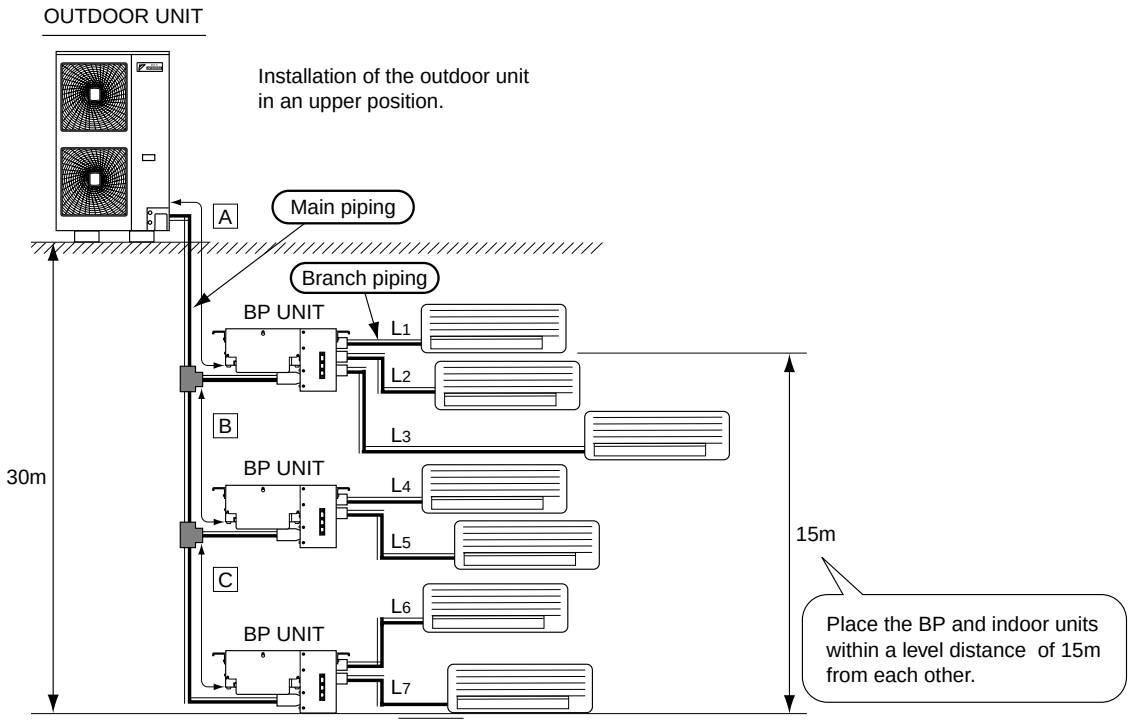
BP unit model
FOR 3 rooms : BPMK928A43
FOR 2 rooms : BPMK928A42

Do not connect more than 7 indoor units together. Choose the BP unit type (2 rooms or 3 rooms) according to the installation pattern.

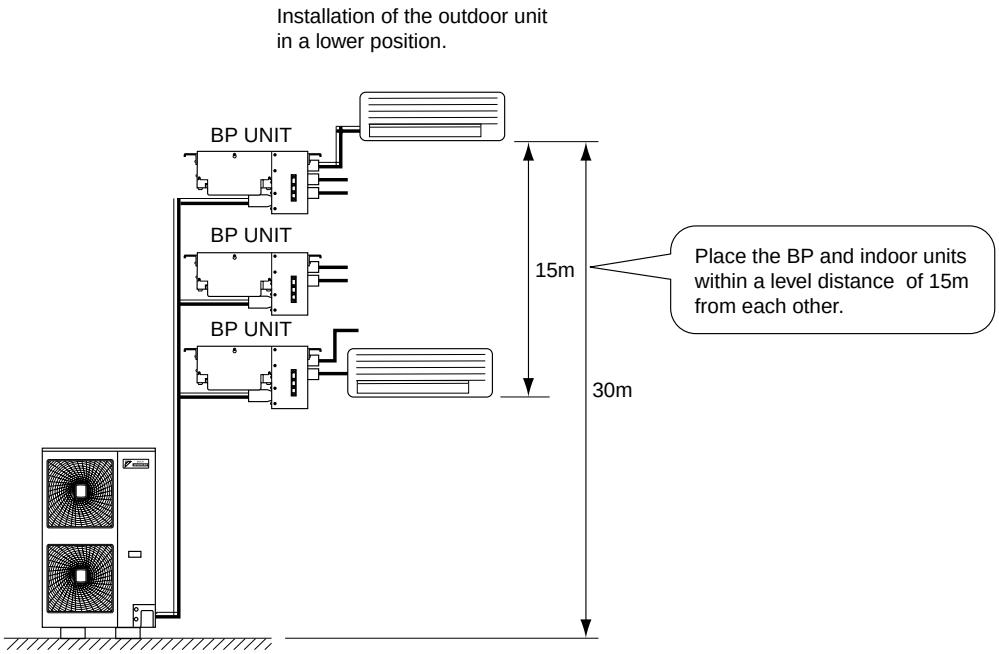


4 THE MAXIMUM ALLOWABLE LEVEL AND PIPING LENGTH

Check the manual for installation that comes with outdoor units



- ◆Total main piping length : **55m**(A + B + C)
- ◆Total branch piping length : **60m** (L_1+L_2+L_3+L_4+L_5+L_6+L_7)
- ◆Each branch piping length : **15m** (L_1,L_2,L_3,L_4,L_5,L_6,L_7)
- ◆Total system piping length : 115m (55+60)



5 COMBINATION OF INDOOR UNITS

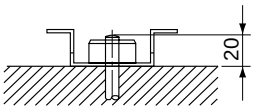
Type	Model name	Rating capacity (kW)
Wall mounted type	FTX25JAV1NB	2.5
	FTX35JAV1NB	3.5
	FTXD50JV1B	5.0
	FTXD60JV1B	6.0
	FTXD71JV1B	7.1
Ceiling embedded duct type (Low static pressure)	CDX25HAV1NB	2.5
	CDX35HAV1NB	3.5
	CDX50HAV1NB	5.0
	CDX60HAV1NB	6.0
Ceiling embedded duct type (Middle static pressure)	FHYB35FK7V1	3.8
	FHYB45FK7V1	4.45
	FHYB60FK7V1	6.25
	FHYB71FK7V1	7.2
Ceiling mounted cassette type	FHYC35B7V1	3.75
	FHYC45B7V1	5.2
	FHYC60B7V1	6.15
	FHYC71B7V1	7.7
Floor/ceiling suspended dual type	FLX25HV1NB	2.5
	FLX35HV1NB	3.5
	FLX50JV1B	5.0
	FLX60JV1B	5.7

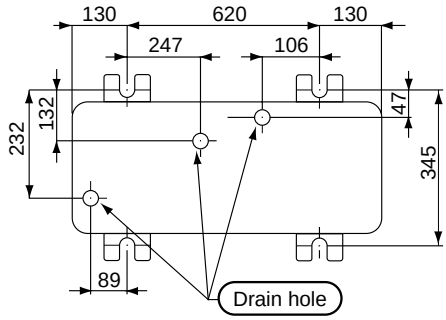
〈**Caution**〉
1. **Select the appropriate indoor unit so that the indoor unit to be connected has the total "Rating capacity" of between 7.5 kW and 18.9 kW.**
2. **The combination of the indoor units only for one single room is not allowed.**

4

6 MAIN BODY INSTALLATION (CAUTIONS FOR INSTALLATION)

1. Check the strength and level of the foundation so that the air conditioner works without vibration or noise.
2. Fix the unit rigidly to the foundation with the foundation bolts as shown in the drawing at right.
   - Prepare 4 sets of M12 foundation bolts, nuts and washers available in the market.
   - The projection of the foundation bolts should be 20 mm.





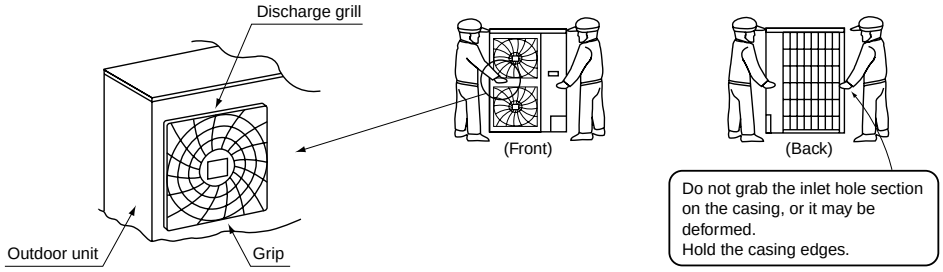
〈Installation method of fitting for prevention of overturning〉
- If overturning prevention is required, use the optional overturning prevention kit.

〈Drain pipe disposal〉
- If drain pipe disposal from the outdoor unit causes trouble, provide the drain piping by using of the drain socket (optional).

7 INSTALLATION PROCEDURE

1. Carrying-in

- Take care not to let your hands and other objects touch the rear fins. ⚠ **WARNING**
  1. Carry in the equipment slowly, using the grips provided on the sides.



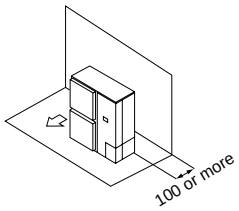
- Always use accessory parts or those of designated specification as parts required for installation.

2. Installation service space

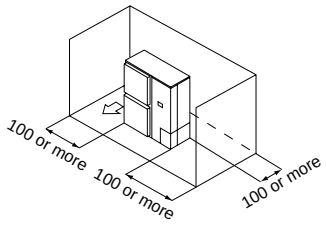
*** The horizontal coupling and stacking are not allowed.**

(A) Where there is an obstacle on the suction side:

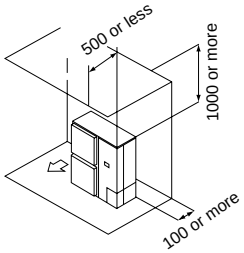
- No obstacle above
  - · Obstacle on the suction side only



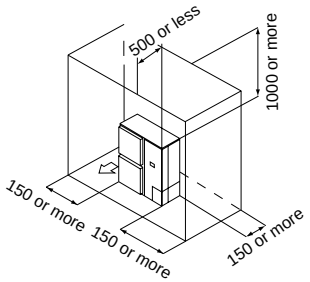
  - · Obstacle on both sides



- Obstacle above, too
  - · Obstacle on the suction side, too

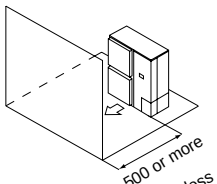


  - · Obstacle on the sunction side, and both sides

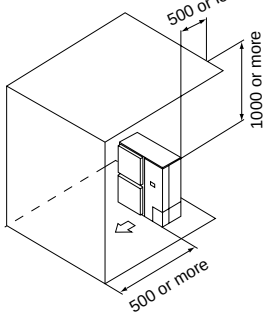


(B) Where there is an obstacle on the discharge side:

- No obstacle above



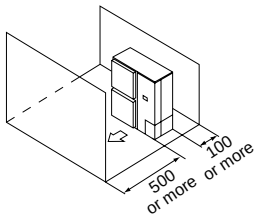
- Obstacle above, too



(C) Where there are obstacles on both suction and discharge sides:

Pattern 1 Where the obstacles on the discharge side is higher than the unit:

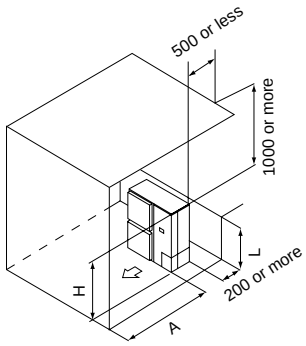
- No obstacle above



- Obstacle above, too

  The relations between H, A and L are as follows:

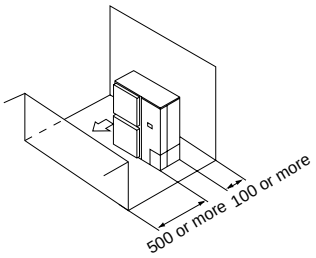
	L	A
L ≤ H	0 < L ≤ 1/2H	750
	1/2H < L	1000
H < L	Set the stand as: L ≤ H	



Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Pattern 2 Where the obstacle on the discharge side is lower than the unit:

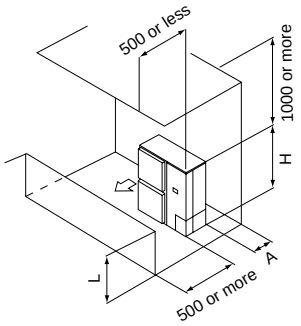
- No obstacle above



- Obstacle above, too

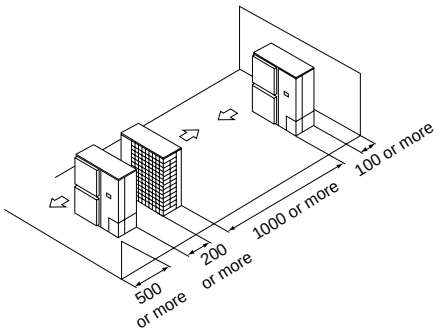
  The relations between H, A and L are as follows:

	L	A
L ≤ H	0 < L ≤ 1/2H	100
	1/2H < L	200
H < L	Set the stand as: L ≤ H	



Close the bottom of the installation frame to prevent the discharged air from being bypassed.

(D) Multiple rows of series installation (on the rooftop, etc.)



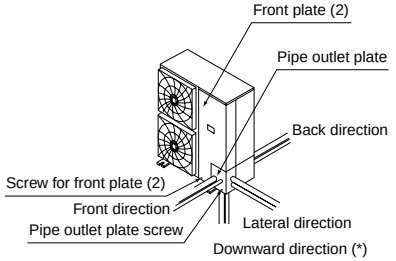
8 REFRIGERANT PIPING CONNECTION

〈 ⚠ **Caution** 〉

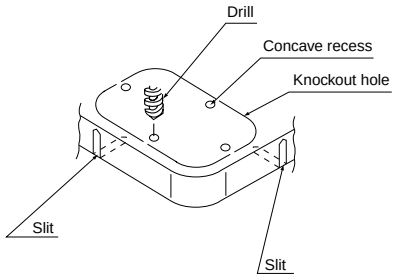
- **The refrigerant-charge-less specifications are used. Do not conduct additional charging.**
- To avoid improper piping connection, control the liquid piping and gas piping as one.
- Checking for incorrect piping and wiring is very time-consuming, so be sure to conduct both together ahead of time.

1. Refrigerant piping

- Pipimg can be locally extended in four directions.

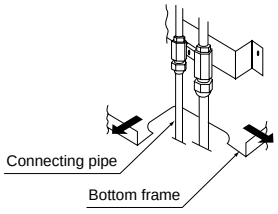


* Do not allow air other that the specified refrigerant to mix in during the refrigeranting cycle.



* To install the connecting pipe tto the unit in downward direction, make a knockout hole by penetrating the concave recesses (four locations) using a ϕ6 mm drill.

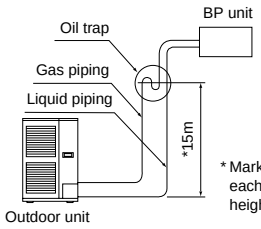
* By cutting the slit (2 places), installation will be possible as in the figure on the right. (please use a haclsaw when cutting the slit.)



■Necessity of a trap

Since there is fear of the oil held inside the riser piping flowing back into the compressor when stopped and causing liquid compression phenomenon, or cases of deterioration of oil return, it will be necessary to provide a trap at an appropriate place in the riser gas piping.

Note) A trap is not necessary when the outdoor unit is installed in a higher position than the indoor unit.

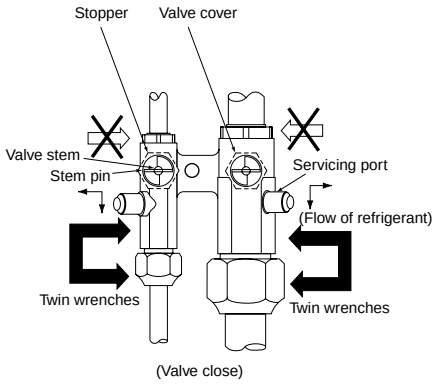


* Marks. Install trap at each difference in height 15 m.

〈**Cautions for handling Stop Valve** 〉

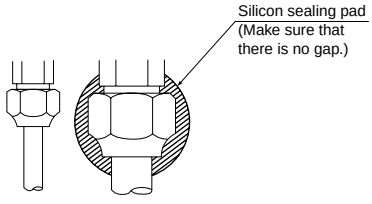
1. The stop valves for BP-outdoor connecting piping are closed at shipment from the factory. The names of parts are as shown on the right.
2. Use two wrenches at the points indicated by the solid arrows (⬅) when loosening or tightening the flare nuts.
3. Do not apply the wrenches to the positions indicated by the hollow arrows. (⇦)

- For cooling operation under low ambient temperature or any other operation under low pressure, apply silicone sealing pad, etc. to prevent the freezing of flare nut gas pipe portion of the stop valve.



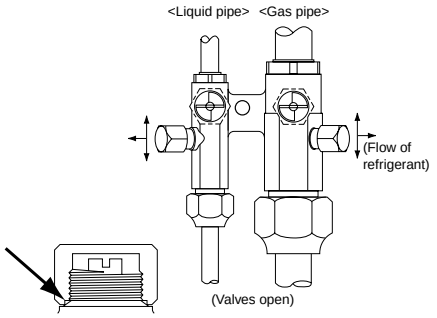
〈**Operating of Stop Valve** 〉

1. Opening
   (a) Turn the valve stem 1/4 turn counterclockwise, using a ⊖ driver.
   (b) Stop when the pin hits the stopper. The valve is open.
2. Closing
   (a) Turn the valve stem 1/4 turn clockwise, using a ⊖ driver.
   (b) Stop when the pin hits the stopper. The valve is closed.



CAUTIONS FOR HANDLING VALVE COVER

1. The valve cover is sealed where indicated by the arrow. Take care not to damage it.
2. After operating the valve, be sure to tighten the valve cover properly. Tightening torque: 1960 - 2450 N·cm (200 - 250 kgf·cm)

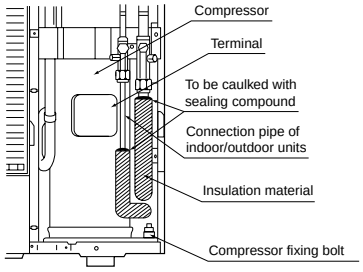


CAUTIONS FOR HANDLING SERVICE PORT

1. Work with the charge hose with a pushbar.
2. After the work, tighten the valve cover in place. Tightening torque: 980 - 1470 N·cm (100 - 150 kgf·cm)

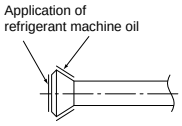
CAUTIONS FOR CONNECTING PIPES

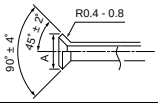
1. Make sure that the BP-outdoor connecting pipes do not touch the terminals of the compressor.
2. The connecting pipes must not touch the bolts of the compressor.
3. If the outdoor unit is installed higher than the indoor unit, the condensate from a stop valve may run down along the piping through the clearance between insulation and piping into the BP unit. Under such conditions, an appropriate measure must be taken to prevent the condensate from runing down into the BP unit, for example, the clearance between the pipe and the insulation must be caulked with sealing compound.



CAUTIONS FOR FLARE CONNECTION

1. See the following table for the flare dimensions.
2. When connecting the flare nut, **apply refrigerating machine oil to the flare (inside and outside) and first screw the nut 3 or 4 turns by hand.**
3. See the following table for the tightening torque. **(Excessive tightening could crack the flare.)**
4. After completing the installation, carry out a gas leak inspection of the piping connections with nitrogen and such.



Pipe size	Tightening torque	Flare dimension A (mm)	Flare form
9.5	3270 ~ 3990 N·cm (333 ~ 407 kgf·cm)	12.0 ~ 12.4	
19.1	9720 ~ 11860 N·cm (990 ~ 1210 kgf·cm)	22.9 ~ 23.3	

2. Airtight

After executing the piping, perform the following inspection thoroughly.

- **Airtight test** – Always use nitrogen gas.
  (Procedure) Pressurize the piping up to **2.8 MPa** from both liquid pipe and gas pipe. (Do not raise the pressure higher than 2.8 MPa.) If the pressure does not drop after **24 hours**, the piping is satisfactory. If the pressure drops, then check for the leaking point.

After the airtight piping, always check for improper piping and wiring before curing the piping. (Refer to **10** Operating test.)

3. Air purge

- **Vacuum drying** – Use the vacuum pump capable of evacuating down to –100.7 kPa (5 torr, –755 mmHg).
  (Procedure) From both liquid pipe and gas pipe, operate at least 2 hours using the vacuum pump, evacuating to –100.7 kPa or less. Then at the pressure of –100.7 kPa or less, leave as is for at least one hour. Check that the vacuum gauge value does not increase. (If the value increases, it is possible that there is some moisture remaining or leaking point in the system.)

  When the system might contain some moisture (work during rainy season, dewing inside the piping due to a long term work, rain intrusion into the piping during work, etc.)
  After performing the aforementioned vacuum drying for 2 hours, pressurize up to 0.05 MPa (vacuum break) using nitrogen gas. Then, evacuate down to –100.7 kPa for one hour using the vacuum pump (vacuum drying).
  (If the pressure does not become –100.7 kPa or less even after 2 hours of evacuating, repeat the vacuum break and vacuum drying alternately. Then, leave the piping for one hour, and check that the vacuum gauge value does not increase.

4. Selection of copper pipes and thermal insulation

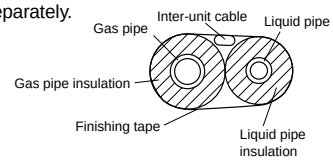
It is desirable to use the optional piping kit: otherwise, use materials of the following specifications.

- Copper tube: C1220T
- Insulation material: polyethylene foam.
  Thermal conductivity: 0.041–0.052 W/mk (0.035–0.045 kcal/mhºC)
- Heat resistance = 100ºC or higher

NOTE

- For the inter-unit piping outside the indoor unit casing, use a heat insulation tube with a thickness of **13 mm**. (For gas piping only.)

- Insulate the gas pipe and the liquid pipe separately.



Do not tie hard
Binding heat insulation as tightly as it deforms can cause condensation.

9 ELECTRIC WIRING CONNECTION

1. Connection electric wire treatment (⚠CAUTION)

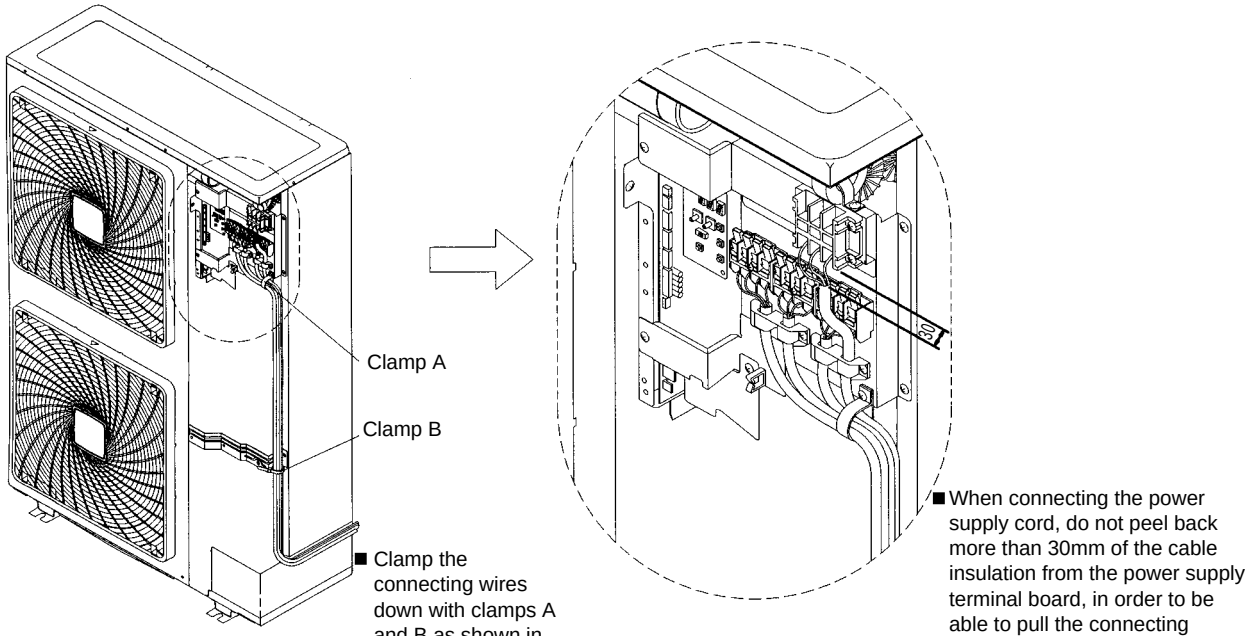
Following are the precautions for inter-unit wiring and power supply wiring.

Be sure to install an earth leakage breaker and safety breaker.

- Do not turn ON the safety breaker for the outdoor power supply before all the work is completed.
- Make sure that the wiring and the piping for each room have the same alphabetical code. (BP1, BP2, BP3)
- In double-outdoor-unit installation, be sure that the wirings are connected in the same outdoor-units as pipings are connected.
- On the inter-unit wiring, terminals of each line at the BP side and the outdoor side must have the same number.
- Tighten the terminal screws on the power supply terminal block securely.
- For power supply, be sure to use a dedicated power circuit.
- Fix wires securely over the sheathes with the clamp.
- Connect an earth wire to the earth screw.
  For earthing, follow applicable local standards for electrical installations.
- For inter-unit wiring, do not use a cut wire joined to another on the way. Use wires long enough to cover the entire length.

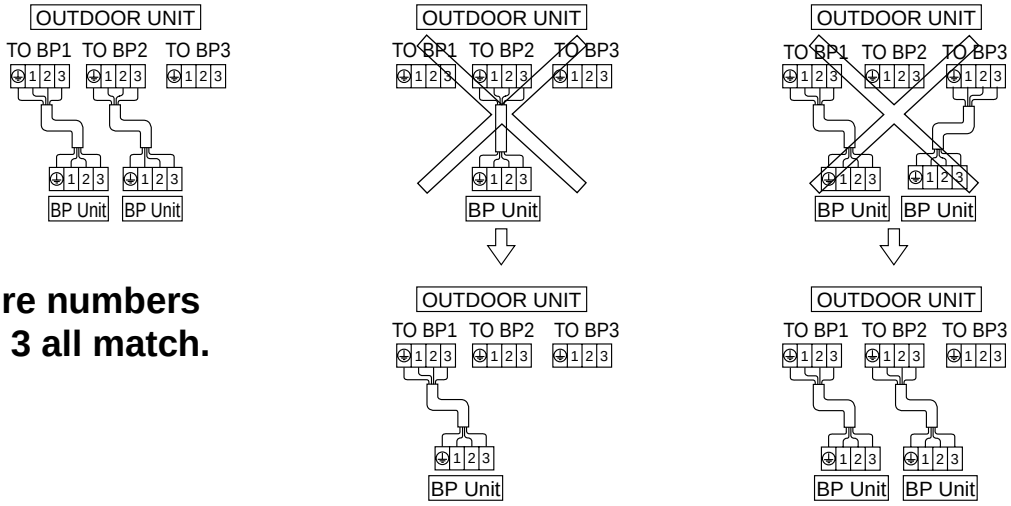
WARNING

Do not use tapped wires, stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock, or fire.

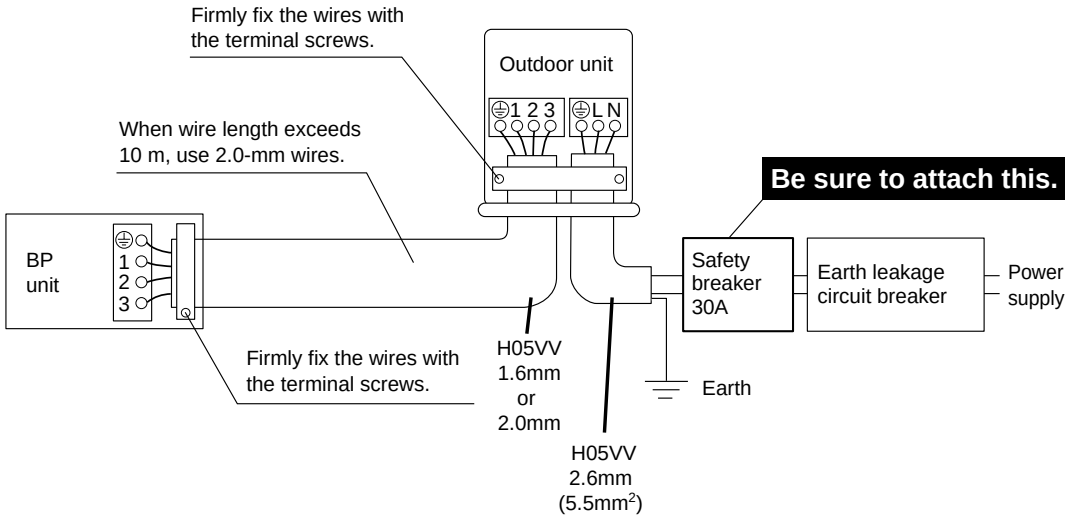


2. BP unit connection priority

When connecting to the BP unit, always start the connection with BP1 of the terminal board (at outdoor unit side) in the sequential order.
Improper connection will cause a transmission failure, preventing the operation.



Make sure numbers 1, 2, and 3 all match.



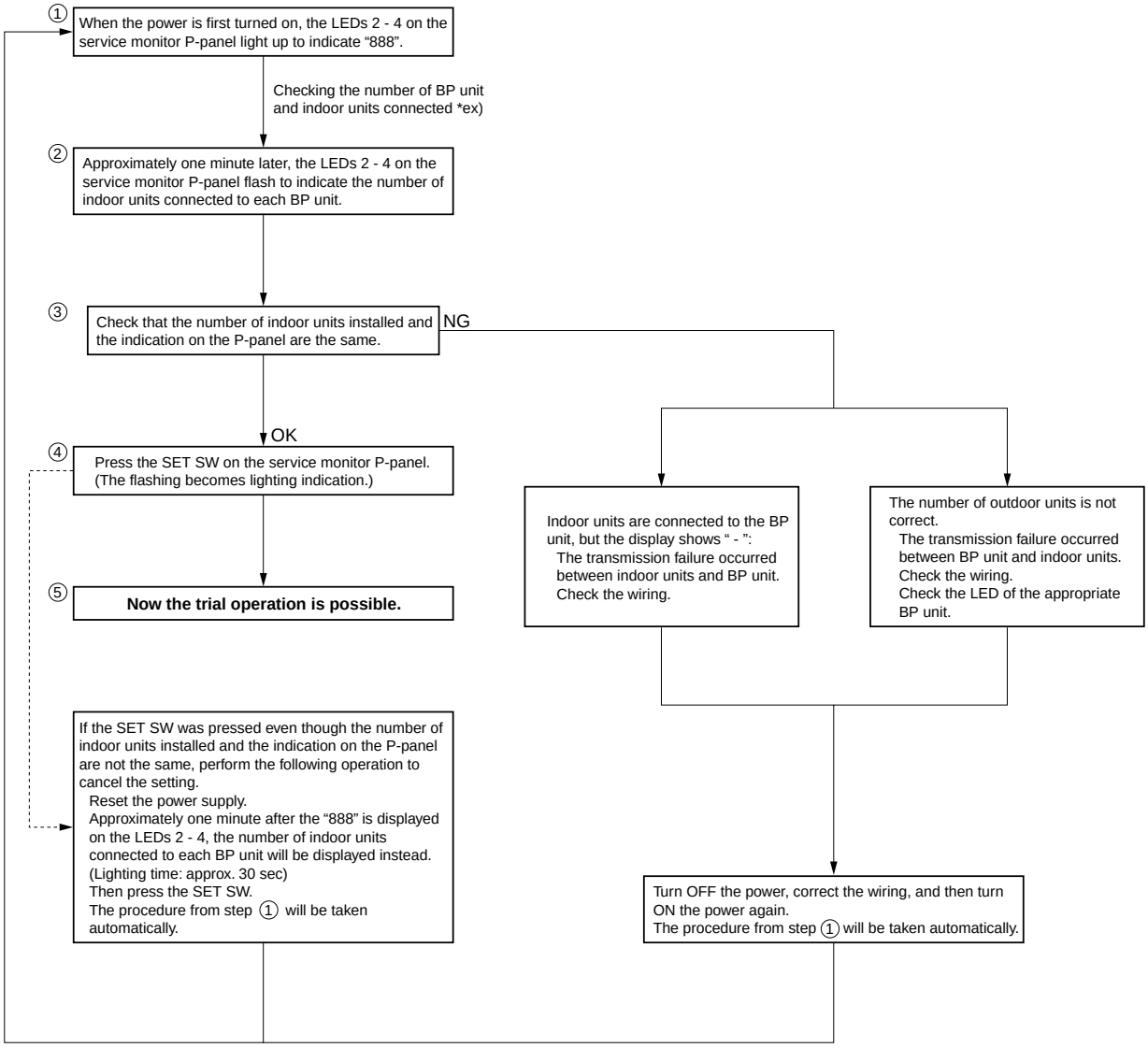
4

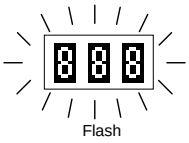
10 OPERATING TEST

Before performing a trial operation

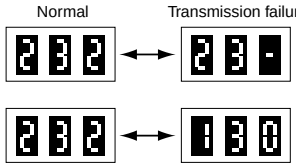
*Check the connection status.
Be sure to carry out initial settings.

Check Flow





"-"	: BP unit unconnected, or transmission failure between outdoor units and BP unit
"Numeral value"	: The number of indoor units connected to each BP unit

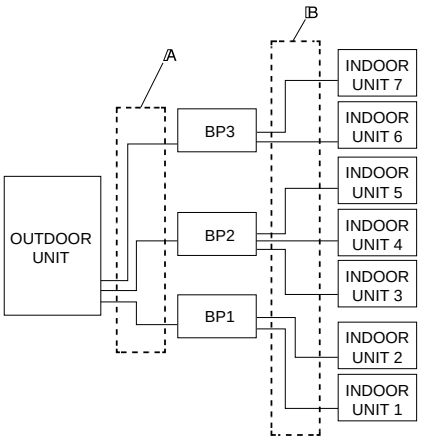


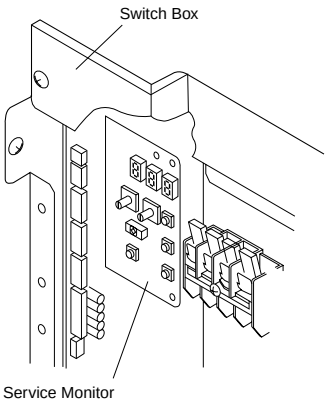
*ex.) : Connect indoor units (2 rooms) to BP1.
Connect indoor units (3 rooms) to BP2.
Connect indoor units (2 rooms) to BP3.

The indoor units for 2 rooms are connected to BP3, but the display indicates "BP unit unconnected." There is a transmission failure between outdoor units and BP unit.
Check the connecting wiring in part Ⓐ in the diagram below.

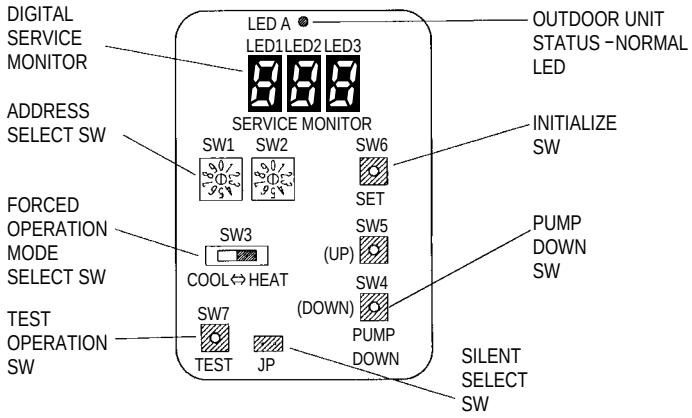
The numbers of indoor units connected to BP1 and BP3 do not agree with the indication. There is transmission failures between BP units and indoor units.
Check the connecting wiring in part Ⓑ in the diagram below.

* When checking the connecting wiring, make sure the wire numbering is correct and that there are no numbers missing.





SERVICE MONITOR RAYOUT (ON PCB)



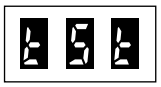
1. Record the installation location of each BP unit in the centralized name plate attached to the front panel (2) of the indoor unit.
   ↓
2. Open the liquid/gas closing valves.
   ↓
3. Check for improper wiring and piping.
   With a remote controller, start the cooling operation in one single room only.
   (Operating condition: indoor/outdoor temperature of –5˚C or higher)
   Set the temperature to 18˚C.
   After operating for 5 minutes, check that the temperature difference between inlet and outlet of the indoor unit is 8˚C or higher.
   Likewise, perform the above step with all indoor units.
   If some improper wiring or piping is found, correct them, and then check again.
   * Before the operation check is completed on one unit, start the operation of the next indoor unit to be checked so that some trial operation time can be saved. (If the trial operation is performed on every indoor unit one by one, since the compressor is stopped after each operation, it will take some time to restart for the next operation.)
   ↓
4. After checking for improper piping and wiring, record the installation locations of indoor units connected to the BP unit in the wiring name plate attached to the BP main body.
   ↓
5. After checking that all the piping and wiring is done properly, start the trial operation in heating mode.
   With a remote controller, perform the heating operation for all rooms. (Set the temperature to 32˚C.)
   After operating for 60 minutes, check that the temperature difference between inlet and outlet is 15˚C or higher.
   ↓
6. Upon completion of the trial operation, stop the operation for all rooms with the remote controller.

Note: 1. When performing a trial operation, check that the indoor/outdoor temperatures satisfy the following conditions:
Cooling: –5˚C or higher
Heating: 25˚C or lower
2. For the pump down procedure, refer to the trouble diagnostic name plate attached to the front panel (2).

1P058917A
1P058918A

TEST OPERATION SWITCH [SW7]

Digital display:

"  "

Blinking

Press the FORCED OPERATION SWITCH [SW7]
Aftrer sellecting the COOL/HEAT SWITCH [SW3]

<CAUTIONS>

1) Test operation stops automatically in about **60 minutes**.
2) Cooling test operation cannot be performed if the outside air temperature is **–5˚C or lower**.
3) **Operate SkyAir indoor unit in the same mode.**

[TO CONTINUE TEST OPERATION]
Press the TEST SW [SW7] again.
[TO RESET TEST OPERATION]
Press the TEST SW [SW7], wait at least 3 seconds and press the TEST SW again.

PUMP DOWN OPERATION SWITCH [SW4]

Digital display:

"  "

After "Pd_" Blinks in the digital display, the LP (Low Pressure) indicator activates.

Press the PUMP DOWN OPERATION SWITCH [SW4]

PUMP DOWN OPERATION STOPS when LP (Low Pressure) COMES TO **0kg/cm²**, or automatically in about **8 minutes**.

<CAUTIONS>

During PUMP DOWN operation, if the low pressure does not become **1kg/cm²** or lower within the specified time, "Pd_" is displayed. In this case, perform PUMP DOWN again.

<CAUTIONS>

After all indoor units have stopped, PUMP DOWN is performed for the next operation.
[Approx. **5 minutes**]

TROUBLE DIAGNOSIS

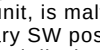
<LED ON OUTDOOR UNIT PCB >

[GREEN]		LED DISPLAY	
		◑ [Blinking slowly]	☼ [ON] OR ● [OFF] OR ◑ [Blinking quickly]
PCB4	LED (A)H1P	NORMAL	ABNORMAL (Malfunction of control unit)
PCB1	LED H2P		
PCB3	LED H3P		
	LED H4P		

<DIGITAL DISPLAY >

Rotary SW position : Set SW1 to 0, Set SW2 to 0.

DIGITAL DISPLAY		DIAGNOSIS
A5		**INDOOR UNNIT** : High pressure protector worked, or freeze-up in operating unit (Stop due to peak cut, freeze)
A9		**BP UNIT** : Malfunction of moving part of electoric expansion valve (Y1E ~ Y4E)
E3		**OUTDOOR UNIT** : Actuation of high pressure switch
E6		**OUTDOOR UNIT** : Compressor lock
E7		**OUTDOOR UNIT** : Fan motor lock or OCP (Output Over current Protect)
E8		**OUTDOOR UNIT** : Inverter input over current protect
E9		**OUTDOOR UNIT** : Malfunction of moving part of electoric expansion valve (Y1E ~ Y3E)
F3		**OUTDOOR UNIT** : Abnormal discharge pipe temperature
FC		**OUTDOOR UNIT** : Low pressure drop error
H3		**OUTDOOR UNIT** : High pressure switch failure
H6		**OUTDOOR UNIT** : Compressor motor position detection sensor error
H7		**OUTDOOR UNIT** : Fan motor position detection sensor error
H8		**OUTDOOR UNIT** : AC current sensor error
H9		**OUTDOOR UNIT** : Malfunction of thermistor for outdoor air
J3		**OUTDOOR UNIT** : Discharge pipe thermistor or related abnormaly
J5		**OUTDOOR UNIT** : Malfunction of suction pipe thermistor
J6		**OUTDOOR UNIT** : Malfunction of heat exchanger thermistor
J7		**OUTDOOR UNIT** : Malfunction of heat exchanger liquid thermistor
J8		**BP UNIT** : Malfunction of liquid pipe thermistor
J9		**BP UNIT** : Malfunction of gas pipe thermistor
JC		**OUTDOOR UNIT** : Malfunction of suction pipe pressure sensor

L3		**OUTDOOR UNIT** : Electoric component box over temperature
L4		**OUTDOOR UNIT** : Radiation fin over temperature
L5		**OUTDOOR UNIT** : Compressor motor insulation defect, short circuit, power unit short circuit
L7		**OUTDOOR UNIT** : Total input over current
L8		**OUTDOOR UNIT** : Compressor overload, compressor motor wire cut
L9		**OUTDOOR UNIT** : Compressor start up error
LC		**OUTDOOR UNIT** : Malfunction of transmission between inverter and outdoor control unit
P3		**OUTDOOR UNIT** : Malfunction of electoric component box sensor
P4		**OUTDOOR UNIT** : Malfunction of power unit temperature sensor
U0		**OUTDOOR UNIT** : Refrigerant shortage
U2		**OUTDOOR UNIT** : Power supply insurfficient or instantaneous failure
U4		Malfunction of transmission between BP unit and outdoor unit
U6		Malfunction of transmission between indoor unit and BP unit
U7		Malfunction of transmission between fan control unit and outdoor control unit
UA		**BP UNIT** : Failure of field setting
UH		**OUTDOOR UNIT** : Malfunction of outdoor control unit

<CAUTION>

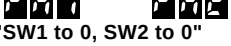
It is possible to check if the outdoor unit, or a BP unit, is malfunctioning.

Rotary SW position : Set SW1 to 0, Set SW2 to 1.

(Digital display is as follows.)

Outdoor unit malfunction : 

BP unit malfunction :  (UPPER) , (LOWER)

DC fan malfunction : 

Return SW to original position. : "SW1 to 0, SW2 to 0"

2P060527B

Precautions: For RMK140J/RMX140J outdoor unit users

■ Applicable model series

* If you use the indoor unit listed below, and have it connected to the multi-type outdoor unit (RMK140J/RMX140J), be sure to read this precautions.
* Use the furnished remote controller.
  For the ceiling-mounted cassette type, the remote controller is an option.
  Choose one of the following remote controllers.
  (1) Wired type: BRC1B61 (C) (2) Wireless type: BRC7C612W (C) (H/P)
  BRC7C613W (C) (C/O)

Outdoor Unit			Cooling only RMK140J	Heat Pump RMX140J
Indoor Unit	Package Air Conditioner	Ceiling-Mounted Cassette Type	FHYC35/50/60/71KV1C, FHYC35/50/60/71KVE	
		Duct-Connected Type	FDYM60/03FV1, FDYM60/03FV1C, FDYM60/03FVAL	
	Room Air Conditioner	Wall-Mounted Type	FTK25/35J FTKD50/60/71J	FTX25/35J FTXD50/60/71J
		Ceiling-Mounted Duct Type	CDK25/35/50/60HA	CDX25/35/50/60HA
		Floor/Ceiling-suspended Dual Type	FLK25/35/50/60H·50/60J	FLX25/35/50/60H·50/60J

■ Outside air temperature for operation

	Cooling only	Heat pump
Cooling Operation	-5 ~ 46 ˚CDB	-5 ~ 46 ˚CDB
Heating Operation		-15 ~ 15.5 ˚CWB

■ These cases are not troubles

(1) All indoor units

In heating operation, when all indoor units are stopped, the outdoor unit stops its operation automatically after 5 minutes. This is a part of preparation process for the next operation, not a failure.
In heating operation, no warm air may come out temporarily. This is to protect the outdoor unit, not a failure. At this point, "DEFROST" is displayed on the wired-type remote controller.
In simultaneous operation in two or more rooms, when heating operation is performed in one room, cooling operation cannot be performed in other rooms. The mode in the room where operation began first is given priority.

(2) Floor/ceiling-suspended dual type units

With the thermostat OFF (*1), the fan may start/stop automatically; this is not a failure.

(3) Skyair indoor units

With the thermostat OFF (*1), the fan may start/stop automatically; this is not a failure. At this point, "DEFROST" is displayed on the wired-type remote controller.
In heating operation, fan operation cannot be performed. If the fan operation is selected, the remote controller will display it as a current mode. However, the fan operation will not be performed.

(*1) Thermostat OFF: After the room temperature reaches the set temperature, indoor units enter the operation stand-by state.

2P042644-17G

2. BP Unit

2.1 BPMK928A42 / BPMK928A43

1 SAFETY PRECAUTIONS

- Read these SAFETY PRECAUTIONS carefully to ensure correct installation.
- This manual classifies the precautions into WARNINGS and CAUTIONS.
  Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNINGS	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTIONS	Failure to follow any of CAUTION may in some cases result in grave consequences.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish an earth connection.	⃠	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNINGS

- Installation should be left to the dealer or another professional.
  Improper installation may cause water leakage, electrical shock, or fire.
- Install the air conditioner according to the instructions given in this manual.
  Incomplete installation may cause water leakage, electrical shock, or fire.
- Be sure to use the supplied or specified installation parts.
  Use of other parts may cause the unit to come to lose, water leakage, electrical shock, or fire.
- Install the air conditioner on a solid base that can support the unit's weight.
  An inadequate base or incomplete installation may cause injury in the event the unit falls off the base.
- Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice.
  Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
- For wiring, use a cable long enough to cover the entire distance with no connection.
  Do not use an extension cord. Do not put other loads on the power supply, use a dedicated power circuit.
  (Failure to do so may cause abnormal heat, electric shock or fire.)
- Use the specified types of wires for electrical connections between the indoor and outdoor units.
  Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating or fire.
- After connecting interconnecting and supply wiring be sure to shape the cables so that they do not put undue force on the electrical covers or panels. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, or fire.
- When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R22), such as air. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury.)
- The unit is out of reach of children-at least 1.8m above the floor.
- If any refrigerant has leaked out during the installation work, ventilate the room. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- After all installation is complete, check to make sure that no refrigerant is leaking out. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)

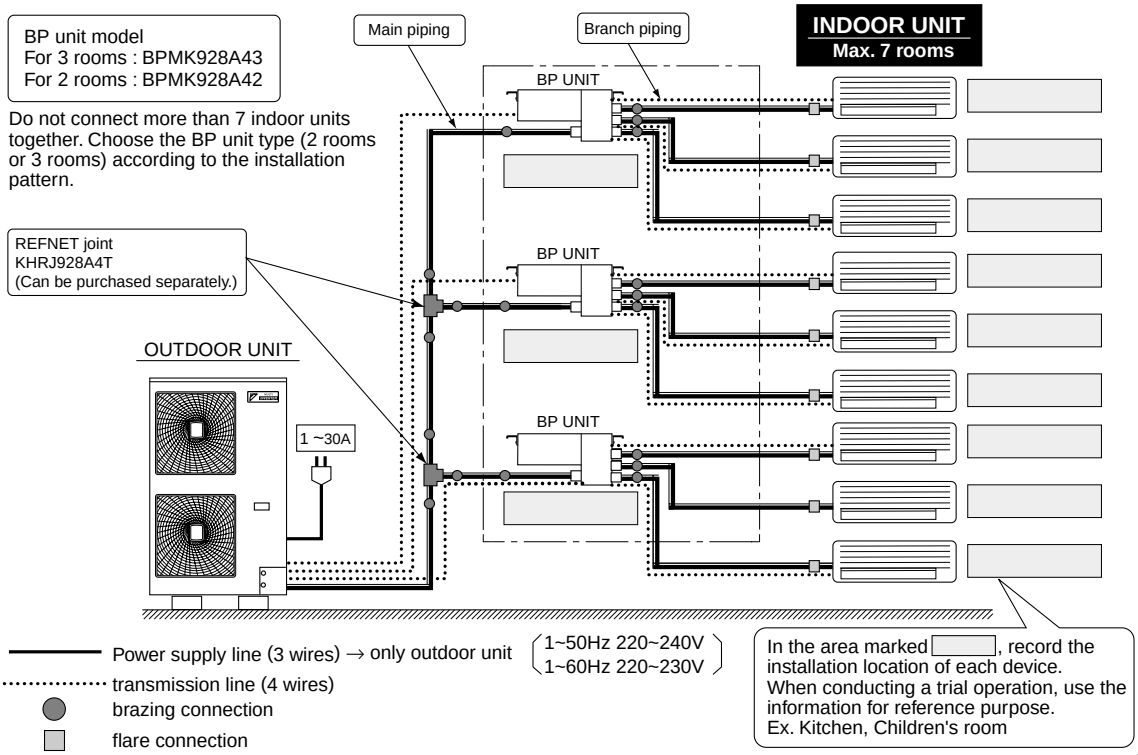
⚠ CAUTIONS

- Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth. ⏚
  Incomplete earth may cause electrical shock. A high surge current from lightning or other sources may cause damage to the air conditioner.
- An earth leakage circuit breaker may be required depending on site condition to prevent electrical shock.
  Failure to do so may cause electrical shock.
- Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage.
  If the gas leaks and builds up around the unit, it may catch fire.
- No drain treatment necessary.
- This unit is for indoor use. ⃠
  (If installing outdoors, place in a location away from wind and rain.)

4

2 SYSTEM LAYOUT

For installation of the indoor and outdoor units, follow the instructions in the installation manual for each unit.

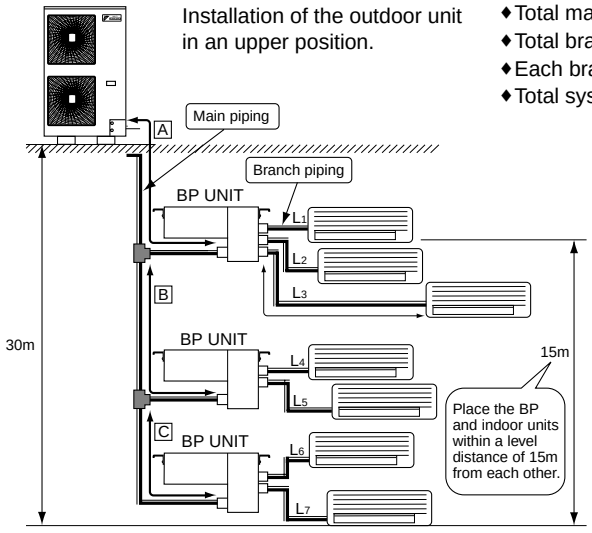


3 THE MAXIMUM ALLOWABLE LEVEL AND PIPING LENGTH

Check the manual for installation that comes with outdoor units.

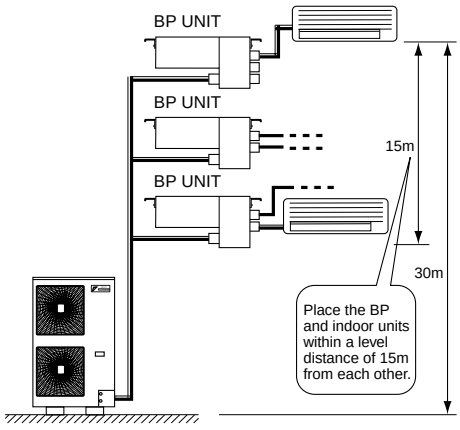
OUTDOOR UNIT

Installation of the outdoor unit in an upper position.



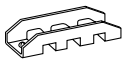
- Total main piping length : **55m** (A + B + C)
- Total branch piping length : **60m** ($L_1 + L_2 + L_3 + L_4 + L_5 + L_6 + L_7$)
- Each branch piping length : **15m** ($L_1, L_2, L_3, L_4, L_5, L_6, L_7$)
- Total system piping length : 115m(55+60)

Installation of the outdoor unit in a lower position.



4 ACCESSORIES

① Installation Manual	
*English Version *Chinese (Mainland) Version *Taiwanese Version	each 1pc.
Pipe Joint	
② For main gas piping 	1pc.
③ For branch liquid piping	1pc.
④ For branch gas piping 	BPMK928A43 (For 3 rooms) 3pcs.
	BPMK928A42 (For 2 rooms) 2pcs.

⑤ Wire clamp	
	1pc.
⑥ Insulator	
	1pc.
⑦ Hanger metal	
	4pcs.
⑧ Screws	
	12pcs.

Items to be prepared in the field

- Connecting wires (H05VV, 4 wires,1.6mm or 2.0mm)
- Installation parts (hanging bolts: 4 x M10 or M8; nuts: 12; flat washers: 8)
- Screws for wall-mounting: 6 x M5
- Heat insulating cylinder (joint) [Thermal conductivity: **0.041 - 0.052 W/mK (0.035 - 0.045 kcal/mh°C) or more** / thickness **13 mm (1/2 inch) or more** / Heat resistance: 100˚C or higher (Only heat pump system)]
- Aluminum tape

5 PRECAUTIONS FOR SELECTING THE LOCATION

The BP unit is for indoor use. Install in a location such as above a ceiling or behind a wall in accordance with the following conditions:

- That the unit is fully supported, and is in a location with little or no vibration.
- That the refrigerant pipes for the indoor and outdoor units can be repaired with ease, and that the units are placed well within the distance from each other allowed by the pipe length.
- That there is nothing nearby that produces heat or steam (gas).
- When installing, that there is enough room for servicing the unit.
- Do not install in location that is hot or humid for long periods of time.(40°C DB or lower for temperature / 29°C WB or lower for humidity)
- A well-ventilated area.
- Do not install near bedrooms. The sound of refrigerant flowing through the piping may sometimes be audible.

For restrictions on installation, refer to “INSTALLATION.”

6 COMBINATION OF INDOOR UNITS

Model	Name	Cooling capacity(kW)				
		25 class	35 class	50 class	60 class	71 class
Wall mounted type	FTX25,35JA/50,60,71J	2.5	3.5	5.0	6.0	7.1
Ceiling embedded duct type (low static pressure)	CDX25,35,50,60HA	2.5	3.5	5.0	6.0	———
Floor/Ceiling suspended dual type	FLX25,35,50,60H/J	2.5	3.5	5.0	5.7	———
Ceiling mounted cassette type	FHYC35,45,60,71B7	———	3.75	5.2	6.15	7.7
Ceiling embedded duct type (middle static pressure)	FHYB35,45,60,71FK7	———	3.8	4.45	6.25	7.2

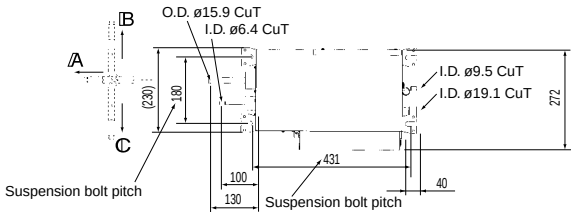
Keep the above cooling capacity to within a total of 18.9kW when connecting the indoor units.

∗ : These symbols designate the export destination country.

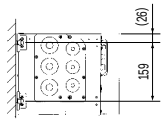
7 INSTALLATION

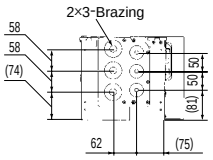
- This unit may be installed suspended from the ceiling or mounted on the wall.
- **This unit may only be installed vertically, as shown in the diagram below.** (Side D is facing up.) However, it may be freely installed in any direction forward or back, and to the sides.
- Be sure to leave a **600mm square** opening for service and inspection as shown in the diagram below, for both ceiling-suspended installation and wall-mounted installation.
- This unit **"does not require drain treatment"** as it uses internal foam treatment as low-pressure piping insulation.
- This unit may be installed with sides F or R facing forward (servicing direction).
- The piping for the indoor unit may be freely led around in directions A, B, or C.
- The inclination of side D must be within ±5˚C degrees forward or back or to the sides.

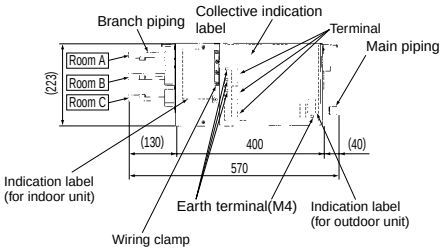
Three-sided view
(product dimensions and attachment bolt pitch)

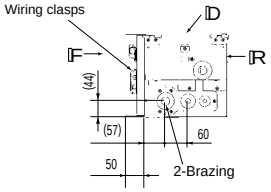


Wall-mounted

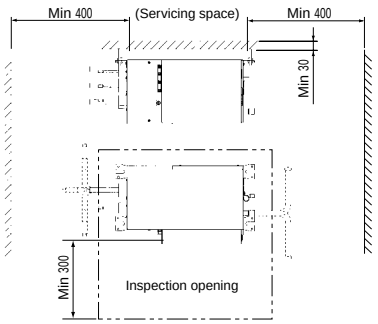








Installation restrictions
(installation and service space)

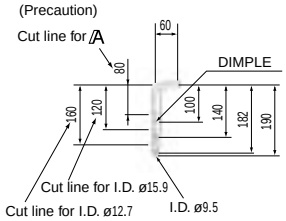


Be sure to leave a 600mm square opening for service and maintenance.

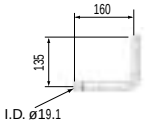
Standard accessories

④ For Branch piping(Gas)

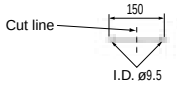
(Precaution)



② For Main piping(Gas)



③ For Branch piping(Liquid)

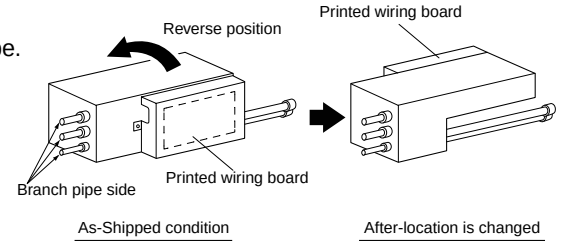


(Precaution) Cut the piping on the standard accessories to match the indoor unit's piping diameter.

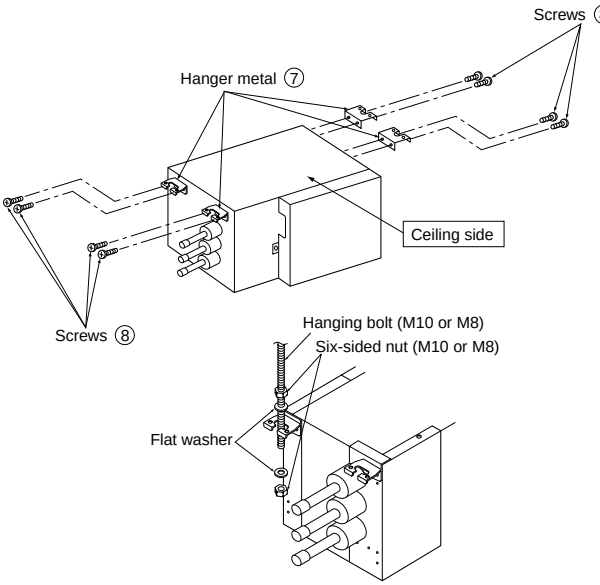
8 INSTALLATION OF THE MAIN UNIT

NOTES:

- This unit has two different installation types: (1) ceiling-suspended type and (2) wall-mounted type.
- Choose the proper installation pattern according to the location of installation.
- The installation location for printed wiring board can be changed.
  Follow the procedure specified in the "CONNECTING THE WIRING" section to change the location. (Refer to ★ mark)

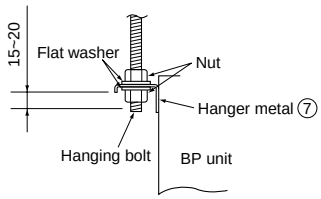


(1) Ceiling-suspended type

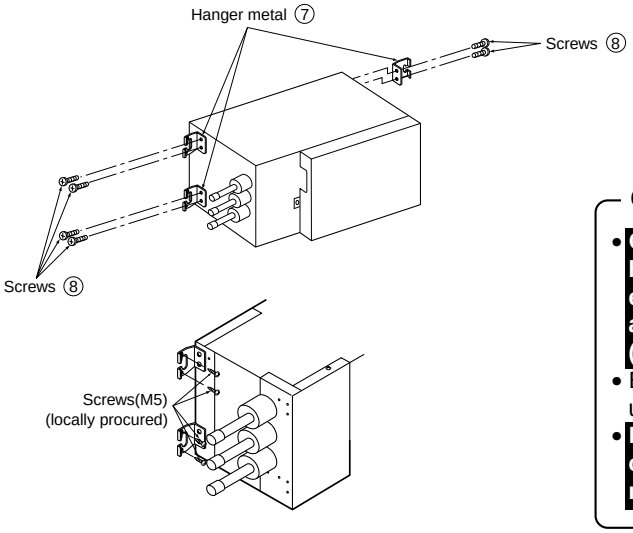


Procedure

(1) Fix the furnished hanger metal ⑦ with two screws ⑧. (4 locations in total)
(2) Using an insert-hole-in-anchor, hang the hanging bolt.
(3) Install a hexagon nut and a flat washer (locally-procured) to the hanging bolt as shown in the figure in the left, and lift the main unit to hang on the hanger metal.
(4) After checking with a level that the unit is level, tighten the hexagon nut.
*The tilt of the unit should be within ±5° in front/back and left/right.



(2) Wall-mounted type



Procedure

(1) Fix the furnished hanger metal ⑦ with two screws ⑧. (3 locations in total)
(2) After checking with a level that the unit is level, fix the unit with the furnished wood screws ⑦.
*The tilt of the unit should be within ±5° in front/back and left/right.

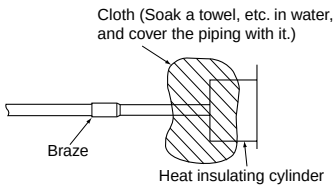
CAUTIONS:

- **Once a screw-hole on the main unit has had a screw hammered in, make sure to either hammer it again or cover it with aluminum tape.**
  (This is to prevent condensation.)
- Be sure to install the unit with the ceiling-side up.
- **Do not install near bedrooms. The sound of refrigerant flowing through the piping may sometimes be audible.**

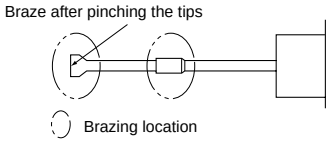
9 CONNECTION OF REFRIGERANT PIPING

CAUTIONS:

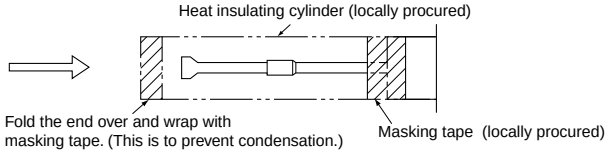
- **To avoid the melting of heat insulating cylinders due to the heat generated during brazing, cover the piping with a cloth, etc.**



- For the piping of unconnected rooms, pinch the tips of pipes, and braze them as shown in the figure below.



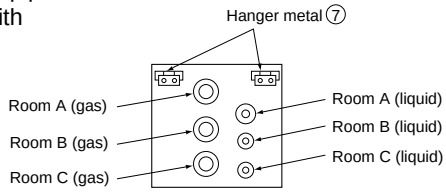
- After brazing, insulate the piping.



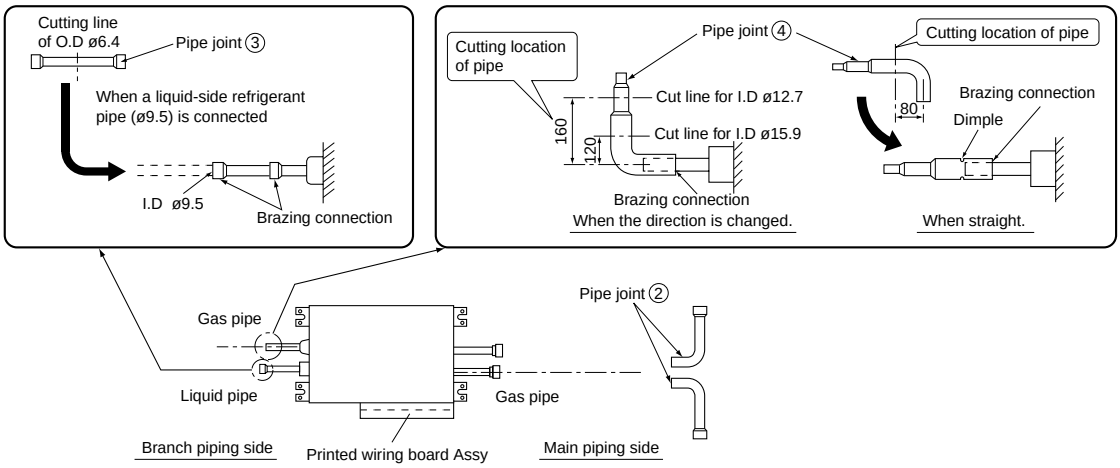
- When connecting indoor units, make sure to connect refrigerant pipes and connection wires to the appropriate connection ports marked with matching alphabets (A, B, and C).

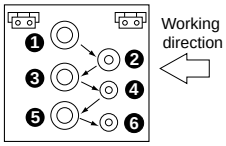
NOTE:

- Be sure to mark all the local refrigerant piping (liquid pipes, gas pipes, etc.) for each indoor unit designating clearly which room it belongs in. (Ex. A, B, C)



- When changing the routing direction, use the pipe joints ② to ④ (accessories). Use pipe joints ③ or ④ to connect refrigerant pipes with different diameters.

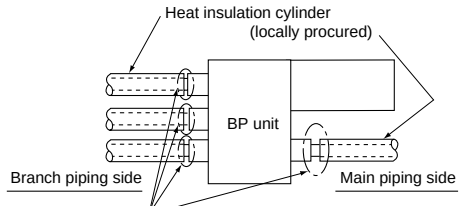




Procedure for wrapping masking tape.

Wrap the tape starting at the top from the inner piping as in terms of the working direction.

- After brazing and system leakage check, connect a heat insulating cylinder (locally procured), and let it cure completely following the procedure illustrated right.
  Use the heat insulating cylinder with the following specifications:
  Thermal conductivity: **0.041 - 0.052 w/mk (0.035 – 0.045 kcal/mh˚C or more)** / thickness **13 mm or more**
  Heat resistance = 100˚C or higher (only heat pump system)

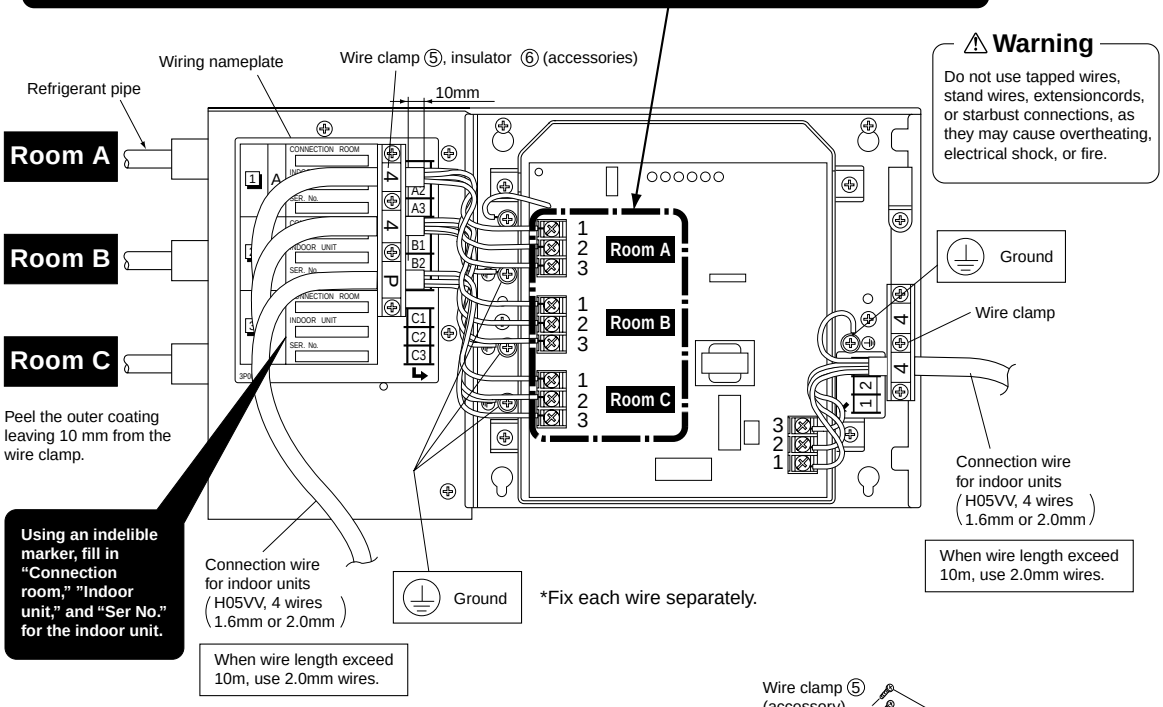


Joint the heat insulating cylinder and BP unit. Use masking tape to eliminate a gap to ensure that the brazing connection completely cures. When taping the branch piping side with masking tape, wrap the tape in order starting from the top pipe and work down.

10 CONNECTING THE WIRING

- Connect refrigerant pipes and connection wires to the appropriate ports marked with matching alphabets (A, B, and C) on this unit .
- Follow the instructions on the wiring nameplate to connect the connection wires of indoor/outdoor units to terminal board numbers. (1,2 and 3) Always fix each ground wire separately with a ground screw. (See the figure below.)
- After completing the wiring, fix the outer coating of wires securely with wire clamps. The wire clamp on indoor unit side is furnished. Follow the procedure below to install.

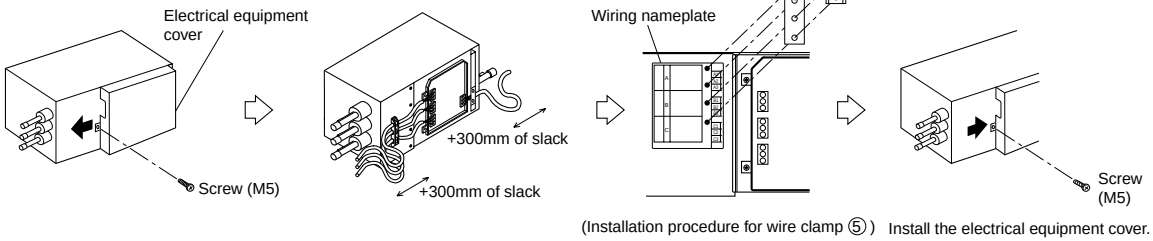
NOTE:
The terminal board numbers are arranged from top to bottom in order of 1, 2, and 3.



⚠ Warning

Do not use tapped wires, stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock, or fire.

Work procedure



(1) Remove the electrical cover. Loosen one of the screws, and slide the cover in the direction of the arrow.

(2) Perform wiring. Allow 300 mm for the pulling-out section of harness.

(3) After checking the wiring, fill in "Connection room," "Indoor unit," and "Ser No." of the indoor unit on the wiring nameplate.

(4) Fix the wires completely with wire clamps (2 locations).

(5) In reverse procedure of (1), slide the electrical equipment cover, and fix it with the screw.

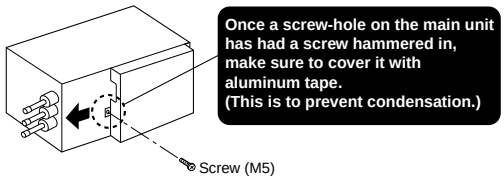
★ Procedure for changing the installation location of printed wiring board

If the installation location of printed wiring board needs to be changed because of the installation conditions, perform the following:

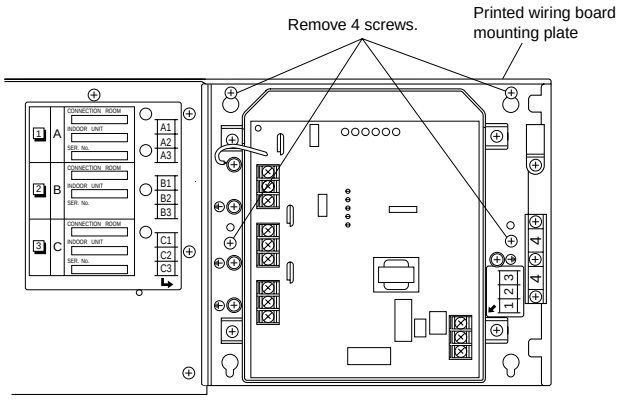
CAUTIONS:

- Do not turn ON the power until relocation and wiring is completed.
- When supplying power, it will automatically recognize the vertical orientation of the printed wiring board and change the terminal board for the indoor unit in order starting with A, B, and then C from above.

(1) Remove the electrical equipment cover.
Loosen the screw, and slide the cover in the direction indicated by the arrow.

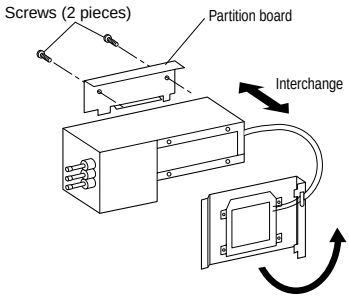


(2) Loosen 4 screws shown in the figure on the below, remove the mounting plate of the printed wiring board.



(3) Loosen and remove 2 screws fixed on the partition board in the opposite side.

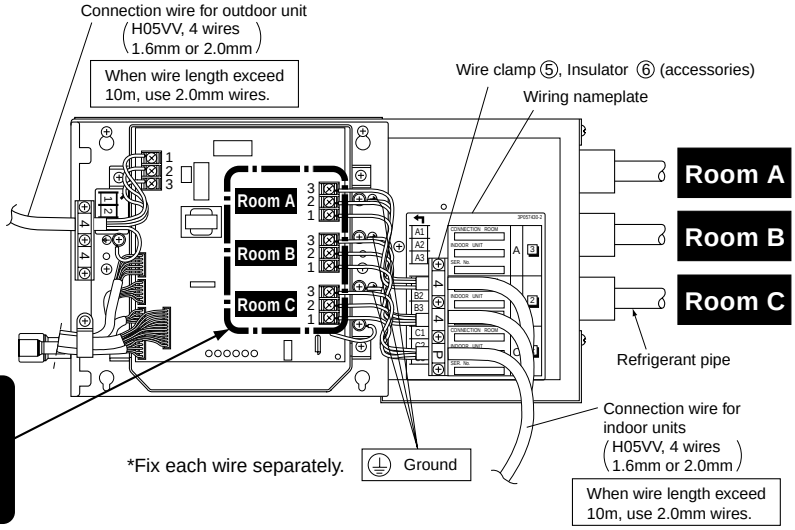
(4) Interchange the positions of the printed wiring board and partition board, and then fix them with screws.



(5) Follow the instruction on the wiring nameplate to connect the connection wires for indoor/outdoor units in accordance with the terminal board numbers.

⚠ Warning

Do not use tapped wires, stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock, or fire.



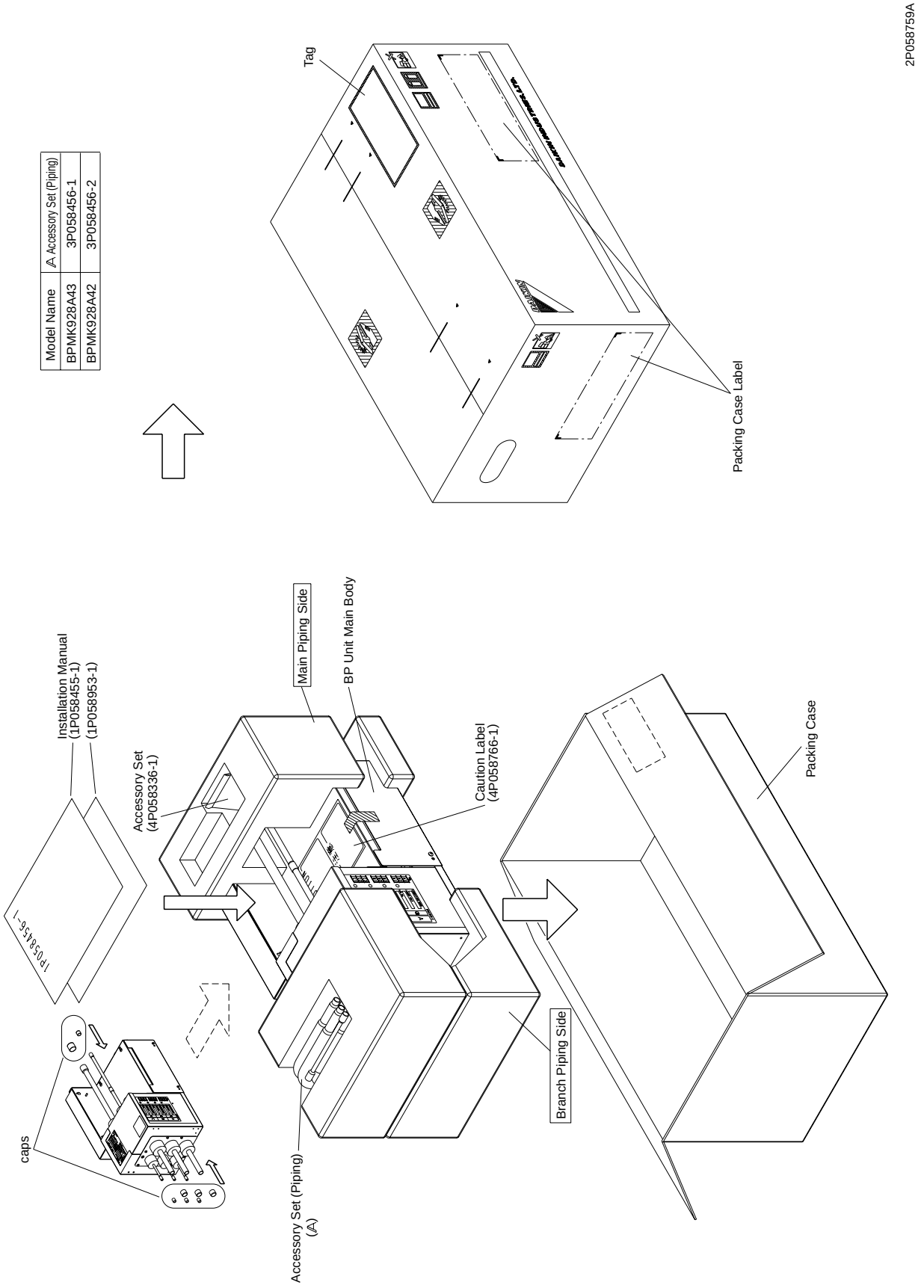
NOTE:
The terminal board numbers are arranged from top to bottom in order of 3, 2, and 1.

Operating Test

Follow the "operating test" as described in the manual for installation that comes with outdoor unit.

1P058455B

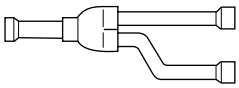
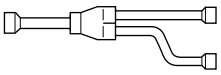
2.2 Packing Method



3. REFENET Joint

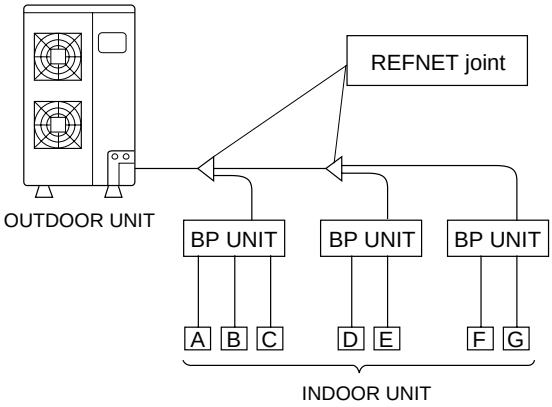
3.1 KHRJ928A4T

■ THIS KIT INCLUDES THE FOLLOWING PARTS.

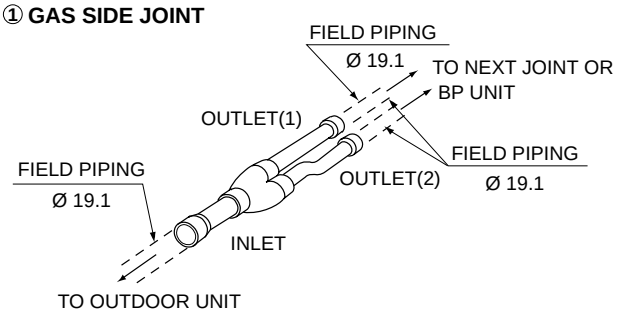
GAS SIDE JOINT	LIQUID SIDE JOINT	INSULATION	TAPE
		(Gas side/liquid side)  2 pcs.	 8 sheets.

■ INSTALLATION PROCEDURE

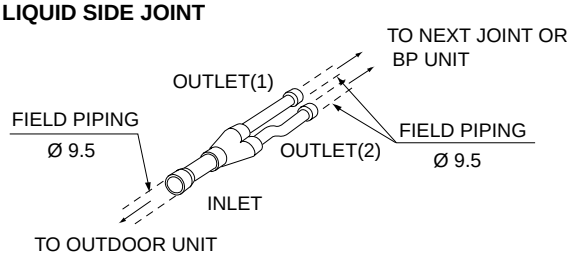
REFRIGERANT PIPING CONNECTION EXAMPLE



① GAS SIDE JOINT

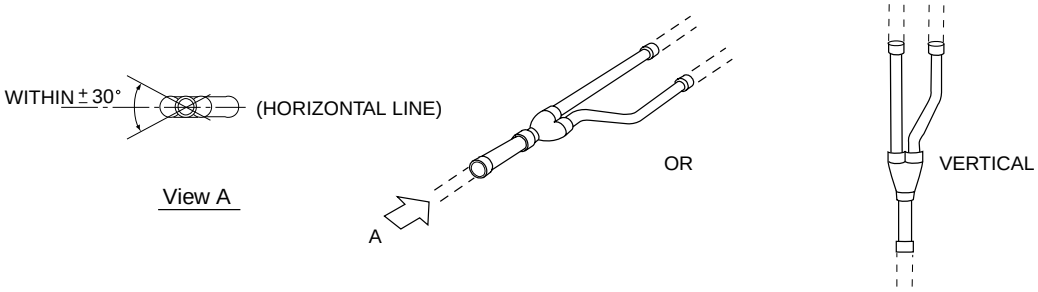


② LIQUID SIDE JOINT



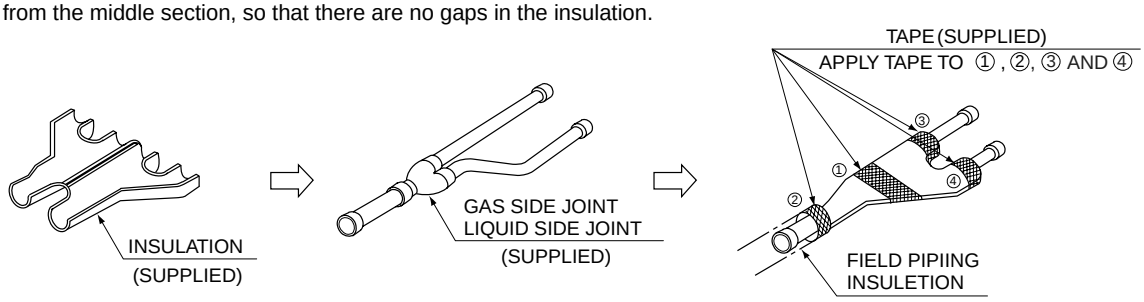
■ INSTALLATION PRECAUTIONS

① INSTALL THE JOINT SO THAT IT IS BRANCHED VERTICALLY OR HORIZONTALLY.



② BE SURE TO INSULATE BOTH THE GAS SIDE AND LIQUID SIDE JOINT.

- Set the joint piping with the insulation, by wrapping with the tape supplied, starting from the middle section, so that there are no gaps in the insulation.



- Seal the insulation and the field piping heat insulation seam with the supplied tape.

2P057850-1

4. Indoor Units

4.1 FTX-J Series

SAFETY PRECAUTIONS

- Read these SAFETY PRECAUTIONS carefully to ensure correct installation.
- This manual classifies the precautions into WARNINGS and CAUTIONS.
  Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNINGS	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTIONS	Failure to follow any of CAUTION may in some cases result in grave consequences.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish an earth connection.	⃠	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNINGS

- Installation should be left to the dealer or another professional.
  Improper installation may cause water leakage, electrical shock, or fire.
- Install the air conditioner according to the instructions given in this manual.
  Incomplete installation may cause water leakage, electrical shock, or fire.
- Be sure to use the supplied or specified installation parts.
  Use of other parts may cause the unit to come to lose, water leakage, electrical shock, or fire.
- Install the air conditioner on a solid base that can support the units weight.
  An inadequate base or incomplete installation may cause injury in the event the unit falls off the base.
- Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice. Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
- For wiring, use a cable long enough to cover the entire distance with no connection.
  Do not use an extension cord. Do not put other loads on the power supply, use a dedicated power circuit.
  (Failure to do so may cause abnormal heat, electric shock or fire.)
- Use the specified types of wires for electrical connections between the indoor and outdoor units.
  Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating or fire.
- After connecting interconnecting and supply wiring be sure to shape the cables so that they do not put undue force on the electrical covers or panels. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, or fire.
- When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R22), such as air. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury.)
- The unit is out of reach of children - at least 2.3m above the floor.
- If any refrigerant has leaked out during the installation work, ventilate the room. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- After all installation is complete, check to make sure that no refrigerant is leaking out. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)

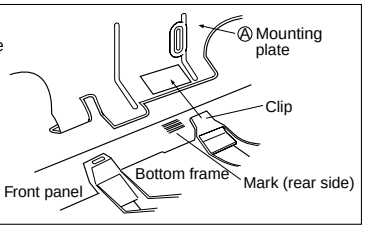
⚠ CAUTIONS

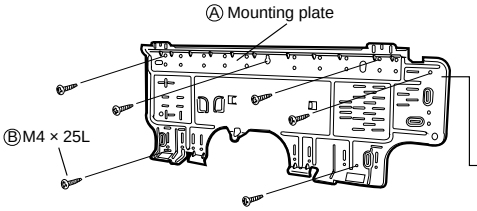
- Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth. ⏚
  Incomplete earth may cause electrical shock. A high surge current from lightning or other sources may cause damage to the air conditioner.
- An earth leakage circuit breaker may be required depending on site condition to prevent electrical shock.
  Failure to do so may cause electrical shock.
- Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage. ⃠
  If the gas leaks and builds up around the unit, it may catch fire.
- Establish drain piping according to the instructions of this manual.
  Inadequate piping may cause flooding.

INDOOR/OUTDOOR UNIT INSTALLATION DRAWINGS

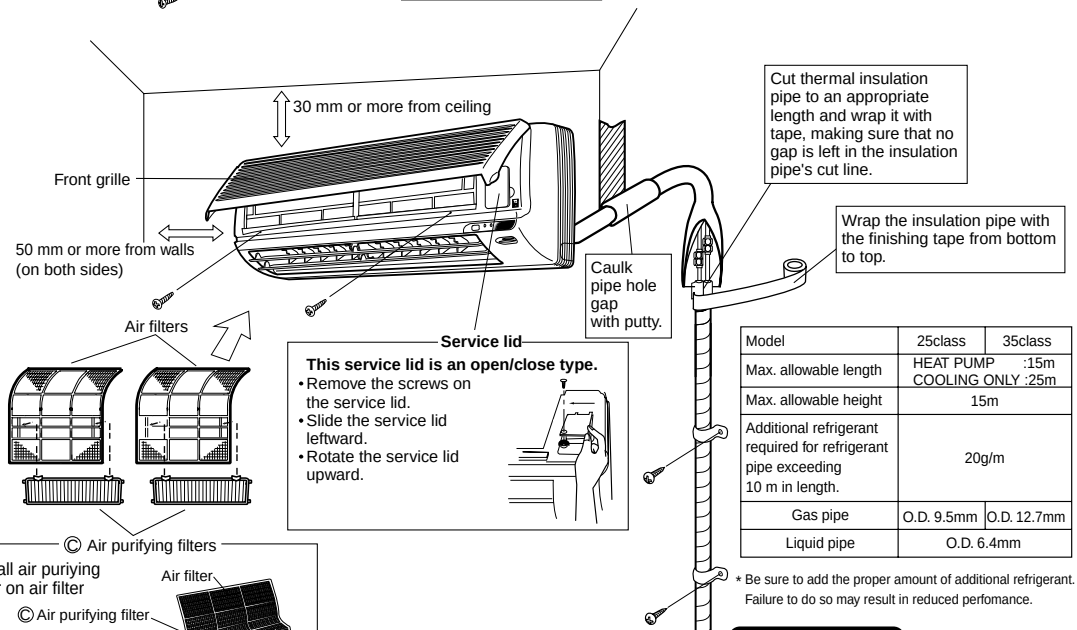
■ **How to attach the indoor unit.**
Hook the claws of the bottom frame to the mounting plate.
If the claws are difficult to hook, remove the front panel.

■ **How to remove the indoor unit.**
Push up the marked area (at the lower part of the front panel) to release the claws. If it is difficult to release, remove the front panel.





The mounting plate should be installed on a wall which can support the weight of the indoor unit.



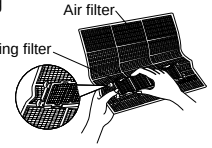
This service lid is an open/close type.
- Remove the screws on the service lid.
- Slide the service lid leftward.
- Rotate the service lid upward.

Model	25class	35class
Max. allowable length	HEAT PUMP :15m COOLING ONLY :25m	
Max. allowable height	15m	
Additional refrigerant required for refrigerant pipe exceeding 10 m in length.	20g/m	
Gas pipe	O.D. 9.5mm	O.D. 12.7mm
Liquid pipe	O.D. 6.4mm	

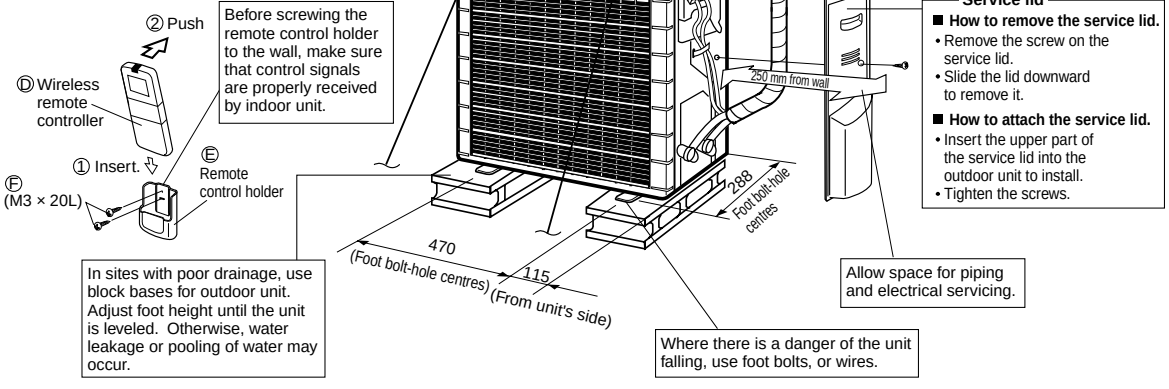
* Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced perfomance.

Ⓒ Air purifying filters

Install air puriying filter on air filter



With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.



Before screwing the remote control holder to the wall, make sure that control signals are properly received by indoor unit.

Service lid

■ **How to remove the service lid.**
- Remove the screw on the service lid.
- Slide the lid downward to remove it.

■ **How to attach the service lid.**
- Insert the upper part of the service lid into the outdoor unit to install.
- Tighten the screws.

In sites with poor drainage, use block bases for outdoor unit. Adjust foot height until the unit is leveled. Otherwise, water leakage or pooling of water may occur.

Allow space for piping and electrical servicing.

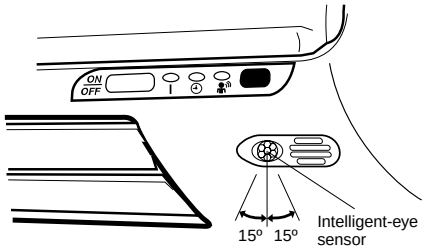
Where there is a danger of the unit falling, use foot bolts, or wires.

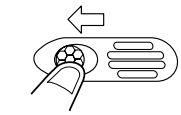
unit: mm

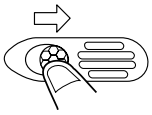
INDOOR/OUTDOOR UNIT INSTALLATION DRAWINGS

■ **Adjusting the angle of the Intelligent-eye sensor**

- Once installation of the indoor unit is complete, adjust the angle of the Intelligent-eye sensor to ensure the detection area properly covers the room. (Adjustable angle: 15º to right and left of centre)
- Gently push and slide the sensor to adjust the angle. Aim so that the sensor is pointing to the centre of the room, or to the part of the room that is most frequently used.




Moving the sensor to the left


Moving the sensor to the right

- After adjusting the angle, gently wipe the sensor with a clean cloth, being careful not to scratch the sensor.

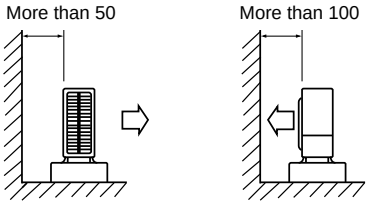
CAUTION

- Do not hit or violently push the Intelligent-eye sensor. This can lead to damage and malfunction.
- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

Outdoor Unit Installation Guidelines

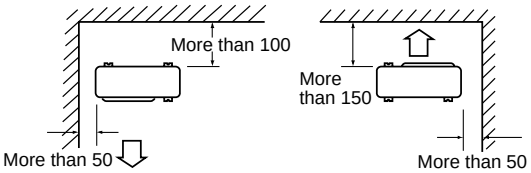
- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.

Wall facing one side



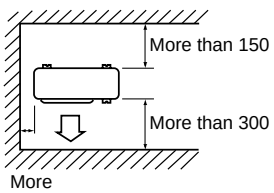
Side view

Walls facing two sides



Top view

Walls facing three sides



Top view

Unit: mm

CAUTION

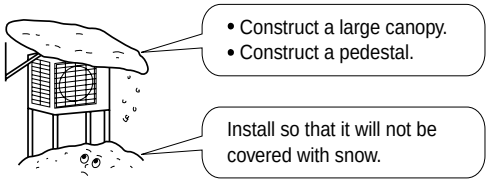
When operating the air conditioner in a low outdoor ambient temperature, be sure to follow the instructions described below.

1) To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.

2) Never install the outdoor unit at a site where the suction side may be exposed directly to wind.

3) To prevent exposure to wind, install a baffle plate on the air discharge side of the outdoor unit.

4) In heavy snowfall areas, select an installation site where the snow will not affect the unit.

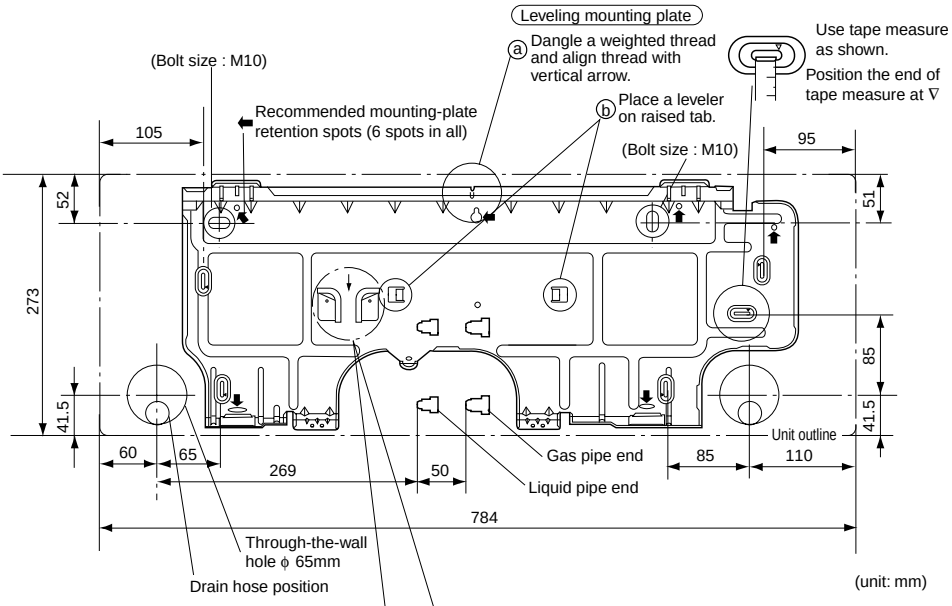


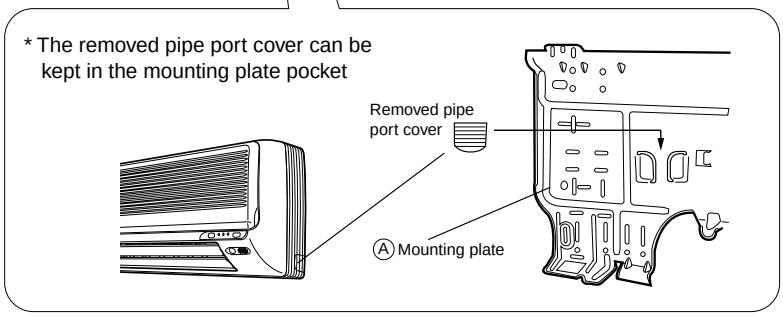
INDOOR UNIT

1 INSTALLING THE MOUNTING PLATE

- The mounting plate should be installed on a wall which can support the weight of the indoor unit.
  (1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
  (2) Secure the mounting plate to the wall with screws.

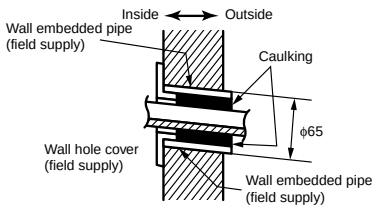
Recommended mounting-plate retention spots and Dimensions





2 BORING A WALL HOLE AND INSTALLING WALL EMBEDDED PIPE

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.
  (1) Bore a feed-through hole of 65 mm in the wall so it has a down slope toward the outside.
  (2) Insert a wall pipe into the hole.
  (3) Insert a wall cover into wall pipe.
  (4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

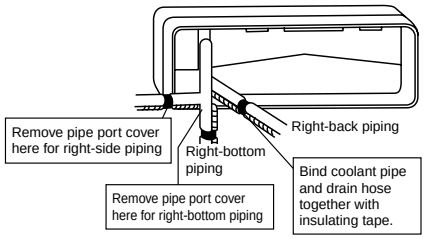


INDOOR UNIT

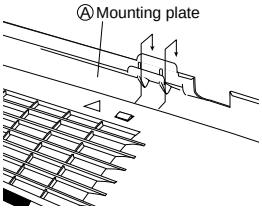
3 INSTALLING INDOOR UNIT

Right-Side, Right-Back, or Right-Bottom Piping

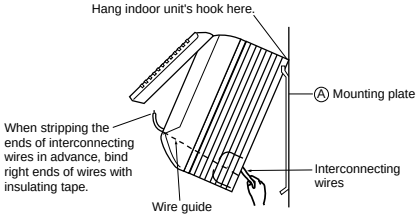
(1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.
(2) Wrap the refrigerant pipes and drain hose together with insulation tape Ⓙ.



(3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.

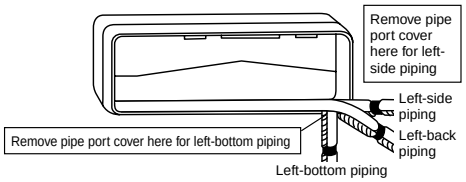


(4) Open the front grille, then open the service lid. (Refer to INSTALLATION TIPS)
(5) Pass the interconnecting wires from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side. Bend the ends of tie wires upward in advance for easier work. (If the interconnecting wire ends are to be stripped first, bundle wire ends with adhesive tape.)
(6) Press the indoor unit's bottom panel with both hands to set it on the mounting plate hooks. Make sure the wires do not catch on the edge of the indoor unit.

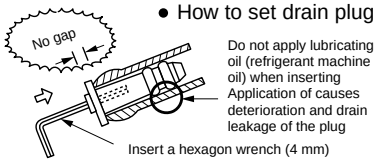


Left-Side, Left-Back, or Left Bottom Piping

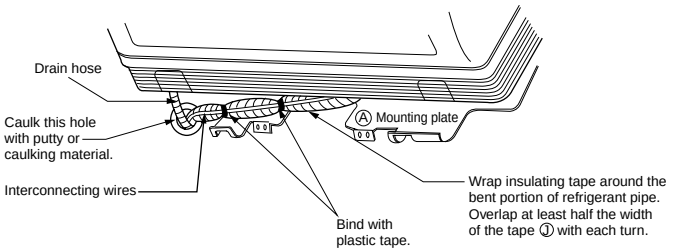
(1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.



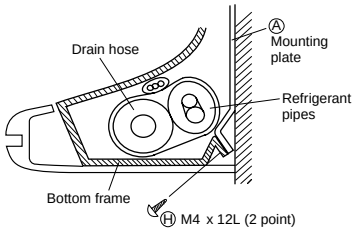
(2) Be sure to connect the drain hose to the drain port in place of a drain plug.



(3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
(4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.
(5) Pull in the interconnecting wires.
(6) Connect the inter-unit piping.



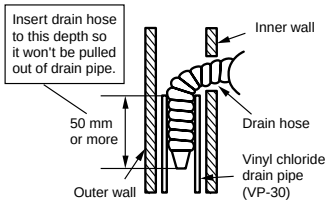
Note:
- Wrap the refrigerant pipes and drain hose together with insulation tapeⒿ as right figure, in case of setting the drain hose through the back of the indoor unit.
- If it difficult to fix the claws of the bottom frame on the catches of the mounting plate.
  Secure indoor unit to the mounting plate with screws (M4 x 12L).



Wall Embedded Piping

Follow the instructions given under
Left-Side, Left-Back, or Left Bottom Piping .

(1) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.

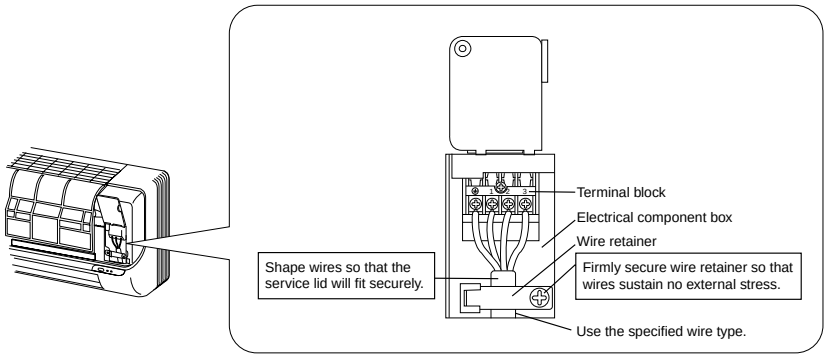


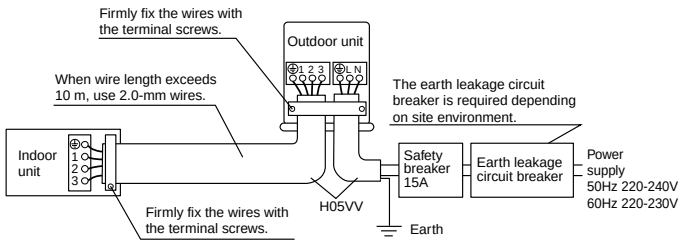
INDOOR UNIT

4 WIRING

With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.

(1) Strip wire ends (15 mm).
(2) Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
(3) Connect the earth wires to the corresponding terminals.
(4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
(5) Shape the wires so that the service lid fits securely, then close service lid.

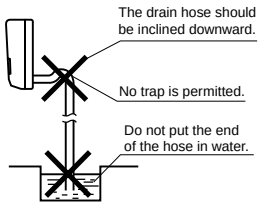




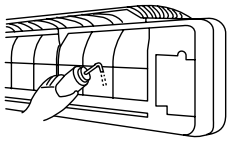
⚠ Warning
Do not use tapped wires,stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock,or fire.

5 DRAIN PIPING

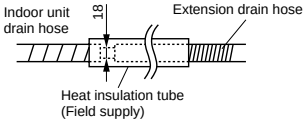
- Connect the drain hose, as described below.



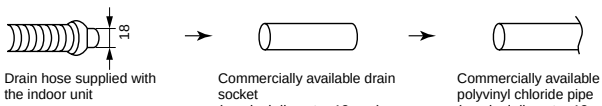
- Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



- When drain hose requires extension, obtain an extension hose commercially available.
  Be sure to thermally insulate the indoor section of the extension hose.



- When connecting a rigid polyvinyl chloride pipe (nominal diameter 13 mm) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 13 mm) as a joint.



1P049353A

4.2 FTXD-J Series

ACCESSORIES

Ⓐ Mounting plate	1	Ⓔ Remote control holder	1	Ⓙ Insulation tape	1
Ⓑ Mounting plate fixing screw M4 X 25L	10	Ⓕ Fixing screw for remote control holder M3 X 20L	2	Ⓚ Operation manual	1
Ⓒ Air purifying filter	2	Ⓖ AAA dry-cell batteries	2	Ⓛ Installation manual	1
Ⓓ Wireless remote controller	1	Ⓗ Indoor unit fixing screw M4 X 12L	2		

CHOOSING A SITE

• Before choosing the installation site, obtain user approval.

Indoor unit

The indoor unit should be sited in a place where:
- the restrictions on installation specified in the indoor unit installation drawings are met,
- both air intake and exhaust have clear paths met,
- the unit is not in the path of direct sunlight,
- the unit is away from the source of heat or steam,
- there is no source of machine oil vapour (this may shorten indoor unit life),
- cool air is circulated throughout the room,
- the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote control range,
- the unit is at least 1 metre away from any television or radio set (unit may cause interference with the picture or sound).

Outdoor unit

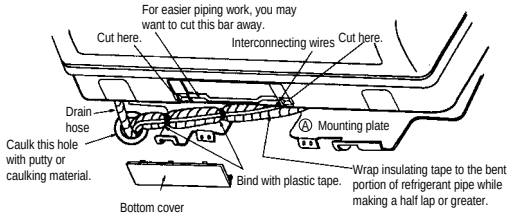
The outdoor unit should be sited in a place where:
- the restrictions on installation specified in the outdoor unit installation diagram are met,
- drain water causes no trouble or problem in particular,
- both air intake and exhaust have clear paths of air (they should be free of snow in snowy districts),
- the unit is in a clear path of air but not directly exposed to rain, strong winds, or direct sunlight,
- there is no fear of inflammable gas leakage,
- the unit is no directly exposed to salt, sulfidized gases, or machine oil vapour (they may shorten outdoor unit life).
- operation noise or hot air flow does not cause trouble to neighbours, and
- the unit is at least 3 metres away from any television or radio antenna.

Wireless Remote Controller

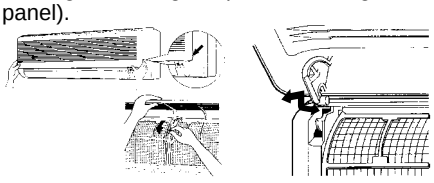
- Turn on all the fluorescent lamps in the room, if any, and find the site where remote control signals are properly received by the indoor unit (within 7 metres).

INSTALLATION TIPS

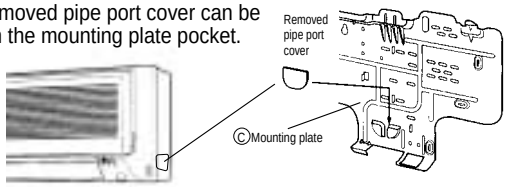
* The pipe port for left-side piping or in-wall piping can be accessed by removing the bottom cover from the bottom frame.



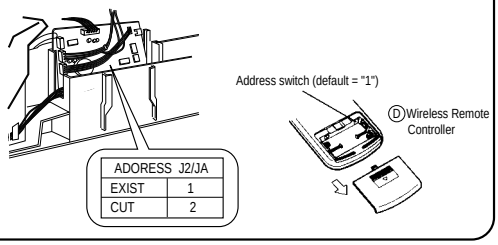
* Indoor unit's lift from mounting plate surface is eliminated by screwing the bottom frame to the mounting plate.
* Indoor unit's terminal block can be accessed for wiring just by removing the front grille (without having to remove the front panel).



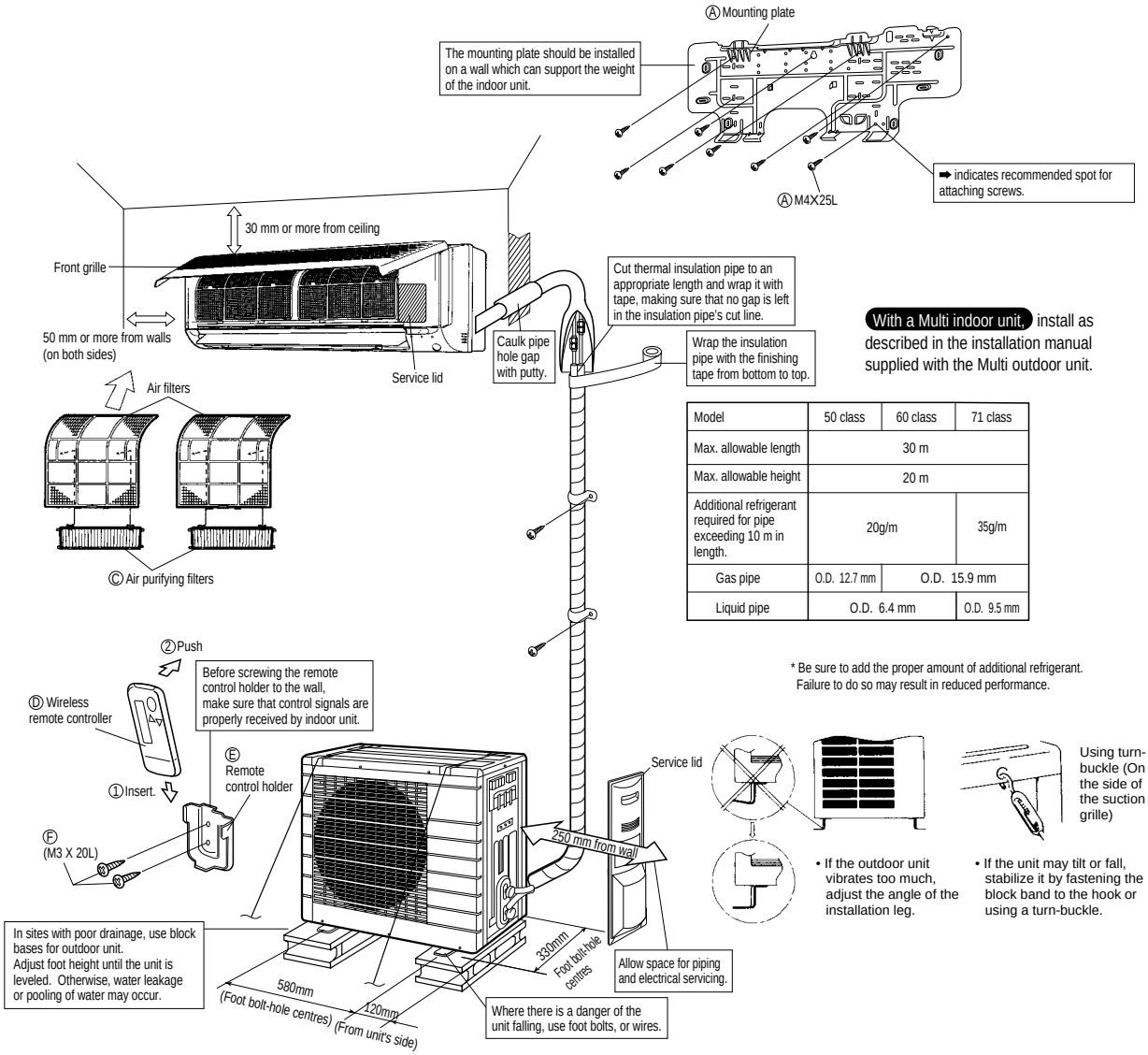
* The removed pipe port cover can be kept in the mounting plate pocket.



* When filling additional refrigerant, see the "INDOOR/OUTDOOR UNIT INSTALLATION DRAWINGS".
* Be sure to use the vacuum pump for air purging.
* When two indoor units are installed in one room, the two wireless remote controllers can be easily set for different addresses.



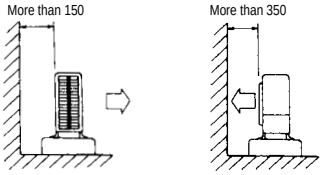
INDOOR/OUTDOOR UNIT INSTALLATION DRAWINGS



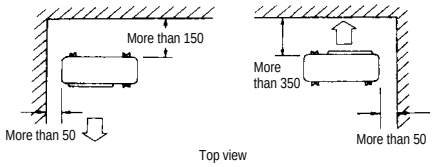
Outdoor Unit Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.

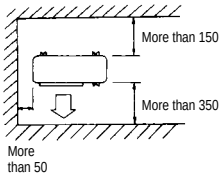
Wall facing one side



Walls facing two sides



Walls facing three sides



Unit: mm

Installing Air Purifying Filter

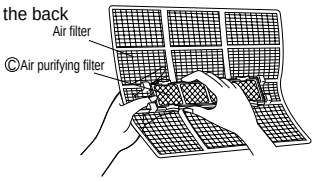
(1) Open front grille.

(2) Remove air filters.

(3) Install air purifying filter into its frame and install it on air filter.

(4) Install air filters on indoor unit.

(5) Stick the Electrostatic Filter Instruction Label on the back of the grille.

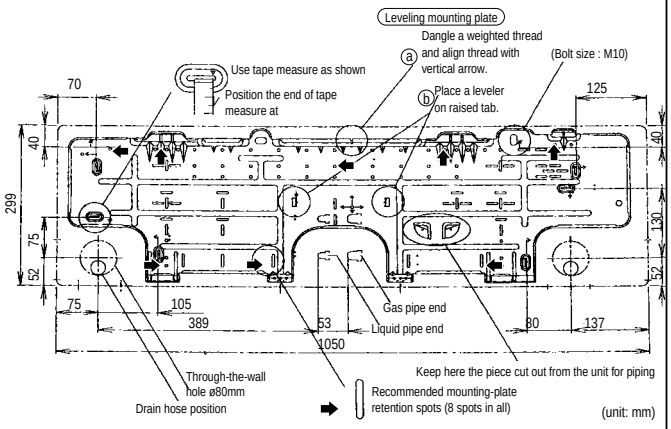


Indoor Unit

1 INSTALLING THE MOUNTING PLATE

- The mounting plate should be installed on a wall which can support the weight of the indoor unit.
  (1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
  (2) Secure the mounting plate to the wall with screws.

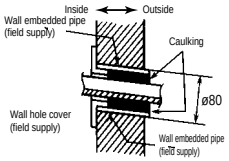
Recommended mounting-plate retention spots and Dimensions



2 BORING A WALL HOLE AND INSTALLING WALL EMBEDDED PIPE

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

(1) Bore a feed-through hole of 80mm in the wall so it has a down slope toward the outside.
(2) Insert a wall pipe into the hole.
(3) Insert a wall cover into wall pipe.
(4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

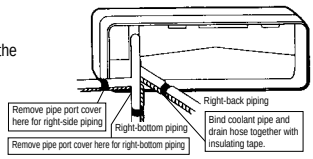


4

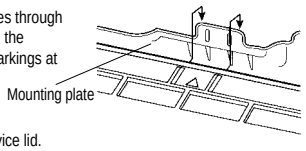
3 INSTALLING INDOOR UNIT

Right-Side, Right-Back, or Right-Bottom Piping

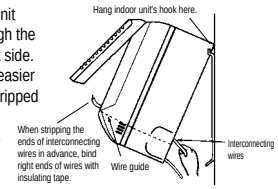
(1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.
(2) Wrap the refrigerant pipes and drain hose together with insulation tape.



(3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.

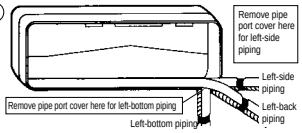


(4) Open the front grille, then open the service lid.
(5) Pass the interconnecting wires from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side. Bend the ends of tie wires upward in advance for easier work. (If the interconnecting wire ends are to be stripped first, bundle wire ends with adhesive tape.)
(6) Press the indoor unit's bottom panel with both hands to set it on the mounting plate hooks. Make sure the wires do not catch on the edge of the indoor unit.

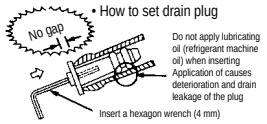


Left-Side, Left-Back, or Left Bottom Piping

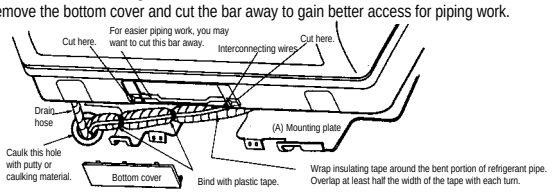
(1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.



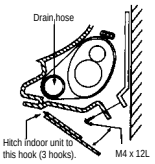
(2) Be sure to connect the drain hose to the drain port in place of a drain plug.



(3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
(4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.
(5) Pull in the interconnecting wires.
(6) Remove the bottom cover and cut the bar away to gain better access for piping work.

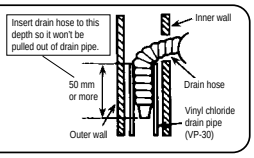


(7) Wrap the refrigerant pipes and drain hose together with insulation tape.
(8) While exercising care so that the interconnecting wires do not catch indoor unit, press the bottom edge of indoor unit with both hands until it is firmly caught by the mounting plate hooks. Secure indoor unit to the mounting plate with screws (M4 x 12L).



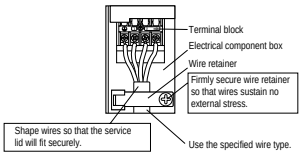
Wall Embedded Piping

Follow the instructions given under **Left-Side, Left-Back, or Left Bottom Piping**.
(1) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.

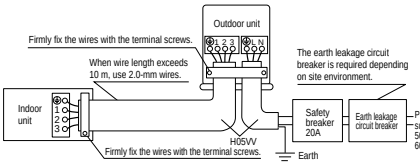


4 WIRING

With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.
(1) Strip wire ends (15 mm).
(2) Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
(3) Connect the earth wires to the corresponding terminals.



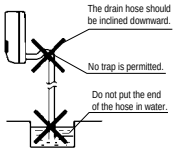
(4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
(5) Shape the wires so that the service lid fits securely, then close service lid.



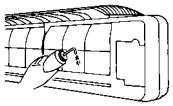
⚠ Warning
Do not use tapped wires,stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock,or fire.

5 DRAIN PIPING

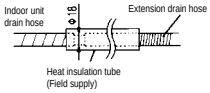
• Connect the drain hose, as described below



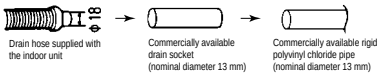
• Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



• When drain hose requires extension, obtain an extension hose commercially available. Be sure to thermally insulate the indoor section of the extension hose.



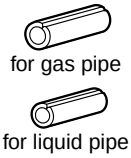
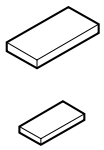
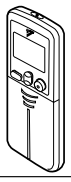
• When connecting a rigid polyvinyl chloride pipe (nominal diameter 13 mm) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 13 mm) as a joint.

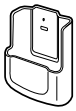
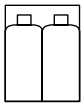


1P060562A

4.3 CDX-HA Series

ACCESSORIES

Clamp metal	Insulation for fitting	Sealing pad	Wireless remote controller
1	1 each	Large and small 1 each	1
	 for gas pipe for liquid pipe	 Large Small	

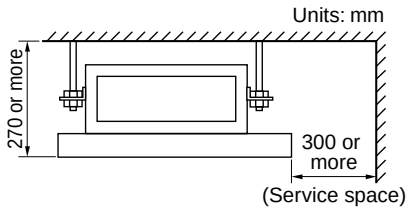
Remote control holder	AAA dry-cell batteries	Reciever kit				[Other]
1	1 set	1 set	1	1	2	• Operation manual • Installation manual
		Faceplate; faceplate frame 	Decorative cover 	Insulated mounting frame 	Screw M4 × 25 	

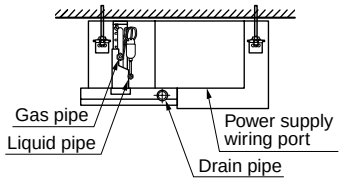
CHOOSING A SITE

- Before choosing the installation site, obtain user approval.

Indoor unit

- Optimum air distribution is ensured.
- The air passage is not blocked.
- Condensate can drain properly.
- The ceiling is strong enough to bear the weight of the indoor unit.
- A false ceiling does not seem to be at an incline.
- Sufficient clearance for maintenance and servicing is ensured.
- Piping between the indoor and outdoor units is within the allowable limits. (Refer to the installation manual for the outdoor unit.)
- The indoor unit, outdoor unit, power supply wiring and transmission wiring is at least 1 meter away from televisions and radios. This prevents image interference and noise in electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if a one-meter allowance is maintained.)

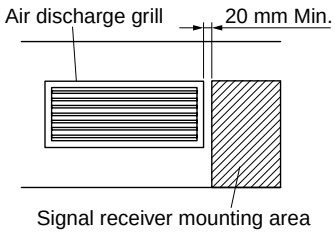




■Use suspension bolts to install the unit. Check whether or not the ceiling is strong enough to support the weight of the unit. If there is a risk that the ceiling is not strong enough, reinforce the ceiling before installing the unit.

■Select the signal receiver mounting location within the signal receiver mounting area according to the following conditions:

- Since the receiver has a built-in temperature sensor, do not mount it in an area where it will be subject to direct sunlight or to cold or hot air coming from the air discharge grill of the air conditioner.
- Since the receiver has a built-in light receptor to receive signals from the wireless remote control, do not mount it in a location where the signal may be blocked by a curtain, etc.



Wireless Remote Controller

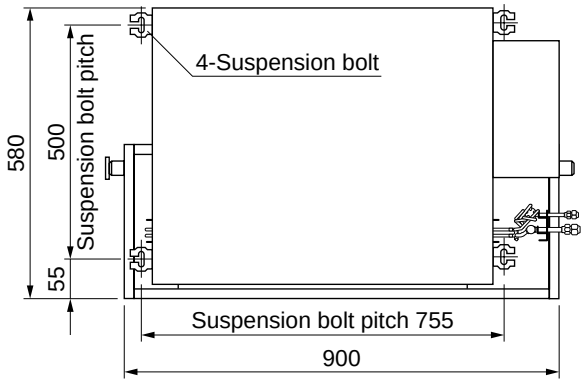
- Turn on all the fluorescent lamps in the room, if any, and find the site where remote control signals are properly received by the indoor unit (within 7 metres).

Outdoor unit

- For outdoor unit installation, see the installation manual supplied with the Multi outdoor unit.

PREPARATIONS BEFORE INSTALLATION

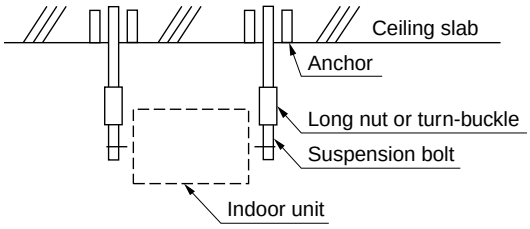
■**Relation of the unit to the suspension bolt positions**



■**Install the suspension bolts.**

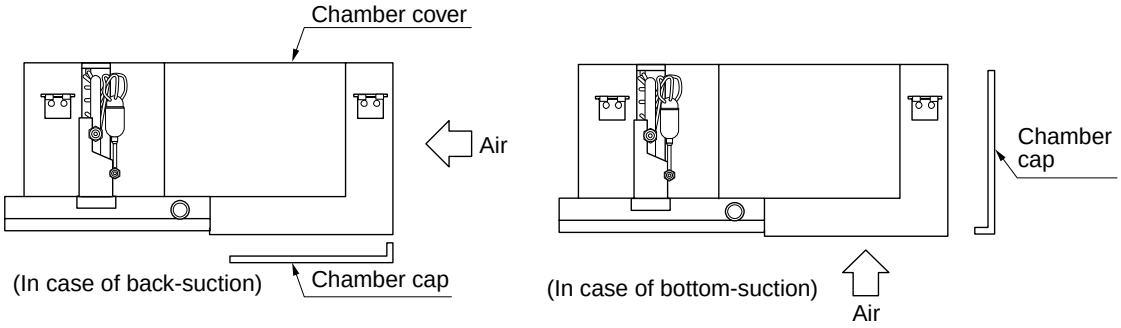
(Use M10-size bolts for the suspension bolts.)
In order to reinforce the ceiling bearing the weight of the unit, use anchors when installing onto an existing ceiling or use sunken inserts, sunken anchors or other commercially available parts when installing onto a new ceiling.

(Installation example)



NOTE) All of the above parts are commercially available.

■**Mount chamber cap**



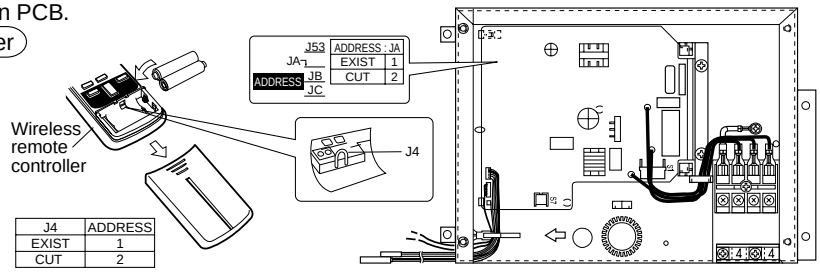
■When two indoor units are installed in one room, one of the two wireless remote controllers can be easily set for another addresses.

PCB in the indoor unit

- Cut the jumper JA on PCB.

Wireless remote controller

- Cut the jumper J4.



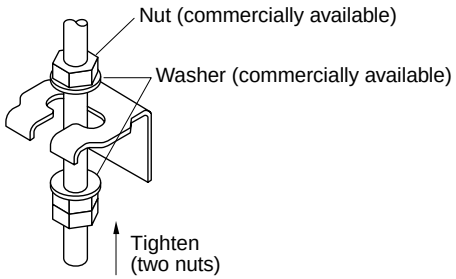
3

INDOOR UNIT INSTALLATION

■**Temporarily install the indoor unit.**

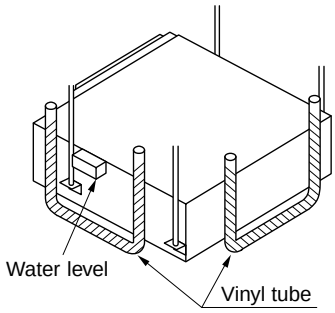
- Attach the hanger brackets to the suspension bolts. Be sure to use nuts and washers both above and below the hanger brackets to secure them.

NOTE) Use washers when mounting with M8 bolts.



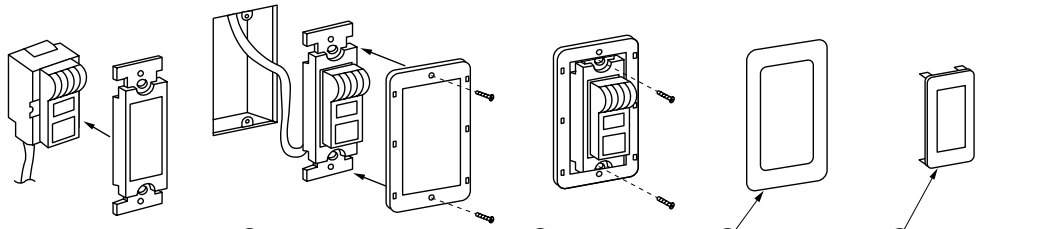
■**Use a water level or water-filled vinyl tubes to check that the unit is level at all four corners as shown in the drawing.**

■**Tighten the top nuts.**



■**Mounting the signal receiver**

Mount the signal receiver as shown below.



① Press the signal receiver into the insulated mounting frame.

② Press the signal receiver and mounting frame into the faceplate frame and secure with two screws.

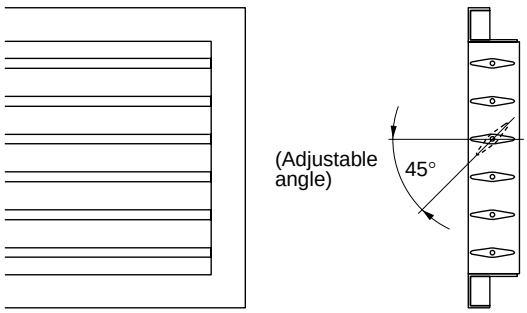
③ Mount the completed assembly using two screws.

④ Press the faceplate onto the faceplate frame.

⑤ Press the decorative cover into the faceplate.

Note) Mount the remote control cord far enough away from strong electrical wires (such as distribution wires for electrical lights, air conditioners, etc.) and from weak electrical wires (such as wires for telephones, intercoms, etc.).

For heat pump: If your feet feel cold when using the heating function, it is recommended that the air discharge grill shown at right be attached.



OUTDOOR UNIT INSTALLATION

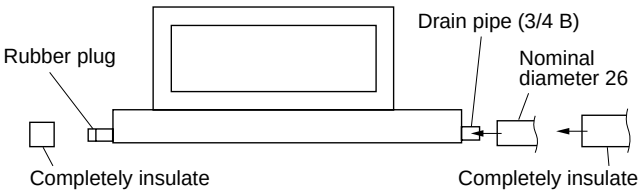
Install as described in the installation manual supplied with the Multi outdoor unit.

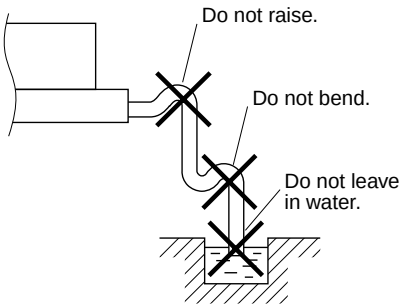
4

DRAIN WORK

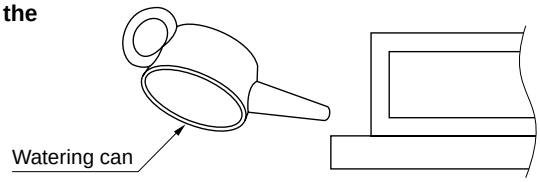
■**Connect the drain pipe as described below.**

- The drain pipe outlet can be either on the right or left side.
- After making the connection, wrap the drain pipes completely with insulation.
- When connecting the drain pipe to the outlet on the left side, remove the rubber plug and attach it to the outlet on the right side.





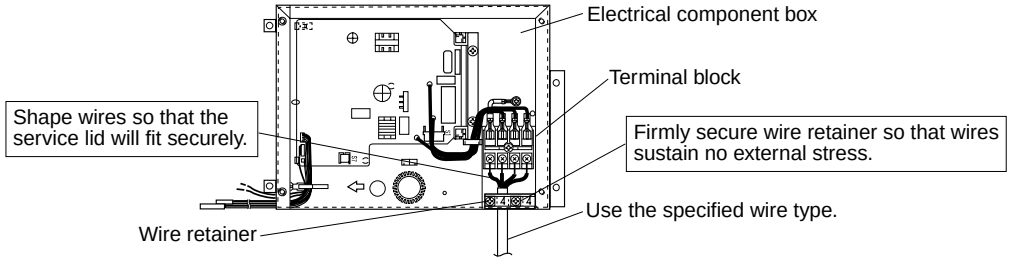
■**Pour some water into the drain pan to check that the water drains smoothly.**



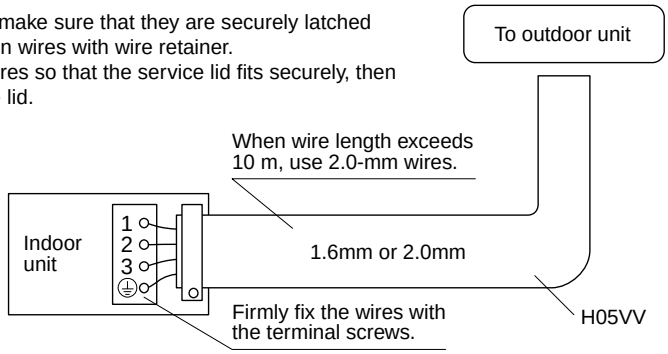
WIRING

See the installation manual supplied with the Multi outdoor unit for outdoor unit.

(1) Strip wire ends (15 mm).
(2) Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
(3) Connect the earth wires to the corresponding terminals.



(4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
(5) Shape the wires so that the service lid fits securely, then close service lid.



⚠ Warning
Do not use tapped wires,stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock,or fire.

TRIAL OPERATION AND TESTING

Trial Operation and Testing

(1) Measure the supply voltage and make sure that it falls in the specified range.
(2) Trial operation should be carried out in either cooling or heating mode.

For Heat pump

In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.

- Trial operation may be disabled in either mode depending on the room temperature.
- After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C in cooling mode, 20˚C to 24˚C in heating mode).
- For protection, the system disables restart operation for 3 minutes after it is turned off.

For Cooling-Only

Select the lowest programmable temperature.

- Trial operation in cooling mode may be disabled depending on the room temperature. Use the remote control for trial operation as described below.

Trial operation from Remote Controller

(1) Press ON/OFF button to turn on the system.
(2) Simultaneously press DOWN, UP, and MODE buttons.
(3) Press MODE button twice.
(" ﾃｽﾄ " will appear on the display to indicate that Trial Operation mode is selected.)
(4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.

- After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C).
- For protection, the unit disables restart operation for 3 minutes after it is turned off.

(3) Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts are working properly.
* The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
* If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is turned on again.

Test Items

Test Items	Symptom (diagnostic display on RC)	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly earthed.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Shut-off valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

1P055196A

4.4 FLX-J Series

(Installation for J series as a representative)

ACCESSORIES

Ⓐ Mounting plate	1pc.	Ⓕ Fixing screw for remote controller holder M3 X 20L	2pcs.	Ⓜ Extension auxiliary pipe	1pc.
Ⓑ Mounting plate fixing screw M4 X 25L	10pcs.	Ⓖ dry batteries	1set.	Ⓝ Heat insulation tube (Refrigerant pipe)	1pc.
Ⓒ Air purifying filter	1set.	Ⓙ Side cover	2pcs.	Ⓠ Binding band	4pcs.
Ⓓ Wireless remote controller	1pc.	Ⓚ Operation manual	1set.		
Ⓔ Remote controller holder	1pc.	Ⓛ Installation manual	1set.		

CHOOSING A SITE

• Before choosing the installation site, obtain user approval.

Indoor unit

The indoor unit should be sited in a place where:
- the restrictions on installation specified in the indoor unit installation drawings are met,
- both air intake and exhaust have clear paths met,
- the unit is not in the path of direct sunlight,
- the unit is away from the source of heat or steam,
- there is no source of machine oil vapour (this may shorten indoor unit life),
- cool air is circulated throughout the room,
- the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote control range, and
- the unit is at least 1 metre away from any television or radio set (unit may cause interference with the picture or sound).

Outdoor unit

The outdoor unit should be sited in a place where:
- the restrictions on installation specified in the outdoor unit installation diagram are met,
- drain water causes no trouble or problem in particular,
- both air intake and exhaust have clear paths of air (they should be free of snow in snowy districts),
- the unit is in a clear path of air but not directly exposed to rain, strong winds, or direct sunlight,
- there is no fear of inflammable gas leakage,
- the unit is no directly exposed to salt, sulfidized gases, or machine oil vapour (they may shorten outdoor unit life).
- operation noise or hot air flow does not cause trouble to neighbours, and
- the unit is at least 3 metres away from any television or radio antenna.

Wireless Remote Controller

- Turn on all the fluorescent lamps in the room, if any, and find the site where remote control signals are properly received by the indoor unit (within 7 metres).

BEFORE INSTALLING THE INDOOR UNIT

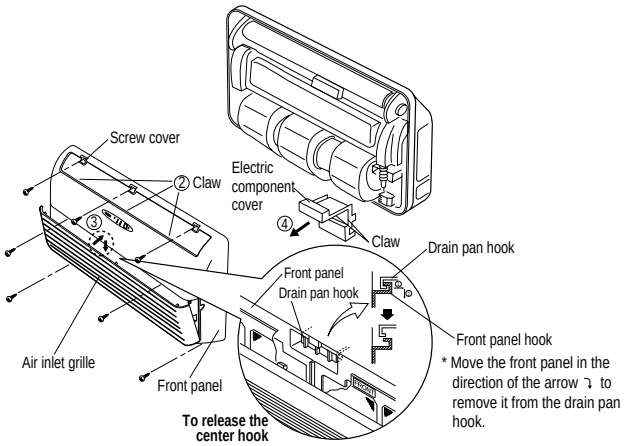
• Perform the following before installing the indoor unit.

① Open the air inlet grille and the screw cover, and remove the seven screws.

② Release the claws in the 3 places indicated.

③ Release the center hook and remove the front panel.

④ Release the claws in the 2 places indicated and remove the electric component cover.



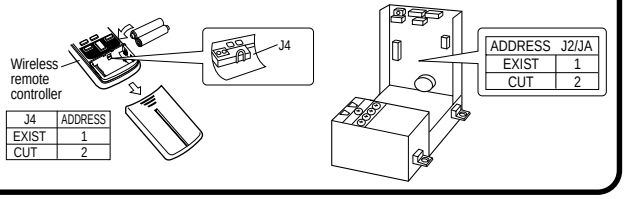
INSTALLATION TIPS

■ How to the different addresses.

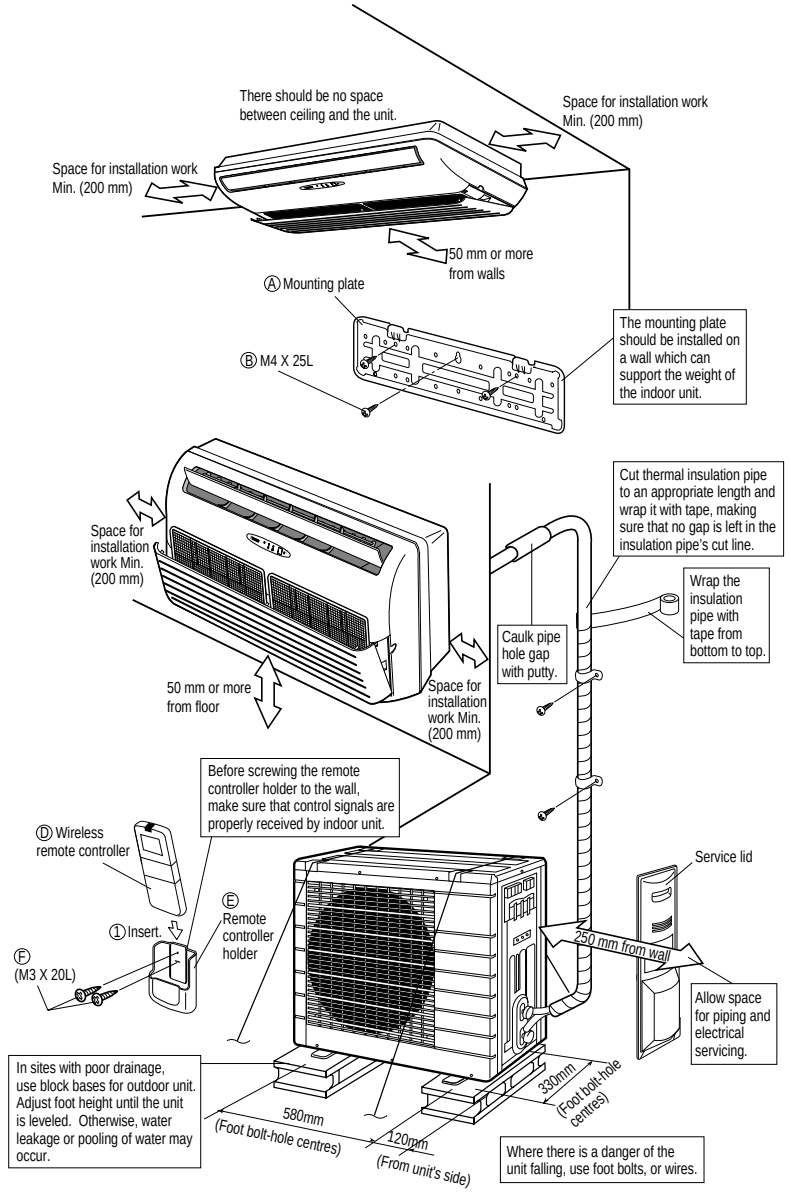
- When two indoor units installed in one room, the two wireless remote controllers can be set for different addresses.

(PCB in the indoor unit)
- Remove the electric component cover. (Refer to the (BEFORE INSTALLING THE INDOOR UNIT).)
- Cut the jumper J2/JA on PCB.

(Wireless remote controller) • Cut the jumper J4



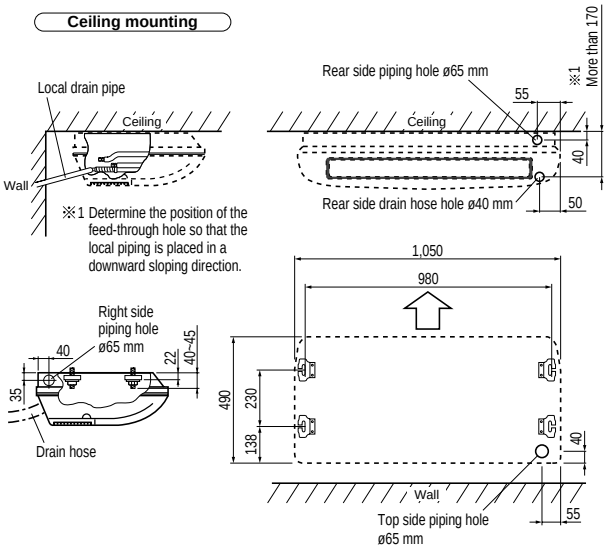
INDOOR/OUTDOOR UNIT INSTALLATION DRAWINGS



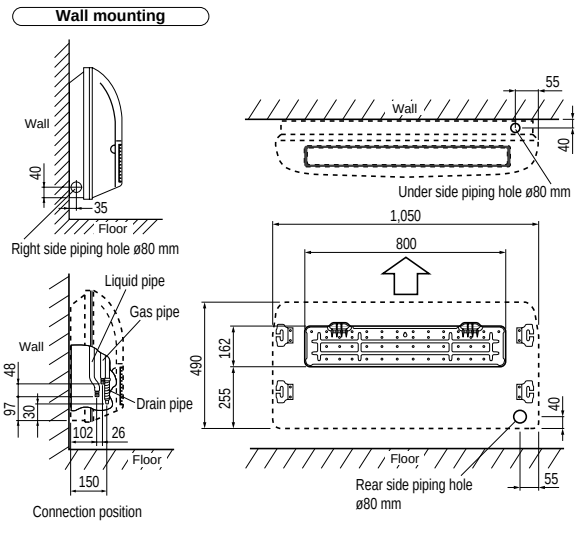
Model	50 class	60 class
Max. allowable length	30 m	
Max. allowable height	20 m	
Additional refrigerant required for refrigerant pipe exceeding 10 m in length.	20 g/m	
Gas pipe	O.D. 12.7 mm	O.D. 15.9 mm
Liquid pipe	O.D. 6.4 mm	

* Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

Ceiling mounting



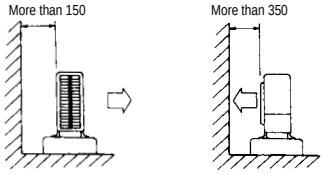
Wall mounting



Outdoor Unit Installation Guidelines

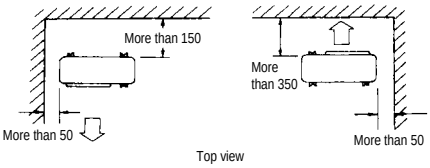
- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.

Wall facing one side



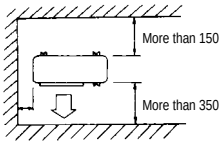
Side view

Walls facing two sides



Top view

Walls facing three sides



Top view

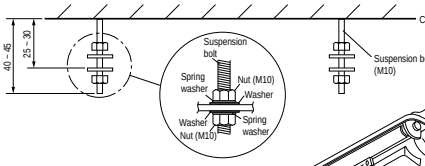
Unit: mm

Indoor Unit

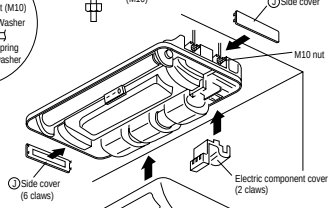
CEILING MOUNTING

1 INSTALLING THE SUSPENSION BOLT

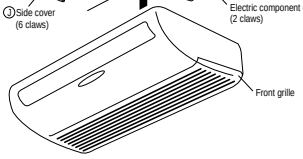
- Install the suspension bolt so that it can support the indoor unit; adjust distance to ceiling before installation.



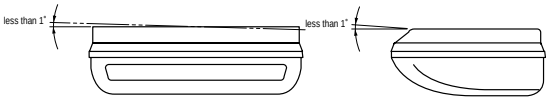
- Mount the indoor unit according to the installation drawings and tighten it securely with M10 nut. (4 places)



- After mounting the indoor unit on the ceiling, install each part as shown in the diagram on the right.



Incline condition for installation



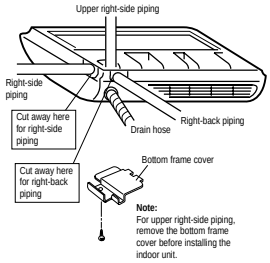
2 INSTALLING INDOOR UNIT

(1) Connect the extension auxiliary pipe (Ⓜ, supplied) to the local piping. (Applies to both ceiling mounting and wall mounting units.)

(2) Prepare the local piping at the connection point for the drain pipe, as shown in the installation drawings.

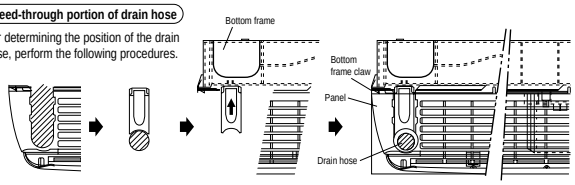
Note:
Be sure to place the drain hose as shown in the diagram on the right, in a downward sloping direction.

(3) Connect the drain hose to the local drain pipe. Position the interconnecting wire in the same direction as the piping.



Feed-through portion of drain hose

For determining the position of the drain hose, perform the following procedures.

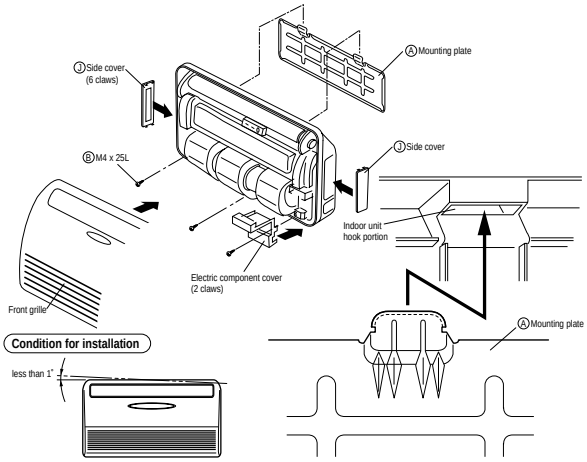


① Cut out with a nipper. ② Cut out the drain hose portion. ③ Screw it to the bottom frame. ④ After determining the position of the drain hose, hook the panel to the bottom frame claws.

WALL MOUNTING

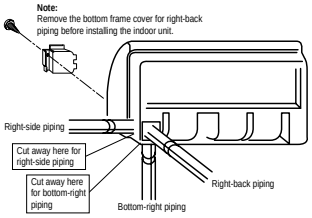
1 INSTALLATION

• Install the indoor unit on the wall according to the installation drawings.
(1) Hang the indoor unit on the hooks of Ⓐ mounting plate. (2 places)
(2) Fix the three holes in the lower portion of the indoor unit with Ⓑ M4 x 25L screws.



2 INSTALLING INDOOR UNIT

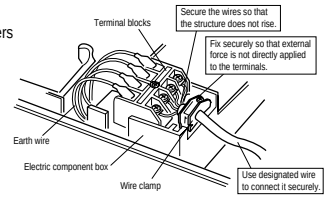
(1) Connect the extension auxiliary pipe (Ⓜ , supplied) to the local piping. (Applies to both ceiling mounting and wall mounting units.)
(2) Prepare the local piping at the connection point for the drain pipe, as shown in the installation drawings.
(3) Connect the drain hose to the local drain pipe.
Position the interconnecting wire in the same direction as the piping.



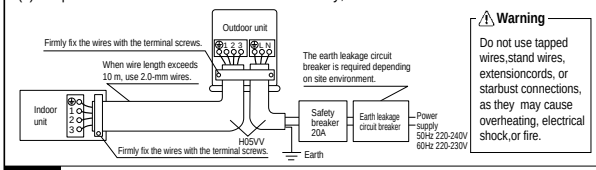
COMMONALITY BETWEEN CEILING MOUNTING AND WALL MOUNTING

1 WIRING

(1) Strip wire ends (15 mm).
(2) Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
(3) Connect the earth wires to the corresponding terminals.



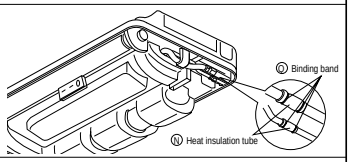
(4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
(5) Shape the wires so that the service lid fits securely, then close service lid.



Warning
Do not use tapped wires,stand wires, extensioncords, or starbust connections, as they may cause overheating, electrical shock,or fire.

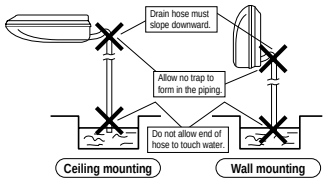
2 INSULATION OF REFRIGERANT PIPES

• Joints in liquid pipe and the gas pipe must be insulated with Ⓝ heat insulation tube attached with Ⓠ binding bands.
* Cut Ⓝ heat insulation tube to appropriate length.

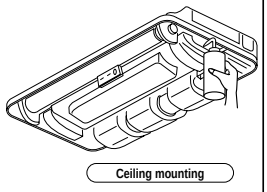


3 DRAIN PIPING

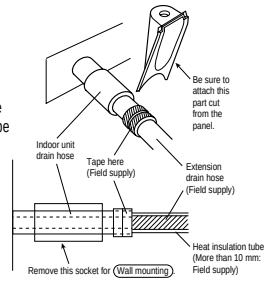
• Connect the drain hose, as described below.

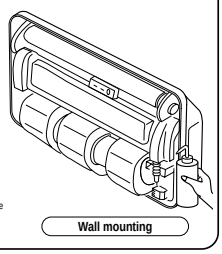


• Pour water into the drain pan from the right side to check that water flows smoothly from the drain hose.



• When drain hose requires extension, obtain an extension hose commercially available.
After connecting the local drain hose, tape the slits of the heat insulation tube.





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