

DAIKIN

INSTALLATION MANUAL

R410A Split Series

INVERTER



Models

FLXS25BVMB	FLKS25BVMB
FLXS35BVMB	FLKS35BVMB
FLXS50BVMB	FLKS50BVMB
FLXS60BVMB	FLKS60BVMB
FLX25BVMB	FLK25BVMB
FLX35BVMB	FLK35BVMB
FLXS25BAVMB	FLKS25BAVMB
FLXS35BAVMB	FLKS35BAVMB
FLXS50BAVMB	FLKS50BAVMB
FLXS60BAVMB	FLKS60BAVMB

Installation manual
R410A Split series

English

Installationsanleitung
Split-Baureihe R410A

Deutsch

Manuel d'installation
Série split R410A

Français

Montagehandleiding
R410A Split-systeem

Nederlands

Manual de instalación
Serie Split R410A

Español

Manuale d'installazione
Serie Multiambienti R410A

Italiano

Εγχειρίδιο εγκατάστασης
διαιρούμενης σειράς R410A

Ελληνικά

Manual de Instalação
Série split R410A

Portugues

Руководство по монтажу
Серия R410A с раздельной установкой

Русский




Safety Precautions

- Read these Safety Precautions carefully to ensure correct installation.
- This manual classifies the precautions into WARNING and CAUTION.
Be sure to follow all the precautions below: they are all important for ensuring safety.





 **WARNING**.....Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.



 **CAUTION**.....Failure to follow any of CAUTION may result in grave consequences in some cases.

- The following safety symbols are used throughout this manual:

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

 WARNING	
• 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 weight of the unit. 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 length 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.	
• 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.)	
• When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R410A), 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.)	
• During pump-down, stop the compressor before removing the refrigerant piping. If the compressor is still running and the stop valve is open during pump-down, air will be sucked in when the refrigerant piping is removed, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.	
• During installation, attach the refrigerant piping securely before running the compressor. If the compressor is not attached and the stop valve is open during pump-down, air will be sucked in when the compressor is run, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.	
• 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, or fire. 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 install an earth leakage breaker may result in electric shocks, or fire.	

 CAUTION	
• 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.	
• Tighten the flare nut according to the specified method such as with a torque wrench. If the flare nut is tightened too hard, the flare nut may crack after a long time and cause refrigerant leakage.	

Accessories

Indoor unit (A) – (Q)

(A) Mounting plate	1	(G) AAA dry-cell batteries	2	(N) Heat insulation tube (Extension auxiliary pipe)	1
(B) Photocatalytic deodorizing filter	1	(J) Side covers	2	(P) Heat insulation tube (Refrigerant pipe)	1
(C) Air purifying filter	1	(K) Operation manual	1	(Q) Binding bands	4
(D) Wireless remote controller	1	(L) Installation manual	1		
(E) Remote controller holder	1	(M) Extension auxiliary pipe	2		

- The extension auxiliary pipe (M) (N) is not included for FLX(S)25, FLX(S)35, FLK(S)25 and FLK(S)35.

Choosing an Installation Site

- Before choosing the installation site, obtain user approval.

1. 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).

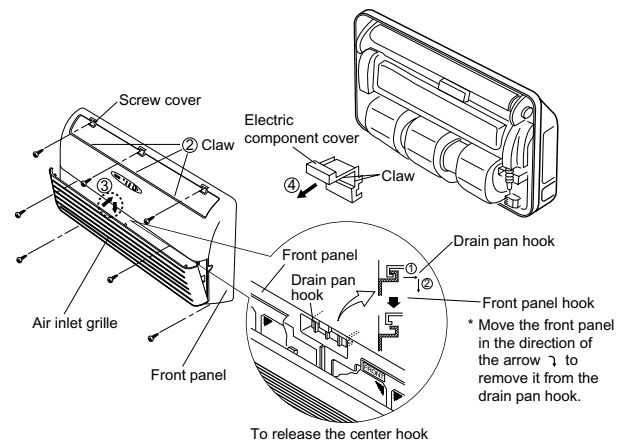
2. Wireless remote controller.

- 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

1. Perform the following before installing the indoor unit.

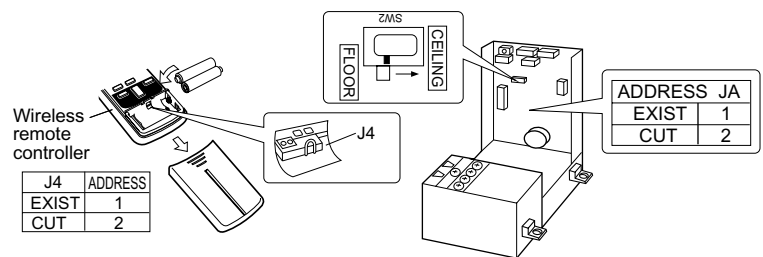
- 1) Open the air inlet grille and the screw cover, and remove the 7 screws.
- 2) Release the claws in the 3 places indicated.
- 3) Release the center hook and remove the front panel.
- 4) Release the claws in the 2 places indicated and remove the electric component cover.



Installation Tips

1. How to the different addresses.

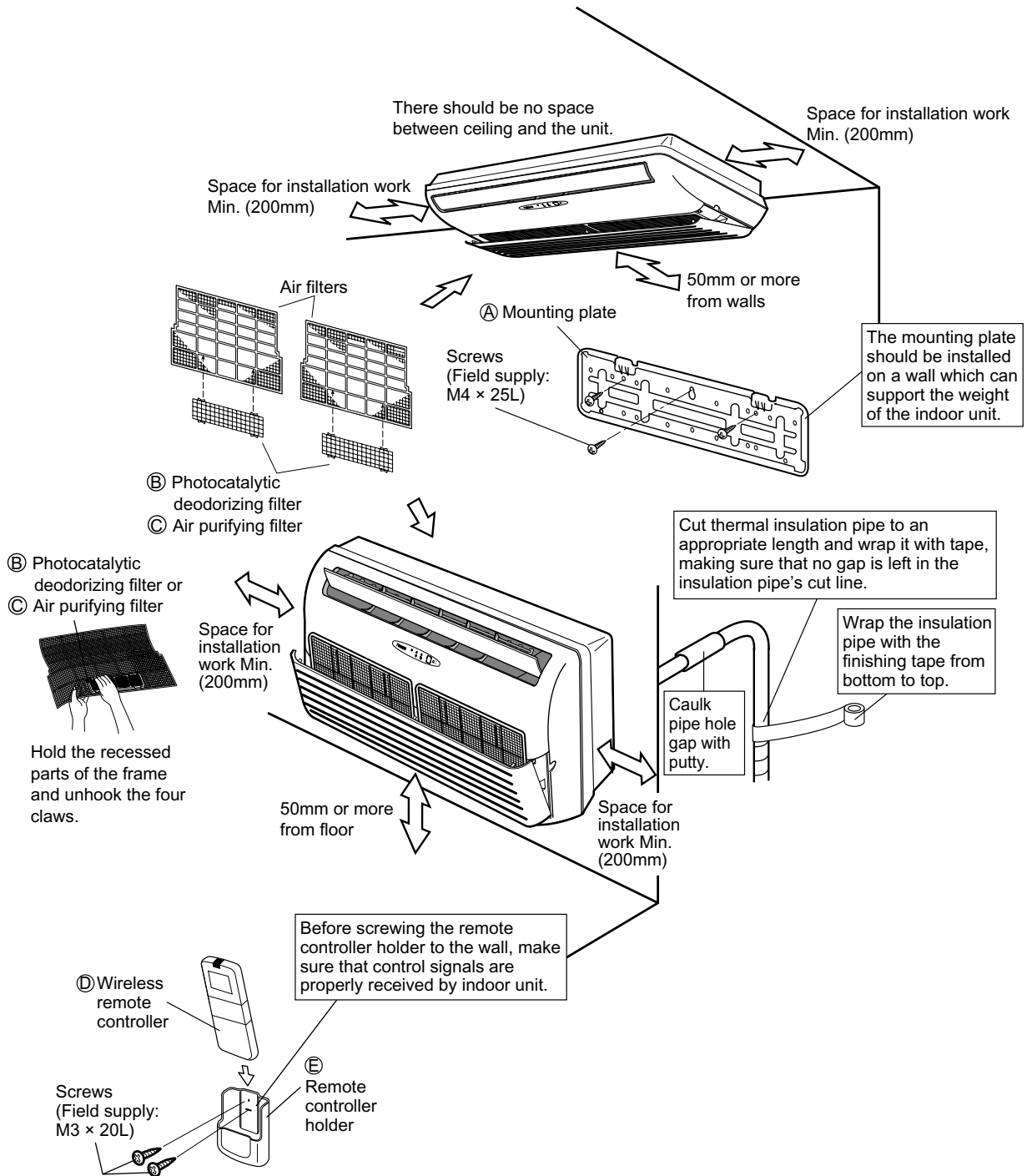
- 1) When two indoor units installed in one room, the two wireless remote controllers can be set for different addresses.
- 2) Remove the electric component cover. (Refer to the **BEFORE INSTALLING THE INDOOR UNIT.**)
- 3) Cut the jumper JA on PCB.
Wireless remote controller
- 4) Cut the jumper J4.



2. In case of ceiling suspended use.

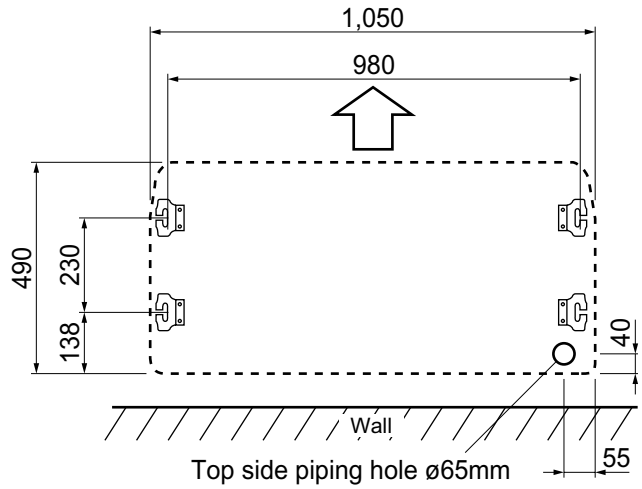
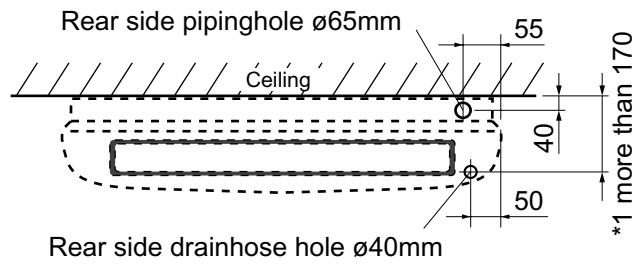
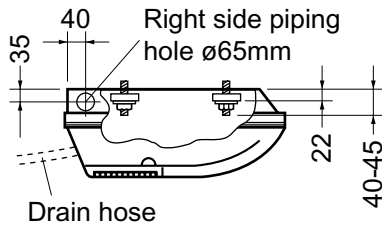
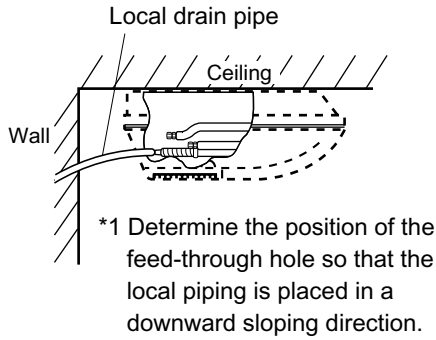
- 1) Slide the switch(SW2) to "CEILING" in case of installing on the ceiling.

Indoor Unit Installation Drawings

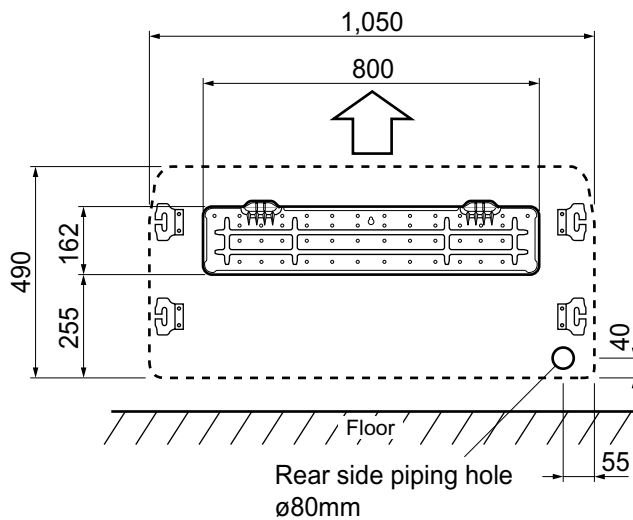
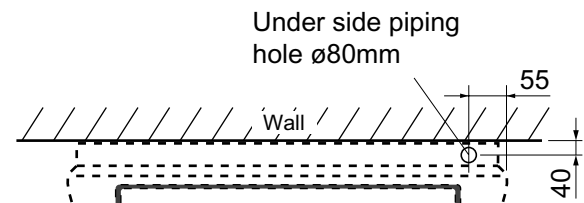
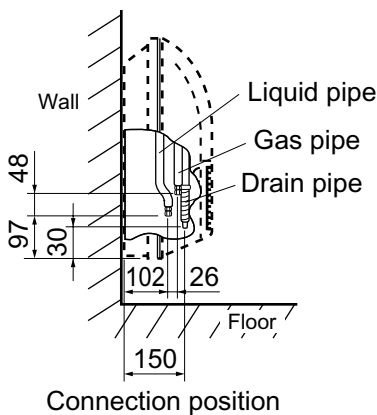
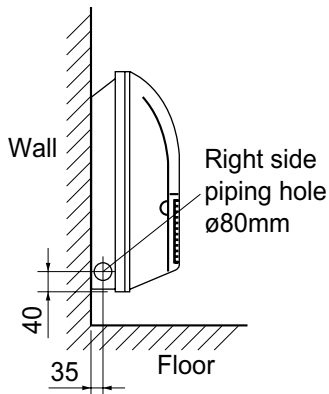


Indoor Unit Installation Drawings

1. Ceiling mounting.



2. Wall mounting.

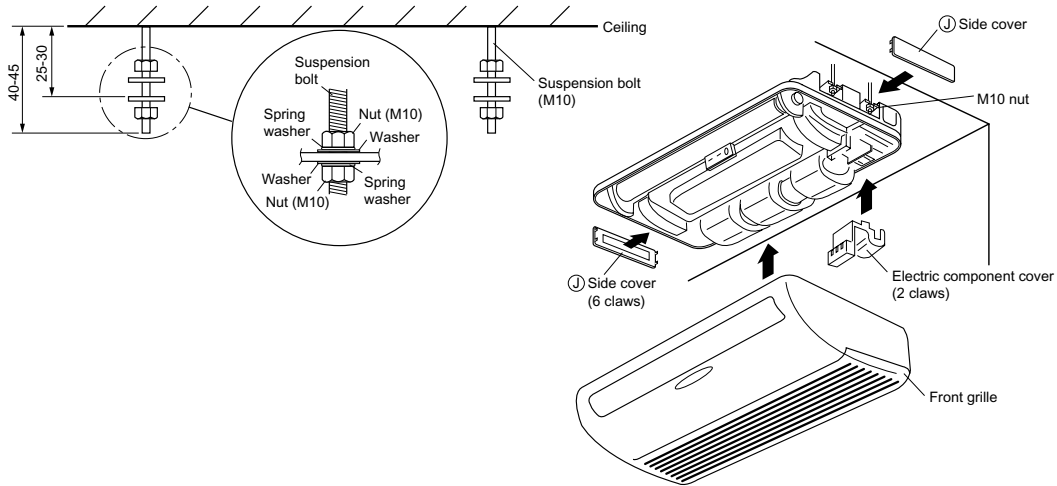


Indoor Unit Installation

Ceiling Mounting

1. Installing the suspension bolt.

- 1) Install the suspension bolt so that it can support the indoor unit; adjust distance to ceiling before installation.
- 2) Mount the indoor unit according to the installation drawings and tighten it securely with M10 nut. (4 places)
- 3) After mounting the indoor unit on the ceiling, install each part as shown in the diagram on the right.

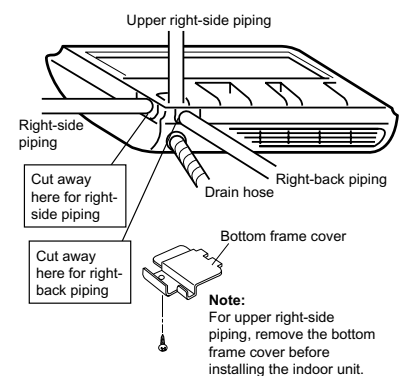


• Incline condition for installation



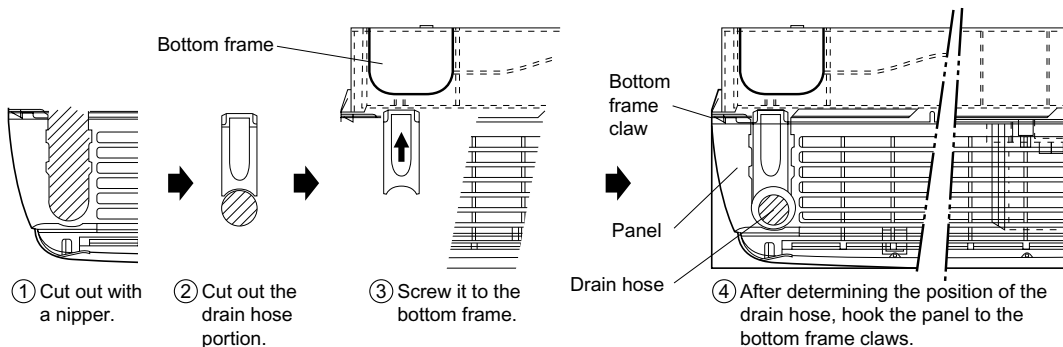
2. Installing indoor unit.

- 1) Connect the extension auxiliary pipe (M), supplied) to the local piping. (See 1 on the next page)
(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.

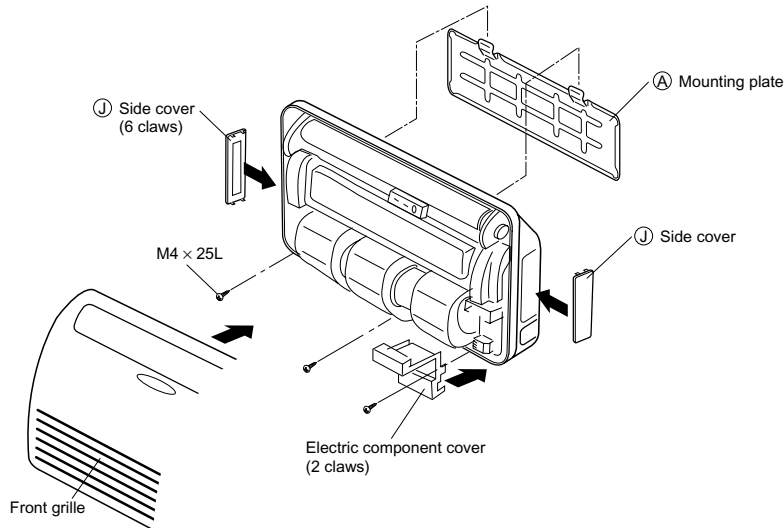


Indoor Unit Installation

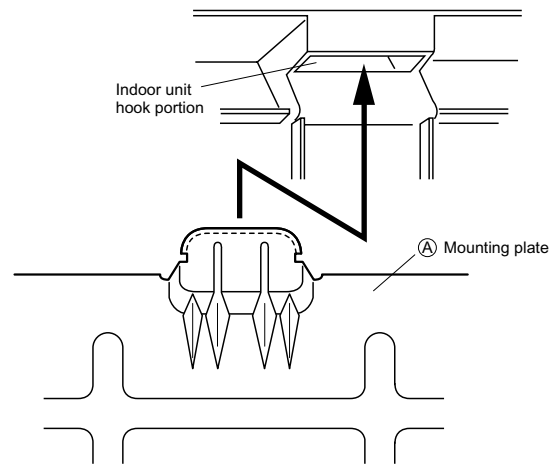
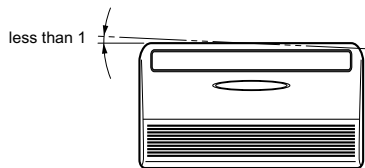
Wall Mounting

3. Installation.

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

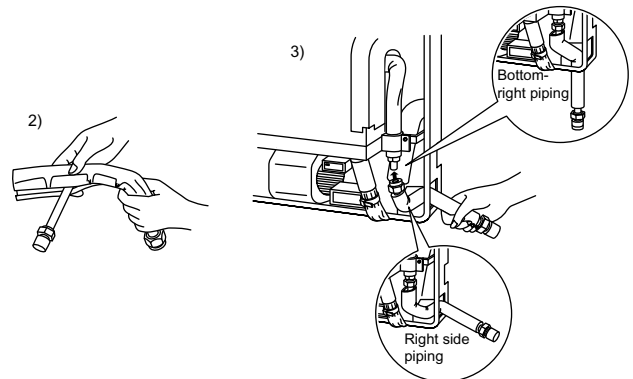


Condition for installation



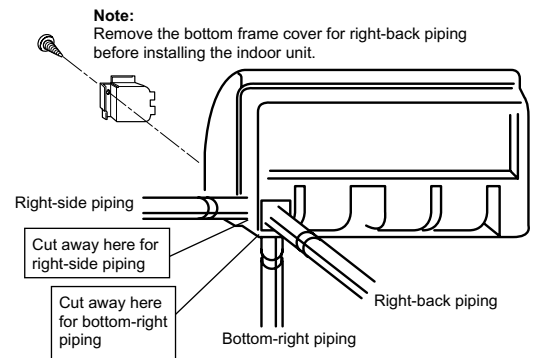
- Work should be performed to match the direction of the piping, as the extension auxiliary pipe ((M), supplied) and installation methods vary depending on the direction the piping is brought out.

- 1) Select the extension auxiliary pipe in accordance with the direction of the piping. (This should be done without the included piping for wall-mounted right-back piping and ceiling-mounted upper right-side piping.)
- 2) Attach the heat insulation tube ((N) to the extension auxiliary pipe. (Make sure there are no gaps.)
- 3) Attach the extension auxiliary pipe to the product.



4. 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.

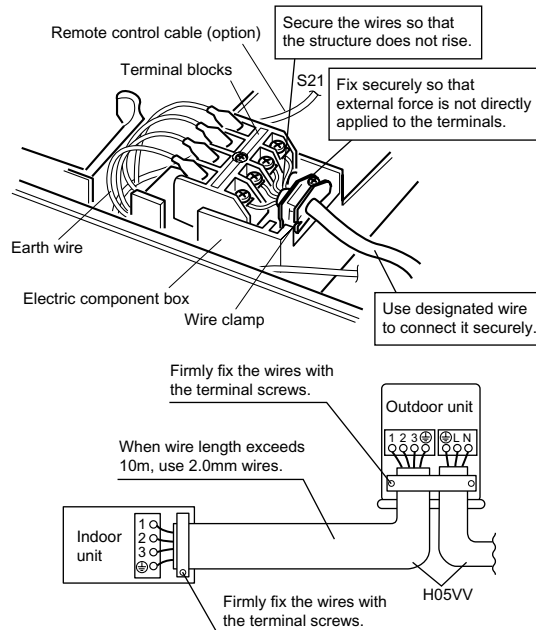


Commonality Between Ceiling Mounting and Wall Mounting

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

5. Wiring.

- 1) Strip wire ends (15mm).
- 2) Match wire colours with terminal numbers on indoor and outdoor unit's 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) In case of connecting to an adapter system. Run the remote control cable and attach the S21 connector as the illustration on the right.
- 6) Shape the wires so that the service lid fits securely, then close service lid.



Warning

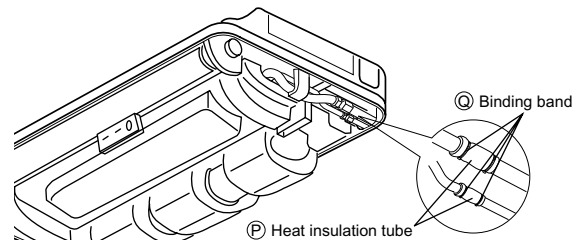
- 1) Do not use tapped wires, stranded wires, extension cords, or starburst connections, as they may cause overheating, electrical shock, or fire.
- 2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.
- 3) Do not connect the power wire to the indoor unit. Doing so may cause electric shock or fire.

Indoor Unit Installation

6. Insulation of refrigerant pipes.

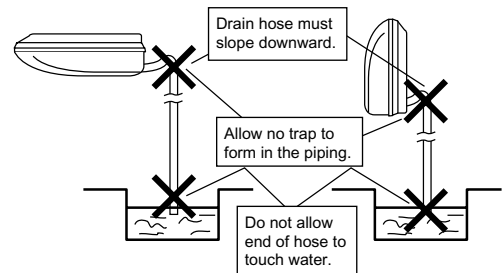
After checking for refrigerant leaks

- Joints in liquid pipe and the gas pipe must be insulated with (P) heat insulation tube attached with (Q) binding bands.
- Cut (P) heat insulation tube to appropriate length.



7. Drain piping.

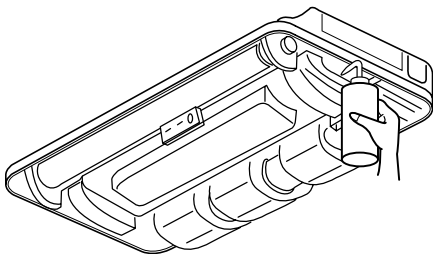
- 1) Connect the drain hose, as described below.



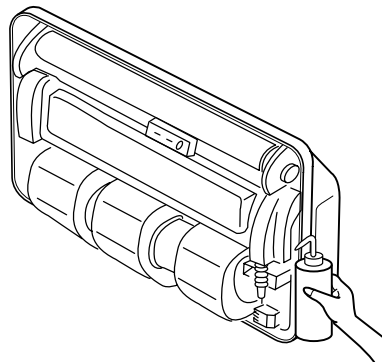
Ceiling mounting

Wall mounting

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

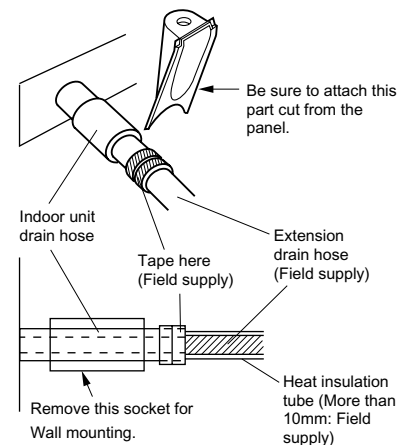


Ceiling mounting



Wall mounting

- 3) 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.

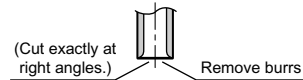


Refrigerant Piping Work

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

1. Flaring the pipe end.

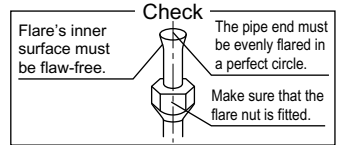
- 1) Cut the pipe end with a pipe cutter.
- 2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
- 3) Put the flare nut on the pipe.
- 4) Flare the pipe.
- 5) Check that the flaring is properly made.



Flaring

Set exactly at the position shown below.

A	Flare tool for R410A		Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)	
A	0-0.5mm	1.0-1.5mm	1.5-2.0mm	



Warning

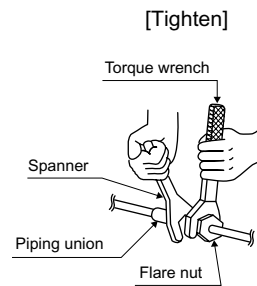
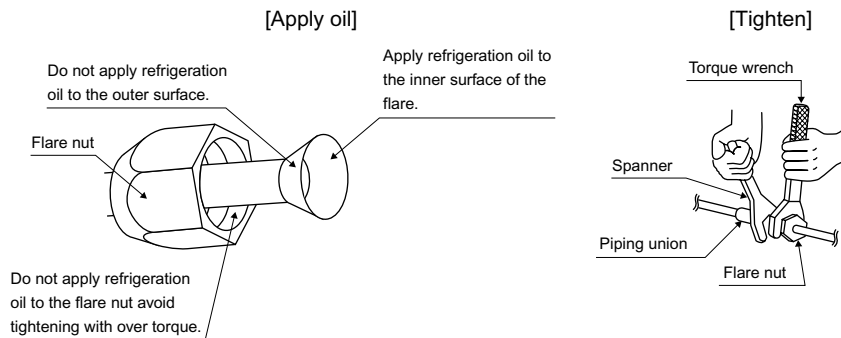
- 1) Do not use mineral oil on flared part.
- 2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
- 3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
- 4) Do never install a drier to this R410A unit in order to guarantee its lifetime.
- 5) The drying material may dissolve and damage the system.
- 6) Incomplete flaring may cause refrigerant gas leakage.

2. Refrigerant piping.

Caution

- 1) Use the flare nut fixed to the main unit. (To prevent cracking of the flare nut by aged deterioration.)
- 2) To prevent gas leakage, apply refrigeration oil only to the inner surface of the flare. (Use refrigeration oil for R410A.)
- 3) Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and gas leakage.

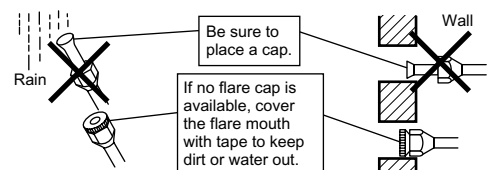
Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.



Flare nut tightening torque		
Gas side		Liquid side
3/8 inch	1/2 inch	1/4 inch
32.7-39.9N • m (333-407kgf • cm)	49.5-60.3N • m (505-615kgf • cm)	14.2-17.2N • m (144-175kgf • cm)

2-1. Caution on Piping Handling

- 1) Protect the open end of the pipe against dust and moisture.
- 2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.

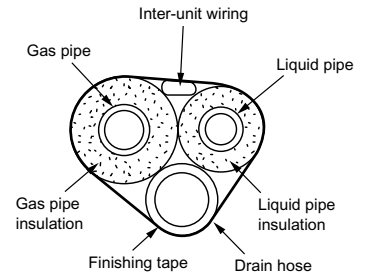


Refrigerant Piping Work

2-2. Selection of Copper and Heat Insulation materials

• When using commercial copper pipes and fittings, observe the following:

- 1) Insulation material: Polyethylene foam
 Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/mh°C)
 Refrigerant gas pipe's surface temperature reaches 110°C max.
 Choose heat insulation materials that will withstand this temperature.



- 2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
20/25/35 class	50/60 class		20/25/35 class	50/60 class	
O.D. 9.5mm	O.D. 12.7mm	O.D. 6.4mm	I.D. 12-15mm	I.D. 14-16mm	I.D. 8-10mm
Minimum bend radius			Thickness 10mm Min.		
30mm or more	40mm or more	30mm or more			
Thickness 0.8mm (C1220T-O)					

- 3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Trial Operation and Testing

1. Trial operation and testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 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.

1) Trial operation may be disabled in either mode depending on the room temperature.

Use the remote control for trial operation as described below.

2) 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).

3) For protection, the system disables restart operation for 3 minutes after it is turned off.

■ For Cooling only

- Select the lowest programmable temperature.

1) Trial operation in cooling mode may be disabled depending on the room temperature.

Use the remote control for trial operation as described below.

2) After trial operation is complete, set the temperature to a normal level (26°C to 28°C).

3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, such as louver movement, 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 opened again.

Trial Operation from Remote Controller

1) Press ON/OFF button to turn on the system.

2) Simultaneously press center of TEMP button and MODE button.

3) Press MODE button twice.

("T" 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.

2. 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. Stop valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote control commands.	Inoperative	

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Two-dimensional bar code is a code for manufacturing.

3P171284-2D

M02B074J (1010) HT