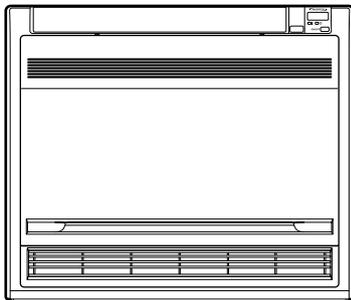


DAIKIN

INSTALLATION MANUAL

R410A Split Series

INVERTER



Models

FVXS25FV1B

FVXS35FV1B

FVXS50FV1B

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

Montaj kılavuzları
R410A Split serisi

Türkçe

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.
--	---	--

- 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) – (I)

(A) Mounting plate	1	(D) Insulation sheet	2	(G) AAA dry-cell batteries	2
(B) Titanium Apatite Photocatalytic Air-Purifying Filter	2	(E) Wireless remote controller	1	(H) Operation manual	1
(C) Drain hose	1	(F) Remote controller holder	1	(I) Installation manual	1

Choosing an Installation Site

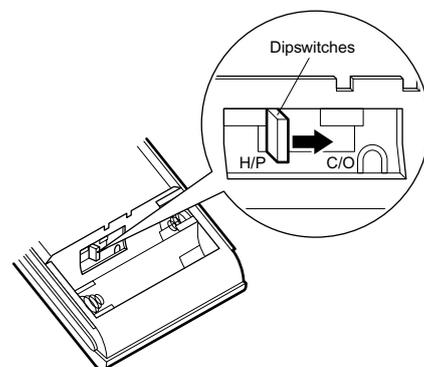
- Before choosing the installation site, obtain user approval.

1. Indoor unit

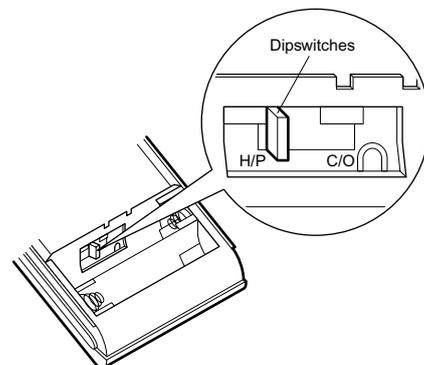
- The indoor unit should be sited in a place where:
 - 1) the restrictions on installation specified in the indoor unit installation drawings are met,
 - 2) both air intake and exhaust have clear paths met,
 - 3) the unit is not in the path of direct sunlight,
 - 4) the unit is away from the source of heat or steam,
 - 5) there is no source of machine oil vapour (this may shorten indoor unit life),
 - 6) cool (warm) air is circulated throughout the room,
 - 7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range,
 - 8) 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

- 1) Turn on all fluorescent lamps in the room, if any, and find site where remote controller signals are properly received by the indoor unit (within 7m).
 - 2) Make the dipswitch settings. Set according to the type of unit purchased by the customer. The default settings are on the heat pump side.
- **For cooling only**
Set the dipswitches on the cooling only side.

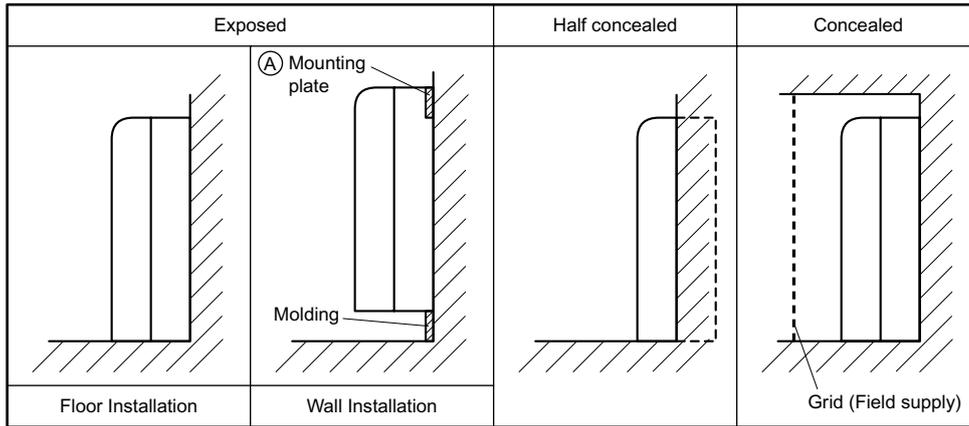


- **For heat pump**
Check that the dipswitches are on the heat pump side.
If they are set on the cooling only side, move them to the heat pump side.

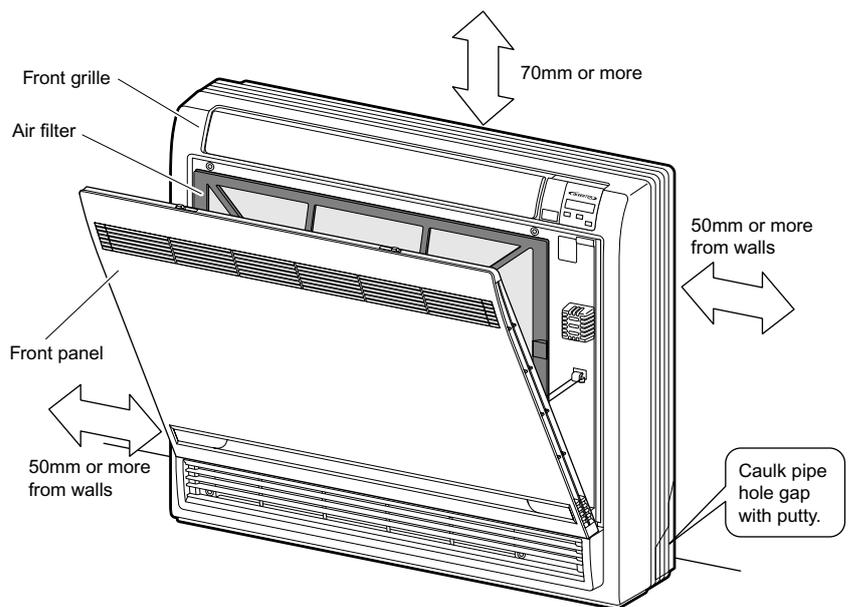
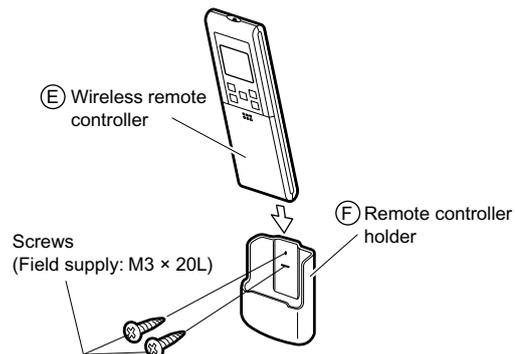
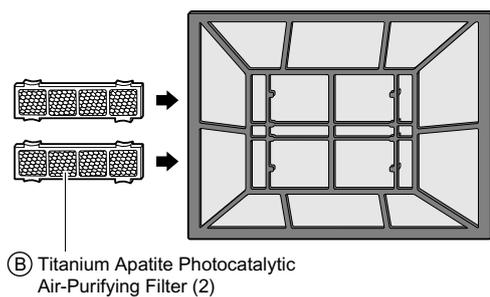
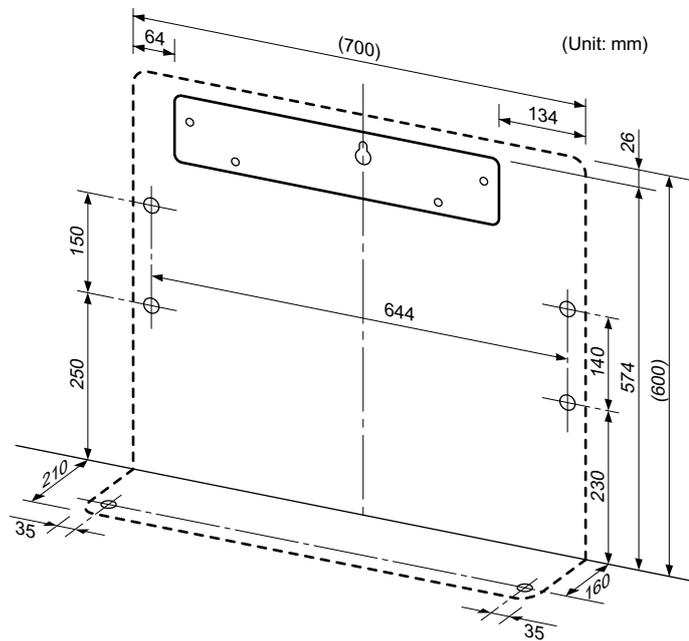


Indoor Unit Installation Drawings

The indoor unit may be mounted in any of the three styles shown here.



Location for securing the installation panel.

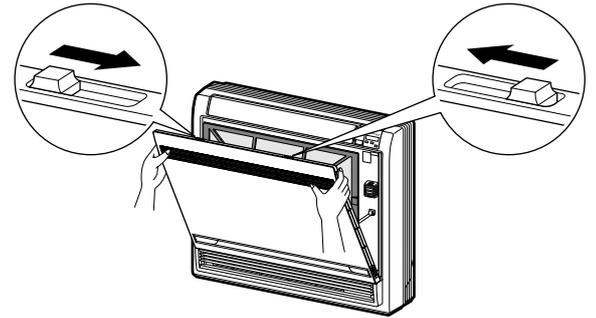


Installation Tips

1. Removing and installing front panel

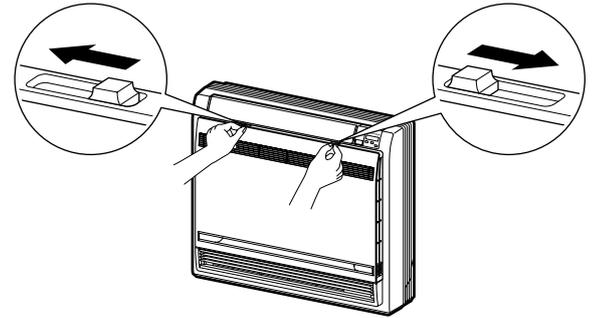
• Removal method

- 1) Slide until the 2 stoppers click into place.
- 2) Open the front panel forward and undo the string.
- 3) Remove the front panel.



• Installation method

- 1) Attach the front grille and front panel after pulling the string around them.
- 2) Close the front panel and slide until the stoppers click outside.



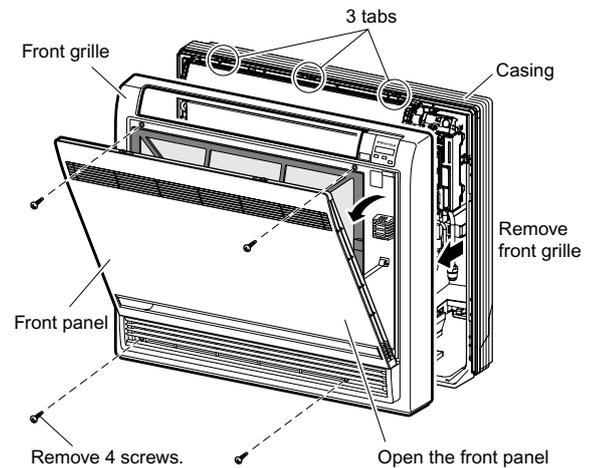
2. Removing and installing front grille

• Removal method

- 1) Open the front panel.
- 2) Remove the 4 screws and remove the front grille while pulling it forward (3 tabs).

• Installation method

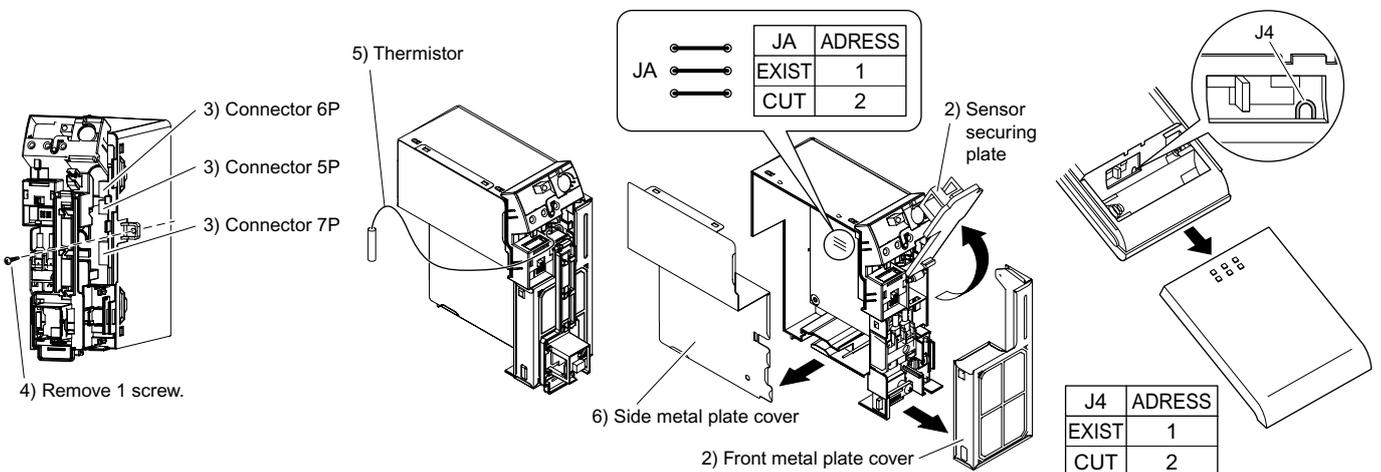
- 1) Secure the front grille with the 4 installation screws (3 tabs).
- 2) Return the front panel to the original position.



3. How to set the different addresses

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

- 1) Remove the front grille.
- 2) Live the sensor securing plate and remove the front metal plate cover.
- 3) Remove connectors 5P, 6P, and 7P.
- 4) Remove the electric box (1 screw).
- 5) Remove the thermistor.
- 6) Remove the side metal plate cover (7 tabs).
- 7) Cut the address jumper (JA) on the printed circuit board.
- 8) Cut the address jumper (J4) in the remote controller.

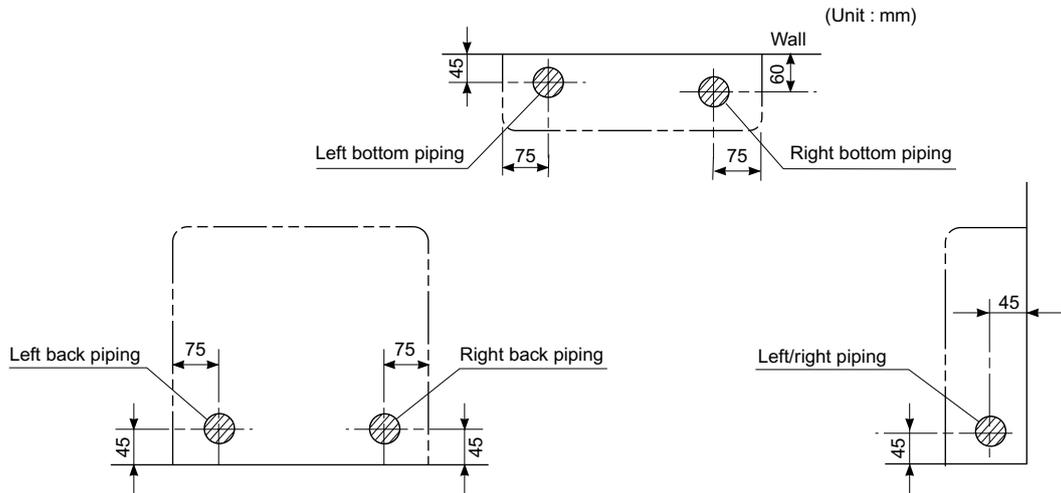


Indoor Unit Installation (1)

Exposed installation

1. Refrigerant piping

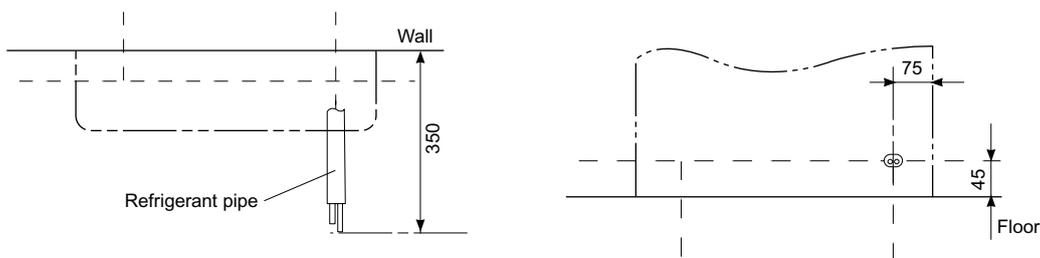
- 1) Drill a hole (65mm in diameter) in the spot indicated by the  symbol in the illustration as below.
- 2) The location of the hole is different depending on which side of the pipe is taken out.
- 3) For piping, see **6. Connecting the refrigerant pipe**, under **Indoor Unit Installation (1)**.
- 4) Allow space around the pipe for a easier indoor unit pipe connection.



CAUTION

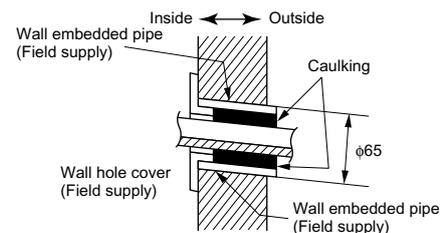
Min. allowable length

- The suggested shortest pipe length is 2.5m, in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)
- See the installation manual for the outdoor unit for the maximum pipe length.
- For multi-connections, see the installation manual for the multi-outdoor unit.



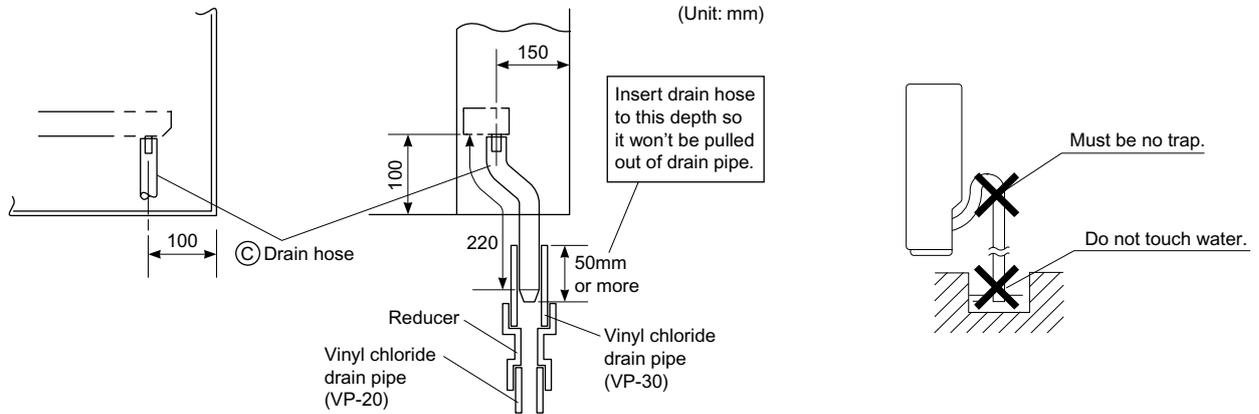
2. Boring a wall hole and installing wall embedded pipe

- 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 65mm 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.



3. Drain piping

- 1) Use commercial rigid polyvinyl chloride pipe (general VP 20 pipe, outer diameter 26mm, inner diameter 20mm) for the drain pipe.
- 2) The drain hose (outer diameter 18mm at connecting end, 220mm long) is supplied with the indoor unit. Prepare the drain pipe picture below position.
- 3) The drain pipe should be **inclined downward** so that water will flow smoothly without any accumulation. (Should not be trap.)
- 4) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.
- 5) **Insulate the indoor drain pipe with 10mm or more of insulation material to prevent condensation.**
- 6) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



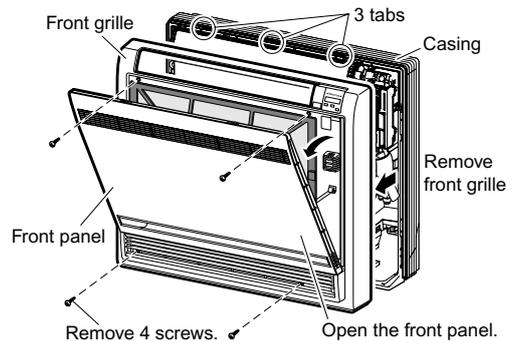
⚠ CAUTION

Use polyvinyl chloride adhesive agent for gluing. Failure to do so may cause water leakage.

4. Installing indoor unit

4-1. Preparation

- Open the front panel, remove the 4 screws and dismount the front grille while pulling it forward.
- Follow the procedure below when removing the slit portions.

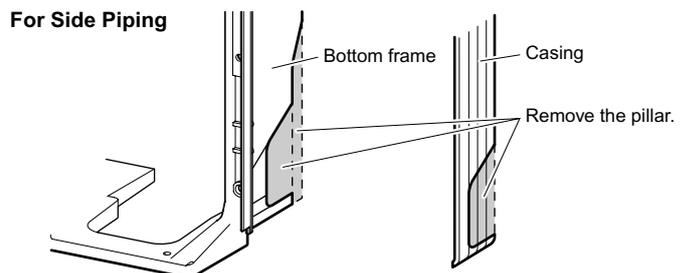
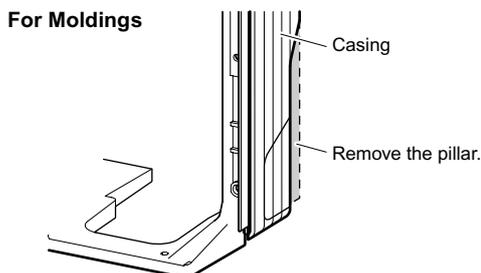
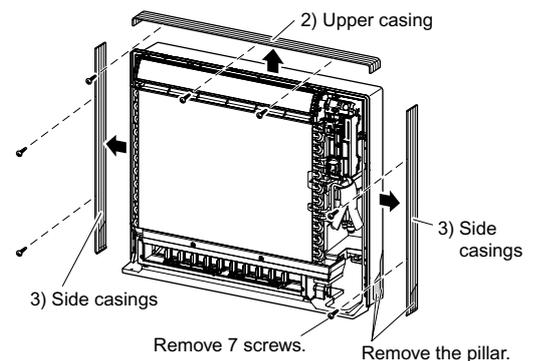


■ For Moldings

- Remove the pillars. (Remove the slit portions on the bottom frame using nippers.)

■ For Side Piping

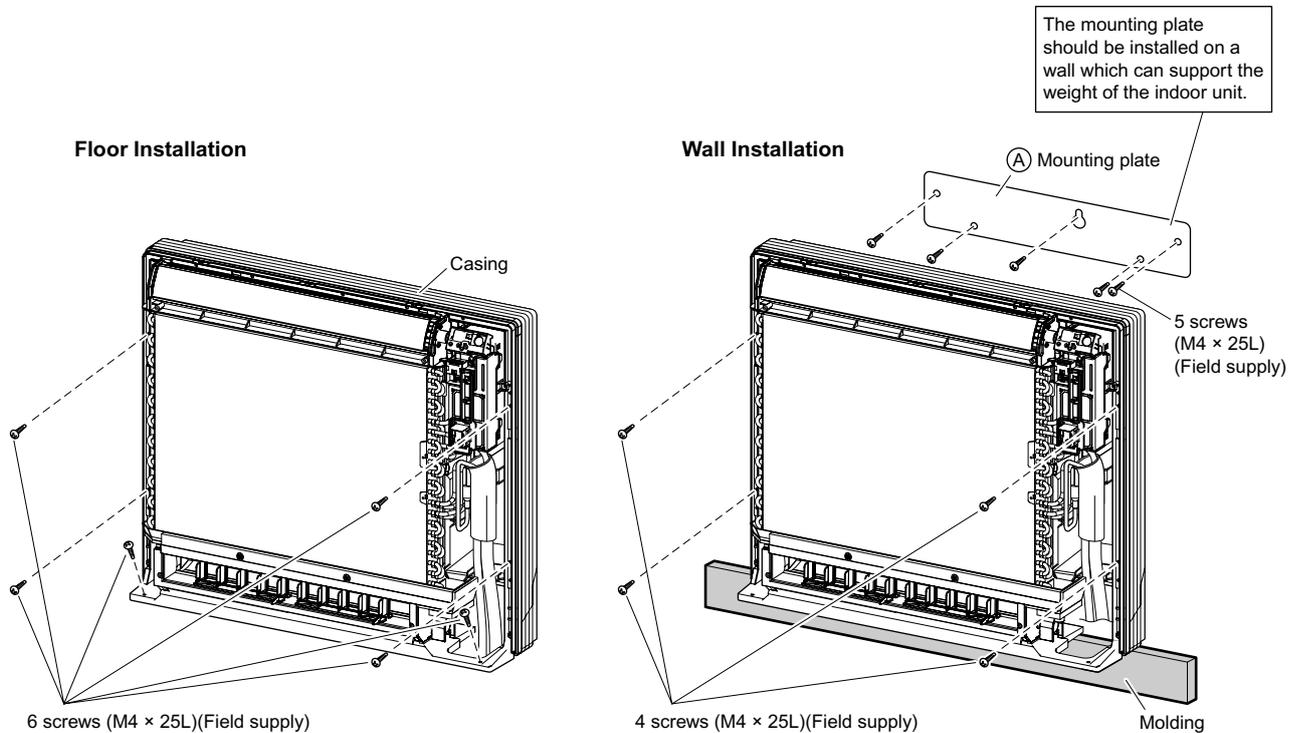
- Remove the pillars.
 - 1) Remove the 7 screws.
 - 2) Remove the upper casing (2 tabs).
 - 3) Remove the left and right casings (2 tabs on each side).
 - 4) Remove the slit portions on the bottom frame and casings using nippers.
 - 5) Return by following the steps in reverse order (3 > 2 > 1).



Indoor Unit Installation (1)

4-2. Installation

- Secure using 6 screws for floor installations. (Do not forget to secure to the rear wall.)
- For wall installations, secure the (A) mounting plate using 5 screws and the indoor unit using 4 screws.
- 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.



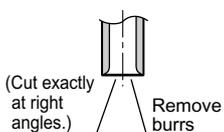
- 3) Once refrigerant piping and drain piping connections are complete, fill in the gap of the through hole with putty. **A gap can lead to condensation on the refrigerant pipe, and drain pipe, and the entry of insects into the pipes.**
- 4) Attach the front panel and front grille in their original positions once all connections are complete.

5. 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) Fit the flare nut on the pipe.
- 4) Flare the pipe.
- 5) Check that the flaring is properly made.

⚠ WARNING

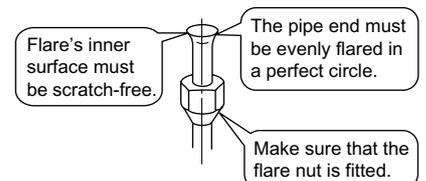
- 1) Do not use mineral oil on flared part.
- 2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
- 3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
- 4) Do never install a drier to this 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.



Flaring

Set exactly at the position shown below.

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

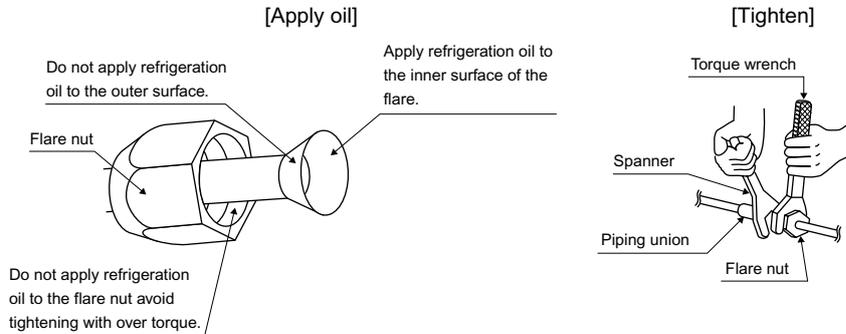


6. Connecting the refrigerant pipe

⚠ 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
25/35 class	50 class	25/35/50 class
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)

6-1. Caution on piping handling

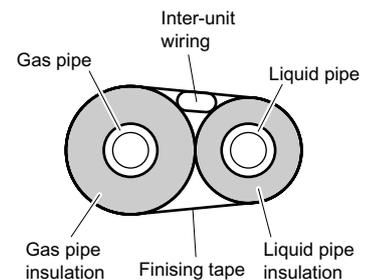
- 1) Protect the open end of the pipe against dust and moisture.
- 2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.



6-2. 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.

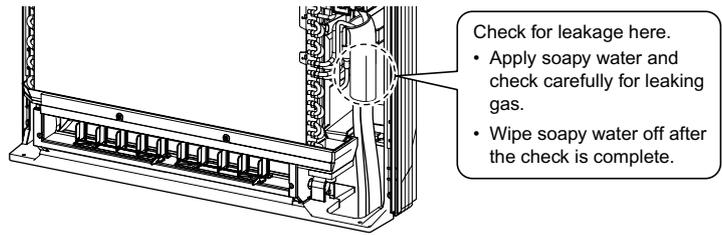
Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
25/35 class	50 class		25/35 class	50 class	
O.D. 9.5mm	O.D. 12.7mm	O.D. 6.4mm	I.D. 12-15mm	I.D. 14-16mm	I.D. 8-10mm
Minimum bend radius			Thickness 10mm Min.		
30mm or more	40mm or more	30mm or more			
Thickness 0.8mm (C1220T-O)					

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

Indoor Unit Installation (1)

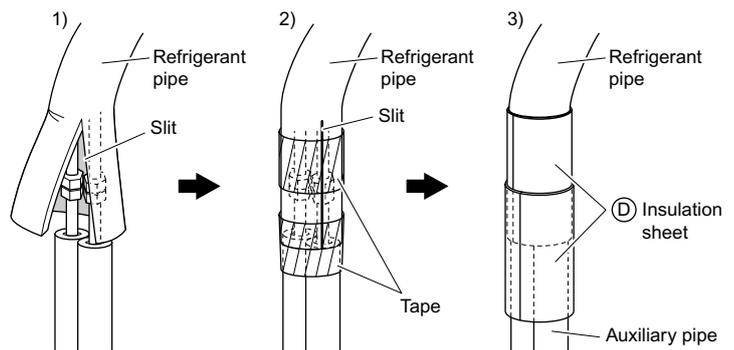
7. Checking for gas leakage

- 1) Check for leakage of gas after air purging.
- 2) See the sections on air purges and gas leak checks in the installation manual for the outdoor unit.



8. Attaching the connection pipe

- Attach the pipe after checking for gas leakage, described above.
- 1) Cut the insulated portion of the on-site piping, matching it up with the connecting portion.
 - 2) Secure the slit on the refrigerant piping side with the butt joint on the auxiliary piping using the tape, making sure there are no gaps.
 - 3) Wrap the slit and the butt joint with the included (D) insulation sheet, making sure there are no gaps.

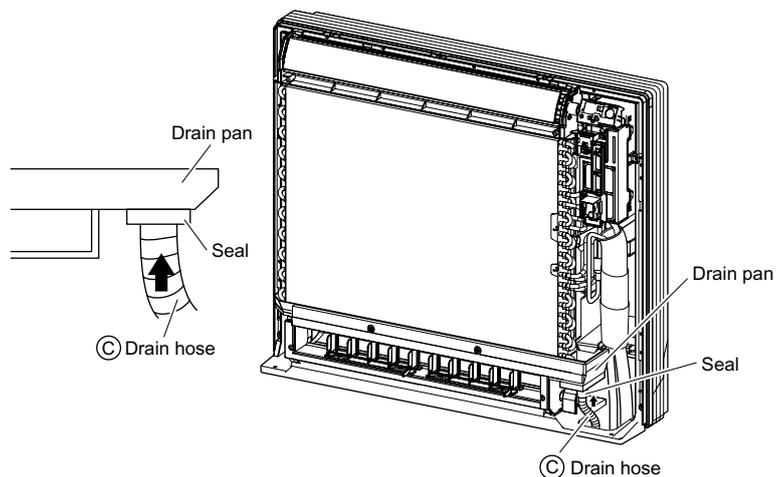


⚠ CAUTION

- 1) Insulate the joint of the pipes securely. Incomplete insulation may lead to water leakage.
- 2) Push the pipe inside so it does not place undue force on the front grille.

9. Connecting the drain hose

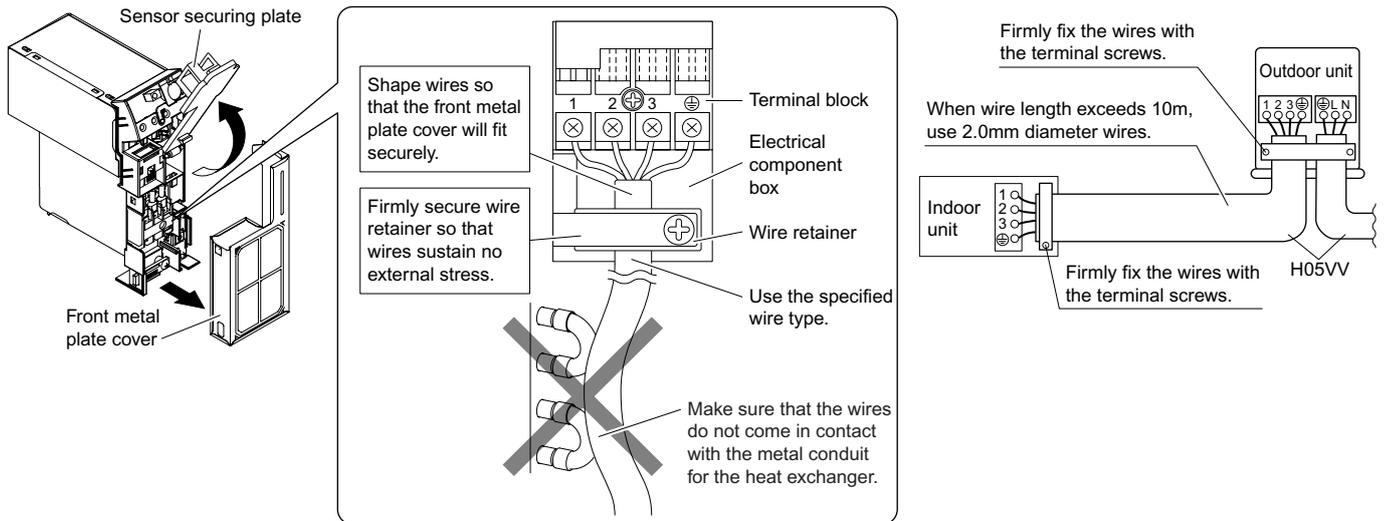
Insert the supplied (C) drain hose into the socket of the drain pan. Fully insert the drain hose until it adheres to a seal of the socket.



10. Wiring

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

- Live the sensor securing plate, remove the front metal plate cover, and connect the branch wiring to the terminal block.
- 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) Make sure that the wires do not come in contact with the metal conduit for the heat exchanger.
 - 6) In case of connecting to an adapter system. Run the remote controller cable and attach the S21. (Refer to 11. When connecting to an HA system.)

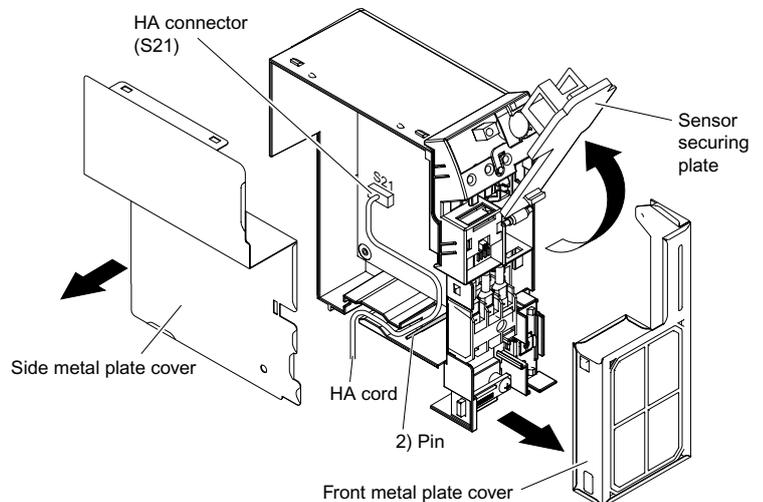


⚠ WARNING

- 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.

11. When connecting to an HA system

- 1) Remove the electric box. (See 3. How to set the different addresses on page 4.)
- 2) Cut off the pins using a nipper.
- 3) Wire as shown in the diagram and connect the connection cord to the S21 connector.
- 4) Attach the side metal plate cover and thermistor sensor and return the electric box to its previous state.
- 5) Attach connectors 5P, 6P, and 7P.
- 6) Replace the front metal plate cover and the sensor securing plate.



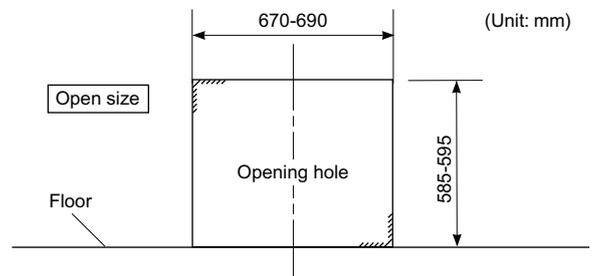
Indoor Unit Installation (2)

Half concealed installation

Only items peculiar to this installation method are given here. See **Exposed Installation** for additional instructions.

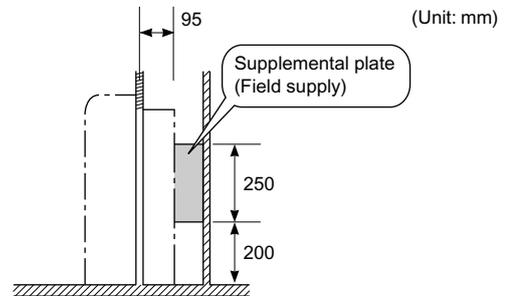
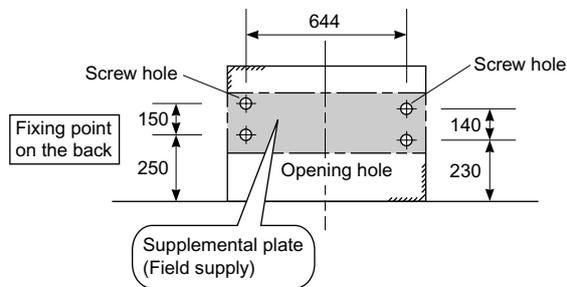
1. Wall hole

- Drill a wall hole of the size shown in the illustration on the right.



2. Installation of supplemental plate for attaching main unit

- The rear of the unit can be fixed with screws at the points shown in the illustration as below. Be sure to install the supplemental plate in accordance with the depth of the inner wall.

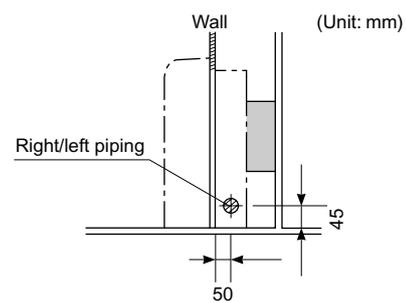
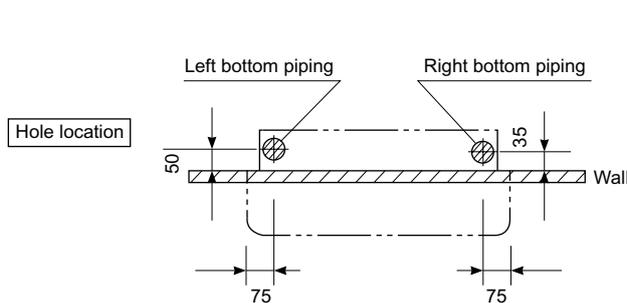


CAUTION

- 1) The supplemental plate for installing the main unit must be used, or there will be a gap between the unit and the wall.

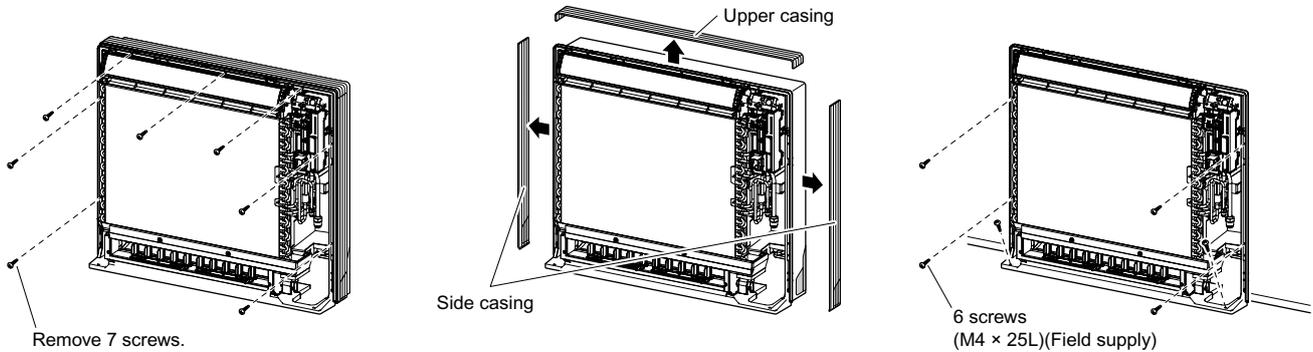
3. Refrigerant piping

See 1. Refrigerant piping under **Indoor Unit Installation (1)**



4. Installing indoor unit

- 1) Remove the front grille.
- 2) Remove 7 screws.
- 3) Remove the upper casing (2 tabs).
- 4) Remove the side casings (2 tabs on each side).
- 5) Attach the indoor unit to the wall and secure using screws in 6 locations (M4 × 25L).



CAUTION

- 1) Use drain pan edge for horizontal projection of the indoor unit.
- 2) Install the indoor unit flush against wall.

NOTE:

For refrigerant piping, Boring a wall hole and installing wall embedded pipe, drain piping, installing indoor unit, flaring the pipe end, connecting the refrigerant pipe, checking for gas leakage, attaching the connection pipe, connecting the drain hose, wiring, when connecting to an HA system, see Exposed Installation.

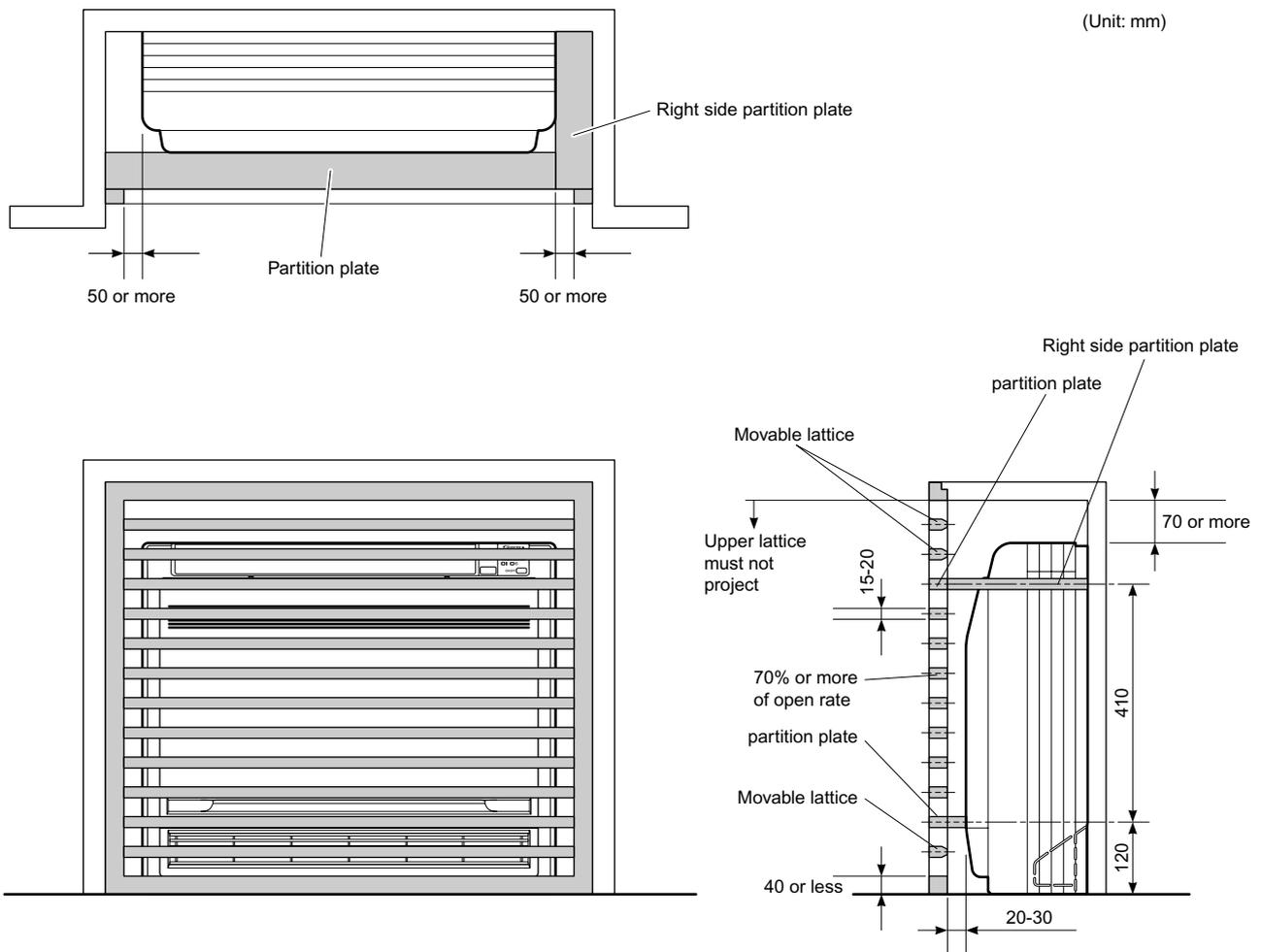
Indoor Unit Installation (3)

Concealed installation

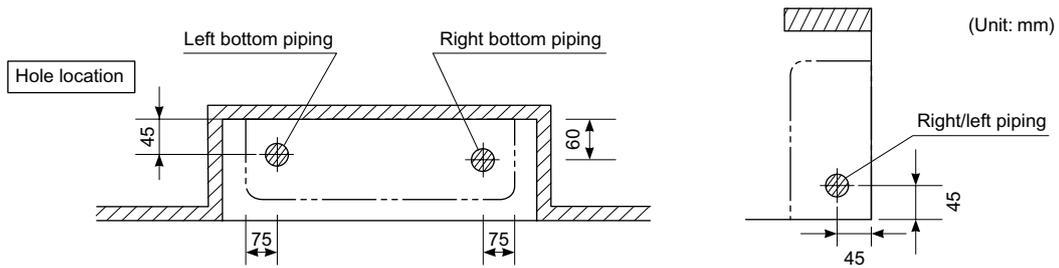
Only items peculiar to this installation method are given here. See **Exposed Installation** for additional instructions.

Install the unit according to the instructions below. Failure to do so may cause lead to both cooling and heating failure and the condensation inside the house.

- 1) Allow enough space between the main unit and ceiling not to obstruct the flow of cool/warm air.
- 2) Place a partition plate between outlet and inlet sections.
- 3) Place a partition plate on the right side.
- 4) Change the upward-blow limit switch.
- 5) Use a movable lattice at the air outlet to allow the adjustment of cool/warm air flow direction.
- 6) Lattice size should be 70% or more of open rate.



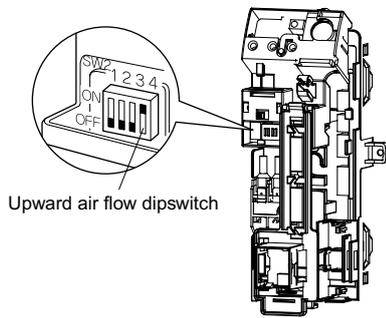
1. Refrigerant piping



2. Changing upward air flow dipswitch

Change the upward air flow dipswitch (SW2-4) to ON to limit the upward air flow.

- 1) Remove the front grille.
- 2) Switch the dipswitch (SW2-4) on the PCB in the electrical equipment box to ON.



• How to set and use the switch

Switch number	SW2-4
Set function	Upward air flow limit
ON	ON
OFF	OFF
Use	Switch to on for embedded units
Factory setting	OFF

⚠ CAUTION

Be sure to turn on the upward air flow switch. Failure to do so may cause incomplete cooling/heating and formation of condensation inside the house.

NOTE:

For refrigerant piping, Boring a wall hole and installing wall embedded pipe, drain piping, installing indoor unit, flaring the pipe end, connecting the refrigerant pipe, checking for gas leakage, attaching the connection pipe, connecting the drain hose, wiring, when connecting to an HA system, see Exposed Installation.

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 controller 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 controller 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) Press TEMP (2 locations) and MODE at the same time.
- 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	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 inter-unit wiring 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 controller commands.	Inoperative	

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Two-dimensional bar code is a code for manufacturing.

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