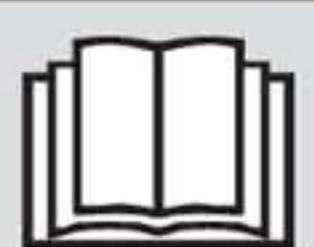


### Safety Precautions



Read the precautions in this manual carefully before operating the unit.



This appliance is filled with R32.

- The precautions described herein are classified as **WARNING** and **CAUTION**. They both contain important information regarding safety. Be sure to observe all precautions without fail.
- Meaning of **WARNING** and **CAUTION** notices



**WARNING** Failure to follow these instructions properly may result in personal injury or loss of life.



**CAUTION** Failure to follow these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

- The safety marks shown in this manual have the following meanings:



Be sure to follow the instructions.



Be sure to establish an earth connection.



Never attempt.

- After completing installation, conduct a trial operation to check for faults and explain to the user how to operate the air conditioner and take care of it with the aid of the operation manual.



#### **WARNING**

- Ask your dealer or qualified personnel to carry out installation work.  
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shock or fire.
- Install the air conditioner in accordance with the instructions in this installation manual. Improper installation may result in water leakage, electric shock or fire.
- Be sure to use only the specified accessories and parts for installation work. Failure to use the specified parts may result in the unit falling, water leakage, electric shock or fire.
- Install the air conditioner on a foundation strong enough to hold the weight of the unit. A foundation of insufficient strength may result in the equipment falling and causing injury.
- Electrical work must be performed in accordance with relevant local and national regulations and with the instructions in this installation manual. Be sure to use a dedicated power supply circuit only. Insufficient power supply and improper workmanship may result in electric shock or fire.
- Use a cable of suitable length. Do not use tapped wires or an extension lead, as this may cause overheating, electric shock or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the wiring between the indoor and outdoor units, position the wires so that the electrical wiring box cover can be securely fastened. Improper positioning of the electrical wiring box cover may result in electric shock, fire or overheating terminals.
- If refrigerant gas leaks during installation, ventilate the area immediately.  
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage. Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- When installing or relocating the air conditioner, do not let any other substances besides R32, such as air, enter the refrigerant circuit. The presence of air or foreign matter in the refrigerant circuit causes an abnormal pressure rise, which may result in equipment damage and even injury.
- During installation, attach the refrigerant piping securely before operating the compressor. If the refrigerant pipes are not attached and the stop valve is open when the compressor is operated, air will be sucked in, causing abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.
- During pump down, stop the compressor before removing the refrigerant piping. If the compressor is still operating 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 refrigeration cycle, which may result in equipment damage and even injury.
- Be sure to earth the air conditioner.  
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shock.
- Be sure to install an earth leakage circuit breaker. Failure to install an earth leakage circuit breaker may result in electric shock or fire.
- Do not pump down when the refrigerant has leaked, otherwise the compressor may be damaged.



#### **CAUTION**

- Do not install the air conditioner at any place where there is a danger of flammable gas leakage.  
In the event of a gas leakage, build-up of gas near the air conditioner may cause a fire to break out.
- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate the piping to prevent condensation. Improper drain piping may result in indoor water leakage and property damage.
- Tighten the flare nut as specified, such as with a torque wrench. If the flare nut is too tight, it may crack after prolonged use, causing refrigerant leakage.
- Take adequate steps to prevent the outdoor unit being used as a shelter by small animals.  
If small animals or birds come into contact with electrical parts, this can cause malfunctions, smoke or fire. Please instruct the customer to always keep the area around the unit clean.
- The refrigerant circuit temperature will be high, therefore the inter-unit wire must be kept away from copper pipes that are not thermally insulated.

RN007

# ACCESSORIES

(A)~(C)

(A) Mounting plate	1
(B) Mounting plate fixing screw M4 × 25L	7
(C) Indoor unit fixing screw M4 × 12L	2

## Precautions for Selecting a Location

- Before choosing the installation site, obtain user approval.

### Indoor unit

The indoor unit should be positioned in a place where:

- the restrictions on the installation requirements specified in "**Indoor/Outdoor Installation Diagram**" are met,
- both the air inlet and air outlet are unobstructed,
- the unit is not exposed to direct sunlight,
- the unit is away from sources of heat or steam,
- there is no source of machine oil vapour (this may shorten the indoor unit service life),
- cool air is circulated throughout the room,
- the unit is at least 1m away from any television or radio set (the unit may cause interference with the picture or sound),
- the unit can be installed at the recommended height (1.8m),
- no laundry equipment is nearby.

### Outdoor unit

The outdoor unit should be positioned in a place where:

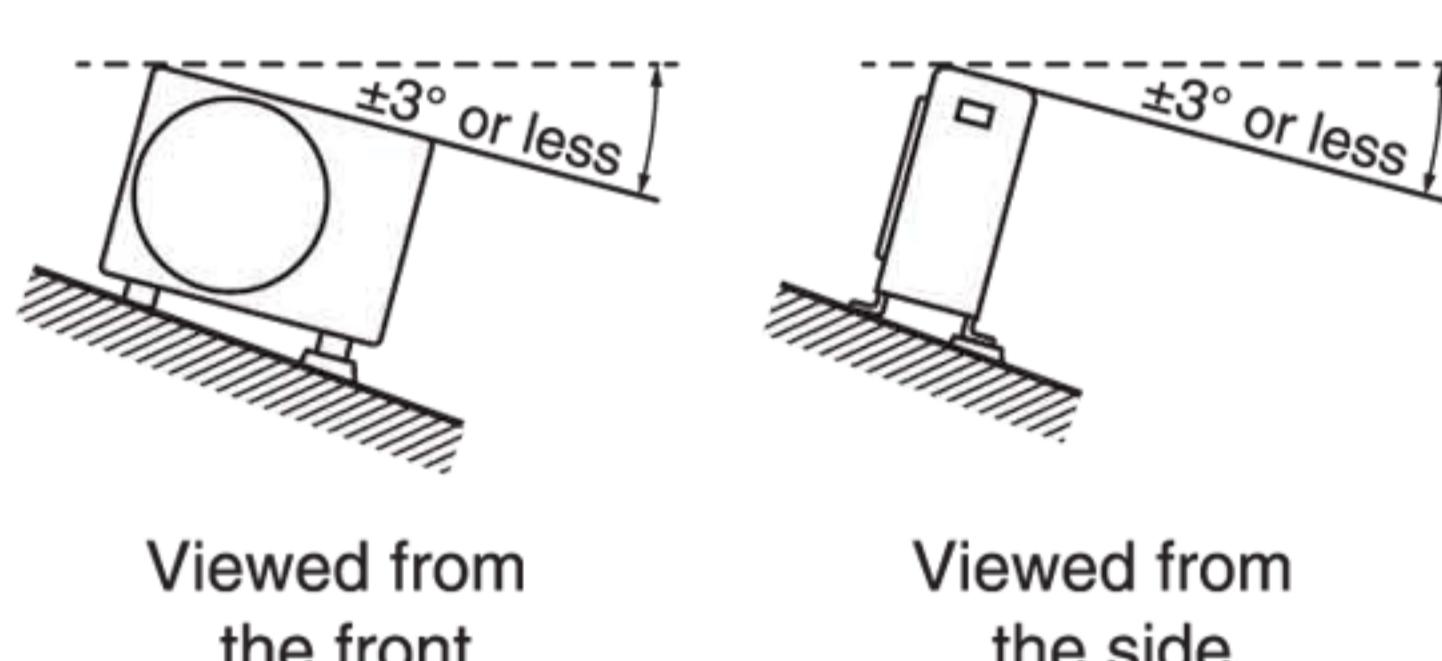
- the restrictions on installation specified in "**Outdoor Unit Installation Diagram**" are met,
- drain water causes no trouble or problem in particular,
- both air inlet and outlet have clear paths of air (they should be free of snow in snowy districts),
- the unit is in a clear path of air but not directly exposed to rain, strong winds, or direct sunlight,
- there is no fear of inflammable gas leakage,
- the unit is not directly exposed to salt, sulfidized gases, or machine oil vapour (these may shorten the service life of the outdoor unit),
- operating sound or hot airflow does not cause trouble to neighbours,
- the unit is at least 3m away from any television or radio antenna.

## Outdoor Unit Installation Space Requirements

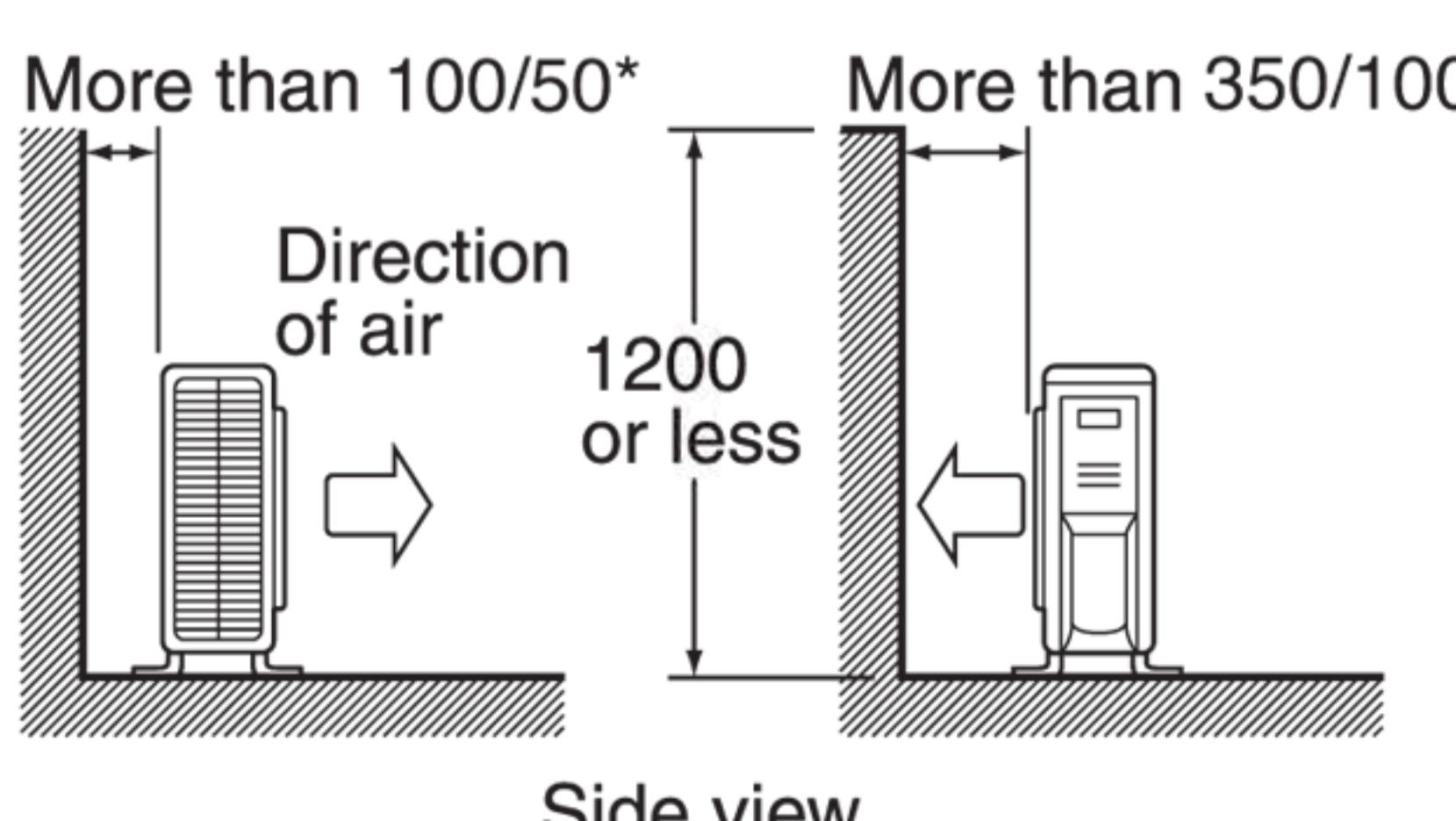
### ! CAUTION

When carrying the outdoor unit during installation, wear gloves to avoid injury.

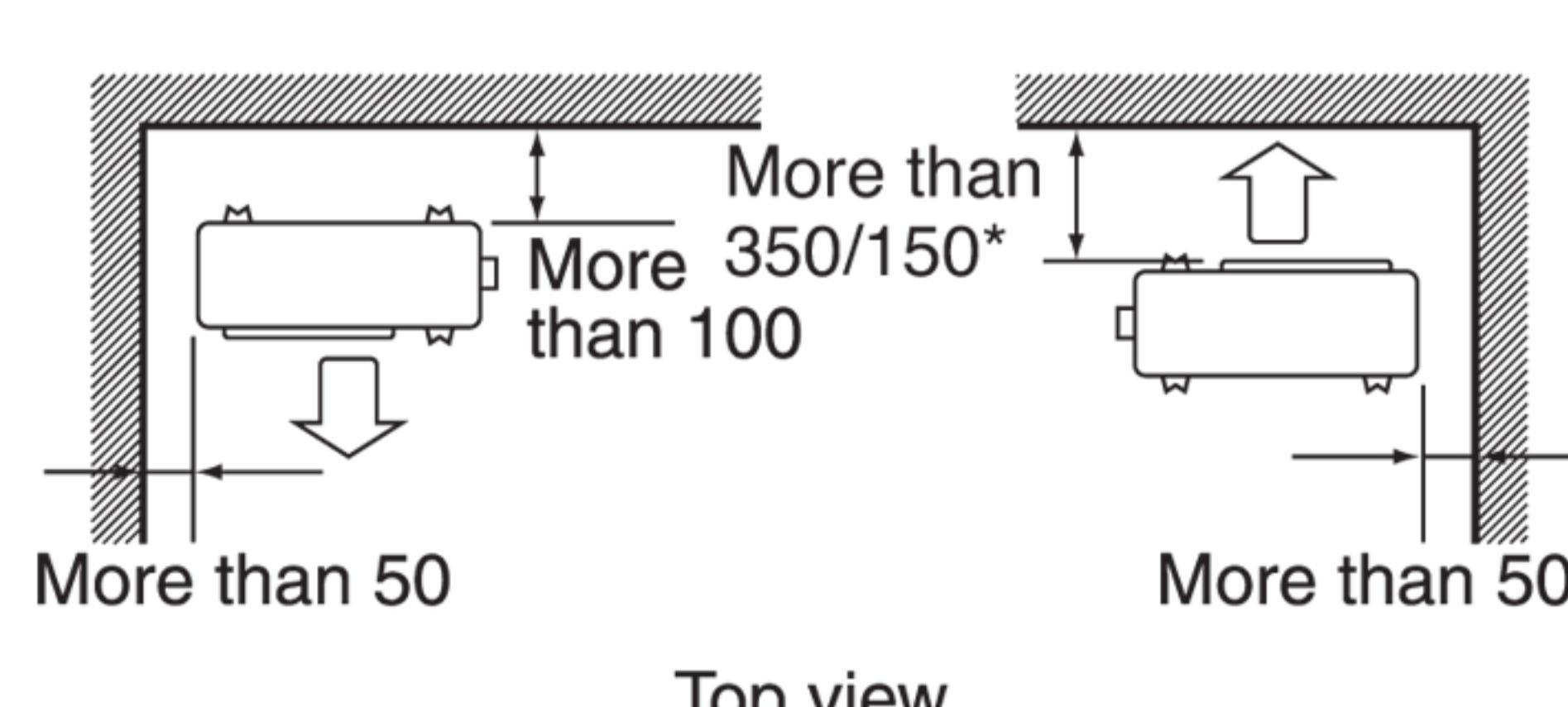
- Position the unit on a horizontal surface.  
Any tilt in the unit (front to back, right to left) should be 3° or less to the horizontal.
- Where a wall or other obstacle is in the path of the outdoor unit's intake or exhaust airflow, follow the installation space requirements below.
- For any of the below installation patterns, the wall height on the outlet side should be 1200mm or less.



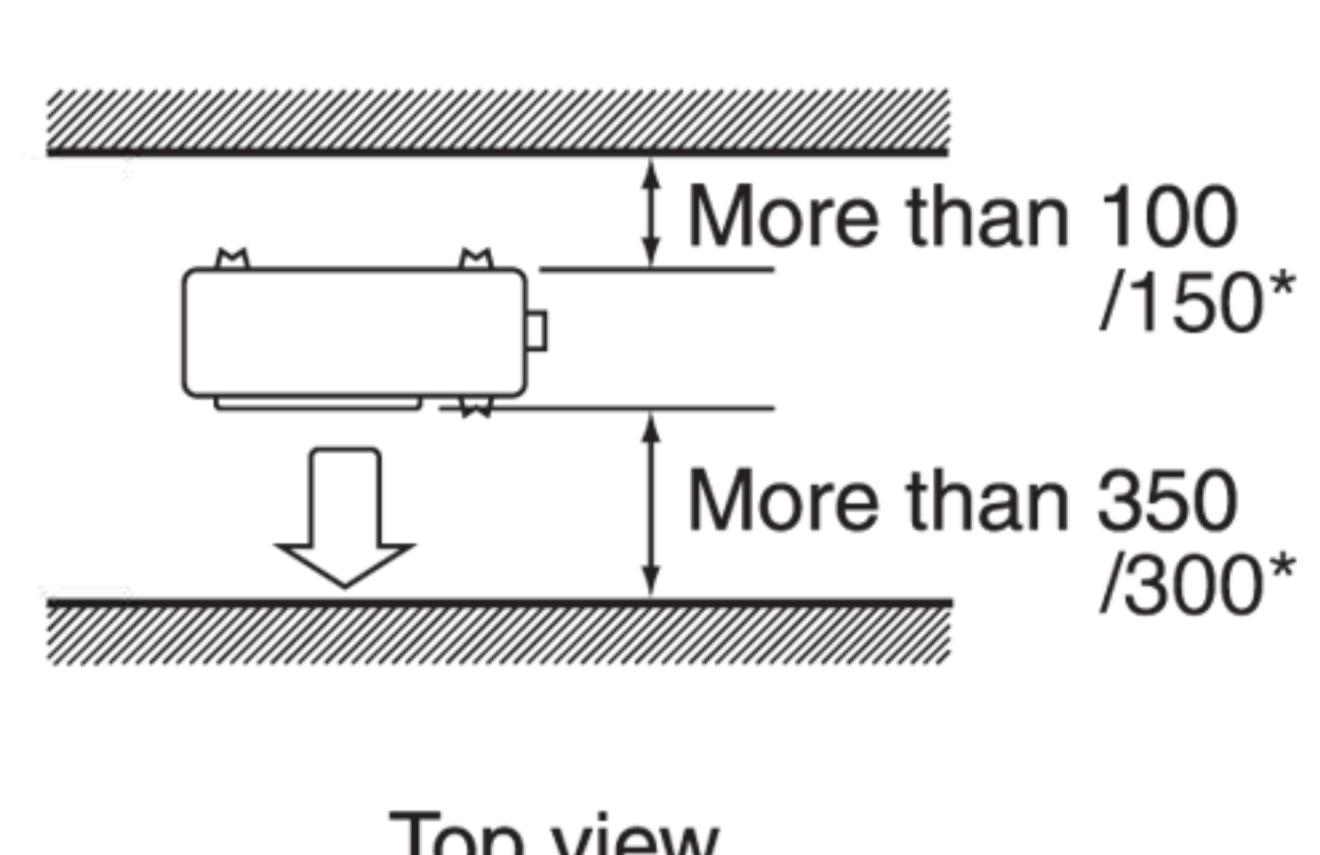
### Wall facing one side



### Walls facing two sides



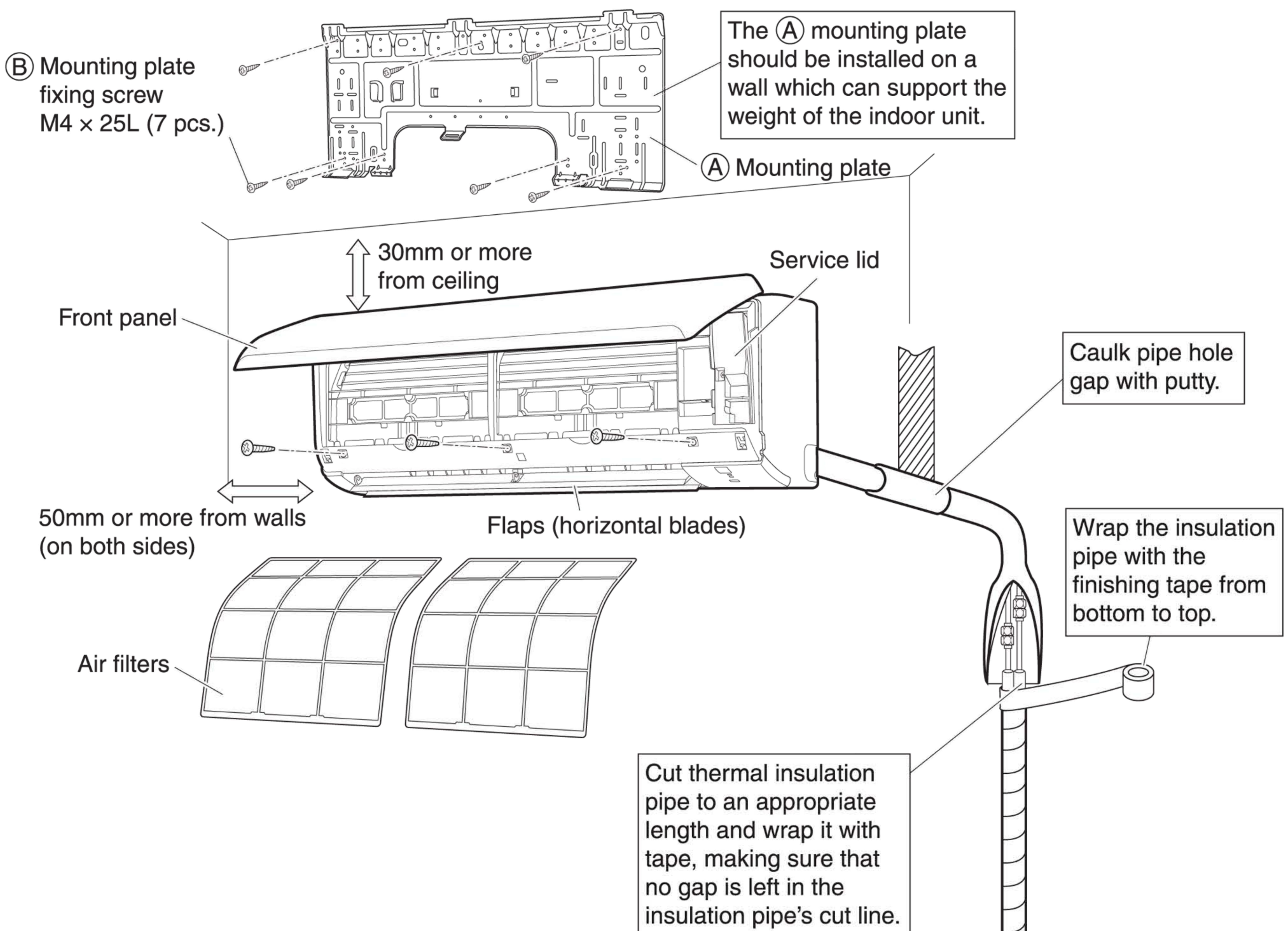
### Walls facing three sides



\*Applicable for RKWG35TV16WZ

unit: mm

# Indoor/Outdoor Unit Installation Diagram



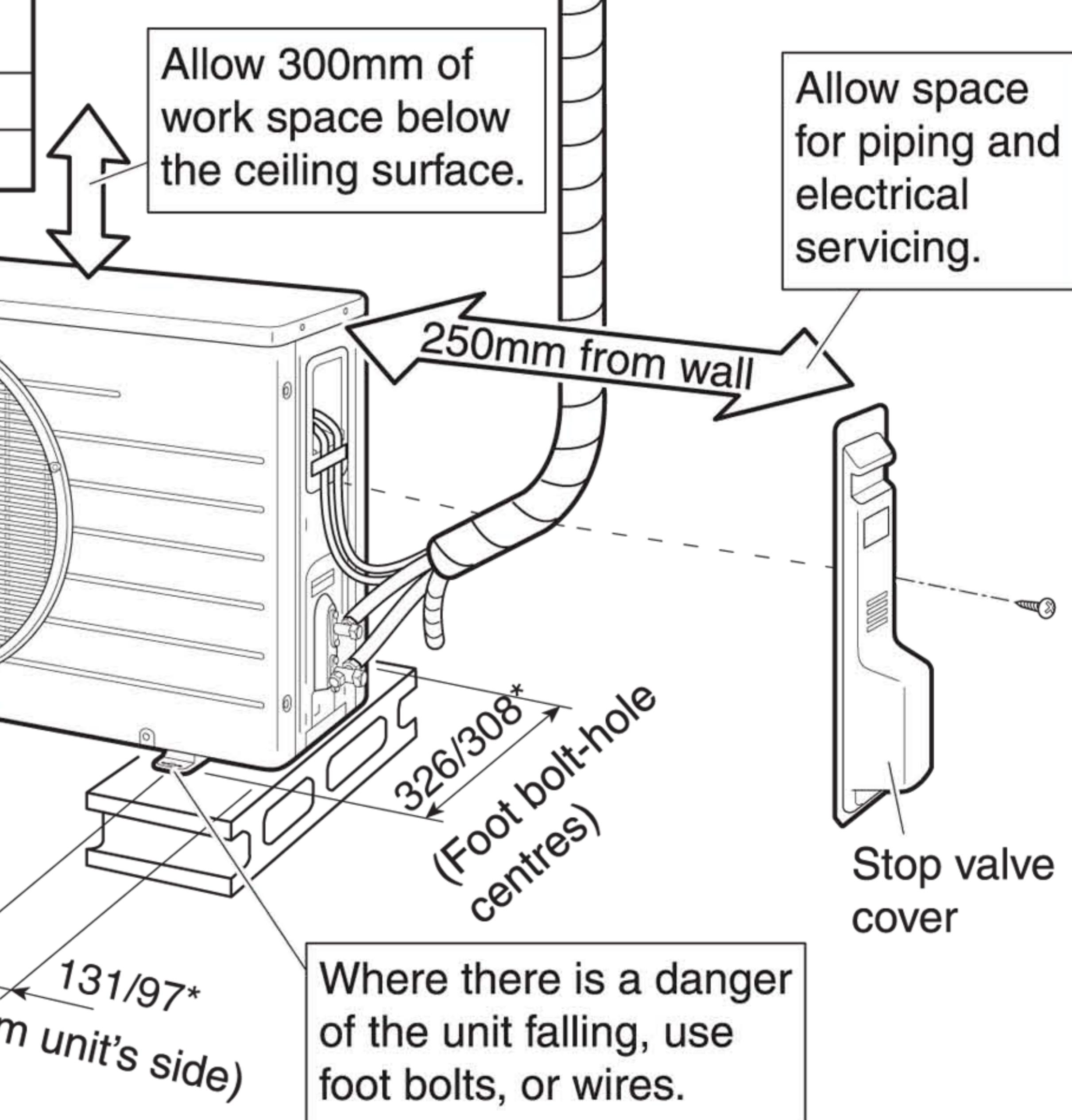
Model	GTKW35TV16WZ	GTKW50TV16VZ, GTKW60TV16UZ
Max. allowable piping length	20m	30m
Min. allowable piping length	3m	
Max. allowable piping height	15m	20m
* Additional refrigerant required for refrigerant pipe exceeding 10m in length.	20g/m	
Gas pipe	O.D. 9.5mm	O.D. 12.7mm
Liquid pipe	O.D. 6.4mm	O.D. 6.4mm

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

\*\* The suggested shortest pipe length is 3m, 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.)

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

unit: mm



\*Applicable for RKW35TV16WZ

# Installation Tips

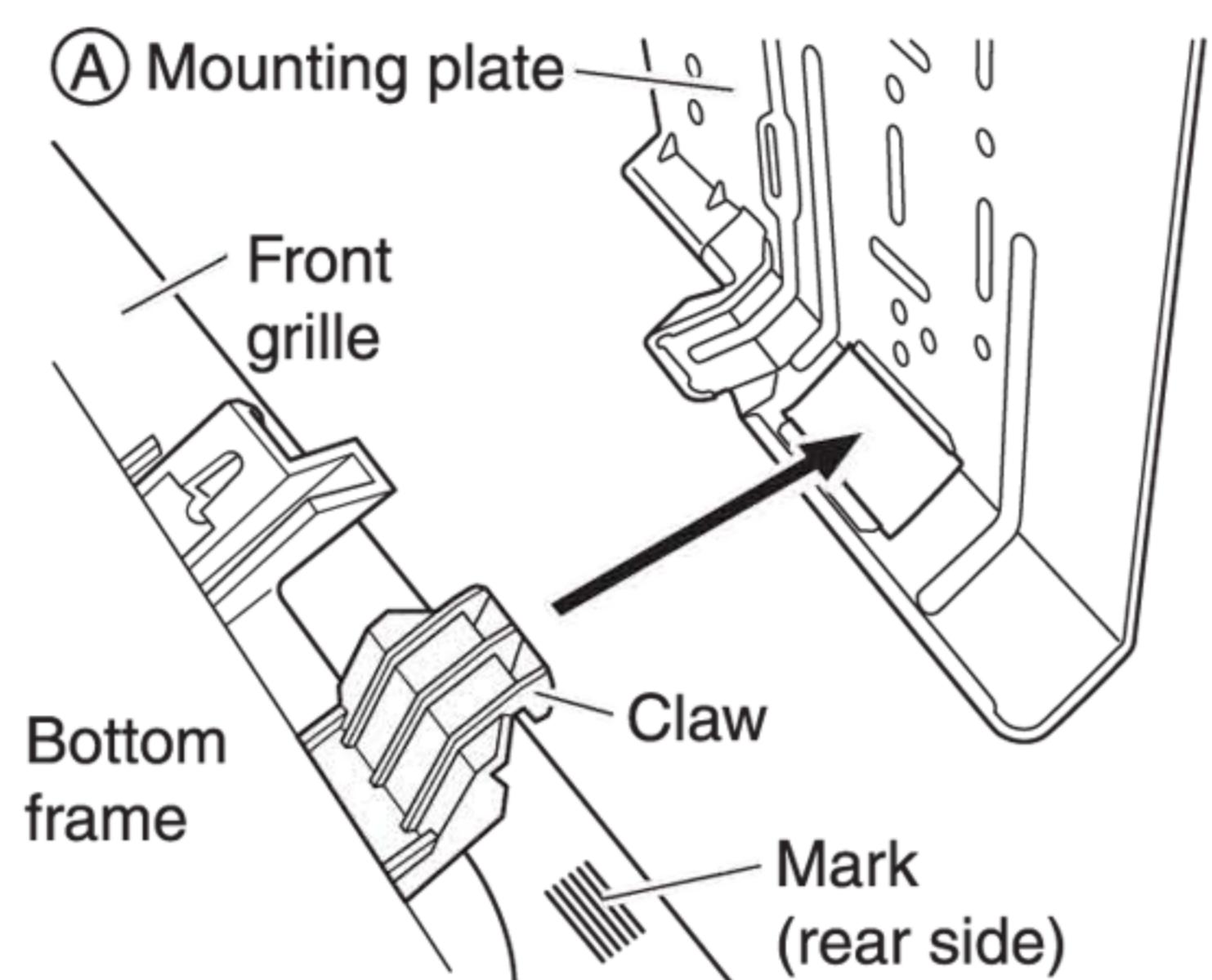
## ■ Installing and Removing the indoor unit.

### ⚠ CAUTION

Do not hold the midsection of the bottom of the front grille when carrying the indoor unit.

#### • Installation method

Hook the claws of the bottom frame to the **(A)** mounting plate. If the claws are difficult to hook, remove the front grille.



#### • Removal method

Push up the marked area (at the lower part of the front grille) to release the claws. If it is difficult to release, remove the front grille.

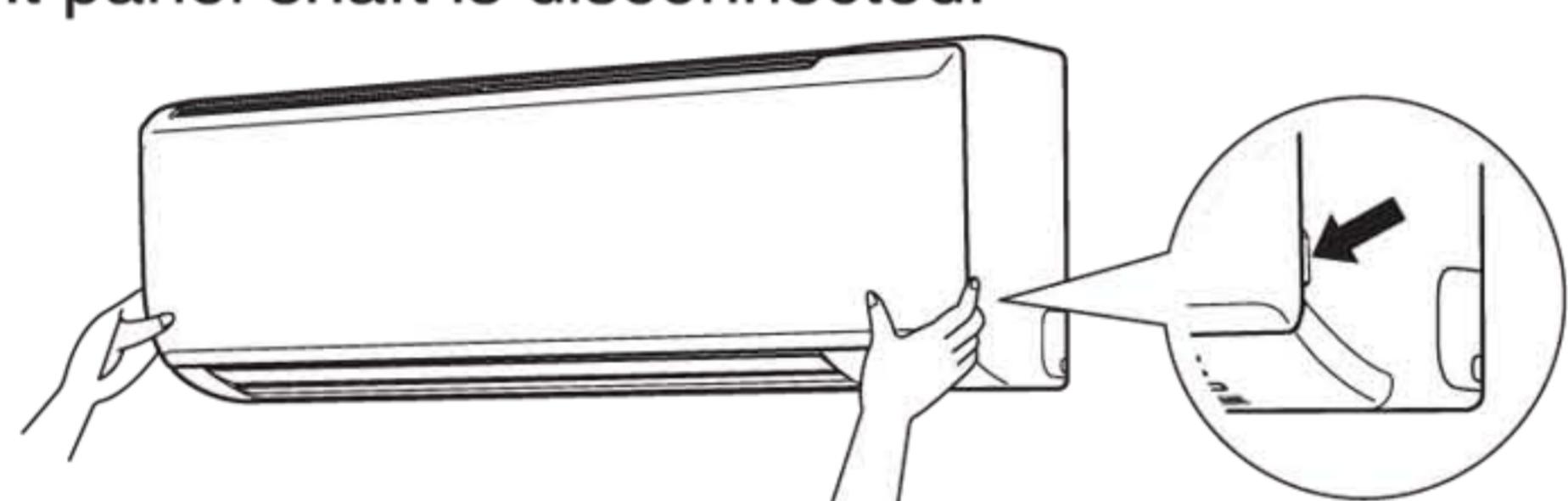
## ■ Removing and installing the front panel.

#### • Removal method

Hold the front panel by the indentations in the main unit and open the panel. Slide the front panel sideways to disengage the front panel shaft.

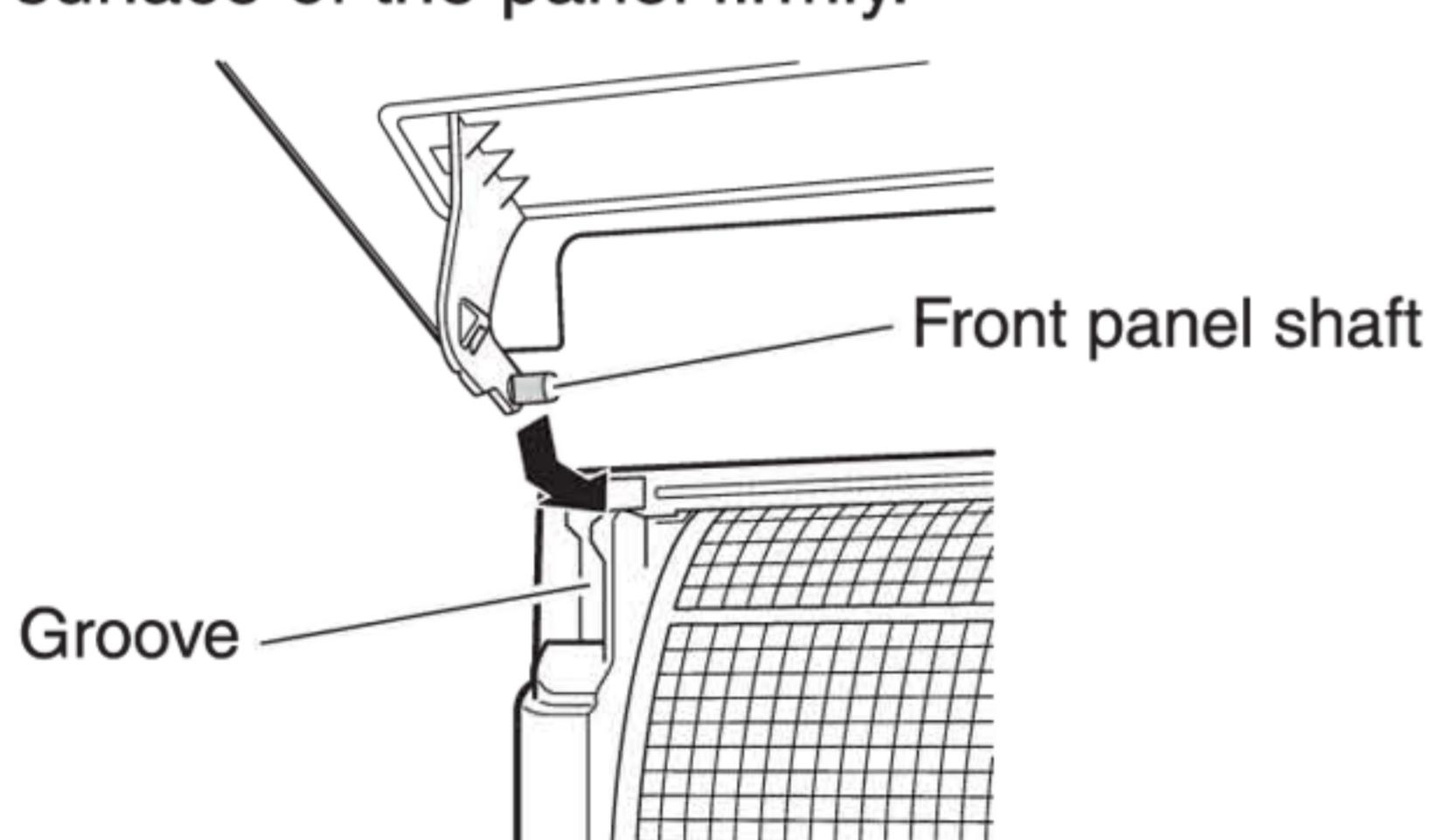
Then pull the front panel toward you to remove it.

You can also remove the front panel by pushing it open until the front panel shaft is disconnected.



#### • Installation method

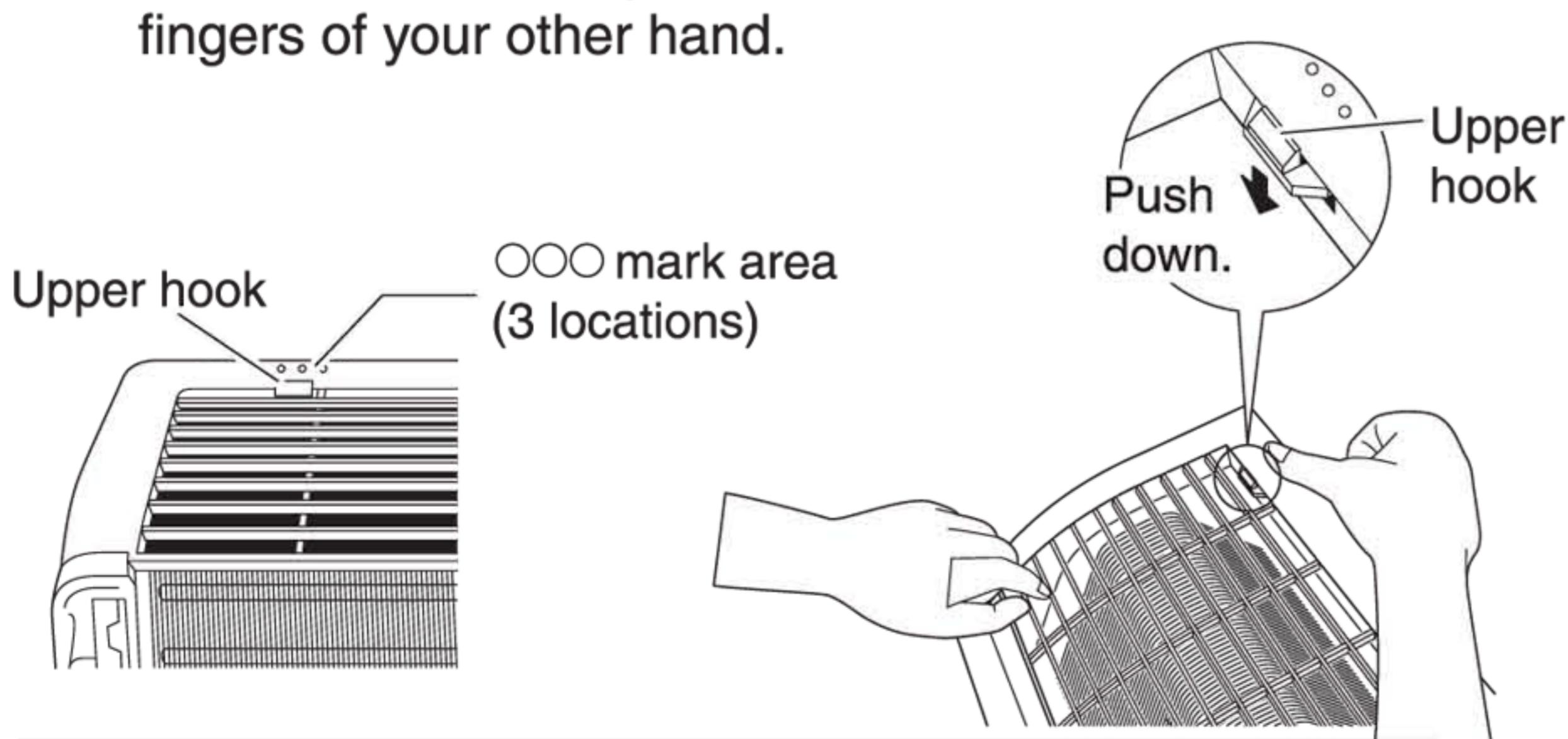
Align the front panel shaft of the front panel with the grooves, and push all the way in, then close slowly. Push the centre of the lower surface of the panel firmly.



## ■ Removing and installing the front grille.

#### • Removal method

- 1) Remove the front panel and air filters.
- 2) Remove the flap (horizontal blade).
- 3) Remove the 3 screws from the front grille.
- 4) In front of the **○○○** mark of the front grille, there are 3 upper hooks. Lightly pull the front grille toward you with one hand, and push down on the hooks with the fingers of your other hand.

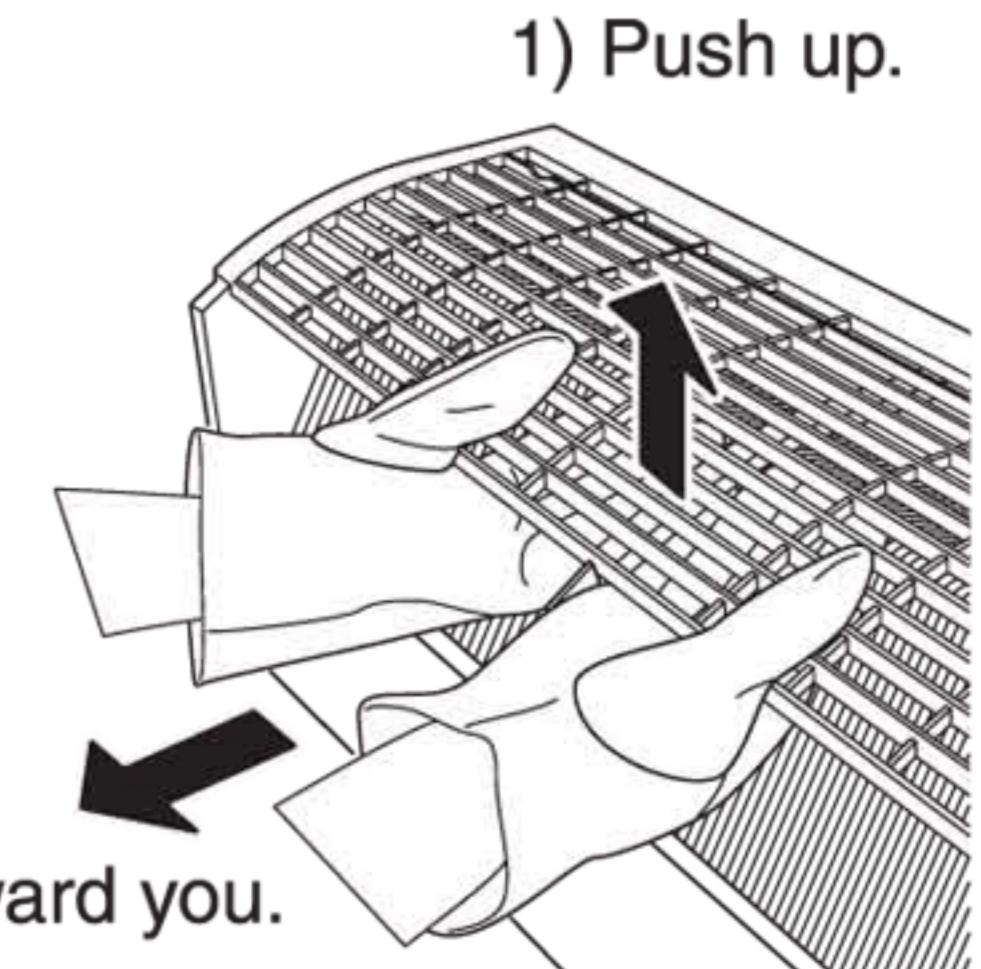


**Note: Remove polythene film from front panel wherever applied.**

## When there is insufficient work space because the unit is close to ceiling

### ⚠ CAUTION

Be sure to wear protection gloves.



Place both hands under the centre of the front grille, and while pushing up, pull it toward you.

#### • Installation method

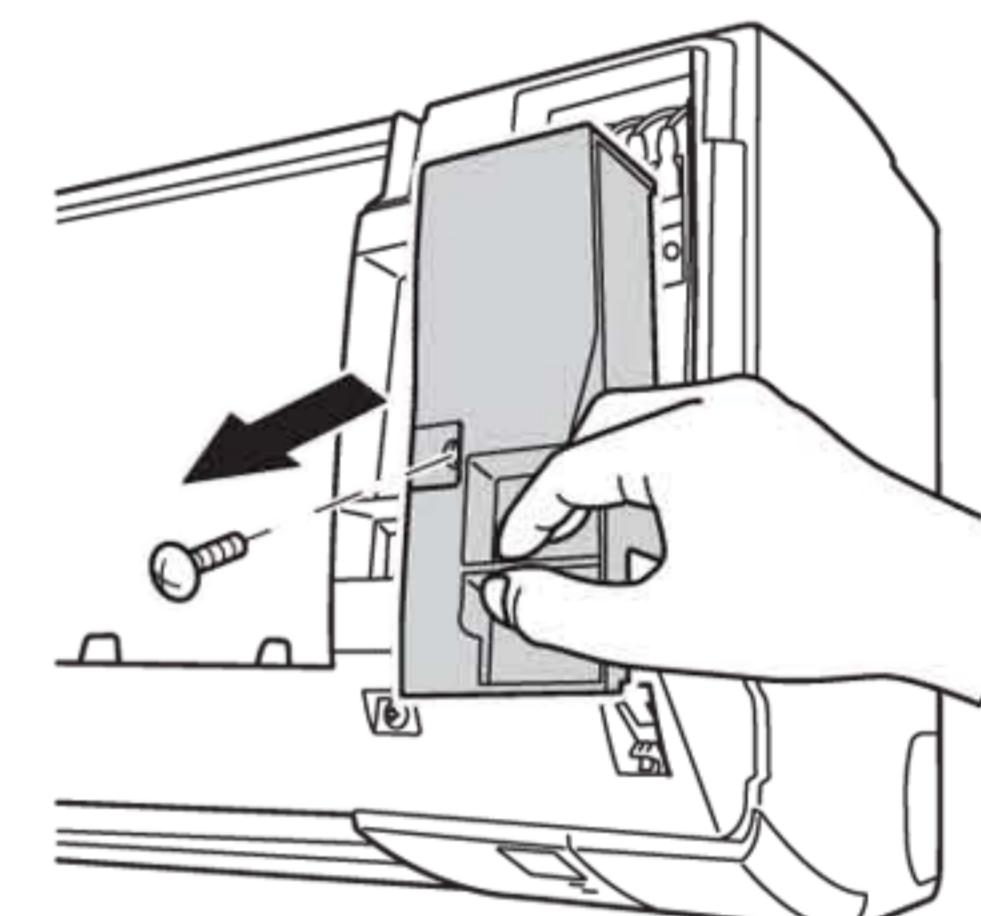
- 1) Install the front grille and firmly engage the upper hooks (3 locations).
- 2) Install 3 screws of the front grille.
- 3) Install the air filters and then mount the front panel.

## ■ Opening the service lid.

The service lid is removable.

#### • Opening method

- 1) Remove the service lid screw.
- 2) Pull out the service lid diagonally down in the direction of the arrow.
- 3) Pull down.





## Outdoor Unit

# Trial Operation and Testing

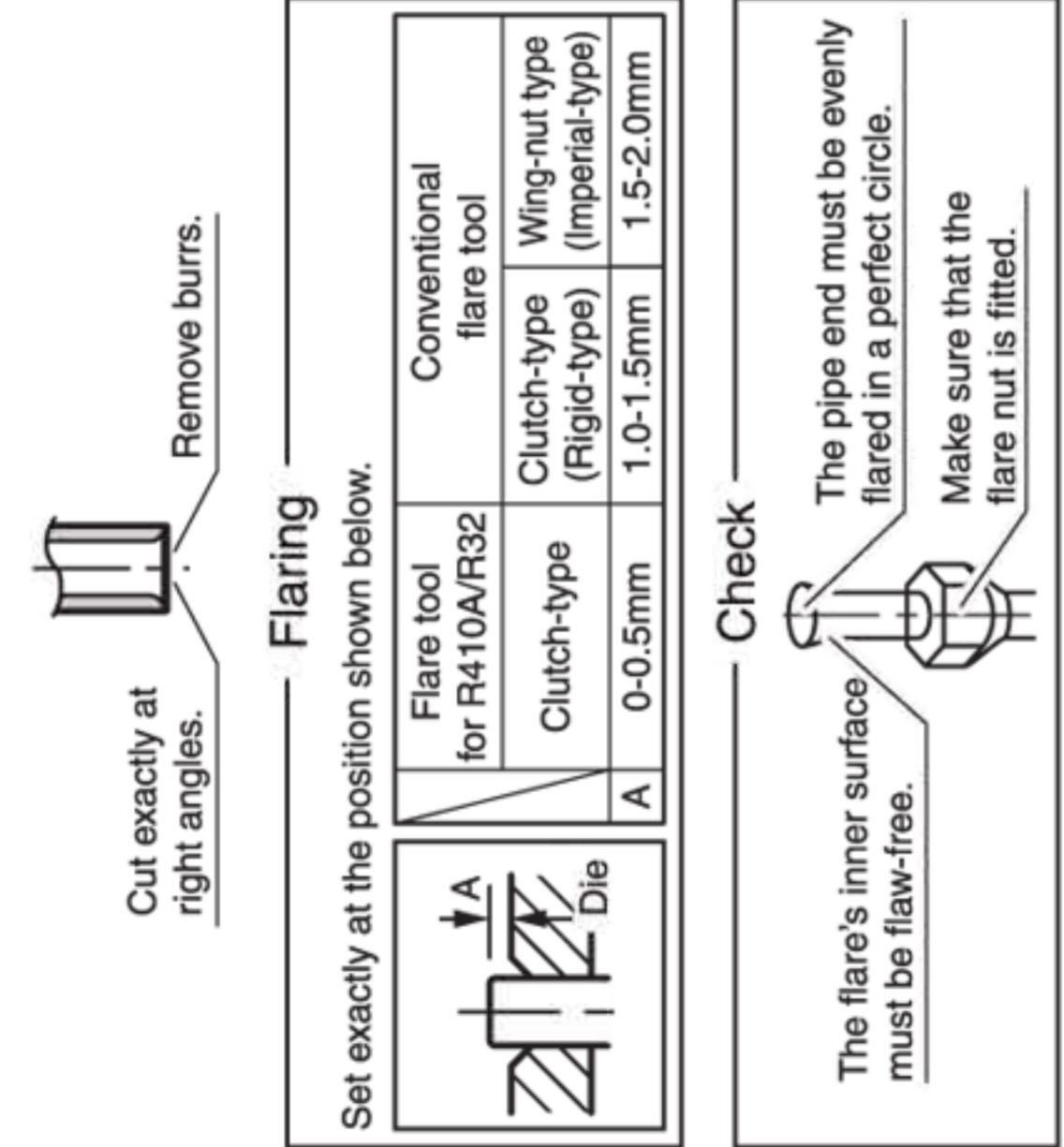
### 1. Installing the outdoor unit

- When installing the outdoor unit, refer to "Precautions for Selecting a Location" and the "Outdoor Unit Installation Diagram".

### 2. Flaring the pipe end

**⚠ WARNING**  
Incomplete flaring may result in refrigerant gas leakage.

- Cut the pipe end with a pipe cutter.
- Remove burrs with the cut surface facing downward, so that the fillings do not enter the pipe.
- Put the flare nut on the pipe.
- Flare the pipe.
- Check that the flaring has been done correctly.



### 3. Refrigerant piping

- To prevent gas leakage, apply refrigeration oil to the inner surface of the flare.
- 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.
- Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.

	Piping size	Flare nut tightening torque	Valve cap tightening torque	Service port cap tightening torque
Gas side	O.D.9.5mm	25-31 N·m (255-316 kgf·cm)	21-25 N·m (214-255 kgf·cm)	10.8-14.7N·m (110-150kgf·cm)
Gas side	O.D.12.7mm	35-43 N·m (357-439kgf·cm)	25-31 N·m (255-316kgf·cm)	10.8-14.7N·m (110-150kgf·cm)
Liquid side	O.D.6.4mm	15-19 N·m (153-194kgf·cm)	21-25 N·m (214-255kgf·cm)	10.8-14.7N·m (110-150kgf·cm)

### Cautions on Pipe Handling

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

### Selection of Copper and Heat Insulation materials

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

- Insulation material : Polyethylene foam  
Heat transfer rate : 0.041 to 0.052W/m<sup>2</sup>K (0.035 to 0.045kcal/mh°C).
- Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Piping size	Minimum bend radius	Piping thickness	Thermal insulation size	Thermal insulation thickness
Gas O.D. 9.5mm	30mm or more	Thickness 0.7mm (C1220T-O)	I.D. 12-15mm	10mm
Gas O.D. 12.7mm	40mm or more		I.D. 14-16mm	
Liquid O.D. 6.4mm	30mm or more		I.D. 8-10mm	

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

### 4. Purging air and checking gas leakage

#### **⚠ WARNING**

- Make sure that air or any matter other than refrigerant (R32) does not get into the refrigeration cycle.
- If refrigerant gas leaks occur, ventilate the room as soon and as much as possible.
- To prevent air pollution, a vacuum pump should be used for air purging wherever possible.

- If using additional refrigerant, purge the air from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench to the specified tightening torque.

- Connect projection side (on which pin is pressed) of charging hose (which comes from gauge manifold) to gas stop valve's service port.
- Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi). (High-pressure valve will require no further operation.)
- Begin vacuum pumping and make sure that the compound pressure gauge reads -0.1MPa (-76cmHg) \*1.
- Close the gauge manifold's low-pressure valve (Lo) and stop vacuum pumping.
- (Maintain this condition for a few minutes to make sure that the compound pressure gauge pointer does not swing back.) \*2.
- Remove the valve caps from the liquid stop value and gas stop valve.
- Turn the liquid stop valve's rod 90° counter-clockwise with a hexagonal wrench. Close it after 5 seconds, and check for gas leakage.
- Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off.
- Disconnect charging hose from the gas stop valve's service port, then fully open the liquid and gas stop valves. (Do not attempt to turn the valve rod further than it can go.)
- Tighten the valve caps and service port caps for the liquid and gas stop valves with a torque wrench to the specified torques.

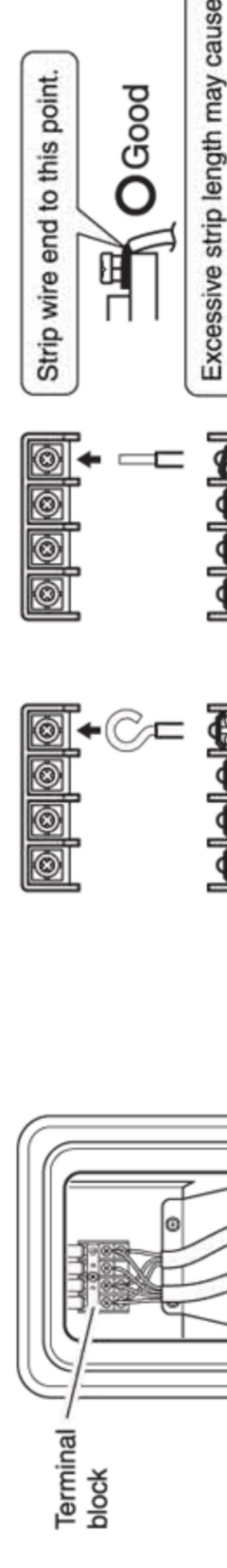
- \*1. Pipe length vs. vacuum pump run time  
Pipe length Up to 15m  
Run time At least 10 min.  
More than 15m  
At least 15 min.

### 5. Wiring

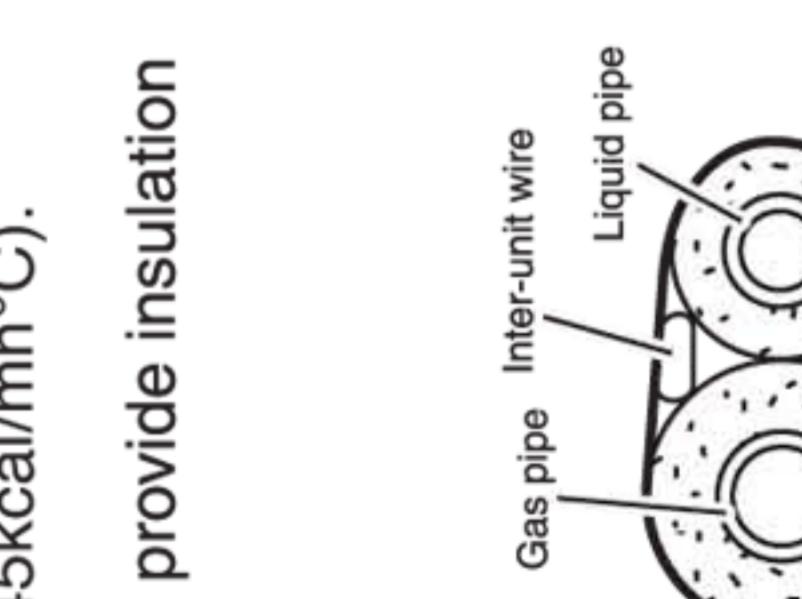
#### **⚠ WARNING**

Never use short cables for connecting end of conductor to each other.

- For inter-unit wiring, refer to "4. Wiring" in the section "Indoor Unit".
- Regarding the inter-unit wire and power supply wire.



- Precautions to be taken for power supply wiring. When using stranded wires, make sure to use the round crimp-style terminal for connection to the power supply terminal block. Place the round crimp-style terminals on the wires up to the covered part and secure in place.



### 6. Drain work

- If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 30mm in height under the outdoor unit's feet.

### 1. Trial operation and testing

- Check that the inter-unit wire is correctly connected.
- Trial operation should be carried out in COOL operation.

1-1 Measure the supply voltage and make sure that it is within the specified range.

1-2 Select the lowest programmable temperature.

1-3 Carry out the trial operation following the instructions in the operation manual to ensure that all functions and parts, such as the movement of the flaps, are working properly.

- To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.

1-4 After trial operation is complete, set the temperature to a normal level (26°C to 28°C).

- When operating the air conditioner, set it to the trial operation mode using the following method.

- Press "ON/OFF" button to turn on the system.
- Press both of "TEMP" button and "MODE" button at the same time.
- Press "TEMP" button, select "7", and press "MODE" button for confirmation.

- Trial operation will stop automatically after about 30 minutes. To stop the operation, press "ON/OFF" button.
- Some of the functions cannot be used in the trial operation mode.

- The air conditioner draws 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 breakers is turned on again.

### 2. Items to Check

Test Items	Symptom	Check
Indoor and outdoor units are installed securely.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling 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	
Only specified wires are used for all wiring, and all wires are connected correctly.	No operation or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air.	Incomplete cooling function	
Stop valves are opened.	Incomplete cooling function	
Indoor unit properly receives Signal	No operation	

### Pump Down Operation

#### **⚠ WARNING**

- Make sure that air or any matter other than refrigerant (R32) does not get into the refrigeration cycle.

- When performing a pump down, turn off the compressor before detaching the refrigerant pipes. (If the refrigerant pipes are detached when the compressor is operating and the stop valves are open, air will be drawn in leading to abnormal high pressure in the refrigeration cycle. This may result in rupturing and bodily injury.)

In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

- Remove the valve cap from the liquid stop valve and gas stop valve.
- Begin forced cooling operation.
- After 5 to 10 minutes, close the liquid stop valve with a hexagonal wrench.
- After 2 to 3 minutes, close the gas stop valve and stop forced cooling operation.
- Attach the valve cap once procedures are complete.

#### ■ Using the indoor unit ON/OFF switch

- Press and hold the indoor unit ON/OFF switch for at least 5 seconds. (The operation will start.)
- Forced cooling operation will stop automatically after about 15 minutes.
  - To stop the operation, press the indoor unit ON/OFF switch.