EN

FOR SERVICE PERSONNEL ONLY

HITACHI
Inspire the Next
HITACHI SPLIT UNIT AIR CONDITIONER INSTALLATION MANUAL
INDOOR UNIT / OUTDOOR UNIT
HFC R410A
RAK-18PSB/RAC-18WSB
RAK-25PSB/RAC-25WSB
RAK-35PSB/RAC-35WSB

- Carefully read through the procedures of proper installation before starting installation work.
- The sales agent should inform customers regarding the correct operation of installation.

Tools Needed For Installation Work

(◉ mark is tool exclusive use for R410A) • ⊕ ⊖ Screwdriver • Measuring Tape • Knife • Saw • Pipe Cutter • Hexagonal Wrench Key (3⧠ 4mm) • Power Drill (ø65~ø80mm) • Vacuum Pump • Pliers or Wrench • Torque Wrench ◉ Vacuum Pump Adaptor ◉ Flare Tool ◉ Gas Leakage Detector ◉ Manifold Valve ◉ Charge Hose

SAFETY PRECAUTION

- Read the safety precautions carefully before operating the unit.
- The contents of this section are vital to ensure safety. Please pay special attention to the following sign.
  - ⚠ **WARNING ..... Incorrect methods of installation may cause death or serious injury.**
  - ⚠ **CAUTION ..... Improper installation may result in serious consequence.**
  - ❗ **Make sure to connect earth line.**
  - ⃠ **This sign in the figures indicates prohibition.**

Be sure that the unit operates in proper condition after installation. Explain to customer the proper operation and maintenance of the unit as described in the user' s guide. Ask a customer to keep this installation manual together with the instruction manual.

⚠ WARNING

- Please request your sales agent or qualified technician to install your unit. Water leakage, short circuit or fire may occur if you do the installation work yourself.
- Please observe the installation stated in the installation manual during the process of installation. Improper installation may cause water leakage, electric shock and fire.
- Make sure that the units are mounted at locations which are able to provide full support to the weight of the units. If not, the units may collapse and impose danger.
- Observe the rules and regulations of the electrical installation and the methods described in the installation manual when dealing with the electrical work. Use cables which are approved official in your country. Be sure to use the specified circuit. A short circuit and fire may occur due to the use of low quality wire or improper work.
- Be sure to use the specified cables for connecting the indoor and outdoor units. Please ensure that the connections are tight after the conductors of the wire are inserted into the terminals to prevent the external force is being applied to the connection section of the terminal base. Improper insertion and loose contact may cause over-heating and fire.
- Please use the specified components for installation work. Otherwise, the unit may collapse or water leakage, electric shock, fire or stronger vibration may occur.
- Be sure to use the specified piping set for R410A. Otherwise, this may result in broken copper pipes or faults.
- When installing or transferring an air conditioner to another location, make sure that air other than the specified refrigerant (R410A) does not enter the refrigeration cycle. If other air should enter, the pressure level of the refrigeration cycle may increase abnormally which could result in a rupture and injury.
- Be sure to ventilate fully if a refrigerant gas leak while at work. If the refrigerant gas comes into contact with fire, a poisonous gas may occur.
- After completion of installation work, check to make sure that there is no refrigeration gas leakage. If the refrigerant gas leaks into the room, coming into contact with fire in the fan-driven heater, space heater, etc., a poisonous gas may occur.
- Unauthorized modifications to the air conditioner may be dangerous. If a breakdown occurs please call a qualified air conditioner technician or electrician. Improper repairs may result in water leakage, electric shock and fire, etc.
- Be sure to connect the earth line from the power supply wire to the outdoor unit and between the outdoor and indoor unit. Do not connect the earth line to the gas tube, water pipe, lighting rod or the earth line of the telephone unit. Improper earthing may cause electric shocks.
- When finishing the refrigerant collection (pumping down), stop the compressor and then remove the coolant pipe. If you remove the refrigerant pipe while the compressor is operating and the service valve is released, air is sucked and a pressure in the freezing cycle system will build up steeply, causing an explosion or injury.
- When installing the unit, be sure to install the refrigerant pipe before starting the compressor. If the refrigerant pipe is not installed and the compressor is operated with the service valve released, air is sucked and the pressure level of the refrigeration cycle may increase abnormally which could result in a rupture and injury.
- The electric cables should neither be reworked nor added. Make sure to use an exclusive circuit breaker. Otherwise fire or electric shock might occur by connection failure, isolation failure or over current.
- Make sure to connect cables to terminal properly and terminal cover should close firmly. Otherwise, over heating at terminal contact, fire or electric shock might occur.
- Make sure that there is no dust on any connected points of electric cables and fix firmly. Otherwise, fire or electric shock might occur.

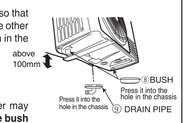
⚠ CAUTION

- A circuit breaker must be installed in the house distribution box for the direct connected power supply cables to the outdoor unit. In case of other installations a main switch with a contact gap of more than 3mm has to be installed. Without a circuit breaker, the danger of electric shock exists.
- Do not install the unit near a location where there is flammable gas. The outdoor unit may catch fire if flammable gas leaks around it.
- Please ensure smooth flow of water when installing the drain hose. Improper installing may wet your funiture.
- An IEC approved power cord should be used. Power cord type: NYM.

Condensed Water Disposal of Outdoor Unit

- There is holes on the base of outdoor unit for condensed water to exhaust.
- In order to flow condensed water to the drain, the unit is installed on a stand or a block so that the unit is 100mm above the ground, join the drain pipe as shown in the figure. Cover the other drain holes (2 places) with a bush. To install the bush, put it on the drain hole as shown in the figure and press the both sides of the bush to fit into the hole.
- After installation, check whether the drain pipe and bush cling to the base firmly.
- Install the outdoor unit horizontally and make sure that condensate drains away.
- **When Using and Installing In Cold Areas**

  Especially when there are heavy snows in areas with cold weather, condensed water may freeze on the base and result in bad drainage. In such areas, **please do not install the bush and the drain pipe**. Also, make sure that the distance from the drain hole to the ground is 250mm or more.



INDOOR UNIT

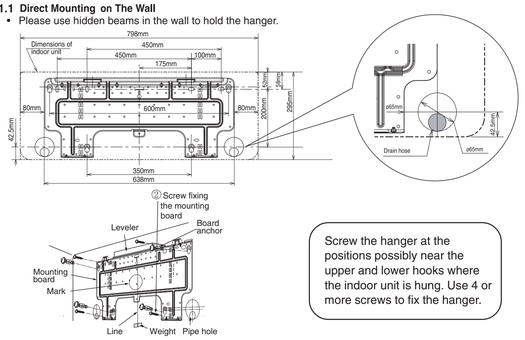
1. Installation of Mounting Board, Wall Penetration and Installation of Protection Pipe

⚠ CAUTION

- **The drain hose can be installed from the left or right of the Indoor unit. When installing the indoor unit, the mounting board must be fixed horizontally or slightly tilted down towards the side of drain hose.**
  If it is tilted above the side of the drain hose, condensed water may overflow.

1.1 Direct Mounting on The Wall

- Please use hidden beams in the wall to hold the hanger.



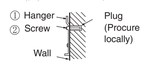
Screw the hanger at the positions possibly near the upper and lower hooks where the indoor unit is hung. Use 4 or more screws to fix the hanger.

1.2 Procedures of Installation and Precautions

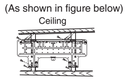
- Procedures to fix the hanger.

1. Drill holes on wall. (As shown below)

2. Push plug into the holes. (As shown below)



3. Fix the hanger on wall with 4.1 x 32 screw. (As shown in figure below)



THE CHOICE OF MOUNTING SITE (Please note the following matters and obtain permission from customer before installation.)

INDOOR UNIT

⚠ WARNING

- The unit should be mounted at stable, non-vibratory location which can provide full support to the unit.

⚠ CAUTION

- No nearby heat source and no obstruction near the air outlet is allowed.
- The clearance distances from top, right and left are specified as ⇔ in figure below.
- The location must be convenient for water drainage and pipe connection with the outdoor unit.
- Do not install at a location where there is flammable gas, steam, oil and smoke. There is a risk of fire, explosion, deterioration of resin and/or damage.
- To avoid interference from noise, please place the unit and its remote controller at least 1m from the radio and television.
- To avoid any error in signal transmission from the remote controller, please put the controller far away from high-frequency machines and high-power wireless systems.
- Lighting fixtures with electronic starters may shorten the reception distance and may even interfere with the signal being received.
- The installation height should be at least 2.3m or more from the floor.

The indoor unit (air outlet) should be installed at least 1.5m away from fire alarm.

OUTDOOR UNIT

⚠ WARNING

- The outdoor unit must be mounted at a location which can support heavy weight. Otherwise, noise and vibration will increase.

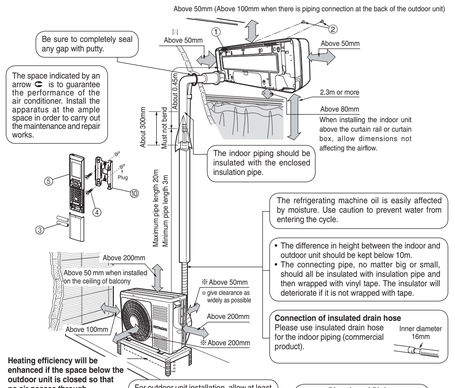
⚠ CAUTION

- Do not expose the unit under direct sunshine or rain. Besides, ventilation must be good and clear of obstruction.
- The air blown out of the unit should not point directly to animals or plants.
- The clearances of the unit from top, left, right and front are specified as ⇔ in figure below. At least two sides must be clear for ventilation.
- Be sure that the hot air blown out of the unit and noise do not disturb the neighbourhood.
- Place not exposed to strong wind
  Particularly on the rooftop of a building, strong wind blows and the outdoor unit may be damaged.
- Do not install at a location where there is flammable gas, steam, oil and smoke.
- The location must be convenient for water drainage.
- Place the outdoor unit and its connecting cord at least 1m away from the antenna or signal line of television, radio or telephone. This is to avoid noise interference.
- Do not install the indoor unit in a place where small animals may build their nests. If small animal goes inside the unit and touches the electrical parts, failure of the unit, smoke or fire may be caused. Request your customer to keep the surrounding of the unit clean.

No.	Supplied Items	Qty
①	Mounting board	1
②	Screw for mounting board	5
③	AAA size battery	2
④	Screw for Remote Controller Holder	2
⑤	Remote controller	1
⑥	Anti-mold wasabi cassette	1
⑦	Heat insulating materials	1
⑧	Bush	2
⑨	Drain pipe	1
⑫	Remote Controller Holder	1

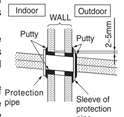
※ Items ⑨ & ⑫ are included in the package of the outdoor unit.

Figure showing the installation of Indoor and Outdoor Unit (For example: Ground installation)



1.3 Wall Penetration and Installation of Protection Pipe

1. Drill a ø65mm hole on wall which is slightly tilted towards the outdoor side.
2. Cut the protection pipe according to the wall thickness and pass through the wall hole.
3. Empty gap in the sleeve of protection pipe should be completely sealed with putty to avoid dripping of rain water into the room.



⚠ WARNING

- **Protection pipe (commercial product) must be used**
  Be sure that the wire is not in contact with any metal in the wall. Please use the protection pipe as wire passing through the hollow part of the wall to prevent damaged by mouse, possibility of short circuit or fire.
- **Completely seal with putty**
  High humidity air inside the wall or the outdoor may go in to the room and could result in dripping of dew. It could also cause smell or odor present outdoor and inside the wall spreading into the room.

2. Installation of the Indoor Unit

2.1 Preparation of Installation

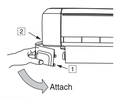
Remove the front panel

- To remove front panel, please refer to “Removing and Attaching the Front Panel” on page 13.
- Make sure to use both hands to attach and remove the front panel.

Remove the lower cover

- Push the bottom inner part (1) of the lower cover to remove the lower cover.

- To attach the lower cover, attach (2) first and then attach (1) by rotating it around (2) as the fulcrum.

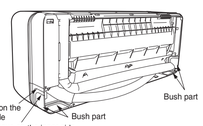


Wiring connection

- Please refer to “Connection of Power Cord” on page 10.

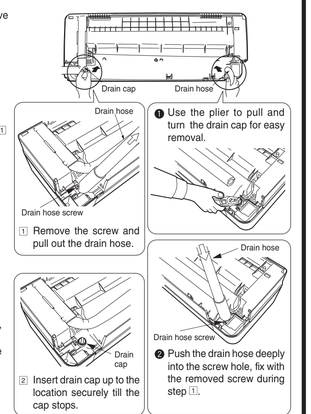
Cutting lower cover bush (Horizontal and downward piping)

- While installing the pipe from the right, left or bottom side, use a knife to cut lower cover bush accordingly.
- Use the groove on the outer side if the pipe which is to be installed from the left side, etc. is big.



Changing of drain hose (Horizontally piping)

- Install and change the drain hose and drain cap when installing the pipe horizontally as shown below.
- Remove the lower cover when installing and changing.
- Do not carry out horizontal piping for drain hose.



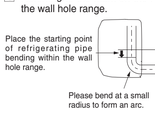
⚠ CAUTION

- **Be sure to insert drain hose and drain cap firmly and fix with screw**
  Insufficient insert may result in water leakage.

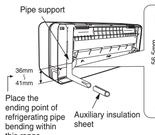
Preparation of Pipe

Backward piping

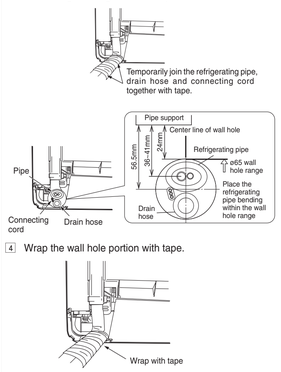
1. Remove the auxiliary insulation material sheet which is attached to the pipe insulation.
2. Referring to the mark on the rear side, form the pipe within the wall hole range.



If the starting point of refrigerating pipe bending is projected from the wall hole range or if the bending radius is too large, the indoor unit may be lifted from wall and this may cause poor finishing.



3. Temporarily join the refrigerating pipe, drain hose and connecting cord together with tape.



Horizontally and downward piping from the right

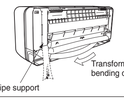
1. Remove the auxiliary insulation material sheet which is attached to the pipe insulation. (Keep the removed auxiliary insulation material sheet because it will be reused after pipe connection.)
2. Carry out refrigerating pipe forming.

Layout of horizontally piping from the right

3. Temporarily join the refrigerating pipe, drain hose and connecting cord with tape.

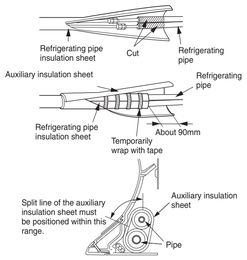
⚠ CAUTION

- Transform the piping while holding down the lower portion of pipe-support by hand.



Installation after connection of refrigerating pipes (Horizontal piping)

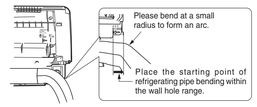
1. Remove the auxiliary insulation material sheet which is attached to the pipe insulation. Connect the refrigerating pipe. (Refer to “Pipe Connection” on page 9)
2. Cut the heat insulation sheet refrigerating pipe aligning to the insulation sheet of the pipe and fix them temporarily with tape.
3. Cover the pipe connection with the auxiliary insulation sheet which was removed earlier, with its split line on the top. Wrap the tape without any gap. Tape must not be over tightened. (Refer to “Heat insulation and Finishing of Piping” on page 11)
   If there is gap or over-tightened, it may cause condensation.



4. Form the refrigerating pipe according to the wall hole position.
   Especially in the case of horizontally backward piping, follow the instruction below to carry out accurate forming.

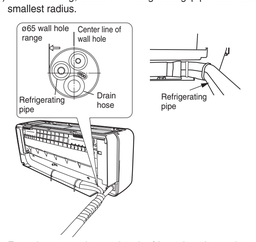
Forming of refrigerating pipe for horizontally backward piping

(1) Refer to the mark at the back, start bending the refrigerating piping within wall hole range.

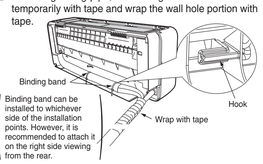


If the starting point of refrigerating pipe bending is projected from the wall hole range or if the bending radius is too large, the indoor unit may be lifted from wall and this may cause poor finishing.

(2) When forming, bend the refrigerating pipe with the smallest radius.



5. Form the connecting cord and refrigerating pipe and put them in the space on the lower side of the rear surface of the indoor unit. Put the binding band on the hook located on the rear surface to fix it.
6. Join refrigerating pipe, connecting cord and drain hose temporarily with tape and wrap the wall hole portion with tape.

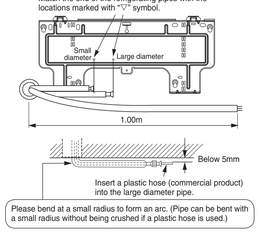


Binding band can be installed to whichever side of the installation points. However, it is recommended to attach it on the right side viewing from the rear.

Be sure to cut the extra binding band.
(Otherwise, it may result in abnormal noise or dewfall.)

Connecting the refrigerating pipe at the back of the indoor unit

- Form and set the refrigerating pipe and connecting cord.



Please bend at a small radius to form an arc. (Pipe can be bent with a small radius without being crushed if a plastic hose is used.)

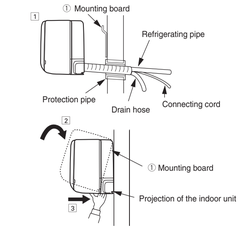
⚠ CAUTION

- **When using a plastic hose, make sure to insert it only after pipe expanding is carried out to avoid cutting dust from getting inside.**

2.2 Installation

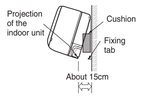
Connecting the refrigerating pipe other than at the back of the indoor unit

1. Insert the pipes through the wall hole.
2. Hang the upper part of the indoor unit on the mounting board.
3. Push the lower part of the indoor unit to the wall, hook the projection on the lower part of the indoor unit onto the mounting board.
4. Cover the pipe connection with the auxiliary insulation sheet which was removed earlier, with its split line on the top. Wrap the tape without any gap. (Refer to “Heat insulation and Finishing of Piping” on page 11)
   If there is gap or over-tightened, it may cause condensation.

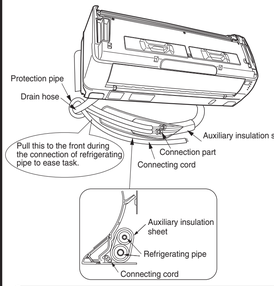


Connecting the refrigerating pipe at the back of the indoor unit

1. Remove the auxiliary insulation material sheet which is attached to the pipe insulation. (Keep the removed auxiliary insulation material sheet because it will be reused after pipe connection.)



2. Hang the indoor unit on the mounting board.
3. Place the cushion under the right rear surface of the indoor unit to lift the lower side of the unit by approximately 15cm.
4. Connect the refrigerating pipe. (Refer to “Pipe Connection” on page 9)
5. Cover the pipe connection with the auxiliary insulation sheet which was removed earlier, with its split line on the top. Wrap the tape without any gap. (Refer to “Installation after connection of refrigerating pipes (Horizontal piping)” on page 5, step 3)
6. Insert the drain hose into the wall hole.
7. Connect the connecting cord. (Refer to “Connection of Power Cord” on page 10).
8. Form connecting cord and refrigerating pipe and put them in the space on the lower side of the rear surface of the indoor unit.
9. Remove the temporary sand and hook the projection on the lower part of the indoor unit onto the mounting board.

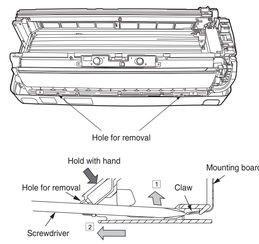


⚠ CAUTION

- **Do not over tighten vinyl tape on pipe heat insulation sheet**
  Do not over tighten to avoid loss of heat insulating effect and dew condensation.
- **Pull the lower part of the indoor unit towards you and confirm that the tab of the indoor unit is fit in the installation plate**
  If the tab is not fitted in securely, vibration of the indoor unit becomes stronger.

How to remove the indoor unit

- Push the [PUSH] section at the bottom of the indoor unit from the outside, the claws are released from the mounting board. (2 places on the left and right)
- If the bottom of the indoor unit cannot be pushed, remove the bottom part of the front cover and insert a screwdriver into the hole for removal of indoor unit as shown in the figure. Then, push the claws upwards while holding down the upper part of the hole (1) and pull the indoor unit towards you (2). When horizontal piping is used, be careful not to damage the pipe and connecting cord with the tip of the screwdriver during this operation.
- Please refer to “Removing and Attaching the Front Cover” on page 14 to remove the bottom part of the front cover.

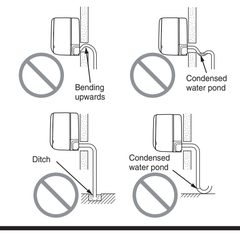


3. Drainage Check

After the indoor unit is installed, please ensure the smooth flow of condensed water of the indoor unit during installation. (Careless work may result in water leakage.)

⚠ CAUTION

- **During drainage work, install the drain pipe to ensure smooth drainage. Make sure to carry out drainage check.**
  Careless work may result in water leakage.
- **Make sure that there is no problem as shown in the figures on page 8.**
  Such problems may cause clogged drain and could result in water leakage.
- **Drain hose must be at a slope of at least 1/25.**
- **When inserting the drain hose into the drain pipe for embedded piping, etc., do not cut the drain hose in the middle.**
  This may lead to poorer heat insulating performance of the drain hose and could result in water leakage.
- **Do not lead the drain hose to a place where corrosive gas (sulfur, ammonia, etc.) is generated such as septic tank.**
  Corrosive gas may flow into the indoor unit through the drain hose, and could result in corrosion on the copper pipe and odor in the room.



⚠ CAUTION

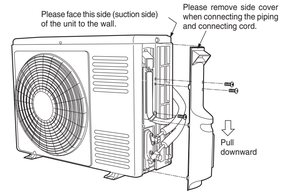
Be sure that the drain hose is loosely connected bend or proper condition like left figure.

⚠ CAUTION

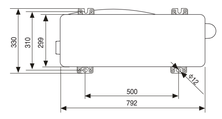
You are free to choose the side (left or right) for the installation of drain hose. Please ensure the smooth flow of condensed water of the indoor unit during installation. (Careless may result in water leakage.)

OUTDOOR UNIT

- Please mount the outdoor unit on stable ground to prevent vibration and increase of noise level.
- Decide the location for piping after sorting out the different types of pipe available.
- When removing side cover, please pull the handle after undoing the hook by pulling it downward. Reinstall the side cover in reverse order of the removal.



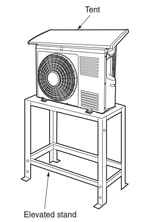
Fixed leg dimension of outdoor unit



⚠ CAUTION

- **Do not touch the suction port, bottom surface or aluminium fin of the outdoor unit.**
  Failure to do so may cause an injury.

In snowy region, install a snow guard and elevated stand to ensure the airflow for better heating efficiency.
In other regions, it is recommended to install a tent for shade.



INSTALLATION OF REFRIGERATING PIPES AND AIR REMOVAL

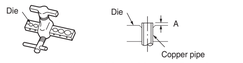
1. Pipe Cutting and Flaring

- Use a pipe cutter to cut the pipe and remove burr.

⚠ CAUTION

- **Remove burr**
  If burr is not removed, it may cause leakage.
- **Point the side to be trimmed downwards during trimming to prevent copper chips from entering the pipe.**

- Before flaring, please put on the flare nut.

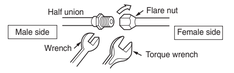


※ Please use exclusive tool for refrigerant R410A.

Outer Diameter (ø)	A (mm) Rigid Flaring Tool	
	For R410A tool	For R22 tool
6.35 (1/4")	0~0.5	1.0
12.7 (1/2")	0~0.5	1.0

2. Pipe Connection

- Remove the flare nut from the pipe of the indoor unit by removing the flare nut (female side) with a spanner while holding down the half union (male side) with a spanner.
- Do not crush the pipe while bending it.
- Apply refrigerant oil on the connection part. After carrying out the center alignment and manual tightening of the flare nut, tighten the flare nut securely with a torque wrench (spanner).



* Tightening torque must be as shown in the table below.

		Outer diameter of pipe (ø)	Torque N•m (kgf•cm)
Small diameter side		6.35 (1/4")	13.7–18.6 (140–190)
Large diameter side		12.7 (1/2")	44.1–53.9 (450–550)
Valve head cap	Small diameter side	6.35 (1/4")	19.6–24.5 (200–250)
	Large diameter side	12.7 (1/2")	29.4–34.3 (300–356)
Valve core cap			12.3–15.7 (125–160)

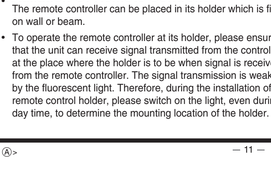
⚠ CAUTION

- **When removing flare nut of the indoor unit, first remove the nut of small diameter side.**
  Otherwise the nut of big diameter side will fly out.
- **Prevent water from entering into the piping when connecting.**
- **Be sure to tighten the flare nut to the specified torque with a torque wrench.**
  If the flare nut is overtightened, it may split after sometime and may cause refrigerant leak.
- **When using a control valve, make sure that the packing is not deteriorated and avoid excessive tightening of the handle. Otherwise, gas may leak from the service valve.**

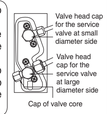
3. Remove of Air from the Pipe and Gas Leakage Inspection

From the viewpoint of global environment protection, air purge type should be vacuum pump method.

2
- Fully tighten the "Hi" shuttle of the manifold valve and completely unscrew the "Lo" shuttle. Run the vacuum pump. (Adapter is switched on)
- After pumping for about 10-15 minutes, completely loosen the "Lo" shuttle and switch off the vacuum pump. (Adapter is switched off)

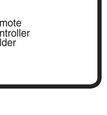


1
- Remove the valve head cap of the service valve.
- Remove the cap of valve core and connect the charge hose.
- Connect the vacuum pump adapter to the vacuum pump and connect the charge hose to the adapter.



3
- Loosen the spindle of the service valve with small diameter by 1/4 turn and tighten the spindle immediately after 5 to 6 seconds.
- Remove the charging hose from the service valve.

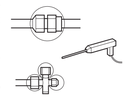
4
- Unscrew the spindle of both the service valves in anticlockwise direction to allow the flow of refrigerant (unscrew halfway).
- Tighten the cap of valve head. Check and make sure that there is no gas leakage.



Gas Leakage Inspection

Please use gas leakage detector to check if leakage occurs at connection of Flare nut as shown on the right.

If gas leakage occurs, further tighten the connection to stop leakage. (Be sure to use R410A detector.)



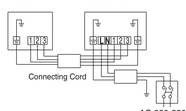
Works to be done when transferring or removing air conditioner

From the viewpoint of global environment protection, refrigerant should be recovered (pumped down) when the air conditioner is transferred or removed.

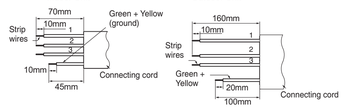
1. Perform force-cooling operation (refer to "Force-cooling operation" on page 12) for about 5 minutes as a preliminary operation.
2. Tighten the spindle of the service valve at small diameter side in clockwise direction.
3. Continue the force-cooling operation for another 1-2 minutes, and then tighten the spindle of the service valve at large diameter side in clockwise direction.
4. Stop the force-cooling operation.

CONNECTION OF POWER CORD

Procedures of Wiring



Detail of Cutting the Connecting Cord



⚠ WARNING

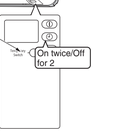
- If the supply cord is damaged, it must be replaced by a special cord (Maker's service parts) available from the manufacturer or its service agent.
- The naked part of the wire core should be 10mm fix it to the terminal tightly. Then try to pull the individual wire to check if the contact is tight. Improper insertion may burn the terminal.
- Be sure to use only wire specified for the use of air-conditioner.
- Be sure to use only power cables approved form the authorities in your country. For example in Germany: Cable type: NYM 3×1.5mm². (Fuse = 25A time delay)
- Please refer to the manual for wire connection, the wiring technique should meet the standard of the electrical installation.
- Leave some space in the connecting cord for maintenance purpose and be sure to secure it with the cord band.
- Secure the connecting cord along the coated part of the wire using the cord band. Do not exert pressure on the wire as this may cause overheating or fire.
- There is a AC voltege of 220-230V between the L and N terminals. Therefore, before servicing, be sure to remove the plug from the AC outlet.

Wiring of the Indoor Unit

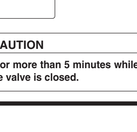
1. Remove the front panel. (Refer to "Removing and Attaching the Front Panel" on page 13)
2. Remove the terminal cover and screw, hold the upper part when removing.

3. Remove the lower cover.
4. Bring the connecting cord from the rear surface to the front surface through the cable guide.

※ The connecting cord should be fix with the terminal.
Tightening torque reference value:
1.2~1.6N•m (12~16kgf•cm)
Excessive tightening may damage the terminal.



5. Connect the connecting cord and fix with cord band.
6. Hook onto the claw at the lower part of the terminal cover and fix with screw.



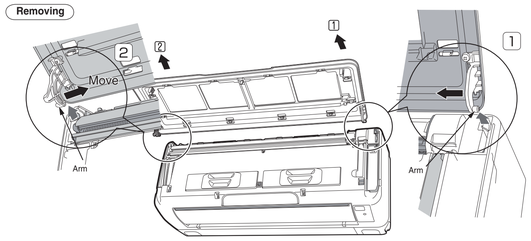
REMOVING AND ATTACHING THE FRONT COVER

Removing and Attaching the Front Panel

• Be sure to hold the front panel with both hands to detach and attach it.

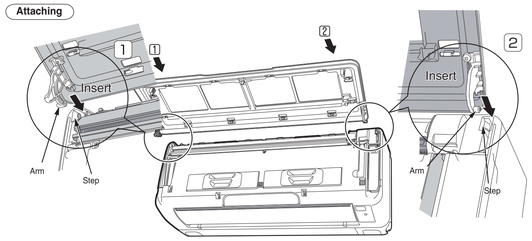
Please refer to the operation manual on how to open and close the front panel.

Removing



① Push the end of the right-side arm outward to release the tab.
② Move the left-side arm outward to release the left tab, and then pull the panel towards you.

Attaching



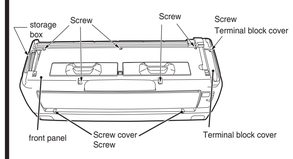
① Insert the shaft of the left arm along the step on the unit into the hole.
② Securely insert the shaft of the right arm along the step on the unit into the hole.
③ Make sure that the front panel is securely attached, and then close the front panel.

⚠ CAUTION

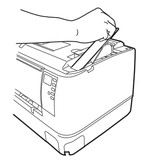
- When being installed or removed, the panel is likely to slide off.
- When lifting to open the panel, do not apply too much force. Otherwise, the panel may come off or malfunction may be caused.

How to remove the panel frame

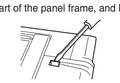
1. Remove the front panel and the storage box.



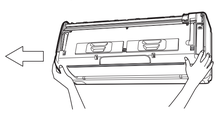
2. Unscrew screws of the terminal block cover, and remove the terminal block.
3. Remove the screw cover below the panel frame, and unscrew the 7 screws from the panel frame.



4. Insert the screw driver into the hole on the right upper part of the panel frame, and loosen the jaw.

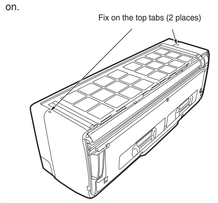


5. Hold the panel frame and pull it along the direction indicated by the arrow to remove it.

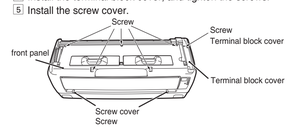


Attaching the Front Cover

1. Make sure that the dew receiving pan and the cleaning unit are securely attached.
2. After attaching the left and right sides of the front cover onto the unit, ensure that the top tabs (2 places) have been fixed on.



3. Tighten the 7 screws in the panel.
4. Install the terminal block cover, and tighten the screws.
5. Install the screw cover.

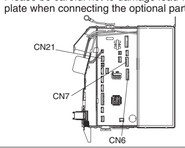


6. Install the storage box and the panel.

How to connect the optional parts

(RAC Adapter, Dry contact, Wired Remote Controller)

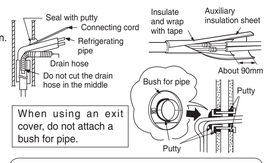
- For cable connection to control P.W.B., you need to remove front cover and electrical box cover. Each connecting location is as below.
  ① Dry contact: CN6
  ② H-LINK:CN7
  ③ Wired Remote Controller : CN21
- Please check and confirm manuals attached to each optional parts for more connection details.
- You can refer to this installation manual how to remove and re-attach the front cover.
- Please be careful not to damage lead wires by edge of plate when connecting the optional parts.



FINAL STAGE

1. Heat Insulation and Finishing of Piping

- Cover the pipe connection with the auxiliary insulation sheet, wrap the tape without any gap.
- If there is gap or over-tightened, it may cause condensation.
- Please wrap the pipe and power cord together with vinyl tape as shown in the figure of the installation of indoor and outdoor units on page 2.
- To enhance the heat insulation and to prevent water condensation, please cover the outdoor part of the drain hose and pipe with insulation sheet.
- When using an exit cover, do not attach a bush for pipe.
- When an exit cover is not used, seal the gap of the hole on the wall, bush and pipe completely with putty. If an exit cover is used, seal the gap of the hole on the wall and pipe completely with putty. In the case of embedded piping, seal the gap of the pipe completely with putty. Incomplete sealing could cause entering of high humidity air into the wall or indoor unit, which could result in dripping of dew. It could also cause smell or odor present outdoor and inside the wall spreading into the room.



When using an exit cover, do not attach a bush for pipe.

⚠ CAUTION

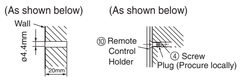
- **Completely seal any gap with putty**
  High humidity air inside the wall or the outdoor may go in to the room and could result in dripping of dew. It could also cause smell or odor present outdoor and inside the wall spreading into the room.

2. Affixing the Remote Controller and Installing the Anti-mold Wasabi Cassette

- Procedures to fix the holder of remote control.

1.Drill holes on wall. 2.Push plug into the holes.

(As shown below) (As shown below)

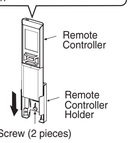


Installation Of Remote Controller

The remote controller can be placed in its holder which is fixed on wall or beam.

- To operate the remote controller at its holder, please ensure that the unit can receive signal transmitted from the controller at the place where the holder is to be when signal is received from the remote controller. The signal transmission is weaken by the fluorescent light. Therefore, during the installation of the remote control holder, please switch on the light, even during day time, to determine the mounting location of the holder.

The remote controller must be slide in in the remote controller holder, in the direction as shown in the figure, until it hooks at the lower end of the remote controller holder.



Wiring of the Outdoor Unit

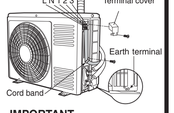
Please remove the side cover and terminal cover for wiring connection.

⚠ WARNING

- **When the fuse (F5 or F6) has been blown out by the improper connection of power cable, it can be restored by the attached reserve fuse.**
  Please exchange the blown-out fuse after making sure the right connection.
- **The connecting cord must be fix with cord band**
  Otherwise rain water may enter and cause short circuit. Besides, an external force may apply to the connection part of the connecting cord and could result in heat and fire.
- **The terminal cover and side cover must be installed after work is done.**

⚠ CAUTION

- **Outdoor supply cords shall not be lighter than polychloroprene sheathed flexible cord with code designation 60245 IEC 57.**



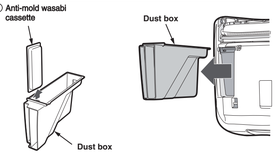
IMPORTANT

Fuse Capacity
25A time-delay fuse

Wire length	Wire cross-section
up to 6m	1.5mm²
up to 15m	2.5mm²
up to 20m	4.0mm²

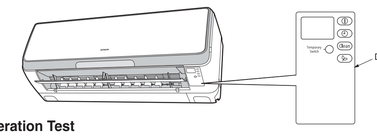
- Install the ⑥ anti-mold wasabi cassette. (Refer to page 6 of the Operation Manual)

Noise may occur if the anti-mold wasabi cassette is not installed properly.



3. Remove the Protection Sheet

- Remove the protection sheet on the display panel.



4. Operation Test

Operation test

- Please ensure that the air conditioner is in normal operating condition during the operation test.
- Explain to your customer about the proper operation procedures as described in the operation manual.
- If the indoor unit won't operate, check the cable for correct connection.

Force-cooling operation

- When the temporary switch of the indoor unit is pressed for more than 5 seconds, the force-cooling operation starts. Use this mode when performing the failure diagnosis or collecting refrigerant into the outdoor unit.
- The Timer lamp flashes when force-cooling is in operation.
- Press the temporary switch again or use the remote controller to stop the force-cooling operation once this operation is completed.

Temporary switch
(Force-cooling operation starts when the switch is pressed for more than 5 seconds. Press the switch again and use the remote controller to stop the operation.)

⚠ CAUTION

- **Do not operate the unit for more than 5 minutes while the spindle of the service valve is closed.**

OPERATION CHECK

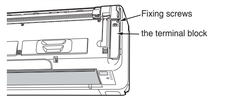
⚠ CAUTION

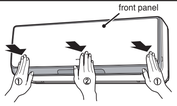
- Before trial running of the air conditioner, be sure to check the following steps 1 and 2, and then operate it in the cooling-heating room.

1 Verifying installation of the terminal block and the front panel

Check whether the terminal block cover has been installed.

To close the front panel, press its right and left sides first and then the center until it clicks into place.



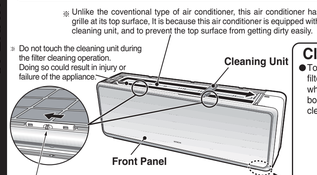


2 Verifying cleaning of the filter mesh

1. Before turning on the power of the air conditioner, make sure that the filters (2 pieces at the top and 2 pieces in front) have been installed properly and locked.
2. When the power of the air conditioner turns on, the "Filter Cleaning Operation" starts automatically. The CLEAN indicator is lit during the filter cleaning operation.

※ Unlike the coventional type of air conditioner, this air conditioner has no grille at its top surface, It is because this air conditioner is equipped with the cleaning unit, and to prevent the top surface from getting dirty easily.

※ Do not touch the cleaning unit during the filter cleaning operation. Doing so could result in injury or failure of the appliance.

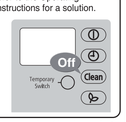


Filter Lock
- Make sure that the top filters have been locked. Lock the filters if they are not locked. (The filters may come off during the operation if they are not locked.)

Cleaning indicator

● To verify cleaning of the filter mesh, send wind when upper and lower wind boards are closed. The cleaning indicator lights up.

● After the cleaning action is acknowledged, if the cleaning diagnosis indicator blinks (4" on/1" off), it indicates abnormality in cleaning operation of the filter mesh. In this case, refer to the Operating Instructions for a solution.

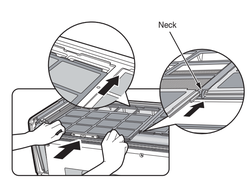


- Filter cleaning operation check will take approximately **5 minutes** for the cleaning unit to make **one cycle** of back and forth movement. Make sure that the cleaning unit is actually working by a visual inspection from the top of the indoor unit.
- Close the front panel properly.
- If the "ON/OFF" button on the remote control is pressed during the operation check, the operation check is stopped before its completion. Wait until the operation check is completed without pressing any button on the remote controller.
- If the filters are not installed properly, "Filter Cleaning Operation" is found abnormal and the CLEAN indicator blinks. The filters may come off during operation if they are not installed properly.
- If the CLEAN indicator blinks during the "Filter Cleaning Operation" means that the operation is stopped before its completion due to an abnormal condition.
  In this case, refer to "Check the Operation of the Filter Cleaning Unit" and "Troubleshooting" of the operation manual and take appropriate actions.

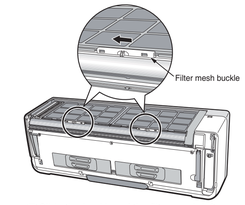
How to check Micro Mesh Stainless Filter installation

- Remove the front panel and check if the filter locks (2 pcs) are tripped or slant.
- If the filters are not inserted properly, refer to following "Installing the Micro Mesh Stainless Filters".
- Please perform "Filter cleaning operation check" again after reinstalled the filters.

Installing the Micro Mesh Stainless Filters



[1] Keep the filter mesh facing up, and align the filter with the top face of the indoor unit, and then slide and push it in. (The shape of the left and right filters are the same.)

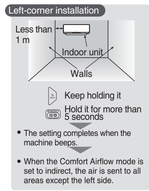


[2] Slide the buckles of the filter mesh leftwards to lock the filter mesh. (Each in both sides)

Settings of [Comfort Airflow]

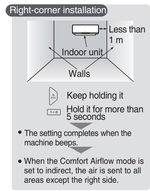
- Reservation for calendar and clock shall be set first before operating Comfort Airflow.
- When the indoor unit is installed in a corner, please set it by following the procedure below to achieve the maximum effect:

Left-corner installation



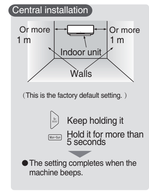
- The setting completes when the machine beeps.
- When the Comfort Airflow mode is set to indirect, the air is sent to all areas except the left side.

Right-corner installation



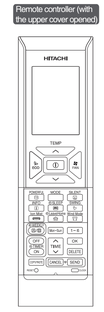
- The setting completes when the machine beeps.
- When the Comfort Airflow mode is set to indirect, the air is sent to all areas except the right side.

Central installation



- The setting completes when the machine beeps.

Remote controller (with the upper cover opened)



- When the room and installing location change, please set the remote controller again.