

FOR SERVICE PERSONNEL ONLY

HITACHI SPLIT UNIT AIR CONDITIONER INSTALLATION MANUAL

Indoor Unit
RAK-70PPD



- 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 R32
- ⊕ ⊖ Screwdriver • Measuring Tape • Knife
- Saw • Pipe Cutter • Hexagonal Wrench Key (⊕ ⊖ 4mm)
- Power Drill (∅ 65mm ~ ∅ 80mm) • Vacuum Pump
- Pliers or Wrench • Torque Wrench • Vacuum Pump Adaptor
- Flare Tool • Gas Leakage Detector • Manifold Valve • Charge Hose • Reamer • File

Refrigerant pipe size (outer diameter): Narrow pipe, Liquid (∅6.35mm); Wide pipe, Gas (∅15.88mm)

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.
- Be sure that the unit operates in proper condition after installation. Explain to customer the proper way of operating the unit as described in the user's guide.

WARNING

- Flare nut must use a torque wrench without fail. Tighten with the specified tightening torque. If the flare nut is tightened too much, after a long period of time, the flare nut breaks, Gas leakage, stagnation, touching fire, rarely cause ignition.
- Sharp bending of the pipe use the polyethylene rod, bend not crushed the pipe. Gas leakage from the crushed part, stagnation, touching fire, rarely cause ignition.
- 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 instructions stated in the installation manual during the process of installation. Improper installation may cause water leakage, electric shock and fire.
- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts. A vacuum valve shall be provided to evacuate the interconnecting pipe and/or any uncharged refrigerating system part.
- Mechanical connectors used indoors shall comply with ISO 14903. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated.
- Refrigerant tubing shall be protected or enclosed to avoid damage.
- 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 power cables approved by the authorities of your country.
- Be sure to use the specified wire 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. Improper insertion and loose contact may cause over-heating and fire.
- Please use the specified components for installation work. Otherwise, the units may collapse or water leakage, electric shock and fire may occur.
- Be sure to use the specified piping set for R32. Otherwise, this may result in broken copper pipes or faults.
- When installing or removing an air conditioner, only specified refrigerant (R32) shall be allowed, do not allow air or moisture to remain in the refrigeration cycle. Otherwise, pressure in the refrigeration cycle may become abnormally high so that a rupture may be caused.
- 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. Be aware that refrigerants may not contain an odour.
- 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.

CAUTION

- A circuit breaker or fuse must be installed. Without a circuit breaker or fuse the danger of electric shock exists. The external switch shall be incorporated to completely disconnect from power supply. It should disconnect all poles, and a contact separation of at least 3mm must be present.
- 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.
- Do not install the indoor unit in a machine shop or kitchen where vapor from oil or its mist flows to the indoor unit. The oil will deposit on the heat exchanger, thereby reducing the indoor unit performance and may deform and in the worst case, break the plastic parts of the indoor unit.
- Please ensure smooth flow of water when installing the drain hose.
- Piping shall be suitable supported with a maximum spacing of 1m between the supports.

The Choice of Mounting Site (Please note the following matters and obtain permission from customer before installation).

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 in figure below.
- The location must be convenient for water drainage and pipe connection with the Outdoor unit.
- To avoid interference from noise please place the unit and its remote controller at least 1m from the radio, television and inverter type fluorescent lamp.
- 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.
- The installation height of indoor unit must be 2.3m or more.



WARNING

This symbol shows that this equipment uses a flammable refrigerant. If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition.



CAUTION

This symbol shows that the Operation Instructions should be read carefully.



CAUTION

This symbol shows that a service personnel should be handling this equipment with reference to the Installation Manual.

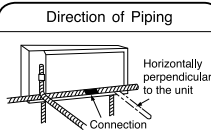


CAUTION

This symbol shows that there is information included in the Operation Manual and/or Installation Manual.

Names of Indoor Components

| No. | Item | Qty |
|-----|-----------------------------------|-----|
| ① | Mounting Plate | 1 |
| ② | Screw for Mounting Plate (4.1x32) | 6 |
| ③ | Air Purifying Filter | 2 |



WARNING

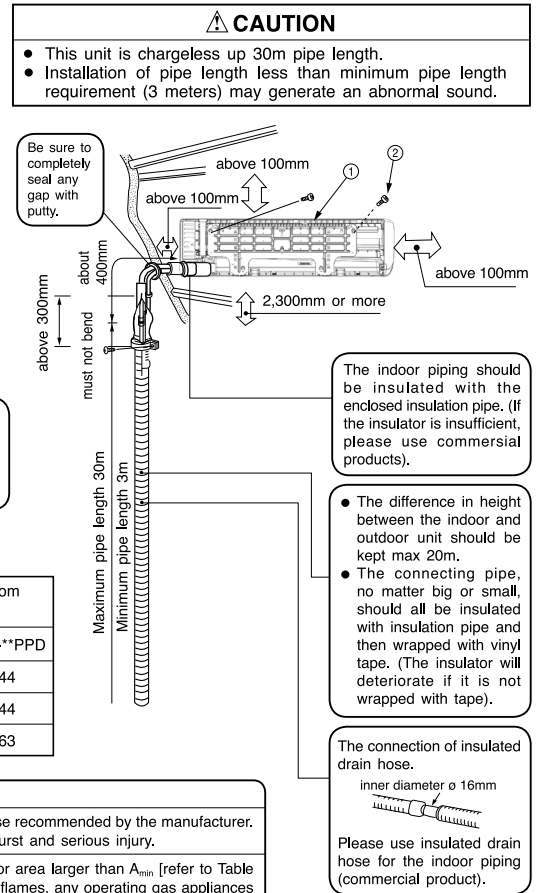
- BURST HAZARD**
Do not allow air, etc. to get into refrigerant cycle (piping).
- RISK OF EXPLOSION**
Compressor must be stopped before removing refrigerant pipes. All service valve must be fully closed after pumping down operation.

WARNING

Flare connection only at outside of building

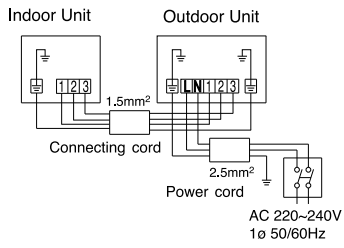
Refrigerant piping must be protected from physical damage. Install a plastic cover or equivalent.

Figure showing the Installation of Indoor Unit.

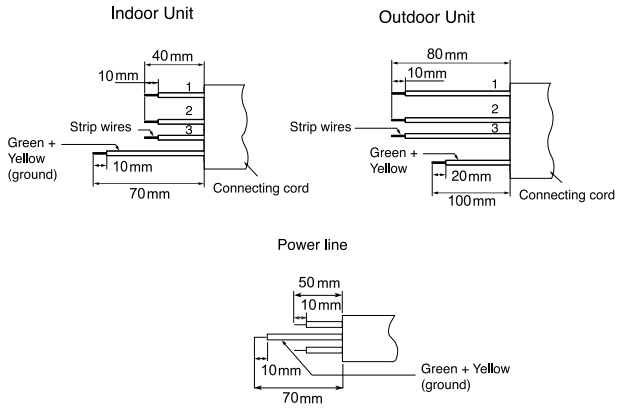


WARNING • THIS APPLIANCE MUST BE EARTHED.

Procedures of Wiring

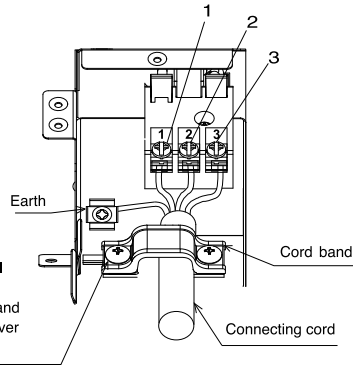


Detail of Cutting the Connecting Cord



Wiring Of The Indoor Unit

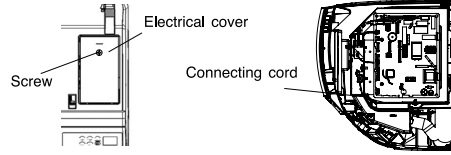
- For wire connection of the indoor unit, you need to remove the front cover, the low cover under the body of the unit and terminal cover.
- Remove the cover from the terminal base and screw the cable.



After remove the screw and terminal cover, and put the connecting cords and fix the terminal cover with screw.

Method to remove electrical cover

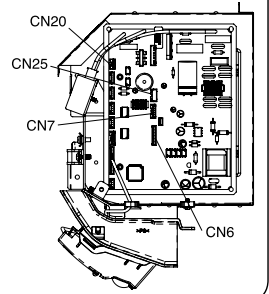
- Remove the screw and electrical cover.
- Insert the connecting cord (1, 2, 3) from the back of unit.
- Fixed the wire to terminal wires firmly as shown as below.



How to connect the optional parts

(Dry contact, H-Link/Wi Fi (optional), Wired remote, Run status)

- 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/Wi Fi: CN7
 - ③ Wired Remote Controller: CN20
 - ④ Run status: CN25
- 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.

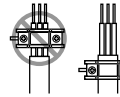


WARNING

- The naked part of the wire core should be 10 mm and 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.
- Please refer to the manual for wire connection and the wiring technique should meet the standard of the electrical installation.
- There is an AC voltage drop between the LN terminal if the power is on. Therefore, be sure to remove the plug from its socket.

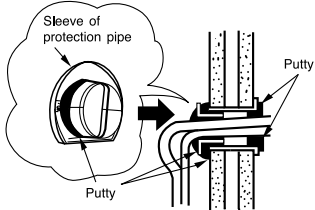
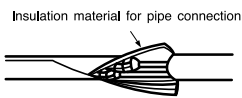
WARNING

- 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.



1 Insulation And Maintenance Of Pipe Connection

- The connected terminals should be completely sealed with heat insulator and then tied up with rubber strap.
- Please tie the pipe and power line together with vinyl tape as shown in the figure showing the installation of Indoor and Outdoor units. Then fix their position with holders.
- To enhance the heat insulation and to prevent water condensation, please cover the outdoor part of the drain hose and pipe with insulation pipe.
- Completely seal any gap with putty.



2 Power Source And Operation Test

Power Source

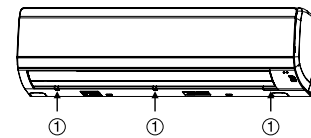
CAUTION

- Please use a new socket. Accident may occur due to the use of old socket because of poor contact.
- Please plug in and then remove the plug for 2 - 3 times. This is to ensure that the plug is completely plugged into the socket.
- Keep additional length for the power cord and do not render the plug under external force as this may cause poor contact.
- Do not fix the power cord with U-shape nail.

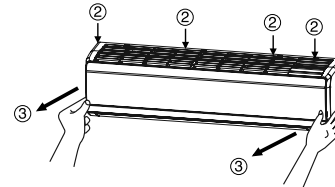
Operation Test

- Please ensure that the air conditioner is in normal operating condition during the operation test.
- Explain to your customer the proper operation procedures as described in the user's manual.

How to remove the front cover



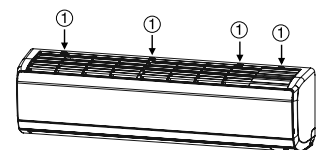
① Remove the caps and uncrew at lower portion of the front cover.



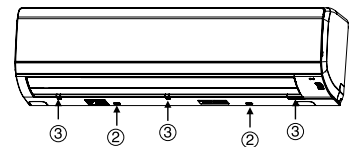
② Firmly press 4 hooks at top of front cover by tools until the hook release from slot

③ Pull the front cover to front side.

How to attach the front cover



① To assemble front cover back to the unit, certainly hook at upper portion (4 places).



② Insert the bottom of front cover into the slot at "PUSH" marking and ensure bottom area is align from left to right.

③ Tighten the screw and cover by caps (3 places)