HITACHI

INSTALLATION MANUAL

air Home 300

SPLIT UNIT AIR CONDITIONER

INDOOR UNIT
RAK-QH10PCBST
RAK-QH13PCBST

OUTDOOR UNIT
RAC-QH10PCBST
RAC-QH13PCBST

HFC R32

EN INSTRUCTION MANUAL

FOR SERVICE PERSONNEL ONLY

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

⚠ 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.
- 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.
- Must install air conditioner according to the electrical installation standards for Thailand of the Engineering Institue of Thailand under The Royal Patronage of His Majesty (the King).
- 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 must be installed. Without a circuit breaker or fuse the danger of electric shock exists.
  A main switch with a contact gap of more than 3mm has to be installed in the power supply line to the outdoor unit.
- 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.

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.

Access the full version of the User Installation Manual by scanning the code.

Cooling & Heating

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

INDOOR UNIT

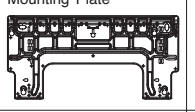
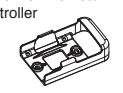
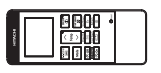
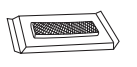
⚠ WARNING

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

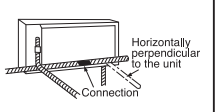
⚠ CAUTION

- No nearby heat source and no obstruction near the air outlet is allowed.
- The clearance distances from top, right and left are specified 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 2.5m or more.

Names of Indoor Components

No.	Component's Name	Qty
①	Mounting Plate 	1
②	Screw for Mounting Plate (4.1x32)	6
③	Holder for Remote Controller 	1
④	AAA Size Battery 	2
⑤	Screw for holder of Remote Controller (3.1x16)	2
⑥	Remote Controller 	1
⑦	Purifying Filter 	1

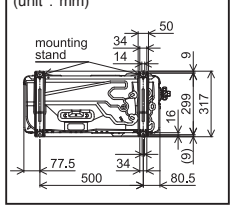
Direction of Piping



There are 6 directions allowed, namely, horizontally perpendicular to the unit, vertically down from right, horizontally out from right, horizontally out to left, horizontally out to right, vertically down from left.

Dimension of Mounting Stand of the outdoor unit

(unit : mm)



⚠ CAUTION

- 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.
- Mechanical connectors used indoor shall comply with ISO 14903. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flare joints are reused indoors, the flare part shall be re-frabricated.
- Refrigerant tubing shall be protected or enclosed to avoid damage.

⚠ WARNING

- Flare connection only at outside of building

⚠ CAUTION

- Installation of pipe length less than minimum pipe length requirement (3 meters) may generate an abnormal sound.

OUTDOOR UNIT

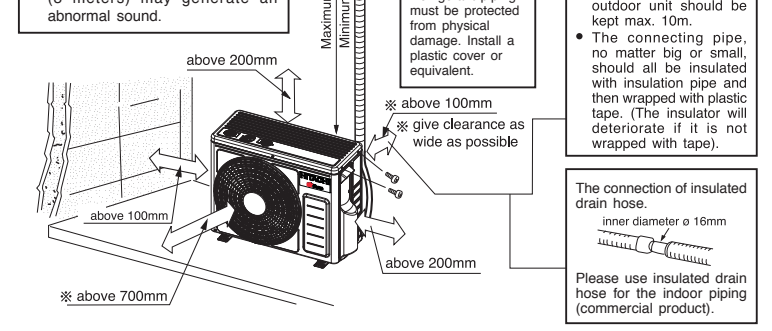
⚠ WARNING

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

⚠ CAUTION

- Selecting the installation location: Suitable location that will reduce the impact from rain and direct sun that may affect the unit performance. Besides that, ventillation 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 in figure below. At least three of the above sides must be open air.
- Be sure that the hot air blown out of the unit and noise do not disturb the neighbourhood.
- 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 connection wire at least 1m away from the antenna or signal line of television, radio or telephone. This is to avoid noise interference.
- Do not install outdoor unit facing strong wind direction. It may damage the fan motor.
- Do not install the outdoor 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 is clean.

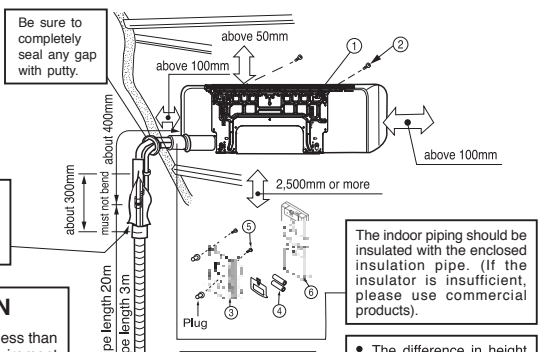
Figure showing the Installation of Indoor and Outdoor Unit.



⚠ CAUTION

In case the pipe length is more than the recommended length for chargeless, add refrigerant R32 as below. Do not exceed the maximum pipe length.

Model	Factory charge R32	Indoor A_{min} (m^2)	Chargeless up to	Additional R32	Maximum charge R32
RAC-QH10PCBST	0.42kg	0.17m^2	8m	10g/m	0.54kg
RAC-QH13PCBST	0.47kg	0.21m^2	20m	–	0.47kg



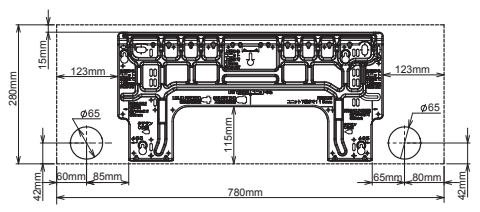
1 Installation of Hanger, Wall Penetration and Installation of Protection Pipe

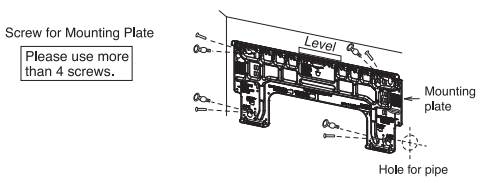
⚠ CAUTION

- The draining of the water container inside the indoor unit can be done from the left. Therefore the mounting plate must be fixed horizontally or slightly tilted towards the side of drain hose. Otherwise, condensed water may overflow the water container.

Direct Mounting On The Wall

- Please use hidden beams in the wall to hold the mounting plate.

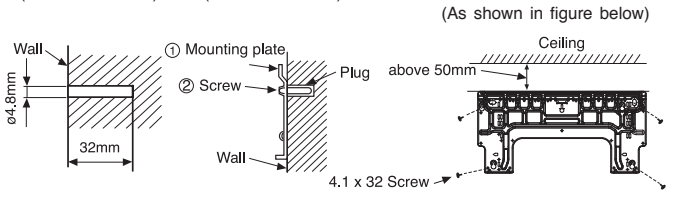




Procedures of Installation and Precautions

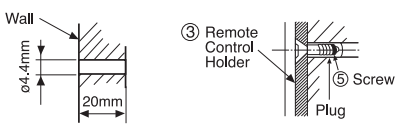
- Procedures to fix the mounting plate.

1. Drill holes on wall. (As shown below)
2. Push plug into the holes. (As shown below)
3. Fix the mounting plate on wall with 4.1 x 32 screw (As shown in figure below)



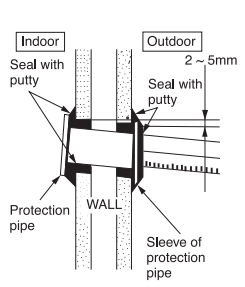
- Procedures to fix the holder of remote control.

1. Drill holes on wall. (As shown below)
2. Push plug into the holes. (As shown below)



Wall Penetration and Installation of Protection Pipe

- Drill a ø 65mm hole on wall which is slightly tilted towards the outdoor side. Drill the wall at a small angle.
- Cut the protection pipe according to the wall thickness.
- Empty gap in the sleeve of protection pipe should be completely sealed with putty to avoid dripping of rain water into the room.



⚠ WARNING

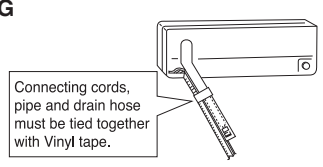
Be sure that the wire is not in contact with any metal in the wall. Please use the protection pipe as wire passing through the hollow part of the wall so as to prevent the possibility of damaged by mouse. Unless it seals completely, any air with high humidity flows from outdoor and dew may drop.

2 Installation of the Indoor Unit

VERTICALLY DOWNWARD PIPING

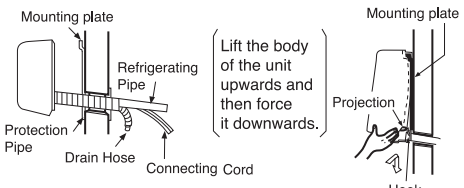
Preparation

- Connect connecting cord.
- Pull out the pipe, connecting cord and drain hose.



Installation

- The upper part of the indoor unit is hanged on the mounting plate.
- The projection at the lower part of the indoor unit is hooked onto the mounting plate.



⚠ CAUTION

Please pull the lower part of the indoor unit outwards to check if the unit is hooked onto the mounting plate. Improper installation may cause vibration and noise.

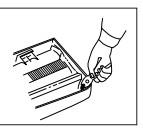
HORIZONTAL PIPING

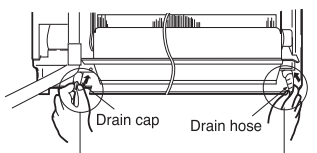
Preparation

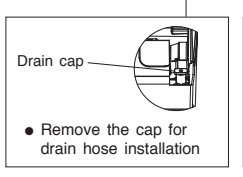
Change of Drain Hose and Installation Procedures.

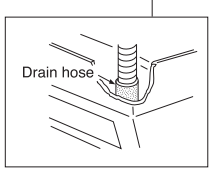
- Exchange the location of drain hose and drain cap during horizontal piping as shown in figure below. Be sure to plug in the drain hose until the insulating material folds upon itself.

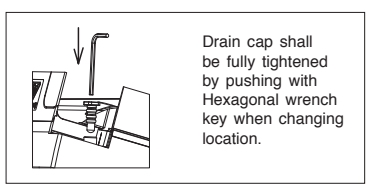
- Please use pliers to pull out the drain cap. (This is an easier way to remove the drain cap).

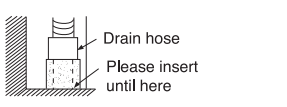












⚠ CAUTION

Condensed water may leak out if not inserted properly.

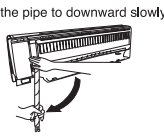
⚠ CAUTION
For horizontally out to right piping

☑ GOOD

For right piping, follow the instruction as below:

- Press the upper side of clamp

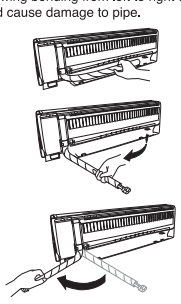
- Unfold the pipe to downward slowly.



- Bend the pipe to the right side of chassis.

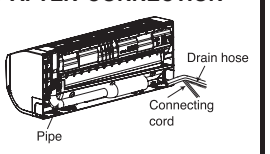
☒ BAD

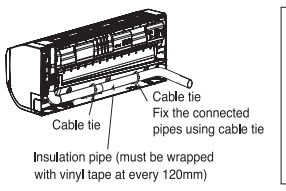
Following bending from left to right directly could cause damage to pipe.



INSTALLATION OF REFRIGERATING PIPES AFTER CONNECTION

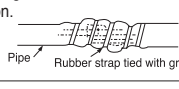
- The refrigerating pipes should be adjusted to fit into the hole on the wall and then ready for further connection.
- The terminals of 2 connected pipes must be covered with insulator used for terminal connection. Then the pipes are wrapped with insulation pipe.
- Connect the connecting cord after removing electrical cover. (Refer to "CONNECTION OF POWER CORD")
- After adjustment, fit the connecting cord and pipes into the space available under the indoor unit.





⚠ CAUTION

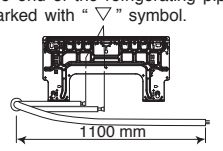
- The rubber strap used for fixing the insulator should not be tied with great force. Otherwise, this will damage heat insulation and causes water condensation.



THE CONNECTION OF REFRIGERATING PIPE DURING THE INSTALLATION OF INDOOR UNIT

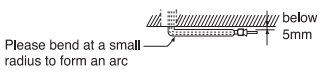
Preparation To Install Refrigerating Pipes

- The refrigerating pipes and connecting cord arrangement are attached.
- The end of the refrigerating pipes are at locations marked with " ▽ " symbol.



⚠ CAUTION

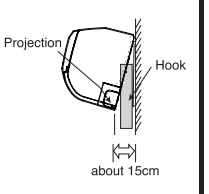
- Please fix in the plastic core after flaring to avoid copper chips entering the pipes.

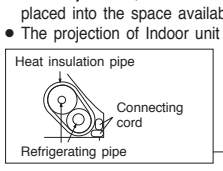


Installation

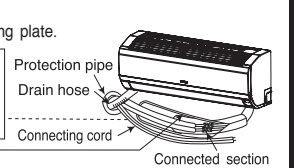
Hang the Indoor unit onto the mounting plate. Use the temporary stand at the back of the Indoor unit to push its lower part 15cm forwards.

- Place the drain hose through the hole on the wall.
- Wrap the refrigerating pipes with insulation pipe after connecting refrigerating pipe.
- Connect the connecting cord after removing electrical cover. (Refer to "Connection of Power Cord")
- After adjustment, the connecting cord and refrigerating pipes are placed into the space available under the Indoor unit.
- The projection of Indoor unit must hook to the mounting plate.





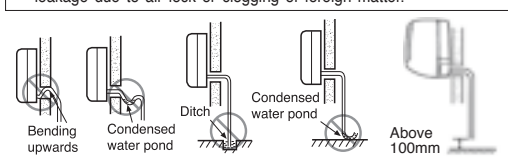
Pull this to the front during the connection of refrigerating pipes to ease task.



3 Installation of Drain Hose

⚠ CAUTION

- Do not guide the drain hose to places where corrosive gases (sulfur, ammonia, etc.) are generated, such as septic tanks and sewer.
  Corrosive gas may flow backward from the drain hose to the indoor unit, corrode the copper pipe, or it may cause offensive odors in the room.
- Cut the drain hose at a position 100 mm higher than the floor surface. It may cause water leakage due to air lock or clogging of foreign matter.



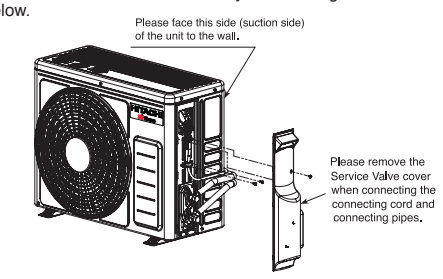
⚠ CAUTION

Be sure that the drain hose is not loosely connected or bend.

⚠ 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. (Carelessness 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.
- Open the service valve cover by unscrewing the screws as shown below.



WARNING

- Use the two spanners on the service valve nuts to tighten and loosen so that the service valve will not deform. Gas leak from the crushed part, stagnation, touching fire, rarely cause ignition.

Do not solder pipes or other parts filled with refrigerant with low-temperature doped welding wire, such as tin-alloyed lead-doped metal.

PURGING OF REFRIGERANT IS PROHIBITED
Purging of refrigerant will cause the unit to be lacked of refrigerant which may affect the capacity performance and lead to severe dew formation causing problem such as dew water drop or splashing from the unit.

When connecting pipes. If you tighten the flare nut by excess torque, the service valve on the small pipe side may be broken.
The flare nut on the small pipe side should be torqued to 122 - 165lbf.in (140 - 190kgf.cm).

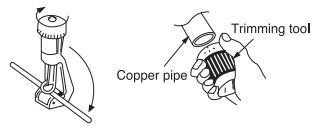
⚠ WARNING

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.

INSTALLATION OF REFRIGERATING PIPES AND AIR REMOVAL

1 Preparation of Pipe

- Use a pipe cutter to cut the copper pipe.



⚠ CAUTION

- Jagged edge will 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.

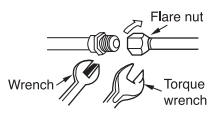
- Recommend to use R32 flaring tool.

Outer Diameter (mm)	Thickness (mm)	A (mm)		
		Flare tool for R32	Conventional flare tool	
		Clutch type	Clutch type	Wing nut type
6.35 (1/4)	0.8	0.0 ~ 0.5	1.0~1.5	1.5~2.0
9.52 (3/8)	0.8	0.0 ~ 0.5	1.0~1.5	1.5~2.0

2 Pipe Connection

⚠ CAUTION

- When removing flare nut from the Indoor unit, please ensure to use proper tooling.
- Prevent pipe from coming in contact with water or working in wet area.



		Outer dia.of pipe	Torque N·m (kgf · cm)
Small dia. side		6.35 (1/4")	13.7 – 18.6 (140 – 190)
Large dia. side		9.52 (3/8")	34.3 – 44.1 (350 – 450)
Valve head cap	Small dia. side	6.35 (1/4")	19.6 – 24.5 (200 ~ 250)
	Large dia. side	9.52 (3/8")	19.6 – 24.5 (200 ~ 250)
Valve core cap			12.3 – 15.7 (125 ~ 160)

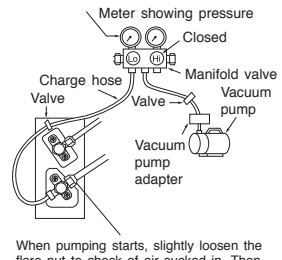
3 Removal Of Air From The Pipe And Gas Leakage Inspection

AIR REMOVAL

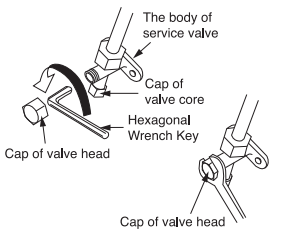
Procedures of using Vacuum Pump for Air Removal

1. As shown in right figure, remove the cap of valve core. Then, connect the charge hose. Remove the cap of valve head. Connect the vacuum pump adapter to the vacuum pump and connect the charge hose to the adapter.
2. Fully tighten the "Hi" knob of the manifold valve and completely unscrew the "Lo" knob. Run the vacuum pump for about 10~15 minutes, then completely tighten the "Lo" knob and switch off the vacuum pump.
   After vacuuming, confirm that the needle of the manifold gauge is stable for 3~5 minutes.
3. Remove the charge hose and tighten the cap of valve core. Check the cap's periphery if there is any gas leakage.
4. Completely unscrew the spindle of the service valve (at 2 places) in anti-clockwise direction to allow the flow of refrigerant (using Hexagonal Wrench key).
5. Re-cap the service valve and tighten using wrench. Check the cap's periphery if there is any gas leakage. The task is then completed.

When the meter reaches - 101KPa (-76cmHg) during pumping, fully tighten the shuttle.



When pumping starts, slightly loosen the flare nut to check of air sucked in. Then tighten the flare nut.



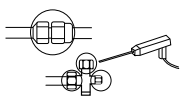
⚠ CAUTION

- Prevent moisture from entering pipe connection.
- Refrigerating machine oil not be applied to the outside of the flare.
  When refrigerating oil is applied to the outside of the flare, cracking of the flare nut, destruction of the flare and gas leakage may occur due to the excessive tightening of the flare nut.
- When using the control valve, do not use deteriorated packing. And, do not overtighten the steering wheel. Gas leakage from the service valve part, stagnation, touching fire, rarely cause ignition.

Gas Leakage Inspection

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

If gas leakage occurs, further tighten the connection to stop leakage. (Use the detector provided for R32)



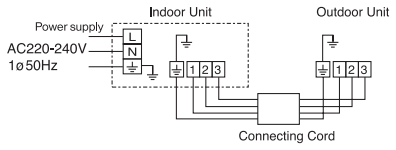
CONNECTION OF POWER CORD

⚠ WARNING THIS APPLIANCE MUST BE EARTHED.

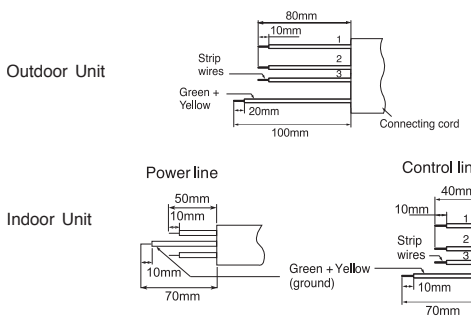
Must install air conditioner according to the electrical installation standards for Thailand of the Engineering Institue of Thailand under The Royal Patronage of His Majesty (the King).

Procedures of Wiring

In case that power is supplied from Indoor Unit



Detail of cutting the connecting cord



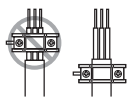
When removing the connecting wires for the indoor unit, please remove the low cover panel in front of the unit.

⚠ WARNING

- The naked part of the wire core should be 10 mm 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.
- Supply cords, current- carrying conductors become taut before earthing conductor, if the cord slips out of the cord band.



Checking for the electric source and the voltage range

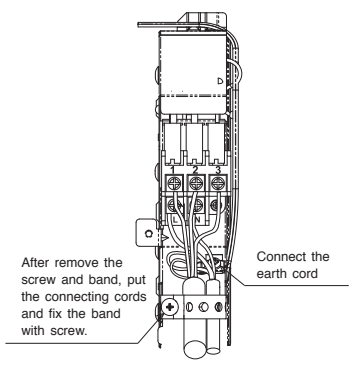
- Before installation, the power source must be checked and necessary wiring work must be completed. To make the wiring capacity proper, use the wire gauge list below for the wiring from house distribution fuse box to the outdoor unit in consideration of the locked rotor current.
- Investigate the power supply capacity and other electrical conditions at the installation location.
  Depending on the model of room air conditioner to be installed, request the customer to make arrangements for the necessary electrical work etc.
  The electrical work includes the wiring work up the outdoor. In localities where electrical conditions are poor, use of a voltage regulation is recommended.

Wiring Of The Indoor Unit

- For wire connection of the Indoor unit, you need to remove front panel and electrical cover.

Method to remove front panel

- Please refer to Instruction Manual – "Removing the Front Panel" under "Cleaning of Front Panel".

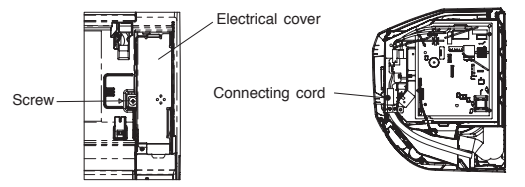


IMPORTANT

Wire length	Wire gauge
up to 20m	1.5mm²

Method to remove electrical cover

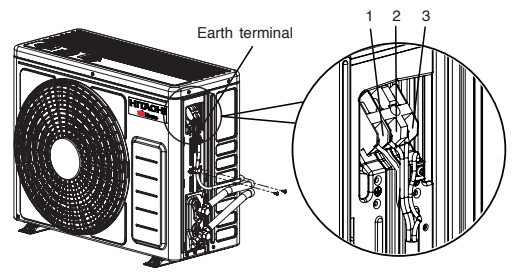
- Remove the screw and electrical cover.
- Insert the connecting cord (1, 2, 3) from the back of unit.
- Fixed the wire to terminal wires firmly as shown as below.



Wiring Of The Outdoor Unit

- Please remove the side plate for wire connection.

⚠ WARNING
- If you cannot attach the side plate due to the connecting cord, press the connecting cord in direction to the front panel to fix it.
- Be sure that the hooks of the side plate is fixed in certainly. Otherwise water leakage may occur and this causes short circuit or faults.



⚠ CAUTION

Note:
- Outdoor supply cords shall not be lighter than polychloroprene sheathed flexible cord, 60245 IEC 57.

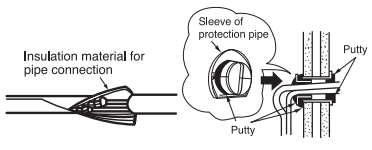
IMPORTANT

Fuse Capacity
13A

FINAL STAGE OF INSTALLATION

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 enchance 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.



3 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.

If a wrong supply voltage is applied.

- If a 220-240V model is connected to a 100V power supply, all the indicators of the indoor unit blink. Correct the voltage of the power outlet (It is not a failure).

Trial run ❖ **Be sure to measure the supply voltage before connecting the power cord into the power outlet.**

Perform a trial run to make sure that the air conditioner operates properly.

1. Press the COOL button (in summer) or HEAT button (in winter) of the remote controller.
2. Press the ROOM TEMPERATURE button to set the temperature to 16°C for cooling mode or 32°C for heating mode. Set the fan speed to " " (HI).
3. Operate the air conditioner for at least 20 minutes and make sure that the air from the air conditioner is cool or warm.
4. Press the STOP button on the remote controller to make sure that the air conditioner stops running.

- If the indicators of the indoor unit blink during the trial run, perform a check following the procedures below.

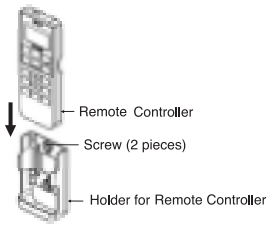
Indicator Blinking Mode	What to check
All indicators blink once repeatedly	Make sure that the voltage of the power outlet is correct according to the product specification.
All indicators blink twice repeatedly.	Make sure that the connecting cord is connected correctly and securely.

- To reset the power supply by switching the circuit breaker OFF, and ON only after:-
  1. waiting for at least 5 minutes; or
  2. pressing the temporary switch button only once while the power is OFF.

2 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 fixed. The unit will beep 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 controller should be insert from top into bottom side of the holder as shown below.



⚠ WARNING

Transport Details Marking and storage Air conditioners that use flammable refrigerants.

- Transportation of air conditioners containing combustible refrigerant
- Disposal of air conditioners using flammable refrigerants
- Air conditioning storage
- Storage of air conditioners in packaging (not yet sold)

Pump Down Method When Reuse Existing Piping (R410A Model) for R32 Model

- Compressor oil of R410A model is insoluble in compressor oil of R32 model. The mixing of compressor oil may cause damage of compressor.

Possibility of Mixing

- Reuse of piping of R410A model is dangerous because of its compressor oil.
- When reuse piping of R410A model, pump down must be carried out properly to ensure compressor oil which is remained inside piping is collected away.

⚠ CAUTION

Reuse of piping R410A model only apply if previous model is Hitachi and proper pump down method is used.

To Reuse Old Piping

- Piping of R410A model can be reused only when air-conditioner is properly pumped down.
- The purpose of pump down is to collect back the compressor oil (which is mixed with refrigerant and circulating inside refrigeration cycle) properly into the outdoor unit of air conditioner.

Proper Pump Down Method

① Operate air conditioner at cooling mode for 10~15 minutes

Most Important Process
Purpose: To make the oil & refrigerant mix together. They are in separated condition when air conditioner is stopped.

② After 10~15 minutes of pre operation, close 2s valve. After 3 minutes, close 3s valve.
Mixed refrigerant & oil will be collected into outdoor unit.

③ Take out air conditioner unit.
It is advisable to flush the piping with R32 to avoid any contamination remain before new installation.

④ Install New Refrigerant air conditioner

Explanation of symbols displayed on unit

	**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.

⚠ WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Any unfit method or using incompatible material may cause product damage, burst and serious injury.
- The appliance/pipe-work shall be stored in a well ventilated room with floor area larger than A_{min}(m^2) and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death.
- The appliance/pipe-work shall be installed, and/or operated in a room with floor area larger than A_{min}(m^2) and keep away ignition sources, such as heat/spark/open flame or hazardous areas such as gas appliances, gas cooking, reticulated gas supply systems or electric cooking appliances, etc.
- Do not pierce or burn as the appliance is pressurized. Do not expose the appliance to heat, flame, sparks, or other sources of ignition. Else, it may explode and cause injury or death.