

Panasonic



nanoeX Technology



Panasonic

GUIDEBOOK FOR INSTALLATION & SERVICE R32 Inverter Air Conditioner NX series

INVERTER • nanoeX™

Panasonic



Enjoy Fresh Air



Pre-Cool On The Go



Instantly Repair Via Error Code Checking



*Based on estimated energy consumption.

Check Energy Consumption

R32
REFRIGERANT



QUALITY AIR FOR LIFE

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#1-329, St 274, Sangkat Vealvong,
Khan 7 Makara, Phnom Penh

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Commercial Air Conditioners

R32 Inverter Air Conditioner NX Series

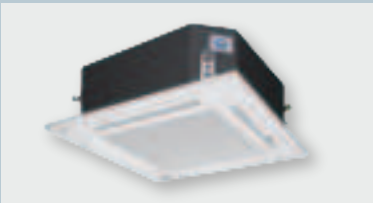
Main Function Overview

| Type | Btu | 17,100 | 20,500 | 24,200 | 29,000 | 34,100 | 42,700 | 47,800/45,500/47,000 |
|---|-----|------------|------------|------------|-----------|-----------|-----------|----------------------|
| Cassette  nanoe TM X CONEX | | S-1821PU3H | S-2430PU3H | S-3448PU3H | | | | |
| Ceiling  nanoe TM X CONEX | | | | S-3448PT3H | | | | |
| Ducted  nanoe TM X CONEX | | | | S-3448PF3H | | | | |
| Outdoor  INVERTER R32 | | U-18PR1H5 | U-21PR1H5 | U-24PR1H5 | U-30PR1H5 | U-34PR1H5 | U-43PR1H5 | U-48PR1H5 |

New Model Features

1. Cassette Type

4-Way Cassette



Basic Informantion

- nanoeTM X Technology
- Compact Design
- DC Fan Motor for increased Efficiency
- Powerful Drain pump give 850 mm lift
- Lightweight Design

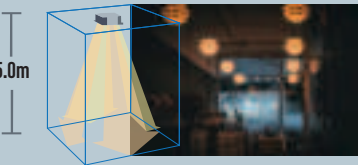
360° Wide airflow

Air from the center is sent farther and the air blown out of the wide side flaps spreads throughout the room.



Long airflow up to 5m

Adding a sub flap and widering the main flap have reduced turbulence and increased airflow.



Internal Cleaning Function

Internal Cleaning Operation

Internal drying in the indoor unit

nanoeTM X circulation in the indoor unit



Fan operation and dehumidified the internal unit



Fan operation and nanoeTM X circulation the internal unit

When the unit operation is turned off during COOL or DRY mode, the unit will operate internal drying and activate nanoeTM X. This is to suppress mold proliferation inside the unit (airflow passage, fan and heat exchange). Mold proliferation suppression effect may changed depending on the unit's installation environment and operation time.

2. Adaptive Ducted



Basic Informantion

- nanoeTM X Technology
- 17,100-47,800 Btu
- Static pressure level: 10-150Pa
- Height: 250mm
- DC fan motor
- Built-in drain pump
- Filter included

Flexible Installation

- Vertically mountable ducted
- Compact body with 150pa ESP
- Bottom suction is available



Quiet Comfort

- Low noise operation (22-29dBA*) using on improved fan casing

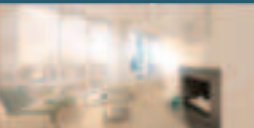
Conventional



New



Ideal for hotel guest rooms



Superior Air Quality

- Equipped standard with nanoeX, a unique technology that cleans indoor air

Flexible Installation for Adaptive Ducted

Vertically Mountable Ducted

- Enables discrete placement outside the room even if a small ceiling limits space for ductwork
- Shared drain pan for both horizontal and vertical installation



Compact Body with 150Pa ESP

- Height was reduced from 290mm to 250mm
- Weight lighter than conventional model

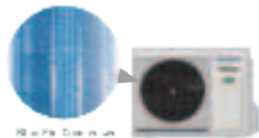


Adjustable Air Intel

- The air inlet angle is also adjustable to the bottom.



3. Outdoor Unit



Hiht Durability Outdoor Unit

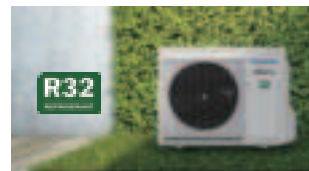
All Panasonic heat exchangers Feature Blue Fin technology, which offers enhanced corrosion resistance compared to non-Blue Fin models.



In-house manufactured compressor

Panasonic all in-house manufactured compressors are supplied to the world. The cumulative total of high-quality compressors in use has reached 580 million units*.

* As of September 2019. (In-house research)



Next Generation R32 Refrigerant

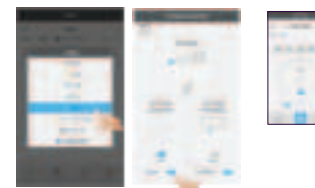
Compared to R22 and R410A, R32 has a very low potential impact on the depletion of the ozone layer and global warming.

4. 24 hrs. nanoe™X Protection

While the general filters in air purifiers are effective against airborne bacteria and viruses, nanoe™ X also works to inhibit longer living, adhered bacteria and viruses. As well as this, the CONEX remote control (CZ-RTC6BLW) gives you access to your air conditioner anywhere, anytime, so you can turn nanoe™ X on even while you're out and enjoy 24-hour quality air in your home.

Clean air independently when you are away
(Fan Mode + nanoe™ X ON)

Cool and Clean air when you are in room
(Cooling Mode + nanoe™ X ON)



Easy 2 Step
①FAN mode ②nanoe™ X ON



Only at 25W/Hour*1
Low energy consumption with fan mode 25W per hour for a single unit.

Maintenance-Free
No maintenance required for nanoe™ X generator device.

Maintenance-Free

No need to consume excessive electricity to clean the air since nanoe™ X functions in cooling as well as fan mode. Titanium electrodes of nanoe™ X devices are produced with the support of craftsmen in Japan. nanoe™ X doesn't require maintenance.



5. New Wired Remote Controller with IoT Integration

A. H&C Diagnosis App

B. H&C Control App

C. Comfort Cloud



The advantage of IoT integration

A. H&C Diagnosis (for Servicemen)

When you cannot solve the problem for your AC. You can record the data in H&C Diagnosis and send to Panasonic Engineer they will check and solve it for you.



BEFORE

We can check
Only the error code

Wireless Remote Controller CZ-RD513C



Wireless Remote Control CZ-RL013UH



NOW

We can check
Main Data
Actual operation data
History data



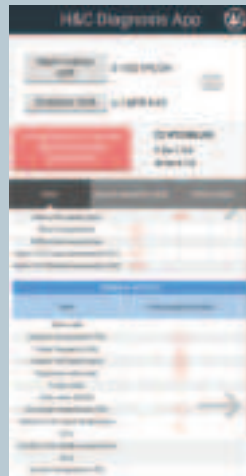
A1 The H&C Diagnosis App Function Showing

| H&C Diagnosis App | | |
|-----------------------------------|---|--|
| Main Data | | |
| Indoor & Outdoor Information | Operation History & Actual Operation Data | |
| | Indoor Unit | Outdoor Unit |
| 1. Model Number 2. Products ID | 1. Error Code 2. Operation Mode 3. ON/OFF 4. Setting Temperature 5. Indoor Fan Speed 6. Indoor FM Speed (rpm) 7. Room Temperature 8. Different Temperature 9. Indoor H/E Liquid Temperature (E1) 10. Indoor H/E Middle Temperature | 1. Error 2. Outdoor Temperator (TO) 3. Comp Frequency (Hz) 4. Outdoor FM Speed (rmp) 5. Expansion Valve Stop (SAVE) 6. 4 ways Valve 7. Save Valve (SAVE) 8. Discharge Temperature 9. Outdoor H/E Liquid Temperature (C1) 10. Ondoor H/E Middle Temperature (C2) 11. Suction Temperature (TS) 12. Outdoor HIC Current Ampere (CT2) 13. Outdoor Current Ampere (CT1) |

| Actual Operation Data | | |
|-----------------------|--|---|
| | Indoor Unit | Outdoor Unit |
| | 1. Operation Mode 2. Setting Temperature 3. Acquisition Time | 1. Outdoor Current Ampere (CT1) 2. Expansion Volve Step 3. Outdoor H/E Liquid Temperature (C1) 4. Outdoor Temperature (TO) 5. Outdoor H/E Middle Temperature (C2) 6. Suction Temperature (TS) 7. Discharge Temperature (TD) 8. Outdoor FM Speed (rmp) 9. Comp Frequency (Command) 10. Comp Frequency (Hz) 11. Error Code 12. Outdoor HIC Current Ampere 13. Latest Alert History 14. Second Latest Alarm History Request 15. Third Latest Alarm History Request 16. Crankcase Heater Output (CH) 17. Save Valve (SAVE) 18. 4 ways Valve 19. Error Level 20. Defrosting |

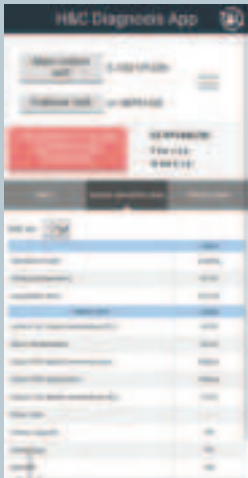
| Actual Operation Data | |
|--|---|
| Indoor Unit Operation/Failure History Information | Outdoor Unit Operation/Failure History Information |
| 1. Cumulative Cooling Operation Time (h) 2. Cumulative Heating Operation Time (h) 3. Cumulative Drying Operation Time (h) 4. Cumulative Auto Operation Time (h) 5. Cumulative FanOperation Time (h) 6. Operation Time 7. Operation Mode 8. Error Level 9. Error Code 10. Room Temperature 11. Outdoor Temperature 12. Indoor H/E Liquid Temperature (E1) 13. Indoor H/E Middle Temperature (E2) 14. Outdoor Temperature (E2) 15. Discharge Temperature 16. Setting Temperature 17. Indoor FM TAP 18. Indoor Fan Speed (Command rpm) 19. Indoor Fan Speed (Actual rpm) 20. Comp Frequency 21. Outdoor Current Ampere 22. Outdoor FM Speed (rpm) 23. Outdoor H/E Temperature 1 24. Expansion Valve Stop 25. Outdoor Status 1 | 1. Cumulative Cooling Operation Time (h) 2. Cumulative Heating Operation Time (h) 3. Cumulative Drying Operation Time (h) 4. Other Cumulative Operation Time (h) 5. Operation Time 6. Error Code 7. Failure Happening Count 8. Setting Temperature 9. Operation Mode 10. Room Temperature 11. Indoor H/E Temperature 1 12. Indoor H/E Temperature 2 13. Outdoor Temperature (E2) 14. Outdoor HE/E Liquid Temperature (C1) 15. Comp Frequency (Command) 16. Comp Frequency (Hz) 17. Outdoor FM Step 18. Outdoor FM Speed (rpm) 19. Outdoor H/E Temperature (TD) 20. Expansion Valve Step 21. Outdoor Current Ampere (CT1) 22. Indoor FM Speed (rpm) |

A2 Main Data



The Main Function Data is showing about the Indoor/Outdoor unit information, Operation history, & actual operation data. You can check in the Table above.

A3 Actual Operation Data



The actual operation is showing about the operation data "Operation mode, setting Temperature, Indoor/Outdoor FM speed, etc..." for more detail please, kindly check in the table above.

A4 History Data

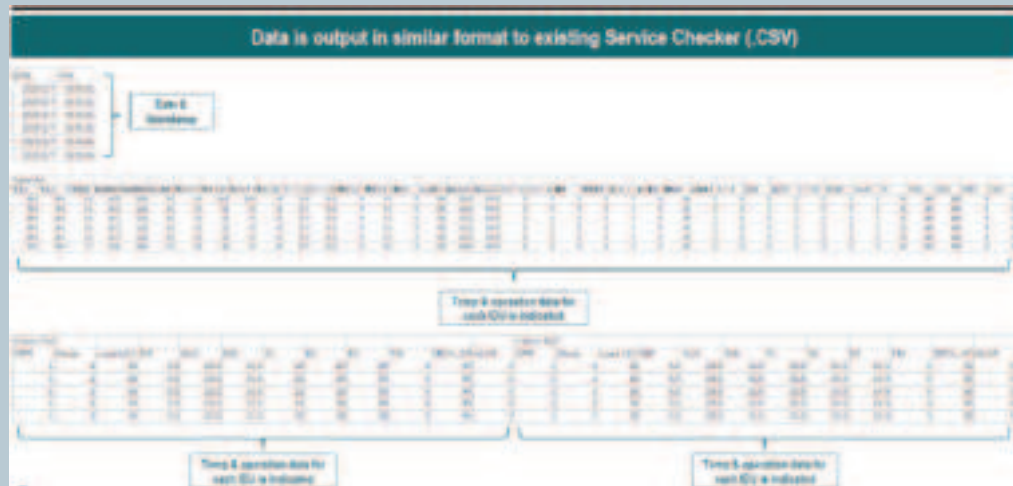


History data, as indicated, shows data from previous recordings and acquisition. The more information detail you can check in table above.

A5 Save File Procedure



A6 File Format of Saved Data From H&C Diagnosis



A7 How to Trace the Saved Data (Android)



A8 How to Trace the Saved Data (iOS)



A9 Common Air Conditioning Problems You Should Know

| No. | Case of Problem | Description | H&C Daignosis Paramete Checking |
|-----|--|--|--|
| 1 | Air conditioner not blowing cold air | Your AC will not blow cold air if a dirty air filter block the airflow of your unit. adirty air filter can further freeze up the condenser unit and limit the cooling power of your AC. Changing your air filter every month will help your AC unit blow cold air. | 1. Compressor frequency 2. Expansion Vale Step 3. Discharge Temperature 4. Liquide Temperature 5. Outdoor Current |
| 2 | Air conditioner Freezing up outside unit | Your air conditioner can freeze up due to: -Insufficient airflow -Low outside temperature -Low coolant levels -Blower motor problems -Stuck contractor | 1. Outdoor Temperature 2. Outdoor Fan Motor Speed 3. Compressor frequency |
| 3 | Air conditioner refrigerant leak | When the coolant in your air conditioner starts leaking, the temperature will vary, and the unit will not perform accurately. Refrigerant leaks can result in: -Low efficiency -High power consumption -Coil freezing -Damaged compressor -Uneven cooling -Inspect your air conditioner regularly for refrigerant leak. | 1. Compressor frequency 2. Indoor H/E Liquide temperature (E1) 3. Indoor H/E Middle temperature (E2) 4. Error Code 5. Discharge Temperature (TD) 6. Liquide Temperature (C1) |
| 4 | Frozen evaporator coil | The evaporator coil freezes when your air conditioner dose not receive sufficient air needed for operation, a frozen evaporator coil can make your AC freeze up and stop working. Blocked vents and ductsm dirty filters, or a faulty fan can cause insufficient airflow in the system. A clean air filter is important to maximize airflow and indoor air quality. | 1. Compressor frequency 2. Room Temperature 3. Disfferential Temperature 4. Indoor H/E Liquide temperature 5. Indoor H/E Middle temperature |
| 5 | Electric control failure | When you frequently turn on and off your air conditioner, the fan controls and compressor can wear out. the condenser fan motor, the compressor, and the blower motor make an electrical connection to start the unit. A connection problem can prevent the motor and compressor from turning on. You should check the electrical connections to determine the issue. | 1. Outdoor Current amperre (CT1) 2. Compressor frequency |
| 6 | Sensor problem | The air conditioner contains a thermostat sensor, located near the evaporator coil. The thermostat measures the air temperature in the evaporating coil and adjust the cooling based on the condition of the room. if the sensor is forced out of position, the air conditioner can randomly turn on and off or cyde constantly. The sensor should be placed near the evaporator coil without touching each other. Adjust the sensorby bending the wire that holds it in position. | 1. Setting Temperature 2. Room Temperature 3. Disfferential Temperature 4. Indoor H/E Liquide temperature 5. Indoor H/E Middle temperature 6. Outdooe Temperature 7. Discharge Temperature (TD) 8. Outdoor H/E Liquide temperature 9. Outdoor H/E Middle temperature |

The advantage of IoT integration

B. H&C Control (for Servicemen)

The H&C Control is a solution for the Servicemen that easy to control AC by smart Phone (Connect with Bluetooth).



BEFORE

Wireless Remote Controller CZ-RD513C



Wireless Remote Control CZ-RL013UH



- Function Displayed by Wireless Remote controller
- It's not convenience for Servicemen
- Less function to control AC

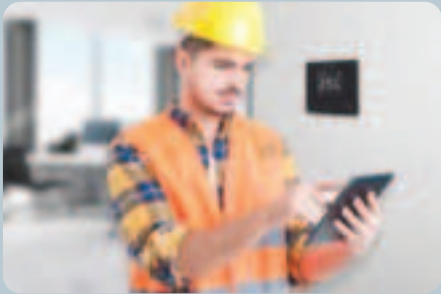
We can check:

| Wireless Remote Controller | |
|----------------------------|--|
| ON/OFF Timer | ON/OFF Timer: You can set your AC turn on under working time and turn off under non-working timer. |
| Saving On | ON/OFF: You can turn on/off your AC by smart phone. Temperature: Temp. setting (0.5 C) by smart phone. Fan Speed: Fan Speed setting (L/M/H) Operation Mode: Mode setting (Cool, Heat and Dry) nanoeX: You can turn on/off nanoeX by smart phone. |

NOW

- Function Displayed by smart phone, Easy to Test & Touch
- It's convenience for Servicemen
- More function, easy to control AC

We can check:



| H&C Control App | |
|-------------------|--|
| Power Consumption | Power Consumption: Check the estimate power consumption of air conditioners |
| Weekly Timer | Timer: Timer Setting by Daily and Weekly "You can set turn on and off your AC 8 times per day." |
| ON/OFF Timer | ON/OFF Timer: You can set your AC turn on under working time and turn off under non-working timer. Example: -OFF Timer: 16h00m -On Timer: 8h 00m" |
| Saving On | ON/OFF: You can turn on/off your AC by smart phone. Temperature: Temp. setting (0.5 C) by smart phone. Fan Speed: Fan Speed setting (L/M/H) Operation Mode: Mode setting (Cool, Heat and Dry) nanoeX: You can turn on/off nanoeX by smart phone. |

B1 Saving ON



When You click the button Saving ON, it will be appeared

In the saving on, you can turn on/off your air conditioners, set the temperature , set the fan speed, set the mode, control on/off and use nanoeX functions.

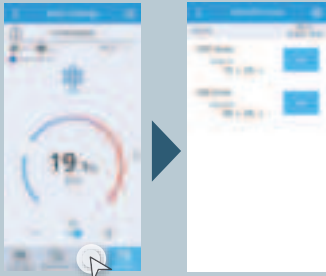
B3 Weekly Timer



When You click the button Weekly timer, it will be appeared

In the weekly timer, you can set turn on and off your air conditioners 8 times per day

B2 ON/OFF Timer



When You click the button ON/OFF Timer, it will be appeared

In the ON/OFF Timer, you can set your air conditioners turn on under working time and turn off under non-working time.
Example:
-OFF timer: 16h 00m
-ON timer: 8h 00m

B4 Power Consumption



When You click the button Power Consumption, it will be appeared

In the power consumption, you can check the estimate power consumption of the air conditioner.

The advantage of IoT integration C. Comfort Cloud App (for End User)

Comfort Cloud is a solution to manage your Air Conditioner smartly and seamlessly with your mobile devices at a next level.



Wireless Remote Controller CZ-RD513C



Wireless Remote Control CZ-RL013UH



- Connectable up to 200 units* with just 1 device (*10 different groups, with up to 20 units/group)
- Convenience of centralized control, compatible for both residential and light commercial applications.



C1 Functionable

| Comfort Cloud | |
|---------------|--|
| nanoeX | <p>ON/OFF: You can turn on/off your AC by smart phone</p> <p>Temperature: Temp. setting (+0.5 C) by smart phone</p> <p>Fan Speed: Fan Speed setting (L/M/H)</p> <p>Operation Mode: Mode Setting (Cool, Heat and Dry)</p> <p>nanoeX: You can turn on/off nanoeX by smart phone</p> |
| Weekly Timer | <p>Timer: Timer setting by daily and weekly. "You can set turn on and turn off AC 8 times per day"</p> |
| Statistics | <p>Power Consumption: Check the estimate power consumption of air conditioner</p> |



C2 Checking Estimated Power Consumption (Daily, Weekly, Monthly, Yearly)



When You click the button statistic, it will be appeared



in the Statistics
"You can check the Estimation Power Consumption by Day, Week, Month, or Year"

C3 Weekly Timer Setting



When You click the button Weekly timer, it will be appeared



in the Weekly timer
"You can set turn on and turn off your AC 8 times per day"

INSTALLATION INSTRUCTION

I. Cassette Type

SAFETY PRECAUTIONS

- Read the following "SAFETY PRECAUTIONS" carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

| | | |
|---|--|---|
| | WARNING | This indication shows the possibility of causing death or serious injury. |
| | CAUTION | This indication shows the possibility of causing injury or damage to properties only. |
| The items to be followed are classified by the symbols: | | |
| | Symbol with white background denotes item that is PROHIBITED. | |
| | Symbol with dark background denotes item that must be carried out. | |

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

| | |
|----------------|---|
| 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. |
| | Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit on veranda of a high rise building, child may climb up to outdoor unit and cross over the handrail causing an accident. |
| | Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire. |
| | Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen. |
| | Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury. |
| | Do not sit or step on the unit, you may fall down accidentally. |
| | Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing. |
| | When installing or relocating air conditioner, do not let any substance other than the specified refrigerant, eg. air etc mix into refrigeration cycle (piping). Mixing of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury 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. |
| | Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc. |
| | <ul style="list-style-type: none">☑ For R32 model, use new piping, flare nut and tools which is specified for R32 refrigerant. Using of existing (R22) piping, flare nut and tools may cause abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury. For R32 and R410A, the same flare nut on the outdoor unit side and pipe can be use.☑ Since the working pressure for R32/R410A is higher than that of refrigerant R22 models, replacing conventional piping and flare nuts on the outdoor unit side are recommended.☑ If reuse piping is unavoidable, refer to instruction 3 REFRIGERANT INSTALLATION (IN CASE OF REUSING EXISTING REFRIGERANT PIPING) in outdoor unit installation manual.☑ Thickness for copper pipes used with R32 must be more than 0.6 mm. Never use copper pipes thinner than 0.6 mm. For copper pipe $\phi 15.88$ or more use copper pipe thickness 0.8 mm and above.☑ It is desirable that the amount of residual oil less than 40 mg/10 m. |
| | Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire. |
| | For refrigeration system work, install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire. |
| | Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock. |
| | Install at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not properly done, the set will drop and cause injury. |
| | For electrical work, follow the national regulation, legislation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire. |
| | Do not use joint cable for indoor / outdoor connection cable. Use the specified indoor/outdoor connection cable, refer to instruction 6 ELECTRICAL WIRING and connect tightly for indoor/outdoor connection. Clamp the cable so that no external force will have impact on the terminal. If connection or fixing is not perfect, it will cause heat up or fire at the connection. |
| | Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause fire or electrical shock. |

| | |
|----------------|---|
| | This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD), with sensitivity of 30mA at 0.1 sec or less. Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown. |
| | During installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves at opened position will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc. |
| | During pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and valves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc. |
| | Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage. |
| | After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire. |
| | Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire. |
| | Be aware that refrigerants may not contain an odour. |
| | This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may cause electrical shock in case of equipment breakdown or insulation breakdown. |
| CAUTION | |
| | Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire. |
| | Prevent liquid or vapor from entering sumps or sewers since vapor is heavier than air and may form suffocating atmospheres. |
| | Do not overcharge the unit, refer to gas charge specification in Outdoor Installation manual. Overcharge will cause over current and damage to compressor. |
| | Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite. |
| | Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc. |
| | Do not touch the sharp aluminium fin, sharp parts may cause injury. |
| | Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture. |
| | Select an installation location which is easy for maintenance. Incorrect installation, service or repair of this air conditioner may increase the risk of rupture and this may result in loss damage or injury and/or property. |
| | Indoor outdoor connection cable. Use power supply cord 4 x 2.5 mm ² (2.0 ~ 6.0HP) type designation 60245 IEC 57 or heavier cord. |
| | Installation work. It may need two people to carry out the installation work. |
| | Keep any required ventilation openings clear of obstruction. |

PRECAUTION FOR USING R32 REFRIGERANT

- The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models. However, pay careful attention to the following points:

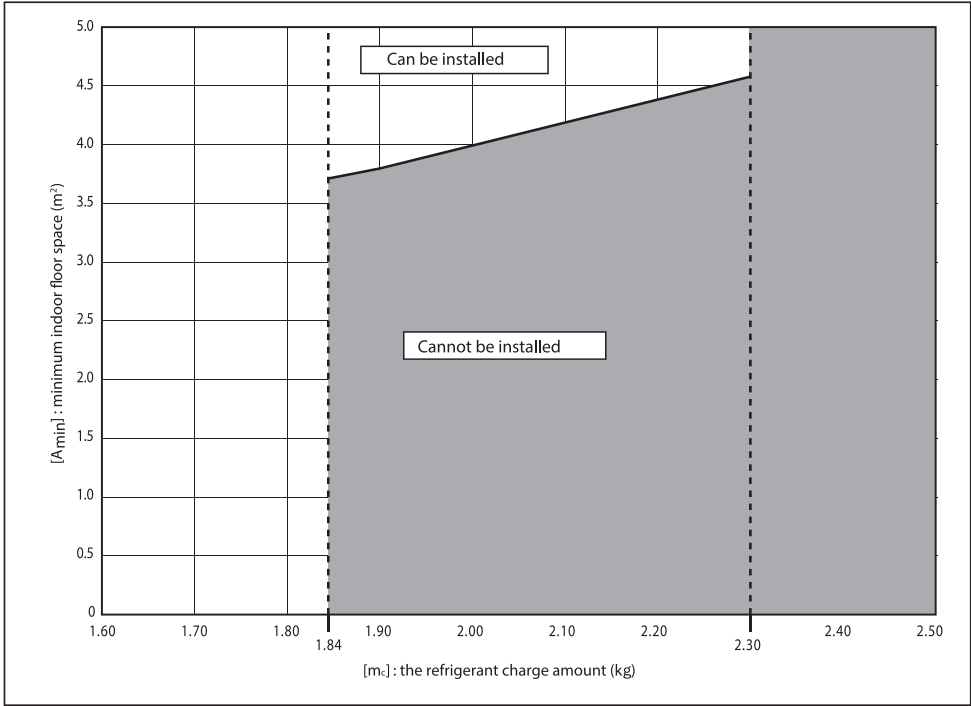
| | |
|--|--|
| | Do not perform flare connection inside a building or dwelling or room, when joining the heat exchanger of indoor unit with interconnecting piping. Refrigerant connection inside a building or dwelling or room must be made by brazing or welding. Joint connection of indoor unit by flaring method can only be made at outdoor or at outside of a building or dwelling or room. Flare connection may cause gas leak and flammable atmosphere. |
| | The appliance shall be stored, installed and operated in a well ventilated room with indoor floor area larger than A_{min} (m ²) [Refer to Check of Density Limit] 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. |
| | Refer to "PRECAUTION FOR USING R32 REFRIGERANT" in outdoor unit installation manual for other precautions that need to pay attention to. |

Check of Density Limit

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount [m_c] used in the appliance.

Regarding the refrigerant charge amount [m_c] used in the appliance, refer to the installation instructions for the outdoor unit.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:



| [m _c] kg | [A _{min}] |
|----------------------|---------------------|
| 1.84 | 3.7 |
| 1.9 | 3.8 |
| 2.0 | 4.0 |
| 2.1 | 4.2 |
| 2.2 | 4.4 |
| 2.3 | 4.6 |

$$A_{min} = (m_c / (2.5 \times (LFL)^{(5/4)} \times h_0))^2$$
 ** not less than safety factor margin

A_{min} = Required minimum room area, in m²
m_c = Refrigerant charge in appliance, in kg
LFL = Lower flammability limit (0.307 kg/m³)
h₀ = Installation height of the appliance: (2.2 m for wall mounted)
SF = Safety factor with a value of 0.75

** The required minimum room area, A_{min}, shall also be governed by the safety factor margin formula below:

$$A_{min} = m_c / (SF \times LFL \times h_0)$$

The higher value shall be taken when determining the room area.

m_c ≤ 1.84 : Can be installed
1.84 < m_c ≤ m_{max} : Can be installed above "Density Limit Line" *1

*1 Refer to table and the installation instructions of indoor unit when deciding "Density Limit Line".

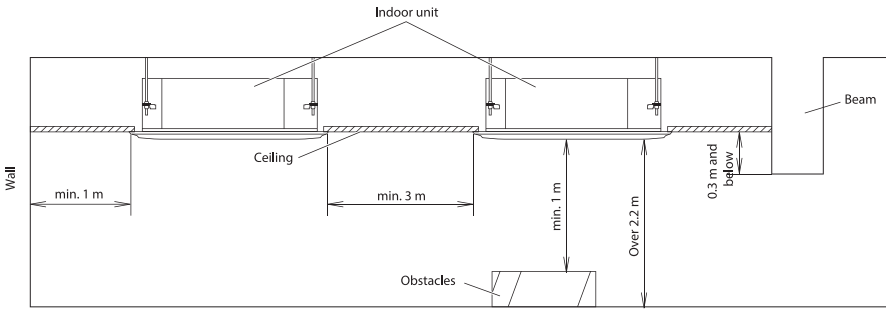
1

SELECTING THE LOCATION FOR THE INDOOR UNIT

Provide a check port on the piping side ceiling for repair and maintenance.

❏ Install the indoor unit once the following conditions are satisfied and after receiving the customer approval.

1. The indoor unit must be within a maintenance space.
2. The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spread of air throughout the room.



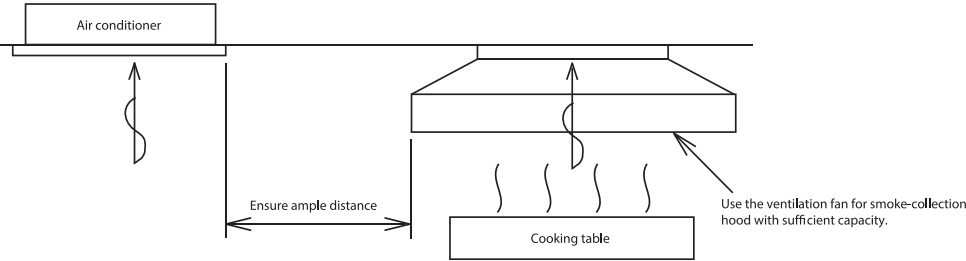
❏ If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

WARNING

3. The installation position must be able to support a load four times the indoor unit weight.
4. The indoor unit must be away from heat and sources of steam, but avoiding installation near an entrance.
5. The indoor unit must allow easy draining.
6. The indoor unit must allow easy connection to the outdoor unit.
7. Place the indoor unit according to the height from the ceiling shown in the illustration below.
8. The indoor unit must be at least 3 m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit.
9. If the power supply is subject to noise generation, add a suppressor.
10. Do not install the indoor unit in a laundry. Electric shocks may result.
11. Installation height for indoor unit shall be at least 2.2 m.

Note ❏ Thoroughly study the following installation locations

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the turbo fan, the fin of the heat exchanger and the drain pump, resulting in heat exchange reduction, spraying, dispersing of water drops, drain pump malfunction, etc.
In these cases, take the following actions:
❏ Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
❏ Make sure there is enough distance from the cooking room to install the air conditioner in such place where it may not suck in oily steam.

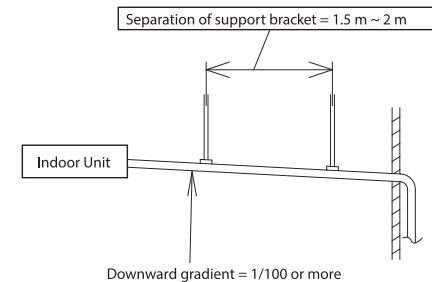


2. Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist, especially in factories, etc.
3. Avoid places where inflammable gas is generated, flows-in, contaminated, or leaked.
4. Avoid places where sulphurous acid gas or corrosive gas can be generated.
5. Avoid places near high frequency generators.

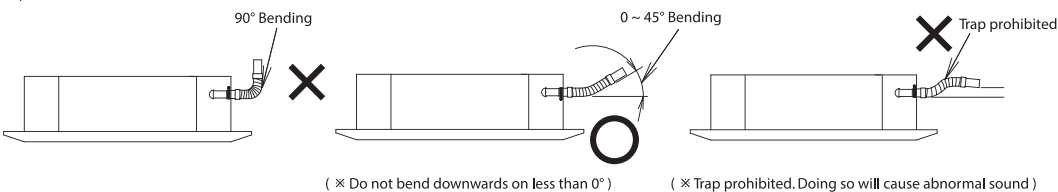
ACCESSORIES PACKED IN THE INDOOR UNIT CONTAINER

| Part Name | Figure | Q'ty | Remarks | Part Name | Figure | Q'ty | Remarks |
|---------------------------------|--------|------|-------------------------------------|------------|--------|------|-------------------------|
| Full-scale installation diagram | | 1 | Printed on container box | Drain hose | | 1 | |
| Washer | | 8 | For suspension bolts | Hose band | | 1 | For securing drain hose |
| Screw | | 4 | For full-scale installation diagram | Clamper | | 4 | For electrical wiring |

- Make sure the drain pipe has downward gradient (1/100 or more; downward from drain port connection).



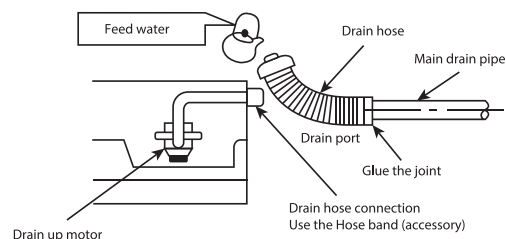
1) Limitations of Drain Hose Connection



DRAIN TEST

The air conditioner uses a drain up motor to drain water. Use the following procedure to test the drain up motor operation.

- Connect the main drain pipe to exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain up motor for normal operating and noise when electric wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port.



5

HEAT INSULATION



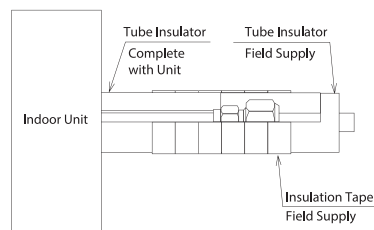
CAUTION

Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat insulation work leads to water leakage.

HEAT INSULATORS FOR REFRIGERANT TUBES

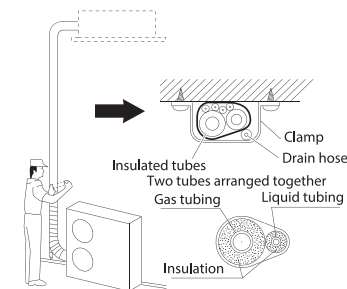
1. Selection of heat insulation materials for refrigerant tube. When using the heat insulation materials (field supply), kindly check for its sizes and performance.

- Material for insulation material: Polyethylene foam.
- Heat transfer rate: less than 0.051 W/m.K.
- Material withstand temperature: up to 110°C Max.
- Must be easy to use, age resistance and not easily absorb moisture.
- Be sure to match the below insulation material size with tube sizes.



| Piping size, mm (In) | Thermal insulation size (I.D.) | Thermal insulation Thickness |
|----------------------|--------------------------------|--|
| 6.35 (1/4") | 8 ~ 10 mm | Insulation thickness must 10 mm or greater |
| 9.52 (3/8") | 12 ~ 15 mm | |
| 12.70 (1/2") | 14 ~ 16 mm | |
| 15.88 (5/8") | 16 ~ 20 mm | |

- Taping the flare nuts
 - Wind the white insulating tape around the flare nuts at the gas tube connections.
 - Cover up the tube connection with tube insulator (field supply).
- Taping the tubes
 - Refrigerant tubes (and electrical wiring if local permit) should be taped together with armoured tape in 1 bundle. Keep drain hose separate from refrigerant tube to prevent condensation.
 - Wrap the armoured tape from the bottom of the outdoor unit to the tubing where it enters the wall. Overlap half of each previous turn.
 - Clamp the tubing to the wall, using 1 clamp approx. per each meter apart.



PRECAUTIONS IN HIGH HUMIDITY CIRCUMSTANCES

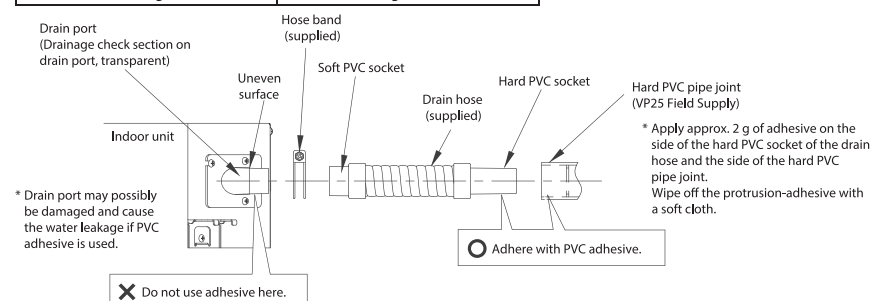
This air-conditioner has been tested according to the "JIS Standard Conditions with Mist" and have been confirmed that there are no faults. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedures:

- Heat insulation material to be prepared. Adiabatic glass wool with thickness 10 to 20 mm.
- Stick the wool on all air-conditioners that are located in ceiling atmosphere.
- In addition to the normal heat insulation (thickness: more than 10 mm) refrigerant piping (gas piping: thick piping) and drain piping, add a further of 10 mm to 30 mm thickness material.

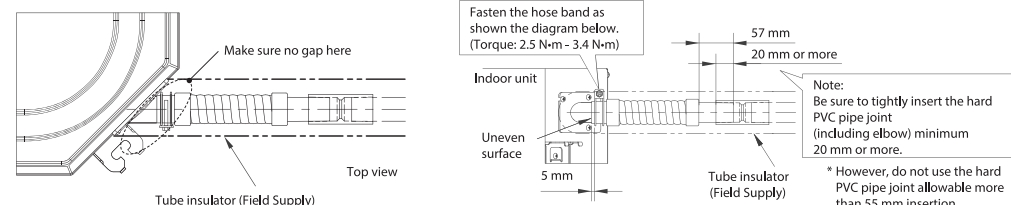
HEAT INSULATORS FOR DRAIN PIPING & DRAIN PIPE INSTALLATION

- Selection of heat insulation materials for drain piping and drain pipe. When using the heat insulation materials (Field Supply). Kindly use the same size and performance as refrigerant tubes. Check for its sizes as below table:

| Insulation Material | Thermal insulation thickness |
|---|---|
| Polyethylene foam (same as heat insulators for refrigerant tubes) | Insulation thickness must 10mm or greater |

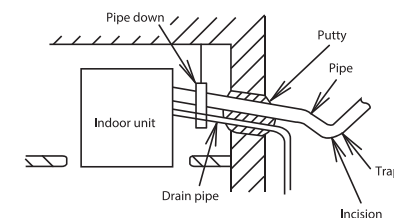


- After checking the drainage, fully wrap it with tube insulator (Field Supply) around the drain hose



WALL SEAL


- When the outdoor unit is installed in a higher position than the indoor unit, install the trap so as not to instill rain water into the wall by transmitting in piping.
- Stuff the space among piping, the electric wire, and the drain hose with "Putty" and seal the penetration wall hole. Make sure that rain water does not instill into the wall.



* Put the incision at the trap part of the heat insulator (for water drainage)

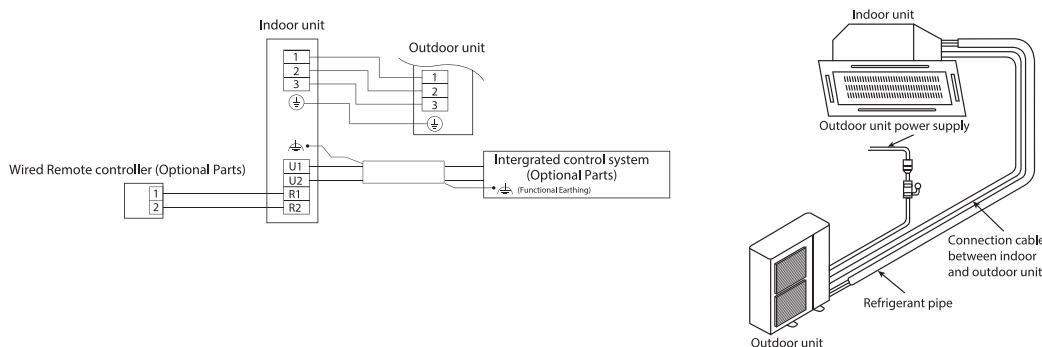
As to main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.

Warning

- ⊠ This air conditioner must be installed in accordance with national wiring regulations.
- ⊠ Cables connected to indoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or H05RN-F/H07RN-F or heavier.
- ⊠ The units must be connected to the supply cables for fixed wiring by qualified technician. Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations. The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3mm in all poles. When the supply cable is damaged, it must be replaced by qualified technician.
- ⊠ Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.
- ⊠ Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result. 
- ⊠ Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

1. Select a power source that is capable of supplying the current required by the air conditioner.
2. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnect all poles with a contact separation of at least 3 mm.
3. Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.
4. Be sure to connect the indoor/outdoor unit connection wires correctly to terminal board.
5. Be sure to turn off the main power before installing and connecting the remote controller.

Note If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (For the system's automatic setting.) Turning off the power supply on the way may cause an abnormal operation.

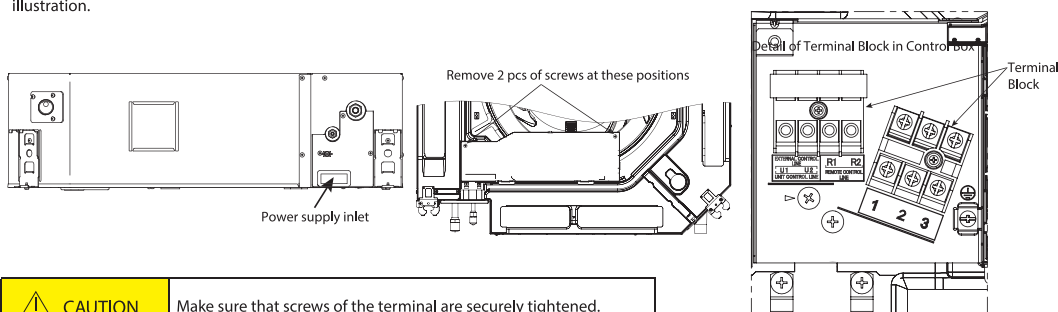


Note

For Optional Parts connecting wiring size, refer to Installation Manual of the Optional Parts.

CONNECTING THE WIRES TO THE CONTROL BOX

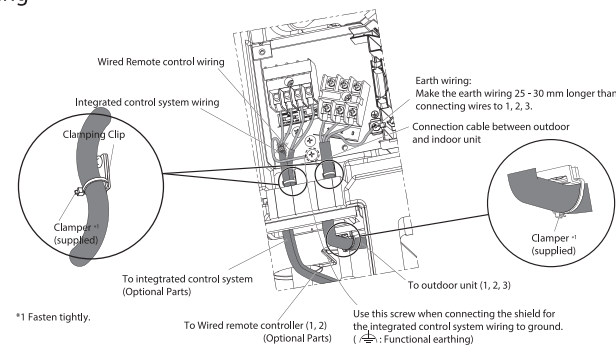
- Remove the 2 pcs of mounting screws, remove the control box cover and then connect the wires by following the procedure given in the illustration.



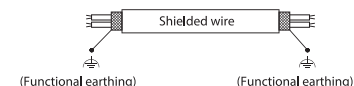
CAUTION

Make sure that screws of the terminal are securely tightened.

Indoor Unit Wiring



Use shielded wires for integrated control system wiring and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in Section "Indoor Unit Wiring".



CAUTION

When linking the outdoor units in a network, it is necessary to install the terminating resistance. The installation method of the terminating resistance is different according to the connecting procedure of the inter-unit control wiring in the link.

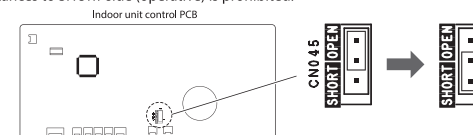
Set the terminating resistance on the indoor unit control PCB.

The setting of the terminating resistance at shipment is OPEN side (inoperative).

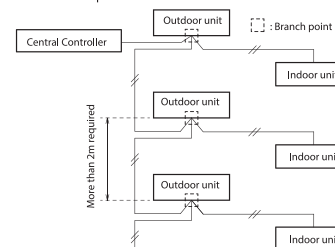
If the shorting socket is replaced as shown below, the terminating resistance is SHORT side (operative).

Change the setting of the terminating resistance at the nearest indoor unit and farthest indoor unit from the integrated control system to SHORT side (operative).

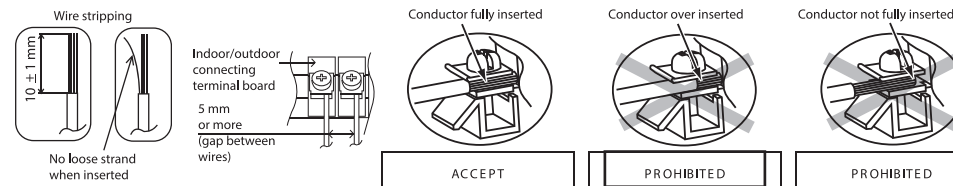
The setting of 3 or more terminating resistances to SHORT side (operative) is prohibited.




If branching the inter-unit control wiring, the number of branch points should be 16 or fewer.



WIRE STRIPPING AND CONNECTING REQUIREMENT



This equipment must be properly earthed. 

Note:

Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap.

Earth wire shall be Yellow/Green (Y/G) in colour than other AC wire for safety reasons.

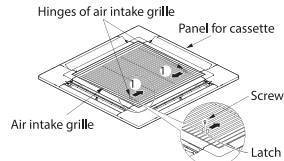
Earth lead wire shall be longer than other lead wires as shown in the figure the electrical safety in case of the cord slipping out of anchorage.

- Before installing the decorative panel, always remove the paper template.

The decorative panel has its installation direction. Confirm the direction by displaying the piping side.

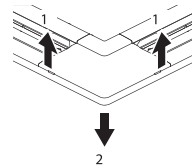
1. Removing the air intake grille.

- Remove the 2 screws on the latch of the air intake grille. (Reattach the air intake grille after installation of the panel for cassette.)
- Slide the air intake grille catches in the direction shown by the arrows 1 to open the grille.



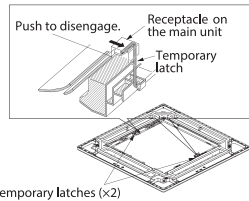
2. Remove the corner cover in 4 corner places.

- Pull hook of corner cover as direction 1, then remove it by sliding out in direction 2.

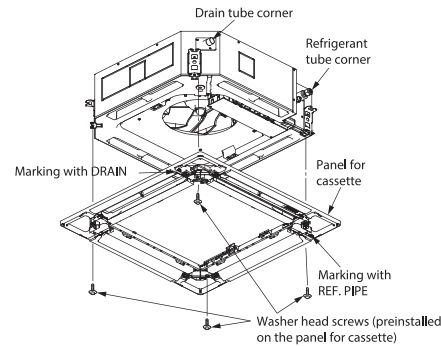


Push latches upward to disengage.

- Hang the temporary latches on the inside of the panel for cassette to the receptacle on the unit to temporarily attach the panel for cassette in place.
 - When removing the panel for cassette, push the temporary latches outward while holding the panel for cassette.

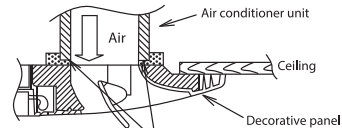


- Adjust between decorative panel fixing hole and indoor unit screw hole.
- Fix decorative panel with 4 screws with already fix at paper model for installation.

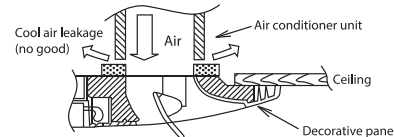


Install the decorative panel securely.
Cool air cause dew to happen.
❑ Water drops fall.

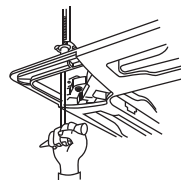
Good example



Bad example



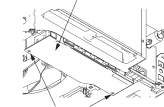
- Adhere the cosmetic panel and ceiling wall together and confirm no gap in between. Readjust indoor unit height, if there is a gap between ceiling wall and decorative panel although it has been fixed by screw. If there is no effect to the indoor unit level and drain piping etc., the adjustment of indoor unit height can be adjusted through the corner cover hole. Tighten the fixing nut of the indoor unit back firmly after adjustment has been made.
- Open the indoor control box cover by removing 2 pcs of mounting screws.
- Insert the wiring panel connector firmly to indoor PCB CN011 LM.
- Be cautious not to clamp the cord in between control board and control board cover.
- After completion, install the parts removed by following reverse procedure.



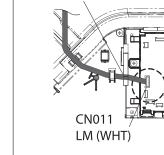
Be sure to hook the air inlet grill string, to prevent grill from falling and causing injury from it.

* Refer to the Wireless Remote Controller Installation Manual for the details of wireless remote controller settings and Receptor Unit Installation.

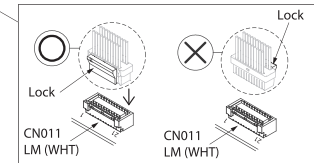
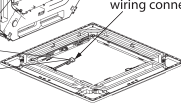
Control Box Cover



Guide lead wire through the cut-out section for wiring protection

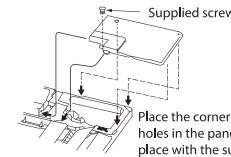
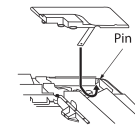


Panel for cassette wiring connector



HOW TO ATTACH THE CORNER COVER

- Check that the safety cord from the corner cover is fastened to the panel for cassette pin, as shown in the figure below.
- Use the supplied screws to attach the corner cover to the panel for cassette.



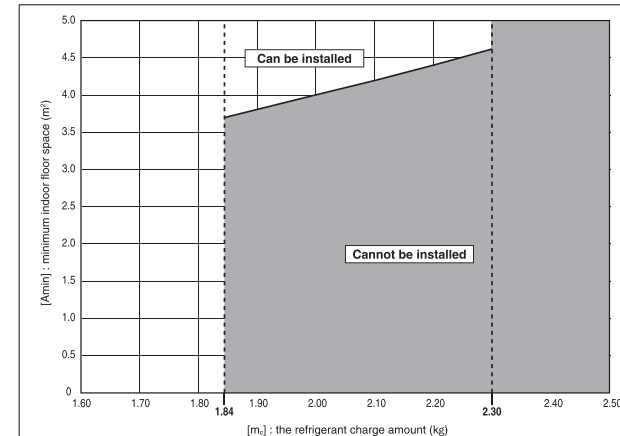
II. Ceiling Type

Check of Density Limit and Accessories in the Packed in the Indoor Unit Container

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount [m_c] used in the appliance.

Regarding the refrigerant charge amount [m_c] used in the appliance, refer to the installation instructions for the outdoor unit.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:



| [m _c] kg | [A _{min}] m² |
|----------------------|------------------------|
| 1.84 | 3.7 |
| 1.9 | 3.8 |
| 2.0 | 4.0 |
| 2.1 | 4.2 |
| 2.2 | 4.4 |
| 2.3 | 4.6 |

$$A_{min} = (m_c / (2.5 \times (LFL)^{(5/4)} \times h_0)) \cdot z$$

** not less than safety factor margin

A_{min} = Required minimum room area, in m²

m_c = Refrigerant charge in appliance, in kg

LFL = Lower flammability limit (0.307 kg/m³)

h₀ = Installation height of the appliance : (2.2 m for wall mounted)

SF = Safety factor with a value of 0.75

** The required minimum room area, A_{min}, shall also be governed by the safety factor margin formula below :

$$A_{min} = m_c / (SF \times LFL \times h_0)$$









The higher value shall be taken when determining the room area.

m_c ≤ 1.84 : Can be installed

1.84 < m_c ≤ m_{max} : Can be installed above "Density Limit Line" *1

*1 Refer to table and the installation instructions of indoor unit when deciding "Density Limit Line".

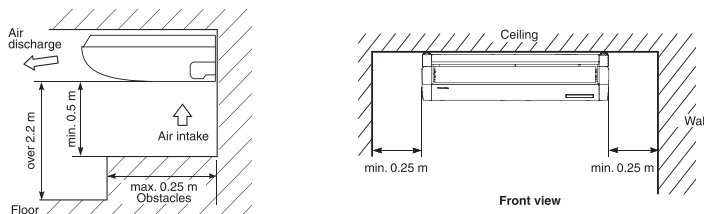
ACCESSORIES PACKED IN THE INDOOR UNIT CONTAINER

| Name | Appearance | Q'ty | Purpose | Name | Appearance | Q'ty | Purpose |
|---------------------------------|---|------|---|----------------|---|------|--|
| Special washer |  | 4 | For temporarily suspending indoor unit from ceiling | Hose band |  | 1 | For drain hose connection |
| Clamper |  | 2 | For wiring | Side cover (R) |  | 1 | (Packed in carton box) For right side |
| Full-scale installation diagram |  | 1 | For positioning installation | Side cover (L) |  | 1 | (Packed in carton box) For left side |
| Drain hose |  | 1 | For main unit + PVC pipe joints | Screw |  | 2 | For side cover (L/R) |

1 SELECTING THE LOCATION OF THE INDOOR UNIT

Provide a check port on the piping side ceiling for repair and maintenance.

- Install the indoor unit once the following conditions are satisfied and after receiving the customers approval.
 - The indoor unit must keep a maintenance space.
 - The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spreading of air throughout the room.

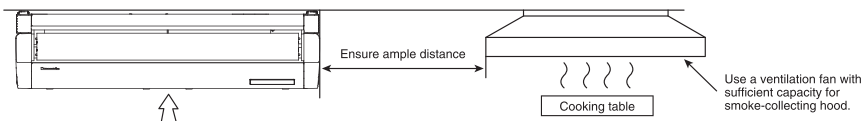


WARNING

- The installation position must be able to support a load four times the indoor unit weight.
- The installation location (surface that the unit is suspended from) must be horizontal (and guaranteed to stay horizontal).
- The indoor unit must be away from heat and steam sources, but avoid installing it near an entrance.
- The indoor unit must allow easy draining.
- The indoor unit must allow easy connection to the outdoor unit.
- The indoor unit must be at least 3 m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit.
- If the power supply is subject to noise generation, add a suppressor.
- Do not install the indoor unit at a laundry. Electric shocks may result.
- Indoor unit of this air conditioner shall be installed in a height of at least 2.2 m.

Note

- Study thoroughly the following installation locations
- In places such as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, and the fin of the heat exchanger may result in heat exchange reduction, spraying or dispersing of water drops, etc. In these cases, take the following actions:
 - Make sure the ventilation fan for smoke-collection hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
 - Make enough distance from cooking room to install the air conditioner in such place where it may not suck in oily steam.



- Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist especially in factories, etc.
- Avoid places where inflammable gas can be generated, flows-in, contaminated, or leak.
- Avoid places where sulphurous acid gas or corrosive gas can be generated.
- Avoid places near high frequency generators.

2 INSTALLATION OF INDOOR UNIT

The paper template for installation may expand or shrink because of temperature and humidity. Check the dimensions before using it.

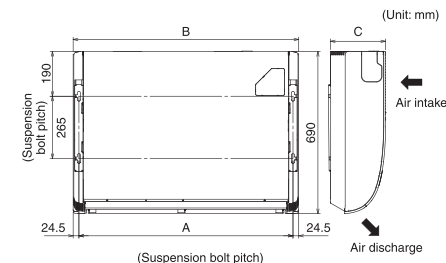
CEILING OPENING DIMENSIONS AND HANGING BOLTS LOCATION

- Dimensions of suspension bolt pitch and unit

| Length Type | A | B | C |
|----------------|------|------|-----|
| S-1821PT**** | 911 | 960 | 235 |
| S-2430PT**** | 1226 | 1275 | 235 |
| S-3448PT**** | 1541 | 1590 | 235 |

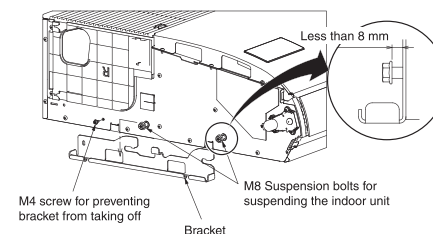
CAUTION

During the installation, care must be taken not to damage the electric wires.

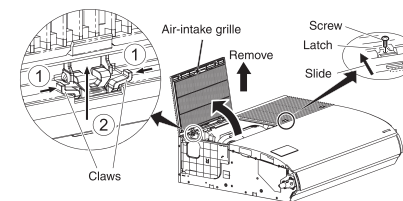


INDOOR UNIT PREPARATIONS BEFORE INSTALLATION

- Remove the bracket (for suspending the indoor unit). Loosen the M8 suspension bolts and expose the axis of bolts by less than 8mm. Remove M4 screw. Then remove the bracket.

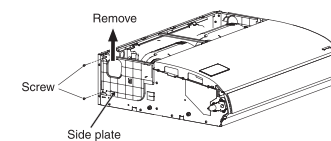


- Remove the air-intake grille. Detach the 2 screws fixed at the latches. Lift the air filter, locate and hold the claws of the hinges of the both sides. Pull to remove.

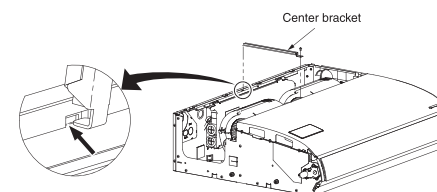


- Remove the side plate to the tubing side.

| | |
|-------------------------------------|---|
| Rear & upper side tubing connection | Remove 2 screws. Slide the side plate in the direction of the arrow and remove it. |
| Right side tubing connection | Do not remove the side plate. |

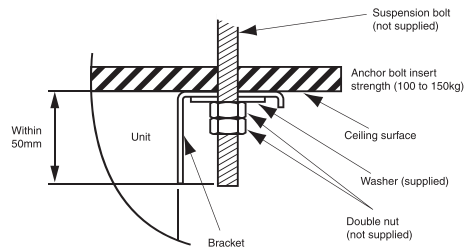


- Remove the center bracket. When wiring, remove the center bracket if necessary. Reinstall after wiring completion.



SUSPENDING THE INDOOR UNIT

1. Use either W3/8 or M10 bolts and nuts (local supplied). For safety, washers and double nuts must be used for a secured installation.
2. The distance of each exposed bolt must be equal length within 50mm.

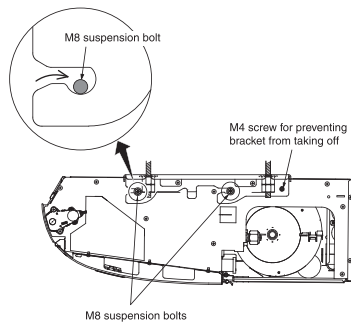


3. Suspend the indoor unit to the bracket. Tighten the M8 suspension bolts and fix the indoor unit in place.



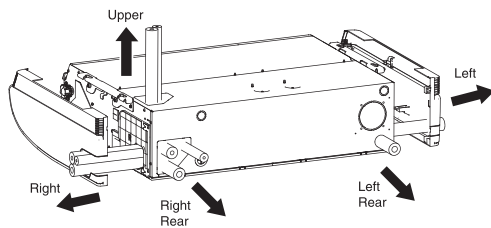
CAUTION

Be sure to tighten the bolts and nuts. Loose bolts and nuts may result in accidents such as falling of the unit.

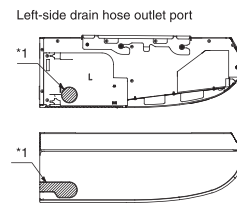
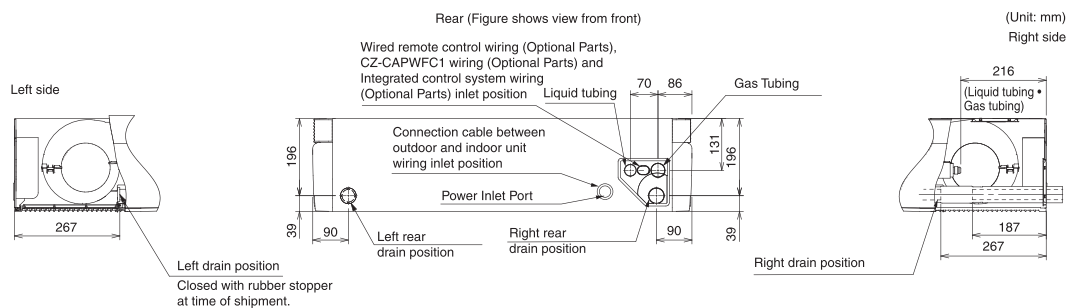


PIPING HOLES POSITIONS

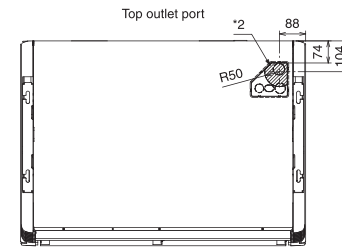
1. Refrigerant tubings can be installed at the right rear, upper, or right side.
2. Refrigerant tubing, Drain hose, Power inlet port, Connection cable between outdoor and indoor unit wiring inlet position, Wired remote control wiring (Optional Parts), CZ-CAPWFC1 wiring (Optional Parts) and Integrated control system wiring (Optional Parts) inlet position.



3. Thermally insulate the drain and refrigerant piping to prevent dew condensation.
4. Be sure to use sealing putty to seal off the opening to prevent dust.



- *1 Use a compass saw, jig saw or similar tool and cut along the indented portion of the side cover and make a hole inside the cover.



- *2 When removing the refrigerant tubing from the upper side, cut along the indented portion and pass the tubing through the hole.

Side cover

3

REFRIGERANT PIPING

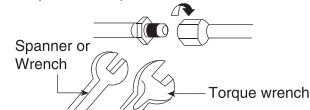
CONNECTING THE PIPING TO INDOOR

For connection joint of all models

Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)

Connect the piping

- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench in specified torque as stated in the table.



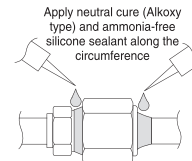
Additional Precautions For R32 Models when connecting by flaring at indoor side

1. Ensure to do re-flaring of pipes before connecting to units to avoid leaking

Seal sufficiently the flare nut (both gas and liquid sides) with neutral cure (Alkoxy type) & ammonia-free silicone sealant and insulation material to avoid the gas leak caused by freezing.

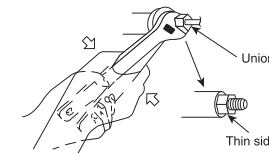
※ Use of silicon containing ammonia can lead to stress corrosion on the joint & can cause leakage.

Neutral cure (Alkoxy type) & ammonia-free silicone sealant is only to be applied after pressure testing and cleaning up by following instructions of sealant, only to the outside of the connection. The aim is to prevent moisture from entering the connection joint and possible occurrence of freezing. Curing sealant will take some time. Make sure sealant will not peel off when wrapping the insulation.



1. Brazing for piping.
 - a. Execute brazing before tightening the flare nut.
 - b. Brazing must be executed while blowing nitrogen gas. (This prevents generation of oxidized scale in copper pipe.)
2. When there is a lot of brazings for long piping, install a strainer midway of the piping. (The strainer is field supplied.)
3. Use clean copper pipe with inner wall surface free from mist and dust. Blow nitrogen gas or air to blow off dust in the pipe before connection.
4. Form the piping according to its routing. Avoid bending and bending back the same piping point more than three times. (This will result in hardening of the pipe.)
5. After deforming the pipe, align centers of the union fitting of the indoor unit and the piping, and tighten them firmly with wrenches.
6. Connect pipe to the service valve or ball valve which is located below the outdoor unit.
7. After completing the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.

Refrigerant is charged to the outdoor unit. For details, see the manual for installation work of outdoor unit. (Additional charging, etc.)



- Confirm the union (thin side) is always at lower direction after connecting piping.



CAUTION

Use two wrenches and tighten with regular torque.

VACUUM DRYING

After completing the piping connection, execute vacuum drying for the connecting piping and the indoor unit. The vacuum drying must be carried out by using the service ports of both the liquid and gas side valves.

| Flare nut fastening torque N•m (kgf•cm) | | | |
|---|----------|-----------|----------|
| ø6.35 mm | 18 (180) | ø12.7 mm | 55 (560) |
| ø9.52 mm | 42 (430) | ø15.88 mm | 65 (660) |

| | | S-1821PT*** | S-2430PT*** | S-3448PT*** |
|--------|---------|--------------|--------------|-------------|
| Liquid | mm (in) | ø6.35 (1/4) | ø9.52 (3/8) | |
| Gas | mm (in) | ø12.70 (1/2) | ø15.88 (5/8) | |

4

INDOOR UNIT DRAIN PIPING

- Be sure to use the drain hose provided (accessory item.)
- Drain piping must have down-slope (1/50 to 1/100) : be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port at the indoor unit.
- The outside diameter of the drain connection at the indoor unit is 20 mm.

Piping material : Polyvinyl chloride pipe VP-20 and pipe fittings.

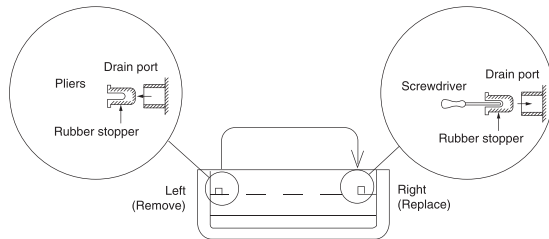
Heat insulation material : Polyethylene foam with thickness more than 8 mm.

CAUTION Be sure to perform heat insulation on the drain piping. If insulation is insufficient, dew may form. This causes water leakage.

CAUTION Prevent the drain hose from floating and hanging down. This causes water leakage. (right figure)

In the case of left side drain piping

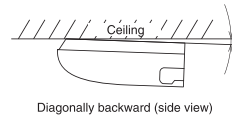
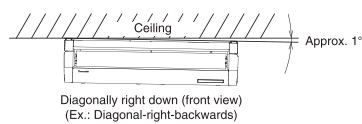
1. Remove the rubber stopper from left drain position by using pliers or similar tools.
2. Use the same rubber stopper to plug the hole at the right drain position by using a screwdriver or similar tools.



* Refer to the PIPING HOLES POSITIONS for locations of left drain and right drain positions.

INDOOR UNIT INSTALLATION FOR WATER TREATMENT

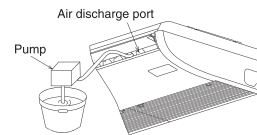
1. The indoor unit should be slightly tilted downward toward the drain pipe connection side as shown in figure below so that the wastewater can flow smoothly without being trapped in the middle.



Drain test

- Confirm the drain water flows smoothly after connecting the drain piping.
- After installation of the drain piping, pour an appropriate amount of water into the drain pan through the opening on the side of the air discharge port. Check the water draining smoothly.

(EXAMPLE)



5

HEAT INSULATION

CAUTION

Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat insulation work leads to water leakage.

HEAT INSULATORS FOR REFRIGERANT TUBES

1. Selection of heat insulation materials for refrigerant tube.

When using the heat insulation materials (field supply), kindly check for its sizes and performance.

- **Material for insulation material:** Polyethylene foam.
- **Heat transfer rate:** less than 0.051 W/m.K.
- **Material withstand temperature:** up to 110°C Max.
- Must be easy to use, age resistance and not easily absorb moisture.
- Be sure to match the below insulation material size with tube sizes.

| Piping size, mm (In) | Thermal insulation size (I.D.) | Thermal insulation Thickness |
|----------------------|--------------------------------|--|
| 6.35 (1/4") | 8 ~ 10 mm | Insulation thickness must 10 mm or greater |
| 9.52 (3/8") | 12 ~ 15 mm | |
| 12.70 (1/2") | 14 ~ 16 mm | |
| 15.88 (5/8") | 16 ~ 20 mm | |

2. Taping the flare nuts
 - Wind the white insulating tape around the flare nuts at the gas tube connections.
 - Cover up the tube connection with tube insulator (field supply).

Note

If noise bothers you from the area between indoor and outdoor units' connection pipes, it is effective to wind the soundproofing materials (field supply) to reduce noise.

CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack. Never grasp the drain or refrigerant connecting outlets when moving the unit.

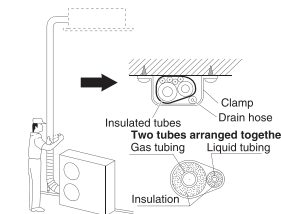
3. Taping the tubes
 - Refrigerant tubes (and electrical wiring if local permit) should be taped together with armouring tape in 1 bundle. Keep drain hose separate from refrigerant tube to prevent condensation.
 - Wrap the armouring tape from the bottom of the outdoor unit to the tubing where it enters the wall. Overlap half of each previous turn.
 - Clamp the tubing to the wall, using 1 clamp approx. per each meter apart.

Note

Do not wind the armouring tape too tightly since this will decrease the heat insulation effect. Also ensure that the condensation drain hose splits away from the bundle and drips clear of the unit and the tubing.

CAUTION

If the exterior of the outdoor unit valves has been finished with a square duct covering, make sure you allow sufficient space to access the valves and to allow the panels to be attached and removed.



PRECAUTIONS IN HIGH HUMIDITY CIRCUMSTANCES

This air-conditioner has been tested according to the "JIS Standard Conditions with Mist" and have been confirmed that there are no faults. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedures:

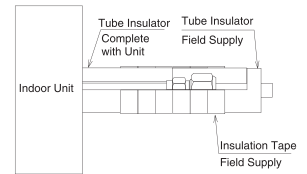
- Heat insulation material to be prepared. Adiabatic glass wool with thickness 10 to 20 mm.
- Stick the wool on all air-conditioners that are located in ceiling atmosphere.
- In addition to the normal heat insulation (thickness: more than 10 mm) refrigerant piping (gas piping: thick piping) and drain piping, add a further of 10 mm to 30 mm thickness material.

HEAT INSULATORS FOR DRAIN PIPING & DRAIN PIPE INSTALLATION

1. Selection of heat insulation materials for drain piping and drain pipe. When using the heat insulation materials (field supply).

Kindly use the same size and performance as refrigerant tubes. Check for its sizes as below table:

| Insulation Material | Thermal insulation thickness |
|---|---|
| Polyethylene foam (same as heat insulators for refrigerant tubes) | Insulation thickness must 10mm or greater |



- (1) Prepare standard hard PVC pipe (O.D. 26 mm) for the drain and use the supplied hose band to prevent water leaks.

The PVC pipe must be purchased separately.

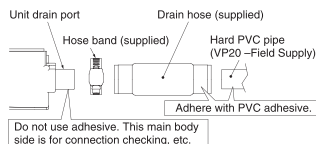
The transparent drain part on the unit allows you to check drainage.



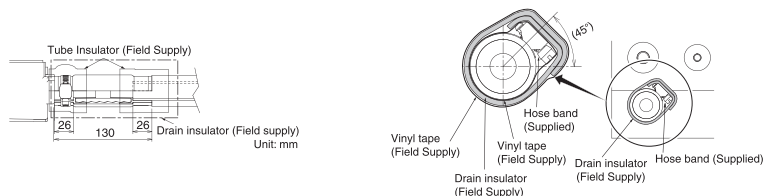
- Do not use adhesive tape at the drain connection port on the indoor unit.
- Insert the drain pipe until it contacts the socket, and then secure it tightly with the hose band.
- Do not use the supplied drain hose bent at a 90° angle. (The maximum permissible bend is 45°.)
- Tighten the hose clamps so their locking nuts face upward.

- (2) Installing the drain hose

- First insert the drain hose (supplied) to the hose band (supplied) and then install the drain hose to the unit drain port.
- Insert until the drain hose bumps to the end.
- Hose band screw torque is 30 - 35 N · cm.
- Connect both the drain hose and PVC pipe (VP20 or similar material, not supplied). Insert until the PVC pipe bumps to the end and adhere with PVC adhesive.

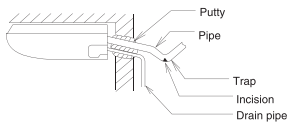


- (3) After connecting the drain pipe securely, wrap the packing (field supply) and drain pipe insulator (field supply) around the pipe, then secure it with the clampers.



WALL SEAL

- When the outdoor unit is installed at a higher position than the indoor unit, install a trap so as not to instill rain water into the wall transmitted by the piping.
- Stuff the space among piping, the electric wire, and the drain hose with "Putty" and seal the penetration wall hole. Make sure that rain water do not instill into the wall.



* Put the incision at the trap part of the heat insulator (for water drainage)

6 ELECTRICAL WIRING

As to main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.

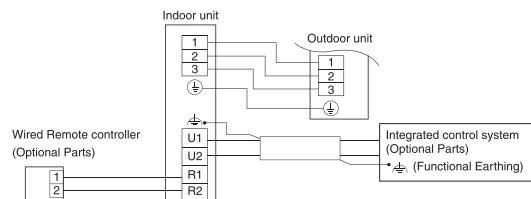


- This air conditioner must be installed in accordance with national wiring regulations.
- Cables connected to indoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or H05RN-F/H07RN-F or heavier.
- The units must be connected to the supply cables for fixed wiring by qualified technician. Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations. The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3mm in all poles. When the supply cable is damaged, it must be replaced by qualified technician.
- Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.
- Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result.
- Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

1. Select a power source that is capable of supplying the current required by the air conditioner.
2. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnect all poles with a contact separation of at least 3 mm.
3. Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.
4. Be sure to connect the indoor/outdoor unit connection wires correctly to terminal board.
5. Be sure to turn off the main power before installing and connecting the remote controller.

Note

If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (For the system's automatic setting.)
Turning off the power supply on the way may cause an abnormal operation.

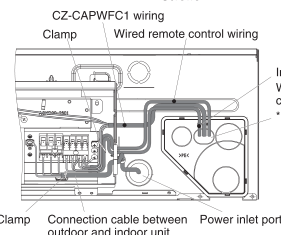
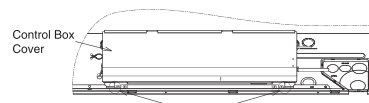


Note

For Optional Parts connecting wiring size, refer to Installation Manual of the Optional Parts.

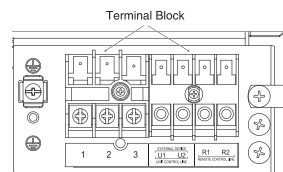
CONNECTING THE WIRES TO THE CONTROL BOX

- Remove the control box cover by loosening/detaching the 2 screws.



Integrated control system wiring
Wired remote control wiring and integrated control system wiring inlet port
* Insert the CZ-CAPWFC1 wiring, Wired remote control wiring and integrated control system wiring into the electrical component box from the inlet port as shown in the figure. This is done regardless of whether the wiring was inserted from the top, rear, or left side of the main unit.

Detail of Terminal Block in Control Box



How to carry out power supply wiring

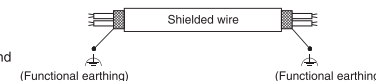
- (1) Wiring connection ports

The power inlet port is located at the rear.

The connection cable between outdoor and indoor unit wiring inlet port, wired remote control wiring inlet port (Optional Parts), the CZ-CAPWFC1 wiring inlet port (Optional Parts), the integrated control system wiring inlet port (Optional Parts) are located at the rear. For details, see the figure under Section Piping Holes Position.

- (2) How to carry out wiring

- Insert the connection cable between outdoor and indoor unit wiring into the indoor unit through the Power inlet port and into the bottom rubber entry at the side of the electrical Control Box.
- Wiring connection for wired remote control wiring (Optional Parts), the CZ-CAPWFC1 wiring (Optional Parts), the integrated control system wiring (Optional Parts), open the elongated hole of the piping cover and pass the wires through the hole.



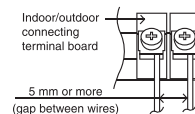
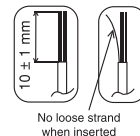
Note

Be sure to use sealing putty to seal off the opening to prevent dust.

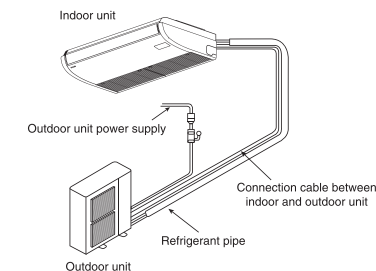
Use shielded wires for integrated control system wiring and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in "Section Indoor Unit Wiring".

WIRE STRIPPING AND CONNECTING REQUIREMENT

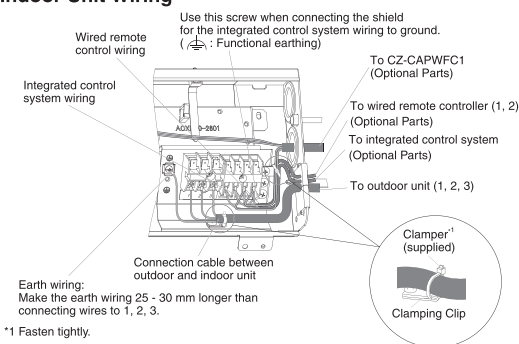
Wire stripping



Make sure that screws of the terminal are securely tightened.



Indoor Unit Wiring



*1 Fasten tightly.



Clamping Clip

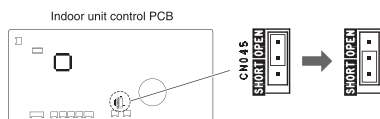
⚠ This equipment must be properly earthed.
Note:
Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap.
Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reasons.
Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the cord slipping out of anchorage.



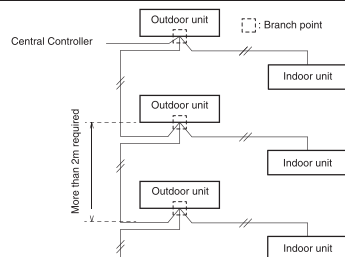
CAUTION

When linking the outdoor units in a network, it is necessary to install the terminating resistance.
The installation method of the terminating resistance is different according to the connecting procedure of the inter-unit control wiring in the link.

Set the terminating resistance on the indoor unit control PCB.
The setting of the terminating resistance at shipment is OPEN side (inoperative).
If the shorting socket is replaced as shown below, the terminating resistance is SHORT side (operative).
Change the setting of the terminating resistance at the nearest indoor unit and farthest indoor unit from the integrated control system to SHORT side (operative).
The setting of 3 or more terminating resistances to SHORT side (operative) is prohibited.



If branching the inter-unit control wiring, the number of branch points should be 16 or fewer.



III. Ducted Type

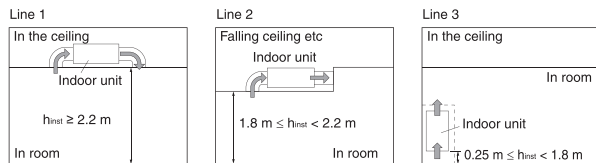
Check of Density Limit and Accessories in the Packed in the Indoor Unit Container

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount [m_c] used in the appliance.

Regarding the refrigerant charge amount [m_c] used in the appliance, refer to the installation instructions for the outdoor unit.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:

| Installation height of Indoor Unit: h _{inst} | Indoor Unit Type | Density Limit Line |
|---|--------------------------------------|--------------------|
| h _{inst} ≥ 2.2 m | Duct units (Horizontal installation) | Line 1 |
| 1.8 m ≤ h _{inst} < 2.2 m | Duct units (Horizontal installation) | Line 2 |
| h _{inst} < 1.8 m | Duct units (Vertical installation) | Line 3 |



| [m _c] kg | [A _{min}] | | |
|----------------------|---------------------|--------|--------|
| | Line 1 | Line 2 | Line 3 |
| 1.84 | 3.7 | 4.5 | 29.1 |
| 1.9 | 3.8 | 4.6 | 31.0 |
| 2.0 | 4.0 | 4.9 | 34.4 |
| 2.1 | 4.2 | 5.1 | 37.9 |
| 2.2 | 4.4 | 5.4 | 41.6 |
| 2.3 | 4.6 | 5.6 | 45.4 |

$$A_{min} = (m_c / (2.5 \times (LFL)^{(5/4)} \times h_0)) ^2 \quad ** \text{ not less than safety factor margin}$$

A_{min} = Required minimum room area, in m²
m_c = Refrigerant charge in appliance, in kg
LFL = Lower flammability limit (0.307 kg/m³)
h₀ = Installation height of the appliance : (Line 1: 2.2 m; Line 2: 1.8 m; Line 3: 0.6 m)
SF = Safety factor with a value of 0.75

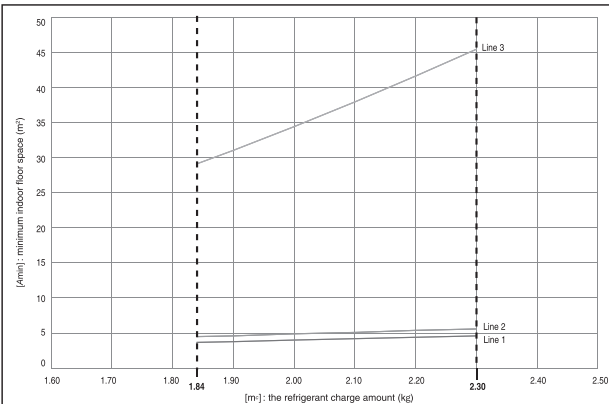
** The required minimum room area, A_{min}, shall also be governed by the safety factor margin formula below :

$$A_{min} = m_c / (SF \times LFL \times h_0)$$

The higher value shall be taken when determining the room area.

m_c ≤ 1.84 : Can be installed
1.84 < m_c ≤ m_{cmax} : Can be installed above "Density Limit Line" *1

*1 Refer to table and the installation instructions of indoor unit when deciding "Density Limit Line".



ACCESSORIES PACKED IN THE INDOOR UNIT CONTAINER

| Part Name | Figure | Q'ty | Remarks | Part Name | Figure | Q'ty | Remarks |
|------------|--------|------|---|--------------------------|--------|------|--|
| Washer | | 8 | For suspending indoor unit from ceiling | Filter | | * | When not connecting the air intake, be sure to install the filter. |
| Hose band | | 1 | For securing drain hose | Screw | | * | |
| Drain hose | | 1 | For main unit + PVC pipe joints | Short-circuit connection | | 1 | For vertical installation (Located on the back of the electrical component box lid.) |
| Clamper | | 2 | For electrical wiring | | | | |

* S-1821PF** : 1 Q'ty S-2430PF** : 2 Q'ty S-3448PF** : 2 Q'ty

1

SELECTING THE LOCATION FOR THE INDOOR UNIT

Provide a check port on the piping side ceiling for repair and maintenance.

● Install the indoor unit once the following conditions are satisfied and after receiving the customer approval.

1. The indoor unit must be within a maintenance space.
2. The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spread of air throughout the room.

| < Horizontal installation > | < Vertical installation > | * It is necessary to make space for the cleaning as well as the maintenance of the drain pan and the heat exchanger. Do not put any obstacle not to cause obstructing maintenance or cleaning works. If the place where the ceiling material cannot be removed, make an opening section below the bottom surface of the indoor unit in order to take it out. If it is impossible to provide an opening, make space more than 300 mm between the indoor unit's bottom surface and the ceiling material. |
|-----------------------------|---------------------------|--|
| | | |

● For horizontal installation, if the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

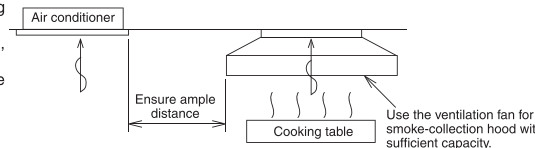
⚠ WARNING

3. The installation position must be able to support a load four times the indoor unit weight (For Horizontal Installation Standard Installation).
4. The indoor unit must be away from heat and sources of steam, but avoiding installation near an entrance.
5. The indoor unit must allow easy draining.
6. The indoor unit must allow easy connection to the outdoor unit.
7. Place the indoor unit according to the height from the ceiling shown in the illustration under the section Horizontal Installation below.
8. The indoor unit must be at least 3 m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit.
9. If the power supply is subject to noise generation, add a suppressor.
10. Do not install the indoor unit in a laundry. Electric shocks may result.
11. Check "Required Minimum Space for Installation and Maintenance Services" for minimum installation height.

Note

● Thoroughly study the following installation locations

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the turbo fan, the fin of the heat exchanger and the drain pump, resulting in heat exchange reduction, spraying, dispersing of water drops, drain pump malfunction, etc.
In these cases, take the following actions:
- Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
- Make sure there is enough distance from the cooking room to install the air conditioner in such place where it may not suck in oily steam.
2. Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist, especially in factories, etc.
3. Avoid places where inflammable gas is generated, flows-in, contaminated, or leaked.
4. Avoid places where sulphurous acid gas or corrosive gas can be generated.
5. Avoid places near high frequency generators.



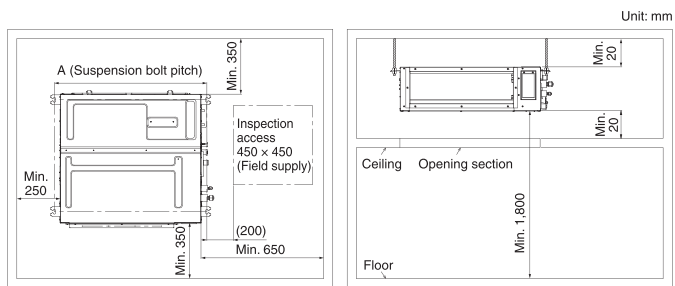
HOW TO INSTALL THE INDOOR UNIT

■ Middle Static Pressure Duct Type

Required Minimum Space for Installation and Maintenance Services

< Horizontal installation >

- This air conditioner is usually installed above the ceiling so that the indoor unit and ducts are not visible. Only the air intake and air outlet ports are visible from below.
- The minimum space for installation and maintenance services is shown in the figure.

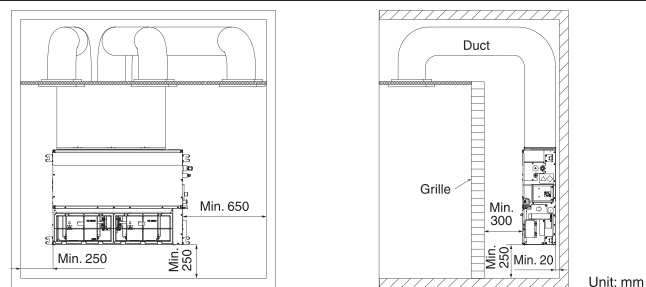


* It is necessary to make space for the cleaning as well as the maintenance of the drain pan and the heat exchanger.
Do not put any obstacle not to cause obstructing maintenance or cleaning works.
If the place where the ceiling material cannot be removed, make an opening section below the bottom surface of the indoor unit in order to take it out.
If it is impossible to provide an opening, make space more than 300 mm between the indoor unit's bottom surface and the ceiling material.

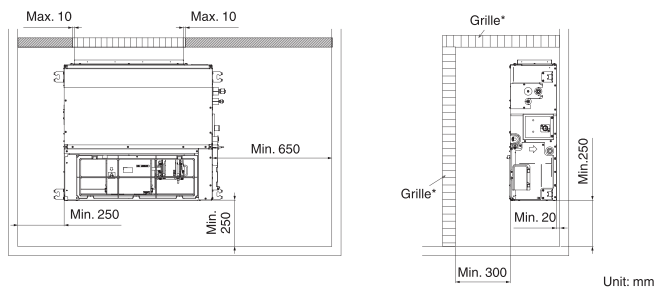
Minimum space for installation and maintenance services

| Type | S-1821PF** | S-2430PF** | S-3448PF** |
|------------|------------|------------|------------|
| A (Length) | 867 | 1,067 | 1,467 |

< Vertical installation >



* Make it possible to open / close for maintenance services.

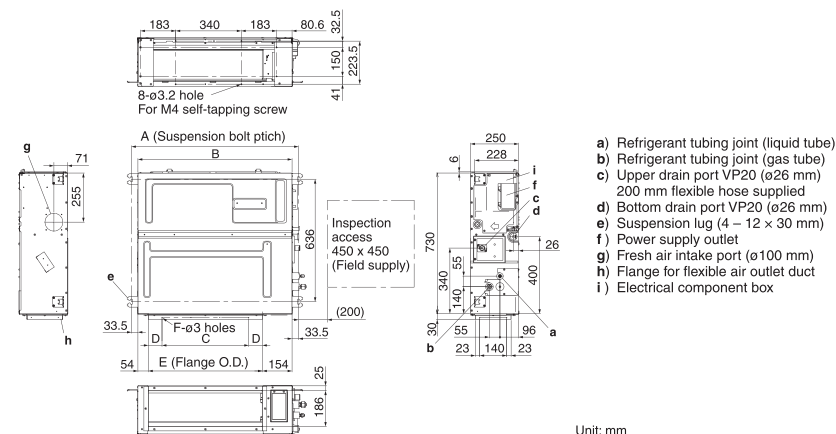


* Make it possible to open / close for maintenance services.

● It is recommended that space be provided (450 x 450 mm) for checking and servicing the electrical system.

Detailed dimensions of indoor unit

| Type | A | B | C | D | E | F |
|------------|-------|-------|-----------------------|----|-------|------|
| | mm | mm | mm | mm | mm | Q'ty |
| S-1821PF** | 867 | 800 | 450 (Pitch 150 x 3) | 71 | 592 | 12 |
| S-2430PF** | 1,067 | 1,000 | 750 (Pitch 150 x 5) | 21 | 792 | 16 |
| S-3448PF** | 1,467 | 1,400 | 1,050 (Pitch 150 x 7) | 71 | 1,192 | 20 |



Unit: mm

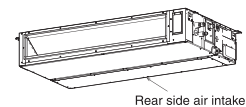
2 INSTALLATION OF INDOOR UNIT

Preparation Before Installation

Main Types of Installation

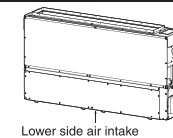
Case A (Standard installation)

Horizontal installation in the ceiling, rear side air intake



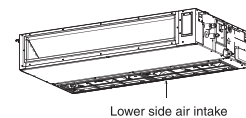
Case C

Vertical installation on the sidewall, lower side air intake



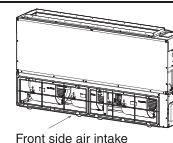
Case B

Horizontal installation in the ceiling, lower side air intake



Case D

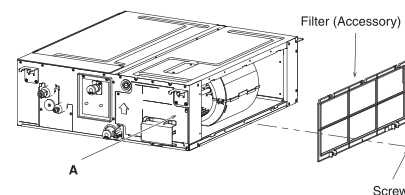
Vertical installation on the sidewall, front side air intake



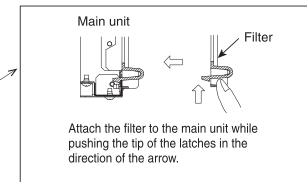
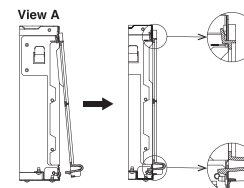
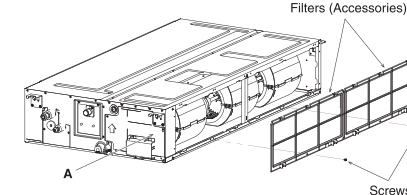
Install the Filter

When not connecting the air intake duct, be sure to install the filters (Accessories).
Case A and Case C are shown below.

Type S-1821PF**



Type S-2430PF**, S-3448PF**

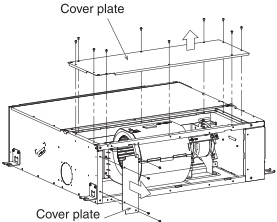


Attach the filters (accessories) in the manner shown in the figure. Securely fix the filters with the screws.

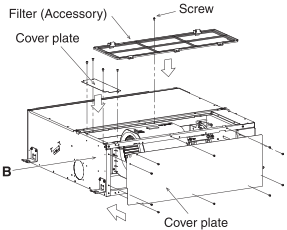
Case B and Case D are shown below.
For Case B and Case D, replace the cover plates in the procedure shown in the figure.

Type S-1821PF**

1. Remove the cover plates (2 pcs).

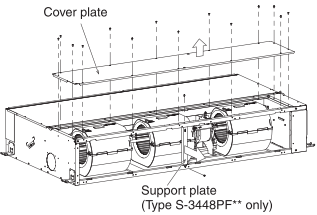


2. Attach the cover plates removed in step 1 and filter (accessory) in the direction shown in the figure below.

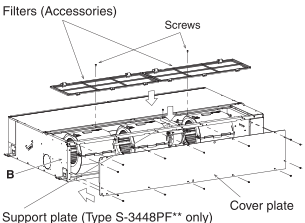


Type S-2430PF, S-3448PF****

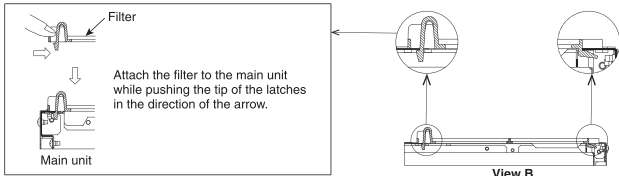
1. Remove the cover plate and the support plate (Type S-3448PF** only)



2. Attach the cover plate and the support plate removed in step 1 and filters (accessories) in the direction shown in the figure below.



3. Attach the filters (accessories) in the manner shown in the figure. Securely fix the filters with the screws.

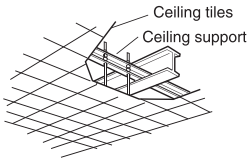
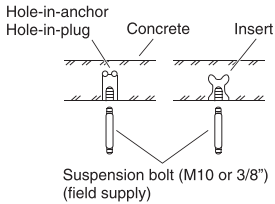


Fix the Indoor Unit

Horizontal Installation

Depending on the ceiling type:.

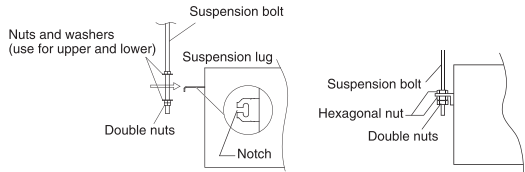
- a) Insert suspension bolts or b) Use existing ceiling supports or construct a suitable support



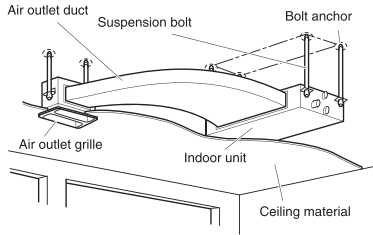
WARNING

It is important that you use extreme care in supporting the indoor unit inside the ceiling. Ensure that the ceiling is strong enough to support the weight of the unit. Before hanging the unit, test the strength of each attached suspension bolt.

- (1) When placing the unit inside the ceiling, determine the pitch of the suspension bolts referring to the dimensional data as shown in the tables and diagrams under the section Required Minimum Space for Installation and Maintenance Services. Tubing must be laid and connected inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the tubing into position for connection to the unit before placing the unit inside the ceiling.
- (2) Screw in the suspension bolts allowing them to protrude from the ceiling. (Cut the ceiling material, if necessary.)
- (3) Thread the 3 hexagonal nuts and 2 washers (field supply) onto each of the 4 suspension bolts. Use 1 nut and 1 washer for the upper part, and 2 nuts (double nuts) and 1 washer for the lower part, so that the unit will not fall off the suspension lugs.

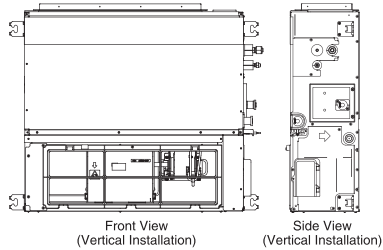


- This shows an example of installation.



Vertical Installation

- To prevent overturning, fasten the unit to the wall securely.
- Check to make sure the wall can endure 5 times of weight of the unit. Ensure to fix the unit.
- In order to suppress vibrations, provide the spacer between the unit and the wall.
- Fasten the hanging brackets and bolts using the hexagon nuts and washers.
- Check to make sure the unit is installed in a horizontal position by using a level. Water leakage may occur if the unit is not installed horizontally.



3

REFRIGERANT PIPING

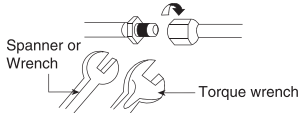
CONNECTING THE PIPING TO INDOOR

For connection joint of all models

Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)

Connect the piping

- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench in specified torque as stated in the table.



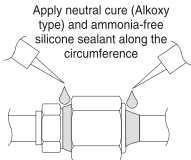
Additional Precautions For R32 Models when connecting by flaring at indoor side

- ❗ Ensure to do re-flaring of pipes before connecting to units to avoid leaking

Seal sufficiently the flare nut (both gas and liquid sides) with neutral cure (Alkoxy type) & ammonia-free silicone sealant and insulation material to avoid the gas leak caused by freezing.

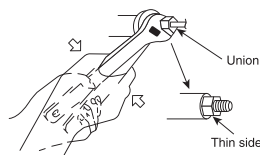
× Use of silicon containing ammonia can lead to stress corrosion on the joint & can cause leakage.

Neutral cure (Alkoxy type) & ammonia-free silicone sealant is only to be applied after pressure testing and cleaning up by following instructions of sealant, only to the outside of the connection. The aim is to prevent moisture from entering the connection joint and possible occurrence of freezing. Curing sealant will take some time. Make sure sealant will not peel off when wrapping the insulation.



- Brazing for piping.
 - Execute brazing before tightening the flare nut.
 - Brazing must be executed while blowing nitrogen gas.
(This prevents generation of oxidized scale in copper pipe.)
- When there is a lot of brazings for long piping, install a strainer midway of the piping. (The strainer is field supplied.)
- Use clean copper pipe with inner wall surface free from mist and dust. Blow nitrogen gas or air to blow off dust in the pipe before connection.
- Form the piping according to its routing. Avoid bending and bending back the same piping point more than three times. (This will result in hardening of the pipe).
- After deforming the pipe, align centers of the union fitting of the indoor unit and the piping, and tighten them firmly with wrenches.
- Connect pipe to the service valve or ball valve which is located below the outdoor unit.
- After completing the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.

Refrigerant is charged to the outdoor unit. For details, see the manual for installation work of outdoor unit. (Additional charging, etc.)



- Confirm the union (thin side) is always at lower direction after connecting piping.

CAUTION Use two wrenches and tighten with regular torque.

VACUUM DRYING

After completing the piping connection, execute vacuum drying for the connecting piping and the indoor unit.
The vacuum drying must be carried out by using the service ports of both the liquid and gas side valves.

| Flare nut fastening torque N•m (kgf•cm) | | | |
|---|----------|-----------|----------|
| ø6.35 mm | 18 (180) | ø12.7 mm | 55 (560) |
| ø9.52 mm | 42 (430) | ø15.88 mm | 65 (660) |

| | | S-1821PF** | S-2430PF** | S-3448PF** |
|--------|---------|--------------|--------------|------------|
| Liquid | mm (in) | ø6.35 (1/4) | ø9.52 (3/8) | |
| Gas | mm (in) | ø12.70 (1/2) | ø15.88 (5/8) | |

4

INDOOR UNIT DRAIN PIPING

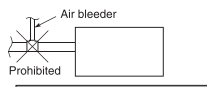
Horizontal Installation

Note

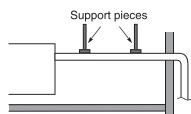
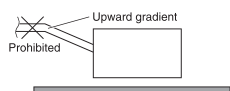
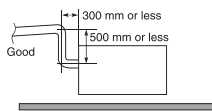
Make sure the drain pipe has a downward gradient (1/100 or more) and that there are no water traps.

CAUTION

- Do not install an air bleeder as this may cause water to spray from the drain pipe outlet.

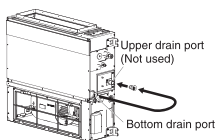


- If it is necessary to increase the height of the drain pipe, the section directly after the connection point can be raised a maximum of 500 mm. Do not raise it any higher than 500 mm, as this could result in water leaks.
- Do not install the pipe with an upward gradient. This will cause the drain water to flow backward and leak when the unit is not operating.
- Do not apply force to the piping on the unit side when connecting the drain pipe. The pipe should not be allowed to hang unsupported from its connection to the unit. Fasten the pipe to a wall, frame, or other support as close to the unit as possible.

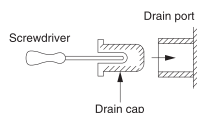


Vertical Installation

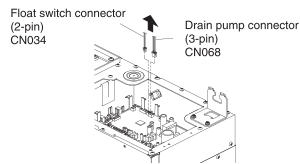
- Replace the drain cap



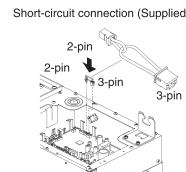
The drain cap can be inserted easily by using a screwdriver or similar tool to push the drain cap into the drain port on the main unit. Push the drain cap into the main unit's drain port until it reaches the end-stop.



- Replace the connectors



When installing the unit vertically, disconnect the connectors of the drain pump (3-pin) CN068 and the float switch (2-pin) CN034 from the PCB.



Insert the supplied short-circuit connection to the place where the connectors were removed.

- Pay attention to the type of connector.
- After switching on the power, invalidate the drain pump and change the heating intake temperature by setting the remote controller.
(For details, see next section How to make drain pump ineffective and changing heating intake temperature.)

5

ADAPT FOR VERTICAL INSTALLATION (CZ-RTC6BLW)

There are some key control settings required to convert the unit to vertical installation



The "Detailed settings" screen will then appear on screen.

Select the unit by pressing the button or button for changes.



Select the "Code no." by pressing the button and press to allow edit.

Change the "Code no." to "3F" by pressing the or button, and press to allow edit.

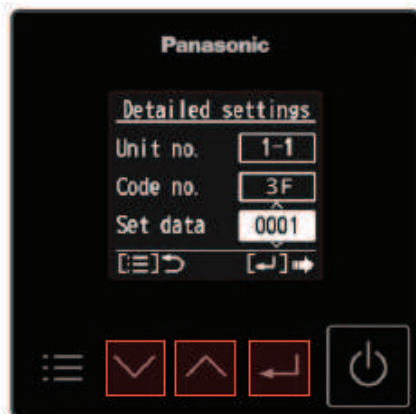


Keep pressing the and simultaneously for 4 or more seconds. This can be done while the controller is in the OFF state.

The "Maintenance func." screen appears on the LCD display.

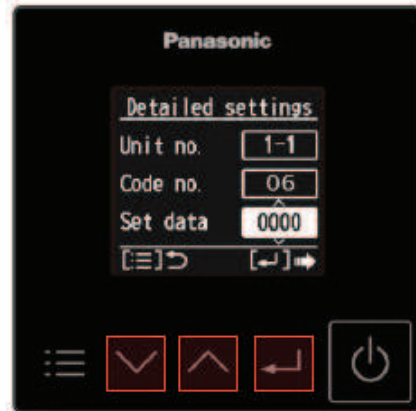


Press the to cycle through the menus until you reach "Detailed settings" and then press to confirm.



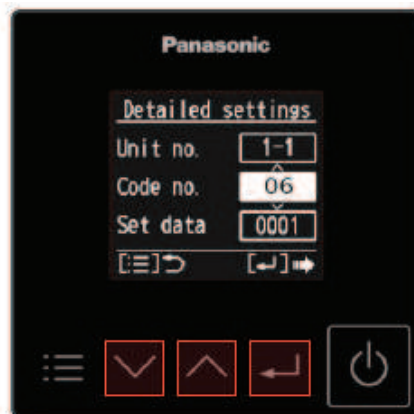
Select the "Set data" by pressing the button and activate ("0007" or "0000" set at shipment).

Change the Set data to "0001" by pressing or button. Press to finalise.



Select the "Set data" by pressing the button. ("0004" set at shipment), and press .

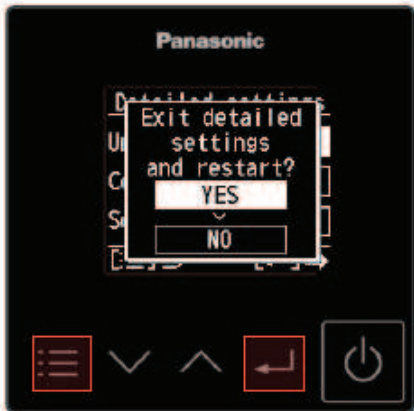
Change the Setting Data "0000" by pressing the or button. Press to finalise.



Select the "Code no." by pressing the button and press to active.

Change the "Code no." to "06" by pressing the or button.

Press to finalise.



Press the button to return.

"Exit detailed settings and restart?" will be displayed.

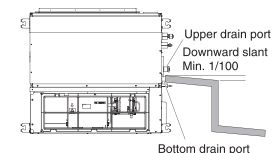
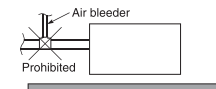
Press to confirm "YES". The unit will restart and the settings will be applied.

Note

Make sure the drain pipe has a downward gradient (1/100 or more) and that there are no water traps.

CAUTION

- Do not install an air bleeder as this may cause water to spray from the drain pipe outlet.



(1) Drain hose connection

- The drain hose is connected below the refrigerant tubing.

Checking the Drainage

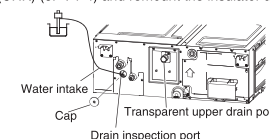
Horizontal Installation Only

After wiring and drain piping are completed, use the following procedure to check that the water will drain smoothly. For this, prepare a bucket and wiping cloth to catch and wipe up spilled water.

- Connect power to the power terminal board (1, 2 terminals) inside the electrical component box.
- Remove the tube cover and slowly pour about 1,200 cc of water through the opening into the drain pan to check drainage.
- Short the check pin (CHK) (6P : 1-4) on the indoor unit control PCB and operate the drain pump. Check the water flow through the transparent upper drain port and see if there is any leakage.

* If the check pin (CHK) (6P : 1-4) is shorted, the fan starts rotating at high speed and could cause injury.

- When the drainage check is complete, open the check pin (CHK) (6P : 1-4) and remount the insulator and the cap onto the drain inspection port.



6

HEAT INSULATION

CAUTION

Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat insulation work leads to water leakage.

HEAT INSULATORS FOR REFRIGERANT TUBES

- Selection of heat insulation materials for refrigerant tube.

When using the heat insulation materials (field supply), kindly check for its sizes and performance.

- Material for insulation material:** Polyethylene foam.
- Heat transfer rate:** less than 0.051 W/m.K.
- Material withstand temperature:** up to 110°C Max.
- Must be easy to use, age resistance and not easily absorb moisture.
- Be sure to match the below insulation material size with tube sizes.

| Piping size, mm (In) | Thermal insulation size (I.D.) | Thermal insulation Thickness |
|----------------------|--------------------------------|--|
| 6.35 (1/4") | 8 ~ 10 mm | Insulation thickness must 10 mm or greater |
| 9.52 (3/8") | 12 ~ 15 mm | |
| 12.70 (1/2") | 14 ~ 16 mm | |
| 15.88 (5/8") | 16 ~ 20 mm | |

- Taping the flare nuts

- Wind the white insulating tape around the flare nuts at the gas tube connections.
- Cover up the tube connection with tube insulator (field supply).

Note

If noise bothers you from the area between indoor and outdoor units' connection pipes, it is effective to wind the soundproofing materials (field supply) to reduce noise.

CAUTION

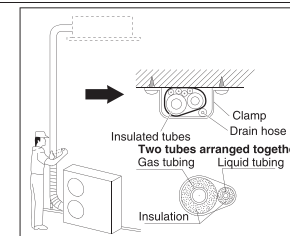
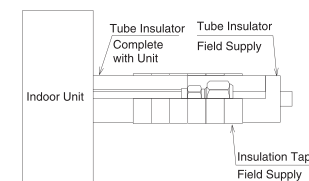
After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.
Never grasp the drain or refrigerant connecting outlets when moving the unit.

- Taping the tubes

- Refrigerant tubes (and electrical wiring if local permit) should be taped together with armouring tape in 1 bundle.
- Keep drain hose separate from refrigerant tube to prevent condensation.
- Wrap the armouring tape from the bottom of the outdoor unit to the tubing where it enters the wall. Overlap half of each previous turn.
- Clamp the tubing to the wall, using 1 clamp approx. per each meter apart.

Note

Do not wind the armouring tape too tightly since this will decrease the heat insulation effect. Also ensure that the condensation drain hose splits away from the bundle and drips clear of the unit and the tubing.





If the exterior of the outdoor unit valves has been finished with a square duct covering, make sure you allow sufficient space to access the valves and to allow the panels to be attached and removed.

PRECAUTIONS IN HIGH HUMIDITY CIRCUMSTANCES

This air-conditioner has been tested according to the "JIS Standard Conditions with Mist" and have been confirmed that there are no faults. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedures:

- Heat insulation material to be prepared. Adiabatic glass wool with thickness 10 to 20 mm.
- Stick the wool on all air-conditioners that are located in ceiling atmosphere.
- In addition to the normal heat insulation (thickness: more than 10 mm) refrigerant piping (gas piping: thick piping) and drain piping, add a further of 10 mm to 30 mm thickness material.

HEAT INSULATORS FOR DRAIN PIPING & DRAIN PIPE INSTALLATION

- Selection of heat insulation materials for drain piping and drain pipe. When using the heat insulation materials (field supply). Kindly use the same size and performance as refrigerant tubes. Check for its sizes as below table:

| Insulation Material | Thermal insulation thickness |
|---|---|
| Polyethylene foam (same as heat insulators for refrigerant tubes) | Insulation thickness must 10mm or greater |

- Prepare standard hard PVC pipe (O.D. 26 mm) for the drain and use the supplied hose band to prevent water leaks. The PVC pipe must be purchased separately.

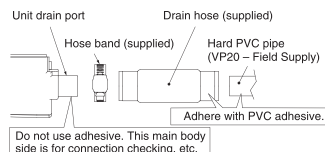
The transparent drain part on the unit allows you to check drainage.



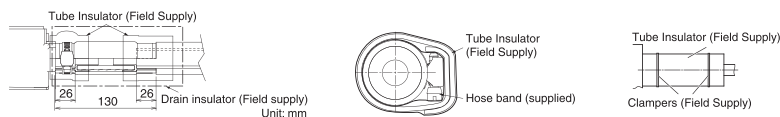
- Do not use adhesive tape at the drain connection port on the indoor unit.
- Insert the drain pipe until it contacts the socket, and then secure it tightly with the hose band.
- Do not use the supplied drain hose bent at a 90° angle. (The maximum permissible bend is 45°.)
- Tighten the hose clamps so their locking nuts face upward.

- Installing the drain hose

- First insert the drain hose (supplied) to the hose band (supplied) and then install the drain hose to the unit drain port.
- Insert until the drain hose bumps to the end.
- Hose band screw torque is 30 - 35 N · cm.
- Connect both the drain hose and PVC pipe (VP20 or similar material, not supplied). Insert until the PVC pipe bumps to the end and adhere with PVC adhesive.

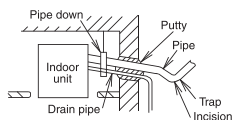


- After connecting the drain pipe securely, wrap the packing (field supply) and drain pipe insulator (field supply) around the pipe, then secure it with the clampers.



WALL SEAL

- When the outdoor unit is installed in a higher position than the indoor unit, install the trap so as not to instill rain water into the wall by transmitting in piping.
- Stuff the space among piping, the electric wire, and the drain hose with "Putty" and seal the penetration wall hole. Make sure that rain water does not instill into the wall.

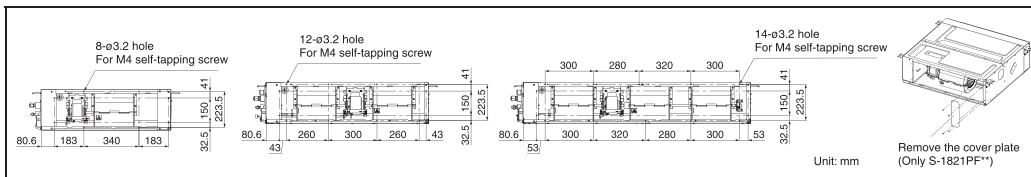


* Put the incision at the trap part of the heat insulator (for water drainage)

7

CONNECTING DUCT TO AIR INTAKE PORT SIDE

- Install the duct (field supply). See the figure for the dimension of the installation hole. Use M4 self-tapping screws for installation.



Note

To get clean air and to extend the service life of the air conditioner, an air filter must be installed in the air intake. For installation and cleaning the air filter, consult your dealer or service center.

8

ELECTRICAL WIRING

As to main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.



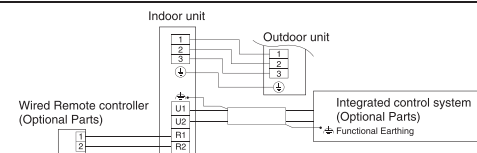
Warning

- This air conditioner must be installed in accordance with national wiring regulations.
- Cables connected to indoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or H05RN-F/H07RN-F or heavier.
- The units must be connected to the supply cables for fixed wiring by qualified technician. Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations. The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3mm in all poles. When the supply cable is damaged, it must be replaced by qualified technician.
- Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.
- Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result.
- Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

- Select a power source that is capable of supplying the current required by the air conditioner.
- Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnect all poles with a contact separation of at least 3 mm.
- Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.
- Be sure to connect the indoor/outdoor unit connection wires correctly to terminal board.
- Be sure to turn off the main power before installing and connecting the remote controller.

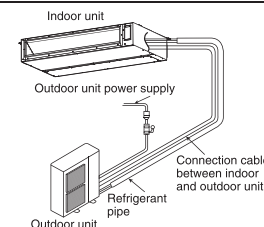
Note

If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (For the system's automatic setting.) Turning off the power supply on the way may cause an abnormal operation.



Note

For Optional Parts connecting wiring size, refer to Installation Manual of the Optional Parts



Make sure that screws of the terminal are securely tightened.



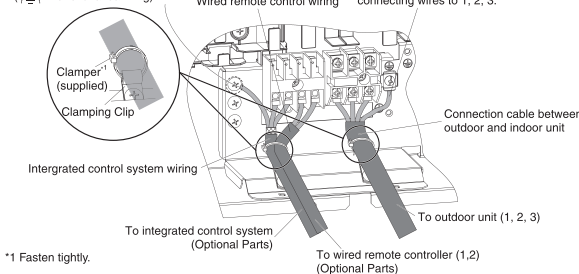
Make sure that screws of the terminal are securely tightened.

Indoor unit wiring

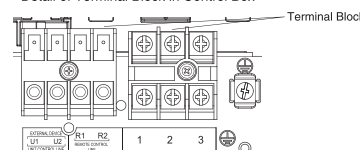
Use this screw when connecting the shield for the integrated control system wiring to ground.

(⚡ : Functional earthing)

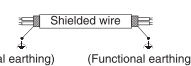
Earth wiring: Make the earth wiring 25 - 30 mm longer than connecting wires to 1, 2, 3.



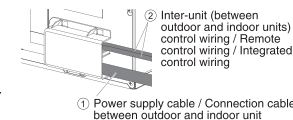
Detail of Terminal Block in Control Box



Use shielded wires for integrated control system wiring and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in Section Indoor Unit Wiring.

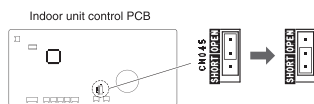


After all of the wires are connected, close the lid of the electrical component box. Make the distance between two cables (① and ②) as shown in the figure to the right.

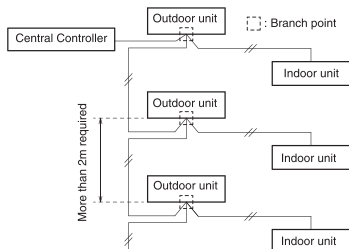


When linking the outdoor units in a network, it is necessary to install the terminating resistance. The installation method of the terminating resistance is different according to the connecting procedure of the inter-unit control wiring in the link.

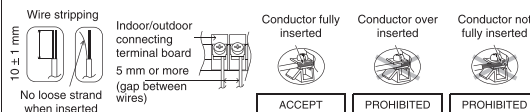
Set the terminating resistance on the indoor unit control PCB.
The setting of the terminating resistance at shipment is OPEN side (inoperative).
If the shorting socket is replaced as shown below, the terminating resistance is SHORT side (operative).
Change the setting of the terminating resistance at the nearest indoor unit and farthest indoor unit from the integrated control system to SHORT side (operative).
The setting of 3 or more terminating resistances to SHORT side (operative) is prohibited.



If branching the inter-unit control wiring, the number of branch points should be 16 or fewer.



WIRE STRIPPING AND CONNECTING REQUIREMENT



This equipment must be properly earthed.

Note:
Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap.
Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reasons.
• Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the cord slipping out of anchorage.

WIRED REMOTE CONTROLLER

I. Installation Instruction



Installation Instructions
Wired Remote Controller

Model No. **CZ-RTC6BLW**

Please Read Before Starting

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

- **This product is a remote controller that comes equipped with Bluetooth® wireless technology.**

NOTICE

The English text is the original instructions. Other languages are translations of the original instructions.

Safety Precautions

We assume no responsibility for accidents or damages resulting from methods other than those described in the Installation Instructions or methods using unspecified parts.
Malfunctions that occur due to unauthorised installation methods are not covered by the product warranty.

- This remote controller must be installed in accordance with National Wiring Regulations.
- Please also read installation instructions of connected devices.
- When relocating or repairing this remote controller, provide the Installation Instructions to the servicing personnel.



WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.



Prohibited matters

Precautions for Installation setup



WARNING

- Turn off the circuit breaker of the units before installation.
- Select an installation location which is rigid and strong enough to support or hold this remote controller, and select a location for easy maintenance.
- Use only the parts specified by Panasonic as supplied accessories.
- Ensure cables are installed properly so that external forces cannot affect them.
- Disassembly and modification of this remote controller is not permitted under any circumstances.



WARNING

- This remote controller must be installed by the sales dealer or installer.
- When installing the remote controller, use appropriate protective equipment and tools for safety.
- This remote controller should be securely installed in accordance with the Installation Instructions.
- Electric work must be performed by authorised personnel in accordance with the local regulations and in accordance with the Installation Instructions.
- To avoid malfunctions caused by radio wave interference, keep the remote controller away from devices such as other wireless device, microwaves and the device that use 2.4 GHz signal. Depending on the area, the module may not be available.
- Attach the electrical cover to the indoor unit securely.
- Make sure to connect the remote controller to the P.C. board and terminal board of the indoor unit properly.
- Do not set up in hospitals or places where electronic medical devices are located.
- If you have a cardiac pacemaker or implantable cardioverter defibrillator, please keep at least 15 cm away from the remote controller.
- Do not use the remote controller near to automatic control equipment (automatic door, fire alarms, etc.).
- In case of an abnormal condition (such as a burning smell), stop the indoor unit and turn the breaker OFF.
- Do not operate with wet hands.
- Do not splash water on the remote controller or use it in the bathroom.



CAUTION

- Ground yourself to discharge static electricity before performing any wiring.
- Do not install the remote controller in places with direct sunlight or where the ambient temperature is 40 °C or more or is 0 °C or less. Follow specifications. (P.5)
- The connecting cable must not touch piping directly.
- Do not set up where children can reach the remote controller.
- Do not stand on an unstable surface when operating or checking the remote controller.
- Do not use in special environments.
Use in places with much oil (including machine oil), steam, flammable or corrosive gas, voltage fluctuation, surrounding the metal body, may lead to severe decrease in functionality and damage to parts.
- Do not use the remote controller nearby other wireless devices, microwaves, cordless phones, or facsimiles.

NOTE

- Install this remote controller vertically.
- When attaching this remote controller, be sure to use the supplied screws and confirm that remote controller is fixed to the surface so that there are no gaps.

NOTE

- The warranty does not cover the product if it falls from an elevated location.
- Please write down the model information, etc., in "Setting Information" in the Operating Instructions when you install the remote controller.
- Requires a mobile device that is iOS/Android™ compatible.
- The End user should read and accept the Terms of use and Privacy Notice in the contents of "Panasonic H&C Control App".
- Please avoid to set up multiple remote controller registrations at the same time.
- Users are responsible for all carrier costs associated with installing the "Panasonic H&C Control App" on the mobile device.
- Panasonic Wired Remote Controller is designed for communication to the "Panasonic H&C Control App".
- Third party Bluetooth® interfaces cannot be connected to the "Panasonic H&C Control App".
- Updates to the service may mean there are changes to the design of the "Panasonic H&C Control App" screen and display.

1. Specifications

| | | |
|--|--------------|---|
| Model No. | | CZ-RTC6BLW |
| Dimensions | | (H) 86 mm × (W) 86 mm × (D) 25 mm |
| Weight | | 0.10 kg |
| Temperature/Humidity range | | 0 °C to 40 °C / 20% to 80% (No condensation) *Indoor use only. |
| Power Source | | DC16 V (supplied from indoor unit) |
| Clock | Precision | ± 30 seconds/month (at normal temperature 25 °C) *Adjust periodically. |
| | Holding time | 24 hours (When fully charged) (at normal temperature 25 °C) *Approx. 8 hours are required for full charge. |
| Number of connected indoor units | | Indoor unit: Up to 8 units (Within group-controlling) |
| OS version on the mobile device for "Panasonic H&C Control App" | | iOS: 10.0 or later Android™: 6.0 or later |
| Bluetooth® version | | 4.2 or later |
| OS version on the mobile device for "Panasonic Comfort Cloud"app | | iOS: 9.0 or later Android™: 4.4 or later |

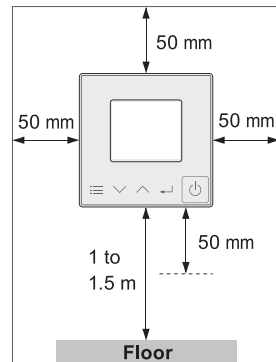
- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license. Other trademarks and trade names are those of their respective owners.
- iOS is the name of the OS of Apple Inc. iOS is a trademark or registered trademark of Cisco in the US and other countries which has been licensed for use.
- Apple and the Apple logo are trademarks of Apple Inc. that are registered in the US and other countries. App Store is a service mark of Apple Inc.
- Android™, Google Play™ and Google Play™ logos are registered trademarks of Google LLC.

Maximum radio-frequency power transmitted in the frequency bands

| Type of wireless | Frequency band | Max EIRP (dBm) |
|----------------------------|-----------------|----------------|
| Bluetooth® functionality | 2402 - 2480 MHz | 6.7 dBm |
| Wireless LAN functionality | 2412 - 2472 MHz | 20 dBm |

2. Installation Precaution

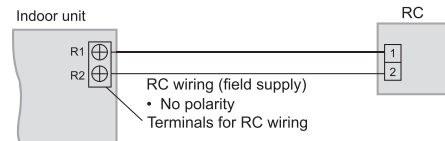
Installation location



- Install at the height of 1 to 1.5 m from the floor (Location where average room temperature can be detected).
- Keep a space around the remote controller as detailed on the figure shown left.
- Avoid the following locations for installation.
 - In the shadow or backside of objects deviated from the room airflow
 - Location where condensation occurs (The remote controller is not moisture proof or drip proof)
 - Location near heat source
- Keep distance of 1 m or more from the TV, radio and PC. (Image blur or related noise may occur)
- Do not use in special environments. Use in places with much oil (including machine oil), steam, flammable or corrosive gas, voltage fluctuation, surrounding the metal body, may lead to severe decrease in functionality and damage to parts.

Remote control wiring

Wiring diagram

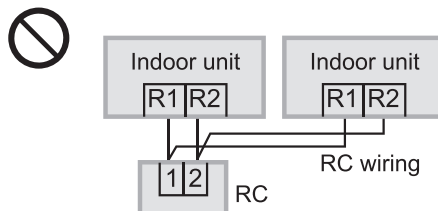


- Type of wiring
 - Use cables of 0.75 to 1.25 mm².
- Total wire length: 100 m or less
- Number of connectable units
 - Remote controller: 1 unit connection only
 - Indoor unit: Max. 8

Attention

- Use the field supplied RC wiring with at least 1 mm in thickness of insulation part including the sheath. Wiring Regulations may differ depending on location. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES. You must ensure that installation complies with relevant rules and regulations.
- Be careful not to connect cables to other terminals of indoor units (e.g. power source wiring terminal). Malfunction may occur.
- Do not bundle together with the power source wiring or store in the same metal tube. Operation error may occur.
- If noise is induced to the unit power supply, attach a noise filter.

Wiring as shown below is prohibited.



3. Mounting

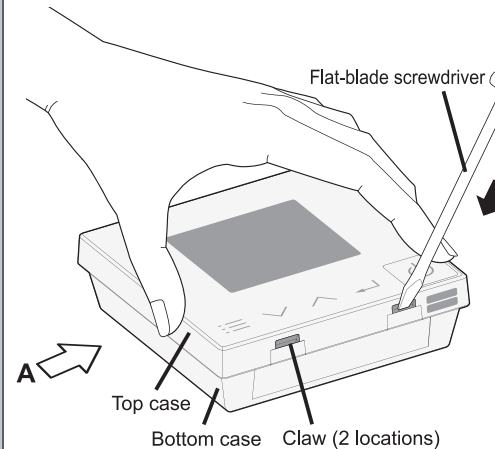
1 Remove the top case.

① Insert the screwdriver to the bottom case.

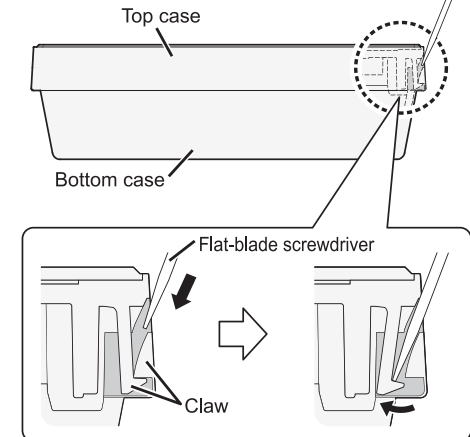
Insert the flat-blade screwdriver to the claws as show in the figure.

② Push the flat-blade screwdriver in.

Push down the flat-blade screwdriver along with the slope of the claws until the top case comes off.



View A



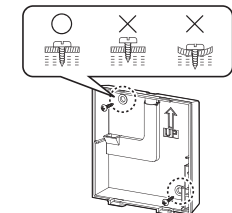
2 Mount to the wall.

There are 2 types of wall-mounting methods: Exposed type and Embedded type.

Attention

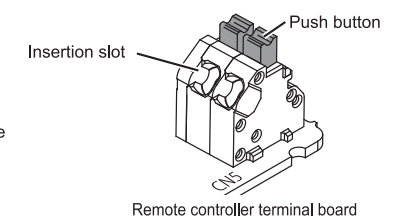
Mounting the bottom case

- Tighten the screws securely until the screw heads touch the bottom case. (Otherwise, loose screw heads may hit the PCB and cause malfunction when mounting the top case.)
- Do not over-tighten the screws. (The bottom case may be deformed, resulting in the unit becoming detached from the surface it is fixed to.)



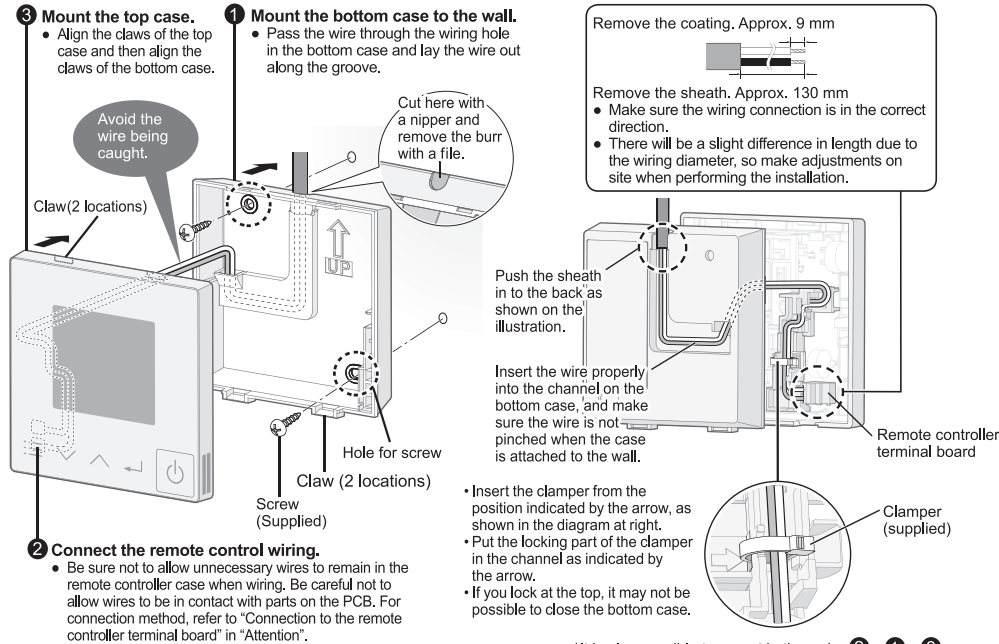
Connection to the remote controller terminal board

- Depress the push button using a round bar or finger, insert the remote control wiring securely from the wiring insertion slot and release the push button.
- Pull the remote control wiring lightly, and confirm it is secured.
- There is the danger of shorting if copper wire is exposed. Make sure the wire is properly inserted.



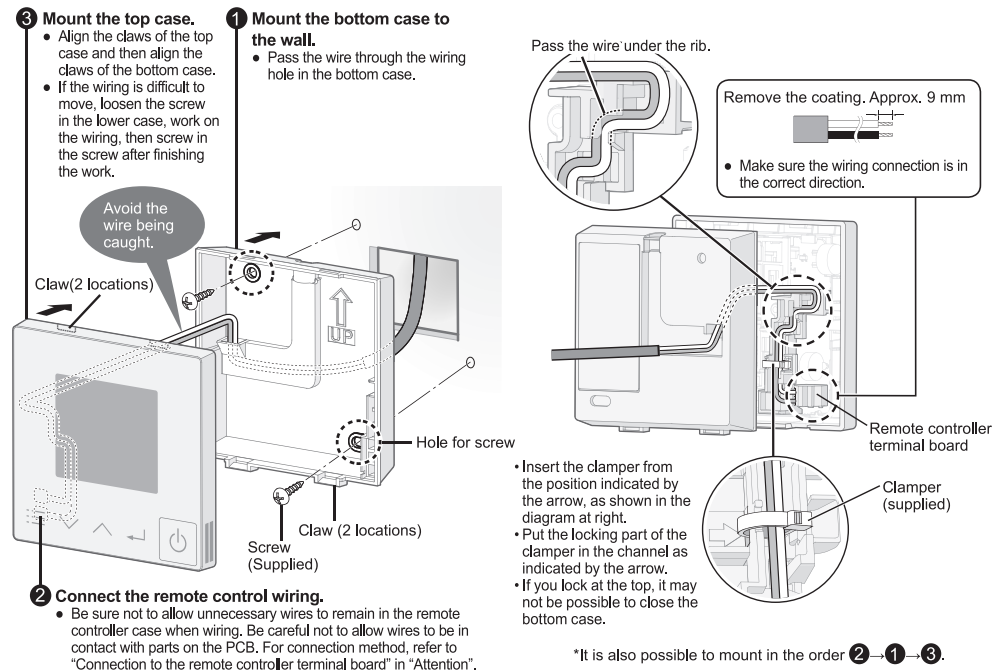
Exposed type

A protective film is attached on the Control panel.



Embedded type

A protective film is attached on the Control panel.



II. Safety Precautions



WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.



Matters to be observed



Prohibited matters



WARNING



Do not use this appliance in a potentially explosive atmosphere.

In case of malfunction of this appliance, do not repair by yourself. Contact the sales or service dealer for repair and disposal.



In case of emergency, remove the power plug from the socket or switch off the circuit breaker or the means by which the system is isolated from the mains power.



CAUTION



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. <for European market only>

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

This equipment is not suitable for use in locations where children are likely to be present.



- Do not operate with wet hands.
- Do not wash with water.

[General precautions for ECONAVI]

WARNING

- Do not use the ECONAVI function in a room with disabled persons or infants only. Due to their limited motions, the ECONAVI sensor may judge no person is present, causing the indoor unit to stop the operation.

[General precautions for Bluetooth® functionality]

⚠ WARNING

- Do not use the remote controller where pacemaker users may be around. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause pacemakers to malfunction and lead to an accident.
- Do not use the remote controller near electrical medical devices. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause these devices to malfunction and lead to an accident.
- Do not use the remote controller near automatic doors, fire alarms, or other automatically controlled devices. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause these devices to malfunction and lead to an accident.

⚠ CAUTION

- This product is permitted for use only in the country where it was purchased.
- This product uses signals in the 2.4 GHz band.
 - Signals in the 2.4 GHz band are used by medical devices, other similar devices, and nonlicensed amateur radio stations (hereafter referred to as other radio stations).
 - Before using this product, make sure there are no other radio stations in the vicinity.
 - If a radio interference occurs between this product and other radio stations, move the product or stop using the product (turn off Bluetooth® functionality).
 - If problems with radio interference occur, consult the dealer from which the product was purchased.
- Keep an appropriate distance between the product and radio-emitting devices, such as cordless phones, microwave ovens, and wireless LANs, to prevent Bluetooth® interference from these devices that can affect normal operation and performance of the product.
- The following actions may be punishable by law.
 - Disassembling or alteration of this product
 - Removal of certification labels
- The maximum line-of-sight distance of this product is 10 meters. This distance will be shorter when obstacles or people are in the path of radio waves or radio interference from appliances (e.g., microwave ovens) exists.

[General precautions for Wireless LAN functionality]

- The wireless LAN coverage must include the remote controller installation location.
- Please ensure that the router supports WPA2-PSK (TKIP/AES) encryption.
- To complete connection of this remote controller to the wireless network service the router may be required.
- The End user should read and accept the Terms of use and Privacy Notice in the contents of "Panasonic Comfort Cloud" app.
- There is a risk of unauthorised operation if a vulnerable password is set for the wireless router.
- Users are responsible for all costs associated with downloading and using the "Panasonic Comfort Cloud" app and the remote controller, including without limitation all fees charged by your Device carrier and internet service provider and any other wireless LAN or data access charges.
- Panasonic remote controller is designed for communication to the "Panasonic Comfort Cloud" app.
- Third party wireless LAN interfaces cannot be connected to the "Panasonic Comfort Cloud" app.
- Updates to the service may mean there are changes to the design of the "Panasonic Comfort Cloud" app screen and display.

[Precautions for using mobile device application]

- When operating an air conditioner from a remote controller located outside the visibility of the air conditioner, make sure that the operation of the air conditioner will not negatively affect its surroundings or the occupants beforehand.
- When occupants include children, elderly people, people with ailments, or people with disabilities, make sure the product is used in the presence of a capable, supervising adult.
- When one or more people are in a room with an air conditioner, let them know beforehand that the air conditioner is going to be operated from a remote controller located outside the visibility of the air conditioner.
- Children should be supervised or instructed to stay away from the product.
- Poor radio-wave conditions due to an existence of obstacles or radio-emitting devices, such as a microwave oven, in the vicinity of the product can lead to a non-response error. Periodically check the operating conditions of the product.
- Regarding Bluetooth® functionality, the maximum line-of-sight distance of this product is 10 meters. Obstacles in the path of radio waves can shorten this distance. If a problem occurs, remove the obstacles or shorten the distance between this product and the connected device.
- It is recommended to lock the mobile device screen to prevent inadvertent operation of the air-conditioning system.



Declaration of Conformity (DOC)

Hereby, "Panasonic Corporation" declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address:
<http://www.ptc.panasonic.eu/>

Authorized Representative: Panasonic Testing Centre, Panasonic Marketing Europe GmbH, Winsbergring 15, 22525 Hamburg, Germany

Norway: There are usage restrictions within a radius of 20 km from the centre of Ny-Alesund on Svalbard.

Maximum radio-frequency power transmitted in the frequency bands

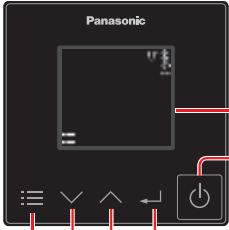
| Type of wireless | Frequency band | Max EIRP (dBm) |
|----------------------------|-----------------|----------------|
| Bluetooth® functionality | 2402 - 2480 MHz | 6.7 dBm |
| Wireless LAN functionality | 2412 - 2472 MHz | 20 dBm |

- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license. Other trademarks and trade names are those of their respective owners.
- iOS is the name of the OS of Apple Inc. iOS is a trademark or registered trademark of Cisco in the US and other countries which has been licensed for use.
- Apple and the Apple logo are trademarks of Apple Inc. that are registered in the US and other countries. App Store is a service mark of Apple Inc.
- Android™, Google Play™ and Google Play™ logos are registered trademarks of Google LLC.

1. Part Names

Control panel / Top screen

④When stopped



Appears when ECONAVI is being set to ON.

Under operation of nanoe™ X

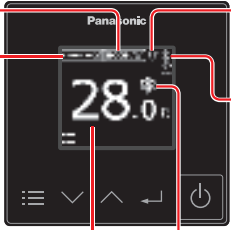
LCD screen

Start/Stop button
Starts/Stops operation.

Enter button
Fixes the selected content.

Up/Down buttons
Selects an item.

④When operating



Connected to a wireless LAN network via a router (P.9)*

Connected with a mobile device via Bluetooth® functionality (P.7)*

Set temperature

Operation mode

Menu button

- When pressed repeatedly during operation, this shows operating status confirmation, set temperature, operation mode, fan speed, flap, and the menu screen.
- When pressed while stopped, the menu screen is displayed.

* The Bluetooth® functionality and Wireless LAN functionality cannot be used simultaneously.

Note



Press centre



No glove



No pen

2. Language/Clock

Steps 1 and 2 are common operations for each item.

1 Display the menu screen.

④When stopped

Press

④When operating

Press repeatedly until the menu screen is displayed.

- To return to the top screen, press .



2 Select the item to set.

Press .



Total number of items

Number for the selected item

Language

3 Select the language to display from among 7 languages shown on the right

Press .
(Press to finish.)

- Default setting: ENGLISH



ENGLISH
↓
РУССКИЙ
↓
POLSKI
↓
ESPAÑOL
↓
ITALIANO
↓
DEUTSCH
↓
FRANÇAIS

Clock

3 Set the present date and time.

Press → .
(Repeat) (Press to finish.)

[→] appears in situations where the clock is reset, such as when power is not supplied to the remote controller for 24 hours or more.



3. Bluetooth® settings

Before use, confirm the version of the OS on the mobile device and the Bluetooth® version (P.14), and install the "Panasonic H&C Control App" onto the mobile device. In addition, be sure to read the "General precautions for Bluetooth® functionality" (P.4).

Panasonic H&C Control App

You can use the "Panasonic H&C Control App" on your mobile device to operate the air conditioning unit, make detailed settings for functions such as the energy saving function, etc.

④ Functions that can be set with the "Panasonic H&C Control App" (some examples)

※ Weekly timer*1

※ Energy saving operation On/Off

※ Power consumption monitor*2

※ Rotation and Backup functions*3

*1 This is not synchronised with the Weekly timer set with the "Panasonic Comfort Cloud" app.

*2 Supported only by models that support the power consumption monitor

*3 Rotation operation is available only when there is a control group of 2 PAC systems (each system being a combination of 1 outdoor unit and 1 indoor unit).

④ Installing the "Panasonic H&C Control App"

For iOS user

- Open App Store
- Search for "Panasonic Comfort Cloud" app.
- Download and install.

For Android™ user

- Open Google Play
- Search for "Panasonic Comfort Cloud" app.
- Download and install.

- The "Panasonic H&C Control App" is free, but the communication fees for downloading it and updating it are at the customer's expense.
- The "Panasonic H&C Control App" screen may change without notice due to updates.
- Functions are not displayed in the "Panasonic H&C Control App" screen if the air conditioner does not support them.
- The screen operations are the same on iOS and Android™. The iOS screen has been used in the examples.

Bluetooth® functionality

① Display the menu screen.

④ When stopped

Press .

④ When operating

Press repeatedly until the menu screen is displayed.

- To return to the top screen, press .



③ Select [Enable/disable].

Press → .



② Select [Bluetooth].

Press → .



④ Select [Enable].

Press → .

(Press twice to finish.)
• [Enable] cannot be set for the Bluetooth® functionality and Wireless LAN functionality simultaneously.



To disable Bluetooth® functionality

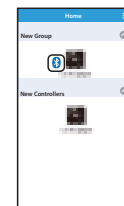
1. Start with Step 1 and select [Disable] in Step 4.
2. Press .
3. Press twice to finish.

Connecting with the "Panasonic H&C Control App"

Before connecting, set Bluetooth® functionality to [Enable] on the remote controller. (Step 4 on page 6)
When connecting, try getting the mobile device as close as possible to the remote controller.

① Start the "Panasonic H&C Control App".

- Remote controllers in the vicinity are displayed on the Home screen.
- Remote controllers that have been paired have "Bluetooth" displayed to the left.

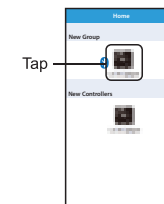


② Select the remote controller you want to operate.

④ Mobile device

Tap .

- If the remote controller is not displayed, slide down to update and the remote controller is detected.

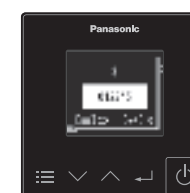


④ When making a Bluetooth® connection for the first time, go to Step 3.

④ For the second and subsequent Bluetooth® connections, go to Step 5.

③ Confirm the numbers on the mobile device match the 6 digits on the remote controller.

- If the numbers do not match, check the remote controller you want to connect again. (Step 2)



④ Start Connecting.

④ Mobile device ④ Remote controller

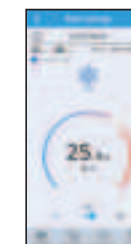
Tap "Pair".

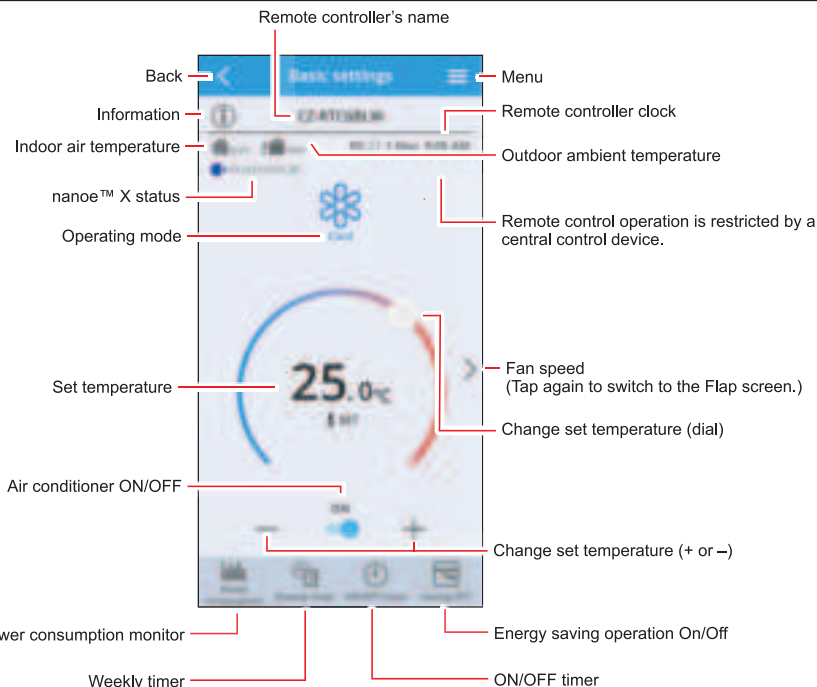
Press .



⑤ Confirm that the Bluetooth® connection is completed.

"Bluetooth" is displayed on the top screen when the Bluetooth® connection is established. Once this step is complete, subsequent connections will be made automatically.





④ datanavi

This unit supports datanavi.
For details on the usage, supporting regions, etc., visit the following URL.
<https://datanavi.ac.smartcloud.panasonic.com/global/>



4. Wireless LAN settings

Before use, confirm the version of the OS on the mobile device (P.14), and install the "Panasonic Comfort Cloud" app onto the mobile device. In addition, be sure to read the "General precautions for Wireless LAN functionality" (P.4).

"Panasonic Comfort Cloud" app

You can use the "Panasonic Comfort Cloud" app on your mobile device to control the air conditioner when you are out and about.

④ Functions that can be set with the "Panasonic Comfort Cloud" app

※ Operation start/stop, Operation mode, Set temperature, Fan speed, Flap

※ Weekly timer*¹

※ Statistics*²

*¹ This is not synchronised with the Weekly timer set with the "Panasonic H&C Control App".

*² The data for Statistics is collected on and managed by a Panasonic server. The power consumption data in particular may possibly show a difference to the data shown on the "Panasonic H&C Control App".

④ Installing the "Panasonic Comfort Cloud" app

For iOS user

- Open App Store
- Search for "Panasonic Comfort Cloud" app.
- Download and install.

For Android™ user

- Open
- Search for "Panasonic Comfort Cloud" app.
- Download and install.

- You need to login with your Panasonic ID to use the "Panasonic Comfort Cloud" app. (P.14)
- There is no charge for using the "Panasonic Comfort Cloud" app. However, other charges may be incurred for connection and operation.
- The "Panasonic Comfort Cloud" app screen may change without notice due to updates.
- The screen operations are the same on iOS and Android™.
- The remote controller is available for use with all indoor units of commercial air conditioners released in April 2020 and after (PACI NX series and subsequent series) with names which start with "S-" except S-80/125MW1E5*³.
- *³ As of October 2020

Wireless LAN Functionality

① Display the menu screen.

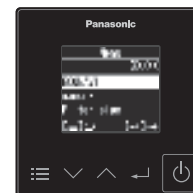
④ When stopped

Press

④ When operating

Press repeatedly until the menu screen is displayed.

- To return to the top screen, press .



③ Select [Enable/disable].

Press → .



To disable Wireless LAN functionality

1. Start with Step 1 and select [Disable] in Step
2. Press .
3. Press twice to finish.

Note

- Depending on the type of indoor unit, the display shown on the right may appear.

② Select [WLAN].

Press → .

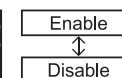


④ Select [Enable].

Press → → .

(Press twice to finish.)

- [Enable] cannot be set for the Bluetooth® functionality and Wireless LAN functionality simultaneously.



Connecting network

At first, set Wireless LAN functionality to [Enable]. (P.9)
Establish network connection to the internet via Wireless mode.

④ Before setting

- Confirm the wireless router is connected to the network and the router has access to the internet.
- Confirm the Wireless LAN of the mobile device is activated.
- Mobile device and air conditioner should be connected to the same wireless LAN.
- Ensure Wireless LAN is broadcasting SSID.

④ Setting flow

You will need to operate both the remote controller and the "Panasonic Comfort Cloud" app to perform these settings.

- 1 Start the "Panasonic Comfort Cloud" app (Step 1)
- 2 Connect wirelessly with a router (Step 2 - Step 5)
- 3 Register the information for the air conditioner on the server (Step 6 - Step 7)

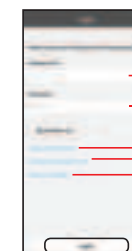
< 1 Start the "Panasonic Comfort Cloud" app >

1 Start the "Panasonic Comfort Cloud" app and login.

- If you do not have a Panasonic ID, create one and then login. (Refer to "To create new Panasonic ID" (P.14) for details.)

④ Mobile device

Enter the information required for login and tap "Login".



- Panasonic ID
- Password
- Reset Panasonic ID / Password
- Register for new Panasonic ID (P.14)
- Start a demonstration

2 Add new air conditioner device.

< 2 Connect wirelessly with a router >

- The air conditioner needs to be registered before using “Panasonic Comfort Cloud” app.

① At My Home screen, tap “+” to add new product.

④ Mobile device

Tap “+”.



② Select the “Commercial air conditioner” and choose the “Wired Remote controller”.

④ Mobile device

Tap “Commercial air conditioner”.



Tap “Wired Remote controller”.



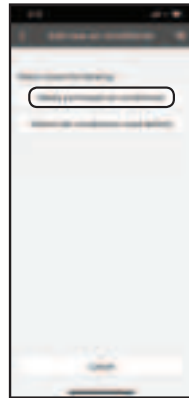
③ Tap “Start” to begin the connection setup.

④ Mobile device

Tap “Start”.



Then, tap “Newly purchased air-conditioner”.



3 Make the settings for network connection.

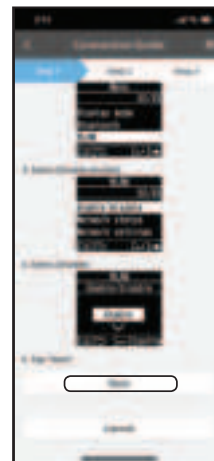
① After confirming that the Wireless LAN functionality on the remote controller is set to [Enable] (P.9), tap “Next”.

④ Remote controller

Follow the instructions on the app screen.

④ Mobile device

Tap “Next”.



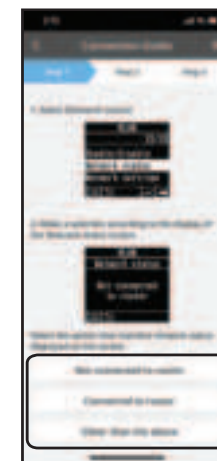
② Select the option that matches the status displays on the remote controller screen.

④ Remote controller

Follow the instructions on the app screen.

④ Mobile device

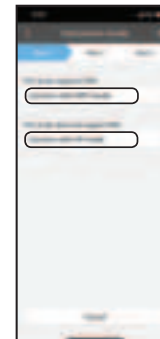
Tap to select the option.



③ Select the preferred router support connectivity mode.

④ Mobile device

Tap to select the option.



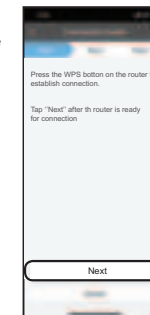
④ Connect to the network using WPS mode.

1. Press the WPS button on the router to establish connection.

2. Tap “Next” after the router is ready for connection.

④ Mobile device

Tap “Next”.



Note

- If the remote controller screen does not change to “Connected to router”, check the wireless LAN router connections.

④ This completes the settings for connecting to the router. Go to Step 6 to continue making the settings.

4 Connect to the network using AP mode.

For iOS 11.0 or later and Android™ 4.4 or later only

① Make the remote controller operate in Manual mode.

④Remote controller

Follow the instructions on the app screen.

④Mobile device

Confirm that “Operating in Manual mode” is displayed, then tap “Next”.



② Join to connect to the “Panasonic-CZ-C-wirelessAP” network.

④Mobile device

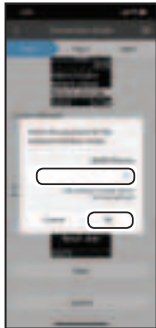
(First time only)
Tap “Allow While Using App”. Then, tap “Join”.
(Subsequent connections)
Tap “Join”.



③ Enter the password of the selected wireless router and continue.

④Mobile device

Enter the password, then tap “OK”.

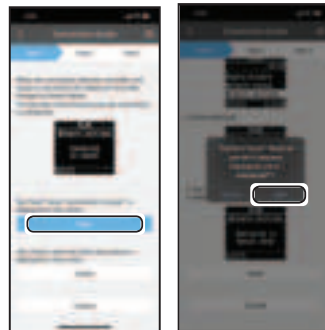


④ When the network connection to the router is successful, “Connected to router” is displayed on the remote controller screen.

- It may take some minutes for the connection to be established.

④Mobile device

Tap “Next”. Then, tap “Join”.



Note

- If “Connected to router” is displayed on the remote controller, connect the mobile device to wireless router. (return to this application after completing the wireless network settings to continue the setup)
- If the remote controller screen does not change to “Connected to router”, check the wireless LAN router connections.

④This completes the settings for connecting to the router. Go to Step 6 to continue making the settings.

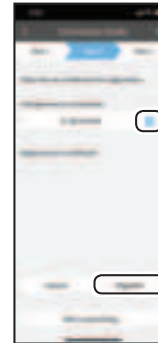
< 3 Register the information for the air conditioner on the server >

5 Select the air conditioner and set the password.

① Select the air conditioner model to register the device.

④Mobile device

Tap the indoor unit model number to register. Then, tap “Register”.



② Make the remote controller operate registration mode.

④Remote controller

Follow the instructions on the app screen.

④Mobile device

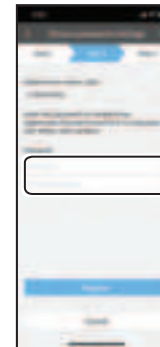
Tap “Next”.



③ Set a password for new air conditioner model to complete the registration. Password must be between 8-15 characters with letters and numbers.

④Mobile device

Tap and enter the password. Then, tap “Register”.



Note

- Keep the password for future use with additional user registrations.

6 Complete registration.

Once connection is established between the app and the new air conditioner, set a preferred name for this air conditioner to help identify it.

- By registering the new name of air conditioner, the function of "Panasonic Comfort Cloud" app is ready to be used.

④**Mobile device**

Tap and enter the name. Then, tap "Register".


④**Remote controller**

Press .

(Press twice to finish.)

- In addition to operation control, this application can monitor the estimated energy consumption and perform comparisons for different time frames by referring to the statistic's graph.



"" is displayed on the top screen of the remote controller when network settings are completed. The network information and air conditioner information are saved in the Wireless LAN module, so even if the power of the remote controller is lost due to a power failure, the connection with the network is automatically re-established using the saved information when power is restored.

Note

- Confirm the "Panasonic Comfort Cloud" app's screen connectivity status before or during operation, if the status is not reflected, use in-house remote controller to operate.

④**To create new Panasonic ID**

If you do not have a Panasonic ID, create one and then login. Use "Panasonic Comfort Cloud" app as an option to control the air conditioner.

- For new user, select "Create new Panasonic ID" to register. Password must be 8-16 characters with letters and numbers. You can input the following characters. (As of October 2020)

| | |
|---|--|
| Numeric characters | 0123456789 |
| Alphabetical characters (upper and lower cases) | ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz |
| Symbols | ~'!@#%&*'()-_+={}[] |

- For registered user, login using your Panasonic ID and password.

Note

- It is recommended that the password be changed periodically.



Specifications

| | | |
|--|---------------------|--|
| Model No. | | CZ-RTC6BLW |
| Dimensions | | (H) 86 mm x (W) 86 mm x (D) 25 mm |
| Weight | | 0.10 kg |
| Temperature/Humidity range | | 0 °C to 40 °C / 20% to 80% (No condensation) * Indoor use only. |
| Power Source | | DC16 V (supplied from indoor unit) |
| Clock | Precision | ± 30 seconds/month (at normal temperature 25 °C) * Adjust periodically. |
| | Holding time | 24 hours (When fully charged) (at normal temperature 25 °C) * Approx. 8 hours are required for full charge. |
| Number of connected indoor units | | Indoor unit: Up to 8 units (Within group-controlling) |
| OS version on the mobile device for "Panasonic H&C Control App" | | iOS: 10.0 or later Android™: 6.0 or later |
| Bluetooth® version | | 4.2 or later |
| Wireless LAN standard | | IEEE 802.11 b/g/n |
| Frequency range | | 2.4 GHz band |
| Encryption | | WPA2-PSK (TKIP/AES) |
| OS version on the mobile device for "Panasonic Comfort Cloud" app | | iOS: 9.0 or later Android™: 4.4 or later |