INSTALLATION INSTRUCTIONS

Air Conditioner

Panasonic®

This air conditioner uses the refrigerant R32.

Model No.

Indoor Units						
Type	Rated Capacity	20	25	36	50	60
	Indoor Units Type					
Y3	4-Way Cassette 60 × 60	S-M20PY3E	S-25PY3E	S-36PY3E	S-50PY3E	S-60PY3E
		(CZ-KPY4)*				

* Panel (optional parts)

ENGLISH
Read through the Installation Instructions before you proceed with the installation.
In particular, you will need to read under the “IMPORTANT!” section at the top of the page.

IMPORTANT!
Please Read Before Starting

This air conditioner must be installed by the sales dealer or installer.
This information is provided for use only by authorized persons.

For safe installation and trouble-free operation, you must:

- This Installation Instructions is for the indoor unit and read the Installation Instructions of the outdoor unit as well.
- Carefully read this instruction booklet before beginning.
- This air conditioner is required to have the remote controller which is adaptable to nanoe™ X function.
- Follow each installation or repair step exactly as shown.
- This air conditioner shall be installed in accordance with National Wiring Regulations.
- That compliance with national gas regulations shall be observed.
- The product meets the technical requirements of EN/IEC 61000-3-3.
- Pay close attention to all warning and caution notices given in this manual.

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.

If Necessary, Get Help

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.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- The following checks shall be applied to installations using flammable refrigerants.

  Appliance shall be installed, operated and stored in a room with a floor area larger than [Amin] m^2.

  As for [Amin], see Section “12. CHECK OF DENSITY LIMIT”.

SPECIAL PRECAUTIONS

WARNING When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death.**
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.
- Provide a power outlet to be used exclusively for each unit.
- Provide a power outlet exclusively for each unit, and full disconnection means having a contact separation by 3 mm in all poles must be incorporated in the fixed wiring in accordance with the wiring rules.
- To prevent possible hazards from insulation failure, the unit must be grounded.

- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.
  The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
- This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown.

When Transporting

- It may need two or more people to carry out the installation work.
- Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Storing…

⚠ WARNING

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- The appliance shall be stored in a room without continuously operating open flames (for example: an operating gas appliance) and ignition sources (for example: an operating electric heater).

- The appliance shall be stored so as to prevent mechanical damage from occurring.

When Installing…

- Select an installation location which is rigid and strong enough to support or hold the unit, and select a location for easy maintenance.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- An unventilated area where the appliance using flammable refrigerants is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard.

…In a Room

Properly insulate any tubing run inside a room to prevent “sweating” that can cause dripping and water damage to walls and floors.

⚠ CAUTION Keep the fire alarm and the air outlet at least 1.5 m away from the unit.

…In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

…In an Area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

…In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

…At least 2.2 m

Installation height for indoor unit shall be at least 2.2 m.

…In laundry rooms

Do not install in laundry rooms. Indoor unit is not drip proof.

When Connecting Refrigerant Tubing

Pay particular attention to refrigerant leakages.

⚠ WARNING

- When performing piping work, do not mix air except for specified refrigerant in refrigeration cycle. It causes capacity down, and risk of explosion and injury due to high tension inside the refrigerant cycle.
- If the refrigerant comes in contact with a flame, it produces toxic gases and fire.
- Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury, etc.

- Ventilate the room immediately in the event of a refrigerant gas leakage during installation. Be careful not to allow contact of the refrigerant gas with a flame as this will cause the generation of toxic gases and fire.
- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.
- Do not leak refrigerant while piping work for an installation or re-installation, and while repairing refrigeration parts.
  Handle liquid refrigerant carefully as it may cause frostbite.
- Under no circumstances shall potential sources of ignition be used in the searching or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used.
- Electronic leak detectors may be used to detect refrigerant leaks but, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
- Leak detection equipment shall be set at a percentage of the lower flammable limit (LFL) of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed.
- Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
- If a leak is suspected, all naked flames shall be removed/extinguished.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

When Servicing

- Contact the sales dealer or service dealer for a repair.
- Be sure to turn off the power before servicing.
- Turn the power OFF at the main power box (mains), wait at least 5 minutes until it is discharged, then open the unit to check or repair electrical parts and wiring.

- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit.

⚠ WARNING

- This product must not be modified or disassembled under any circumstances. Modified or disassembled unit may cause fire, electric shock or injury.
- Do not clean inside the indoor and outdoor units by users. Engage authorized dealer or specialist for cleaning.
- In case of malfunction of this appliance, do not repair by yourself. Contact the sales dealer or service dealer for a repair and disposal.

⚠ CAUTION

- Ventilate any enclosed areas when installing or testing the refrigeration system. Leaked refrigerant gas, on contact with fire or heat, can produce dangerously toxic gases.
- Confirm after installation that no refrigerant gas is leaking. If the gas comes in contact with a burning stove, gas water heater, electric room heater or other heat source, it can cause the generation of toxic gases and fire.

Others

When disposal of the product, do follow the precautions referring to Section “Recovery” in the installation instructions supplied with the outdoor unit and comply with national regulations.

⚠ WARNING

- Do not sit or step on the unit. You may fall down accidentally.

⚠ CAUTION

- Do not touch the air inlet or the sharp aluminum fins of the outdoor unit. You may get injured.

- Do not stick any object into the FAN CASE. You may be injured and the unit may be damaged.

SERVICING

⚠ CAUTION

- Any qualified person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- Servicing shall be performed only as recommended by the manufacturer.
- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, (2) to (6) shall be completed prior to conducting work on the system.

(1) Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

(2) All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

(3) The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

(4) If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

(5) No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

(6) Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

(7) Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.
   - The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
   - The ventilation machinery and outlets are operating adequately and are not obstructed.

- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
- Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

(8) Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised. Initial safety checks shall include:

- That capacitors are discharged. This shall be done in a safe manner to avoid possibility of sparking.
- That no live electrical components and wiring are exposed while charging, recovering or purging the system.
- That there is continuity of earth bonding.

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc.
- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
- Replacement parts shall be in accordance with the manufacturer's specifications.

  NOTE:

  The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere.
- The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer. Unspecified parts by manufacturer may result ignition of refrigerant in the atmosphere from a leak.

REMOVAL AND EVACUATION

⚠ CAUTION

- When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used.
  However, it is important that best practice is followed since flammability is a consideration.
  The following procedure shall be adhered to:
  - Remove refrigerant.
  - Purge the circuit with inert gas.
  - Evacuate.
  - Purge again with inert gas.
  - Open the circuit by cutting or brazing.
- The refrigerant charge shall be recovered into the correct recovery cylinders.
- The system shall be “flushed” with Oxygen free nitrogen (OFN) to render the unit safe.
- This process may need to be repeated several times.
- Compressed air or oxygen shall not be used for this task.
- Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.
- This process shall be repeated until no refrigerant is within the system.
- When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
- This operation is absolutely vital if brazing operations on the pipe work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and there is ventilation available.

CHARGING PROCEDURES

NOTE:

Refer to the Installation Instructions attached to the outdoor unit.

DECOMMISSIONING

⚠ CAUTION

- Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details.
- It is recommended good practice that all refrigerants are recovered safely.
- Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant.
- It is essential that electrical power is available before the task is commenced.
  a) Become familiar with the equipment and its operation.
  b) Isolate system electrically.
  c) Before attempting the procedure ensure that:
  - Mechanical handling equipment is available, if required, for handling refrigerant cylinders.
  - All personal protective equipment is available and being used correctly.
  - The recovery process is supervised at all times by a competent person.

- Recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with instructions.
h) Do not overfill cylinders. (No more than 80% volume liquid charge).
i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

- Electrostatic charge may accumulate and create a hazardous condition when charging or discharging the refrigerant.
  To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging / discharging.

RECOVERY

NOTE:

Refer to the Installation Instructions attached to the outdoor unit.

NOTICE

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

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1. GENERAL

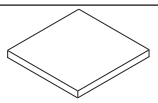
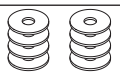
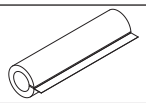
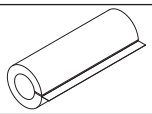
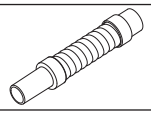
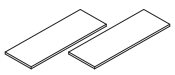
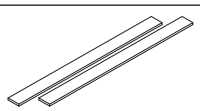
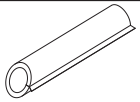
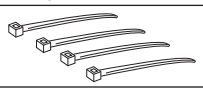
This booklet briefly outlines where and how to install the air conditioning system. Please read over the entire set of instructions for the indoor and outdoor units and make sure all accessory parts listed are with the system before beginning.
The installation of pipe-work shall be kept to a minimum.

WARNING	This symbol shows that this equipment uses a flammable refrigerant. If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition.
CAUTION	This symbol shows type of flammable refrigerant contained in the system.
CAUTION	This symbol shows that the Operating Instructions should be read carefully.
CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the Technical Manual.
CAUTION	This symbol shows that there is information included in the Operating Instructions and/or Installation Instructions.

1-1. Tools Required for Installation (not supplied)

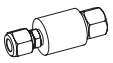
1. Flathead screwdriver
2. Phillips head screwdriver
3. Knife or wire stripper
4. Tape measure
5. Carpenter's level
6. Sabre saw or keyhole saw
7. Hacksaw
8. Core bits
9. Hammer
10. Drill
11. Tube cutter
12. Tube flaring tool
13. Torque wrench
14. Adjustable wrench
15. Reamer (for deburring)

1-2. Accessories Supplied with Unit

Part Name	Figure	Q'ty	Remarks
Full-scale installation diagram		1	Printed on container box
Washer		8	For suspension bolts
Screw		4	For full-scale installation diagram
Flare insulator		1	For liquid tube
Flare insulator		1	For gas tube
Drain hose		1	
Hose band		1	For securing drain hose
Packing		2	70 × 220 (mm)
Packing		2	30 × 500 (mm)
Drain insulator		1	
Clamper		4	For electrical wiring

Part Name	Figure	Q'ty	Remarks
Operating Instructions		1	
Installation Instructions		1	

As for S-60PY3E, the following accessories are additionally provided.

Part Name	Figure	Q'ty	Remarks
Different-diameter-tube joint		1	Gas socket tube A : ø15.88 → ø12.7
		1	Liquid socket tube B : ø9.52 → ø6.35
Insulating tape		2	For gas and liquid tube flare nuts

- Use M10 for suspension bolts.
- Field supply for suspension bolts and nuts.

1-3. Type of Copper Tube and Insulation Material

If you wish to purchase these materials separately from a local source, you will need:

1. Deoxidized annealed copper tube for refrigerant tubing.
2. Foamed polyethylene insulation for copper tubes as required to precise length of tubing. Wall thickness of the insulation should be not less than 8 mm.
3. Use insulated copper wire for field wiring. Wire size varies with the total length of wiring. See Section "4. ELECTRICAL WIRING" for details.

⚠ CAUTION

Check local electrical codes and regulations before obtaining wire. Also, check any specified instructions or limitations.

1-4. Additional Materials Required for Installation

1. Refrigeration (armored) tape
2. Insulated staples or clamps for connecting wire (See your local codes.)
3. Putty
4. Refrigeration tubing lubricant
5. Clamps or saddles to secure refrigerant tubing
6. Scale for weighing

2. SELECTING THE INSTALLATION SITE

2-1. Indoor Unit

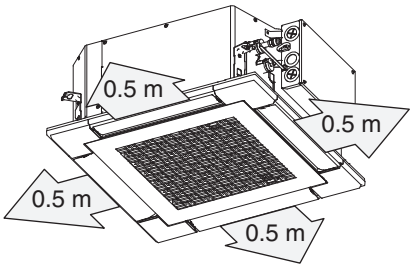
AVOID:

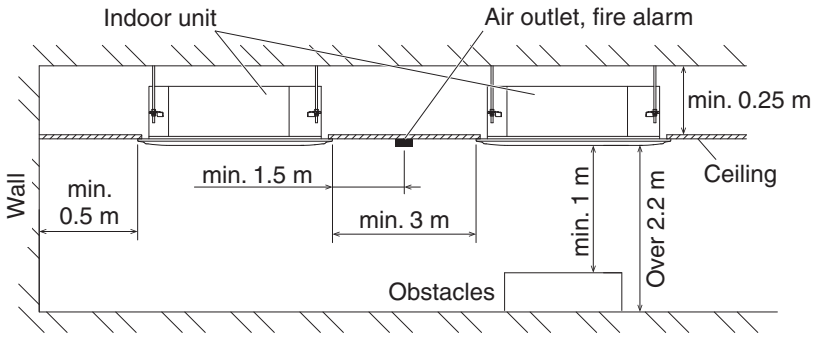
- areas where leakage of flammable gas may be expected.
- places where large amounts of oil mist exist.
- direct sunlight.
- locations near heat sources which may affect the performance of the unit.
- locations where external air may enter the room directly. This may cause “condensation” on the air discharge ports, causing them to spray or drip water.
- locations where the remote controller will be splashed with water or affected by dampness or humidity.
- installing the remote controller behind curtains or furniture.
- locations where high-frequency emissions are generated.

DO:

- select an appropriate position from which every corner of the room can be uniformly cooled.
- select a location where the ceiling is strong enough to support the weight of the unit.
- select a location where tubing and drain pipe have the shortest run to the outdoor unit.
- allow room for operation and maintenance as well as unrestricted airflow around the unit.
- the limitation of the tubing length between the indoor and the outdoor units should be referred to the Installation Instructions of the outdoor unit.
- allow room for mounting the remote controller about 1 m off the floor, in an area that is not in direct sunlight or in the flow of cool air from the indoor unit.
- If the inside of the ceiling is high temperature and high humidity, apply the polyethylene foam or other materials of minimum thickness of 10 mm or more to the unit.

4-Way Cassette 60 × 60 Type





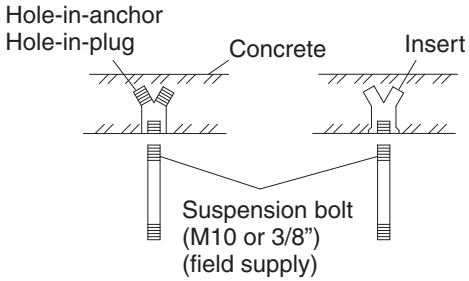
3. HOW TO INSTALL THE INDOOR UNIT

3-1. Preparation for Suspending

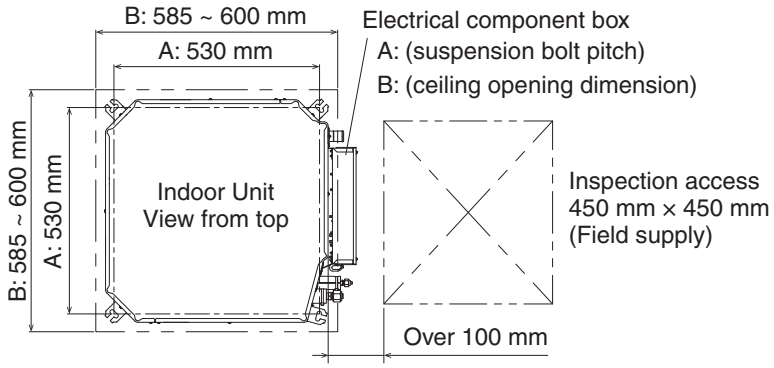
This unit uses a drain pump. Use a carpenter's level to check that the unit is level.

3-2. Suspending the Indoor Unit

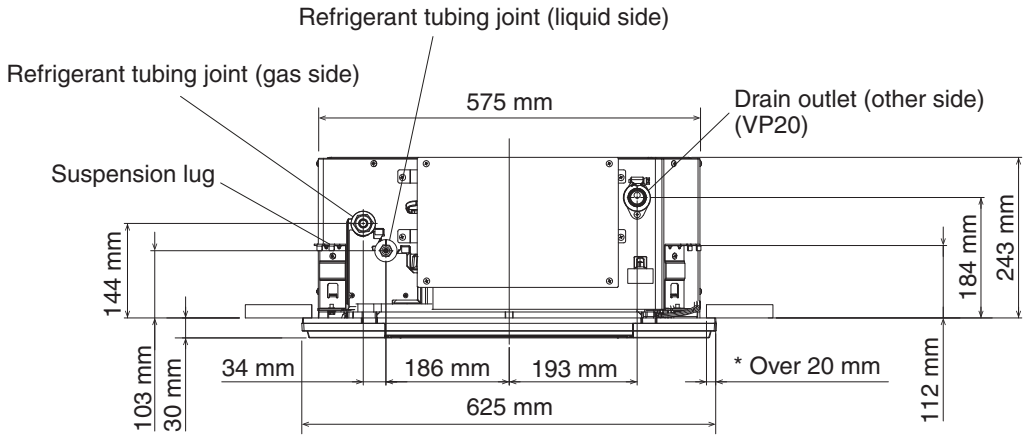
(1) Fix the suspension bolts securely in the ceiling using the method shown in the diagrams, by attaching them to the ceiling support structure, or by any other method that ensures that the unit will be securely and safely suspended.



(2) Follow the diagram to make the holes in the ceiling.
Install the inspection opening on the electrical component box side where maintenance and inspection of the electrical component box and drain pump are easy.



(3) Determine the pitch of the suspension bolts using the supplied full-scale installation diagram (printed on container box).
The diagram show the relationship between the positions of the suspension fitting, unit, and panel.
Use the nut (field supply) and washer (supplied) for upper and lower position of the suspension lug.



* The overlapping portion between the ceiling and panel for cassette should be kept over 20 mm.

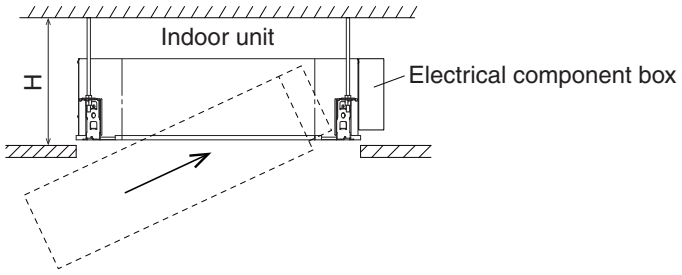
3-3. Placing the Unit Inside the Ceiling

This air conditioner is designed to be installed on the system ceiling.
Care must be taken before installation so that the maintenance or relocation can be done instantly.
This unit is equipped with the drain pump. Check a tape measure or carpenter's level.
Before installing the panel for cassette, complete the work of drain pipe and refrigerant tube installation.

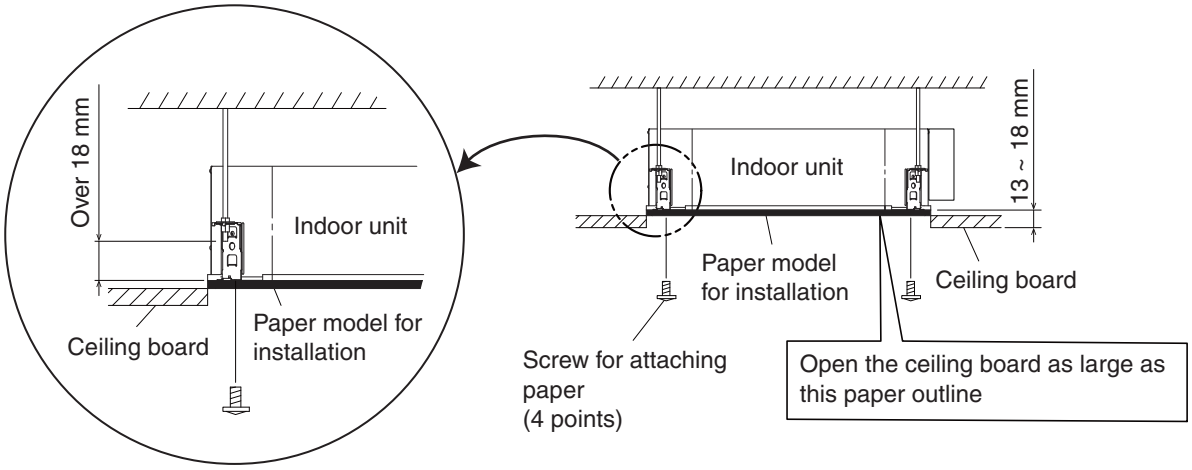
(1) When placing the unit inside the ceiling, determine the pitch of the suspension bolts using the supplied full-scale installation diagram.
Tubing and wiring must be laid inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the tubing and wiring into position for connection to the unit before placing the unit inside the ceiling.

(2) The length of suspension bolts must be appropriate for a distance between the bottom of the bolt and the bottom of the unit of more than 18 mm.

If there is a ceiling opening, install the indoor unit's electrical component box side first in the opening portion.



H :
If the roof space is 285 mm or more in height, it is possible to remove the grid system ceiling panel and place the unit inside the system ceiling.
If the roof space is more than 250 mm and less than 285 mm in height, first remove the grid system ceiling panel and T-Bar supporting the system ceiling temporarily, and then place the unit inside the ceiling.



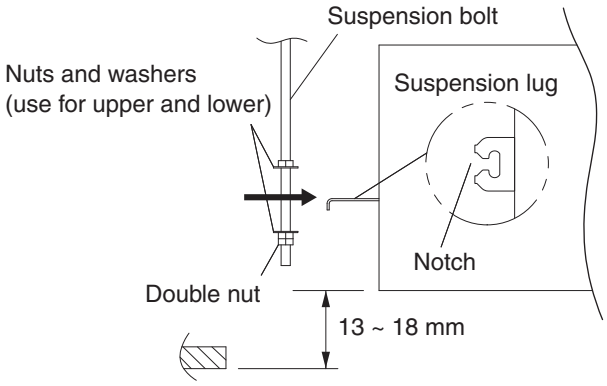
Full-scale installation diagram
(printed on top of container box)

(3) Thread the 3 hexagonal nuts and 2 washers onto each of the 4 suspension bolts. Use 1 nut and 1 washer for the upper side, and 2 nuts and 1 washer for the lower side, so that the unit will not fall off the suspension lugs.

(4) Adjust so that the distance between the unit and the ceiling bottom is 13 to 18 mm. Tighten the nuts on the upper side and lower side of the suspension lug.

(5) Remove the protective polyethylene used to protect the fan parts during transport.

(6) Check with a tape measure or carpenter's level.



3-4. How to Process Tubing

See Section "5. HOW TO PROCESS TUBING".

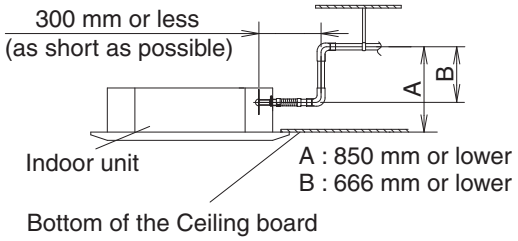
3-5. Installing the Drain Pipe

3-5-1. Before Performing the Installation Drain Piping

(1) Limitations of Raising the Drain Pipe Connection

CAUTION

- The drain pipe can be raised to a maximum height of 850 mm from the bottom of the ceiling. Do not attempt to raise it higher than 850 mm. Doing so will result in water leakage.

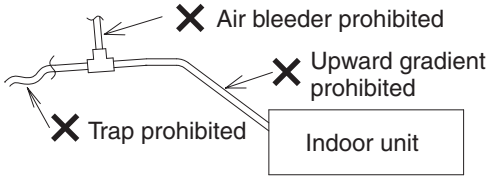


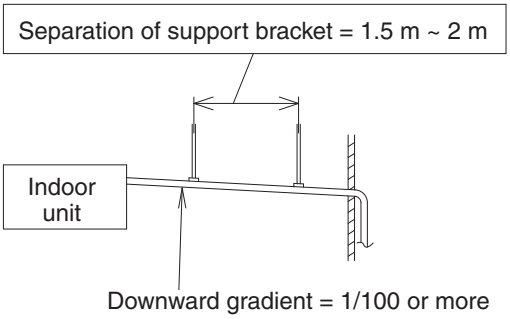
* Length of supplied drain pipe = 250 mm

(2) Limitations of Drain Pipe Connection

CAUTION

- Do not install the drain pipe with an upward gradient from the drain port connection. This will cause the drain water to flow backward and leak when the unit is not operating.
- Do not install an air bleeder as this may cause water to spray from the drain pipe outlet.
- Do not provide U-trap or bell-shaped trap in the middle of the drain pipe. Doing so will cause abnormal sound.
- Make sure the drain pipe has a downward gradient (1/100 or more; downward from drain port connection).

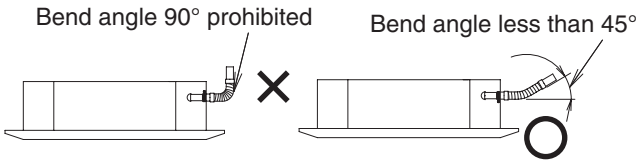




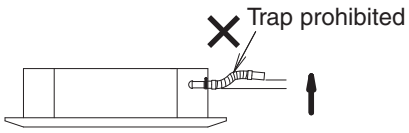
(3) Limitations of Drain Hose Connection

CAUTION

- Do not bend the supplied drain hose 90° or more.
  Bend it less than 45°.



- Do not make a trap in the middle of the supplied drain hose. Doing so will cause abnormal sound.



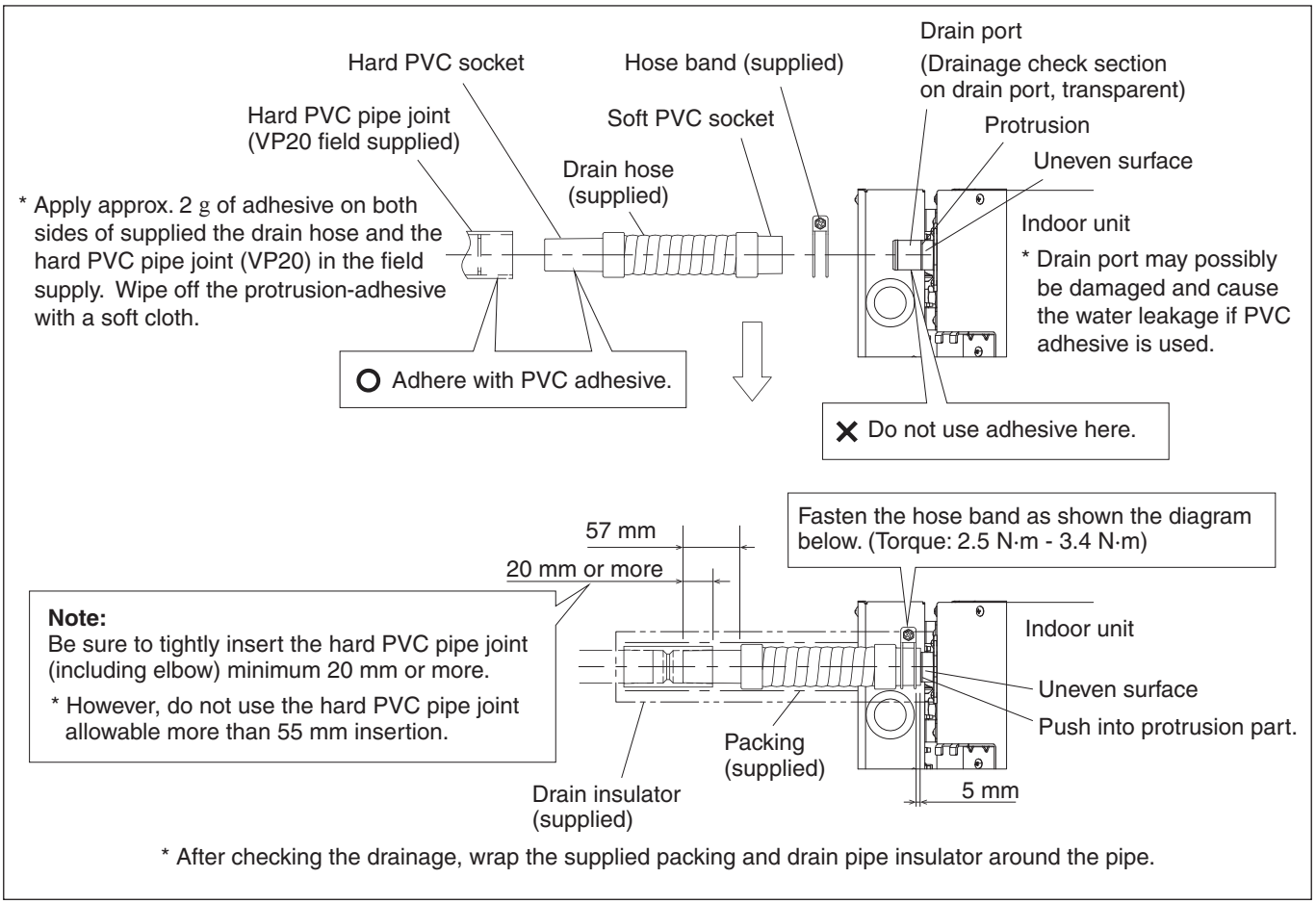
3-5-2. Installing the Drain Pipe

⚠ CAUTION

- Do not apply force to the drain port when connecting the drain pipe. Install and fix it near the indoor unit as close as possible.
- Do not use adhesive when connecting the drain port pipe and the drain hose.

(1) How to Install the Drain Pipe

1) First insert the supplied hose band into the drain port pipe. Then make sure the head of the screw is facing toward a technical engineer when placing the screw of the hose band at an upward angle.
2) Insert the soft PVC socket of the supplied drain hose to the drain port pipe. Do not use adhesive when connecting the drain hose to the drain port pipe.
   Insert it until the tip of the drain hose contacts the uneven surface of the drain port pipe.
3) Move the hose band so that the center position of the hose band can be placed approx. 30 mm away from the external plate of the indoor unit. See diagram below.
4) Screw the drain hose tightly facing the screw of the hose band upward. (Torque: 2.5 N·m - 3.4 N·m) (If the screw is tightened beneath the drain hose, the troubles will be generated.)
5) Apply approx. 2 g of adhesive on both sides of the drain hose without connection of the hard PVC socket and the hard PVC pipe joint (VP20) in the field supply.
6) Connect the drain hose and the hard PVC pipe joint so that the adhesive area of both sides can be overlapped.
   Wipe off the protrusion-adhesive with a soft cloth.



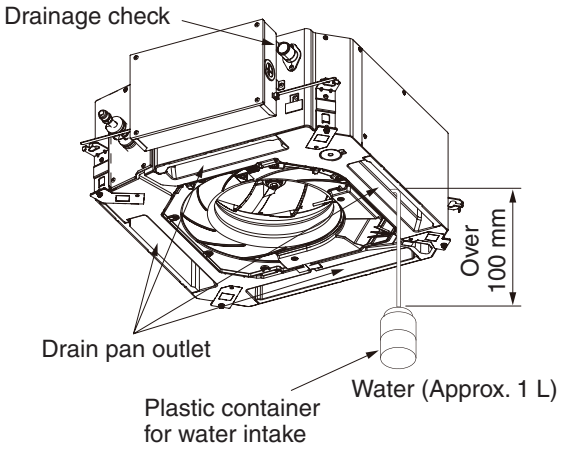
3-5-3. Checking the Drainage

⚠ CAUTION **Be careful since the fan will start when you short the pin on the indoor unit control PCB.**

After wiring (see Section “4. ELECTRICAL 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.

(1) Connect power to the power terminal board (L/1, N/2 terminals) inside the electrical component box.

(2) Slowly pour about 1 L of water into the drain pan to check drainage.



(3) 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 drain pipe 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.

(4) When the check of drainage is complete, open the check pin (CHK) (6P : 1-4) and remount the tube cover.

(5) Checkpoint after installation
After installation of indoor and outdoor units, panels and electrical wiring, check Section “10. CHECKLIST AFTER INSTALLATION WORK”.

3-6. Important Note for Wiring 4-Way Cassette 60 × 60 Type

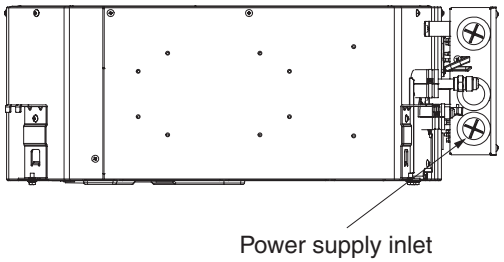
(1) The power supply inlet is located at the lower area of the refrigerant tubing side.
The electrical component box is located at the refrigerant tubing side.

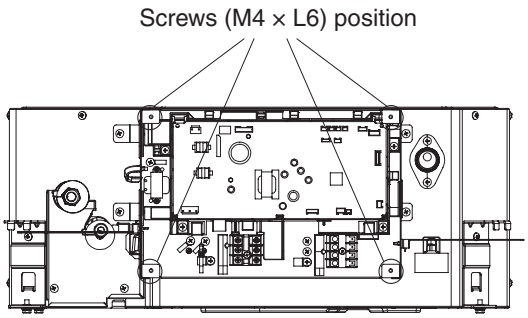
(2) Before installing the panel for cassette, be sure to carry out the wiring connection.

(3) Remove the lid located on the electrical component box by unscrewing the screws (M4 × L6) (×4).

(4) Lead the wires from the power supply inlet to the unit. Be sure to lead the wires through the power supply inlet. Make sure that no wire is caught between the indoor unit and panel for cassette. Otherwise, the unit may cause a fire.

(5) Connect the wires into the terminals through the power supply inlet for the electrical component box.
Fix the wires with a clamping clip.

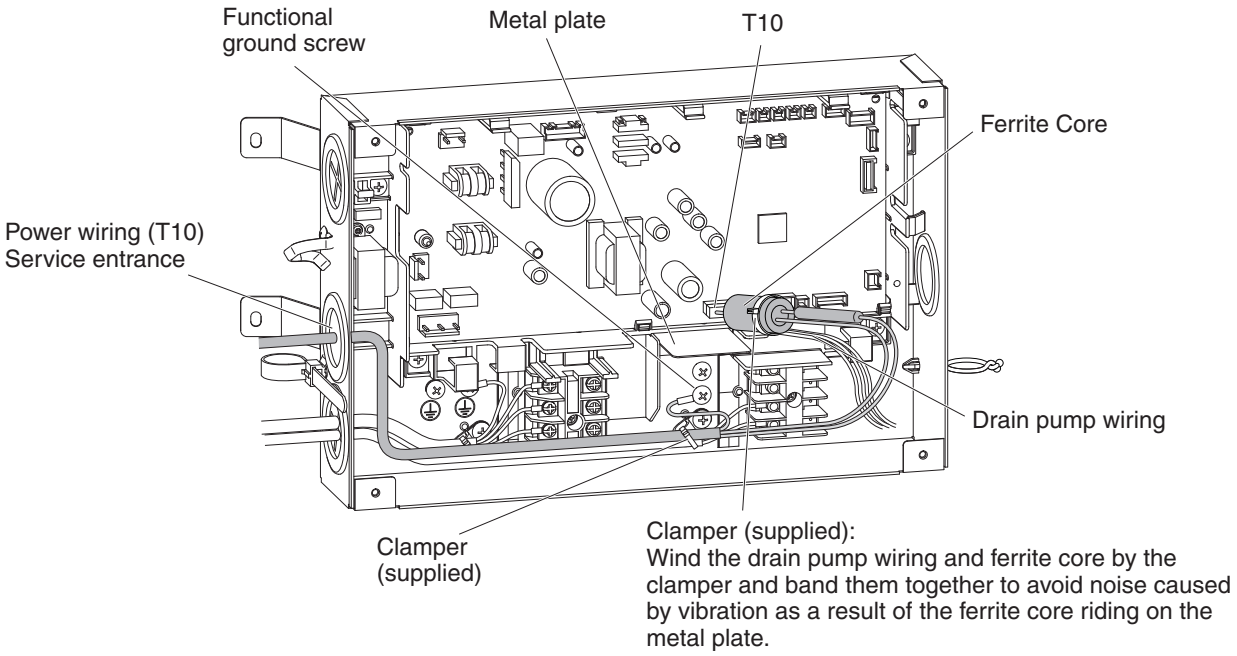




(6) Reinstall the lid of the electrical component box in its original position with paying attention not to have the wires caught in the lid.
See Section “4. ELECTRICAL WIRING”.

< When connecting to optional parts >

● Connecting to Schedule Timer or Seri-Para I/O Unit
Connect the wire from Schedule Timer or Seri-Para I/O Unit to the indoor unit control PCB T10 (CN061, Yellow) and functional ground screw.



4. ELECTRICAL WIRING

When connecting RAC Multi outdoor unit, see Section "INSTALLATION INSTRUCTION SUPPLEMENT" as well.

4-1. General Precautions on Wiring

(1) Before wiring, confirm the rated voltage of the unit as shown on its nameplate, then carry out the wiring closely following the wiring diagram under Section 4-3.

⚠ WARNING

(2) This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown.
The ELCB must be incorporated in the fixed wiring in accordance with the wiring regulations. The ELCB must be an approved circuit capacity, having a contact separation in all poles.
The ELCB or RCD suitable for use with inverters, resistant to high frequency noise, is most suitable. The ELCB's or RCD's intended for protection to include high frequency currents are unnecessary and should be avoided, as potentially causing nuisance tripping, in this application.

(3) To prevent possible hazards from insulation failure, the unit must be grounded.

(4) Each wiring connection must be done in accordance with the wiring system diagram. Wrong wiring may cause the unit to misoperate or become damaged.

(5) Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.

(6) Unauthorized changes in the internal wiring can be very dangerous. The manufacturer will accept no responsibility for any damage or misoperation that occurs as a result of such unauthorized changes.

(7) Regulations on wire diameters differ from locality to locality. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning.
You must ensure that installation complies with all relevant rules and regulations.

(8) To prevent malfunction of the air conditioner caused by electrical noise, care must be taken when wiring as follows:
- The remote control wiring and the inter-unit control wiring should be wired apart from the inter-unit power wiring.
- Use shielded wires for inter-unit control wiring between units and ground the shield on both sides.

⚠ CAUTION

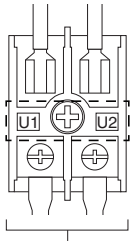
Check local electrical codes and regulations before wiring. Also, check any specified instruction or limitations.

4-2. Wire Length and Wire Diameter for Power Supply System

Connection cable between outdoor and indoor unit has 2 types; One is 2-line connection and the other is 3-line connection. Check the type of the outdoor unit terminal board as illustrated below and make connection.

- **If U1 and U2 are shown on the terminal board, it is for 2-line connection.**

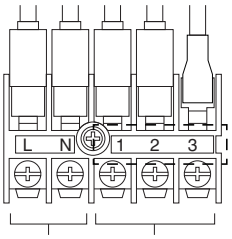
  * See the example in Section 4-3.



Inter-unit (between outdoor and indoor units) control wiring

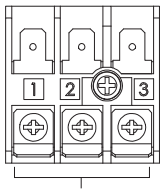
- **If 1, 2 and 3 are shown on the terminal board, it is for 3-line connection.**

  * See the example in Section 4-3.



Power supply cable

Connection cable between outdoor and indoor unit



Connection cable between outdoor and indoor unit

Indoor unit
(Type of 2-line connection [U1, U2] with indoor and outdoor units)

Type	(B) Power supply cable	Time delay fuse or circuit capacity
	Min. 2.5 mm^2 *1	
Y3	Max. 130 m *3	15 A

Indoor unit
(Type of 3-line connection [1, 2 and 3] with indoor and outdoor units)

Type	(B) Power supply cable	Time delay fuse or circuit capacity
	Min. 2.5 mm^2 *1	
Y3	Max. 130 m *3	15 A

Type	Connection cable between outdoor and indoor unit	
	(F) Outdoor unit U-25 ~ 50PZ3E5, U-60PZ3E5A Min. 1.5 mm^2 *1	(G) Outdoor unit U-100, 125PZ3E5, U-100, 125PZ3E8 Min. 2.5 mm^2 *1
Y3	Max. 40 m *3	Max. 50 m *3

Type	Connection cable between outdoor and indoor unit	
	(F) Outdoor unit U-36 ~ 60PZH3E5 Min. 1.5 mm^2 *1	(G) Outdoor unit U-71 ~ 140PZH3E5, U-71 ~ 140PZH3E8 Min. 2.5 mm^2 *1
Y3	Max. 40 m *3	Max. 85 m *3

Control wiring

(C) Inter-unit (between outdoor and indoor units) control wiring	(D) Remote control wiring	(E) Remote control wiring for group control
Min. 0.75 mm^2 **Use shielded wiring*2**	Min. 0.75 mm^2	Min. 0.75 mm^2
Max. 1,000 m	(D) + (E) : Max. 500 m (E) : Max. 200 m The above descriptions can be used for the model CZ-RTC4 , CZ-RTC5B or CZ-RTC6 series. For other remote controllers, refer to the manual of each unit.	

NOTE

*1 Maximum applicable wire for terminal board of indoor unit : 4 mm^2

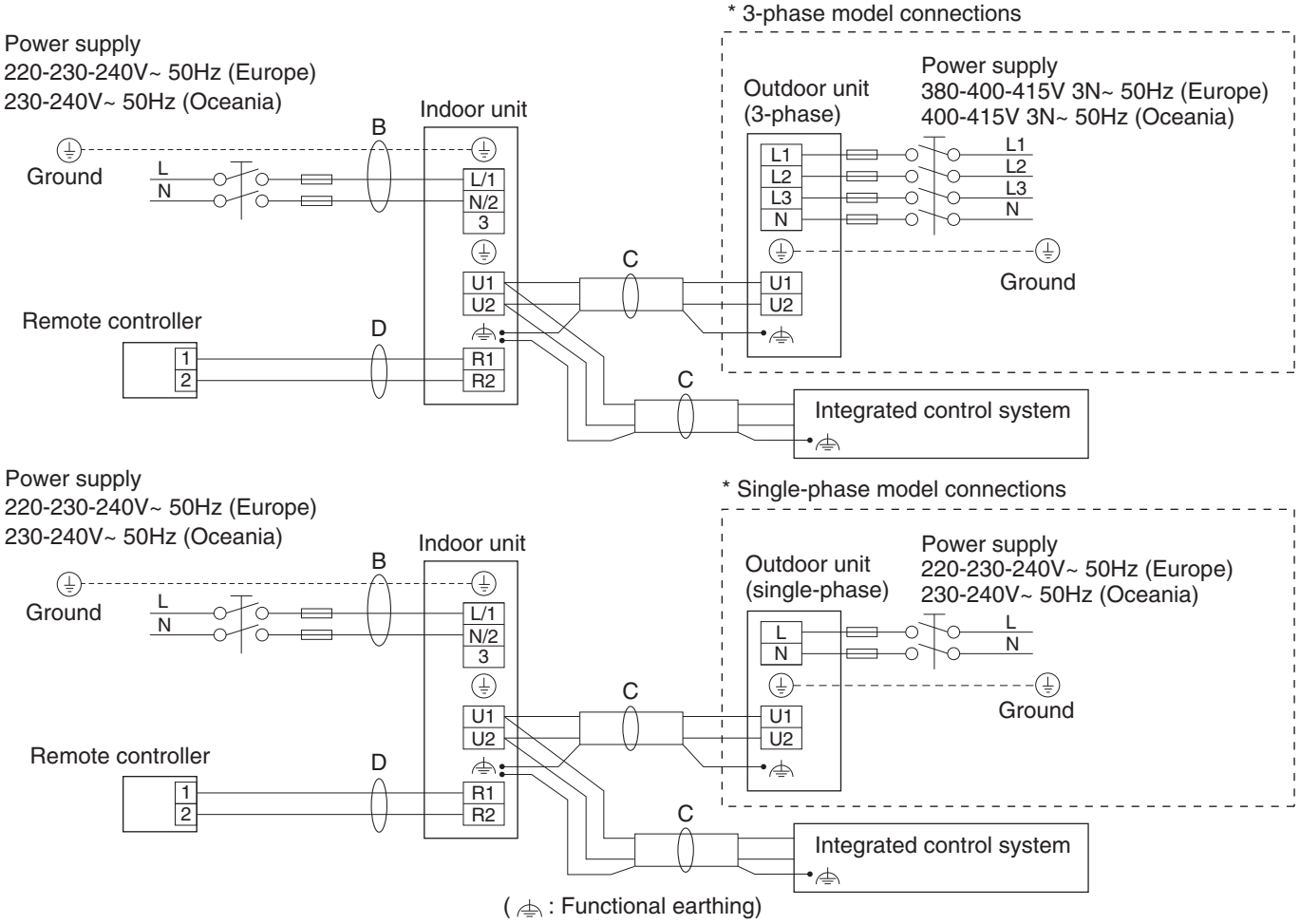
*2 With ring-type wire terminal

*3 Maximum length shows a 2% voltage drop.

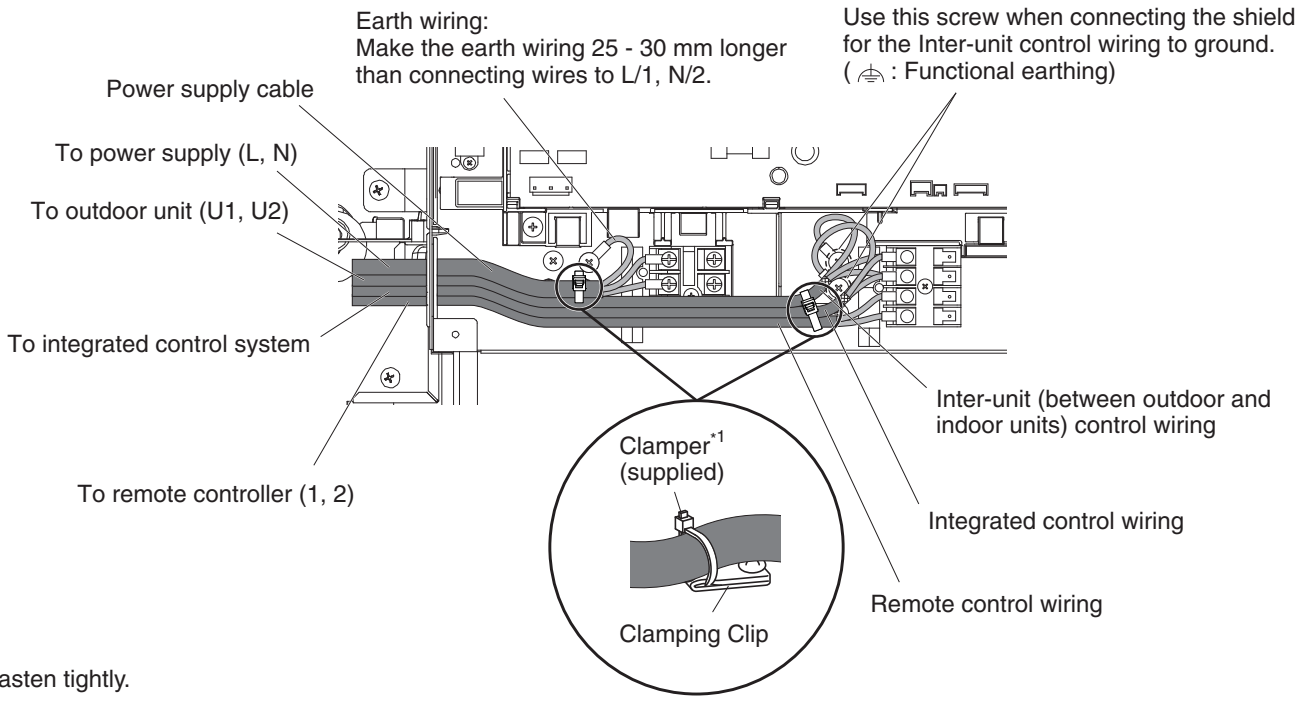
4-3. Wiring System Diagrams

■ 2-LINE CONNECTION

Example : Single connection



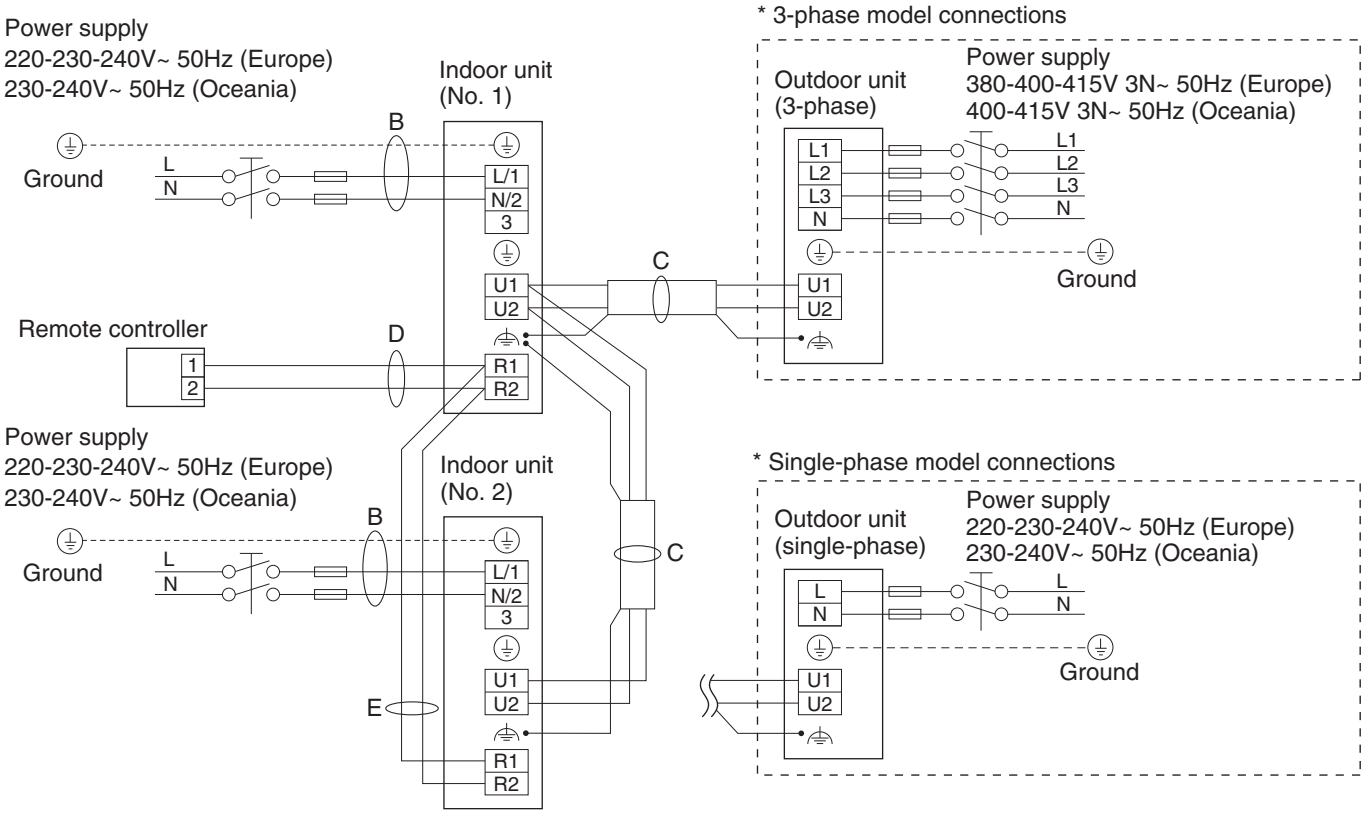
Indoor unit wiring sample



*1 Fasten tightly.

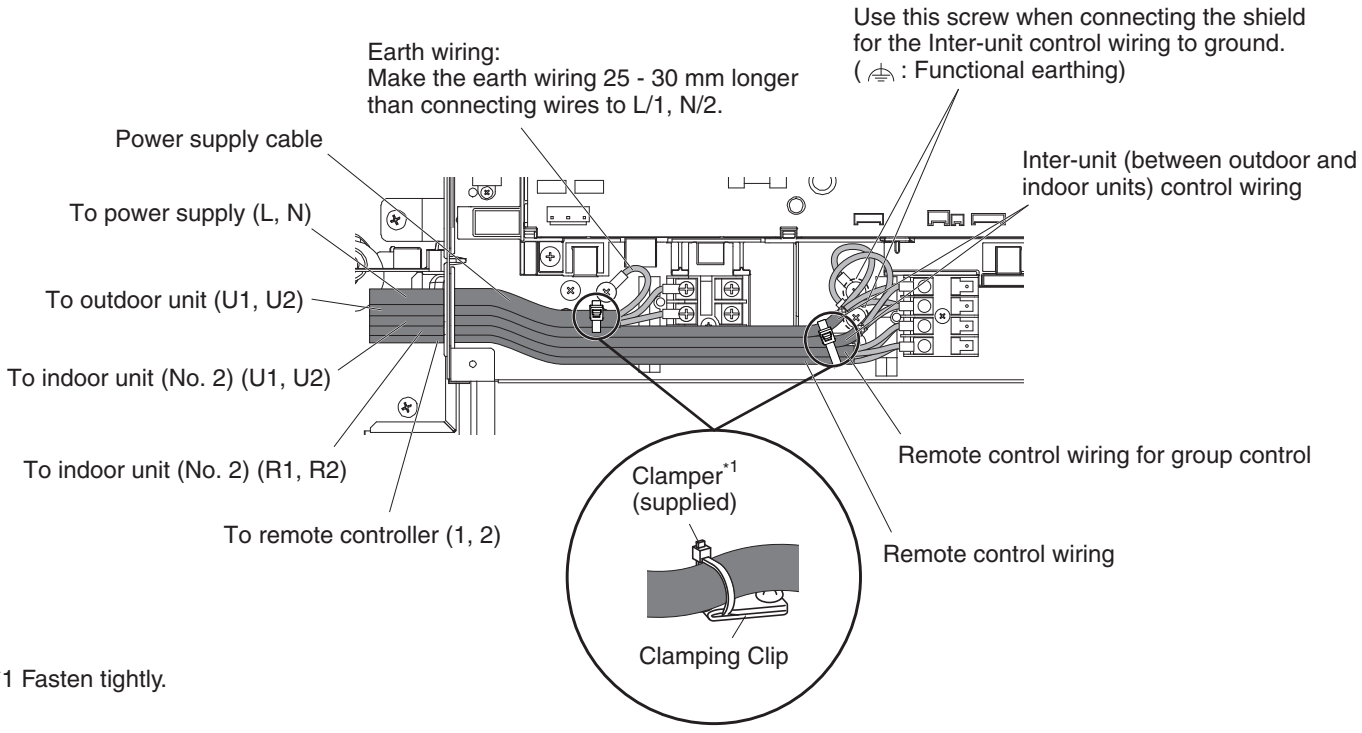
■ 2-LINE CONNECTION

Example : Twin connection



(⏚ : Functional earthing)

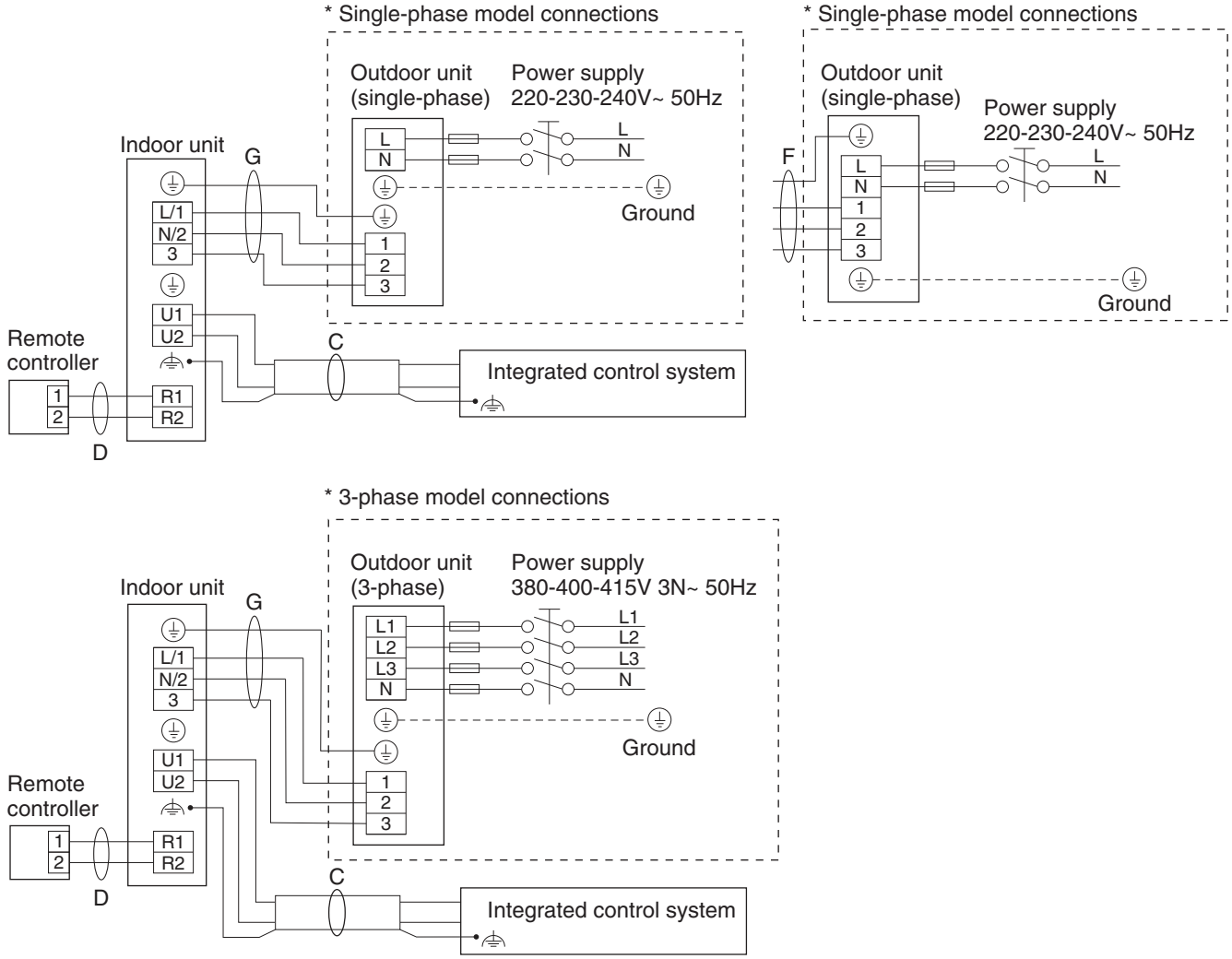
Indoor unit (No. 1) wiring sample



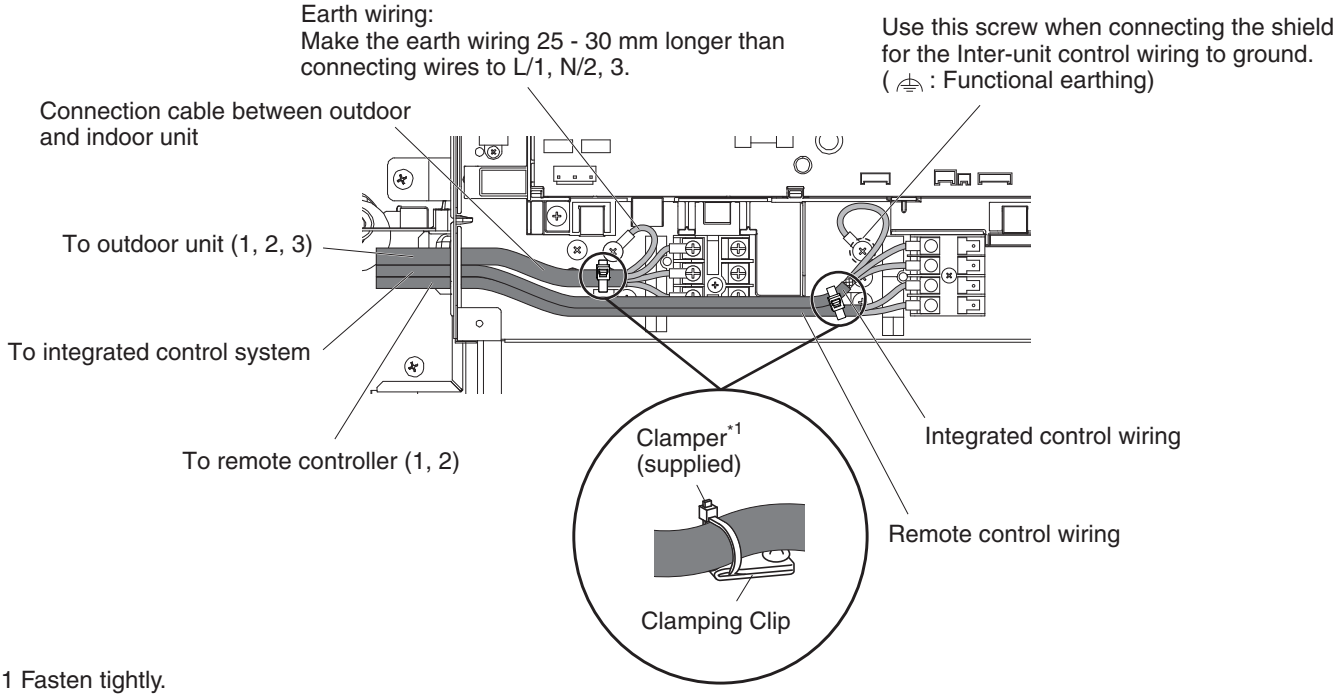
*1 Fasten tightly.

■ 3-LINE CONNECTION

Example : Single connection



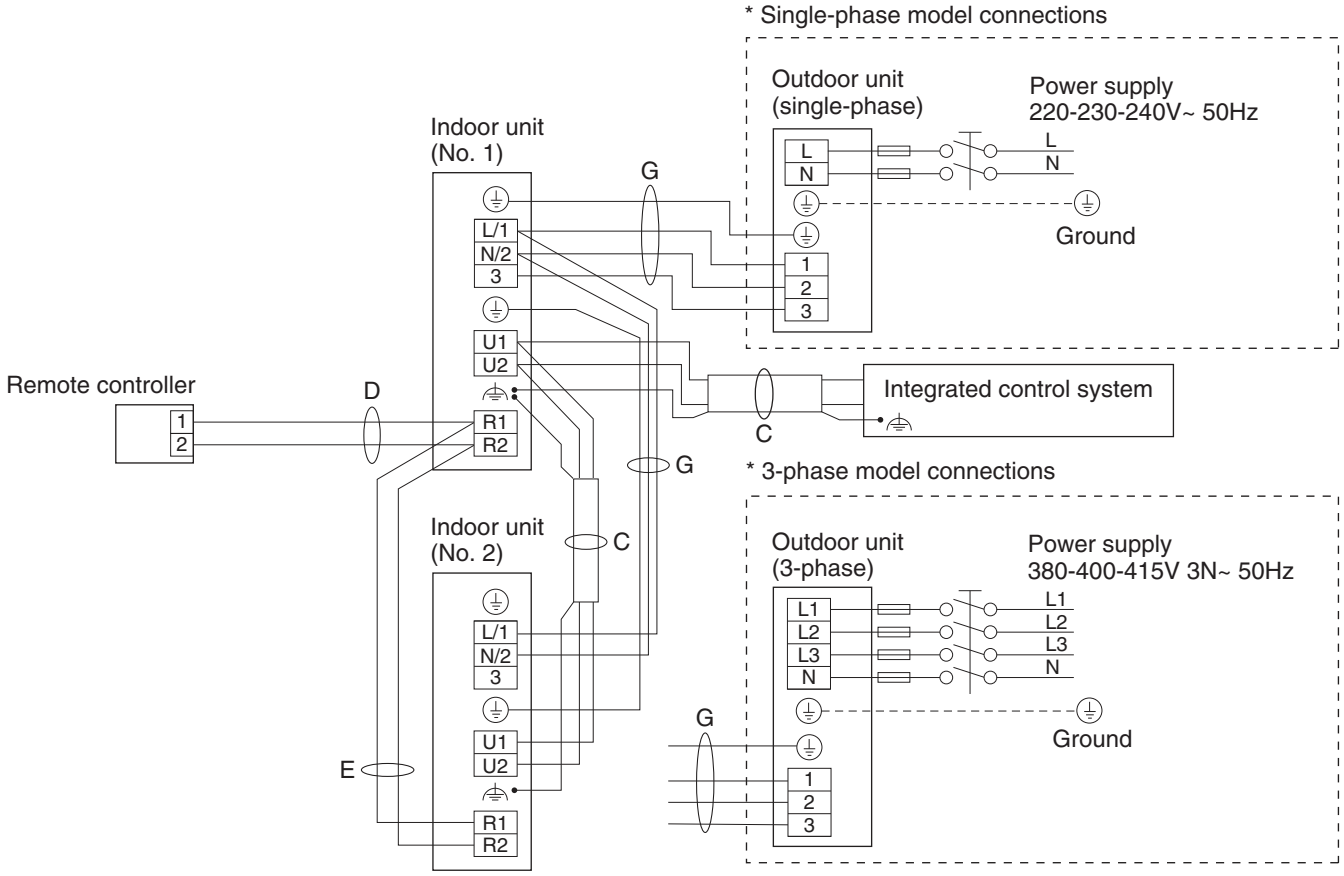
Indoor unit wiring sample



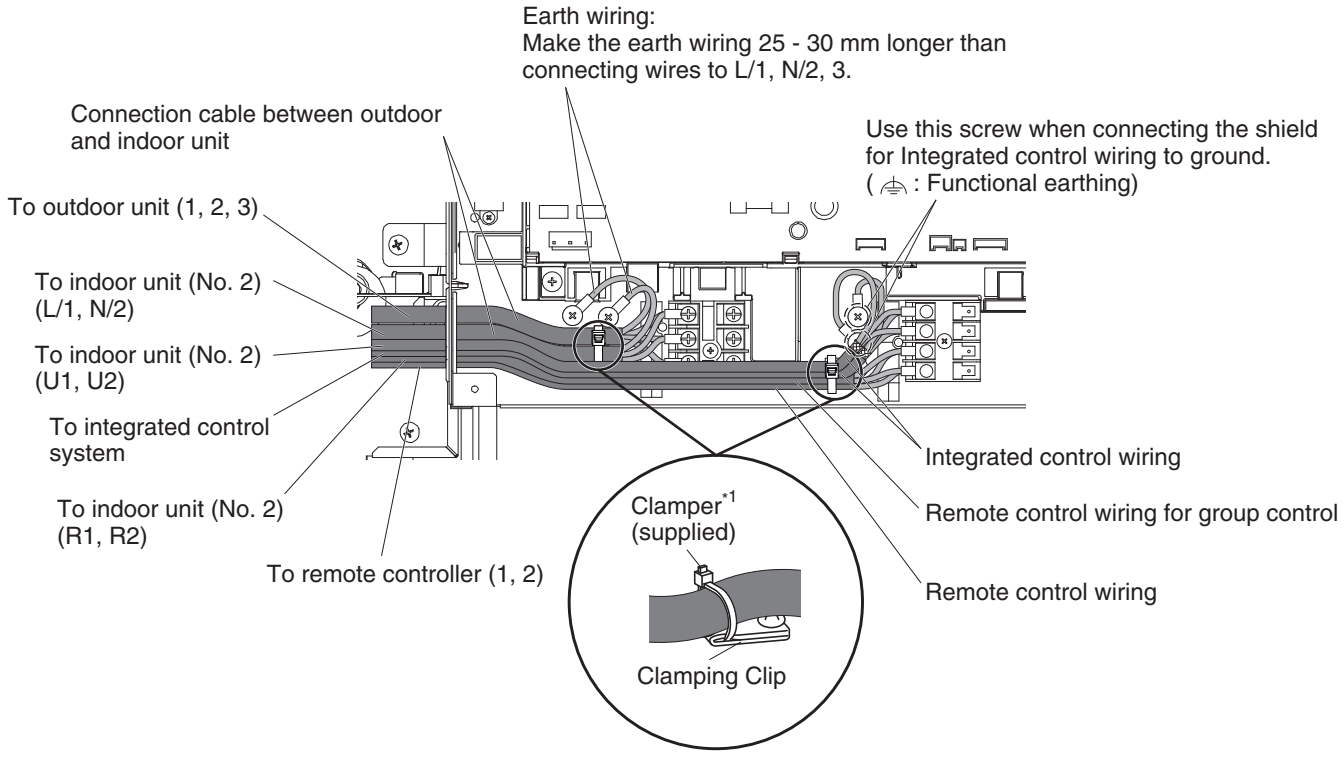
*1 Fasten tightly.

■ 3-LINE CONNECTION

Example : Twin connection



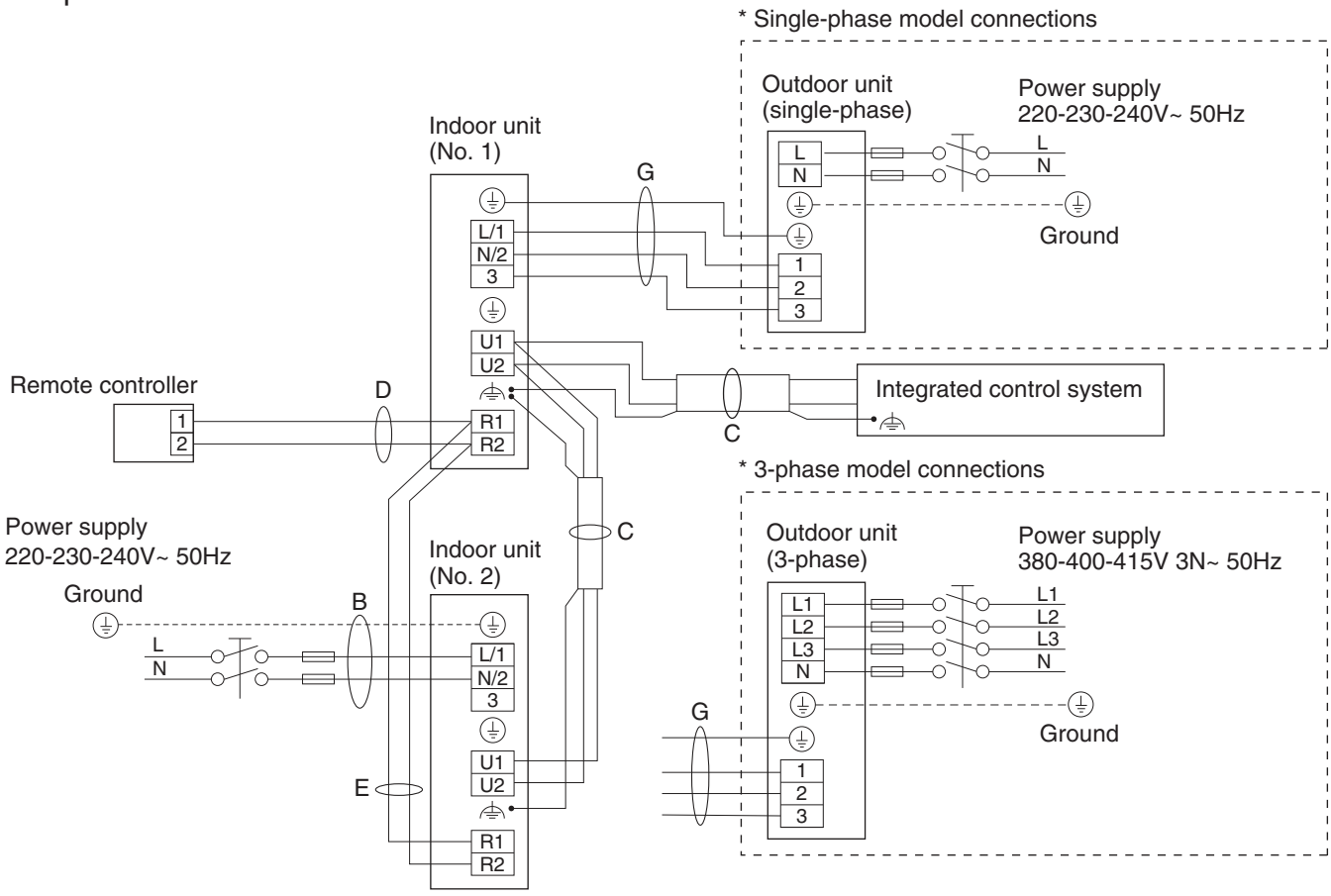
Indoor unit (No. 1) wiring sample



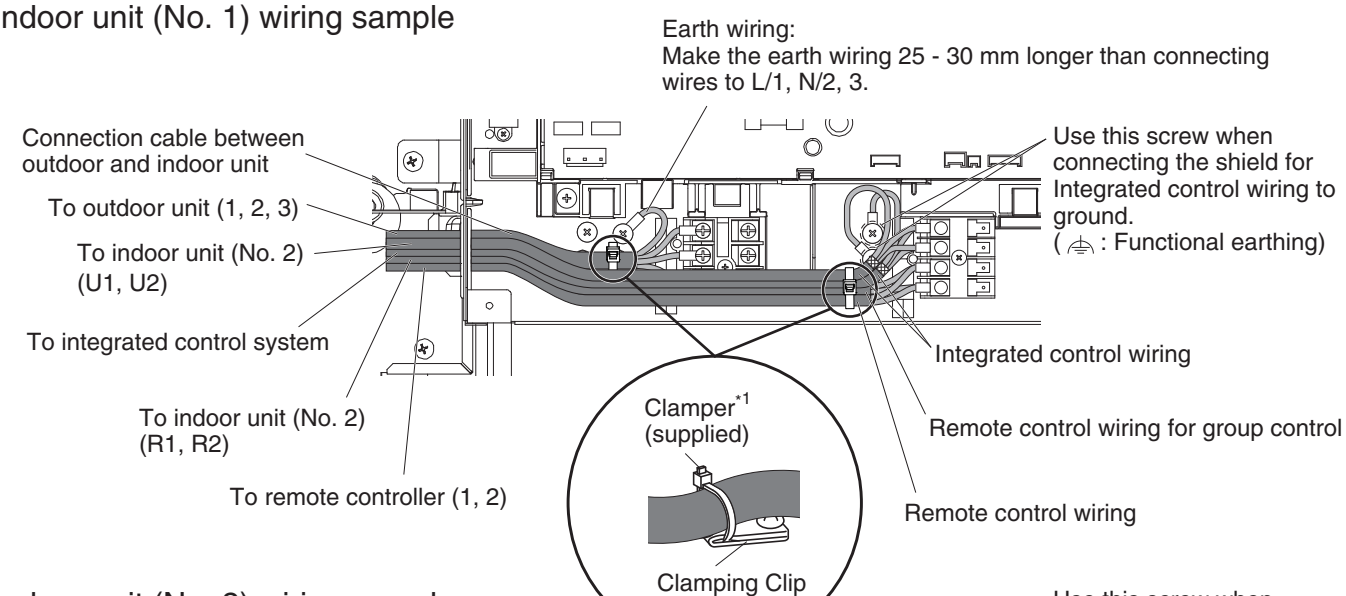
*1 Fasten tightly.

■ 3-LINE CONNECTION

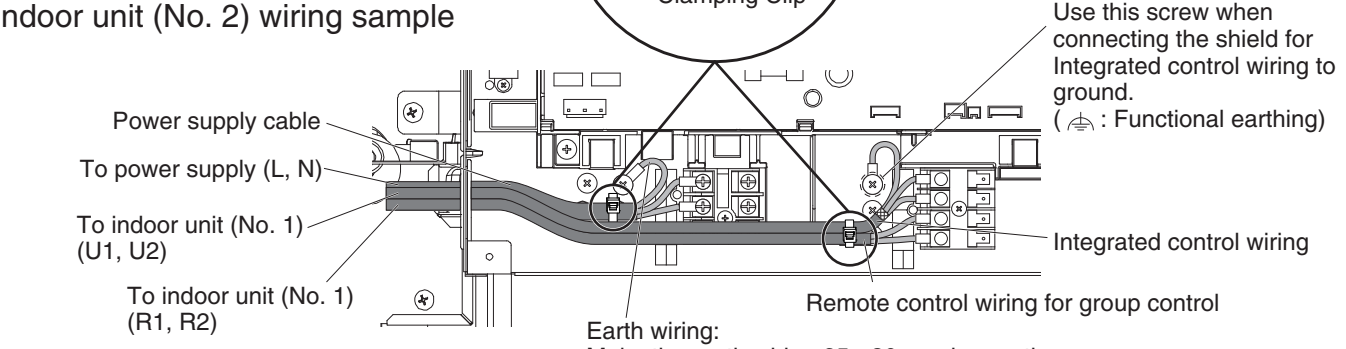
Example : Twin connection



Indoor unit (No. 1) wiring sample



Indoor unit (No. 2) wiring sample



*1 Fasten tightly.

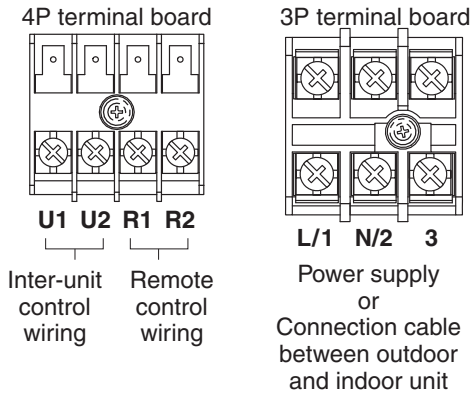
NOTE

(1) See Section 4-2 for the explanation of “B”, “C”, “D”, “E”, “F” and “G” under Section 4-3.

(2) The basic connection diagram of the indoor unit shows the terminal boards, so the terminal boards in your equipment may differ from the diagram.

(3) Refrigerant Circuit address should be set before turning the power on.

(4) Regarding Refrigerant Circuit address setting, refer to the installation instructions supplied with the remote controller (Optional). Auto address setting can be executed by remote controller automatically.

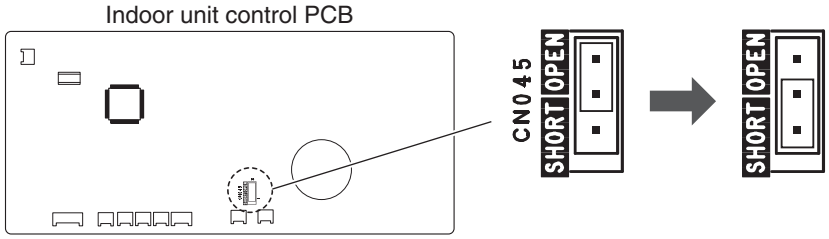


Type Y3

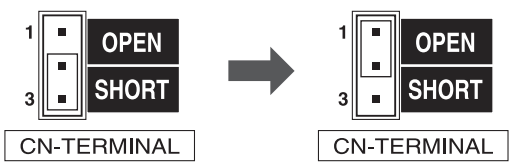
CAUTION

(1) When connecting to the integrated control system, the setting of the terminating resistance is required. Even more connection with the integrated control system is required, all indoor units in the link of 3-line connection should be connected with 2-line link wiring.

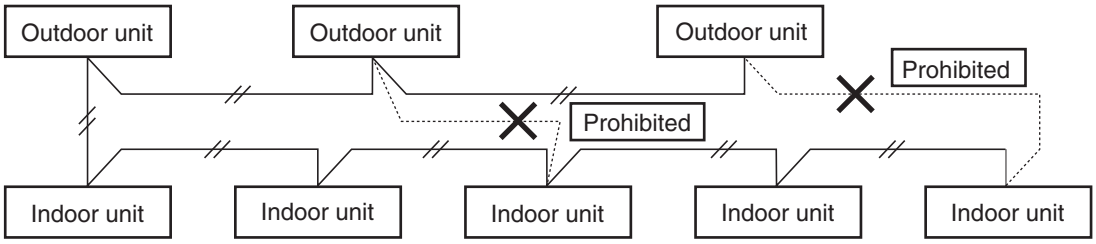
- **How to set the terminating resistance of the indoor unit**
  The setting of the terminating resistance should be made by CN045 on the indoor unit control PCB.
  The setting of indoor unit terminating resistance at shipment is OPEN side. If the shorting socket is moved as shown below, the terminating resistance is SHORT side (operative).
  It is not necessary to install all units’ terminating resistance. Follow the steps on the next page which unit’s terminating resistance to install.



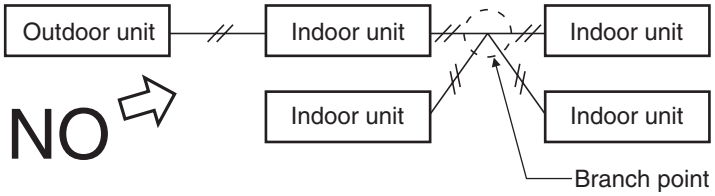
- **How to set the terminating resistance of the outdoor unit**
  The setting of the terminating resistance should be made by CN-TERMINAL on the outdoor unit control PCB.
  The setting of the outdoor unit terminating resistance at shipment is SHORT side (operative). Leave one unit in short circuit among outdoor units in the link.
  Change to OPEN for other units. It is not necessary to install all units’ terminating resistance to OPEN side.
  It is not necessary to install all units’ terminating resistance. Follow the steps on the next page which unit’s terminating resistance to install.



(2) Do not install the inter-unit control wiring in a way that forms a loop.



(3) Do not install inter-unit control wiring such as star branch wiring. Star branch wiring causes mis-address setting.

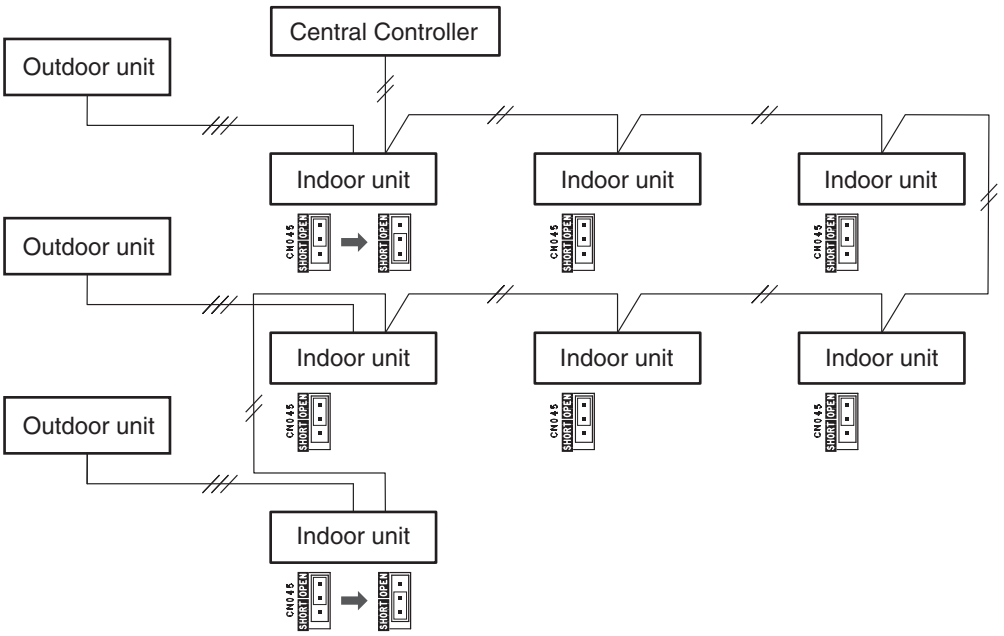


(4) If branching the inter-unit control wiring, the number of branch points should be 16 or fewer.

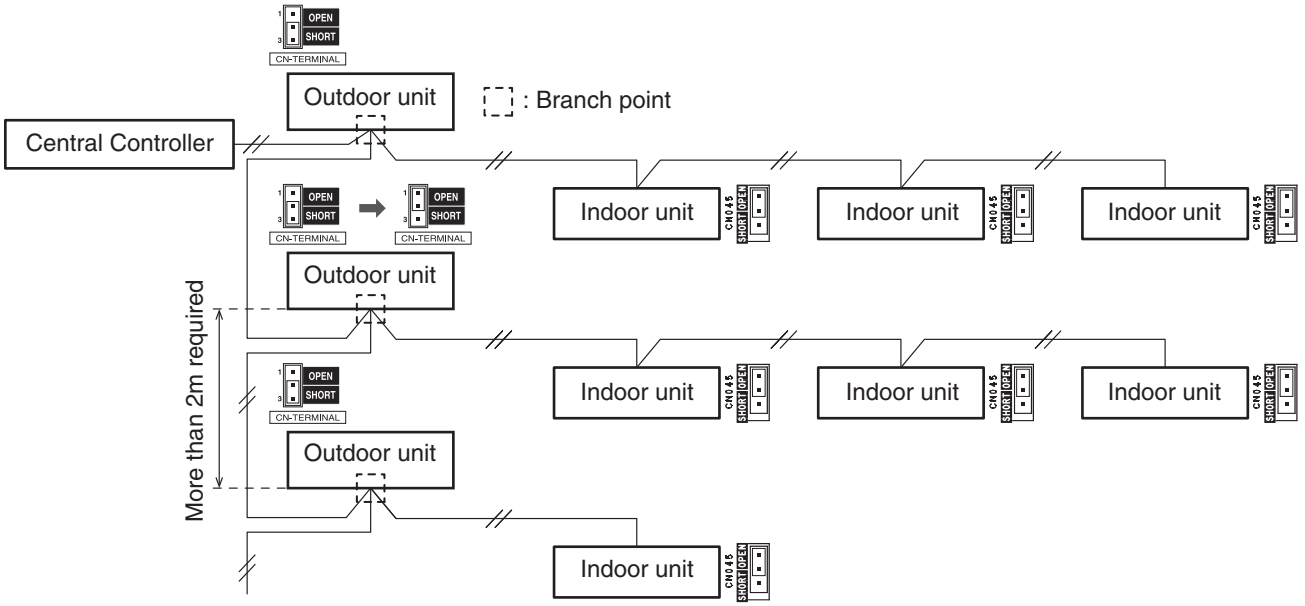
The setting of the terminating resistance changes according to the number of refrigerant systems connected to the integrated control wiring in the link.

- For one refrigerant system in the link wiring, it is necessary to set one terminating resistance to the valid (SHORT side). For over 2 refrigerant systems, it is necessary to set 2 terminating resistance to the valid (SHORT side).
- The valid or invalid setting of the terminating resistance is basically carried out with the outdoor unit. However, 3-line connection outdoor unit cannot make a setting of terminating resistance. In this case, the shortage of the valid setting for the terminating resistance should be carried out with the indoor unit. The setting of the terminating resistance of the 2-line outdoor unit at shipment is the valid (SHORT side) and indoor unit is the invalid (OPEN side).

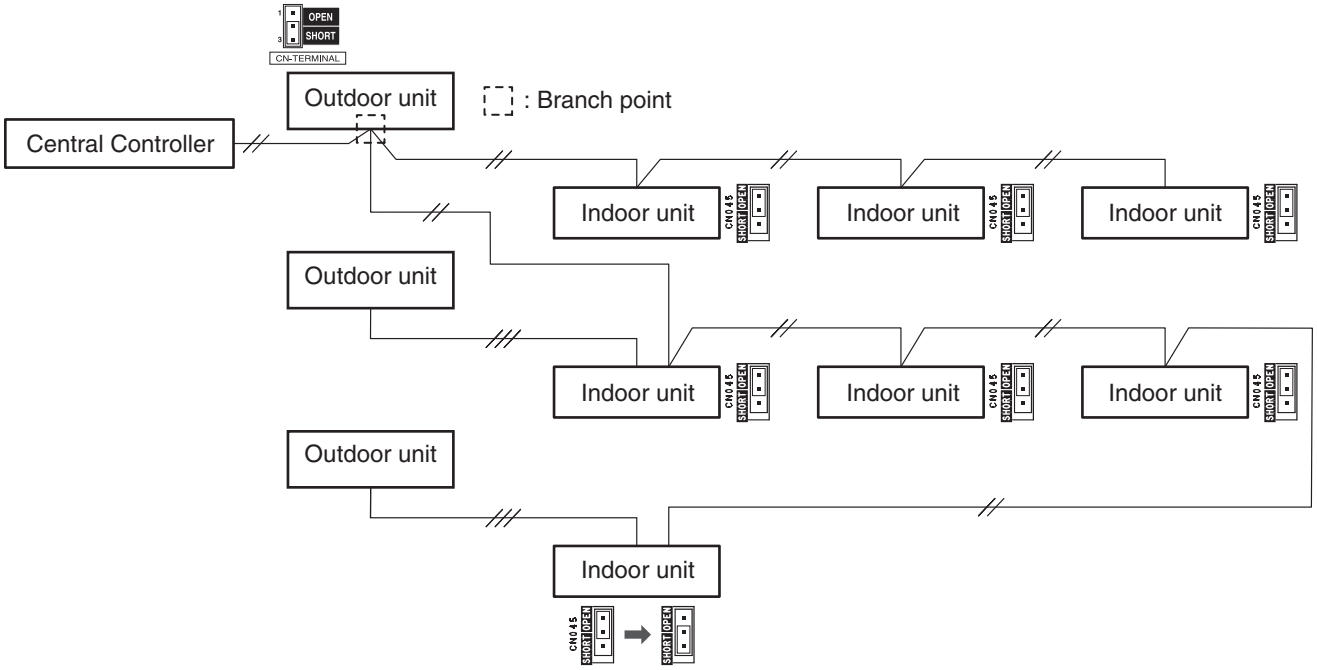
● In case that the inter-unit control wiring in the link are all 3-line connection:

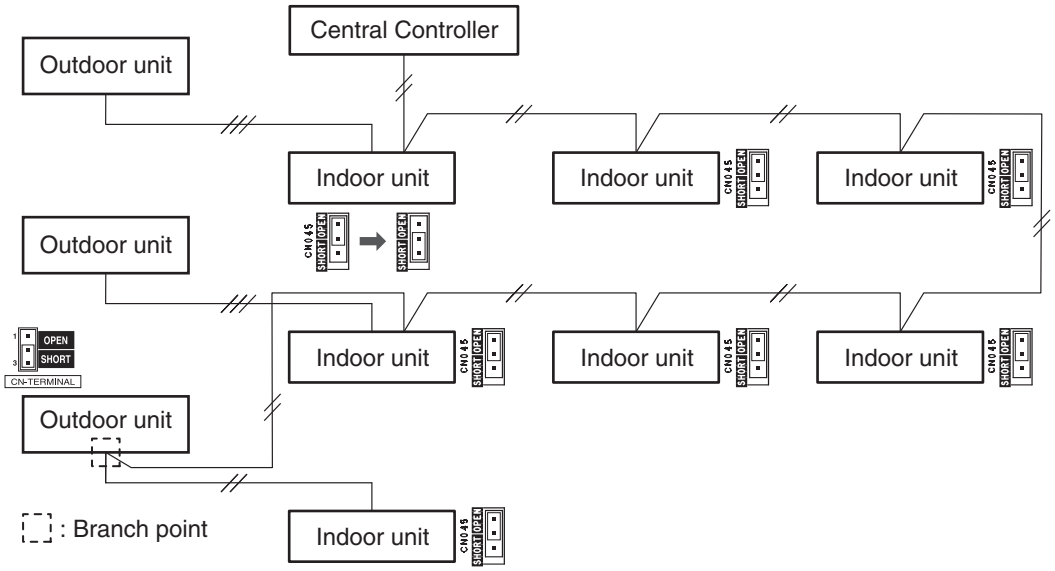


- In case that the inter-unit control wiring in the link are all 2-line connection only, or mixed with 2-line and 3-line connections:
  1) All refrigerant systems are 2-line connection:

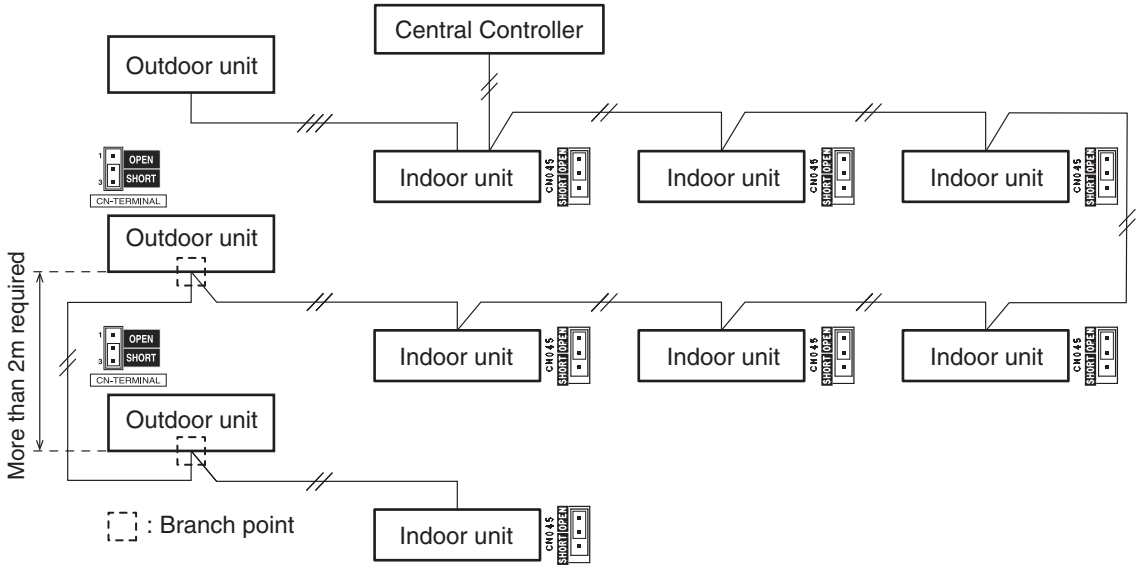


  2) Only one refrigerant system is 2-line connection and other refrigerant systems are 3-line connection:

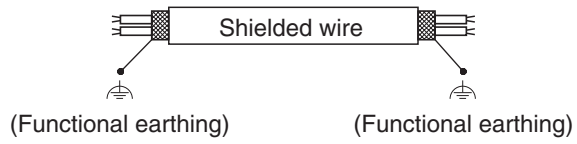




3) Only one refrigerant system is 3-line connection and other refrigerant systems are 2-line connection:



(5) Use shielded wires for inter-unit control wiring (C) and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in Section 4-3.



(6)
- **In the case of 3-line connection, connection cable between outdoor and indoor unit shall be approved polychloroprene sheathed flexible cord. Type designation 60245 IEC57 (H05RN-F, GP85PCP etc.) or heavier cord.**
- **Use the standard power supply cables for Europe (such as H05RN-F or H07RN-F which conform to CENELEC (HAR) rating specifications) or use the cables based on IEC standard. (60245 IEC57, 60245 IEC66)**

⚠ WARNING

Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also occur. Therefore, ensure that all wiring is tightly connected.

When connecting each power wire to the terminal, follow the instructions on “How to connect wiring to the terminal” and fasten the wire securely with the terminal screw.

How to connect wiring to the terminal

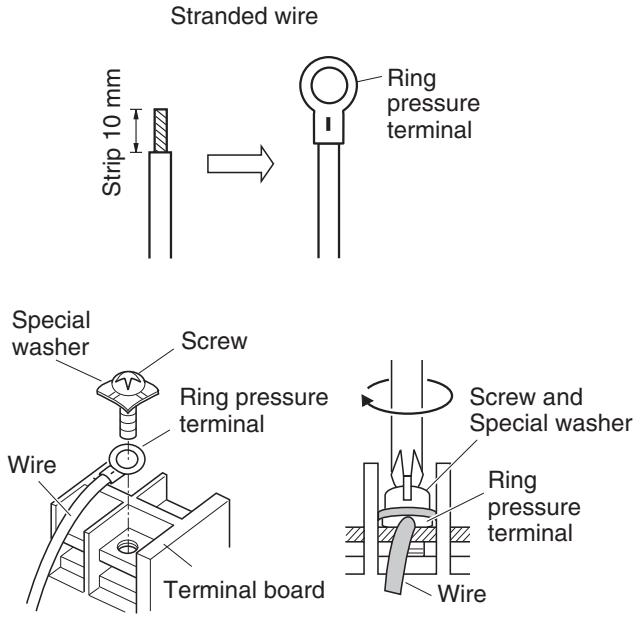
■ For stranded wiring

(1) Cut the wire end with cutting pliers, then strip the insulation to expose the stranded wiring about 10 mm and tightly twist the wire ends. Then attach the ring pressure terminal.

(2) Using a Phillips head screwdriver, remove the terminal screw(s) on the terminal board.

(3) Using a ring connector fastener or pliers, securely clamp each stripped wire end with a ring pressure terminal.

(4) Place the ring pressure terminal, and replace and tighten the removed terminal screw using a screwdriver.



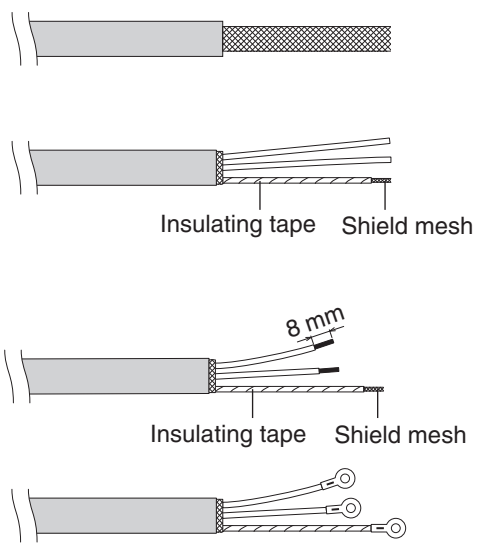
■ Examples of shield wires

(1) Remove cable coat not to scratch braided shield.

(2) Unbraid the braided shield carefully and twist the unbraided shield wires tightly together. Insulate the shield wires by covering them with an insulation tube or wrapping insulating tape around them.

(3) Remove coat of signal wire.

(4) Attach ring pressure terminals to the signal wires and the shield wires insulated in Step (2).



5. HOW TO PROCESS TUBING

When connecting RAC Multi outdoor unit, see Section "INSTALLATION INSTRUCTION SUPPLEMENT" as well.

Must ensure mechanical connections be accessible for maintenance purposes.

5-1. Connecting the Refrigerant Tubing

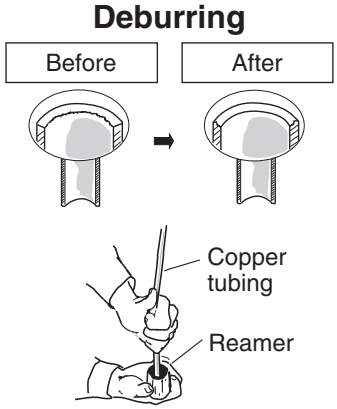
Use of the Flaring Method

Many of conventional split system air conditioners employ the flaring method to connect refrigerant tubes that run between indoor and outdoor units. In this method, the copper tubes are flared at each end and connected with flare nuts.

Flaring Procedure with a Flare Tool

(1) Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30 – 50 cm longer than the tubing length you estimate.

(2) Remove burrs at each end of the copper tubing with a tube reamer or a similar tool. This process is important and should be done carefully to make a good flare. Be sure to keep any contaminants (moisture, dirt, metal filings, etc.) from entering the tubing.

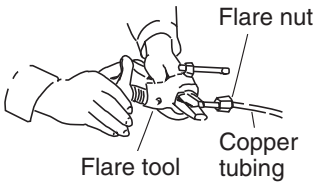


NOTE

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube.

(3) Remove the flare nut from the unit and be sure to mount it on the copper tube.

(4) Make a flare at the end of the copper tube with a flare tool.



NOTE

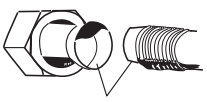
When flared joints are reused, the flare part shall be re-fabricated.
A good flare should have the following characteristics:

- inside surface is glossy and smooth
- edge is smooth
- tapered sides are of uniform length

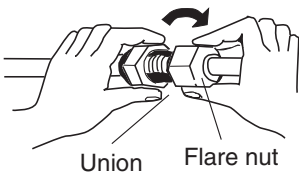
Caution Before Connecting Tubes Tightly

(1) Apply a sealing cap or water-proof tape to prevent dust or water from entering the tubes before they are used.

(2) Be sure to apply refrigerant lubricant (ether oil) to the inside of the flare nut before making piping connections. This is effective for reducing gas leaks.


Apply refrigerant lubricant.

(3) For proper connection, align the union tube and flare tube straight with each other, then screw on the flare nut lightly at first to obtain a smooth match.



- Adjust the shape of the liquid tube using a tube bender at the installation site and connect it to the liquid tubing side valve using a flare.

5-2. Connecting Tubing Between Indoor and Outdoor Units

(1) Tightly connect the indoor-side refrigerant tubing extended from the wall with the outdoor-side tubing.

Indoor Unit Tubing Connection

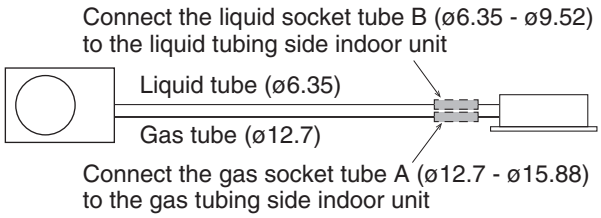
Unit : mm

Indoor unit type	S-25, 36, 50PY3E	S-60PY3E
Gas tube	ø12.7	ø15.88 (ø12.7)
Liquid tube	ø6.35	ø9.52 (ø6.35)

Different-diameter-tube joint for the indoor unit tubing connection part is supplied with S-60PY3E.
The size of parenthesis indicates the connection tube diameter when using the different-diameter-tube joint.

How to use different-diameter-tube joint (supplied)

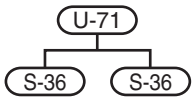
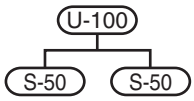
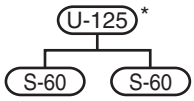
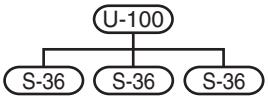
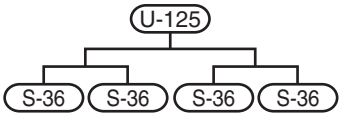
1) When using with single connection
   • Outdoor PZ3 and PZH3 series (Type 60)

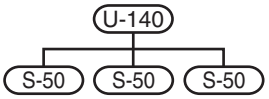


The following examples show the multiple connections.

- Connectable or disconnectable units vary depending on a series of outdoor units. Refer to the installation instructions for the outdoor unit as well.
- Two, three or four indoor units can be operated simultaneously with a single remote controller. Note that individual operation is not possible.
- Master unit and slave unit can be set automatically in twin, triple and double twin system. No address setting is necessary.

Applicable “TWIN”, “TRIPLE” and “DOUBLE TWIN” combination table

	Outdoor unit	Type 71 (Only PZH series)	Type 100	Type 125
TWIN	combination			
TRIPLE	combination			
DOUBLE TWIN	combination			

	Outdoor unit	Type 140
TWIN	combination	
TRIPLE	combination	
DOUBLE TWIN	combination	

* Except for the outdoor PZ2 and PZH2 series

(2) To fasten the flare nuts, apply specified torque.

- When removing the flare nuts from the tubing connections, or when tightening them after connecting the tubing, be sure to use two spanners.
  When tightening the flare nuts, use a torque wrench.
  If the flare nuts are over-tightened, the flare may be damaged, which could result in refrigerant leakage and cause injury or asphyxiation to room occupants.
- For the flare nuts at tubing connections, be sure to use the flare nuts that were supplied with the unit, or else flare nuts for R410A, R32 (type 2). The refrigerant tubing that is used must be of the correct wall thickness as shown in the table at right.

  Because the pressure is approximately 1.6 times higher than conventional refrigerant R22 pressure, the use of ordinary flare nuts (type 1) or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.

Tube diameter	Tightening torque (approximate)	Tube thickness
ø6.35 (1/4”)	14 – 18 N · m {140 – 180 kgf · cm}	0.8 mm
ø9.52 (3/8”)	34 – 42 N · m {340 – 420 kgf · cm}	0.8 mm
ø12.7 (1/2”)	49 – 55 N · m {490 – 550 kgf · cm}	0.8 mm
ø15.88 (5/8”)	68 – 82 N · m {680 – 820 kgf · cm}	1.0 mm

- In order to prevent damage to the flare caused by over-tightening of the flare nuts, use the table on the right as a guide when tightening.
- When tightening the flare nut on the liquid tube, use an adjustable wrench with a nominal handle length of 200 mm.

5-3. Insulating the Refrigerant Tubing

Tubing Insulation

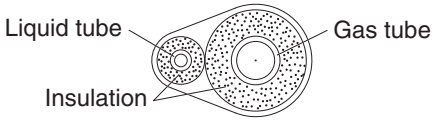
Must ensure that pipe-work shall be protected from physical damage.

- Thermal insulation must be applied to all units tubing, including distribution joint (field supply).
  * For gas tubing, the insulation material must be heat resistant to 120°C or above. For other tubing, it must be heat resistant to 80°C or above.

  Insulation material thickness must be 10 mm or greater.

  If the conditions inside the ceiling exceed DB 30°C and RH 70%, increase the thickness of the gas tubing insulation material by 1 step.

Two tubes arranged together



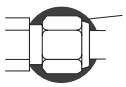
⚠ CAUTION

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.

Additional Precautions For R32 Models

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

To prevent the ingress of moisture into the joint which could have the potential to freeze and then cause leakage, the joint must be sealed with suitable silicone and insulation material. The joint should be sealed on both liquid and gas side.



Insulation material and silicone sealant.
Please ensure there are no gaps where moisture can enter the joint.

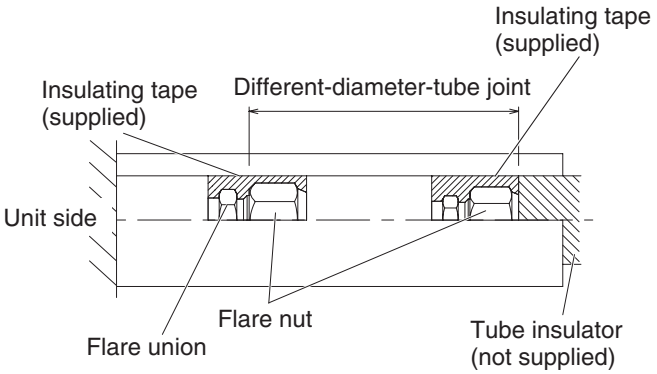
Silicone Sealant must be neutral cure and ammonia free. Use of silicone containing ammonia can lead to stress corrosion on the joint and cause leakage.

Taping the flare nuts

Wind the insulating tape around the flare nuts at the gas / liquid tube connections. Then cover up the tubing connections with the flare insulator.

Insulation material

The material used for insulation must have good insulation characteristics, be easy to use, be age resistant, and must not easily absorb moisture.



* Illustration shows when using by S-60PY3E. (Only PZ3 series)

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

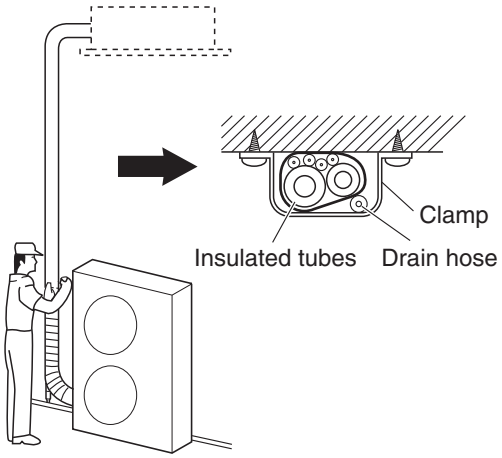
After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.
Never grasp the drain or refrigerant connecting outlets when moving the unit.

5-4. Taping the Tubes

(1) At this time, the refrigerant tubes (and electrical wiring if local codes permit) should be taped together with armoring tape in 1 bundle. To prevent condensation from overflowing the drain pan, keep the drain hose separate from the refrigerant tubing.

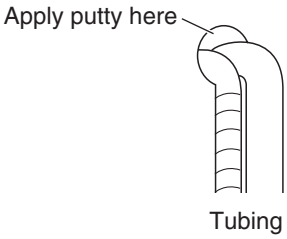
(2) Wrap the armoring tape from the bottom of the outdoor unit to the top of the tubing where it enters the wall. As you wrap the tubing, overlap half of each previous tape turn.

(3) Clamp the tubing bundle to the wall, using 1 clamp approx. each meter.



NOTE

Do not wind the armoring 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.



5-5. Finishing the Installation

After finishing insulating and taping over the tubing, use sealing putty to seal off the hole in the wall to prevent rain and draft from entering.

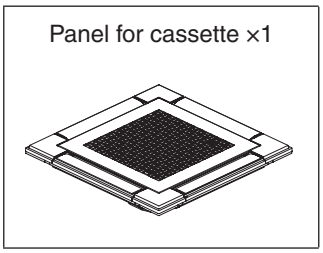
6. HOW TO INSTALL THE TIMER REMOTE CONTROLLER OR HIGH-SPEC WIRED REMOTE CONTROLLER (OPTIONAL PART)

NOTE

Refer to the Installation Instructions attached to the optional Timer Remote Controller or optional High-spec Wired Remote Controller.

7. HOW TO INSTALL THE PANEL FOR CASSETTE

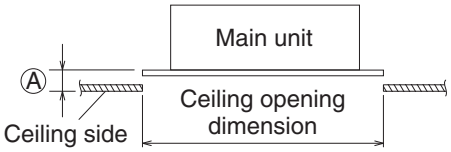
Accessories



7-1. Preparation for Panel for Cassette Installation

(1) Checking the unit position

1) Check that the ceiling hole is within this range: 585 mm × 585 mm to 595 mm × 595 mm
2) Confirm that the position of the indoor unit and the ceiling as shown in the diagram. If the positions of the ceiling surface and unit do not match, air leakage, water leakage, flap operation failure, or other problems may occur.

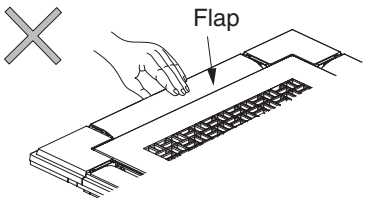


Ⓐ :Be sure to necessarily make a space within the range of 13 mm ~ 18 mm.

If not within this range, malfunction or other trouble may occur.

⚠ CAUTION

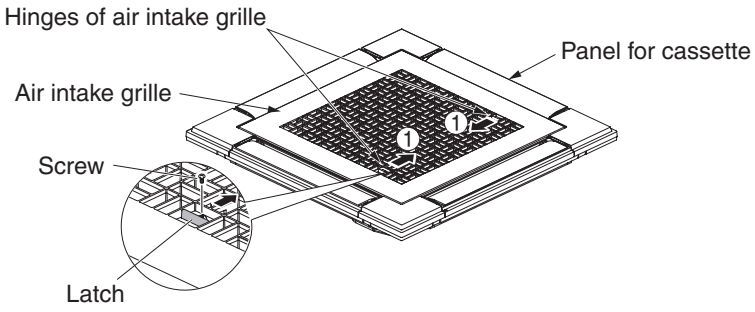
- **Never place the panel face-down. Either hang it vertically or place it on top of a projecting object. Placing it face-down will damage the surface.**
- **Do not touch the flap or apply force to it. (This may cause flap malfunction.)**



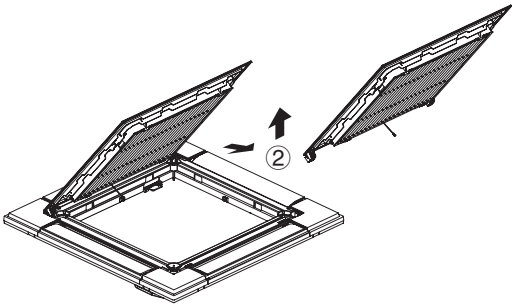
7-2. How to Install the Panel for Cassette

(1) Removing the air intake grille

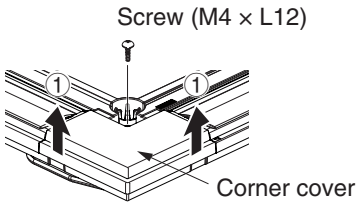
1) Remove the 2 screws on the latch of the air intake grille. (Reattach the air intake grille after installation of the panel for cassette.)
2) Slide the air intake grille catches in the direction shown by the arrows ① to open the grille.

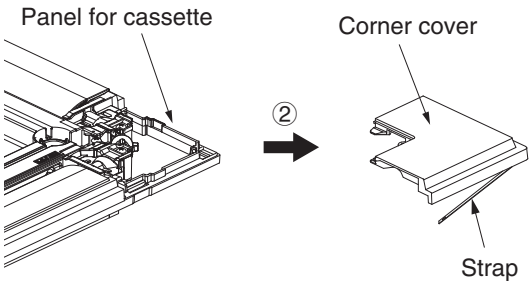


3) With the air intake grille opened, remove the grille hinge from the panel for cassette by sliding it in the direction shown by the arrow ②. (Reattach the air intake grille after installation of the panel for cassette.)

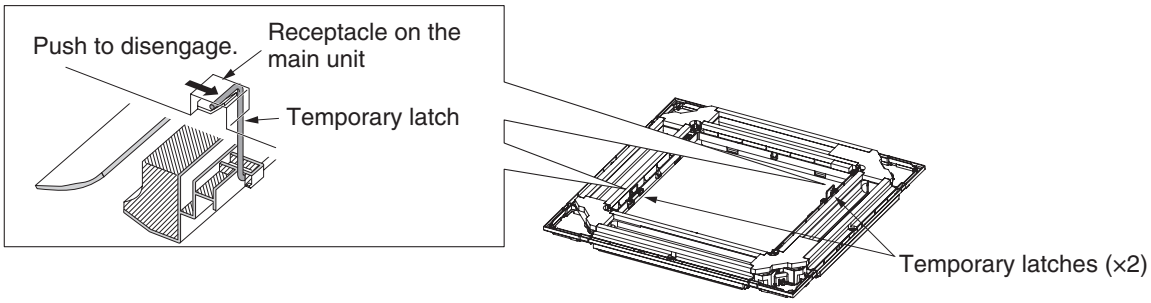


(2) Removing the corner cover
Push the latches on the corner cover in the direction of the arrow ① and remove them by sliding in the direction of the arrow ②.

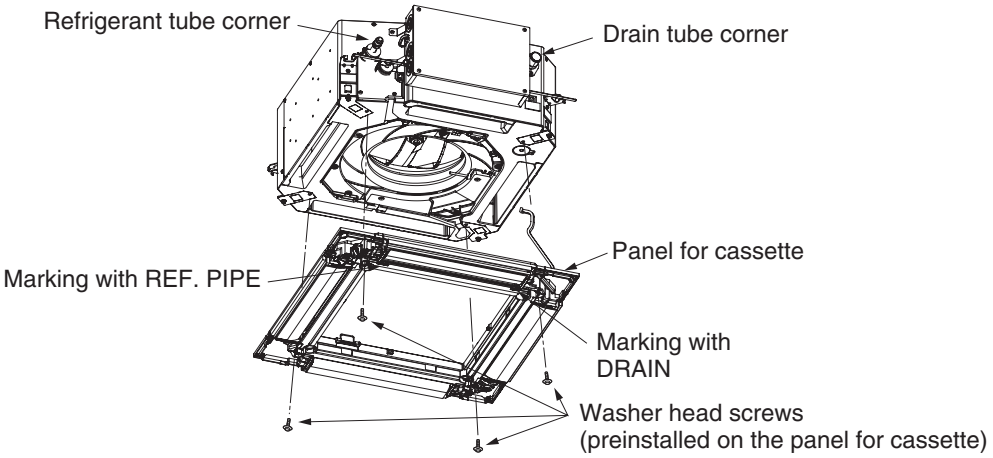




(3) Installing the panel for cassette
The power must be turned ON in order to change the flap angle. (Do not attempt to move the flap by hand. Doing so may damage the flap.)
1) Hang the temporary latches on the inside of the panel for cassette to the receptacle on the unit to temporarily attach the panel for cassette in place.
- The panel for cassette must be installed in the correct direction relative to the unit. Align the REF. PIPE and DRAIN marks on the panel for cassette corner with the correct positions on the unit.
- When removing the panel for cassette, push the temporary latches outward while holding the panel for cassette.

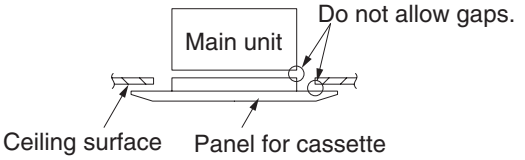


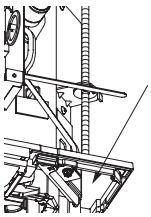
2) Align the panel installation holes and the unit screw holes.
3) Tighten the provided washer head screws at the 4 panel installation locations so that the panel is attached tightly to the unit.



4) Check that the panel is attached tightly to the ceiling.

- At this time, make sure that there are no gaps between the unit and the panel for cassette, or between the panel for cassette and the ceiling surface.
- If there is a gap between the panel and the ceiling, leave the panel for cassette attached and make fine adjustments to the installation height of the unit to eliminate the gap with the ceiling.

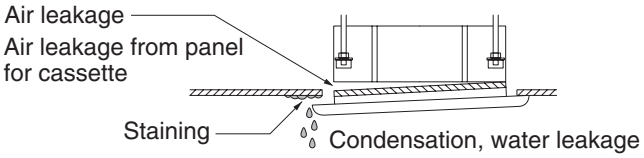




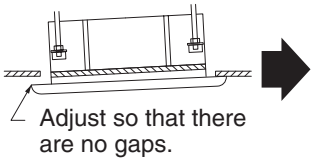
Make fine adjustment by a wrench or other tools to the installation height of the unit to eliminate the gap with the ceiling through the holes of the corner cover.

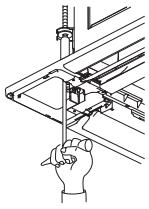
⚠ CAUTION

- **If the screws are not sufficiently tightened, trouble such as that shown in the figure may occur.**
  Be sure to tighten the screws securely.



- **If a gap remains between the ceiling surface and the panel for cassette even after the screws are tightened, adjust the height of the unit again.**



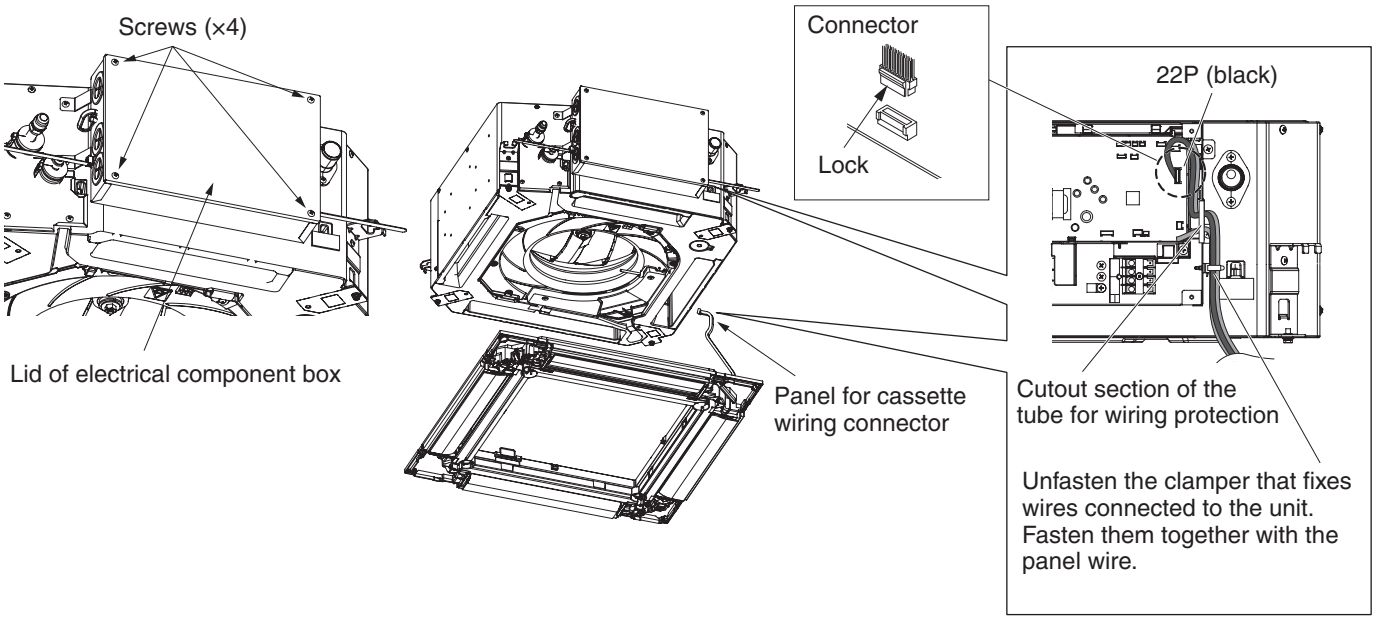


If there is no affect to the horizontal of the unit and drain tube, adjustment to the installation height of the unit can be made through the hole of the panel for cassette corner.

(4) Wiring the Panel for Cassette

1) Open the cover of the electrical component box for the indoor unit control PCB.
2) Connect the 22P connector (black) from the panel for cassette to the connector on the indoor unit control PCB in the unit electrical component box. In this case, expose the cutout section of the tube for the wiring protection to the outside from the electrical component box and fix it with the clamper attached to the electrical component box.

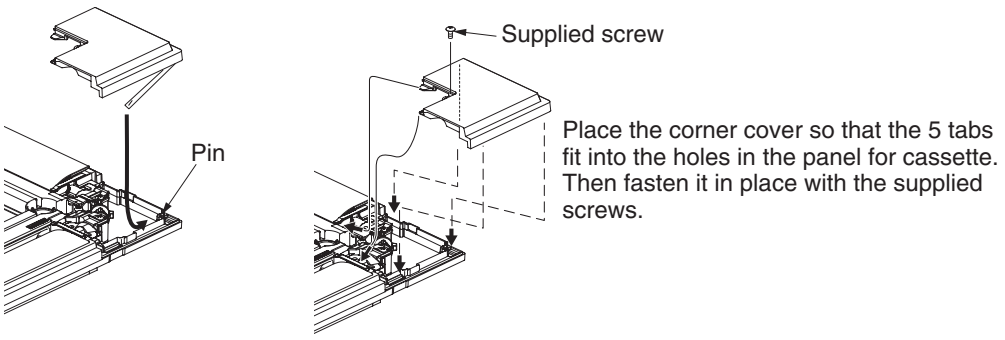
- **Insert connector lock facing PCB edge until it is locked in place. (If not connected completely, the Auto Flap will not operate and "P09" is displayed on the remote controller.)**
- **Check that the wiring connector is not caught between the electrical component box and the cover.**
- **Check that the wiring connector is not caught between the unit and the panel for cassette.**



(5) How to Attach the Corner & Air Intake Grille

A. Attaching the corner cover

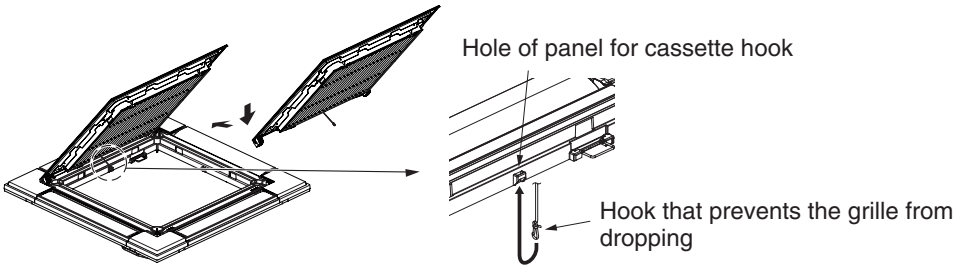
1) Check that the safety strap from the corner cover is fastened to the panel for cassette pin, as shown in the figure.
2) Use the supplied screws to attach the corner cover to the panel for cassette.



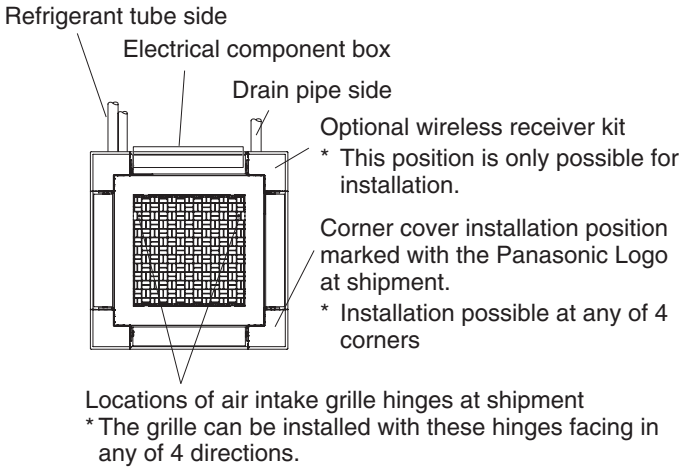
B. Attaching the air intake grille

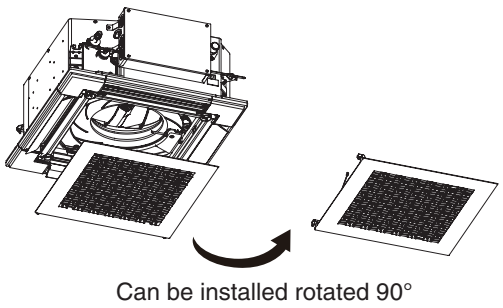
- To install the air intake grille, follow the steps for "Removing the air intake grille" in the reverse order. By rotating the air intake grille, it is possible to attach the grille onto the panel for cassette from any of 4 directions. Coordinate the directions of the air intake grilles when installing multiple units, and change the directions according to customer's requests.
- When attaching the air intake grille, be careful that the flap lead wire does not become caught.

- Be sure to attach the safety strap that prevents the air intake grille from dropping off to the panel for cassette unit as shown in the figure.



- With this panel for cassette, the directions of the air intake grille lattices when installing multiple units, and the position of the label showing the company name on the corner panel, can be changed according to customer's requests, as shown in the figure. However, the wireless signal receiver can only be installed at the refrigerant-tubing corner of the ceiling unit.



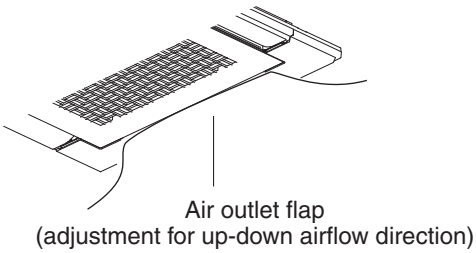


7-3. Others

(1) Checking After Installation
  1) Check that there are no gaps between the unit and the panel for cassette, or between the panel for cassette and the ceiling surface.
    * Gaps may cause water leakage and condensation.
  2) Check that the wiring is securely connected.
    * If it is not securely connected, the auto flap will not operate. ("P09" is displayed on the remote controller.) In addition, the water leakage and condensation may occur.

(2) Operating the Wireless Remote Controller
  For details of installation, refer to the Installation Instructions attached to the optional Wireless Remote Controller.

(3) Setting the Flap Separately
  1) The 4-air outlet flap can be adjusted separately during operation. When not adjusted separately, all flaps operate in the same manner.

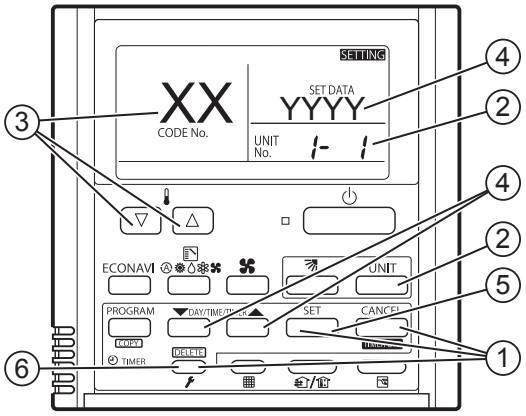


<Procedure of CZ-RTC5B>

Refer to Section "Flap Setting for Each Air Outlet" in the Operating Instructions attached to the optional High-spec Wired Remote Controller.

<Procedure of CZ-RTC4>

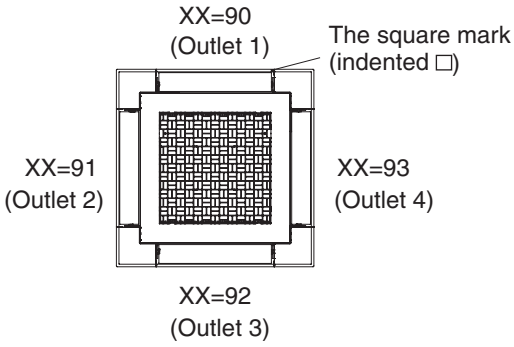
Stop the system before performing these steps.



① Press and hold the , SET and CANCEL buttons simultaneously for 4 seconds or longer.

② If group control is in effect, press the UNIT button to set. At this time, the fan at the indoor unit begins and select the address (unit No.) of the indoor unit operating.

③ Designate the item code "XX" by adjusting the Temperature Setting ▽/△ buttons.

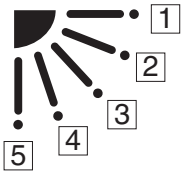


④ Press the timer time DAY/ / TIMER buttons to select the desired setting data.

* Setting data "YYYY"

Setting data	Flap position during operation
0000	Without separate setting
0001	Swing
0002	Move to position 1 and stay
0003	Move to position 2 and stay
0004	Move to position 3 and stay
0005	Move to position 4 and stay
0006	Move to position 5 and stay

Flap position



NOTE

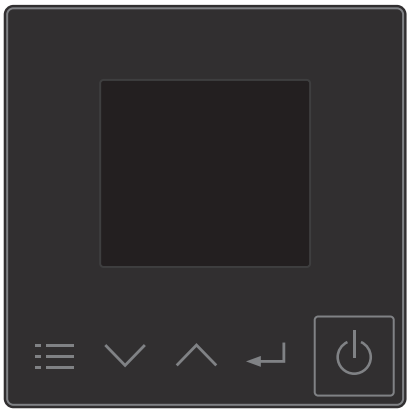
The flap swings during the operation under "Setting the Flap Separately". At this time, the unselected flaps are moved to the position 1.

⑤ Press the SET button.
(The display stops blinking and remains lit, and setting is completed.)
If you wish to change the selected indoor unit, follow Step ②.

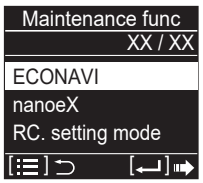
⑥ Press the button to return to normal remote controller display.

<Procedure of CZ-RTC6 series>

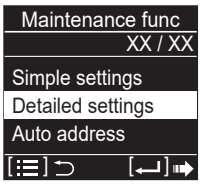
Stop the system before performing these steps.



① Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.

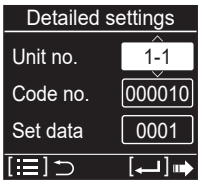


② Press the ∨ or ∧ button to see each menu.
Select “Detailed settings” on the LCD display and press the ↵ button.



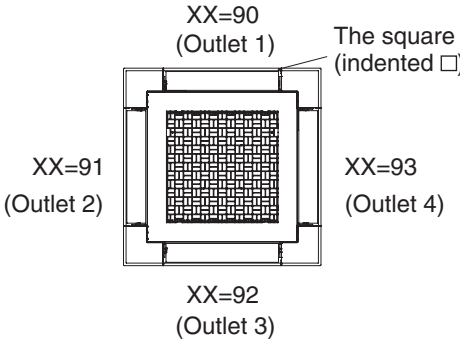
The “Detailed settings” screen appears on the LCD display.

③ Select the “Unit no.” by pressing the ∨ or ∧ button.
After selecting “Unit no.”, press the ↵ button and proceed to Step ④.
If the ☰ button is pressed, proceed to Step ⑥.



④ Keep pressing the ↵ button for 2 seconds or more during selecting “Code no.”.

Change the “Code no.” one digit at a time so that it becomes [0000XX] along with the following procedures.



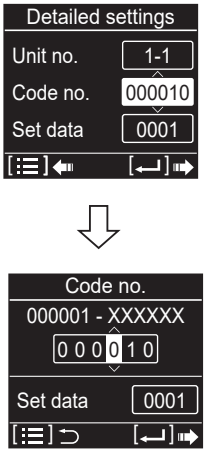


Fig. A

Change the value by pressing the ∨ or ∧ button.
After changing the value, press the ↵ button and set the next digit.

Change the value by pressing the ∨ or ∧ button.
After changing the value, press the ↵ button and set the next digit.

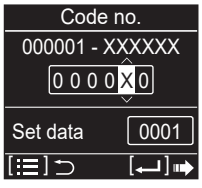


Fig. B

Change the value by pressing the ▽ or △ button.
After changing all digits, press the ↵ button and proceed to Step ⑤.

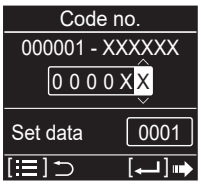


Fig. C

⑤ Select one of the Setting Data “YYYY” by pressing the ▽ or △ button.

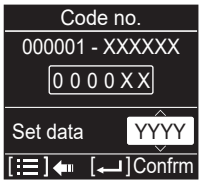
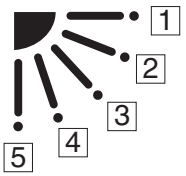


Fig. D

* Setting data “YYYY”

Setting data	Flap position during operation
0000	Without separate setting
0001	Swing
0002	Move to position 1 and stay
0003	Move to position 2 and stay
0004	Move to position 3 and stay
0005	Move to position 4 and stay
0006	Move to position 5 and stay

Flap position

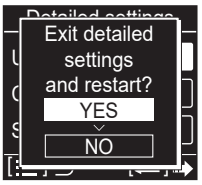


NOTE

The flap swings during the operation under “Setting the Flap Separately”.
At this time, the unselected flaps are moved to the position 1.

After selecting “Set data”, press the ↵ button. (If setting continuously, follow the procedures from **Fig. A**.)
If you wish to change the selected indoor unit or finish setting, press the ☰ button (the display returns to Step ③).

⑥ If the ☰ button is pressed under the display Step ③, the following display (Detailed setting-end screen) appears.
Then select “YES” by pressing the ▽ or △ button and press the ↵ button.



8. HOW TO INSTALL WIRELESS REMOTE CONTROLLER

NOTE

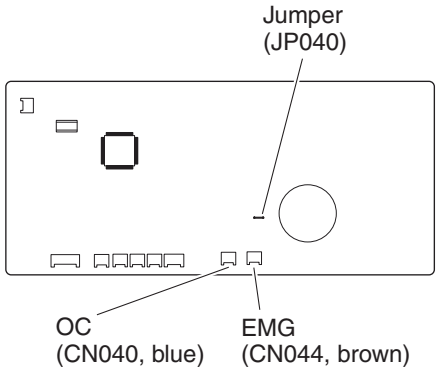
Refer to the Installation Instructions attached to the optional Wireless Remote Controller.

9. TEST RUN

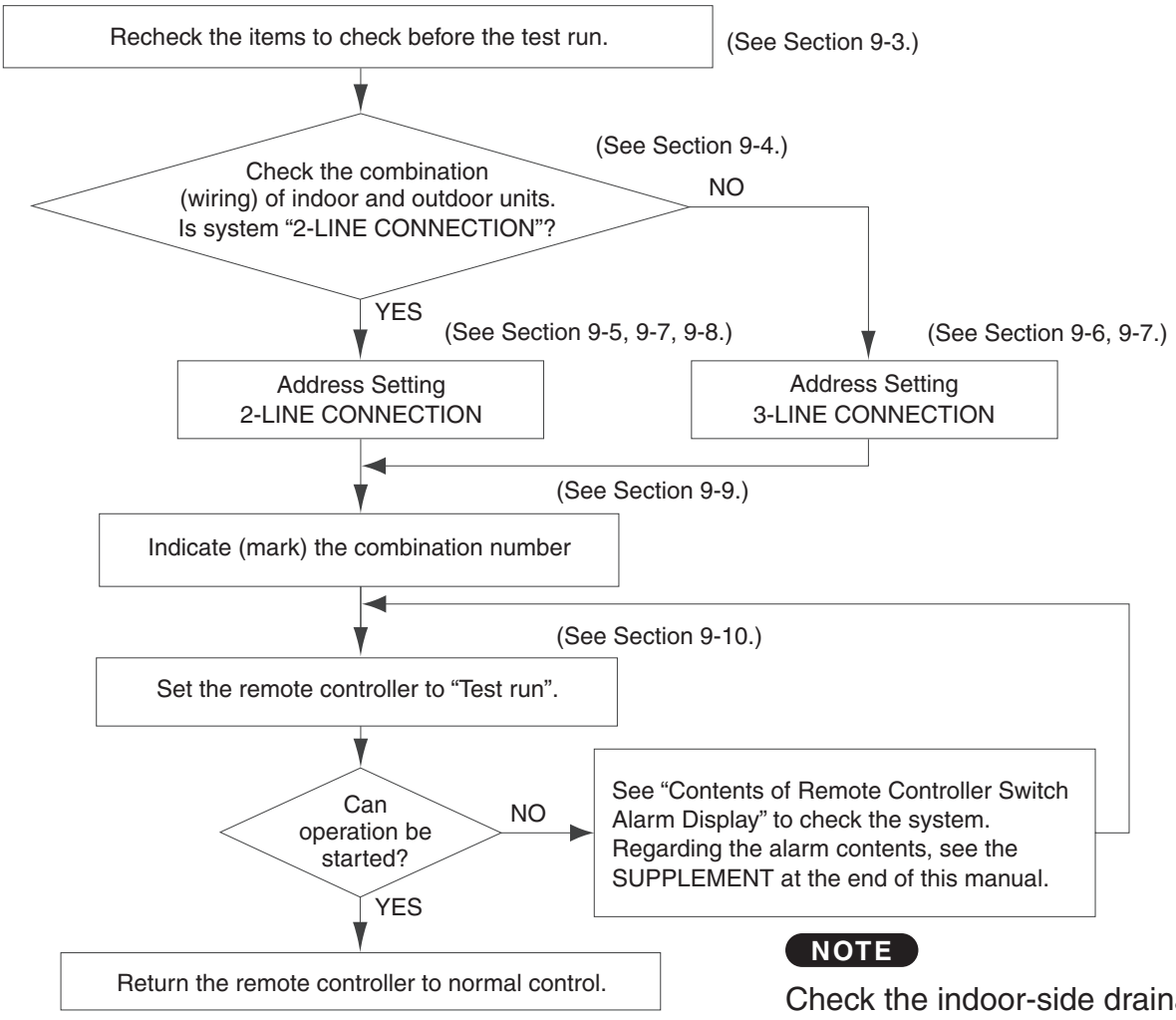
When connecting RAC Multi outdoor unit, see Section "INSTALLATION INSTRUCTION SUPPLEMENT" as well.

9-1. Precautions

- Request that the customer be present when the test run is performed.
  At this time, explain the operation manual and have the customer perform the actual steps.
- Check that the 220 – 240 VAC power is not connected to the inter-unit control wiring connector terminal.
  * If 220 – 240 VAC is accidentally applied, the indoor unit control PCB fuse will blow in order to protect the PCB.
    In this case, make the wiring correctly.
    Then disconnect the 2P connectors (OC) that are connected to the indoor unit control PCB, and replace them with 2P connectors (EMG).
    If operation is still not possible after changing the brown connectors, cut the jumper on the indoor unit control PCB.
    (Be sure to turn the power OFF before performing this work.)



9-2. Test Run Procedure



NOTE

Check the indoor-side drainage.

9-3. Items to Check Before the Test Run

(1) Check that the indoor and outdoor units have correct combination.
(2) Turn the remote power switch ON at least 5 hours in advance in order to energize.
(3) Fully open the closed valves on the liquid tubing and gas tubing sides.
(4) Separate the power supply in accordance with the types of system.
(5) In the case of conditions below, restore the detailed setting code nos. 11, 12, 13, 14 of all indoor units in the system to the factory setting and then set up the auto address setting.
- Indoor unit has been communicated with another outdoor unit before.
- One or more PCBs of indoor units in the system are replaced.
- Detailed setting “Code no.” 11 is different from correct indoor unit capacity.
- Detailed setting “Code no.” 12, 13 or 14 doesn’t match for system.
- E15, E16 or L09 alarm occurs.
- The “Assigning” screen appears on the LCD display for more than 10 minutes.

* Factory setting

XX : Code no.	Item	YYYY : Set data
11	Indoor unit capacity	0000
12	System address	0099
13	Indoor unit address	0099
14	Group control address	0099

List of detailed setting items code nos. 11, 12, 13, 14

Code no.	Item	Set data					
		No.	Description		No.	Description	
11	Indoor unit capacity	0001	22	S-M20PY3E (20) Y3	0003	28	S-25PY3E (25) Y3
		0005	36	S-36PY3E (36) Y3	0009	56	S-50PY3E (50) Y3
		0011	71	S-60PY3E (60) Y3			
12	System address	0001	Unit no. 1				
		0002	Unit no. 2				
		0003	Unit no. 3				
		〉	〉				
		0030	Unit no. 30				
		0099	Not set				
13	Indoor unit address	0001	Unit no. 1				
		0002	Unit no. 2				
		0003	Unit no. 3				
		〉	〉				
		0064	Unit no. 64				
		0099	Not set				
14	Group control address	0000	Individual (1:1 = Indoor unit with no group wiring)				
		0001	Main unit (One of the group-control indoor units)				
		0002	Sub unit (All group-control indoor units except for main unit)				
		0099	Not set				

* Code no. is displayed with 6 digits in wired remote controller, CZ-RTC6 series.
In this case, read as follows.
e.g. 11 → 000011

NOTE

The Item code numbers 11, 12, 13 and 14 can automatically be changed to the appropriate settings from factory settings listed above by making the auto address settings according to the connected outdoor unit capacity and the number of indoor units. If needed to reset the settings after once changed, return all the item codes to the factory shipment-time settings. It is necessary to set the auto address settings once again.

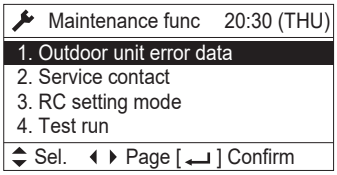
NOTE

In case of checking and changing before setting up the address settings in group connection, turn on only the power of the system to be checked and changed. If you turn on the power to all systems before address settings, the settings of all indoor units may not be seen correctly. After changing, turn off the power supply within 2 minutes or carry out the auto address setting procedures immediately. If the power of the system switched on for a while, the auto address setting may start as a single system and it might not match the multiple systems.

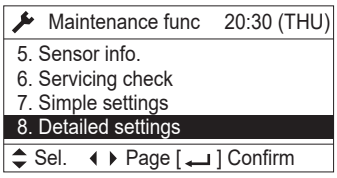
- How to check and change code nos. 11, 12, 13, 14

<Procedure of CZ-RTC5B>
Stop the system before performing these steps.

(1) Keep pressing the ⮌ , ↵ and ► buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ▼ or ▲ button to see each menu.
If you wish to see the next screen instantly, press the ◄ or ► button.
Select “8. Detailed settings” on the LCD display and press the ↵ button.

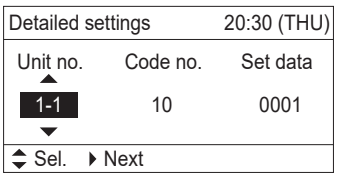


The “Detailed settings” screen appears on the LCD display.

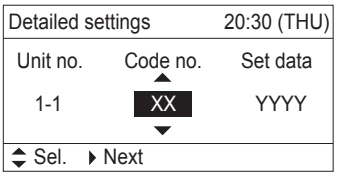
(3) Select the “Unit no.” by pressing the ▼ or ▲ button for changes.

NOTE

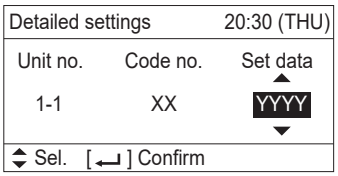
If the address setting is not set up correctly, the “ALL” will be displayed in the “Unit no.”.



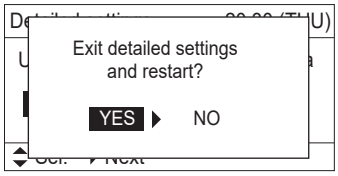
(4) Select the “Code no.” by pressing the ◄ or ► button.
Change the “Code no.” to “XX” by pressing the ▼ or ▲ button (or keeping it pressed).



(5) Select the “Set data” by pressing the ◄ or ► button.
Select one of the Setting Data “YYYY” by pressing the ▼ or ▲ button.
Then press the ↵ button.
If you wish to change the selected indoor unit, follow Step (3).



(6) Press the ↩ button to finish.
The “Exit detailed settings and restart?” (Detailed setting-end) screen appears on the LCD display.
Select “YES” and press the ↵ button.
(Return to normal remote controller display.)

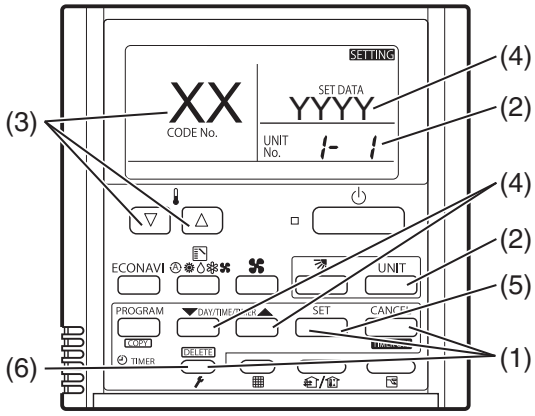


<Procedure of CZ-RTC4>
Stop the system before performing these steps.

(1) Press and hold the ⏻ , SET and CANCEL buttons simultaneously for 4 seconds or longer.
(2) If group control is in effect, press the UNIT button to set. At this time, the fan at the indoor unit begins and select the address (unit no.) of the indoor unit operating.

NOTE

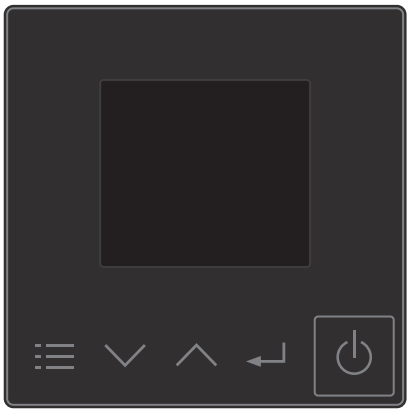
If the address setting is not set up correctly, the “ALL” will be displayed in the “Unit no.”.



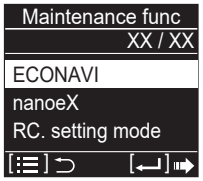
(3) Designate the item code “XX” by adjusting the Temperature Setting ▽/△ buttons.
(4) Press the timer time DAY/ / TIMER buttons to select the desired setting data.
(5) Press the SET button.
(The display stops blinking and remains lit, and setting is completed.)
If you wish to change the selected indoor unit, follow Step (2).
(6) Press the ⏻ button to return to normal remote controller display.

<Procedure of CZ-RTC6 series>

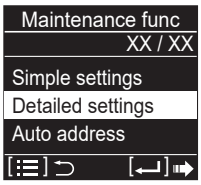
Stop the system before performing these steps.



(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.

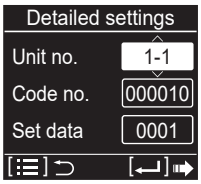


(2) Press the ∨ or ∧ button to see each menu.
Select “Detailed settings” on the LCD display and press the ↵ button.



The “Detailed settings” screen appears on the LCD display.

(3) Select the “Unit no.” by pressing the ∨ or ∧ button.
After selecting “Unit no.”, press the ↵ button and proceed to Step (4).

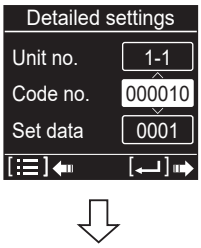


NOTE

If the address setting is not set up correctly, the “ALL” will be displayed in the “Unit no.”.

If the ☰ button is pressed, proceed to Step (6).

(4) Keep pressing the ↵ button for 2 seconds or more during selecting “Code no.”.



Change the “Code no.” one digit at a time so that it becomes [0000XX] along with the following procedures.

Change the value by pressing the ∨ or ∧ button.
After changing the value, press the ↵ button and set the next digit.

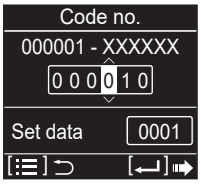


Fig. A

Change the value by pressing the ∨ or ∧ button.
After changing the value, press the ↵ button and set the next digit.

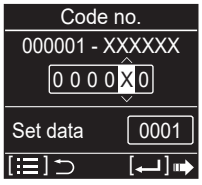


Fig. B

Change the value by pressing the ▽ or △ button.
After changing all digits, press the ↵ button and proceed to Step (5).

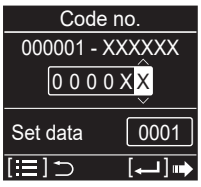


Fig. C

(5) Select one of the Setting Data “YYYY” by pressing the ▽ or △ button.
After selecting “Set data”, press the ↵ button. (If setting continuously, follow the procedures from **Fig. A**.)
If you wish to change the selected indoor unit or finish setting, press the ☰ button twice (the display returns to Step (3)).

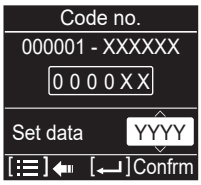
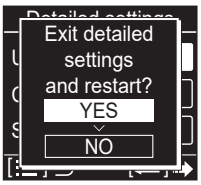


Fig. D

(6) If the ☰ button is pressed under the display Step (3), the following display (Detailed setting-end screen) appears.
Then select “YES” by pressing the ▽ or △ button and press the ↵ button.
(Return to normal remote controller display.)

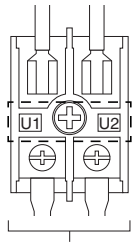


9-4. Check the Combination (wiring) of Indoor and Outdoor Units

Connection cable between outdoor and indoor unit has 2 types; One is 2-line connection and the other is 3-line connection. Check the type of the outdoor unit terminal board as illustrated below and make connection.

- **If U1 and U2 are shown on the terminal board, it is for 2-line connection.**

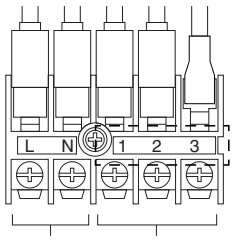
  * See the example in Section 4-3.



Inter-unit (between outdoor and indoor units) control wiring

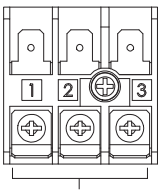
- **If 1, 2 and 3 are shown on the terminal board, it is for 3-line connection.**

  * See the example in Section 4-3.



Power supply cable

Connection cable between outdoor and indoor unit



Connection cable between outdoor and indoor unit

The examples above show the outdoor unit terminal boards. Carefully refer to the outdoor unit installation instructions.

9-5. Address Setting : 2-LINE CONNECTION

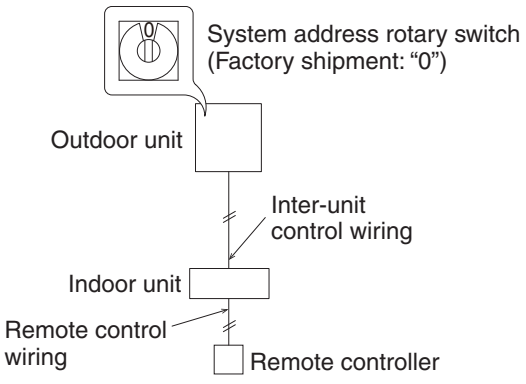
NOTE

The displays of the earth, outdoor unit power supply wiring and earth leakage circuit breaker are omitted.

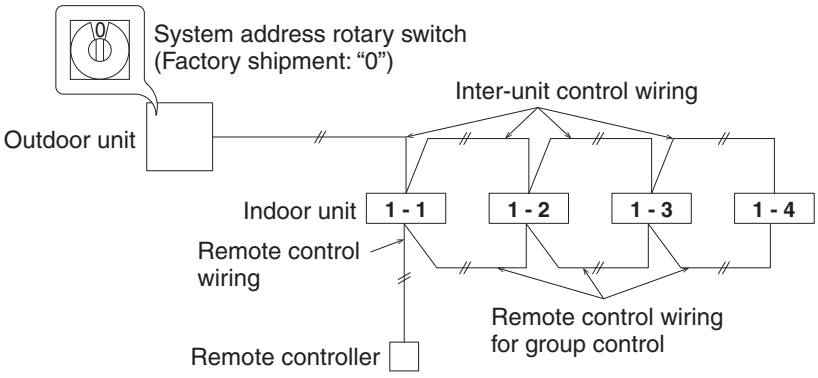
9-5-1. Basic connection 1 : Single type and simultaneous multiple operations

- **Simultaneous multiple operations: It is possible to operate maximum 4 (double-twin) indoor units within one outdoor unit. (Only specified indoor unit combination. Independent operation is not possible by connecting an individual remote controller.)**
- **It is not necessary to make setting of the refrigerant system address.**
- **When turning on all indoor and outdoor units, the auto address will start. It takes maximum 10 minutes. LED1 and LED2 of outdoor unit control PCB blink alternately during auto address setting. When finished, LEDs go off.**
- **When the auto address setting is completed, wait at least 1 minute and 30 seconds. Then start the operation.**

Single type



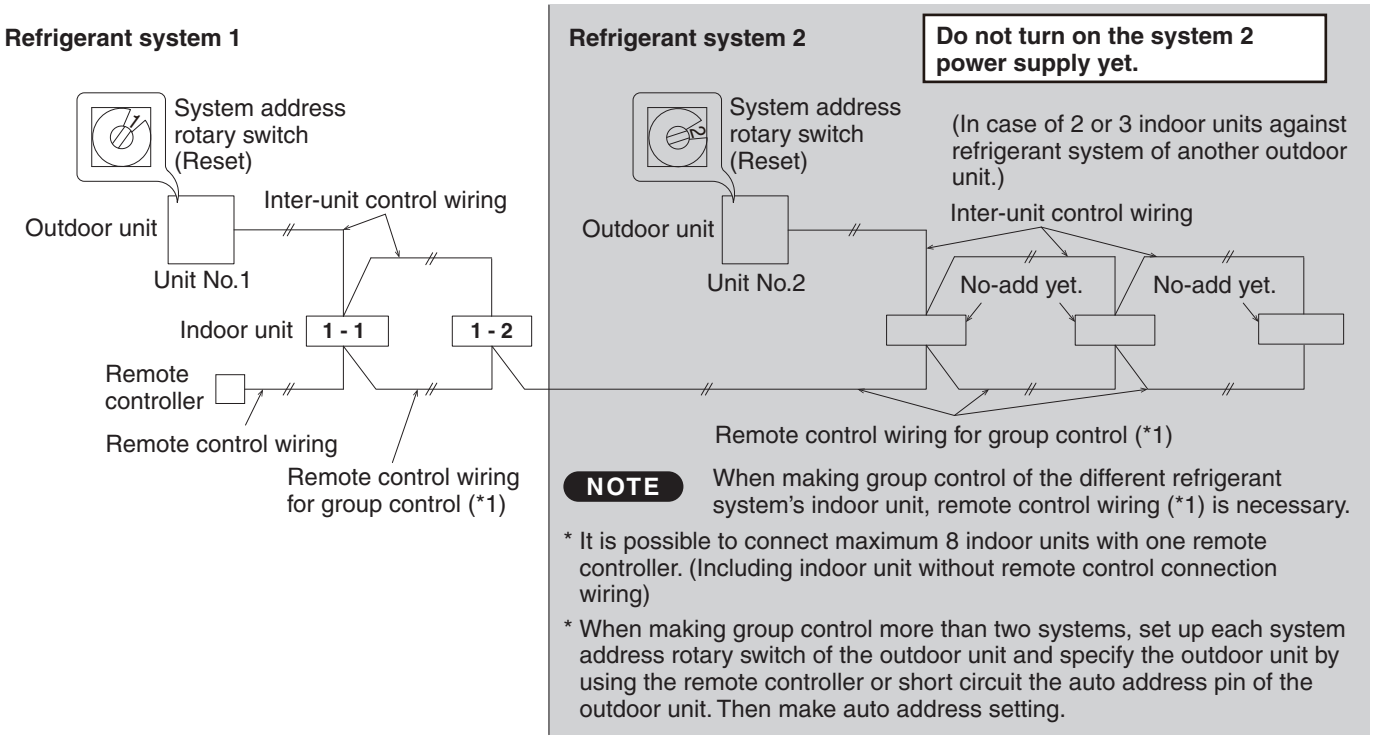
Simultaneous multiple (double-twin) operations



9-5-2. Basic connection 2 : Group control operation (when not using integrated control system)

- **Before turning on the power (earth leakage circuit breaker), make refrigerant system auto address setting. (See Section 9-5-5.)**
- **Turn on the system 1 indoor and outdoor units (earth leakage circuit breaker) and make indoor unit auto address setting. (See Section 9-7.)**

Two group control

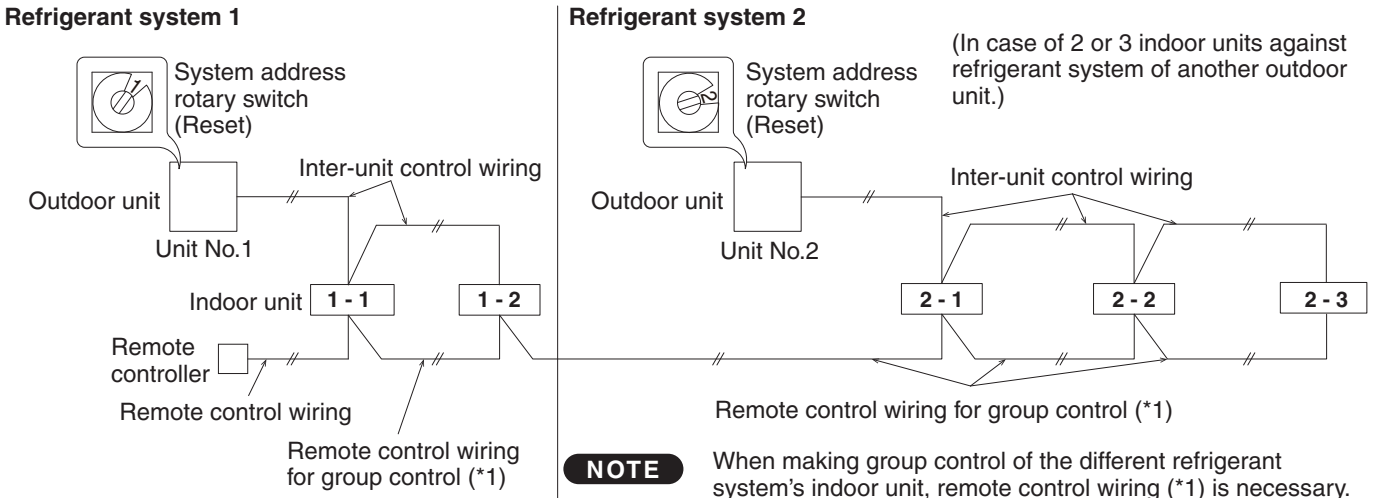


NOTE When making group control of the different refrigerant system's indoor unit, remote control wiring (*1) is necessary.

* It is possible to connect maximum 8 indoor units with one remote controller. (Including indoor unit without remote control connection wiring)
* When making group control more than two systems, set up each system address rotary switch of the outdoor unit and specify the outdoor unit by using the remote controller or short circuit the auto address pin of the outdoor unit. Then make auto address setting.

- **While keeping the system 1 power on, turn on the system 2 indoor and outdoor units (earth leakage circuit breaker).**
  Then make auto address setting of the indoor unit. (See Section 9-7.)

Two group control

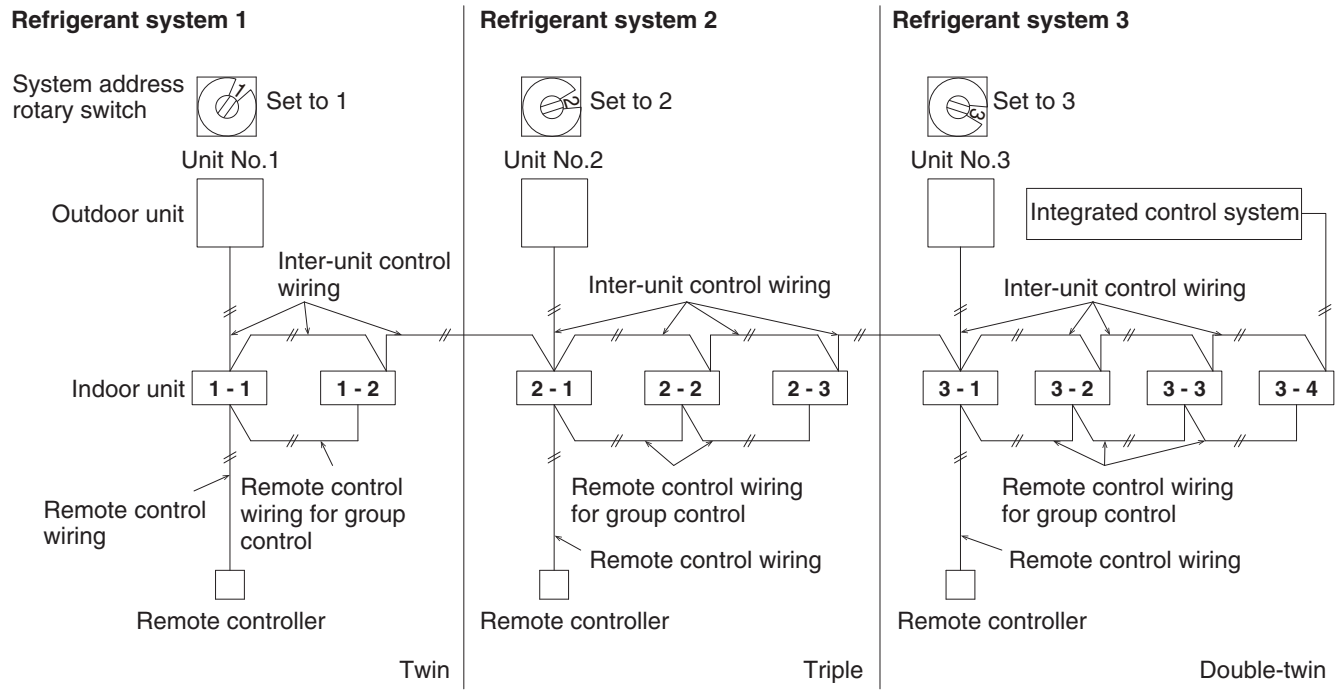


NOTE When making group control of the different refrigerant system's indoor unit, remote control wiring (*1) is necessary.

* It is possible to connect maximum 8 indoor units with one remote controller. (Including indoor unit without remote control connection wiring)
* When making group control more than two systems, set up each system address rotary switch of the outdoor unit and specify the outdoor unit by using the remote controller or short circuit the auto address pin of the outdoor unit. Then make auto address setting.

9-5-3. Basic connection 3 : Example of link wiring (when using integrated control system)

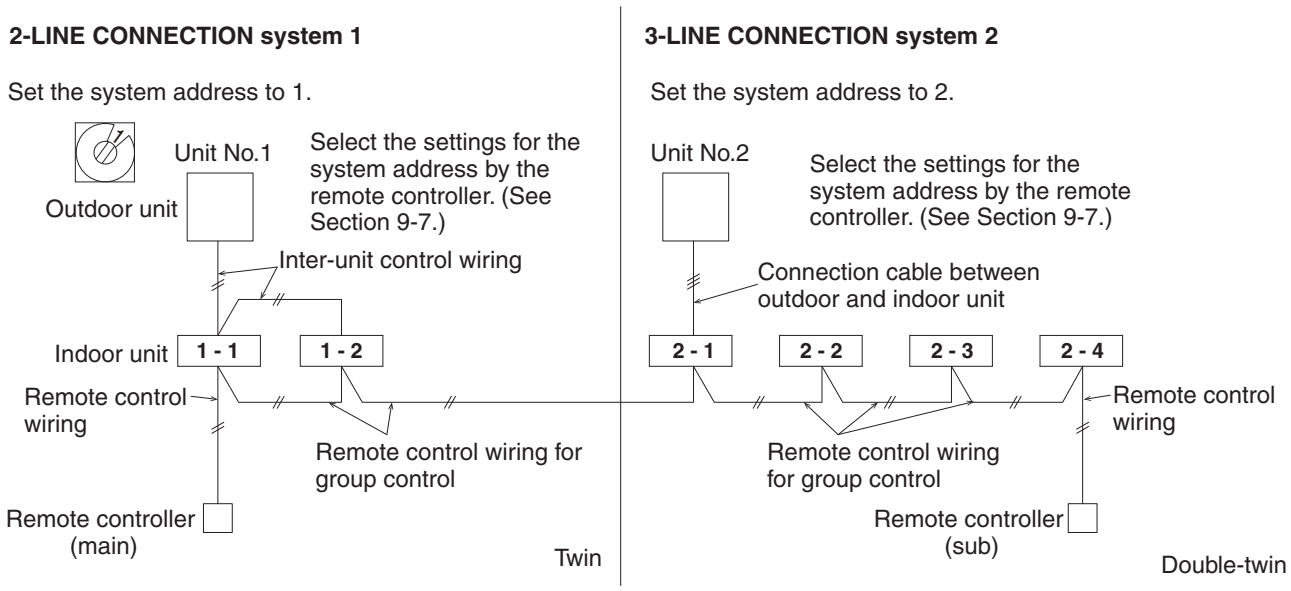
- **Before turning on the power (earth leakage circuit breaker), set the system address of each outdoor unit with the rotary switch.**
- **Turn on the power supply (earth leakage circuit breaker) of each system, make each system auto address setting by using the remote controller or short-circuiting the auto address pin of outdoor unit. (See Sections 9-7, 9-8).**



* It is possible to connect maximum 8 indoor units with one remote controller.

9-5-4. Basic connection 4 : Group control with 3-LINE CONNECTION unit

- *** Remote control wiring is necessary in all indoor units.**
  Make auto address setting following the procedure "9-5-2. Basic connection 2".



* If two (2) remote controllers are used, one (1) remote controller is set to "main" and the other is set to "sub". (See Section 9-11.)

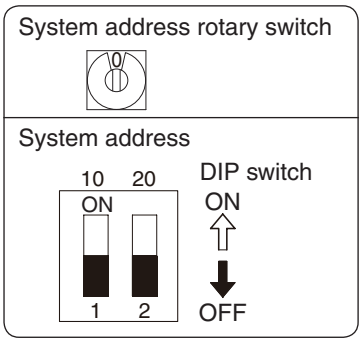
* In the case of 3-line connection system, auto address setting cannot be made by short-circuiting the outdoor auto address pin.

9-5-5. Setting the Outdoor unit system addresses

For basic wiring diagram (Set the system address: 1)

Outdoor unit control PCB

System address rotary switch
(Set to “0” at time of shipment)



System address No.	System address 10 digit (2P DIP switch)	System address 1 place (Rotary switch)
0 Auto address (Setting at shipment = “0”)	Both OFF ON 1 2 ON OFF	“0” setting 0
1 (If outdoor unit is No. 1)	Both OFF ON 1 2 ON OFF	“1” setting 1

9-6. Address Setting : 3-LINE CONNECTION

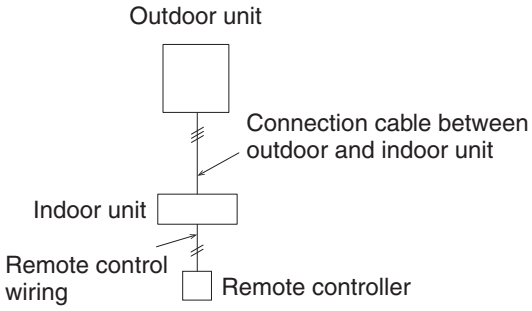
NOTE

The displays of the earth, outdoor unit power supply wiring and earth leakage circuit breaker are omitted.

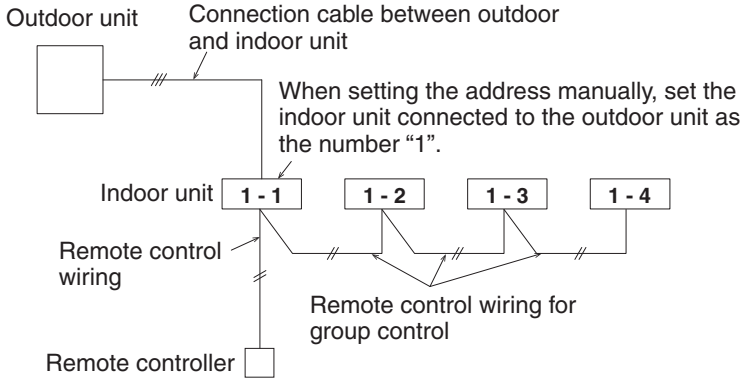
9-6-1. Basic connection 1 : Single type and simultaneous multiple operations

- **Simultaneous multiple operations: It is possible to operate maximum 4 (double-twin) indoor units within one outdoor unit. (Only specified indoor unit combination. Independent operation is not possible by connecting an individual remote controller.)**
- **It is not necessary to make setting of the refrigerant system address.**
- **When turning on all indoor and outdoor units, the auto address will start. It takes maximum 10 minutes.**
- **When the auto address setting is completed, wait at least 1 minute and 30 seconds. Then start the operation.**

Single type



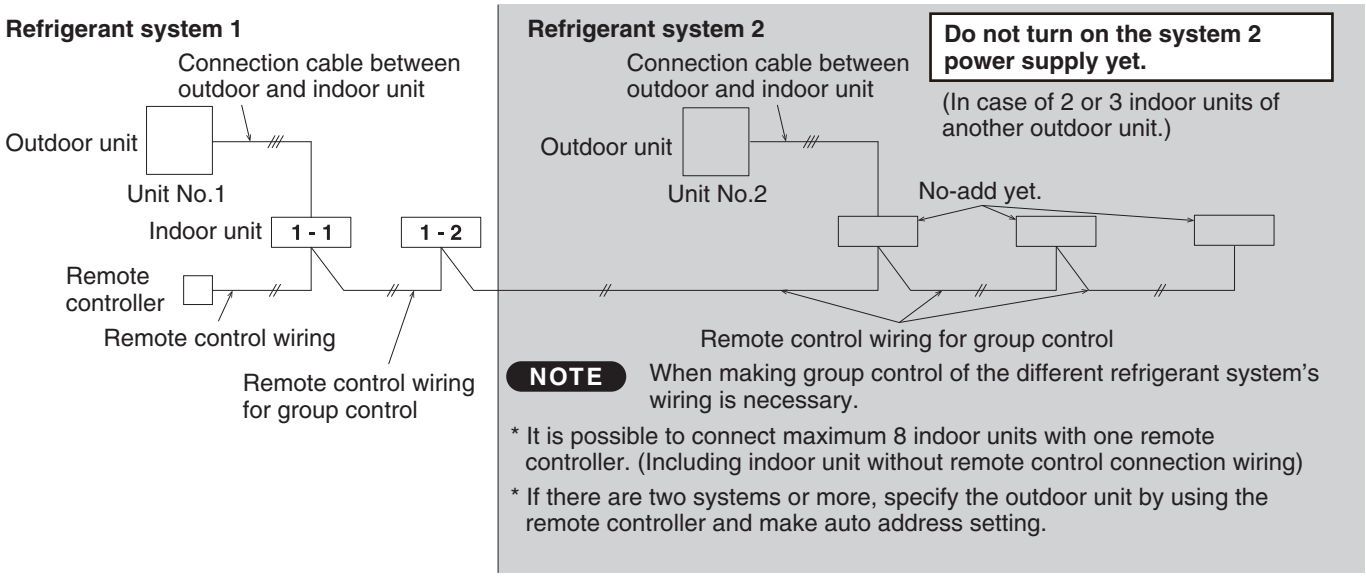
Simultaneous multiple (double-twin) operations



9-6-2. Basic connection 2 : Group control operation (when not using integrated control system)

- **Turn on the system 1 indoor and outdoor units (earth leakage circuit breaker) and make indoor unit auto address setting. (See Section 9-7.)**

Two group control



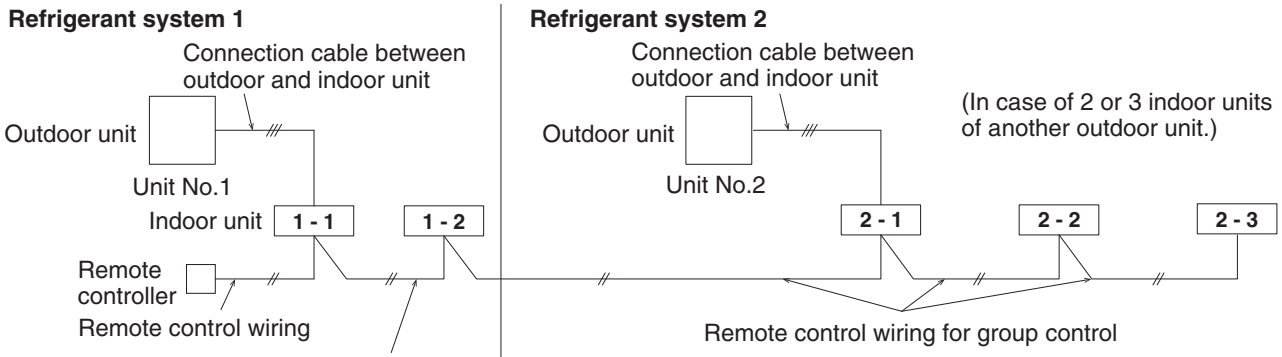
NOTE When making group control of the different refrigerant system's wiring is necessary.

* It is possible to connect maximum 8 indoor units with one remote controller. (Including indoor unit without remote control connection wiring)

* If there are two systems or more, specify the outdoor unit by using the remote controller and make auto address setting.

- **While keeping the system 1 power on, turn on the system 2 indoor and outdoor units (earth leakage circuit breaker).**
  Then make auto address setting of the indoor unit. (See Section 9-7.)

Two group control



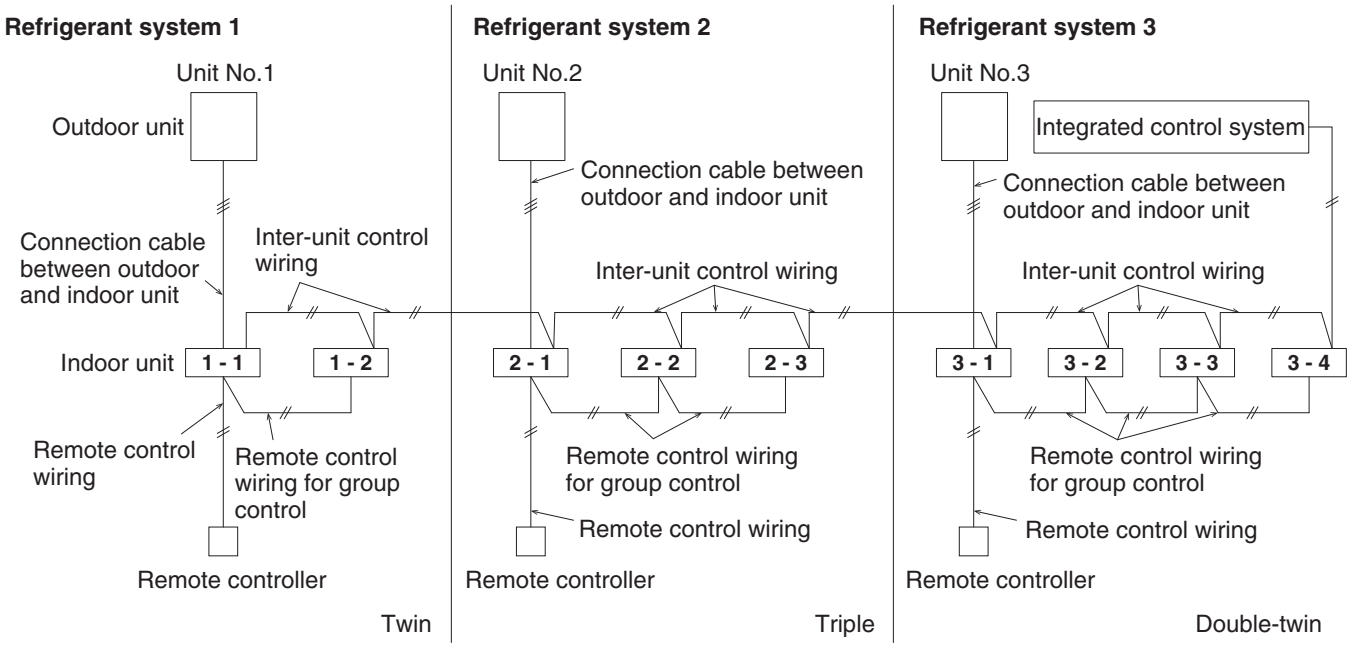
NOTE When making group control of the different refrigerant system's wiring is necessary.

* It is possible to connect maximum 8 indoor units with one remote controller. (Including indoor unit without remote control connection wiring)

* If there are two systems or more, specify the outdoor unit by using the remote controller and make auto address setting.

9-6-3. Basic connection 3 : Example of link wiring (when using integrated control system)

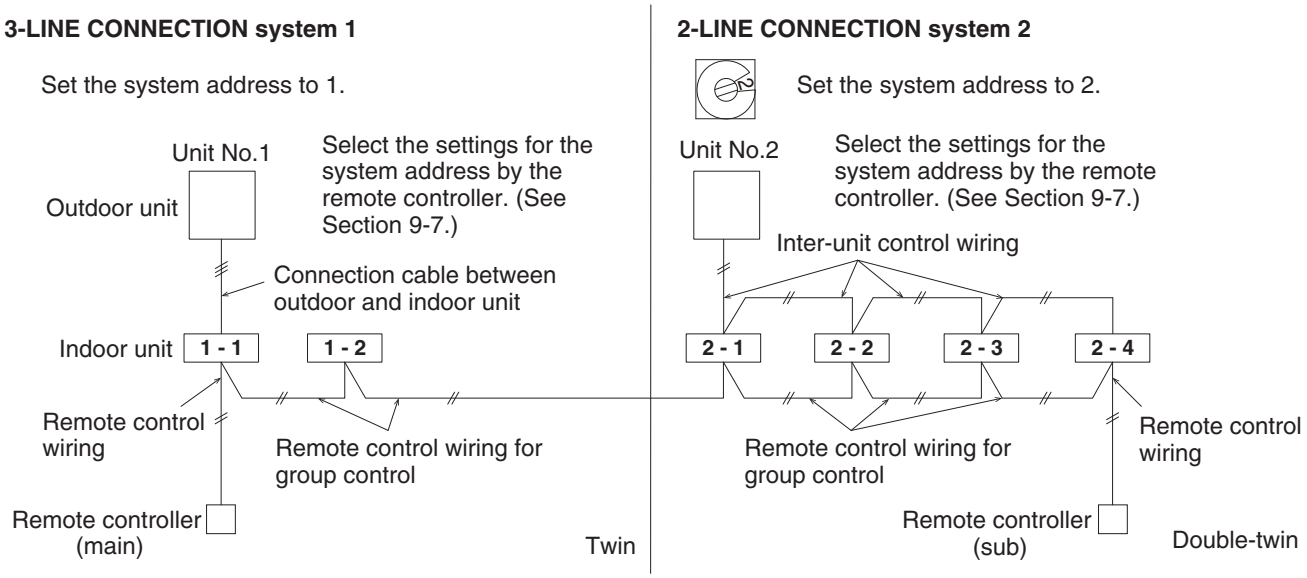
- **Turn on the power of each system, specify a different system address for each system and make auto address setting from each remote controller. (See Section 9-7.)**



* It is possible to connect maximum 8 indoor units with one remote controller.

9-6-4. Basic connection 4 : Group control with different refrigerant unit

- *** Remote control inter-unit control wiring is necessary in all indoor units. Make auto address setting following the procedure "9-6-2. Basic connection 2".**



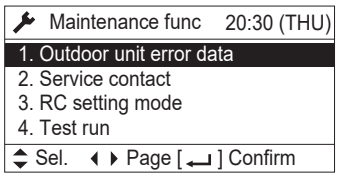
* If two (2) remote controllers are used, one (1) remote controller is set to "main" and the other is set to "sub". (See Section 9-11.)

* In the case of 2-line connection system, auto address setting from the outdoor unit can be also made by specifying address with the rotary switch and short-circuiting the auto address pin. (See Section 9-8.)

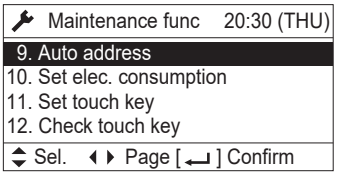
9-7. Auto Address Setting Using the Remote Controller

Auto Address Setting from the High-spec Wired Remote Controller (CZ-RTC5B)

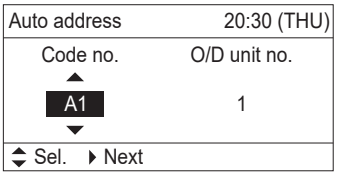
(1) Keep pressing the ⮌ , ↵ and ▶ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ▼ or ▲ button to see each menu.
If you wish to see the next screen instantly, press the ◀ or ▶ button.
Select “9. Auto address” on the LCD display and press the ↵ button.



(3) The “Auto address” screen appears on the LCD display.
Change the “Code no.” to “A1” by pressing the ▼ or ▲ button.



(4) Select the “O/D unit no.” by pressing the ◀ or ▶ button.
Select one of the “O/D unit no.” by pressing the ▼ or ▲ button and press the ↵ button for auto address setting.
Approximately 10 minutes are required.
When auto address setting is completed, the units return to normal stopped status.

Auto Address Setting* from the Remote Controller (CZ-RTC4)

NOTE

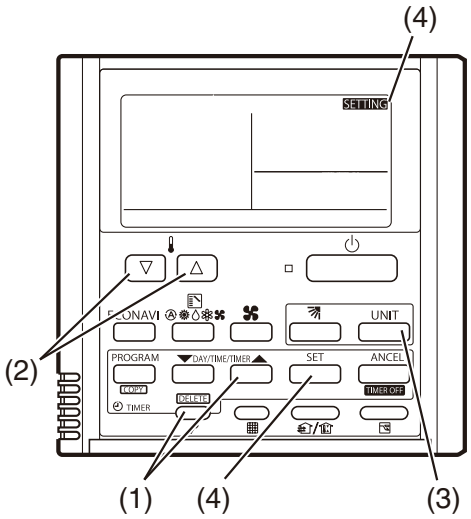
- Selecting each refrigerant system individually for auto address setting
- Auto address setting for each system : Item code “A1”

(1) Press the remote controller timer time /TIMER button and button at the same time.
(Press and hold for 4 seconds or longer.)

(2) Next, press either the temperature setting ▽/△ button.
(Check that the item code is “A1”.)

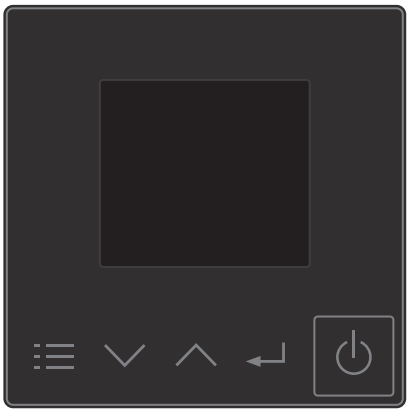
(3) Use either the UNIT button to set the system No. to perform auto address setting.

(4) Then press the SET button.
(Auto address setting for one refrigerant system begins.)
(When auto address setting for one system is completed, the system returns to normal stopped status.)
<Approximately 10 minutes are required.>
(During auto address setting, “ SETTING ” is displayed on the remote controller.
This message disappears when auto address setting is completed.)

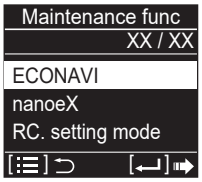


(5) Repeat the same steps to perform auto address setting for each successive system.

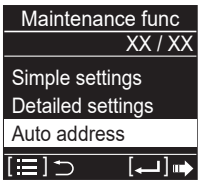
Auto Address Setting from the Wired Remote Controller (CZ-RTC6 series)



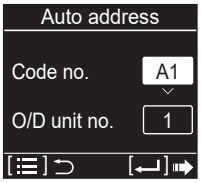
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Auto address” on the LCD display and press the ↵ button.

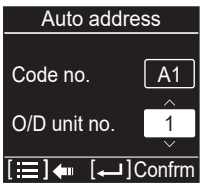


(3) The “Auto address” screen appears on the LCD display.
Select the “Code no.” to “A1” by pressing the ∨ or ∧ button.

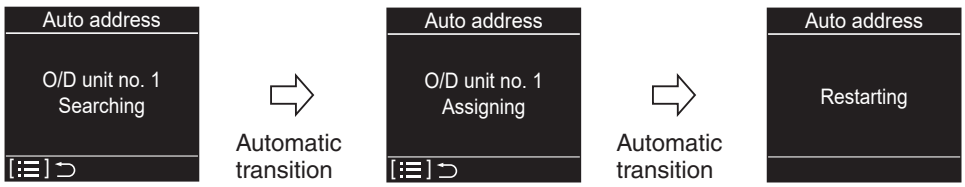


After selecting “Code no.”, press the ↵ button and proceed to Step (4).
If the ☰ button is pressed, proceed to Step (5).

(4) Select one of the “O/D unit no.” for auto address by pressing the ∨ or ∧ button.

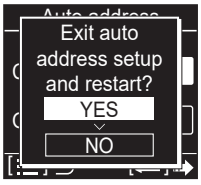


After selecting “O/D unit no.”, press the ↵ button.



Approximately 10 minutes are required.
When auto address setting is completed, the units return to normal stopped status.

(5) If the ☰ button is pressed under the display Step (3), the following display (Auto address-end screen) appears.
Then select “YES” by pressing the ∨ or ∧ button and press the ↵ button.



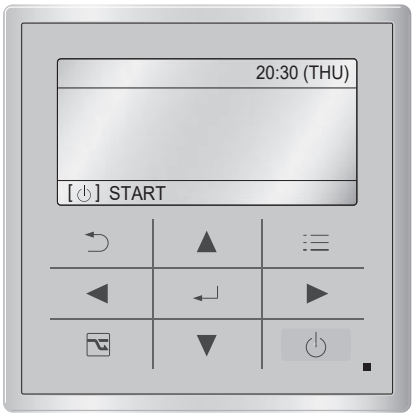
9-8. How to Set Refrigerant System Address (Only outdoor PZ2 and PZH2 series)

- Turn on the power in the indoor and outdoor units of the refrigerant system 1.
- Switch the power on and wait at least 1 minute and 30 seconds or more. Short-circuit the auto address pin of the outdoor unit with turned on and release. (LED1 and LED2 of the outdoor unit control PCB blink alternately and the address setting of the indoor unit is started. When completed, LEDs go off.)
  <It takes about 10 minutes until it finished.>
  Auto address pin: If you once again short-circuit the auto address pin before completion when the auto address started, the auto address will stop.
- Turn on the different refrigerant system's indoor and outdoor units and wait at least 1 minute and 30 seconds or more. Then short-circuit the auto address pin of the outdoor unit and release.
- Repeat the same procedure and complete the auto address setting of each system.
- When the address setting is completed, wait at least 1 minute and 30 seconds or more. Then start the operation.

9-9. Checking the Indoor Unit Addresses

Use the remote controller to check the indoor unit address.

CZ-RTC5B (High-spec wired remote controller)



(1) Keep pressing the [↩] , [↵] and [▶] buttons simultaneously for 4 or more seconds.
The "Maintenance func" screen appears on the LCD display.

Maintenance func 20:30 (THU)
1. Outdoor unit error data
2. Service contact
3. RC setting mode
4. Test run
Sel. ◀ ▶ Page [↵] Confirm

(2) Press the [▼] or [▲] button to see each menu.
If you wish to see the next screen instantly, press the [◀] or [▶] button.
Select "7. Simple settings" on the LCD display and press the [↵] button.

Maintenance func 20:30 (THU)
5. Sensor info.
6. Servicing check
7. Simple settings
8. Detailed settings
Sel. ◀ ▶ Page [↵] Confirm

(3) The "Simple settings" screen appears on the LCD display.
Select the "Unit no." by pressing the [▼] or [▲] button for changes.
* The initial display is "ALL".
The indoor unit fan operates only at the selected indoor unit.

Simple settings 20:30 (THU)		
Unit no.	Code no.	Set data
ALL	01	0001
Sel. ▶ Next		

(4) Press the [↩] button and select "YES" to restart.

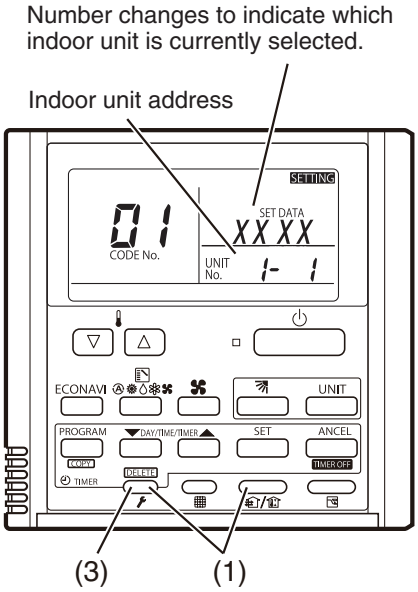
CZ-RTC4 (Timer remote controller)

<If 1 indoor unit is connected to 1 remote controller>

(1) Press and hold the button and button for 4 seconds or longer (simple settings mode).

(2) The address is displayed for the indoor unit that is connected to the remote controller.
(Only the address of the indoor unit that is connected to the remote controller can be checked.)

(3) Press the button again to return to normal remote controller mode.



<If multiple indoor units are connected to 1 remote controller (group control)>

(1) Press and hold the button and button for 4 seconds or longer (simple settings mode).

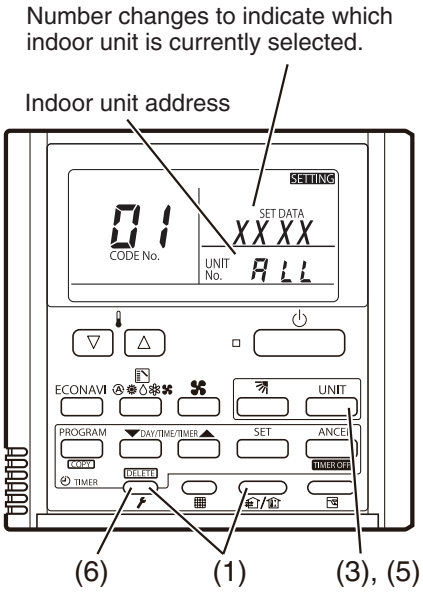
(2) “ALL” is displayed on the remote controller.

(3) Next, press the UNIT button.

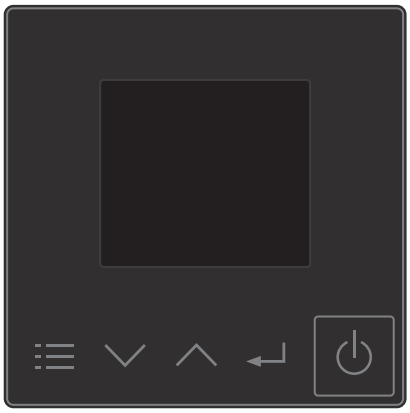
(4) The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.

(5) Press the UNIT button again and check the address of each indoor unit in sequence.

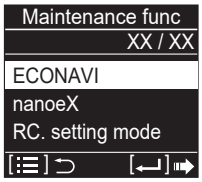
(6) Press the button again to return to normal remote controller mode.



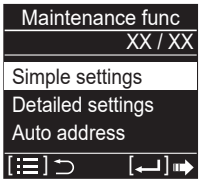
CZ-RTC6 series (Wired Remote Controller)



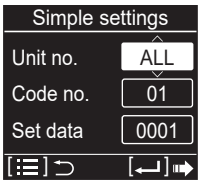
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Simple settings” on the LCD display and press the ↵ button.



(3) The “Simple settings” screen appears on the LCD display.
Select the “Unit no.” by pressing the ∨ or ∧ button for changes.
* The initial display is “ALL”.
The indoor unit fan operates only at the selected indoor unit.

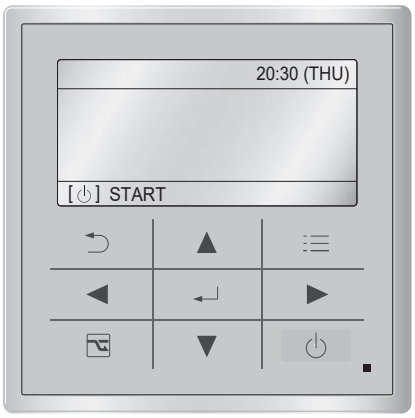


(4) Press the ☰ button and select “YES” to restart.

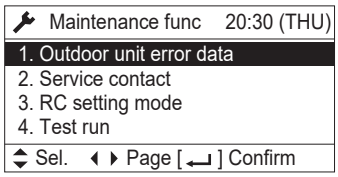
9-10. Test Run Using the Remote Controller

CZ-RTC5B (High-spec wired remote controller)

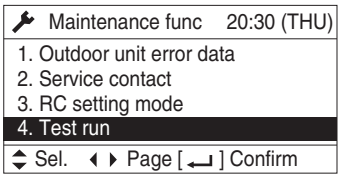
This mode places a heavy load on the machines. Therefore use it only when performing the test run.



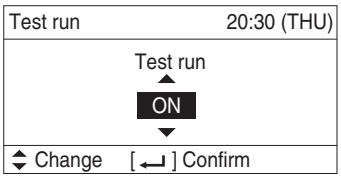
(1) Keep pressing the ⮌ , ↵ and ► buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



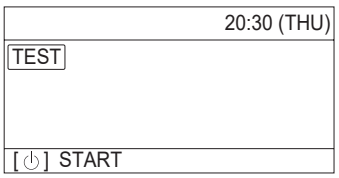
(2) Press the ▼ or ▲ button to see each menu.
If you wish to see the next screen instantly, press the ◄ or ► button.
Select “4. Test run” on the LCD display and press the ↵ button.



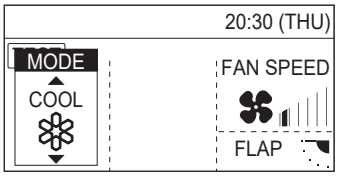
Change the display from “OFF” to “ON” by pressing the ▼ or ▲ button. Then press the ↵ button.



(3) Press the ⮌ button. “TEST” will be displayed on the LCD display.



(4) Press the ⏻ button. Test run will be started.
Test run setting mode screen appears on the LCD display.



- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.)

(5) After the test run is completed, proceed from Step (1) and change to “OFF” at Step (2).

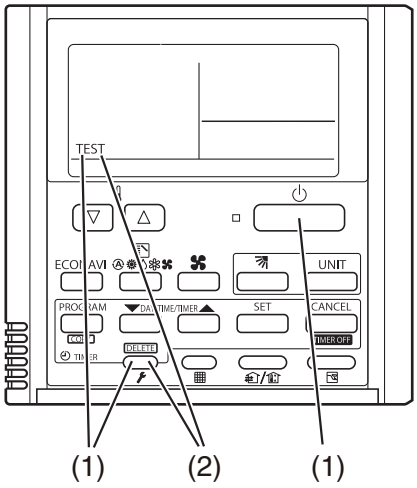
- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. (“P09” display does not occur.)

CZ-RTC4 (Timer remote controller)

This mode places a heavy load on the machines. Therefore use it only when performing the test run.



(1) Press the remote controller button for 4 seconds or longer.

Then press the button.

" TEST " appears on the LCD display while the test run is in progress.

- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.)

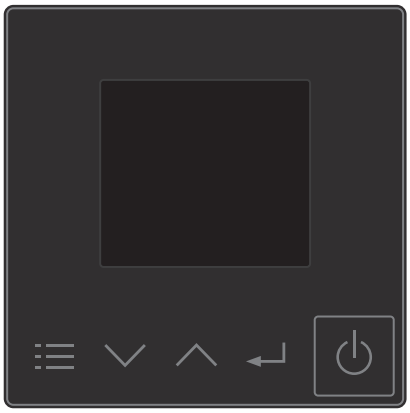
(2) After the test run is completed, press the button again. Check that " TEST " disappears from the LCD display.

- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

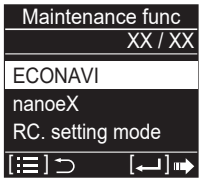
- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

CZ-RTC6 series (Wired Remote Controller)

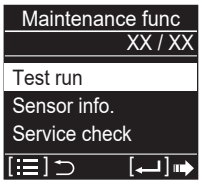


This mode places a heavy load on the machines. Therefore use it only when performing the test run.

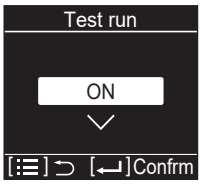
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Test run” on the LCD display and press the ↵ button.

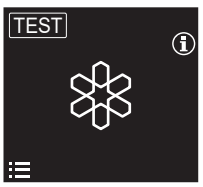


Change the display from “OFF” to “ON” by pressing the ∨ or ∧ button.
Then press the ↵ button.



(3) Press the ☰ button.
“TEST” will be displayed on the LCD display.

(4) Press the ⏻ button. Test run will be started.
Test run setting mode screen appears on the LCD display.



- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.)

(5) After the test run is completed, proceed from Step (1) and change to “OFF” at Step (2).

- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

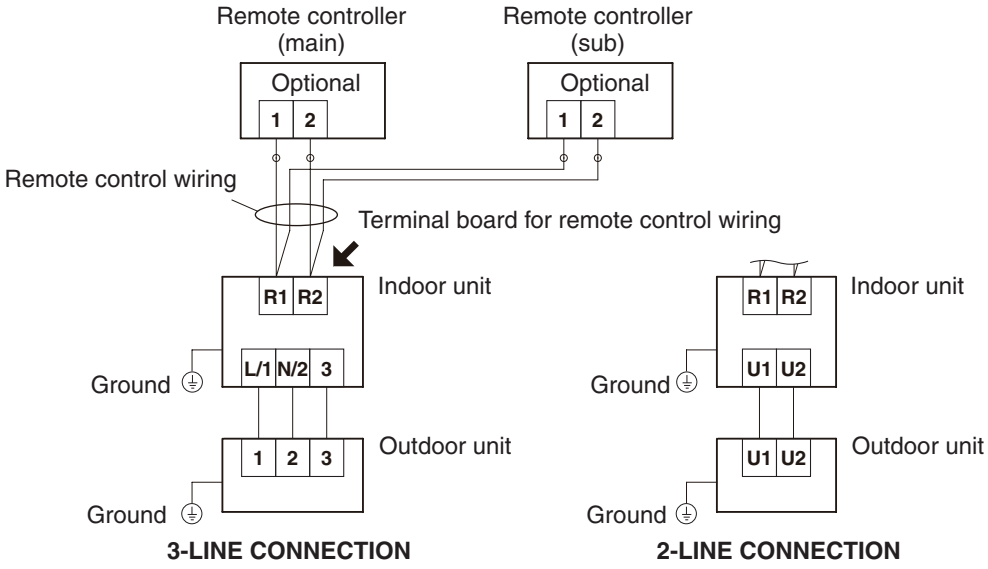
NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. (“P09” display does not occur.)

9-11. Main-Sub Remote Controller Control

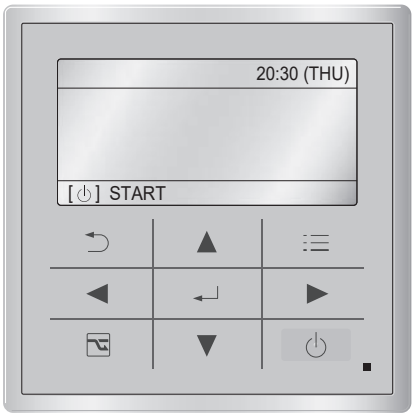
One (1) indoor unit can be controlled by two (2) wired remote controllers. In the case of using 2 remote controllers, one of them needs to be designated as the sub remote controller.

Connecting 2 remote controllers to control 1 indoor unit



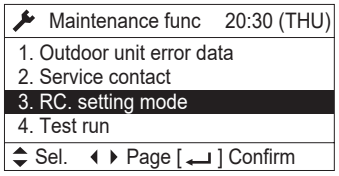
Remote controller setting mode (CZ-RTC5B)

(1) Press and hold the ⮌ , ↵ and ▶ for 4 seconds or more simultaneously.



(2) Select “3. RC. setting mode”.

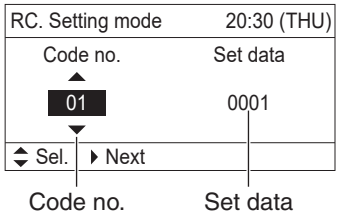
▲ ▼ → ↵



(3) Select the “Code no.” and “Set data”.

▲ ▼ → ▶ → ↵

(Repeat)



Code no.	Item	Set data	
		0000	0001
01	Main/Sub	Sub	Main

(4) Press ⮌.

● After selecting “YES”, the unit restarts.

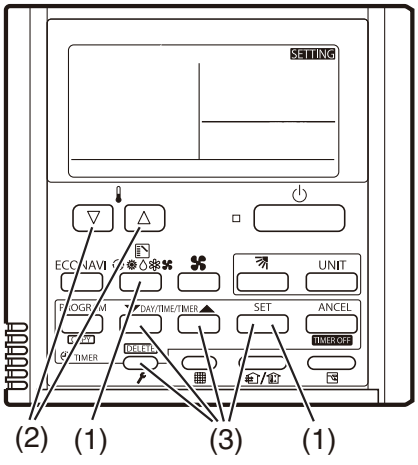
Remote controller setting mode (CZ-RTC4)

(1) Press and hold the ⓐ❄🔥✻ and SET buttons for several seconds simultaneously.

(2) Select the Code no. ▽ / △

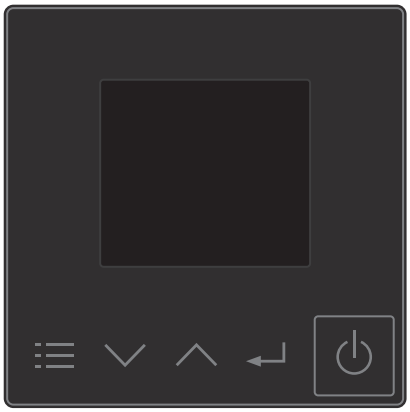
(3) Select the Set data. ▼DAY/TIME/TIMER▲ → SET

The indicator illuminates after blinking. Press ⚲.



Code no.	Item	Set data	
		0000	0001
01	Main/Sub	Sub	Main

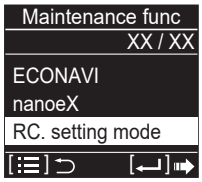
Remote controller setting mode (CZ-RTC6 series)



(1) Press and hold the ☰, ∧ and ↵ for 4 seconds or more simultaneously.

(2) Select “RC. setting mode”.

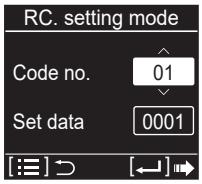
∨ ∧ → ↵



(3) Select the “Code no.” and “ Set data”.

∨ ∧ → ↵

(Repeat)



Code no.	Item	Set data	
		0000	0001
01	Main/Sub	Sub	Main

(4) Press ☰.

● After selecting “YES”, the unit restarts.

10. CHECKLIST AFTER INSTALLATION WORK

Work List	No.	Content	Check ☑	Possibility of Failure & Checkpoint
Installation	1	Are the indoor units installed following the content of Section “2. SELECTING THE INSTALLATION SITE”?	☐	There is a possibility of light injure or loss of property.
Tubing & Wiring	2	In the case of multiple installation: Is there a wrong tubing connection with another system?	☐	The unit is inoperated or the refrigerant flows into the inoperative unit and the leakage is expected. Check if there is a wrong tubing or wiring connection with another system.
	3	In the case of multiple installation: Is there a wrong wiring connection with another system?	☐	
	4	Is the earth leakage circuit breaker (all-pole switching function provided) installed?	☐	Power failure or short circuit may cause electric shock or fire. Check installation work and ground wire work.
	5	Is there any wrong installation of optional parts or wrong wiring?	☐	
	6	Was the ground wire work performed?	☐	
	7	Are there any wrong power supply wiring, wrong connection wire, wrong signal wire or loose screw?	☐	
	8	Is the thickness of wire in accordance with rule?	☐	
	9	Is the power-supply voltage equal to the nameplate of the unit?	☐	
	10	Was the check of the airtight test, flared tube fitting and gas leakage on the welded portion performed?	☐	If the gas leakage occurs, the unit quality not only becomes inferior but affects environment. Repair it as quickly as possible.
Drain Check	11	Has the adhesive been applied to the drain connecting portion (resin portion) of the indoor unit?	☐	The resin portion cracks after a few months and it may cause water drain.
	12	Is there water leakage?	☐	Since there is a possibility of water drain, repair the drain pipe if the drain failure or water drain occurs.
	13	Indoor unit drain pipe has a downward gradient (1/100 or more) by rule. Is the drain water flowing smoothly?	☐	
Heat Insulation	14	Was the heat insulation work at a suitable location including the flared tube fitting (refrigerant tube & drain pipe) performed properly?	☐	The quality of unit not only becomes inferior but there is a possibility of the water drain. So, perform the heat insulation work properly.
Test Run	15	Did the abnormal sound occur?	☐	Check if there is a fan contact or distortion of the indoor unit.
	16	Did the cool and warm airflow discharge from the indoor unit?	☐	Check if the unit does not operate or there is a wrong tubing or wiring connection with another system.

11. APPENDIX

■ Care and Cleaning

⚠ WARNING

- **For safety, be sure to turn the air conditioner off and also to disconnect the power before cleaning.**
- **Do not pour water on the indoor unit to clean it. This will damage the internal components and cause an electric shock hazard.**

Air intake and outlet side (Indoor unit)

Clean the air intake and outlet side of the indoor unit with a vacuum cleaner brush, or wipe them with a clean, soft cloth.

If these parts are stained, use a clean cloth moistened with water. When cleaning the air outlet side, be careful not to force the vanes out of place.

⚠ CAUTION

- **Never use solvents or harsh chemicals when cleaning the indoor unit. Do not wipe plastic parts using very hot water.**
- **Some metal edges and the fins are sharp and may cause injury if handled improperly; be especially careful when you clean these parts.**
- **The internal coil and other components of outdoor unit must be cleaned regularly. Consult your dealer or service center.**

Air filter

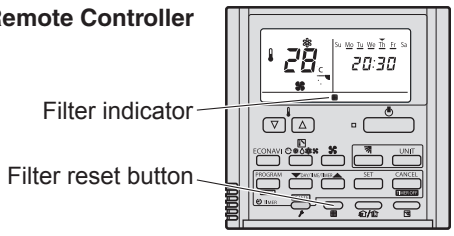
The air filter collects dust and other particles from the air and should be cleaned at regular intervals or when the filter indication (▦) on the display of the remote controller (wired type) shows that the filter needs cleaning. If the filter gets blocked, the efficiency of the air conditioner drops greatly.

Type	Y3
Period	6 months

- **After Cleaning**

1. After the air filter is cleaned, reinstall it in its original position.
   Be sure to reinstall in reverse order.
2. [In the case of Timer Remote Controller]
   Press the Filter reset button.
   The ▦ (Filter) indicator on the display goes out.

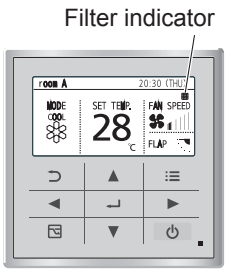
Timer Remote Controller



[In the case of High-spec Wired Remote Controller and Wired Remote Controller]

Refer to the Operating Instructions attached to the optional High-spec Wired Remote Controller or optional Wired Remote Controller.

High-spec Wired Remote Controller



Wired Remote Controller

NOTE

The frequency with which the filter should be cleaned depends on the environment in which the unit is used.
Clean the filter frequently for best performance in the area of dusty or oil spots regardless of filter status.

<How to clean the filter>

1. Remove the air filter from the air intake grille.
2. Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

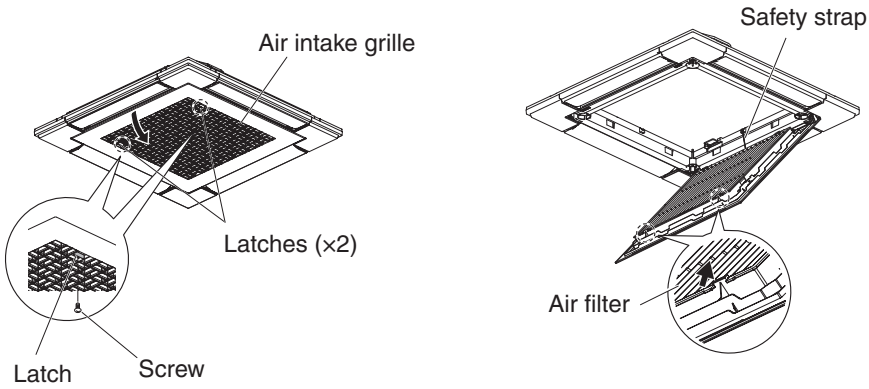
<How to remove the filter>
4-Way Cassette 60 × 60 Type (Y3):

1. Use a screwdriver to remove the bolt screw on each side for the two latches. (Be sure to reattach the two bolt screws after cleaning.)
2. Slide the latches of the air intake grille in the direction of the inside to open the grille.
3. The air intake grille opens downward.

⚠ CAUTION

- **When cleaning the air filter, never remove the safety strap. If it is necessary to remove it for servicing and maintenance inside, be sure to reinstall the safety strap securely (hook on the grille side) after the work.**
- **When the filter has been removed, rotating parts (such as the fan), electrically charged areas, etc. will be exposed in the unit's opening. Bear in mind the dangers that these parts and areas pose, and proceed with the work carefully.**

4. Push the bottom of the air filter up and pull it toward you. The air filter will be disengaged.



⚠ CAUTION

- **Certain metal edges and the condenser fins are sharp and may cause injury if handled improperly; special care should be taken when you clean these parts.**
- **Periodically check the outdoor unit to see if the air outlet or air intake is clogged with dirt or soot.**
- **The internal coil and other components must also be cleaned periodically. Consult your dealer or service center.**

Care: After a prolonged idle period

Check the indoor and outdoor unit air intakes and outlets for blockage; if there is a blockage, remove it.

Care: Before a prolonged idle period

- Operate the fan for half a day to dry out the inside.
- Disconnect the power supply and also turn off the circuit breaker.
- Clean the air filter and replace it in its original position.
- Outdoor unit internal components must be checked and cleaned periodically. Contact your local dealer for this service.

■ Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If it still does not work properly, contact your dealer or a service center.

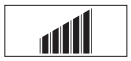
● Indoor unit

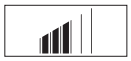
Symptom		Cause
Noise	Sound like streaming water during operation or after operation	● Sound of refrigerant liquid flowing inside unit ● Sound of drainage water through drain pipe
	Cracking noise during operation or when operation stops.	Cracking sound due to temperature changes of parts
Odor	Discharged air is smelled during operation.	Indoor odor components, cigarette odor and cosmetic odor accumulated in the air conditioner and its air is discharged. Unit inside is dusty. Consult your dealer.
Dewdrop	Dewdrop gets accumulated near air discharge during operation	Indoor moisture is cooled by cool wind and accumulated by dewdrop.
Fog	Fog occurs during operation in cooling mode. (Places where large amounts of oil mist exist at restaurants.)	● Cleaning is necessary because unit inside (heat exchanger) is dirty. Consult your dealer as technical engineering is required. ● During defrost operation
Fan is rotating for a while even though operation stops.		● Fan rotating makes operation smoothly. ● Fan may sometimes rotate because of drying heat exchanger due to settings. ● Fan may sometimes rotate in internal cleaning operation mode for a while.
Wind-direction changes while operating. Wind-direction setting cannot be made. Wind-direction cannot be changed.		● When air discharge temperature is low or during defrost operation, horizontal wind flow is made automatically. ● Flap position is occasionally set up individually.
When wind-direction is changed, flap operates several times and stops at designated position.		When wind-direction is changed, flap operates after searching for standard position.
Dust		Dust accumulation inside indoor unit is discharged.
Poor cooling or heating performance		The indoor unit is initially designed to control the indoor temperature detected by the built-in room sensor inside the indoor unit. Due to indoor unit installation position, however, the built-in sensor may occasionally sense temperature improperly; for example, temperature difference between the ceiling and floor, lighting apparatus, electric fan, windows or waist-high partition walls, etc. In this case, the unit does not operate properly at the desired temperature. You may change the use of the temperature sensor inside the indoor unit to that of the remote controller. Then the desired room temperature can be controlled properly. For details, consult your dealer.

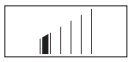
● Check Before Requiring Services

Symptom	Cause	Remedy
Air conditioner does not run at all although power is turned on.	Power failure or after power failure	Press ON/OFF operation button on remote controller again.
	Operation button is turned off.	● Switch on power if breaker is turned off. ● If breaker has been tripped, consult your dealer without turning it on.
	Fuse blow out.	If blown out, consult your dealer.
Poor cooling or heating performance	Air intake or air discharge port of indoor and outdoor units is clogged with dust or obstacles.	Remove dust or obstruction.
	Fan speed switch is set to “Low”.*	Change to “Medium” or “High”.*
	Improper temperature settings	See Section “■ Tips for Energy Saving”.
	Room is exposed to direct sunlight in cooling mode.	
	Doors and /or windows are open.	
	Air filter is clogged.	See Section “■ Care and Cleaning”.
	Too much heat sources in room in cooling mode.	Use minimum heat sources and in a short time.
	Too many people in room in cooling mode.	Reduce temperature settings or change to “Medium” or “High”.*

* Fan speed display on the remote controller

High :  (CZ-RTC4),  (CZ-RTC5B, CZ-RTC6 series)

Medium :  (CZ-RTC4),  (CZ-RTC5B, CZ-RTC6 series)

Low :  (CZ-RTC4),  (CZ-RTC5B, CZ-RTC6 series)

If your air conditioner still does not work properly although you checked the points as described above, first stop the operation and turn off the power switch. Then contact your dealer and report the serial number and symptom. Never repair your air conditioner by yourself since it is very dangerous for you to do so.

■ Tips for Energy Saving

Avoid

- **Do not block the air intake and outlet of the unit. If either is obstructed, the unit will not work well, and may be damaged.**
- Do not let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.

Do

- Always try to keep the air filter clean. (See Section “■ Care and Cleaning”.) A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

NOTE

Should the power fail while the unit is running

If the power supply for this unit is temporarily cut off, the unit will automatically resume operation once power is restored using the same settings before the power was interrupted.

Important Information Regarding The Refrigerant Used

NOTE

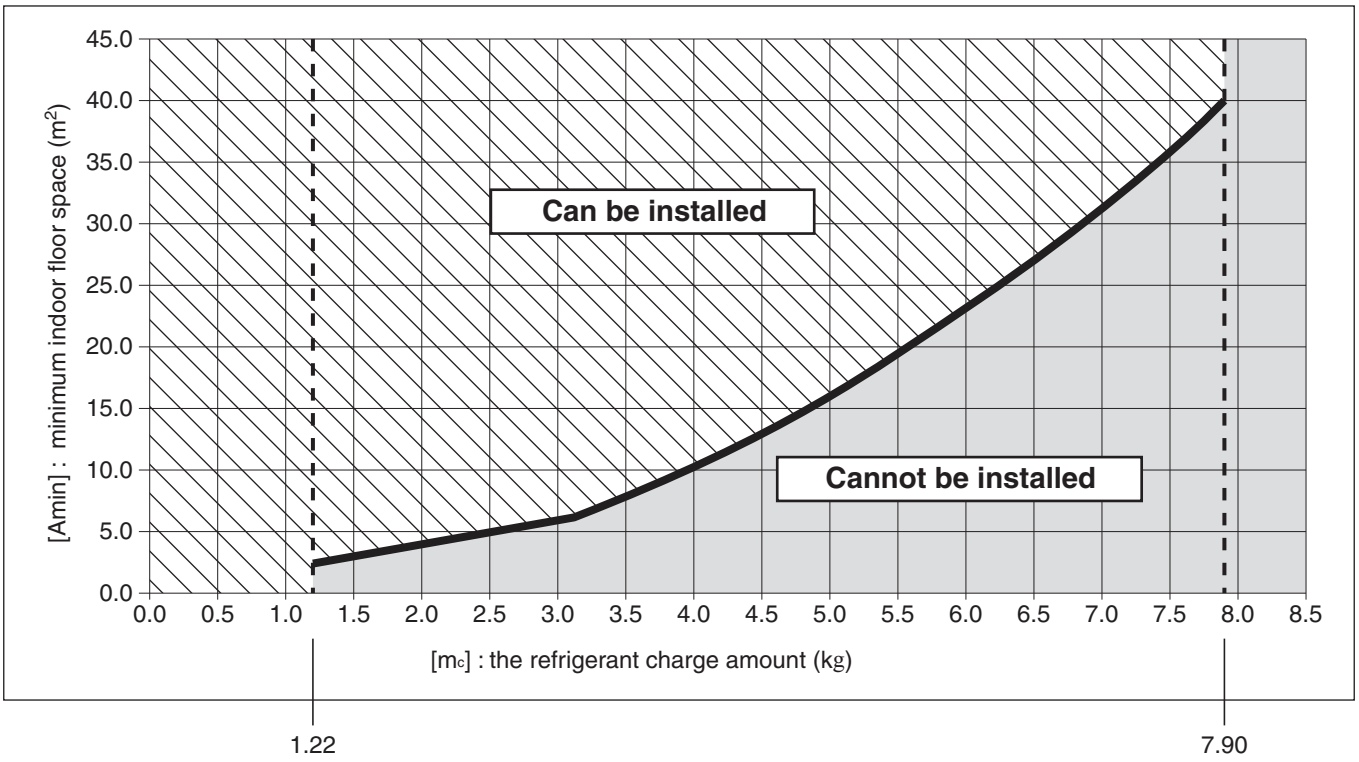
Refer to the Installation Instructions attached to the outdoor unit.

12. CHECK OF DENSITY LIMIT

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space in each room 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] : The refrigerant charge amount (kg) (Total of refrigerant at shipment and refrigerant charge amount in the field).

[Amin] : Minimum indoor floor space (m^2)

[m_c]	[Amin]
1.22	2.5
1.3	2.6
1.4	2.8
1.5	3.0
1.6	3.2
1.7	3.4
1.8	3.6
1.9	3.8
2.0	4.0
2.1	4.2
2.2	4.4
2.3	4.6
2.4	4.8
2.5	5.0
2.6	5.2
2.7	5.4
2.8	5.6

[m_c]	[Amin]
2.9	5.8
3.0	6.0
3.1	6.2
3.2	6.5
3.3	6.9
3.4	7.4
3.5	7.8
3.6	8.3
3.7	8.7
3.8	9.2
3.9	9.7
4.0	10.2
4.1	10.7
4.2	11.2
4.3	11.8
4.4	12.3
4.5	12.9

[m_c]	[Amin]
4.6	13.4
4.7	14.0
4.8	14.6
4.9	15.2
5.0	15.9
5.1	16.5
5.2	17.2
5.3	17.8
5.4	18.5
5.5	19.2
5.6	19.9
5.7	20.6
5.8	21.3
5.9	22.1
6.0	22.8
6.1	23.6
6.2	24.4

[m_c]	[Amin]
6.3	25.2
6.4	26.0
6.5	26.8
6.6	27.6
6.7	28.5
6.8	29.3
6.9	30.2
7.0	31.1
7.1	32.0
7.2	32.9
7.3	33.8
7.4	34.7
7.5	35.7
7.6	36.6
7.7	37.6
7.8	38.6
7.9	39.6

SUPPLEMENT

Contents of Remote Controller Switch Alarm Display

ON: ○ Blinking: ☼ OFF: ●

Abnormal display		Wireless remote controller receiver display: Operation	Timer	Standby	Alarm contents	Error location
Remote controller • Indoor Unit	E01	Operating lamp blinking	☼	●	●	Faulty remote controller	• Replace the remote controller
					Disconnection / Contact failure of remote controller wiring	• Correct the remote controller wiring
					CHK (check) pins on the indoor unit control PCB are short circuited	• Remove the short
					In the case of non-group control · Power supply OFF of outdoor unit · Disconnection / Contact failure of indoor / outdoor control line * In the case of group control Auto address operation was not carried out	• Execute auto address setting
					Faulty setting of EEPROM (IC010) on indoor unit	• Replace the indoor unit EEPROM
	E02				Faulty remote controller	• Replace the remote controller
					Wrong wiring of remote controller	• Correct the remote controller wiring
	E03				Error in indoor unit receiving signal from remote controller (central)	• Check the indoor unit control PCB • Check the remote controller wiring • Check the indoor / outdoor control line *
	E04	Standby lamp blinking	●	●	☼	Disconnection / Contact failure of indoor / outdoor control line *	• Check the electrical connection of indoor / outdoor control line * • Replace the indoor unit control PCB • Replace the outdoor unit control PCB • Check the electrical connection of fuse (F302) on indoor unit control PCB (sub) In the case of the fuse opened on an indoor unit control PCB (sub), after correcting wiring connection, it substitutes an EMG plug for OC plug
					• Faulty indoor unit control PCB • Faulty outdoor unit control PCB • Communication circuit fuse (F302) on indoor unit control PCB (sub) opened	
					• Fuse on outdoor unit control PCB opened Since failure of an outdoor fan motor is considered as a cause, both outdoor unit control PCB and outdoor unit fan motor are exchanged simultaneously	• In the case of the fuse opened on an outdoor unit control PCB, replace both outdoor unit control PCB (CR / HIC) and outdoor unit fan motor simultaneously
					• Setting error of indoor unit address • Capacity of indoor / outdoor units is mismatched.	• Capacity and address re-setting after correcting the combination of units
	E08	Operating lamp blinking	☼	●	●	Duplication of indoor unit address setting	• Indoor unit address re-setting
	E09					Error because of more than one remote controller setting to main	• Correct the setting
	E18					• Disconnection of wiring between main unit and additional units • Contact failure of wiring • Faulty indoor unit control PCB (main or addition)	• Correct the wiring connection • Replace the wiring • Replace the indoor unit control PCB
	F01	Operating and timer lamp blinking alternately	☼	☼	●	Indoor heat exchanger temperature sensor (E1) trouble	• Check the indoor unit heat exchanger temperature sensor (E1) • Check the indoor unit control PCB
	F02					Indoor heat exchanger temperature sensor (E2) trouble	• Check the indoor unit heat exchanger temperature sensor (E2) • Check the indoor unit control PCB
	F10					Indoor air temperature sensor (TA) trouble	• Check the indoor unit air temperature sensor (TA) • Check the indoor unit control PCB
	F29	Operating and timer lamp blinking simultaneously	☼	☼	●	Indoor unit EEPROM trouble	• Check the indoor unit EEPROM • Check the indoor unit control PCB
	L02	Operating and standby lamps blinking simultaneously	☼	●	☼	Setting error, indoor / outdoor unit type / model mismatched	• Address re-setting after correcting the combination of units
	L03					Duplication of main indoor unit address in group control	• Correct the group (main and addition)
	L07					Group control wiring is connected to individual control indoor unit	• Correct the indoor unit address
	L08					Indoor unit address is not set	• Correct the indoor unit address
	L09					Indoor unit capacity is not set	• Correct the capacity setting of indoor units

* 3-Line : Connection cable between outdoor and indoor unit
2-Line : Inter-unit control wiring

ON: ○ Blinking: ☼ OFF: ●

Abnormal display		Wireless remote controller receiver display: Operation (☼/⏻)	Timer (◴)	Standby (✳)	Alarm contents		Error location
Remote controller • Indoor Unit	P01	Timer and standby lamp blinking alternately			Indoor unit fan motor locked		• Remove the cause
					Indoor unit fan motor layer short		• Replace the fan motor
					Contact failure in thermostat protector circuit		• Correct the wiring
	P09				Faulty wiring connections of (ceiling) indoor unit panel		• Correct the wiring connection • Correct insertion direction of connector (Hook is outside.)
	P10				Faulty drain pump		• Repair / Replace
					Drainage failure		• Correct
					Contact failure of float switch wiring		• Correct the wiring
		●	☼	☼	High water alarm for the case of Middle static pressure duct (PF) model installed vertically		• Change the setting
	P11				Faulty drain pump		• Repair / Replace
					Drain pump locked		• Remove the cause
	P12				Indoor unit fan motor locked Faulty wiring connections of indoor unit fan motor		• Remove the cause • Correct the wiring
Outdoor Unit	E06	Standby lamp blinking			Disconnection / Contact failure of indoor / outdoor control line *		• Correct the indoor / outdoor control line * Check the electrical connection of fuse (F302) on indoor unit control PCB (sub) In the case of the fuse opened on an indoor unit control PCB (sub), after correcting wiring connection, it substitutes an EMG plug for OC plug
					• Disconnection of indoor / outdoor control line * • Communication circuit fuse (F302) on indoor unit control PCB (sub) opened		
		●	●	☼	Indoor unit control PCB address settings error		• Indoor unit address re-setting
	E12	Operating lamp blinking			Auto address setting start is prohibited		• Check the indoor / outdoor control line *
	E14	☼	●	●	Duplication of main unit in group control		• Check the indoor / outdoor control line * • Check the indoor unit combination
	E15	Standby lamp blinking			Auto address alarm	The total capacity of indoor units is too low	• Check the indoor / outdoor control line * • Check the indoor and outdoor unit control PCB • Check the power supply • Capacity and address re-setting after correcting the combination of units
	E16					The total capacity of indoor units is too high The number of indoor units is too many	
	E20					No indoor unit connected	
	E24	●	●	☼	• Outdoor unit communication error		• Check the outdoor unit control PCB
	E29				• Outdoor unit communication error		• Check the outdoor unit control PCB
	F04	Operating and timer lamp blinking alternately			Compressor discharge temperature sensor (TD) trouble		• Check the compressor discharge temperature sensor (TD) • Check the outdoor unit control PCB
	F06				Outdoor heat exchanger temperature sensor (C1) trouble		• Check the outdoor unit heat exchanger temperature sensor (C1) • Check the outdoor unit control PCB
	F07				Outdoor heat exchanger temperature sensor (C2) trouble		• Check the outdoor unit heat exchanger temperature sensor (C2) • Check the outdoor unit control PCB
	F08				Outdoor air temperature sensor (TO) trouble		• Check the outdoor air temperature sensor (TO) • Check the outdoor unit control PCB
	F12	☼	☼	○	Compressor suction temperature sensor (TS) trouble		• Check the compressor suction temperature sensor (TS) • Check the outdoor unit control PCB
	F23				Outdoor gas pipe temperature sensor trouble		• Check the outdoor gas pipe temperature sensor • Check the outdoor unit control PCB
	F24				Outdoor liquid pipe temperature sensor trouble		• Check the outdoor liquid pipe temperature sensor • Check the outdoor unit control PCB
	F31				Outdoor unit EEPROM trouble		• Check the outdoor unit EEPROM • Check the outdoor unit control PCB
	H01	Timer lamp blinking			Primary (input) overcurrent detected		• Check the refrigerant cycle (abnormal overload operation) • Check the outdoor unit control PCB • Check the power supply
	H02				PAM trouble		• Check the outdoor unit control PCB • Compressor locked • Check the power supply
	H03	●	☼	●	Primary current CT sensor failure		• Check the outdoor unit control PCB • Check the power supply
	H31				HIC trouble DC voltage not detected		• Check the outdoor unit control PCB • Check the HIC • Compressor locked • Valve blockage

* 3-Line : Connection cable between outdoor and indoor unit
2-Line : Inter-unit control wiring

ON: ○ Blinking: ☼ OFF: ●

Abnormal display		Wireless remote controller receiver display: Operation (☼/⏻)	Timer (◴)	Standby (✳)	Alarm contents	Error location
Outdoor Unit	L04	Operating and standby lamps blinking simultaneously			Duplication of outdoor unit address	• Check the indoor / outdoor control line *
	L10				Outdoor unit capacity is not set or setting error	• Replace the outdoor unit EEPROM • Capacity value re-setting
	L13				Indoor unit type setting error Type of indoor / outdoor units is different	• Replace the indoor unit EEPROM • Check the outdoor unit control PCB • Check the type of IU and OU, and re-set address
	L18	☼	○	☼	4-way valve locked trouble / operation failure	• Check the 4-way valve • Check the 4-way valve wiring • Check the outdoor unit control PCB
	P03	Operating and standby lamp blinking alternately			Compressor discharge temperature trouble	• Check the refrigerant cycle (gas leak) • Trouble with the electronic expansion valve • Check the discharge temperature sensor (TD)
	P04				Condensing pressure trouble Compressor discharge pressure trouble	• Check the refrigerant cycle • Valve blockage • Heat exchanger obstruction
	P05				Open phase detected AC power supply trouble	• Check the power supply • Check the reactor wiring • Check the outdoor unit control PCB • Check the compressor wiring
	P07	☼	●	☼	HIC (IPM) temperature trouble	• Check the outdoor unit control PCB • Check the HIC • Compressor locked • Valve blockage
	P13	Timer and standby lamp blinking alternately			Valve error Refrigerant circuit error Wrong installation for refrigerant piping and wiring	• Valve blockage • Check the refrigerant circuit • Check the refrigerant piping and wiring installation
	P14				O_2 sensor detected	• Input from the O_2 sensor
	P15	Operating and standby lamp blinking alternately			Insufficient gas level detected	• Check the refrigerant cycle (gas leak) • Trouble with the electronic expansion valve • Valve (or refrigerant circuit) blockage
	P16				Compressor overcurrent trouble	• Layer short on the compressor • Compressor locked • Check the outdoor unit control PCB
	P22				Outdoor unit fan motor trouble Outdoor unit fan trouble	• Check the outdoor unit fan motor, connector • Check the outdoor unit control PCB
	P29	☼	●	☼	Inverter compressor trouble	• Layer short on the compressor • Check the outdoor unit control PCB • Check the inverter compressor wiring (Open phase / Reverse phase) • Compressor actuation failure (include lock) • Valve (or refrigerant circuit) blockage
	P31				Indoor unit in group control trouble	• Repair indoor unit which blinking alarm

* 3-Line : Connection cable between outdoor and indoor unit
2-Line : Inter-unit control wiring

INSTALLATION INSTRUCTION SUPPLEMENT

The outdoor unit to be connected is
CU-2Z35/2Z41/2Z50/3Z52/3Z68/4Z68/4Z80/5Z90***.
Check this manual for the following contents before performing the installation work.

4. ELECTRICAL WIRING
5. HOW TO PROCESS TUBING
9. TEST RUN

4. ELECTRICAL WIRING

4-1. General Precautions on Wiring

(1) Before wiring, confirm the rated voltage of the unit as shown on its nameplate, then carry out the wiring closely following the wiring diagram under Section 4-4.

⚠ WARNING

(2) This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown.
The ELCB must be incorporated in the fixed wiring in accordance with the wiring regulations. The ELCB must be an approved circuit capacity, having a contact separation in all poles.
The ELCB or RCD suitable for use with inverters, resistant to high frequency noise, is most suitable. The ELCB's or RCD's intended for protection to include high frequency currents are unnecessary and should be avoided, as potentially causing nuisance tripping, in this application.

(3) To prevent possible hazards from insulation failure, the unit must be grounded.

(4) Each wiring connection must be done in accordance with the wiring system diagram. Wrong wiring may cause the unit to misoperate or become damaged.

(5) Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.

(6) Unauthorized changes in the internal wiring can be very dangerous. The manufacturer will accept no responsibility for any damage or misoperation that occurs as a result of such unauthorized changes.

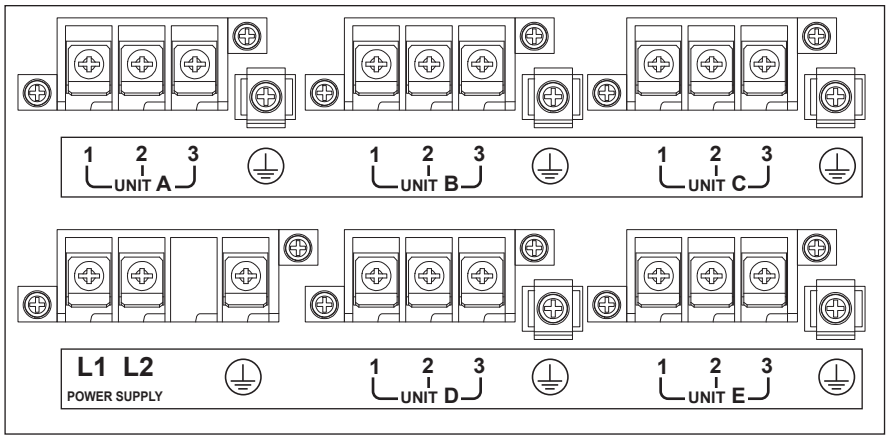
(7) Regulations on wire diameters differ from locality to locality. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning.
You must ensure that installation complies with all relevant rules and regulations.

⚠ CAUTION

Check local electrical codes and regulations before wiring. Also, check any specified instruction or limitations.

4-2. Recommended Wire Length and Wire Diameter for Power Supply System

The terminal block of the outdoor unit is as shown in the figure below.
Wire the indoor units one by one to the terminal blocks of unit A to unit E.
(Example of CU-5Z90*** outdoor unit)



Indoor unit
(Type of RAC Multi connection with indoor and outdoor units)

Type	Connection cable between outdoor and indoor unit
Y3	(G) Outdoor Unit : CU-2Z35/2Z41/2Z50/3Z52/3Z68/4Z68/4Z80/5Z90*** Refer to Installation Instruction for each outdoor unit for Maximum cable length allowable between outdoor and indoor unit

Control wiring

(D) Remote control wiring
0.75 mm^2
(D) : Max. 500 m The above descriptions can be used for the model CZ-RTC4, CZ-RTC5B or CZ-RTC6 series. For other remote controllers, refer to the manual of each unit.

NOTE

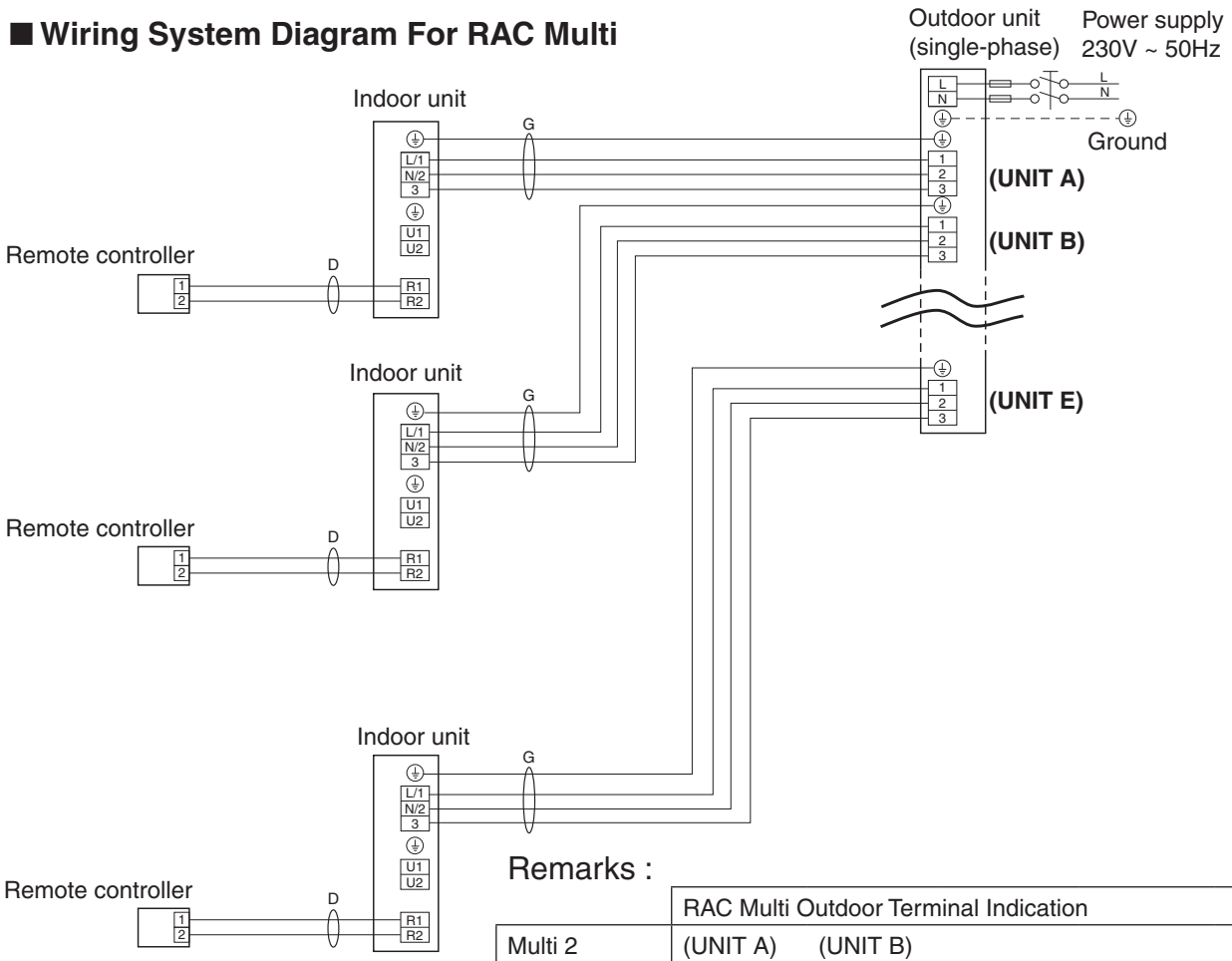
*1 Maximum applicable wire for terminal board of indoor unit : 4 mm^2

*2 With ring-type wire terminal

*3 Maximum length shows a 2% voltage drop.

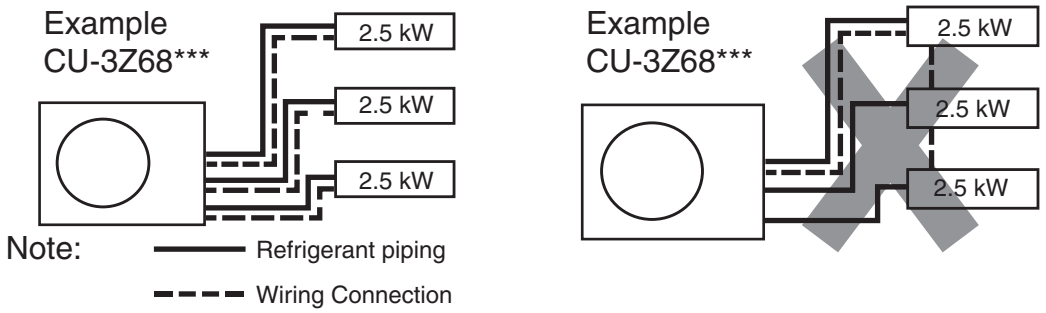
4-3. Wiring System Diagram

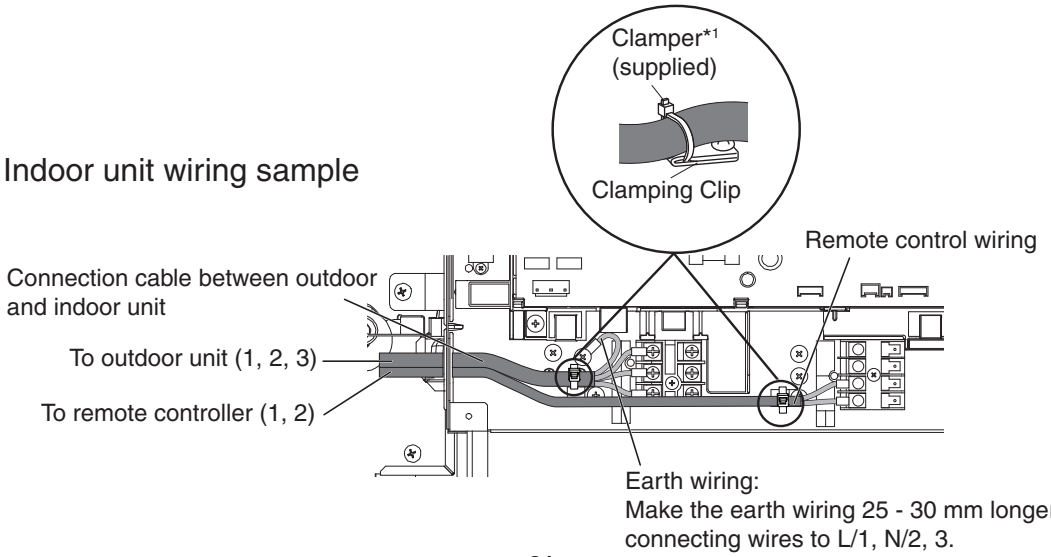
■ Wiring System Diagram For RAC Multi



Remarks :

	RAC Multi Outdoor Terminal Indication				
Multi 2	(UNIT A)	(UNIT B)			
Multi 3	(UNIT A)	(UNIT B)	(UNIT C)		
Multi 4	(UNIT A)	(UNIT B)	(UNIT C)	(UNIT D)	
Multi 5	(UNIT A)	(UNIT B)	(UNIT C)	(UNIT D)	(UNIT E)



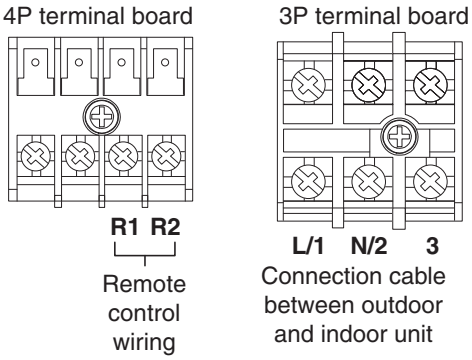


NOTE

(1) See Section 4-2 for the explanation of “D”, and “G” under Section 4-3.

(2) The basic connection diagram of the indoor unit shows the terminal boards, so the terminal boards in your equipment may differ from the diagram.

(3) Regarding Refrigerant Circuit address setting, refer to the installation instructions supplied with the remote controller (Optional). Auto address setting can be executed by remote controller automatically.



Type Y3

⚠ CAUTION

- **In the case of 3-line connection, connection cable between outdoor and indoor unit shall be approved polychloroprene sheathed flexible cord. Type designation 60245 IEC57 (H05RN-F, GP85PCP etc.) or heavier cord.**

⚠ WARNING

Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also occur. Therefore, ensure that all wiring is tightly connected.

When connecting each power wire to the terminal, follow the instructions on “How to connect wiring to the terminal” and fasten the wire securely with the terminal screw.

5. HOW TO PROCESS TUBING

Must ensure mechanical connections be accessible for maintenance purposes.

5-1. Connecting the Refrigerant Tubing

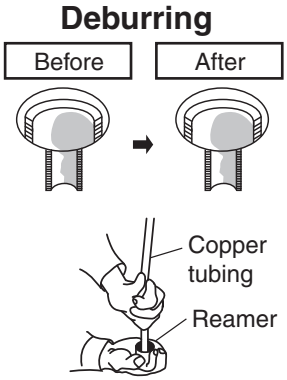
Use of the Flaring Method

Many of conventional split system air conditioners employ the flaring method to connect refrigerant tubes that run between indoor and outdoor units. In this method, the copper tubes are flared at each end and connected with flare nuts.

Flaring Procedure with a Flare Tool

(1) Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30 – 50 cm longer than the tubing length you estimate.

(2) Remove burrs at each end of the copper tubing with a tube reamer or a similar tool. This process is important and should be done carefully to make a good flare. Be sure to keep any contaminants (moisture, dirt, metal filings, etc.) from entering the tubing.

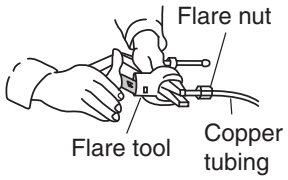


NOTE

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube.

(3) Remove the flare nut from the unit and be sure to mount it on the copper tube.

(4) Make a flare at the end of the copper tube with a flare tool.



NOTE

When flared joints are reused, the flare part shall be re-fabricated. A good flare should have the following characteristics:

- inside surface is glossy and smooth
- edge is smooth
- tapered sides are of uniform length

Caution Before Connecting Tubes Tightly

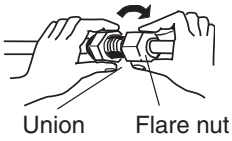
(1) Apply a sealing cap or water-proof tape to prevent dust or water from entering the tubes before they are used.

(2) Be sure to apply refrigerant lubricant (ether oil) to the inside of the flare nut before making piping connections. This is effective for reducing gas leaks.


Apply refrigerant lubricant.

(3) For proper connection, align the union tube and flare tube straight with each other, then screw on the flare nut lightly at first to obtain a smooth match.

- Adjust the shape of the liquid tube using a tube bender at the installation site and connect it to the liquid tubing side valve using a flare.



5-2. Connecting Tubing Between Indoor and RAC Multi Outdoor Units

(1) Tightly connect the indoor-side refrigerant tubing extended from wall with the RAC Multi Outdoor-side tubing.

Indoor Unit Tubing Connection

Unit : mm

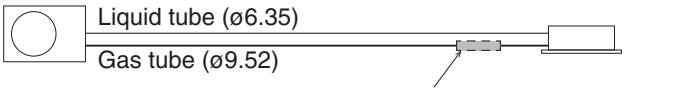
Indoor unit type	S-M20, 25, 36, 50PY3E	S-60PY3E
Gas tube	ø12.7 (ø9.52)	ø15.88 (ø12.7)
Liquid tube	ø6.35	ø9.52 (ø6.35)

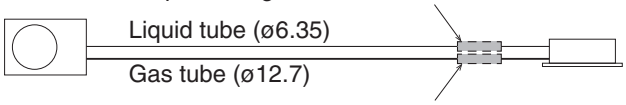
When connecting to the CU-XX outdoor unit, joint piping is required because the piping diameter is different.

The size of parenthesis indicates the connection tube diameter when using the different-diameter- tube joint.

S-M20, 25, 36, 50PY3E	Use Pipe size Reducer (CZ-MA1PA) is separate purchase
S-60PY3E	Different-diameter-tube joint for the indoor unit tubing connection part is supplied with S-60PY3E.

Liquid and Gas side piping connection diagram.

<table>
<tr><th>Indoor Model</th><th>Multi R32 Model</th><th>Pipe connection diagram</th></tr>
<tr><td>S-M20PY3E
S-25PY3E
S-36PY3E</td><td>CU-2Z35***
CU-2Z41***
CU-2Z50***
CU-3Z52***
CU-3Z68***
CU-4Z68***
CU-4Z80***
CU-5Z90***</td><td rowspan="2"> 

Connect the Pipe Size Reducer CZ-MA1PA (ø9.52 - ø12.7) to the gas tubing side indoor unit</td></tr>
<tr><td>S-50PY3E</td><td>CU-2Z50***
CU-3Z52***
CU-3Z68***
CU-4Z68***
CU-4Z80***
CU-5Z90***</td></tr>
<tr><td>S-60PY3E</td><td>CU-3Z68***
CU-4Z68***
CU-4Z80***
CU-5Z90***</td><td>Connect the liquid socket tube B (ø6.35 - ø9.52) to the liquid tubing side indoor unit
 

Connect the gas socket tube A (ø12,7- ø15.88) to the gas tubing side indoor unit</td></tr>
</table>

(2) To fasten the flare nuts, apply specified torque.

- When removing the flare nuts from the tubing connections, or when tightening them after connecting the tubing, be sure to use two spanners.
  When tightening the flare nuts, use a torque wrench.
  If the flare nuts are over-tightened, the flare may be damaged, which could result in refrigerant leakage and cause injury or asphyxiation to room occupants.
- For the flare nuts at tubing connections, be sure to use the flare nuts that were supplied with the unit, or else flare nuts for R410A, R32 (type 2). The refrigerant tubing that is used must be of the correct wall thickness as shown in the table at right.
  Because the pressure is approximately 1.6 times higher than conventional refrigerant R22 pressure, the use of ordinary flare nuts (type 1) or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.

Tube diameter	Tightening torque (approximate)	Tube thickness
ø6.35 (1/4")	14 – 18 N • m {140 – 180 kgf • cm}	0.8 mm
ø9.52 (3/8")	34 – 42 N • m {340 – 420 kgf • cm}	0.8 mm
ø12.7 (1/2")	49 – 55 N • m {490 – 550 kgf • cm}	0.8 mm
ø15.88 (5/8")	68 – 82 N • m {680 – 820 kgf • cm}	1.0 mm

- In order to prevent damage to the flare caused by over-tightening of the flare nuts, use the table on the right as a guide when tightening.
- When tightening the flare nut on the liquid tube, use an adjustable wrench with a nominal handle length of 200 mm.

5-3. Insulating the Refrigerant Tubing

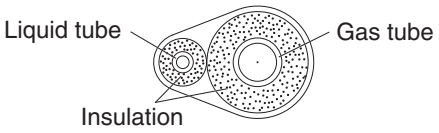
Tubing Insulation

Must ensure that pipe-work shall be protected from physical damage.

- Thermal insulation must be applied to all units tubing, including distribution joint (field supply).
  * For gas tubing, the insulation material must be heat resistant to 120°C or above. For other tubing, it must be heat resistant to 80°C or above.

  Insulation material thickness must be 10 mm or greater.
  If the conditions inside the ceiling exceed DB 30°C and RH 70%, increase the thickness of the gas tubing insulation material by 1 step.

Two tubes arranged together



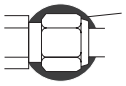
⚠ CAUTION

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.

Additional Precautions For R32 Models

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

To prevent the ingress of moisture into the joint which could have the potential to freeze and then cause leakage, the joint must be sealed with suitable silicone and insulation material.
The joint should be sealed on both liquid and gas side.

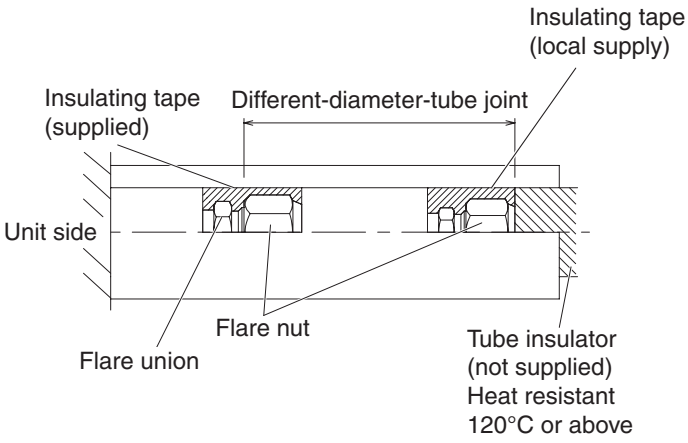


Insulation material and silicone sealant.
Please ensure there are no gaps where moisture can enter the joint.

Silicone Sealant must be neutral cure and ammonia free. Use of silicone containing ammonia can lead to stress corrosion on the joint and cause leakage.

Taping the flare nuts

Wind the insulating tape around the flare nuts at the gas/liquid tube connections. Then cover up the tubing connections with the flare insulator.



Insulation material

The material used for insulation must have good insulation characteristics, be easy to use, be age resistant, and must not easily absorb moisture.

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.

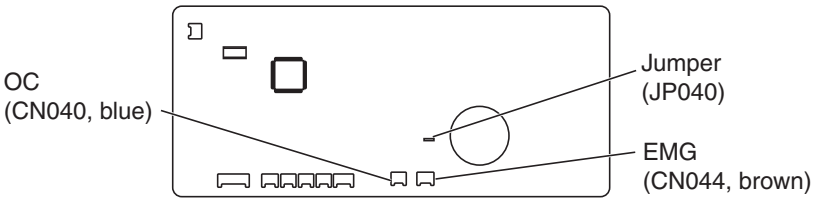
⚠ CAUTION

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.

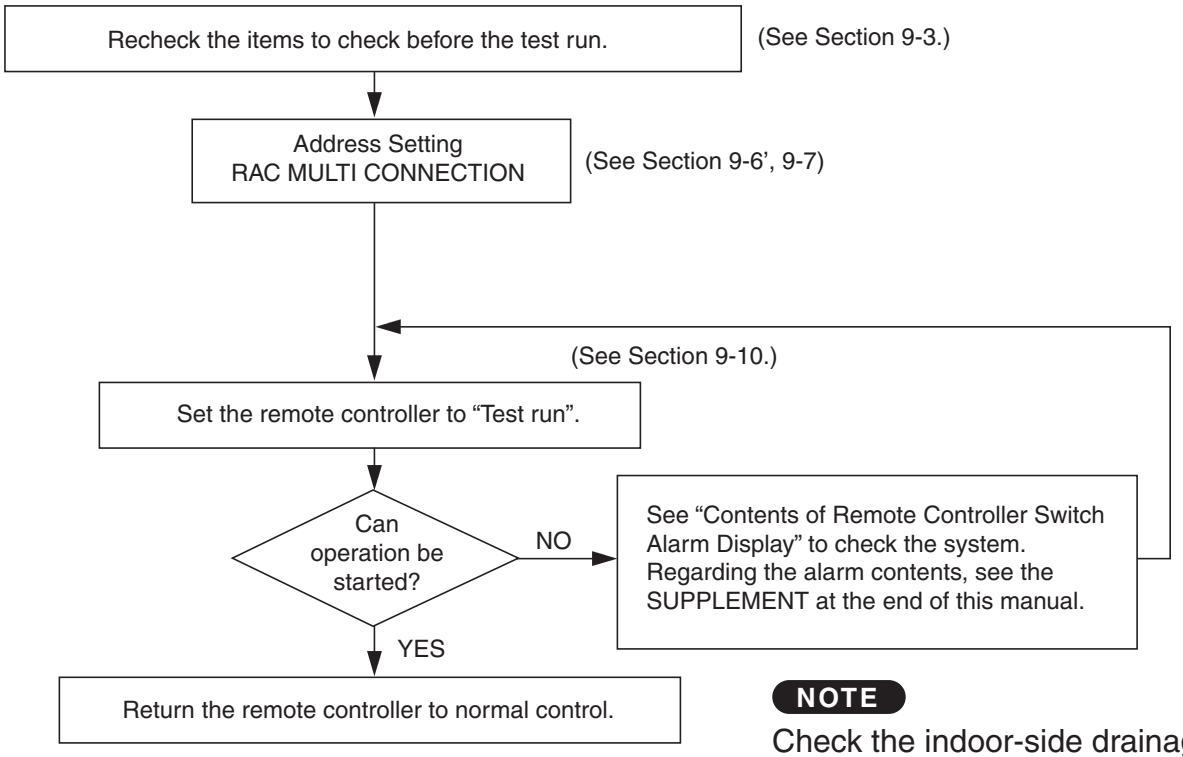
9. TEST RUN WHEN CONNECT TO RAC MULTI OUTDOOR

9-1. Precautions

- Request that the customer be present when the test run is performed.
  At this time, explain the operation manual and have the customer perform the actual steps.
- Check that the 230 VAC power is not connected to the inter-unit control wiring connector terminal.
  * If 230 VAC is accidentally applied, the indoor unit control PCB fuse will blow in order to protect the PCB.
  In this case, make the wiring correctly.
  Then disconnect the 2P connectors (OC) that are connected to the indoor unit control PCB, and replace them with 2P connectors (EMG).
  If operation is still not possible after changing the brown connectors, cut the jumper on the indoor unit control PCB.
  (Be sure to turn the power OFF before performing this work.)



9-2. Test Run Procedure



NOTE

Check the indoor-side drainage.

TEST RUN : Address Setting

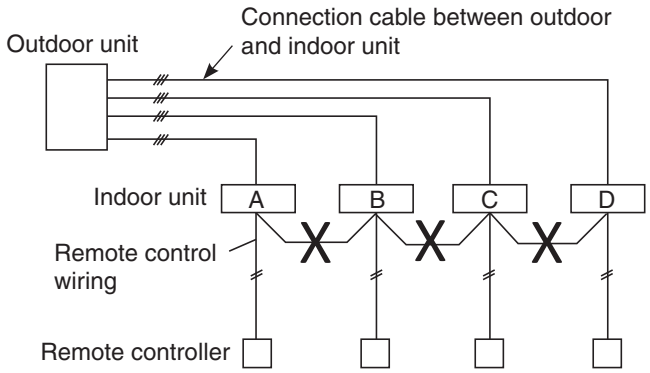
NOTE

The displays of the earth, outdoor unit power supply wiring and earth leakage circuit breaker are omitted.

■ 3-LINE CONNECTION

- RAC Multi operations : It is possible to operate maximum 5 indoor units within one outdoor unit. (Only specified indoor unit combination. Independent operation is possible by connecting an individual remote controller.)
- It is not necessary to make setting of the refrigerant system address.
- When turning on outdoor unit, the auto address will start.
  It takes maximum 10 minutes.
- When the auto address setting is completed, wait at least 1 minute and 30 seconds.
  Then start the operation.

RAC Multi operations



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