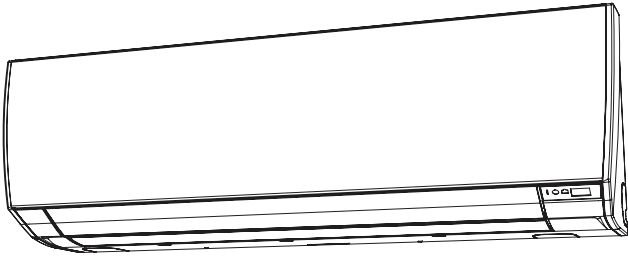


# AIR CONDITIONER

## Wall Mounted Type



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## 1. SAFETY PRECAUTIONS

- Be sure to read this Manual thoroughly before installation.
- The warnings and precautions indicated in this Manual contain important information pertaining to your safety. Be sure to observe them.
- Hand this Manual, together with the Operating Manual, to the customer. Request the customer to keep them on hand for future use, such as for relocating or repairing the unit.

### ⚠ WARNING

Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

### ⚠ CAUTION

Indicates a potentially hazardous situation that may result in minor or moderate injury or damage to property.

### ⚠ WARNING

- Installation of this product must be done by experienced service technicians or professional installers only in accordance with this manual. Installation by non-professional or improper installation of the product might cause serious accidents such as injury, water leakage, electric shock, or fire. If the product is installed in disregard of the instructions in this manual, it will void the manufacturer's warranty.
- Do not turn on the power until all work has been completed. Turning on the power before the work is completed can cause serious accidents such as an electric shock or a fire.
- If refrigerant leaks when you are working, ventilate the area. If the leaking refrigerant is exposed to a direct flame, it may produce a toxic gas.
- Installation must be performed in accordance with regulations, codes, or standards for electrical wiring and equipment in each country, region, or the installation place.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- To avoid danger of suffocation, keep the plastic bag or thin film used as the packaging material away from young children.
- 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.

# INSTALLATION MANUAL



PART No. 9333005232

[Original instructions]

For authorized service personnel only.

### ⚠ CAUTION

- Read carefully all of safety information written in this manual before you install or use the air conditioner.
  - Install the product by following local codes and regulations in force at the place of installation, and the instructions provided by the manufacturer.
  - This product is part of a set constituting an air conditioner. The product must not be installed alone or be installed with a device not authorized by the manufacturer.
  - Always use a separate power supply line protected by a circuit breaker operating on all wires with a distance between contact of 3 mm for this product.
  - To protect the persons, earth (ground) the unit correctly, and use the power cable combined with an Earth Leakage Circuit Breaker (ELCB).
  - This product is not explosion proof, and therefore should not be installed in an explosive atmosphere.
  - To avoid getting an electric shock, never touch the electrical components soon after the power supply has been turned off. After turning off the power, always wait 5 minutes or more before you touch the electrical components.
  - This product contains no user-serviceable parts. Always consult experienced service technicians for repairing.
  - When moving or relocating the air conditioner, consult experienced service technicians for disconnection and reinstallation of the product.
  - Do not touch the aluminum fins of heat exchanger built-in the indoor or outdoor unit to avoid personal injury when you install or maintain the unit.
  - Do not place any other electrical products or household belongings under the product. Condensation dripping from the product might get them wet, and may cause damage or malfunction to the property.
- Be careful not to scratch the air conditioner when handling it.

## 1.1. Precautions for using R32 refrigerant

The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models.

However, pay careful attention to the following points:

Since the working pressure is 1.6 times higher than that of refrigerant R22 models, some of the piping and installation and service tools are special. (See "2.1. Special tools for R32 (R410A)".)

Especially, when replacing a refrigerant R22 model with a new refrigerant R32 model, always replace the conventional piping and flare nuts with the R32 and R410A piping and flare nuts on the outdoor unit side.

For R32 and R410A, the same flare nut on the outdoor unit side and pipe can be used.

Models that use refrigerant R32 and R410A have a different charging port thread diameter to prevent erroneous charging with refrigerant R22 and for safety. Therefore, check beforehand. [The charging port thread diameter for R32 and R410A is 1/2-20 UNF.]

Be more careful than R22 so that foreign matter (oil, water, etc.) does not enter the piping. Also, when storing the piping, securely seal the opening by pinching, taping, etc. (Handling of R32 is similar to R410A.)

### ⚠ CAUTION


#### 1-Installation (Space)

- That the installation of pipe-work shall be kept to a minimum.
- That pipe-work shall be protected from physical damage.
- That compliance with national gas regulations shall be observed.
- That mechanical connections shall be accessible for maintenance purposes.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- When disposing of the product is used, be based on national regulations, properly processed.

#### 2- Servicing

##### 2-1 Service personnel

- Any 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 authorises 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.

 **CAUTION**

**2-2 Work**

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the precautions in 2-2 to 2-8 shall be complied with prior to conducting work on the system.
- Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.
- 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.

**2-3 Checking for presence of refrigerant**

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

**2-4 Presence of fire extinguisher**

- If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available at hand.
- Have a dry powder or CO<sub>2</sub> fire extinguisher adjacent to the charging area.

**2-5 No ignition sources**

- No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant 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 flammable 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.

**2-6 Ventilated area**

- 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.

**2-7 Checks to the refrigeration equipment**

- 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 following checks shall be applied to installations using flammable refrigerants.
  - The charge size 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.
  - If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
  - Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
  - Refrigeration 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.

**2-8 Checks to electrical devices**

- 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 there no live electrical components and wiring are exposed while charging, recovering or purging the system.
  - That there is continuity of earth bonding.

**3-Repairs to sealed components**

- 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.
- If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
- 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.

**4-Repair to intrinsically safe components**

- 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.
- Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

**5-Cabling**

- 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.

**6-Detection of flammable refrigerants**


- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used.

**7-Leak detection methods**

- Electronic leak detectors shall be used to detect flammable refrigerants, 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 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.

**8-Removal and evacuation**

- 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 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 ignition sources and there is ventilation available.

 **CAUTION**

9-Charging procedures

- In addition to conventional charging procedures, the following requirements shall be followed.
  - Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
  - Cylinders shall be kept upright.
  - Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already).
  - Extreme care shall be taken not to overfill the refrigeration system.
- Prior to recharging the system it shall be pressure tested with OFN.
- The system shall be leak tested on completion of charging but prior to commissioning.
- A follow up leak test shall be carried out prior to leaving the site.

10-Decommissioning

- 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 reclaimed refrigerant.
- It is essential that electrical power is available before the task is commenced.
  - Become familiar with the equipment and its operation.
  - Isolate system electrically.
  - 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.
  - Pump down refrigerant system, if possible.
  - If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
  - Make sure that cylinder is situated on the scales before recovery takes place.
  - Start the recovery machine and operate in accordance with manufacturer's instructions.
  - Do not overfill cylinders. (No more than 80 % volume liquid charge).
  - Do not exceed the maximum working pressure of the cylinder, even temporarily.
  - 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.
  - Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.





11-Labeling

- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant.
- The label shall be dated and signed.
- Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

12-Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed.
- Ensure that the correct number of cylinders for holding the total system charge are available.
- All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant).
- Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order.
- Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants.
- In addition, a set of calibrated weighing scales shall be available and in good working order.
- Hoses shall be complete with leak-free disconnect couplings and in good condition.
- Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
- The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged.
- Do not mix refrigerants in recovery units and especially not in cylinders.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.
  - The evacuation process shall be carried out prior to returning the compressor to the suppliers.
  - Only electric heating to the compressor body shall be employed to accelerate this process.
- When oil is drained from a system, it shall be carried out safely.

Explanation of symbols displayed on the indoor unit or outdoor unit.

	<b>WARNING</b>	This symbol shows that this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	<b>CAUTION</b>	This symbol shows that the operation manual should be read carefully.
	<b>CAUTION</b>	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	<b>CAUTION</b>	This symbol shows that information is available such as the operating manual or installation manual.

**2. ABOUT THE PRODUCT**

**2.1. Special tools for R32 (R410A)**


Tool name	Change from R22 to R32 (R410A)
<b>Gauge manifold</b>	Pressure is high and cannot be measured with a R22 gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended to use gauge with seals -0.1 to 5.3 MPa (-1 to 53 bar) for high pressure. -0.1 to 3.8 MPa (-1 to 38 bar) for low pressure.
<b>Charge hose</b>	To increase pressure resistance, the hose material and base size were changed. (R32/R410A)
<b>Vacuum pump</b>	A conventional vacuum pump can be used by installing a vacuum pump adapter. (Use of a vacuum pump with a series motor is prohibited.)
<b>Gas leakage detector</b>	Special gas leakage detector for HFC refrigerant R410A or R32.

**Copper pipes**

It is necessary to use seamless copper pipes and it is desirable that the amount of residual oil is less than 40 mg/10 m. Do not use copper pipes having a collapsed, deformed or discolored portion (especially on the interior surface). Otherwise, the expansion valve or capillary tube may become blocked with contaminants. As an air conditioner using R32 (R410A) incurs pressure higher than when using R22, it is necessary to choose adequate materials.

 **WARNING**



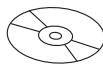
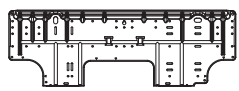


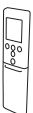

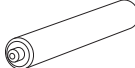
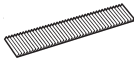


- Do not use the existing (for R22) piping and flare nuts. If the existing materials are used, the pressure inside the refrigerant cycle will rise and cause failure, injury, etc. (Use the special R32/R410A materials.)
- Use (refill or replace with) specified refrigerant (R32) only. Use of unspecified refrigerant can cause product malfunction, burst, or injury.
- Do not mix any gas or impurities except specified refrigerant (R32). Inflow of air or application of unspecified material makes the internal pressure of the refrigerant cycle too high, and may cause product malfunction, burst of piping, or injury.
- For installation purposes, be sure to use the parts supplied by the manufacturer or other prescribed parts. The use of non-prescribed parts can cause serious accidents such as the unit falling, water leakage, electric shock, or fire.
- Do not turn on the power until all installation work is complete.

 **CAUTION**

This installation manual describes how to install the indoor unit only. To install the outdoor unit, refer to the installation manual included with the outdoor unit.

**2.2. Accessories**

The following installation accessories are supplied. Use them as required.

Name and Shape	Q'ty	Name and Shape	Q'ty
Operating Manual 	1	Cloth tape 	1
Operating Manual (CD-ROM) 	1	Wall hook bracket 	1
Installation Manual (This manual) 	1	Tapping screw (large) 	5
Remote controller 	1	Tapping screw (small) 	2
Battery 	2	Air cleaning filter 	2
Remote controller holder 	1	Filter holders 	2

The following items are necessary to install this air conditioner. (The items are not included with the air conditioner and must be purchased separately.)

Additional materials	
Connection pipe assembly	Wall cap
Connection cable (4-conductor)	Saddle
Wall pipe	Drain hose
Decorative tape	Tapping screws
Vinyl tape	Putty

### 2.3. Optional parts

Refer to each installation manual for the method of installing optional parts.

Parts name	Model No.	Application
Wired remote controller (*1)	UTY-RVN*M	For air conditioner operation (3-wired type)
	UTY-RNN*M	
Simple remote controller (*1)	UTY-RSN*M	For air conditioner operation (3-wired type)
External connect kit (*1)	UTY-XWZXZ5	For control input/output port
Communication kit	UTY-XCBXZ2	For the installation of optional parts
WLAN adapter	UTY-TFNXZ1	For wireless LAN control

\*1: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.

## 3. GENERAL SPECIFICATION

This INSTALLATION MANUAL 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.

### 3.1. Type of copper pipe and insulation material

#### CAUTION

Refer to the installation manual for the outdoor unit for description of allowable pipe length and height difference.

Capacity of indoor unit	Gas pipe size (thickness) [mm]	Liquid pipe size (thickness) [mm]
9, 12, 14	Ø 9.52 (0.8)	Ø 6.35 (0.8)

#### CAUTION

- Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.
- Use heat insulation with heat resistance above 120 °C. Reverse cycle model only)
- In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 15 mm or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm or thicker.
- If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation.
- In addition, use heat insulation with heat conductivity of 0.045 W/(m·K) or less 20 °C.

## 4. ELECTRICAL REQUIREMENT

The indoor unit is powered from the outdoor unit. Do not power indoor unit from separate power source.

#### WARNING

Standard for electrical wiring and equipment differs in each country or region. Before you start electrical working, confirm related regulations, codes, or standards.

Cable	Conductor size [mm <sup>2</sup> ]	Type	Remarks
Connection cable	1.5	Type 60245 IEC 57	3 cable + Earth (Ground), 1 Ø 230 V

Cable Length: Limit voltage drop to less than 2%. Increase cable gauge if voltage drop is 2% or more.

## 5. SELECTING THE MOUNTING POSITION

Decide the mounting position with the customer as follows:

### 5.1. Indoor unit

- (1) Install the indoor unit level on a strong wall which is not subject to vibration.
- (2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.
- (3) Install the unit a dedicated electrical branch circuit.
- (4) Do not install the unit where it will be exposed to direct sunlight.
- (5) Install the unit where connection to the outdoor unit is easy.
- (6) Install the unit where the drain pipe can be easily installed.
- (7) Take servicing, etc. into consideration and leave the spaces shown in [6.1. Installation dimensions]. Also install the unit where the filter can be removed.

Correct initial installation location is important because it is difficult to move unit after it is installed.

#### WARNING

Select installation locations that can properly support the weight of the indoor. Install the units securely so that they do not topple or fall.

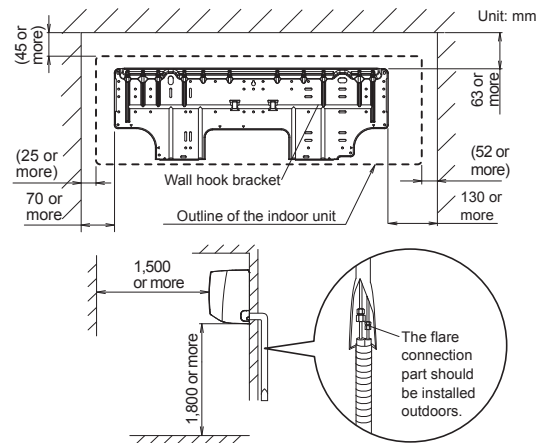
#### CAUTION

Do not install the unit in the following areas:

- Area with high salt content, such as at the seaside. It will deteriorate metal parts, causing the parts to fail or the unit to leak water.
  - Area filled with mineral oil or containing a large amount of splashed oil or steam, such as a kitchen. It will deteriorate plastic parts, causing the parts to fail or the unit to leak water.
  - Area that generates substances that adversely affect the equipment, such as sulfuric gas, chlorine gas, acid, or alkali. It will cause the copper pipes and brazed joints to corrode, which can cause refrigerant leakage.
  - Area that can cause combustible gas to leak, contains suspended carbon fibers or flammable dust, or volatile inflammables such as paint thinner or gasoline.
  - If gas leaks and settles around the unit, it can cause a fire.
  - Area where animals may urinate on the unit or ammonia may be generated.
- Do not use the unit for special purposes, such as storing food, raising animals, growing plants, or preserving precision devices or art objects.
  - It can degrade the quality of the preserved or stored objects.
  - Do not install where there is the danger of combustible gas leakage.
  - Do not install the unit near a source of heat, steam, or flammable gas.
  - Install the unit where drainage does not cause any trouble.
  - Install the indoor unit, outdoor unit, power supply cable, transmission cable, and remote control cable at least 1 m away from a television or radio receivers. The purpose of this is to prevent TV reception interference or radio noise.
  - (Even if they are installed more than 1 m apart, you could still receive noise under some signal conditions.)
  - If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.
  - Install the indoor unit on the wall where the height from the floors more than 1800 mm.

## 6. INSTALLATION WORK

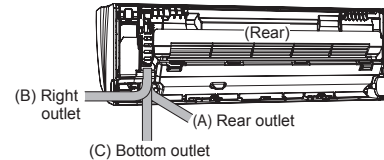
### 6.1. Installation dimensions



### 6.2. Indoor unit piping direction

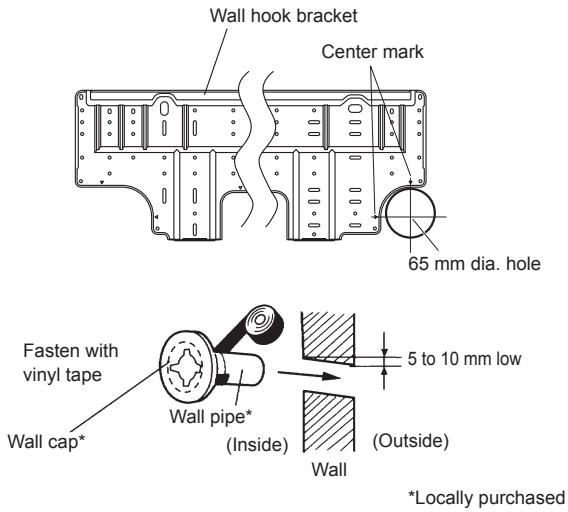
The piping can be connected in the 3 directions indicated in the following.

When the piping is connected in direction (B) or (C), cut along the piping groove in the side of the front cover with a hacksaw.



### 6.3. Cutting the hole in the wall for the connecting piping

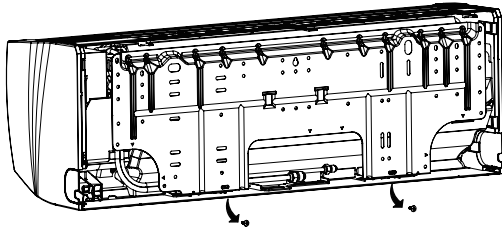
- (1) Cut a 65 mm diameter hole in the wall at the position shown in the following.
- (2) Cut the hole so that the outside end is lower (5 to 10 mm) than the inside end.
- (3) Always align the center of the wall hole. If misaligned, water leakage will occur.
- (4) Cut the wall pipe to match the wall thickness, stick it into the wall cap, fasten the cap with vinyl tape, and stick the pipe through the hole.
- (5) For right piping, cut the hole a little lower so that drain water will flow freely.



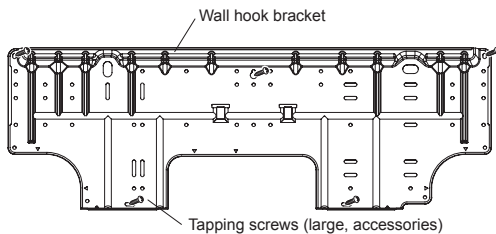
### WARNING

Always use the wall pipe. If the wall pipe is not used, the cable that is connected between the indoor unit and the outdoor unit may touch metal, and cause electric discharge.

## 6.4. Installing the wall hook bracket



- Remove the wall hook bracket from the indoor unit. (Remove 2 screws).
- (1) Install the wall hook bracket so that it is correctly positioned horizontally and vertically. If the wall hook bracket is tilted, water will drip to the floor.
- (2) Install the wall hook bracket so that it is strong enough to support the weight of the unit.
  - Fasten the wall hook bracket to the wall with 5 or more screws through the holes near the outer edge of the bracket.
  - Check that there is no rattle at the wall hook bracket.



### CAUTION

Install the wall hook bracket both horizontally and vertically aligned. Misaligned installation may cause water leakage.

## 6.5. Forming the drain hose and pipe

### CAUTION

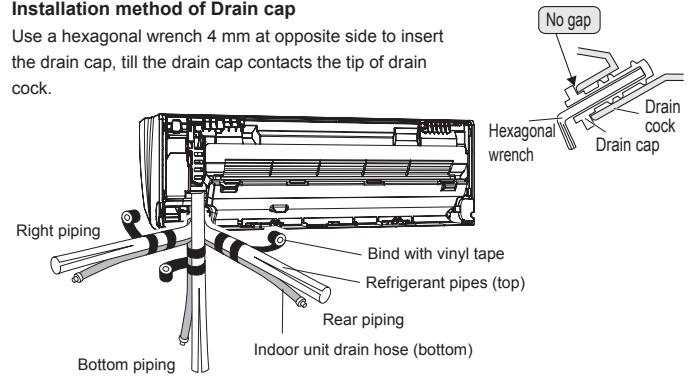
- Insert drain hose and drain cap securely. Drain should slope down to avoid water leakage.
  - When inserting, be sure not to attach any material besides water. If any other material is attached, it will cause deterioration and water leakage.
  - After removing drain hose, be sure not to forget mounting drain cap.
  - Be sure to fix the drain hose with tape to the bottom of piping.
  - Prevent drain water freezing under low temperature environment.
- When installing indoor unit's drain hose outdoors, necessary measure for frost protection should be taken to prevent drain water freezing.
- Under low temperature environment (when outdoor temperature under 0 °C), after cooling operation is executed, water in the drain hose could be frozen. Once drain water is frozen, the drain hose will be blocked and water leakage may result at the indoor unit.

### [Rear piping, Right piping, Bottom piping]

- Install the indoor unit piping in the direction of the wall hole and bind the drain hose and pipe together with vinyl tape.
- Install the piping so that the drain hose is at the bottom.
- Wrap the pipes of the indoor unit that are visible from the outside with decorative tape.

## Installation method of Drain cap

Use a hexagonal wrench 4 mm at opposite side to insert the drain cap, till the drain cap contacts the tip of drain cock.



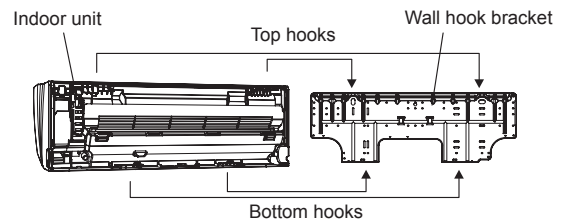
### CAUTION

Insert the drain hose and drain cap into the drain port, making sure that it comes in contact with the back of the drain port, and then mount it. If the drain hose is not connected properly, leaking will occur.

- Please hold around the joint of the drain hose during working.
- As the screw is inside, be sure to use screwdriver treated with magnet.
- Bend the connection piping at a bend radius of 70 mm or more and install no more than 35 mm from the wall.
- After passing the indoor piping and drain hose through the wall hole, hang the indoor unit on the hooks at the top and bottom of the wall hook bracket.

### [Installing the indoor unit]

- Hang the indoor unit from the hooks at the top of the wall hook bracket.
- Insert the spacer, etc. between the indoor unit and the wall hook bracket and separate the bottom of the indoor unit from the wall.



After hooking the indoor unit to the top hook, hook the fittings of the indoor unit to the 2 bottom hooks while lowering the unit and pushing it against the wall.

## 6.6. Pipe connection

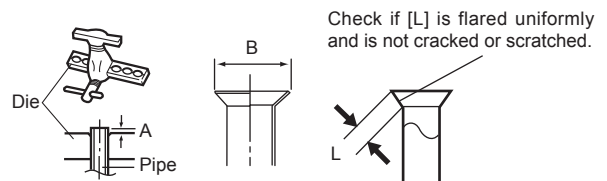
### CAUTION

Tighten the flare nuts with a torque wrench using the specified tightening method. Otherwise, the flare nuts could break after a prolonged period, causing refrigerant to leak and generate hazardous gas if the refrigerant comes into contact with a flame.

### 6.6.1. Flaring

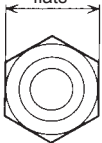
Use special pipe cutter and flare tool exclusive for R410A or R32 pipework.

- Cut the connection pipe to the necessary length with a pipe cutter.
- Hold the pipe downward so that cuttings will not enter the pipe and remove any burrs.
- Insert the flare nut (always use the flare nut attached to the indoor unit(s) and outdoor unit respectively) onto the pipe and perform the flare processing with a flare tool. Use the special R410A or R32 flare tool, or the conventional flare tool. Leakage of refrigerant may result if other flare nuts are used.
- Protect the pipes by pinching them or with tape to prevent dust, dirt, or water from entering the pipes.



Pipe outside diameter [mm (in.)]	Dimension A [mm]		Dimension B [mm]
	Flare tool for R32, clutch type		
6.35 (1/4)	0 to 0.5		9.1
9.52 (3/8)			13.2
12.70 (1/2)			16.6
15.88 (5/8)			19.7
19.05 (3/4)			24.0

When using conventional flare tools to flare R32(R410A) pipes, the dimension A should be approximately 0.5 mm more than indicated in the table (for flaring with R32(R410A) flare tools) to achieve the specified flaring. Use a thickness gauge to measure the dimension A.

Width across flats	Pipe outside diameter [mm (in.)]	Width across flats of Flare nut [mm]
	6.35 (1/4)	17
	9.52 (3/8)	22
	12.70 (1/2)	26
	15.88 (5/8)	29
	19.05 (3/4)	36

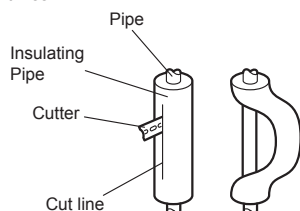
### 6.6.2. Bending pipes

#### CAUTION

- To prevent breaking of the pipe, avoid sharp bends.
- If the pipe is bent repeatedly at the same place, it will break.

- The pipes are shaped by your hands. Be careful not to collapse them.
- Bend R70 mm or more with a pipe bender.
- Do not bend the pipes in an angle more than 90°.
- When pipes are repeatedly bend or stretched, the material will harden, making it difficult to bend or stretch them any more.
- Do not bend or stretch the pipes more than 3 times.

When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the insulating pipe with a sharp cutter as shown on the right, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.



### 6.6.3. Flare connection

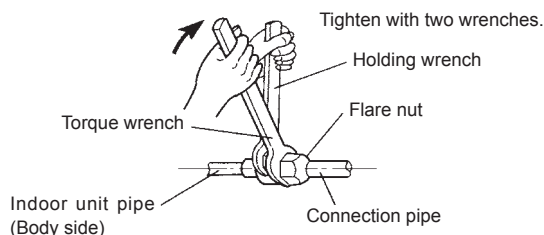
#### WARNING

The flare connection shall not be performed indoors.

#### CAUTION

- Be sure to install the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot tighten smoothly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.
- Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.
- Tighten the flare nuts with a torque wrench using the specified tightening method. Otherwise, the flare nuts could break after a prolonged period, causing refrigerant to leak and generate hazardous gas if the refrigerant comes into contact with a flame.
- Connect the piping so that the control box cover can easily be removed for servicing when necessary.
- In order to prevent water from leaking into the control box, make sure that the piping is well insulated.

When the flare nut is tightened properly by your hand, hold the body side coupling with a wrench, then tighten with a torque wrench. (See the table below for the flare nut tightening torques.)



Flare nut [mm (in.)]	Tightening torque [N·m (kgf·cm)]
6.35 (1/4) dia.	16 to 18 (160 to 180)
9.52 (3/8) dia.	32 to 42 (320 to 420)
12.70 (1/2) dia.	49 to 61 (490 to 610)
15.88 (5/8) dia.	63 to 75 (630 to 750)
19.05 (3/4) dia.	90 to 110 (900 to 1,100)

Do not remove the cap from the connection pipe before connecting the pipe.

## 7. ELECTRICAL WIRING

#### WARNING

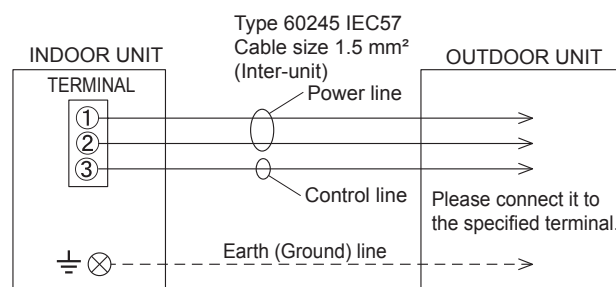
- Before connecting the wires, make sure the power supply is OFF.
- Every wire must be connected firmly.
- No wire should be allowed to touch refrigerant tubing, the compressor or any moving part.
- Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, be sure all wiring is tightly connected.
- Connect wires to the matching numbers of terminals.

#### CAUTION

Be careful not to generate a spark as follows for using a flammable refrigerant.

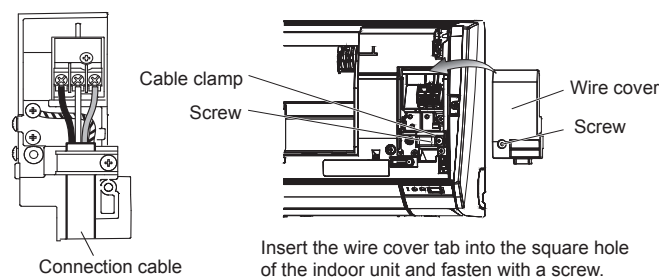
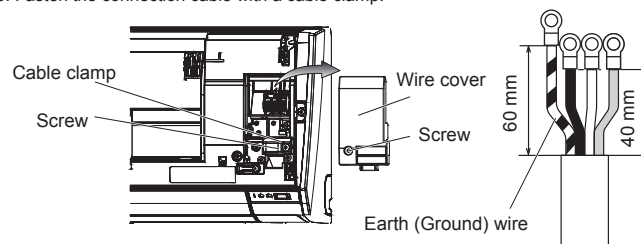
- Do not remove the fuse while the power is on.
- Do not disconnect the wiring while the power is on.
- It is recommended to position the outlet connection in a high position. Place the cords so that they do not get tangled.

### 7.1. Wiring system diagram



### 7.2. Indoor unit wiring

1. Remove the wire cover. (Remove 1 screw.)
2. Remove the cable clamp.
3. Ring terminals connect to the connection cable.
4. Connect the ring terminals fully into the terminal block.
5. Fasten the connection cable with a cable clamp.

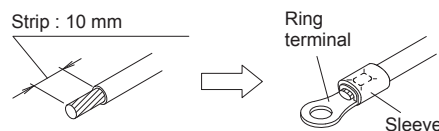


### 7.3. How to connect wiring to the terminals

#### Caution when wiring cable

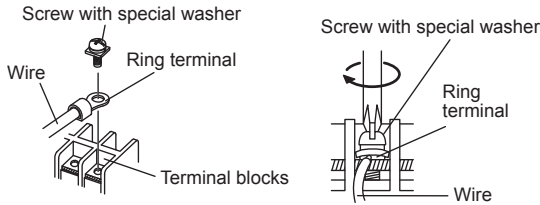
When stripping off the insulation of a lead wire, always use a special tool such as a wire stripper. If there is no special tool available, carefully strip the insulation with a knife etc.

- (1) Use ring terminals with insulating sleeves as shown in the figure below to connect to the terminal block.
- (2) Securely clamp the ring terminals to the wires using an appropriate tool so that the wires do not come loose.



- (3) Use the specified wires, connect them securely, and fasten them so that there is no stress placed on the terminals.
- (4) Use an appropriate screwdriver to tighten the terminal screws. Do not use a screwdriver that is too small, otherwise, the screw heads may be damaged and prevent the screws from being properly tightened.

- (5) Do not tighten the terminal screws too much, otherwise, the screws may break.



- (6) See the table below for the terminal screw tightening torques.

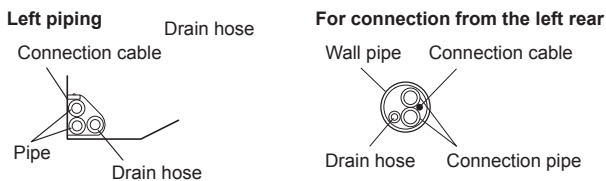
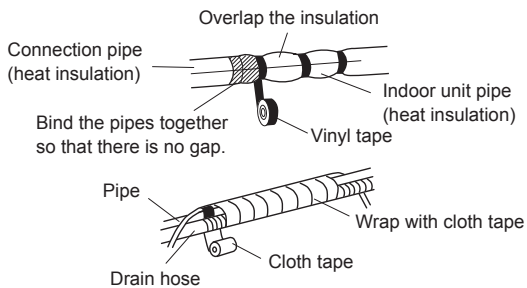
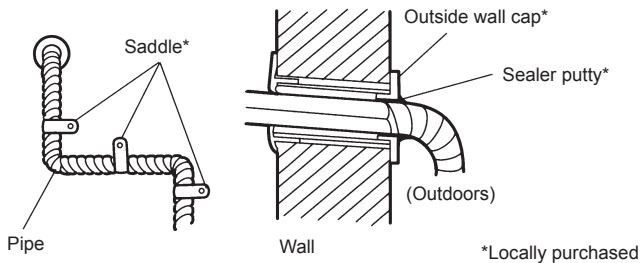
Tightening torque [N·m (kgf·cm)]	
M4 screw	1.2 to 1.8 (12 to 18)

### CAUTION

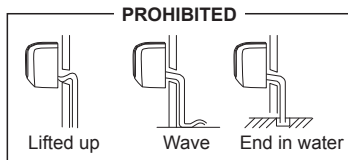
- Match the terminal block numbers and connection cable colors with those of the outdoor unit.
- Erroneous wiring may cause burning of the electric parts.
- Connect the connection cables firmly to the terminal block. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cable with the cable clamp. (If the insulator is chafed, electric discharge may occur.)
- Always connect the ground wire.
- Do not use the earth screw of the indoor unit for the connection other than a specified outdoor unit.

## 8. FINISHING

- Insulate between pipes.
  - Insulate suction and discharge pipes separately.
  - For rear, right, and bottom piping, overlap the connection pipe heat insulation and indoor unit pipe heat insulation and bind them with vinyl tape so that there is no gap.
  - For left and left rear piping, butt the connection pipe heat insulation and indoor unit pipe heat insulation together and bind them with vinyl tape so that there is no gap.
  - For left and left rear piping, wrap the area which accommodates the rear piping housing section with cloth tape.
  - For left and left rear piping, bind the connection cable to the top of the pipe with vinyl tape.
  - For left and left rear piping, bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.
- Temporarily fasten the connection cable along the connection pipe with vinyl tape. (Wrap to about 1/3 the width of the tape from the bottom of the pipe so that water does not enter.)
- Fasten the connection pipe to the outside wall with a saddle, etc.
- Fill the gap between the outside wall pipe hole and the pipe with sealer so that rain water and wind cannot blow in.
- Fasten the drain hose to the outside wall, etc.

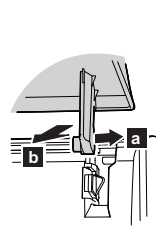


Check the following:



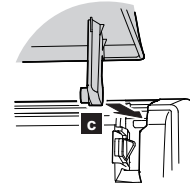
## 9. FRONT PANEL REMOVAL AND INSTALLATION

### Intake grille removal



Open the intake grille. While gently pressing the left and right mounting shafts of the intake grille outward "a", remove the intake grille in direction of the arrow "b".

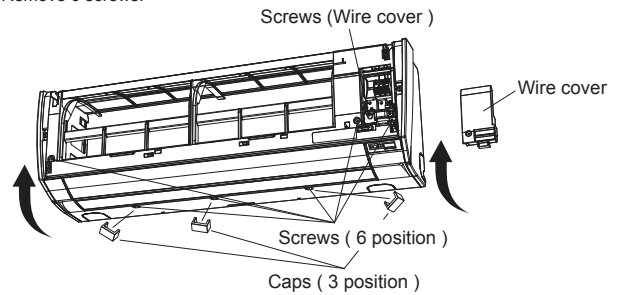
### Intake grille installation



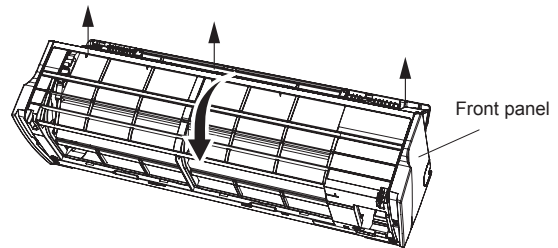
While holding the grille horizontal, set the left and right mounting shafts into the pillow blocks at the top of the panel "c". To latch each shaft properly, insert the shaft until it snaps. Press 4 places on the intake grille to close it completely.

### 9.1. Front panel removal

- Remove intake grille (Reference the intake grille removal.)
- Remove 3 caps.
- Remove wire cover.
- Remove 6 screws.

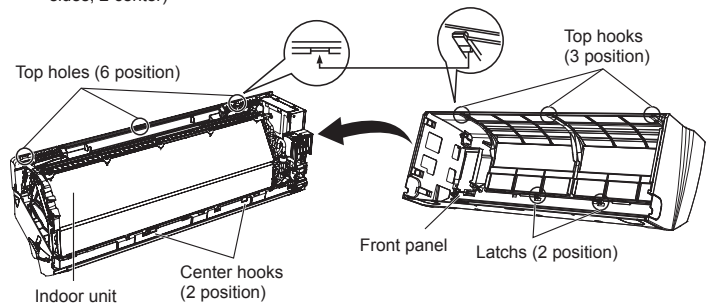


- (5) The front panel is pulled to the front, raising the upper surface, and a front panel is removed.



### 9.2. Front panel installation

- (1) First, fit the lower part of the front panel, and insert top and bottom hooks. (3 top sides, 2 center)



- Attach the 6 screws.
- Attach the wire cover.
- Attach the 3 caps.
- Attach the intake grille.

### CAUTION

Install the Front panel and Intake grille securely. If installation is imperfect, the Front panel or Intake grille may fall off and cause injury.

## 10. TEST RUN

### Check items

- (1) Is operation of each button on the remote control unit normal?
  - (2) Does each lamp light normally?
  - (3) Do airflow direction louvers operate normally?
  - (4) Is the drain normal?
  - (5) Do not have an abnormal noise and vibration during operation?
- Do not operate the air conditioner in test run for a long time.

### [Operation method]

- For the operation method, refer to the operating manual.
- The outdoor unit, may not operate, depending on the room temperature. In this case, keep on pressing the MANUAL AUTO button of the indoor unit for more than 10 seconds. The operation indicator lamp and timer indicator lamp will begin to flash simultaneously during cooling test run. Then, heating test run will begin in about three minutes when HEAT is selected by the remote control operation. (Please follow the operating manual for remote control operation.)
- To end test operation, press the remote controller START/STOP button. (When the air conditioner is running by pressing the test run button, the OPERATION Lamp and TIMER Lamp will simultaneously flash slowly.)

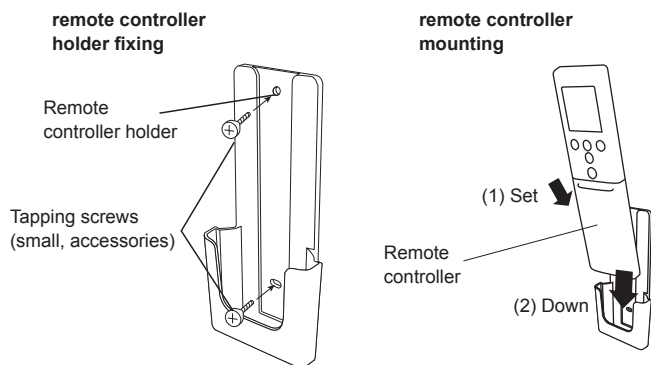
## 11. REMOTE CONTROLLER INSTALLATION

### CAUTION

- Check that the indoor unit correctly receives the signal from the remote controller, then install the remote controller holder.
- Select the remote controller holder selection site by paying careful attention to the following:  
Avoid places in direct sunlight.  
Select a place that will not be affected by the heat from a stove, etc.

### 11.1. Remote controller holder installation

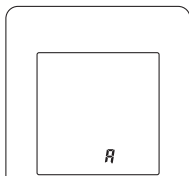
- Install the remote controller a maximum distance of 7 m from the remote control receiver. However, when installing the remote controller, check that it operates correctly.
- Install the remote controller holder to a wall, pillar, etc. with the tapping screw.



### 11.2. Remote controller custom setting

Use the following steps to select the custom code of the remote controller. (Note that the air conditioner cannot receive a signal if the air conditioner has not been set for the matching custom code.)

- (1) Press [ $\psi$ /I] until only the clock is displayed on the remote controller display.
- (2) Press [MODE] for at least 5 seconds to display the current custom code (initially set to A).
- (3) Press [TEMP. ( $\wedge$  /  $\vee$ )] to change the custom code between  $\boxed{\rightarrow A \leftrightarrow B \leftrightarrow C \leftrightarrow D \leftarrow}$ .  
Match the code on the display to the air conditioner custom code.
- (4) Press [MODE] again to return to the clock display. The custom code will be changed.



- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner custom code is set to A prior to shipment.

## 12. FUNCTION SETTING

Perform the Function Setting according to the installation conditions using the remote controller.

### CAUTION

- Confirm whether the wiring work for outdoor unit has been finished.
- Confirm that the cover for the electrical enclosure on the outdoor unit is in place.

- This procedure changes to the Function Settings used to control the indoor unit according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the Function Setting according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Value.
- Settings will not be changed if invalid numbers or setting values are selected.
- Refer to the installation manual enclosed with the remote control unit when the wired remote control unit (option ) is used.

### Entering the Function Setting Mode

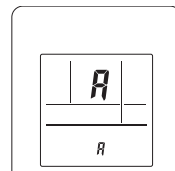
While pressing [POWERFUL] and [TEMP. ( $\wedge$ )] simultaneously, press [RESET] to enter the function setting mode.

#### STEP 1

##### Selecting the Remote Controller Custom Code

Use the following steps to select the custom code of the remote controller. (Note that the air conditioner cannot receive a signal if the air conditioner has not been set for the matching custom code.)

The custom codes that are set through this process are applicable only to the signals in the function setting. For details on how to set the custom codes through the normal process, refer to "11.2. Remote controller custom setting".

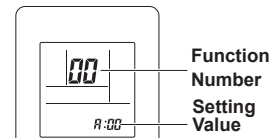


- (1) Press [TEMP. ( $\wedge$  /  $\vee$ )] to change the custom code between  $A \rightarrow B \rightarrow C \rightarrow D$ . Match the code on the display to the air conditioner custom code. (initially set to A) (If the custom code does not need to be selected, press [10°C HEAT] and proceed to STEP 2.)
- (2) Press [MODE] and check that the indoor unit can receive signals at the displayed custom code.
- (3) Press [10°C HEAT] to accept the custom code, and proceed to STEP 2.

#### STEP 2

##### Selecting the Function Number and Setting Value

- (1) Press the [TEMP. ( $\wedge$  /  $\vee$ )] to select the function number. (Press [10°C HEAT] to switch between the left and right digits.)
- (2) Press [POWERFUL] to proceed to setting value. (Press [POWERFUL] again to return to the function number selection.)
- (3) Press the [TEMP. ( $\wedge$  /  $\vee$ )] to select the setting value. (Press [10°C HEAT] to switch between the left and right digits.)
- (4) Press [MODE] once. Please confirm the beeping sound.
- (5) Next, please press [ $\psi$ /I] once to fix the Function Setting. Please confirm the beeping sound.
- (6) Press [RESET] to cancel the Function Setting mode.
- (7) After completing the Function Setting, be sure to disconnect the power supply and then reconnect it.



### CAUTION

After disconnecting the power, wait 10 seconds or more before reconnecting it again. The Function Setting does not become active unless the power is disconnected then reconnected again.

### 12.1. Function Details

#### Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

( $\psi$ ... Factory setting)

Function Number	Setting Value	Setting Description
11	00	Standard (400 hours)
	01	Long interval (1,000 hours)
	02	Short interval (200 hours)
	03	No indication



### Room temperature sensor control for cooling

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

(◆... Factory setting)

Function Number	Setting Value	Setting Description
30	00	Standard
	01	Slightly lower control
	02	Lower control
	03	Higher control

### Room temperature sensor control for heating

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

(◆... Factory setting)

Function Number	Setting Value	Setting Description
31	00	Standard
	01	Lower control
	02	Slightly higher control
	03	Higher control

### Auto restart

Enable or disable automatic restart after a power interruption.

(◆... Factory setting)

Function Number	Setting Value	Setting Description
40	00	Enable
	01	Disable

\* Auto restart is an emergency function such as for power outage etc. Do not attempt to use this function in normal operation. Be sure to operate the unit by remote controller or other external input device.

### Room temperature sensor switching

(Only for wired remote controller)

When using the Wired remote controller temperature sensor, change the setting to "Both" (01).

(◆... Factory setting)

Function Number	Setting Value	Setting Description
42	00	Indoor unit
	01	Both

00: Sensor on the indoor unit is active.

01: Sensors on both indoor unit and wired remote controller is active.

\* Remote controller sensor must be turned on by using the remote controller.

### Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed. Select the appropriate custom code.

(◆... Factory setting)

Function Number	Setting Value	Setting Description
44	00	A
	01	B
	02	C
	03	D

### External input control

"Operation/Stop" mode or "Forced stop" mode can be selected.

(◆... Factory setting)

Function Number	Setting Value	Setting Description
46	00	Operation/Stop mode
	01	(Setting prohibited)
	02	Forced stop mode

### Room temperature sensor switching (Aux.)

To use the temperature sensor on the wired remote controller only, change the setting to "Wired remote controller" (01). This function will only work if the function setting 42 is set at "Both" (01)

(◆... Factory setting)

Function Number	Setting Value	Setting Description
48	00	Both
	01	Wired remote controller

### Indoor unit fan control for energy saving for cooling

Enables or disables the power-saving function by controlling the indoor unit fan rotation when the outdoor unit is stopped during cooling operation.

(◆... Factory setting)

Function Number	Setting Value	Setting description
49	00	Disable
	01	Enable

00: When the outdoor unit is stopped, the indoor unit fan operates continuously following the setting on the remote controller.

01: When the outdoor unit is stopped, the indoor unit fan operates intermittently at a very low speed.

### Setting record

Record any changes to the settings in the following table.

Setting Description	Setting Value
Filter sign	
Room temperature sensor control for cooling	
Room temperature sensor control for heating	
Auto restart	
Room temperature sensor switching	
Remote controller custom code	
External input control	
Room temperature sensor switching (Aux.)	
Indoor unit fan control for energy saving for cooling	

After completing the Function Setting, be sure to turn off the power supply and then reconnect it.

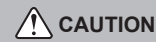
## 13. OPTIONAL KIT INSTALLATION

This air conditioner can be connected with the following optional kits.

- Wired remote controller
- Simple remote controller
- External connect kit

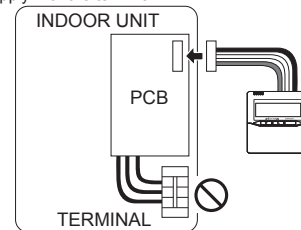
### BEFORE INSTALL WIRED REMOTE CONTROLLER

- When you use wired remote controller, some functions may not be used.



- Before installing, be sure to disconnect all power supply.
- Don't touch the heat exchanger.
- During installing or removing operation, be sure not to have wire caught by parts or draw it hard. Or it may result troubles to the air-conditioner.
- Avoid place in direct sunlight.
- Select place that will not be affected by the heat from a stove, etc
- Before setting up the optional kit, please confirm whether air-conditioner can receive the signal.
- Do not connect the wired remote controller to the terminal for power supply.
- When connecting the wired remote controller with the indoor unit, use the connecting cable (supplied with wired remote controller or simple remote controller).
- Recommended cable length of wired remote controller is 10 m. Make sure to do insulate of connecting part when extended the cable.

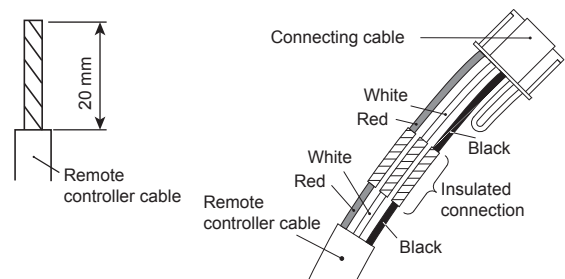
Do not connect power supply with the terminal.



### 13.1. Remote controller cable modification

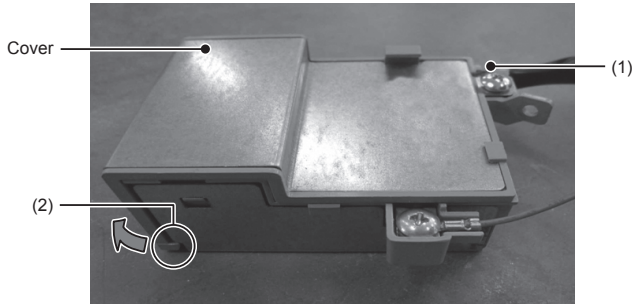
- (1) Use a tool to cut off the terminal on the end of the remote controller cable, and then remove the insulation from the cut end of the cable.
- (2) Connect the remote controller cable and connecting cable.  
(supplied with wired remote controller)

**Important:** Be sure to solder wires to connect. Be sure to insulate the connection between the wires.

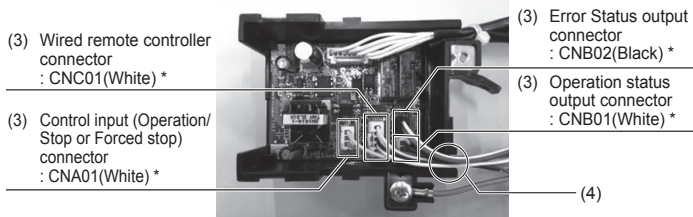


## 13.2. Installing wired remote controller terminal / external connect kit terminal (sold separately)

- (1) Remove the screw on the control box as shown on the top right of the figure below.
- (2) Release both bottom clasps at the sides in the direction of the arrow as circled in the bottom left of the figure below. Pull and remove the cover.

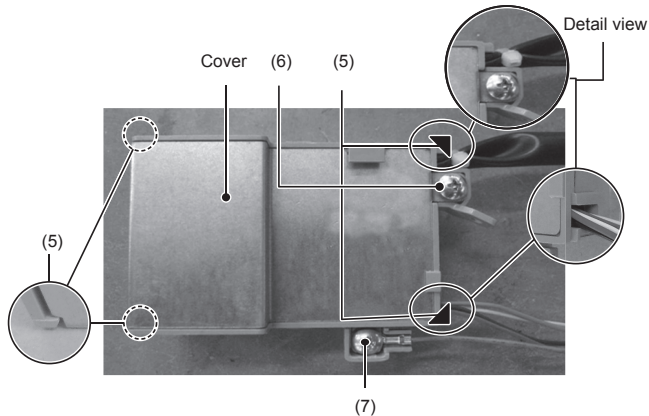


- (3) Connect the wired remote controller terminal / external connect kit terminal (sold separately) to the specified terminal on the board as shown below. Please connect to the connector with necessary function according to the actual usage.
- (4) After connecting each terminal, thread the cables through the notch as circled on the bottom right of the figure below.



\* : Symbol indicating the location printed on the board

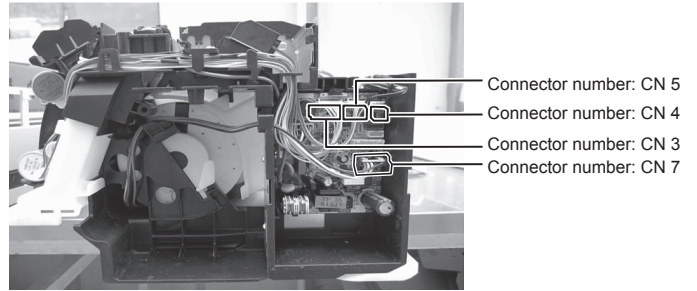
- (5) Install the control box cover as shown below. (Align the cover with the upper and lower right corners as indicated by the triangular symbols on the figure. Insert the clasps on the cover into both sides at the bottom of the two dotted circles.)
  - When installing the control box cover, make sure that the cables are not caught as shown in the detail view.
- (6) Install one screw.
- (7) Screw the earth wire of wired remote controller as shown in the figure. (AUSTRALIA model only).



- (3) Remove the connectors (x4).
  - Remove and pull off the lock at the side of the connector insertion part.

### CAUTION

Be careful not to damage the parts on the board. Otherwise, it will cause malfunction.

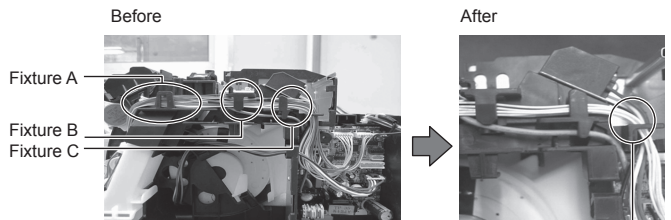


\* : Symbol indicating the location printed on the board

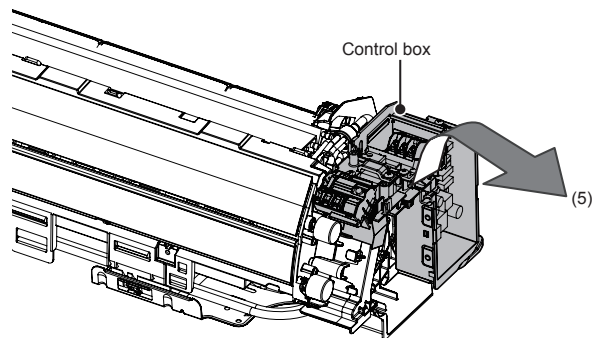
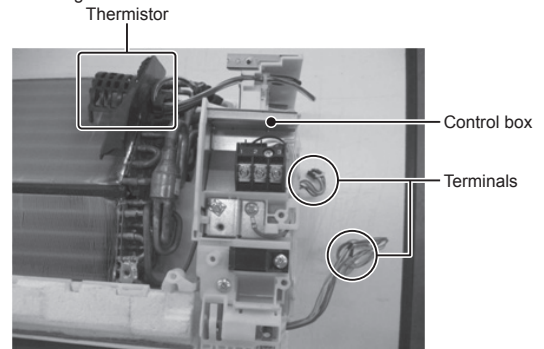
- (4) Remove the wires from the three fixtures. (See the figure below)
  - Leave the thick green wire in fixture C and remove the rest of the wires.

### CAUTION

Do not pull the wires forcibly. You may damage them.



- (5) While pulling the control box towards you, remove in the right direction.
  - Do not remove the thermistor.
  - Do not damage the terminals on the removed wires.

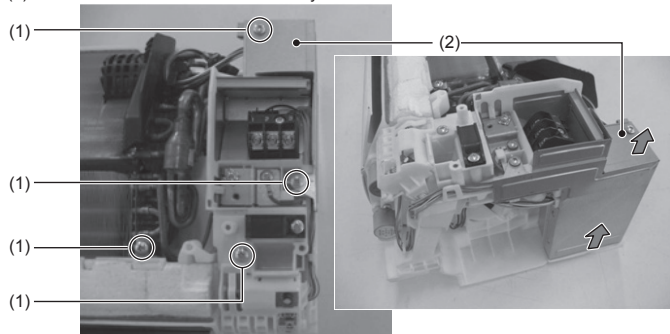


## 13.3. Installing communication box

### 13.3.1. Removing intake grille (Refer to "9.1. Front panel removal")

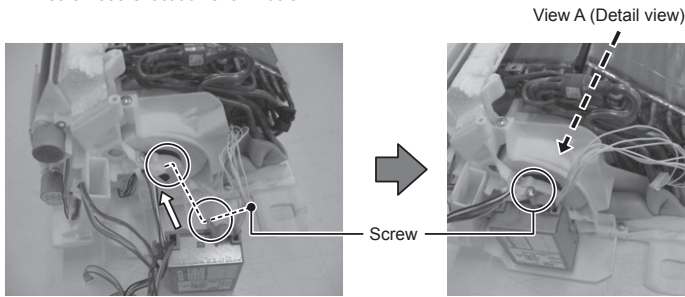
### 13.3.2. Removing control box

- (1) Remove the screws (x4). (Use the same screws when installing.)
- (2) Pull the control box cover towards you and remove.

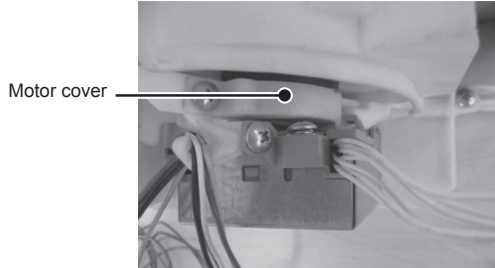


### 13.3.3. Installing communication box

- (1) Install the communication box on the main unit and secure it with the provided screw at the location shown below.

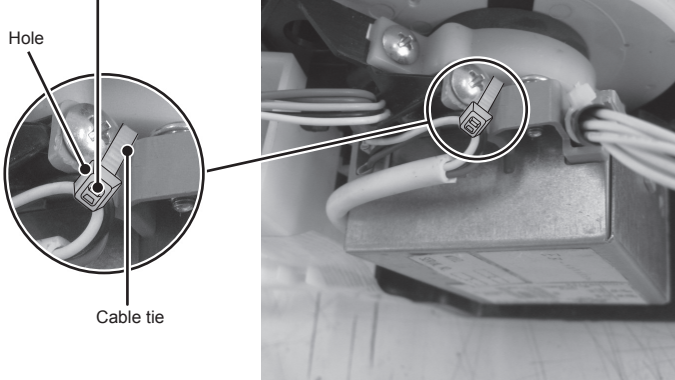


View A (Detail view)



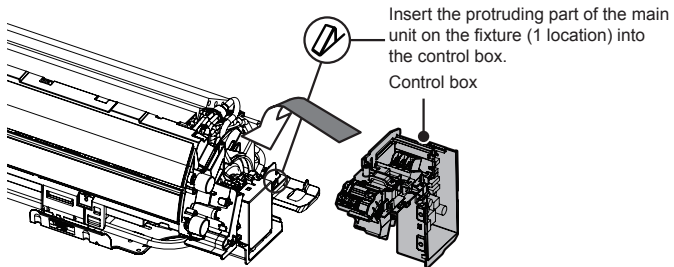
- (2) Use the hole on the motor cover and secure the wire from the communication box with the provided cable tie. (See the figure below)

Cut away the tip of the cable tie.



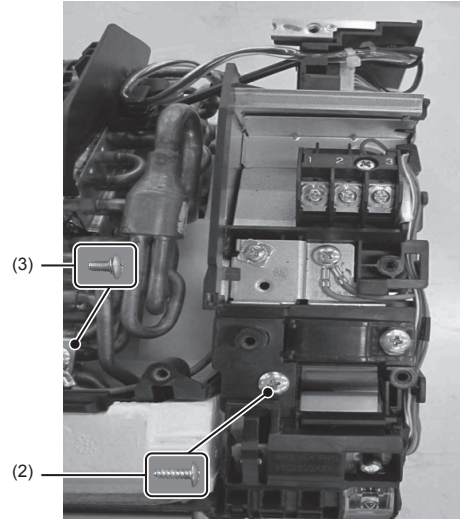
### 13.3.4. Installing control box

- (1) Set the control box toward the bottom so that it touches the motor cover from the right.



- The installation method of the control box is different for each destination country. (See figure below)  
(When installing, reuse the screw that was removed in "13.3.2. Removing control box".)

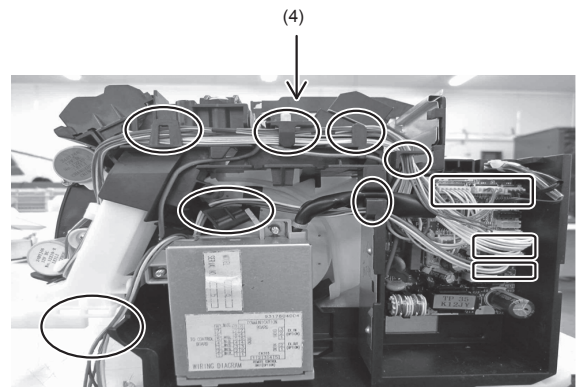
- (2) Secure the control box with a screw. (Use a long screw.)



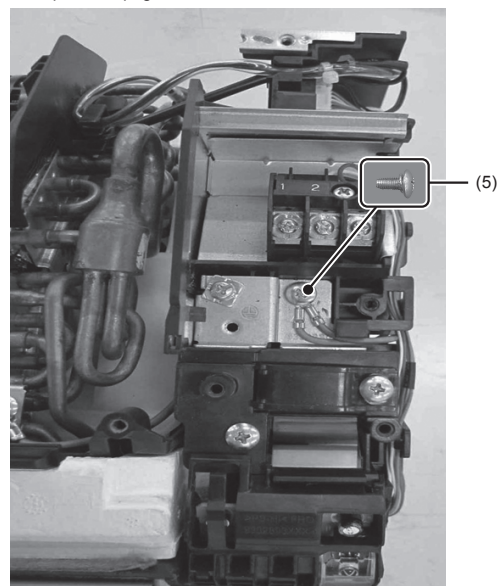
- (3) Fasten the earth wires of the heat exchanger together as shown in the left figure above. (Use a short screw here.)
- (4) Hitch the wires onto the fixtures as shown in the oval circles below. Then connect the connectors in the squares to the terminals respectively. (Each terminal should form a pair with a connector.)

#### CAUTION

- Ensure that the connector is properly inserted. Otherwise, it may result in erroneous operation.
- Be careful not to damage the parts on the board. Otherwise, it will cause malfunction.



- (5) Fasten the earth wire (green) in the communication box together with the earth wire (green) on the board of the control box as shown below and in the bottommost figure of the previous page.

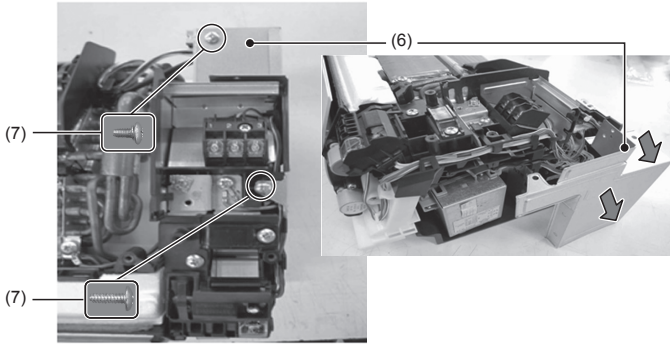


- (6) Install the cover of the control box onto the inner side of the rib as shown below.

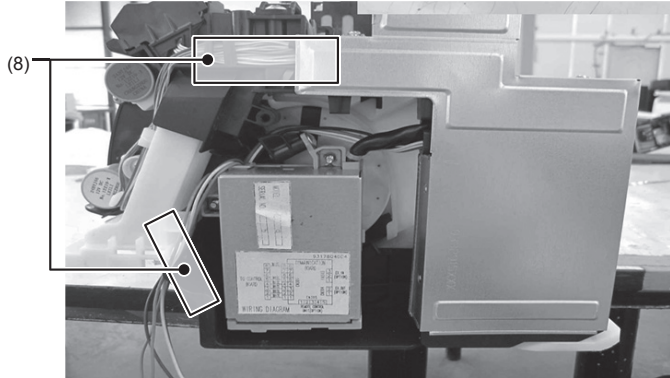
#### CAUTION

- Do not cut or tuck the wires with the electrical component box cover. An electric shock may occur if the wires are damaged.

- (7) Tighten with screws to prevent the cover of the control box from falling off.  
(When installing, reuse the screws that was removed in "13.3.2. Removing control box".)



- (8) Paste protect seals (2 locations) to prevent the wires from sticking out.



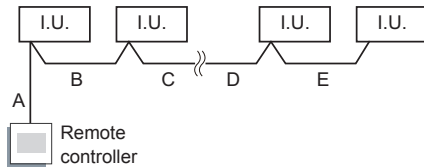
### 13.3.5. Installing front panel ( Refer to "9.2. Front panel installation" )

## 14. SPECIAL INSTALLATION METHODS

### Group control system

A number of indoor units can be operated at the same time using a single remote controller.  
\*When connecting different types of indoor units (such as wall mounted, cassette, duct, or other types), some functions may be restricted.

- (1) Connect multiple indoor units in a system.



A, B, C, D, E : Remote controller cable.

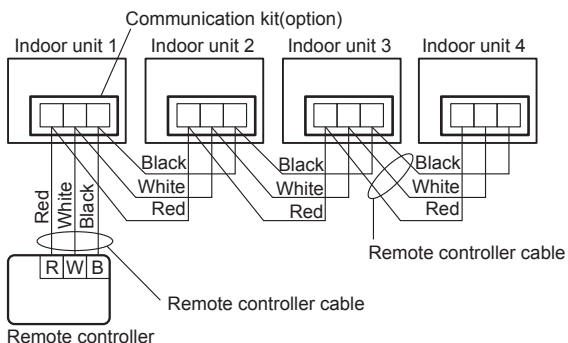
A+B+C+D+E ≤ 300 m \*

\* Crimping terminal (locally purchased) is necessary. (For details, refer to the technical manual).

The cable size needs to be changed depending on the total wiring length.

Total wiring length of remote controller cable (A+B+C+D+E)	Cross section of cable
100 m (328 ft) or less	0.3-0.8 mm <sup>2</sup> (WAG 18-22)
100-200 m (328-656 ft)	0.5-0.8 mm <sup>2</sup> (WAG 18-20)
200-300 m (656-984 ft)	0.8 mm <sup>2</sup> (WAG 18)

Example of wiring method

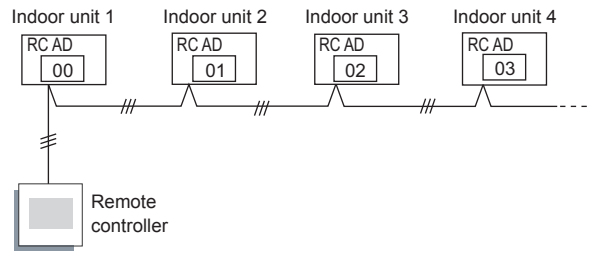


- (2) Set the R.C. address (Function setting)

Manual setting:

- Set the R.C. address of each indoor unit with the wireless remote controller.
- Set each R.C. address in sequence from "00".
- Connect up to 16 indoor units in a system.

Example of R.C. address setting



### Remote controller address setting

(♦... Factory setting)

Function Number	Setting Value	Setting Description
00	00	Unit No. 0 ♦
	01	Unit No. 1
	02 ~ 13	Unit No. 2 ~ Unit No. 13
	14	Unit No. 14
	15	Unit No. 15

\* Do not use the same setting value.

\* After completing the Function Setting, be sure to disconnect the power supply and then reconnect it.

**NOTES:** Set the R.C. address by the wireless remote controller.

## 15. CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating manual:

- (1) Starting and stopping method, operation switching, temperature adjustment, timer, airflow switching, and other remote control unit operations.
- (2) Air filter removal and cleaning, and how to use the air louvers.
- (3) Give the operating manual to the customer.

## 16. ERROR CODES

If you use a wireless remote controller, the lamp on the photo detector unit will output error codes by way of blinking patterns. If you use a wired remote controller, error codes will appear on the remote control display. See the lamp blinking patterns and error codes in the table. An error display is displayed only during operation.

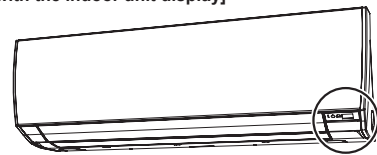
OPERATION lamp (green)	Error display		Wired remote controller Error code	Description
	TIMER lamp (orange)	ECONOMY lamp (green)		
●(1)	●(1)	◇	11	Serial communication error
●(1)	●(2)	◇	12	Wired remote controller communication error
●(1)	●(5)	◇	15	Check run unfinished
●(1)	●(6)	◇	16	Peripheral unit transmission PCB connection error
●(1)	●(8)	◇	18	External communication error
●(2)	●(1)	◇	21	Unit number or Refrigerant circuit address setting error [Simultaneous Multi]
●(2)	●(2)	◇	22	Indoor unit capacity error
●(2)	●(3)	◇	23	Combination error
●(2)	●(4)	◇	24	• Connection unit number error (indoor secondary unit) [Simultaneous Multi] • Connection unit number error (indoor unit or branch unit) [Flexible Multi]
●(2)	●(6)	◇	26	Indoor unit address setting error
●(2)	●(7)	◇	27	Primary unit, secondary unit set-up error [Simultaneous Multi]
●(2)	●(9)	◇	29	Connection unit number error in wired remote controller system

●(3)	●(1)	◇	31	Power supply interruption error
●(3)	●(2)	◇	32	Indoor unit PCB model information error
●(3)	●(3)	◇	33	Indoor unit motor electricity consumption detection error
●(3)	●(5)	◇	35	Manual auto switch error
●(3)	●(9)	◇	39	Indoor unit power supply error for fan motor
●(3)	●(10)	◇	3A	Indoor unit communication circuit (wired remote controller) error
●(4)	●(1)	◇	41	Room temp. sensor error
●(4)	●(2)	◇	42	Indoor unit Heat Ex. Middle temp. sensor error
●(4)	●(4)	◇	44	Human sensor error
●(5)	●(1)	◇	51	Indoor unit fan motor error
●(5)	●(3)	◇	53	Drain pump error
●(5)	●(4)	◇	54	Electric air cleaner reverse VDD error
●(5)	●(5)	◇	55	Filter set error
●(5)	●(7)	◇	57	Damper error
●(5)	●(8)	◇	58	Intake grille error
●(5)	●(9)	◇	59	Indoor unit fan motor 2 error (Left side fan)
●(5)	●(10)	◇	5A	Indoor unit fan motor 3 error (Right side fan)
●(5)	●(15)	◇	5U	Indoor unit error
●(6)	●(1)	◇	61	Outdoor unit reverse/missing phase and wiring error
●(6)	●(2)	◇	62	Outdoor unit main PCB model information error or communication error
●(6)	●(3)	◇	63	Inverter error
●(6)	●(4)	◇	64	Active filter error, PFC circuit error
●(6)	●(5)	◇	65	Trip terminal L error
●(6)	●(8)	◇	68	Outdoor unit rush current limiting resistor temp. rise error
●(6)	●(10)	◇	6A	Display PCB microcomputers communication error
●(7)	●(1)	◇	71	Discharge temp. sensor error
●(7)	●(2)	◇	72	Compressor temp. sensor error
●(7)	●(3)	◇	73	Outdoor unit Heat Ex. liquid temp. sensor error
●(7)	●(4)	◇	74	Outdoor temp. sensor error
●(7)	●(5)	◇	75	Suction Gas temp. sensor error
●(7)	●(6)	◇	76	• 2-way valve temp. sensor error • 3-way valve temp. sensor error
●(7)	●(7)	◇	77	Heat sink temp. sensor error
●(8)	●(2)	◇	82	• Sub-cool Heat Ex. gas inlet temp. sensor error • Sub-cool Heat Ex. gas outlet temp. sensor error
●(8)	●(3)	◇	83	Liquid pipe temp. sensor error
●(8)	●(4)	◇	84	Current sensor error
●(8)	●(6)	◇	86	• Discharge pressure sensor error • Suction pressure sensor error • High pressure switch error

●(9)	●(4)	◇	94	Trip detection
●(9)	●(5)	◇	95	Compressor rotor position detection error
●(9)	●(7)	◇	97	Outdoor unit fan motor error
●(9)	●(8)	◇	98	Outdoor unit fan motor 2 error
●(9)	●(9)	◇	99	4-way valve error
●(9)	●(10)	◇	9A	Coil (expansion valve) error
●(10)	●(1)	◇	A1	Discharge temp. error
●(10)	●(3)	◇	A3	Compressor temp. error
●(10)	●(4)	◇	A4	High pressure error
●(10)	●(5)	◇	A5	Low pressure error
●(13)	●(2)	◇	J2	Branch boxes error [Flexible Multi]

Display mode ● : 0.5s ON / 0.5s OFF  
◇ : 0.1s ON / 0.1s OFF  
( ) : Number of flashing

**[Troubleshooting with the indoor unit display]**



OPERATION indicator (green) —  
TIMER indicator (orange) —  
ECONOMY indicator (green) —

**[Troubleshooting with the Wired Remote Controller Display (Option)]**

If an error occurs, the following display will be shown. ("Er" will appear in the set room temperature display.)

