TOSHIBA

INSTALLATION MANUAL
MANUEL D'INSTALLATION
INSTALLATIONS-HANDBUCH
MANUALE DI INSTALLAZIONE
MANUAL DE INSTALACIÓN
MANUAL DE INSTALAÇÃO
INSTALLATIE HANDLEIDING
ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ
安 装 手 册

SUPER
SUPER MODULAR MULTI

HFC
R410A

SUPER MODULAR MULTI SYSTEM AIR CONDITIONER
SMMS CLIMATISEUR
SMMS KLIMAGERÄT
SMMS CONDIZIONATORE D'ARIA
SMMS APARATO DE AIRE ACONDICIONADO
SMMS AR CONDICIONADO
SMMS AIRCONDITIONER
SMMS ΚΛΙΜΑΤΙΣΤΙΚΟ
SMMS 超级模块化多系统空调

Indoor Unit
Unité intérieure
Raumeinheit
Unità interna
Unidad interior
Unidade interior
Binnenunit
Εσωτερική μονάδα
室内机

<High-Wall Type>
<Type mural haut>
<Wand modell>
<Tipo per mura alte>
<Tipo parte alta de la pared>
<Tipo para Parede Alta>
<Hogewandmodel>
<Τύπος τοποθετημένου ψηλά στον τοίχο>
＜壁设式＞

MMK-AP0072H,
MMK-AP0092H,
MMK-AP0122H

For commercial use (Not accessible to the general public)
Pour usage commercial (Vente interdite au grand public)
Nur für gewerbliche Nutzung (kein öffentlicher Zugang)
Per uso commerciale (Non accessibile a clienti generici)
Para uso comercial (no destinado al público en general)
Para uso comercial (não acessível ao público em geral)
Voor commercieel gebruik (niet geschikt voor huishoudelijk gebruik)
Για εμπορική χρήση (Μη διαθέσιμο στο ευρύ κοινό)
商　用（普通公众无法获得）

ADOPTION OF NEW REFRIGERANT

This Air Conditioner is a new type which adopts a new refrigerant HFC (R410A) instead of the conventional refrigerant R22 in order to prevent destruction of the ozone layer.

Thank you very much for purchasing TOSHIBA Air Conditioner.
Please read this Installation manual carefully before using your Air Conditioner.
- Be sure to obtain the “Owner’s manual” and “Installation manual” from constructor (or dealer).

Request to constructor or dealer
Please clearly explain the contents of the Owner’s manual and hand over it.

UTILISATION DU NOUVEAU REFRIGERANT

Ce climatiseur est d’un type inédit qui utilise le nouveau réfrigérant HFC (R410A) au lieu du réfrigérant traditionnel R22, afin d’éviter la destruction de la couche d’ozone.

Nous vous remercions pour avoir choisi un climatiseur TOSHIBA.
Veuillez lire attentivement ce Manuel d’installation avant d’utiliser votre climatiseur.
- Assurez-vous que le constructeur (ou le revendeur) vous remette le “Manuel du propriétaire” et le “Manuel d’installation”.

Demande au constructeur ou au revendeur
Veuillez expliquer clairement le contenu du Manuel du propriétaire et le remettre au client.

EINFÜHRUNG EINES NEUEN KÜHLMITTELS

Dies ist ein neuartiges Klimagerät. Anstatt des herkömmlichen Kühlmittels R22 verwendet es das neue ozonschicht-schonende HFC Kühlmittel R410A.

Wir danken Ihnen, dass Sie sich für ein TOSHIBA Klimagerät entschieden haben.
Bitte lesen Sie diese Installations-Handbuch, bevor Sie Ihr Klimagerät benutzen, sorgfältig.
- Lassen Sie sich die “Betriebsanleitung” und das “Installations-Handbuch” unbedingt vom Installateur oder vom Lieferanten aushändigen.

Eine Bitte an den Installateur oder Lieferanten:
Bitte erklären Sie dem Käufer den Inhalt der Betriebsanleitung und händigen sie ihm aus.

ADOZIONE DI UN NUOVO REFRIGERANTE

Questo condizionatore d'aria è di un tipo nuovo che adotta un nuovo refrigerate HFC (R410A) al posto del refrigerante convenzionale R22, per prevenire la distruzione dello strato di ozono dell'atmosfera terrestre.

Grazie di aver acquistato un condizionatore d'aria TOSHIBA.
Prima di usare il condizionatore d'aria, leggere con attenzione questo Manuale di installazione.
- Si raccomanda di tenere a portata di mano il “Manuale del proprietario” e il “Manuale di installazione” ricevuti dal produttore (o dal rivenditore).

Richiesta al produttore o al rivenditore
Spiegare chiaramente il contenuto del Manuale del proprietario e consegnarne una copia all'utente.

ADOPCIÓN DE NUEVO REFRIGERANTE

Este aparato de aire acondicionado es un modelo reciente que incorpora el nuevo refrigerante HFC (R410A) en lugar del refrigerante convencional R22 para así evitar daños en la capa de ozono.

Muchas gracias por haber adquirido el aparato de aire acondicionado TOSHIBA.
Lea atentamente este Manual de instalación antes de utilizar el aparato de aire acondicionado.
- Asegúrese de que el fabricante (o distribuidor) le proporcione el “Manual del propietario” y el “Manual de instalación”.

Solicitud al fabricante o distribuidor
Explique con claridad el contenido del Manual del propietario y entréguelo al cliente.

ADOPÇÃO DO NOVO REFRIGERANTE

Este ar condicionado é um modelo novo que adopta um novo refrigerante HFC (R410A) em vez do refrigerante convencional R22 para evitar a destruição da cama de ozono.

Muito obrigada por adquirir o Ar Condicionado TOSHIBA.
Leia atentamente este Manual de inslatação antes de utilizar o seu ar condicionado.
- Não se esqueça de receber o “Manual do utilizador” e o “Manual de inslatação” do fabricante (ou agente).

Pedido ao fabricante ou agente
Explique por favor o conteúdo do Manual do utilizador e entregue-o.

TOEPASSING VAN EEN NIEUW KOELMIDDEL

Deze airconditioner is een nieuwe type dat werkt met een nieuw koelmiddel HFC (R410A) in plaats van met het conventionele koelmiddel R22, als bijdrage om de aantasting van de ozonlaag te reduceren.

Hartelijk dank voor uw keuze voor een airconditioner van TOSHIBA.
Lees deze installatiehandleiding zorgvuldig door voordat u de airconditioner gaat gebruiken.
- Zorg ervoor dat u zowel de “gebruiksaanwijzing” als de “installatiehandleiding” van de installateur (of leverancier) krijgt.

Verzoek aan de installateur of de leverancier
Leg de inhoud van de gebruiksaanwijzing duidelijk uit en overhandig de gebruiksaanwijzing nadien aan de klant.

ΥΙΟΘΕΤΗΣΗ ΝΕΟΥ ΨΥΚΤΙΚΟΥ

Το παρόν Κλιματιστικό είναι νέος τύπος που υιοθετεί νέο ψυκτικό HFC (R410A) στη θέση του συμβατικού ψυκτικού R22 προκειμένου να βοηθήσει στην προστασία του όζοντος.

Σας ευχαριστούμε πολύ που προτιμήσατε για την αγορά σας ένα Κλιματιστικό TOSHIBA.
Παρακαλούμε διαβάστε προσεχτικά τις Εγχειρίδιο Εγκατάστασης πριν από τη χρήση του Κλιματιστικού.
- Βεβαιωθείτε ότι ο κατασκευαστής (ή ο πωλητής) σας παρέδωσε και τις “Οδηγίες Χρήσης” και το “Εγχειρίδιο Εγκατάστασης”.

Παράκληση για τον κατασκευαστή ή τον πωλητή
Παρακαλώ εξηγήστε με σαφήνεια τα περιεχόμενα των Οδηγιών Χρήσης και

采用新的冷媒

为了防止破坏臭氧层，本空调采用最新冷媒 HFC (R410A)，而非普通的冷媒 R22。

承蒙选购东芝空调，谨在此表示由衷的感谢。
使用本空调前，请熟读本安装使用手册。
- 必须向合同签订人(或 销售商)领取《用户手册》和《安装手册》。

对合同签订人或 销售商的要求：
请清楚地说明使用手册的内容，然后把使用手册交给用户。

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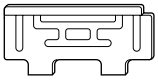
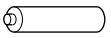
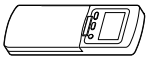
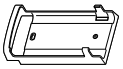
Accessory parts and parts to be procured locally

❒ Accessory parts

Part No.	Part name (Q'ty)	Part No.	Part name (Q'ty)	Part No.	Part name (Q'ty)
1	 Installation plate × 1	3	 Battery × 2	5	 Mounting screw Ø4 × 25 ℓ x 6
2	 Wireless remote controller × 1	4	 Remote controller holder × 1	6	 Pan head wood screw Ø3.1 × 16 ℓ × 2

<Others>

Name
Owner' s manual
Installation manual
Paper pattern

<Separate sold parts>

Part name	Q'ty	Shape	Usage
Standard wired remote controller	1		Model : **RBC-AMT21E**

Refrigerant piping

- Piping material used for the conventional refrigerant cannot be used.
- Use copper pipe with 0.8 mm or more thickness for Ø6.4, Ø9.5.
- Flare nut and flare works are also different from those of the conventional refrigerant. Take out the flare nut attached to the indoor unit of the air conditioner, and use it.

❒ Parts to be procured locally

Connecting pipe (Liquid side) (6.4mm (diam.), Nominal (diam.) 1/4" thick 0.8mm) MMK-AP0072H to MMK-AP0122H
Connecting pipe (Gas side) (9.5mm (diam.), Nominal (diam.) 3/8" thick 0.8mm) MMK-AP0072H to MMK-AP0122H
Power supply cord Cable 3-core 2.5mm^2, **in conformity with Design 60245 IEC57**

1 PRECAUTIONS FOR SAFETY

- Ensure that all Local, National and International regulations are satisfied.
- Read this "PRECAUTIONS FOR SAFETY" carefully before Installation.
- The precautions described below include the important items regarding safety. Observe them without fail.
- After the installation work, perform a trial operation to check for any problem.
  Follow the Owner's Manual to explain how to use and maintain the unit to the customer.
- Turn off the main power supply switch (or breaker) before the unit maintenance.
- Ask the customer to keep the Installation Manual together with the Owner's Manual.

CAUTION **New Refrigerant Air Conditioner Installation**

- **THIS AIR CONDITIONER ADOPTS THE NEW HFC REFRIGERANT (R410A) WHICH DOES NOT DESTROY OZONE LAYER.**

The characteristics of R410A refrigerant are ; easy to absorb water, oxidizing membrane or oil, and its pressure is approx. 1.6 times higher than that of refrigerant R22. Accompanied with the new refrigerant, refrigerating oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle.

To prevent charging an incorrect refrigerant and refrigerating oil, the sizes of connecting sections of charging port of the main unit and installation tools are charged from those for the conventional refrigerant.

Accordingly the exclusive tools are required for the new refrigerant (R410A).

For connecting pipes, use new and clean piping designed for R410A, and please care so that water or dust does not enter. Moreover, do not use the existing piping because there are problems with pressure-resistance force and impurity in it.

CAUTION **To Disconnect the Appliance from Main Power Supply**

This appliance must be connected to the main power supply by means of a switch with a contact separation of at least 3 mm.

⚠ WARNING

- **Ask an authorized dealer or qualified installation professional to install/maintain the air conditioner.**
  Inappropriate installation may result in water leakage, electric shock or fire.
- **Turn off the main power supply switch or breaker before attempting any electrical work.**
  Make sure all power switches are off. Failure to do so may cause electric shock.
- **Connect the connecting wire correctly.**
  If the connecting wire is connected in a wrong way, electric parts may be damaged.
- **When moving the air conditioner for the installation into another place, be very careful not to enter any gaseous matter other than the specified refrigerant into the refrigeration cycle.**
  If air or any other gas is mixed in the refrigerant, the gas pressure in the refrigeration cycle becomes abnormally high and it as a result causes pipe burst and injuries on persons.
- **Do not modify this unit by removing any of the safety guards or by by-passing any of the safety interlock switches.**
- **Exposure of unit to water or other moisture before installation may cause a short-circuit of electrical parts.**
  Do not store it in a wet basement or expose to rain or water.
- **After unpacking the unit, examine it carefully if there are possible damage.**
- **Do not install in a place that might increase the vibration of the unit.**
- **To avoid personal injury (with sharp edges), be careful when handling parts.**
- **Perform installation work properly according to the Installation Manual.**
  Inappropriate installation may result in water leakage, electric shock or fire.
- **When the air conditioner is installed in a small room, provide appropriate measures to ensure that the concentration of refrigerant leakage occur in the room does not exceed the critical level.**

1 PRECAUTIONS FOR SAFETY

- **Install the air conditioner securely in a location where the base can sustain the weight adequately.**
- **Perform the specified installation work to guard against an earthquake.**
  If the air conditioner is not installed appropriately, accidents may occur due to the falling unit.
- **If refrigerant gas has leaked during the installation work, ventilate the room immediately.**
  If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.
- **After the installation work, confirm that refrigerant gas does not leak.**
  If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas might generate.
- **Electrical work must be performed by a qualified electrician in accordance with the Installation Manual. Make sure the air conditioner uses an exclusive power supply.**
  An insufficient power supply capacity or inappropriate installation may cause fire.
- **Use the specified wires for wiring connect the terminals securely fix. To prevent external forces applied to the terminals from affecting the terminals.**
- **Conform to the regulations of the local electric company when wiring the power supply.**
  Inappropriate grounding may cause electric shock.
- **Do not install the air conditioner in a location subject to a risk of exposure to a combustible gas.**
  If a combustible gas leaks, and stays around the unit, a fire may occur.

2 SELECTION OF INSTALLATION PLACE

WARNING

- **Install the air conditioner where there is sufficient strength to weight of the unit.**
  If strength is insufficient, the unit may fall down resulting in human injury.
- **Perform a specified installation work to guard against an earthquake.**
  An incomplete installation can cause accidents by the units failing and dropping.

⚠ CAUTION

- **Do not install the air conditioner in a location subject to a risk of exposure to combustible gas.**
  Should the combustible gas leak and collect near the unit, fire may occur.

Upon approval of the customer, install the air conditioner in a place that satisfies the following conditions.

- Place where the unit can be installed horizontally.
- Place where a sufficient servicing space can be ensured for safe maintenance and check.
- Place where drained water will not cause any problem.

Avoid installing in the following places.

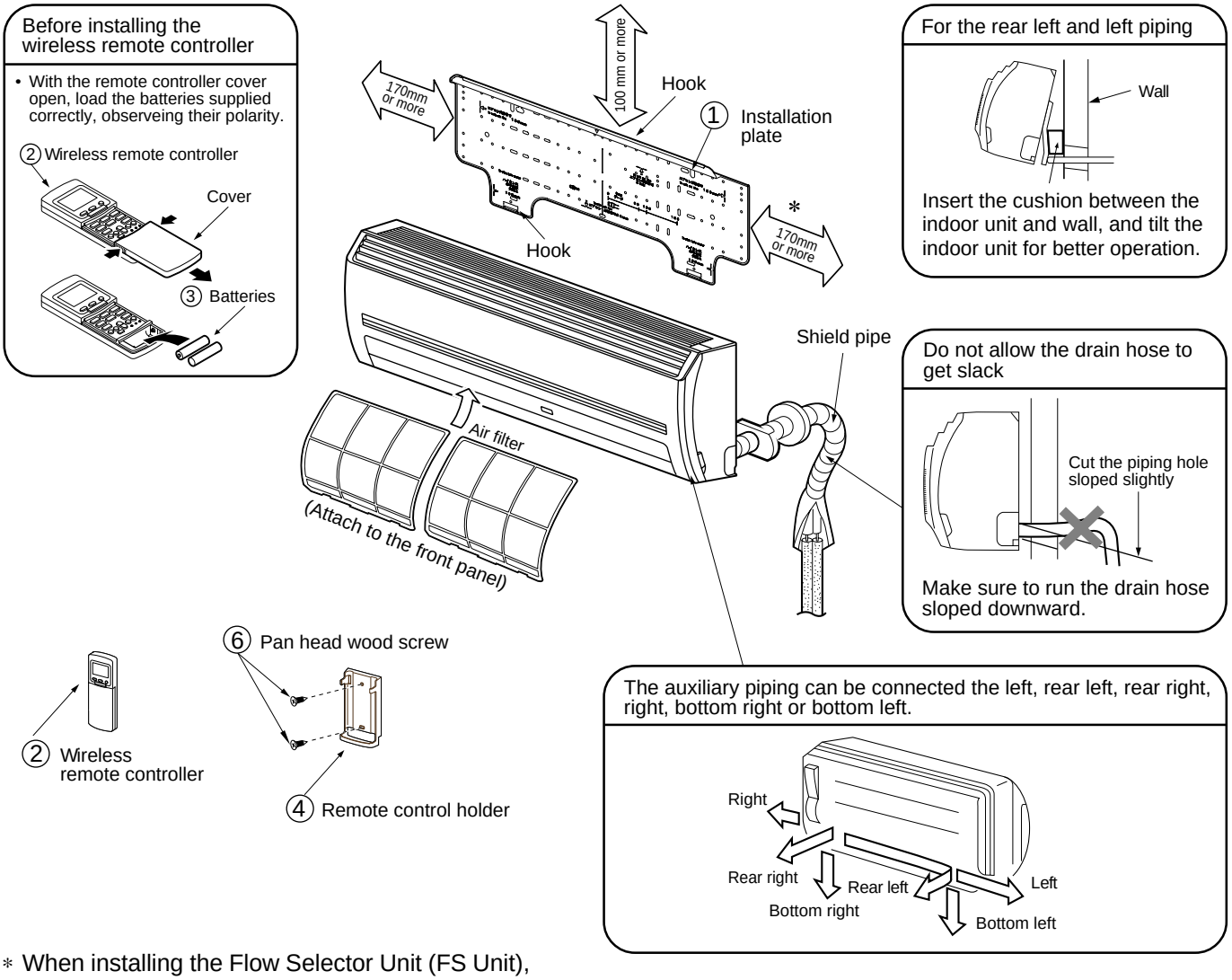
- Place exposed to air with high salt content (seaside area), or place exposed to large quantities of sulfide gas (hot spring). (Should the unit be used in these places, special protective measures are needed.)
- Place exposed to oil, vapor, oil smoke or corrosive gas.
- Place where organic solvent is used nearby.
- Place close to a machine generating high frequency.
- Place near door or window where may come to contact with the outside air of high humidity. (Dewing may be caused.)
- Place where special spray is frequently used.
- Place with poor ventilation.

Installation space

Reserve space required to install the indoor unit and for service work.

Keep 100mm or more for clearance between top plate of the indoor unit and the ceiling surface.

Installation diagram of Indoor and outdoor units



* When installing the Flow Selector Unit (FS Unit), keep a space more than 300mm for wiring work.

Installation place

- A place which provides the spaces around the indoor unit as shown in the above diagram.
- A place where there is no obstacle near the air inlet and outlet.
- A place that allows easy installation of the piping to the outdoor unit.
- A place which allows the front panel to be opened.

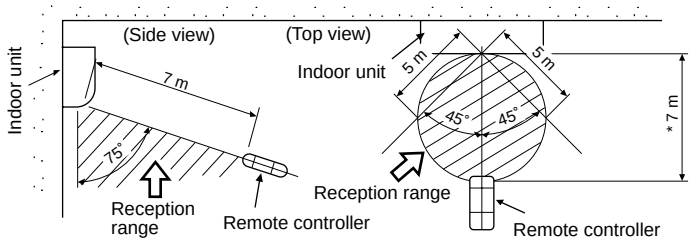
CAUTION

- Direct sunlight to the indoor unit' s wireless receiver should be avoided.
- The microprocessor in the indoor unit should not be too close to RF noise sources. (For details, see the owner' s manual.)

2 SELECTION OF INSTALLATION PLACE

Remote controller

- A place where there are no obstacles such as a curtain that may block the signal from the indoor unit.
- Do not install the remote controller in a place exposed to direct sunlight or close to a heating source, such as a stove.
- Keep the remote controller at least 1m apart from the nearest TV set or stereo equipment. (This is necessary to prevent image distur-bances or noise interference.)
- The location of the remote controller should be determined as shown below.



* : Axial distance

3 INSTALLATION OF INDOOR UNIT

WARNING

Install the air conditioner certainly to sufficiently withstand the weight.

If the strength is insufficient, the unit may fall down resulting in human injury.

Perform a specified installation work to guard against strong wind or earthquake.

An incomplete installation can cause accidents by the units falling and dropping.

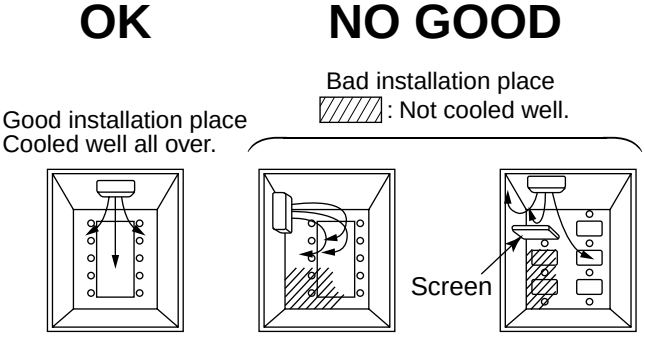
REQUIREMENT

Strictly comply with the following rules to prevent damage of the indoor units and human injury.

- Do not put a heavy article on the indoor unit. (Even units are packaged)
- Carry in the indoor unit as it is packaged if possible. If carrying in the indoor unit unpacked by necessity, be sure to use buffering cloth, etc. to not damage the unit.
- To move the indoor unit, do not apply force to the refrigerant pipe, drain pan, foamed parts, or resin parts, etc.
- Carry the package by two or more persons, and do not bundle it with PP band at positions other than specified.

Be careful to the following items when installing the unit.

- Considering air discharge direction, select an installation place where discharge air can circulate evenly in a room. Avoid to install the unit at place with "**NO GOOD**" mark in the right figure.

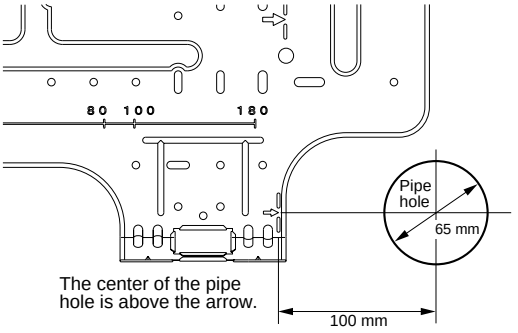


4 CUTTING A HOLE AND MOUNTING INSTALLATION PLATE

Cutting a hole

In case of installing the refrigerant pipes from the rear:

1. Decide the hole position for piping at 100mm from the arrow mark (➡) on the installation plate and drill a hole with Ø65mm at a slight downward slant toward outdoor side.

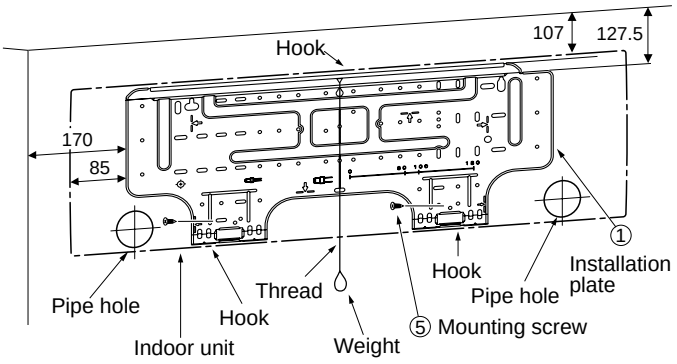


NOTE

- When drilling a wall that contains a metal lath, wire lath or metal plate, be sure to use a pipe hole brim ring sold separately.

Mounting the installation plate

For installation of the indoor unit,
use the paper pattern in the accessory parts.

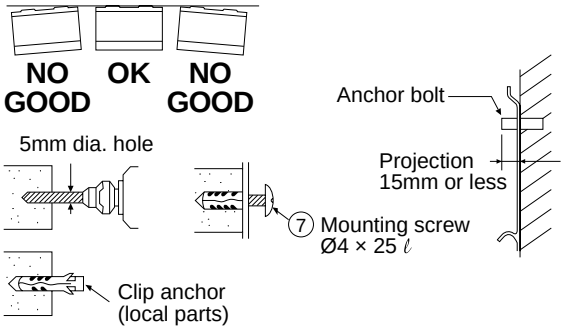


When the installation plate is directly mounted on the wall

1. Securely fit the installation plate onto the wall by screwing it in the upper and lower parts to hook up the indoor unit.
2. To mount the installation plate on a concrete wall with anchor bolts, utilize the anchor bolt holes as illustrated in the above figure.
3. Install the installation plate horizontally in the wall.

CAUTION

When installing the installation plate with a mounting screw, do not use the anchor bolt hole.
Otherwise the unit may fall down and result in personal injury and property damage.



CAUTION

Failure to firmly install the unit may result in personal injury and property damage if the unit falls.

- In case of block, brick, concrete or similar type walls, make 5mm dia. holes in the wall.
- Insert clip anchors for appropriate ⑤ mounting screws.

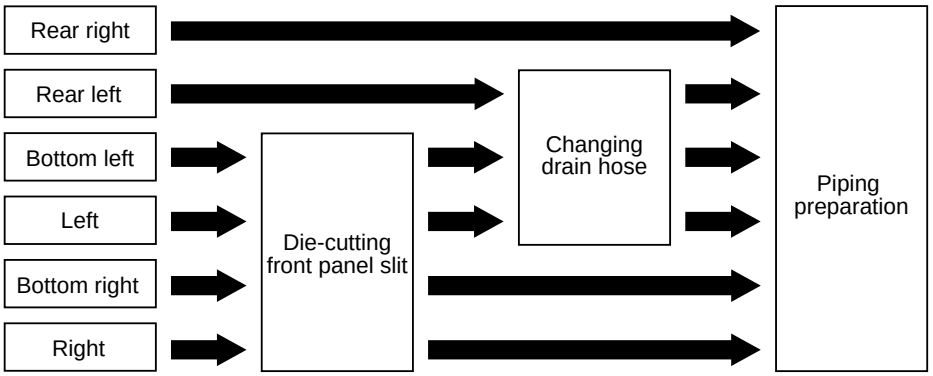
NOTE

- Secure four corners and lower parts of the installation plate with 4 to 6 mounting screws to install it.

5 PIPING AND DRAIN HOSE INSTALLATION

Piping and drain hose forming

* Apply thermal-insulation for both refrigerant pipe and drain hose surely so that no dewing generates inside of the equipment. (Use polyethylene foam for insulating material.)



1. Die- cutting front panel slit

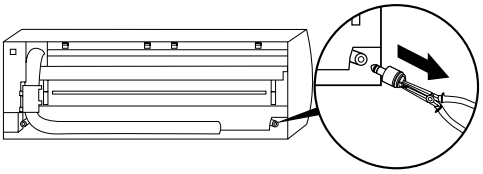
For piping work at the left side, cut off the left slit for notching of the front panel.
(A knife will produce flaws on the panel, so use nippers.)

2. Changing drain hose

For piping work at the left side, lower left side, and left back side, it is necessary to change the drain hose and drain cap.

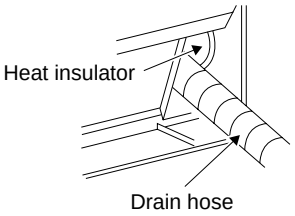
How to remove the drains cap

Clip drain cap by needle- nose pliers, and pull out.



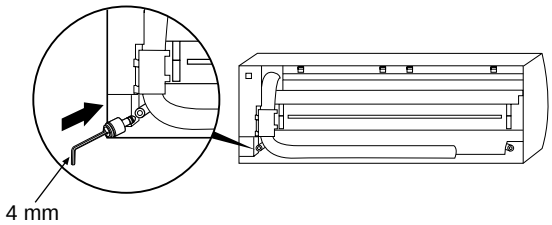
How to install the drain hose

Firmly insert drain hose connecting part until hitting on a heat insulator.

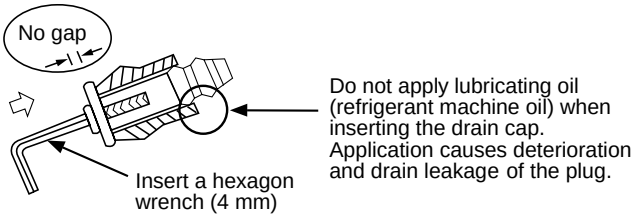


How to fix the drains cap

1) Insert hexagonal wrench (Ø4mm) in a center head.



2) Firmly insert drains cap.

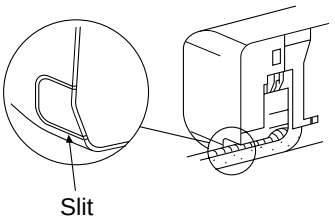


CAUTION

Firmly insert the drain hose and drain cap; otherwise, water may leak.

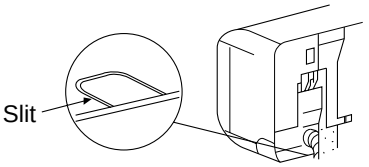
In case of right or left piping

- After scribing slits of the front panel with a knife or a marking-off pin, cut them with a pair of nippers or an equivalent tool.



In case of bottom right or bottom left piping

- After scribing slits of the front panel with a knife or a marking- off pin, cut them with a pair of nippers or an equivalent tool.

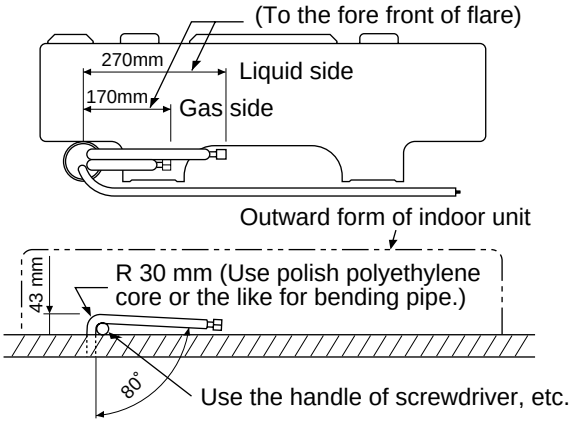


Left- hand connection with piping

Bend the connecting pipe so that it is laid within 43mm above the wall surface. If the connecting pipe is laid exceeding 43mm above the wall surface, the indoor unit may unstably be set on the wall. When bending the connecting pipe, make sure to use a spring bender so as not to crush the pipe.

Bend the connection pipe within a radius of 30 mm.

To connect the pipe after installation of the unit (figure)



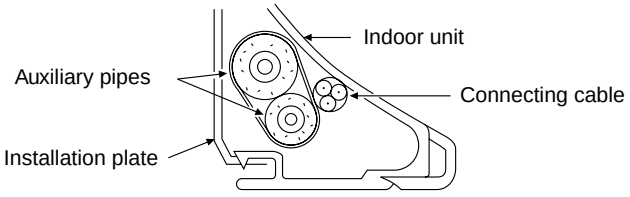
NOTE

If the pipe is bent incorrectly, the indoor unit may unstably be set on the wall.

After passing the connecting pipe through the pipe hole, connect the connecting pipe to the auxiliary pipes and wrap the facing tape around them.

CAUTION

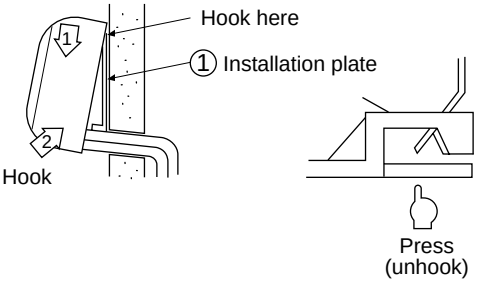
- Bind the auxiliary pipes (two) and connecting cable with facing tape tightly. In case of leftward piping and rear-leftward piping, bind the auxiliary pipes (two) only with facing tape.



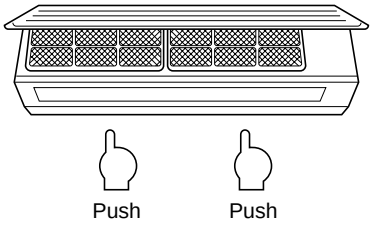
- Carefully arrange pipes so that any pipe does not stick out of the rear plate of the indoor unit.
- Carefully connect the auxiliary pipes and connecting pipes to each other and cut off the insulating tape wound on the connecting pipe to avoid double- taping at the joint, moreover, seal the joint with the vinyl tape, etc.
- Since dewing results in a machine trouble, make sure to insulate both the connecting pipes. (Use polyethylene foam as insulating material.)
- When bending a pipe, carefully do it, not to crush it.

6 INDOOR UNIT FIXING

1. Pass the pipe through the hole in the wall, and hook the indoor unit on the installation plate at the upper hooks.
2. Swing the indoor unit to right and left to confirm that it is firmly hooked up on the installation plate.
3. While pressing the indoor unit onto the wall, hook it at the lower part on the installation plate. Pull the indoor unit toward you to confirm that it is firmly hooked up on the installation plate.



- For detaching the indoor unit from the installation plate, pull the indoor unit toward you while pushing its bottom up at the specified parts.



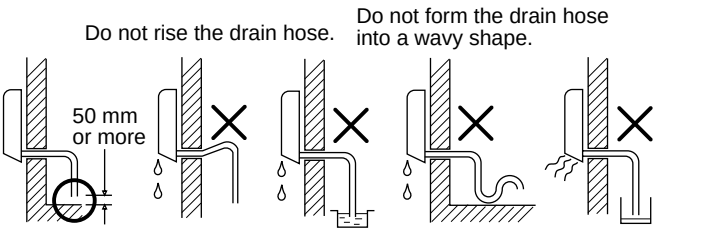
7 DRAINAGE

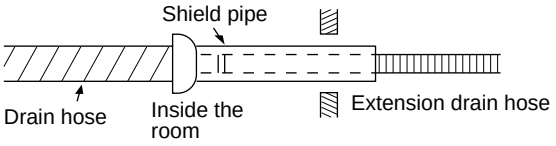
1. Run the drain hose sloped downwards.

NOTE

- Hole should be made at a slight downward slant on the outdoor side.

2. Put water in the drain pan and make sure that the water is drained out of doors.
3. When connecting extension drain hose, insulate the connecting part of extension drain hose with shield pipe.





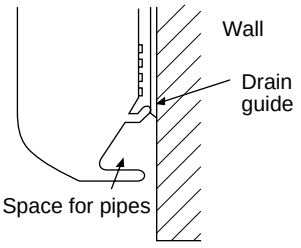
CAUTION

Arrange the drain pipe for proper drainage from the unit.

Improper drainage can result in dew- dropping.

This air conditioner has the structure designed to drain water collected from dew, which forms on the back of the indoor unit, to the drain pan.

Therefore, do not store the power cord and other parts at a height above the drain guide.



8 REFRIGERANT PIPING

⚠ WARNING

- **If refrigerant gas has leaked during the installation work, ventilate the room immediately.**
- If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.
- **After the installation work, confirm that refrigerant gas does not leak.**
- If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas may generate.

REQUIREMENT

When the refrigerant pipe is long, set the support brackets to fix the pipe with 2.5 to 3m intervals. If the pipe is not fixed, abnormal sound may generate.

Be sure to use the flare nuts attached to the indoor unit or those for R410A.

Permissible pipe length and permissible height difference

They are different according to the used outdoor unit. For details, refer to the Installation Manual attached to the outdoor unit.

Piping material and dimensions

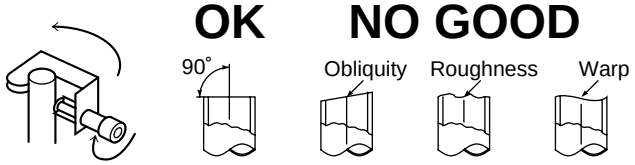
Piping material		Phosphor deoxidization joint-less pipe for air conditioner
Model		MMK-AP0072H to MMK-AP0122H
Pipe size (mm)	Gas side	Ø9.5
	Liquid side	Ø6.4

- Use a clean and new pipe, and check that impurity such as dust, oil, moisture, etc. does not adhere in the pipe.

Pipe Forming/End Positioning

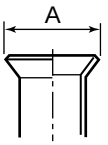
Flaring

1. Cut the pipe with a pipe cutter.



2. Insert a flare nut into the pipe, and flare the pipe.
   As the flaring sizes of R410A differ from those of refrigerant R22, the flare tools newly manufactured for R410A are recommended.
   However, the conventional tools can be used by adjusting projection margin of the copper pipe.

- **Flaring diam. meter size : A (Unit : mm)**

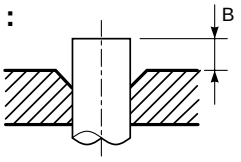


Outer diam. of copper pipe	$A^{+0}_{-0.4}$
	R410A
6.4	9.1
9.5	13.2
12.7	16.6
15.9	19.7

* In case of flaring for R410A with the conventional flare tool, pull it out approx. 0.5 mm more than that for R22 to adjust to the specified flare size.
  The copper pipe gauge is useful for adjusting projection margin size.

8 REFRIGERANT PIPING

- **Projection margin in flaring : B (Unit : mm)**



Rigid (Clutch type)

Outer diam. of copper pipe	R410A tool used		Conventional tool used	
	R410A	R22	**R410A**	R22
6.4	0 to 0.5	(Same as left)	1.0 to 1.5	0.5 to 1.0
9.5	0 to 0.5	(Same as left)	1.0 to 1.5	0.5 to 1.0
12.7	0 to 0.5	(Same as left)	1.0 to 1.5	0.5 to 1.0
15.9	0 to 0.5	(Same as left)	1.0 to 1.5	0.5 to 1.0

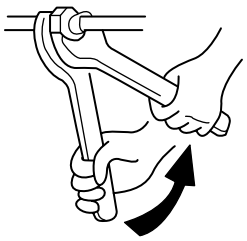
Imperial (Wing nut type)

Outer diam. of copper pipe	R410A	R22
6.4	1.5 to 2.0	1.0 to 1.5
9.5	1.5 to 2.0	1.0 to 1.5
12.7	2.0 to 2.5	1.5 to 2.0
15.9	2.0 to 2.5	1.5 to 2.0

Connection of refrigerant pipe

Connect all the refrigerant pipes with flare connecting work.

- Since the atmospheric pressure only is sealed as the sealing gas, it is not abnormal that "Pushu…" sound is not heard when the flare nut is removed.
- Be sure to use a double spanner for pipe connecting work of the indoor unit.



Work using double spanner

- Refer to the following table for tightening torque.

Connecting pipe outer dia. (mm)	Tightening torque (N•m)	Re-tightening torque (N•m)
Ø6.4	14 to 18 (1.4 to 1.8 kgf•m)	18 (1.8 kgf•m)
Ø9.5	33 to 42 (3.3 to 4.2 kgf•m)	42 (4.2 kgf•m)
Ø12.7	50 to 62 (5.0 to 6.2 kgf•m)	50 (5.0 kgf•m)
Ø15.9	68 to 82 (6.8 to 8.2 kgf•m)	68 (6.8 kgf•m)

Airtight test/Air purge, etc.

For airtight test, air purge, addition of refrigerant, and gas leak check, follow the Installation Manual attached to the outdoor unit.

Open fully valves of the outdoor unit

Gas leak check

Check with a leak detector or soap water whether gas leaks or not, from the pipe connecting section or cap of the valve.

REQUIREMENT

Use a leak detector manufactured exclusively for HFC refrigerant (R410A, R134a, etc.).

9 ELECTRIC WORK

⚠ WARNING

1. **Using the specified wires, ensure to connect the wires, and fix wires securely so that the external strength of the wires do not transmit to the connecting part of the terminals.**
   Incomplete connection or fixation may cause a fire, etc.
2. **Be sure to connect earth wire. (Grounding work)**
   Do not connect the earth wire to gas pipe, city water pipe, lightning rod, or the earth wire of telephone. Incomplete grounding causes an electric shock.
3. **For electric work, strictly follow to the Local Regulation in each country and the Installation Manual, and use an exclusive circuit.**
   Capacity shortage of power circuit or incomplete installation may cause an electric shock or a fire.

⚠ CAUTION

Be sure to install an earth leakage breaker.
If an earth leakage breaker is not installed, an electric shock may be caused.

REQUIREMENT

- For power supply wiring, strictly conform to the Local Regulation in each country.
- For wiring of power supply of the outdoor units, follow to the Installation Manual of each outdoor unit.
- Never connect 220–240V power to the terminal blocks (A, B, U1, U2, X, Y, etc.) for control wiring. (Otherwise, the system will be failed.)
- Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe. The coating may melt resulted in an accident.
- After connecting wires to the terminal blocks, provide a trap and fix wires with the wire clamp.
- Store the refrigerant piping line and control wiring line in the same line.
- Do not turn on the power of the indoor unit until vacuuming of the refrigerant pipes completes.

Power supply specifications

Cables and remote controller wires are procured locally.

For the power supply specifications, follow to the table below. If capacity is little, it is dangerous because overheat or seizure may be caused.

For specifications of the power capacity of the outdoor unit and the power supply cables, refer to the Installation Manual attached to the outdoor unit.

Indoor unit power supply (*1)	Power supply		220–240V ~ 50Hz 220V ~ 60Hz
	Power supply switch/Earth leakage breaker or power supply wiring/fuse rating for indoor units should be selected by the accummulated total current values of the indoor units.		
	Power supply wiring	20m or less	Twist wire : 2.0 mm²
		50m or less	Twist wire : 2.5 mm²
Communication line	Indoor/Outdoor inter-unit wiring (*2)	Q'ty	2
		Wire size	(Up to 1000m) Twist wire : 1.25 mm² (Up to 2000m) Twist wire : 2.0 mm²
	Central control line wiring (*3)	Q'ty	2
		Wire size	(Up to 1000m) Twist wire : 1.25 mm² (Up to 2000m) Twist wire : 2.0 mm²
	Remote controller wiring (*4)	Q'ty	2
		Wire size	Twist wire : 0.5 to 2.0 mm²

9 ELECTRIC WORK

Indoor unit power supply (*1)

- For the power supply of the indoor unit, prepare the exclusive power supply separated from that of the outdoor unit.
- Arrange the power supply, earth leakage breaker, and main switch of the indoor unit connected to the same outdoor unit so that they are commonly used.
- Power supply cord specification : Cable 3-core 2.5mm², in conformity with Design 60245 IEC 57.

Indoor/Outdoor inter-unit wiring, Central controller wiring (*2) (*3)

- 2-core with polarity wires are used for the Indoor/Outdoor inter-unit wiring and Central controller wiring.
- To prevent noise trouble, use 2-core shield wire.
- The length of the communication line means the total length of the inter-unit wire length between indoor and outdoor units added with the central control system wire length.

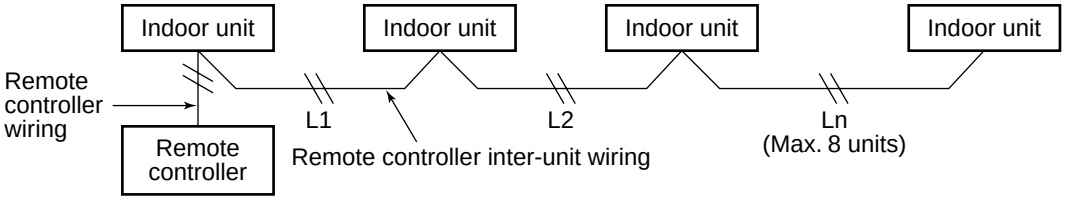
Remote controller wiring (*4)

- 2-core with non-polarity wire is used for wiring of the remote controller wiring and group remote controllers wiring.

Remote controller wiring, remote controller inter-unit wiring	Twist wire: 0.5mm² to 2.0mm² × 2	
Total wire length of remote controller wiring and remote controller inter-unit wiring = L + L1 + L2 + … Ln	In case of wired type only	Up to 500m
	In case of wireless type included	Up to 400m
Total wire length of remote controller inter-unit wiring = L1 + L2 + … Ln		Up to 200m

CAUTION

The remote controller wire (Communication line) and AC220–240V wires cannot be parallel to contact each other and cannot be stored in the same conduits. If doing so, a trouble may be caused on the control system due to noise, etc.

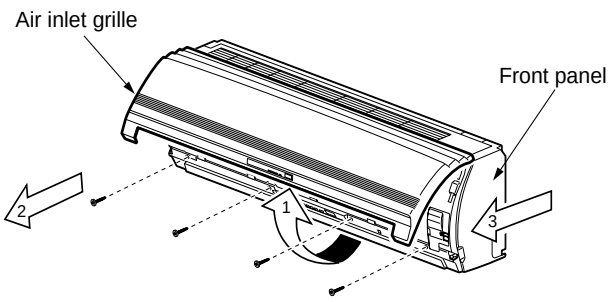


Wiring connection

How to connect the power cable

For the air conditioner that does not have power cable, connect a power cable to it as mentioned below.

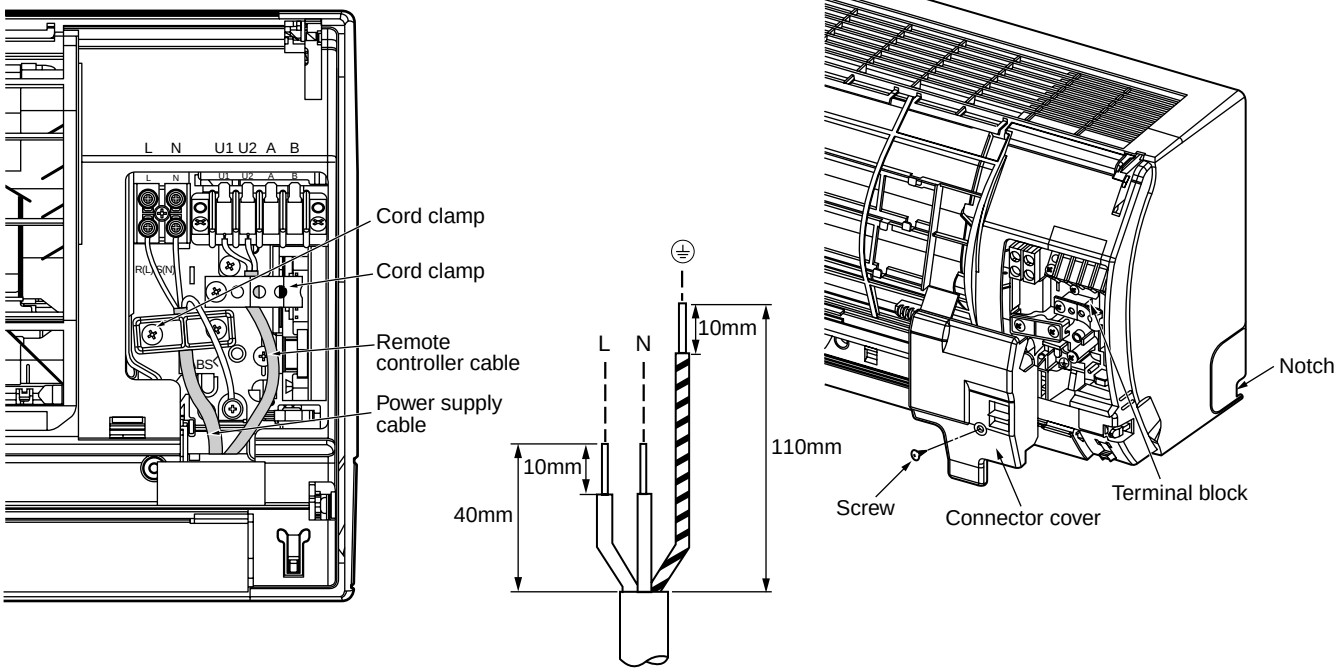
1. Open the air inlet grille upward.
2. Remove the four screws securing the front panel.
3. Slightly open the lower part of the front panel then pull the upper part of the front panel toward you to remove it from the rear plate.
4. After removing the front panel, remove the power cable connect cover and the cord clamp.
5. Connect and secure the power supply cable and secure the cord clamp and the power connect cover.
6. Cut the slit and front panel, and put the power supply cable through the notch.
7. Be sure to smooth the notch with a file, etc.



REQUIREMENT

- Be sure to pass the cable through the cable connection port of the indoor unit.
- The low-voltage circuit is provided for the remote controller.

- Tighten the screws of the terminal block, and fix the cables with cord clamp attached to the electric parts box.
  (Do not apply tension to the connecting section of the terminal block.)

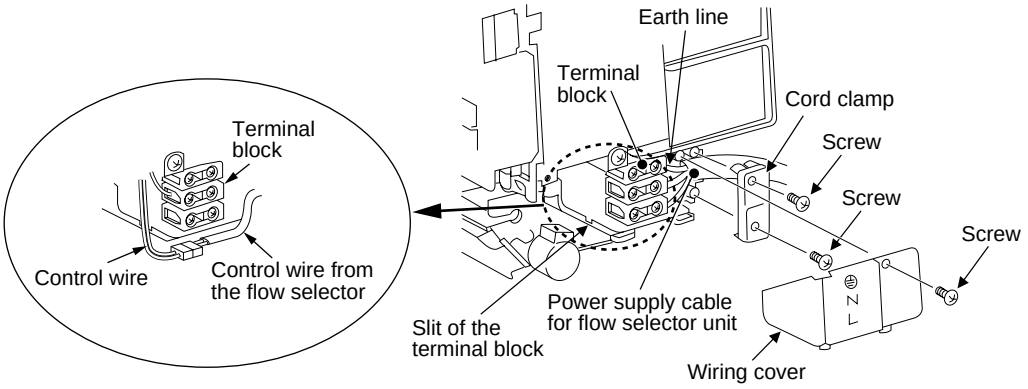


Wiring connection for flow selector unit

How to connect the wiring of flow selector unit

For the flow selector unit that have power supply cord, connect a power supply cable to it as mentioned below.

1. Open the air inlet grille upward.
2. Remove the four screws securing the front panel.
3. Slightly open the lower part of the front panel then pull the upper part of the front panel toward you to remove it from the rear plate.
4. After removing the front panel, remove the wiring cover and the cord clamp.
5. Connect and secure the power supply cable of flow selector unit and secure the cord clamp.
6. The control wires are included in terminal block part of the power supply.
   Take out the control wires outwards through the slit of the terminal block.
7. Fasten the wiring cover surely with screws.
8. Connect the control wire taken out through the slit on the terminal block and the control wire from the flow selector unit at the relay terminal section.

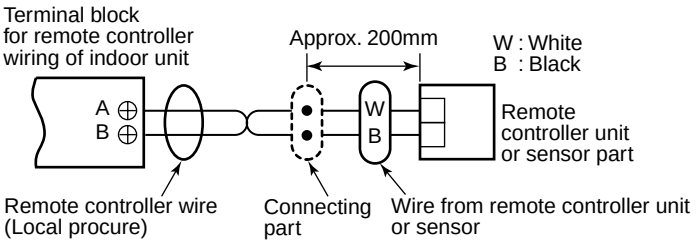


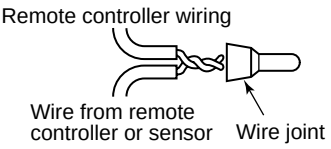
9 ELECTRIC WORK

Remote controller wiring

- Strip off approx. 14mm cover of the wire to be connected.
- Twist wire of the remote controller to be connected with wire of the remote controller unit (or sensor), and press-fit them with a wire joint. (Wire joints (White: 2 pieces) are included in the accessory of the main remote controller (sold separately) or wireless remote controller kit (sold separately).)
- As the remote controller wire has no polarity, there is no problem if connections to indoor unit terminal blocks A and B are reversed.

<Wiring diagram>

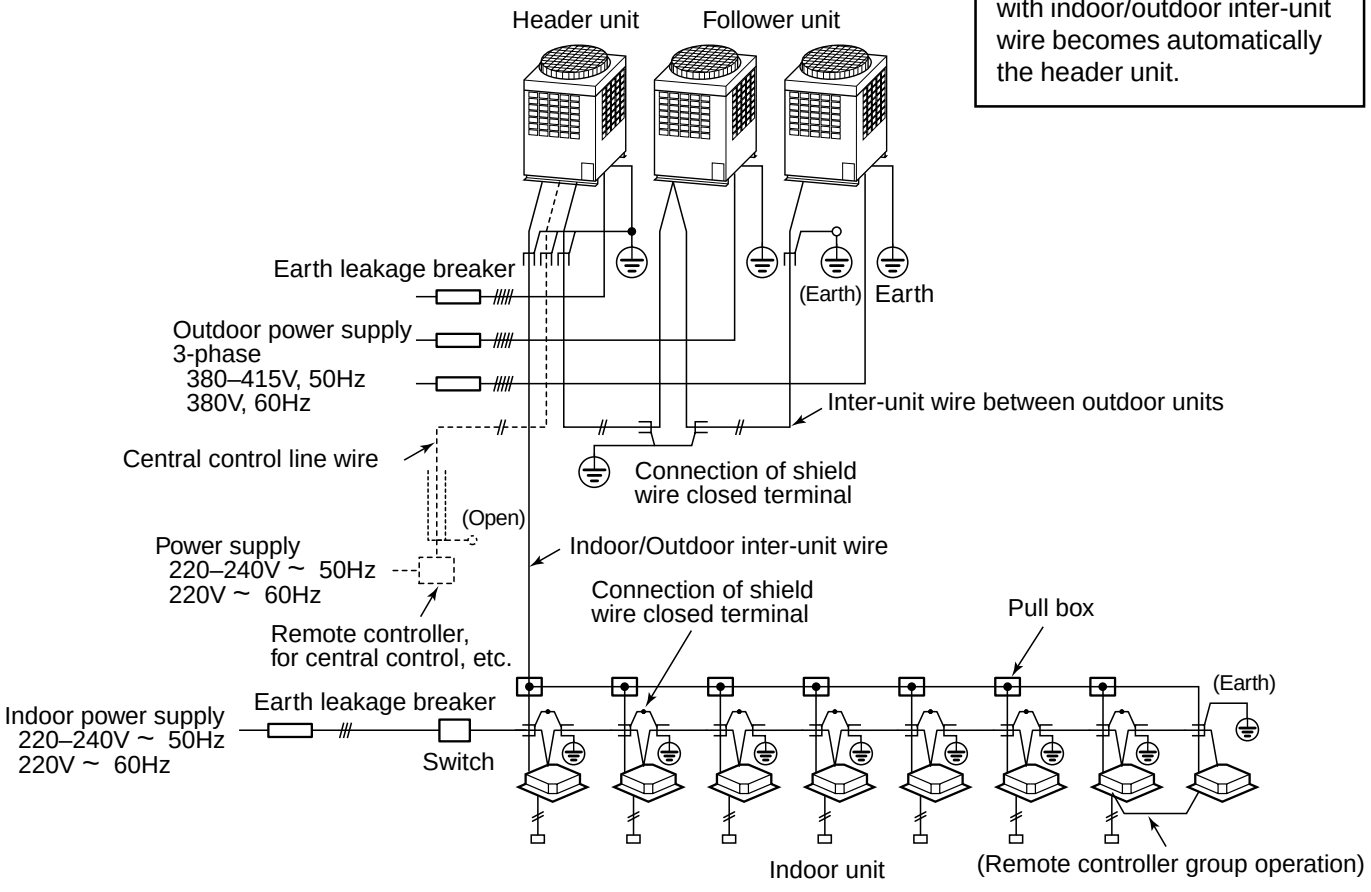




Wiring between indoor and outdoor units

NOTE

An outdoor unit connected with indoor/outdoor inter-unit wire becomes automatically the header unit.



Address setup

Set up the addresses according to the Installation Manual attached to the outdoor unit.

10 APPLICABLE CONTROLS

NOTIFICATION

When using the equipment at the first time, it will take a lot of time that the remote controller accepts an operation after power was on. However, it is not a trouble.

- **Automatic address**
  - While automatic addressing, the operation cannot be performed on the remote controller.
  - For automatic addressing, Max. 10 minutes (generally, approx. 5 minutes) are required.
- **When power will be turned on after finish of automatic addressing;**
  - It will require Max. 10 minutes (generally, approx. 3 minutes) that outdoor unit starts operation after power was on.

As all have been set to [Standard] at the shipment, change the setup of the indoor unit if necessary.

To change the setup, use the main remote controller (wired remote controller).

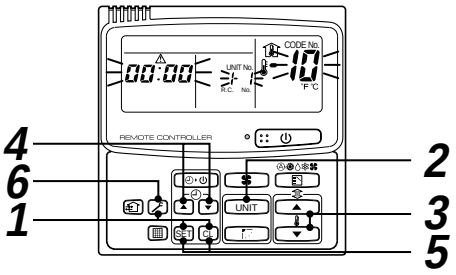
The wireless remote controller is unavailable for address setting.

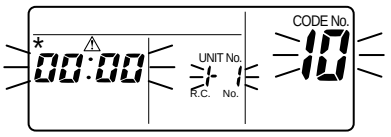
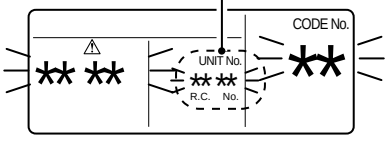
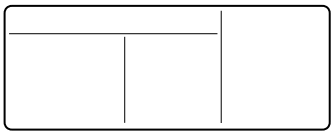
* The setup change for wireless remote controller, sub remote controller, or remote controller-less system (Central control remote controller only is provided.) is impossible. In these cases, prepare and mount a separate main remote controller.

Exchange of applicable control setup

Basic operation procedure for setup exchange

Change the setup while operation of the equipment stops.
(Be sure to stop the operation of a set.)



Procedure	Description
1	When pushing [SET], [CL], and [🔧] buttons simultaneously for 4 seconds or more, after a while, the display part flashes as shown in the figure. Check that the displayed item code is [10]. • If the item code indicates other than [10], push [🔧] button to erase the display, and then retry the operation from the first step. (For some time after [🔧] button has been pushed, the operation of the remote controller cannot be accepted.) (In a group control, the firstly displayed indoor unit No. becomes the header unit.)  (* The display changes according to the indoor unit model.)
2	Every pushing [UNIT] button, the indoor unit No. in the group control is displayed successively. Select an indoor unit of which setup to be changed. In this time, the position of the indoor unit of which setup to be changed can be confirmed because the fan and the flap of the selected indoor unit work.
3	Using [▲], [▼] buttons of set temperature, specify the item code [∗∗]. 
4	Using [▲], [▼] buttons of timer time, select set data [∗∗∗∗].
5	Push [SET] button. In this time, if the display changes from flashing to lighting, the setup completes. • To change the setup of an indoor unit other than the selected one, start operation from Procedure ***2***. • To change the setup of another setup in the selected indoor unit, start operation from Procedure ***3***. Pushing [CL] button clears the set up contents which have been already set. In this case, retry from Procedure ***2***.
6	When the setup finished, push [🔧] button. (The setup is determined.) Pushing [🔧] button deletes the display and returns the status to normal stop status. (For some time after [🔧] button has been pushed, the operation of the remote controller cannot be accepted.) 

10 APPLICABLE CONTROLS

Change of lighting time of filter sign

According to the installation condition, the lighting time of the filter sign (Notification of filter cleaning) can be changed.

Follow to the basic operation procedure
(***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6***).

- For the item code in Procedure ***3***, specify [01].
- For the [Set data] in Procedure ***4***, select the setup data of filter sign lighting time from the following table.

Setup data	Filter sign lighting time
0000	None
0001	150H (At shipment from factory)
0002	2500H
0003	5000H
0004	10000H

To secure better effect of heating

When it is difficult to obtain satisfactory heating due to installation place of the indoor unit or structure of the room, the detection temperature of heating can be raised. Also use a circulator, etc. to circulate heat air near the ceiling.

Follow to the basic operation procedure
(***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6***).

- For the item code in Procedure ***3***, specify [06].
- For the set data in Procedure ***4***, select the setup data of shift value of detection temperature to be set up from the table below.

Setup data	Detection temp shift value
0000	No shift
0001	+1°C
0002	+2°C (At shipment from factory)
0003	+3°C
0004	+4°C
0005	+5°C
0006	+6°C

Adjustment of air direction

1. Using the remote controller switch, change the up/down air direction by moving the horizontal flap.
2. Adjust the right/left air direction by bending the vertical grille inside of the air outlet port with hands.

REQUIREMENT

Do not touch the horizontal flap directly with hands; otherwise a trouble may be caused.

For handling of the horizontal flap, refer to "Owner's Manual" attached to the outdoor unit.

Group control

In a group control, a remote controller can control up to maximum 8 units.

- The wired remote controller only can control a group control. The wireless remote controller is unavailable for this control.
- For cabling procedure and cables of the individual line (Identical refrigerant line) system, refer to "Electric work" in this Manual.
- Cabling between indoor units in a group is performed in the following procedure.

  Connect the indoor units by connecting the remote controller inter-unit cables from the remote controller terminal blocks (A, B) of the indoor unit connected with a remote controller to the remote controller terminal blocks (A, B) of the other indoor unit.
  (No polarity)
- For address setup, refer to the Installation Manual attached to the outdoor unit.

NOTE

Net work adapter (Model TCB-PCNT20E) can not connect to this High Wall type air conditioner.

11 TEST RUN

Before test operation

- Before turning on the power supply, carry out the following items.
  1) Using 500V-megger, check there is 1MΩ or more between the terminal block of the power supply and the earth. If 1MΩ or less is detected, do not run the unit.
  2) Check that all the valves of the outdoor unit are fully opened.
- Never push the electromagnetic contactor to carry out a forced test operation. (It is very dangerous because a protective device does not work.)

WARNING

To protect the compressor at starting time, keep power-ON condition before 12 hours or more.

How to execute test operation

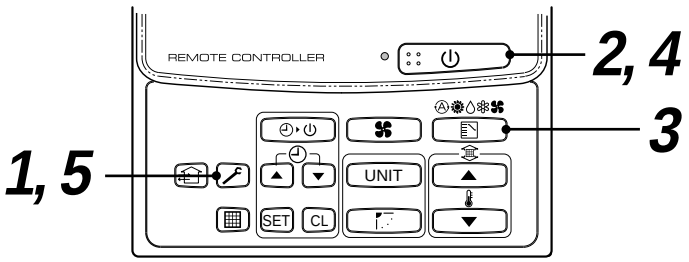
- Using the remote controller, check the operation in the usual operation. For the operation procedure, refer to the attached Owner's Manual.

  A forced test operation can be executed in the following procedure under condition of thermo-OFF of room temperature.

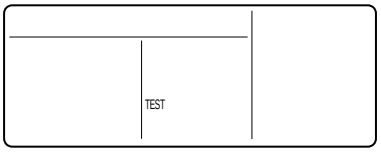
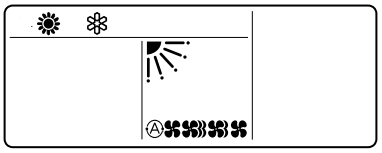
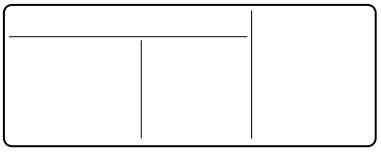
  In order to prevent a serial operation, the forced test operation is released after 60 minutes and returns to the usual operation.

NOTE

Do not use a forced operation in cases other than test operation because it applies an excessive load to the air conditioner.



In case of wired remote controller

Procedure	Description	
1	Keep [🔧] button pushed for 4 seconds or more. [TEST] is displayed on the display part and the selection of mode in the test mode is permitted.	
2	Push [⏻] button.	
3	Using [▤] button, select the operation mode, [COOL] or [HEAT]. • Do not run the air conditioner in a mode other than [COOL] or [HEAT]. • The temperature controlling function does not work during test operation. • The detection of error is performed as usual.	
4	After the test operation, push [⏻] button to stop the operation. (Display part is same as procedure ***1***)	
5	Push [🔧] button to cancel (release from) the test operation mode. ([TEST] disappears on the display part and the status returns to a normal stop status.)	

11 TEST RUN

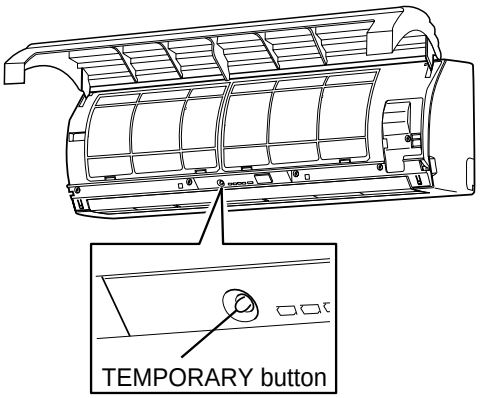
In case of wireless remote controller (Forced test operation is performed in a different way.)

REQUIREMENT

1. For the operation procedure, be sure to follow the Owner's Manual.
2. Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.
3. A test operation of forced heating is unavailable. Perform a test operation by heating operation using the switches of the remote controller.

   However heating operation may be not carried out according to the temperature conditions.

- **Check wiring/piping of indoor and outdoor units**
  1. Open the front panel.
  2. When pushing "TEMPORARY" button for 10 seconds or more, "Pi!" sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly.
     Check cool air starts blowing. If the operation does not start, check wiring again.
  3. To stop a test operation, push "TEMPORARY" button once again (Approx. 1 second).
     The up/down air flow adjusting plate closes and the operation stops.
- **Check transmission of remote controller**
  1. Push "START/STOP" button of the remote controller to check an operation can also start by the remote controller.
     - When pushing "TEMPORARY" button once (For 1 second), the operation changes to automatic operation. For a forced cooling operation, keep the "TEMPORARY" button pushed over 10 seconds.
     - "Cooling" operation by the remote controller may be unavailable according to the temperature conditions. Check wiring/piping of the indoor and outdoor units in forced cooling operation.



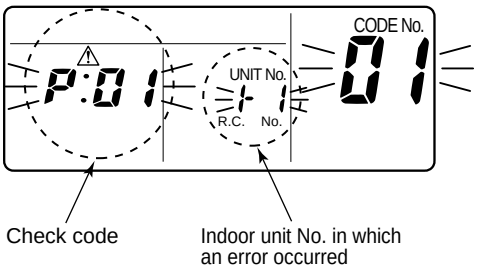
12 TROUBLESHOOTING

Confirmation and check

When a trouble occurred in the air conditioner, the check code and the indoor unit No. appear on the display part of the remote controller.

The check code is only displayed during the operation.

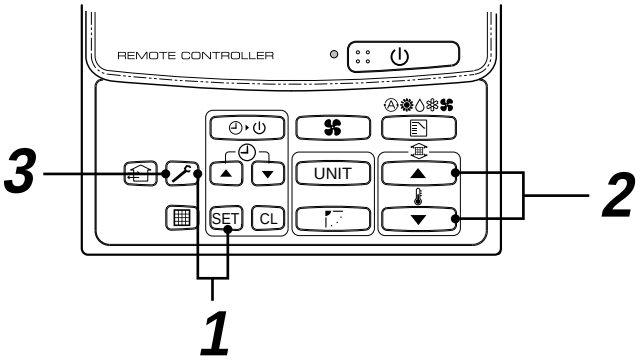
If the display disappears, operate the air conditioner according to the following “Confirmation of error history” for confirmation.

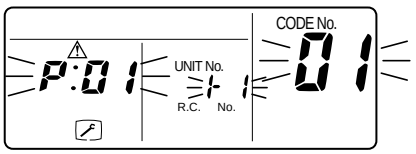


Confirmation of error history

When a trouble occurred on the air conditioner, the error history can be confirmed with the following procedure.
(The error history is stored in memory up to 4 errors.)

This history can be confirmed from either operating status or stop status.



Procedure	Description	
1	When pushing [SET] and [🔧] buttons simultaneously for 4 seconds or more, the right display appears. If [Service Check] is displayed, the mode enters in the error history mode. • [01: Order of error history] is displayed in CODE No. window. • [Check Code] is displayed in CHECK window. • [Indoor unit address in which an error occurred] is displayed in UNIT No.	
2	Every pushing [▲] , [▼] buttons, the error history stored in the memory is displayed in order. The numbers in CODE No. indicates CODE No. [01] (Latest) → [04] (Oldest). **CAUTION** Do not push [CL] button because all the error history of the indoor unit will be deleted.	
3	After confirmation, push [🔧] button to return to the usual display.	

12 TROUBLESHOOTING

Check method

On the remote controller (Main remote controller, Central control remote controller) and the interface P.C. board of the outdoor unit (I/F), a check display LCD (Remote controller) or 7-segment display (on the outdoor interface P.C. board) to display the operation is provided. Therefore the operation status can be known. Using this self-diagnosis function, a trouble or position with error of the air conditioner can be found as shown in the table below.

Check code list

The following list shows each check code. Find the check contents from the list according to part to be checked.

- In case of check from indoor remote controller: See “Main remote controller display” in the list.
- In case of check from outdoor unit: See “Outdoor 7-segment display” in the list.
- In case of check from indoor unit with wireless remote controller: See “Sensor block display of receiving unit” in the list.

Terminology

AI-NET : Artificial Intelligence.
IPDU : Intelligent Power Drive Unit
○ : Lighting, ¤ : Flashing, ● : Goes off
ALT. : Flashing is alternately when there are two flashing LED.
SIM : Simultaneous flashing when there are two flashing LED.

Check code			Wireless remote controller				Check code name	Judging device
Main remote controller display	Outdoor 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
E01	—	—	¤	●	●		Communication error between indoor and remote controller (Detected at remote controller side)	Remote controller
E02	—	—	¤	●	●		Remote controller transmission error	Remote controller
E03	—	—	¤	●	●		Communication error between indoor and remote controller (Detected at indoor side)	Indoor
E04	—	—	●	●	¤		Communication circuit error between indoor/ outdoor (Detected at indoor side)	Indoor
E06	E06	No. of indoor units in which sensor has been normally received	●	●	¤		Decrease of No. of indoor units	I/F
—	E07	—	●	●	¤		Communication circuit error between indoor/ outdoor (Detected at outdoor side)	I/F
E08	E08	Duplicated indoor addresses	¤	●	●		Duplicated indoor addresses	Indoor / I/F
E09	—	—	¤	●	●		Duplicated main remote controllers	Remote controller
E10	—	—	¤	●	●		Communication error between indoor MCU	Indoor
E12	E12	01: Indoor/Outdoor communication 02: Communication between outdoor units	¤	●	●		Automatic address start error	I/F
E15	E15	—	●	●	¤		Indoor is nothing during automatic addressing	I/F
E16	E16	00: Capacity over 01 ~: No. of connected units	●	●	¤		Capacity over / No. of connected indoor units	I/F
E18	—	—	¤	●	●		Communication error between indoor units	Indoor
E19	E19	00: Header is nothing 02: Two or more header units	●	●	¤		Outdoor header units quantity error	I/F
E20	E20	01: Outdoor of other line connected 02: Indoor of other line connected	●	●	¤		Other line connected during automatic address	I/F
E23	E23	—	●	●	¤		Sending error in communication between outdoor units	I/F
E25	E25	—	●	●	¤		Duplicated follower outdoor addresses	I/F
E26	E26	No. of outdoor units which received signal normally	●	●	¤		Decrease of No. of connected outdoor units	I/F
E28	E28	Detected outdoor unit number	●	●	¤		Follower outdoor unit error	I/F
E31	E31	01: IPDU1 error 02: IPDU2 error 03: IPDU1, 2 error 04: Fan IPDU error 05: IPDU + Fan IPDU error 06: IPDU2 + Fan IPDU error 07: All IPDU error	●	●	¤		IPDU communication error	I/F

Check code			Wireless remote controller				Check code name	Judging device
Main remote controller display	Outdoor 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
F01	—	—	¤	¤	●	ALT	Indoor TCJ sensor error	Indoor
F02	—	—	¤	¤	●	ALT	Indoor TC2 sensor error	Indoor
F03	—	—	¤	¤	●	ALT	Indoor TC1 sensor error	Indoor
F04	F04	—	¤	¤	○	ALT	TD1 sensor error	I/F
F05	F05	—	¤	¤	○	ALT	TD2 sensor error	I/F
F06	F06	—	¤	¤	○	ALT	TE1 sensor error	I/F
F07	F07	—	¤	¤	○	ALT	TL sensor error	I/F
F08	F08	—	¤	¤	○	ALT	TO sensor error	I/F
F10	—	—	¤	¤	●	ALT	Indoor TA sensor error	Indoor
F12	F12	—	¤	¤	○	ALT	TS1 sensor error	I/F
F13	F13	01: Comp. 1 side 02: Comp. 2 side	¤	¤	○	ALT	TH sensor error	IPDU
F15	F15	—	¤	¤	○	ALT	Outdoor temp. sensor miscabling (TE, TL)	I/F
F16	F16	—	¤	¤	○	ALT	Outdoor pressure sensor miscabling (Pd, Ps)	I/F
F23	F23	—	¤	¤	○	ALT	Ps sensor error	I/F
F24	F24	—	¤	¤	○	ALT	Pd sensor error	I/F
F29	—	—	¤	¤	●	SIM	Indoor other error	Indoor
F31	F31	—	¤	¤	○	SIM	Indoor EEPROM error	I/F
H01	H01	01: Comp. 1 side 02: Comp. 2 side	●	¤	●		Compressor break down	IPDU
H02	H02	01: Comp. 1 side 02: Comp. 2 side	●	¤	●		Magnet switch error Overcurrent relay operation Compressor trouble (lock)	MG-SW Overcurrent relay IPDU
H03	H03	01: Comp. 1 side 02: Comp. 2 side	●	¤	●		Current detect circuit system error	IPDU
H04	H04	—	●	¤	●		Comp 1 case thermo operation	I/F
H06	H06	—	●	¤	●		Low pressure protective operation	I/F
H07	H07	—	●	¤	●		Oil level down detective protection	I/F
H08	H08	01: TK1 sensor error 02: TK2 sensor error 03: TK3 sensor error 04: TK4 sensor error	●	¤	●		Oil level detective temp sensor error	I/F
H14	H14	—	●	¤	●		Comp 2 case thermo operation	I/F
H16	H16	01: TK1 oil circuit system error 02: TK2 oil circuit system error 03: TK3 oil circuit system error 04: TK4 oil circuit system error	●	¤	●		Oil level detective circuit error Magnet switch error Overcurrent relay operation	I/F MG-SW Overcurrent relay
L03	—	—	¤	●	¤	SIM	Indoor center unit duplicated	Indoor
L04	L04	—	¤	○	¤	SIM	Outdoor line address duplicated	I/F
L05	—	—	¤	●	¤	SIM	Duplicated indoor units with priority (Displayed in indoor unit with priority)	I/F
L06	L06	No. of indoor units with priority	¤	●	¤	SIM	Duplicated indoor units with priority (Displayed in unit other than indoor unit with priority)	I/F
L07	—	—	¤	●	¤	SIM	Group line in individual indoor unit	Indoor
L08	L08	—	¤	●	¤	SIM	Indoor group/Address unset	Indoor, I/F
L09	—	—	¤	●	¤	SIM	Indoor capacity unset	Indoor
L10	L10	—	¤	○	¤	SIM	Outdoor capacity unset	I/F
L20	L20	—	¤	○	¤	SIM	Duplicated central control addresses	AI-NET, Indoor
L28	L28	—	¤	○	¤	SIM	Over No. of connected outdoor units	I/F
L29	L29	01: IPDU1 error 02: IPDU2 error 03: IPDU3 error 04: Fan IPDU error 05: IPDU1 + Fan IPDU error 06: IPDU2 + Fan IPDU error 07: All IPDU error	¤	○	¤	SIM	No. of IPDU error	I/F
L30	L30	Detected indoor address	¤	○	¤	SIM	Indoor outside interlock	Indoor
—	L31	—		—			Extended I/C error	I/F

12 TROUBLESHOOTING

Check code			Wireless remote controller				Check code name	Judging device
Main remote controller display	Outdoor 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
P01	—	—	●	¤	¤	ALT	Indoor fan motor error	Indoor
P03	P03	—	¤	●	¤	ALT	Discharge temp. TD1 error	I/F
P04	P04	01: Comp. 1 side 02: Comp. 2 side	¤	●	¤	ALT	High-pressure SW system operation	IPDU
P05	P05	01: Phase-missing detection 02: Phase error	¤	●	¤	ALT	Phase-missing detection /Phase error	I/F
P07	P07	01: Comp. 1 side 02: Comp. 2 side	¤	●	¤	ALT	Heat sink overheat error	IPDU, I/F
P10	P10	Detected indoor address	●	¤	¤	ALT	Indoor overflow error	Indoor
P12	—	—	●	¤	¤	ALT	Indoor fan motor error	Indoor
P13	P13	—	●	¤	¤	ALT	Outdoor liquid back detection error	I/F
P15	P15	01: TS condition 02: TD condition	¤	●	¤	ALT	Gas leak detection	I/F
P17	P17	—	¤	●	¤	ALT	Discharge temp. TD2 error	I/F
P19	P19	Detected outdoor unit number	¤	●	¤	ALT	4-way valve inverse error	I/F
P20	P20	—	¤	●	¤	ALT	High-pressure protective operation	I/F
P22	P22	0 ⎵ : IGBT short 1 ⎵ : Fan motor position detective circuit error 3 ⎵ : Fan motor trouble C ⎵ : TH sensor temp. error (Heat sink overheat) D ⎵ : TH sensor error E ⎵ : Vdc output error	¤	●	¤	ALT	Outdoor fan IPDU error	IPDU
P26	P26	01: Comp. 1 side 02: Comp. 2 side	¤	●	¤	ALT	G-TR short protection error	IPDU
P29	P29	01: Comp. 1 side 02: Comp. 2 side	¤	●	¤	ALT	Comp position detective circuit system error	IPDU
P31	P31	—	¤	●	¤	ALT	Other indoor unit error (Group terminal unit error)	Indoor
—	—	—	By alarm device			ALT	Error in indoor group	AI-NET

Error detected by TCC-LINK central control device

Check code			Wireless remote controller				Check code name	Judging device
Central control device indication	Outdoor 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
C05	—	—	—				Sending error in TCC-LINK central control device	TCC-LINK
C06	—	—	—				Receiving error in TCC-LINK central control device	TCC-LINK
C12	—	—	—				Batch alarm of general-purpose equipment control interface	General-purpose equipment I/F
P30	Differs according to error contents of unit with occurrence of alarm						Group control branching unit error	TCC-LINK
	—	—	(L20 is displayed.)				Duplicated central control addresses	

Terminology

TCC-LINK : TOSHIBA Carrier Communication Link.

New check code

1. Difference between the new check code and the current system

The displaying method of the check code changes in this model and after.

	Check code in current system	New check code
Used characters	Hexadecimal notation, 2 digits	Alphabet + Decimal notation, 2 digits
Characteristics of code classification	Few classification of communication/incorrect setup system	Many classification of communication/incorrect setup system
Block display	Indoor P.C. board, Outdoor P.C. board, Cycle, Communication	Communication/Incorrect setup (4 ways), Indoor protection, Outdoor protection, Sensor, Compressor protection, etc.

<Display on wired remote controller>

- [⚠] goes on.
- [UNIT No.] + Check code + Operation lamp (Green) flash

<Display on sensor part of wireless>

- Block display of combination of [⏻] [🕘] [✺]

<Display on indicater on wireless remote controller receiver part>

- Unit No. and check code are displayed.
- In a case of error with auxiliary code, check code and auxiliary code are displayed alternately.

Display	Classification
A	Unused
C	Central control system error
E	Communication system error
F	Each sensor error (Failure)
H	Compressor protective system error
J	Unused
L	Setup error, Other errors
P	Protective device operation

WARNINGS ON REFRIGERANT LEAKAGE

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

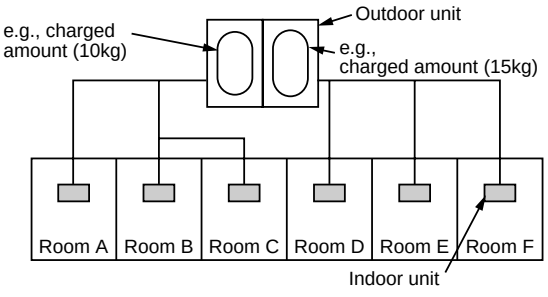
The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.
Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).
In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Concentration limit (kg/m}^3\text{)}$$

The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m³.

NOTE 1 :

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

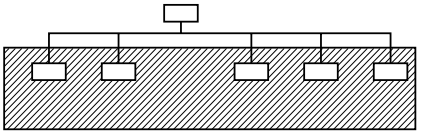
The possible amount of leaked refrigerant gas in rooms A, B and C is 10kg.
The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

Important

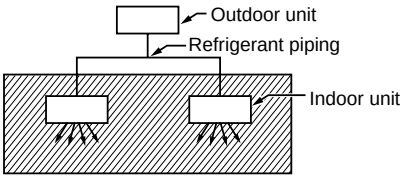
NOTE 2 :

The standards for minimum room volume are as follows.

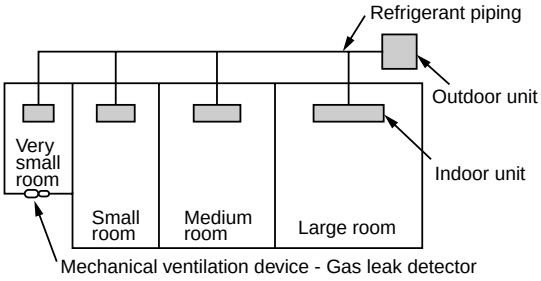
(1) No partition (shaded portion)



(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

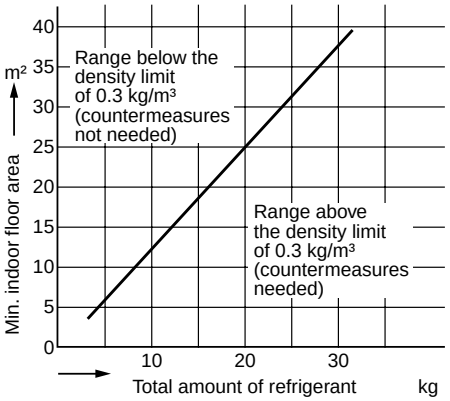


(3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



NOTE 3 :

The minimum indoor floor area compared with the amount of refrigerant is roughly as follows:
(When the ceiling is 2.7m high)



CONFIRMATION OF INDOOR UNIT SETUP

Prior to delivery to the customers, check the address and setup of the indoor unit, which has been installed in this time and fill the check sheet (Table below). Deta of four units can be entered in this check sheet. Copy this sheet according to the No. of the indoor units. If the installed system is a group control system, use this sheet by entering each line system into each installation manual attached to the other indoor units.

REQUIREMENT

This check sheet is required for maintenance after installation. Be sure to fill this sheet and then pass this Installation Manual to the customers.

Indoor unit setup check sheet

Indoor unit	Indoor unit	Indoor unit	Indoor unit
Room name	**Room name**	**Room name**	**Room name**
Model	**Model**	**Model**	**Model**

Check indoor unit address. (For check method, refer to Applicable controls in this sheet.)
* In case of a single system, it is unnecessary to enter the indoor address. (Item code: Line [12], Indoor [13], Group [14], Central control [03])

Line	Indoor	Group	Line	Indoor	Group	Line	Indoor	Group	Line	Indoor	Group

Central control address	Central control address	Central control address	Central control address

Various setup	Various setup	Various setup	Various setup

Have you changed high ceiling setup? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively.
(For check method, refer to Applicable controls in this sheet.) * In case of replacement of short plugs on indoor microcomputer P.C. board, setup is automatically changed.

High ceiling setup (Item code [5d])	High ceiling setup (Item code [5d])	High ceiling setup (Item code [5d])	High ceiling setup (Item code [5d])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ STANDARD [0000]	☐ STANDARD [0000]	☐ STANDARD [0000]	☐ STANDARD [0000]
☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]
☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]

Have you changed lighting time of filter sign? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively.
(For check method, refer to Applicable controls in this sheet.)

Filter sign lighting time (Item code [01])	Filter sign lighting time (Item code [01])	Filter sign lighting time (Item code [01])	Filter sign lighting time (Item code [01])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ NONE [0000]	☐ NONE [0000]	☐ NONE [0000]	☐ NONE [0000]
☐ 150H [0001]	☐ 150H [0001]	☐ 150H [0001]	☐ 150H [0001]
☐ 2500H [0002]	☐ 2500H [0002]	☐ 2500H [0002]	☐ 2500H [0002]
☐ 5000H [0003]	☐ 5000H [0003]	☐ 5000H [0003]	☐ 5000H [0003]
☐ 10000H [0004]	☐ 10000H [0004]	☐ 10000H [0004]	☐ 10000H [0004]

Have you changed detected temp. shift value? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively.
(For check method, refer to Applicable control in this sheet.)

Detected temp. shift value setup (Item code [06])	Detected temp. shift value setup (Item code [06])	Detected temp. shift value setup (Item code [06])	Detected temp. shift value setup (Item code [06])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ NO SHIFT [0000]	☐ NO SHIFT [0000]	☐ NO SHIFT [0000]	☐ NO SHIFT [0000]
☐ +1°C [0001]	☐ +1°C [0001]	☐ +1°C [0001]	☐ +1°C [0001]
☐ +2°C [0002]	☐ +2°C [0002]	☐ +2°C [0002]	☐ +2°C [0002]
☐ +3°C [0003]	☐ +3°C [0003]	☐ +3°C [0003]	☐ +3°C [0003]
☐ +4°C [0004]	☐ +4°C [0004]	☐ +4°C [0004]	☐ +4°C [0004]
☐ +5°C [0005]	☐ +5°C [0005]	☐ +5°C [0005]	☐ +5°C [0005]
☐ +6°C [0006]	☐ +6°C [0006]	☐ +6°C [0006]	☐ +6°C [0006]

Incorporation of parts sold separately	Incorporation of parts sold separately	Incorporation of parts sold separately	Incorporation of parts sold separately

Have you incorporated the following parts sold separately? If incorporated, fill check mark [×] in each [ITEM].
(When incorporating, the setup change is necessary in some cases. For setup change method, refer to Installation Manual attached to each part sold separately.)

Panel	Panel	Panel	Panel
☐ Standard panel	☐ Standard panel	☐ Standard panel	☐ Standard panel
Filter	Filter	Filter	Filter
☐ Super long life filter	☐ Super long life filter	☐ Super long life filter	☐ Super long life filter
☐ Others ( )	☐ Others ( )	☐ Others ( )	☐ Others ( )
☐ Others ( )	☐ Others ( )	☐ Others ( )	☐ Others ( )