

TOSHIBA

Leading Innovation >>>

AIR CONDITIONER (SPLIT TYPE) Installation Manual



EH99885801-1

Indoor Unit

Model name:

For commercial use

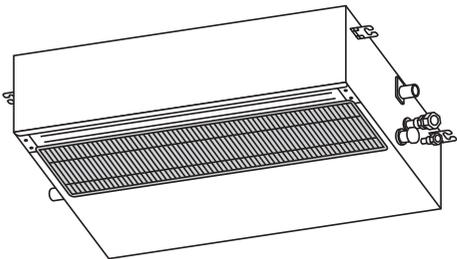
Slim Duct Type

RAV-SM304SDT-E

RAV-SM404SDT-E

RAV-SM454SDT-E

RAV-SM564SDT-E



Original instruction

Thank you very much for purchasing TOSHIBA Air Conditioner.
Please read this Installation Manual carefully before installing the Air Conditioner.

- This Manual describes the installation method of the indoor unit.
- For installation of the outdoor unit, follow the Installation Manual attached to the outdoor unit.

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.

Contents

1	Precautions for safety	3
1	Précautions relatives à la sécurité	6
1	Sicherheitshinweise	9
1	Precauzioni per la sicurezza	12
1	Precauciones de seguridad	15
1	Precauções de segurança	18
1	Voorzorgen voor de veiligheid	21
1	Προφυλάξεις ασφαλείας	24
1	Правила техники безопасности	27
2	Accessory parts	29
3	Selection of installation place	29
4	Installation	31
5	Drain piping	32
6	Duct design	34
7	Refrigerant piping	36
8	Electrical connection	37
9	Applicable controls	39
10	Test run	43
11	Maintenance	45
12	Troubleshooting	46

Thank you for purchasing this Toshiba air conditioner.

Please read carefully through these instructions that contain important information which complies with the "Machinery" Directive (Directive 2006/42/EC), and ensure that you understand them.

After completing the installation work, hand over this Installation Manual as well as the Owner's Manual provided to the user, and ask the user to keep them in a safe place for future reference.

Generic Denomination: Air Conditioner

Definition of Qualified Installer or Qualified Service Person

The air conditioner must be installed, maintained, repaired and removed by a qualified installer or qualified service person. When any of these jobs is to be done, ask a qualified installer or qualified service person to do them for you.

A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the following table.

Agent	Qualifications and knowledge which the agent must have
Qualified installer	<ul style="list-style-type: none"> The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person	<ul style="list-style-type: none"> The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear

When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.

In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the following table.

Failure to wear the proper protective gear is dangerous because you will be more susceptible to injury, burns, electric shocks and other injuries.

Work undertaken	Protective gear worn
All types of work	Protective gloves 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians and from heat Insulating shoes Clothing to provide protection from electric shock
Work done at heights (50 cm or more)	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toe cap
Repair of outdoor unit	Gloves to provide protection for electricians and from heat

■ Warning indications on the air conditioner unit

Warning indication		Description
 <p>WARNING ELECTRICAL SHOCK HAZARD Disconnect all remote electric power supplies before servicing.</p>	<p>WARNING ELECTRICAL SHOCK HAZARD Disconnect all remote electric power supplies before servicing.</p>	
 <p>WARNING Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</p>	<p>WARNING Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</p>	
 <p>CAUTION High temperature parts. You might get burned when removing this panel.</p>	<p>CAUTION High temperature parts. You might get burned when removing this panel.</p>	
 <p>CAUTION Do not touch the aluminum fins of the unit. Doing so may result in injury.</p>	<p>CAUTION Do not touch the aluminium fins of the unit. Doing so may result in injury.</p>	
 <p>CAUTION BURST HAZARD Open the service valves before the operation, otherwise there might be the burst.</p>	<p>CAUTION BURST HAZARD Open the service valves before the operation, otherwise there might be the burst.</p>	

1 Precautions for safety

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

WARNING

General

- Before starting to install the air conditioner, read through the Installation Manual carefully, and follow its instructions to install the air conditioner.
- Only a qualified installer or service person is allowed to do installation work. Inappropriate installation may result in water leakage, electric shock or fire.
- Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
- Before opening the intake grille of the indoor unit or service panel of the outdoor unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer(*1) or qualified service person(*1) is allowed to remove the intake grille of the indoor unit or service panel of the outdoor unit and do the work required.
- Before carrying out the installation, maintenance, repair or removal work, set the circuit breaker to the OFF position. Otherwise, electric shocks may result.
- Place a "Work in progress" sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
- Only a qualified installer(*1) or qualified service person(*1) is allowed to undertake work at heights using a stand of 50 cm or more or to remove the intake grille of the indoor unit to undertake work.
- Wear protective gloves and safety work clothing during installation, servicing and removal.
- Do not touch the aluminium fin of the unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.
- Do not climb onto or place objects on top of the outdoor unit. You may fall or the objects may fall off of the outdoor unit and result in injury.
- When work is performed at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
- Before cleaning the filter or other parts of the outdoor unit, set the circuit breaker to OFF without fail, and place a "Work in progress" sign near the circuit breaker before proceeding with the work.
- Before working at heights, put a sign in place so that no-one will approach the work location, before proceeding with the work. Parts and other objects may fall from above, possibly injuring a person below. While carrying out the work, wear a helmet for protection from falling objects.
- The refrigerant used by this air conditioner is the R410A.
- The air conditioner must be transported in stable condition. If any part of the product is broken, contact the dealer.
- When the air conditioner must be transported by hand, carry it by two or more people.
- Do not move or repair any unit by yourself. There is high voltage inside the unit. You may get electric shock when removing the cover and main unit.

Selection of installation location

- 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.
- Do not install in a location where flammable gas leaks are possible. If the gas leak and accumulate around the unit, it may ignite and cause a fire.
- To transport the air conditioner, wear shoes with additional protective toe caps.
- To transport the air conditioner, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.
- Install the indoor unit at least 2.5 m above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.
- Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.

Installation

- When the indoor unit is to be suspended, the designated hanging bolts (M10 or W3/8) and nuts (M10 or W3/8) must be used.
- Install the air conditioner securely in a location where the base can sustain the weight adequately. If the strength is not enough, the unit may fall down resulting in injury.
- Follow the instructions in the Installation Manual to install the air conditioner. Failure to follow these instructions may cause the product to fall down or topple over or give rise to noise, vibration, water leakage or other trouble.
- Carry out the specified installation work to guard against the possibility of high winds and earthquake. If the air conditioner is not installed appropriately, a unit may topple over or fall down, causing an accident.
- 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.
- Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.

Refrigerant piping

- Install the refrigerant pipe securely during the installation work before operating the air conditioner. If the compressor is operated with the valve open and without refrigerant pipe, the compressor sucks air and the refrigeration cycles is over pressurized, which may cause a injury.
- Tighten the flare nut with a torque wrench in the specified manner. Excessive tighten of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
- 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 be generated.
- When the air conditioner has been installed or relocated, follow the instructions in the Installation Manual and purge the air completely so that no gases other than the refrigerant will be mixed in the refrigerating cycle. Failure to purge the air completely may cause the air conditioner to malfunction.
- Nitrogen gas must be used for the airtight test.
- The charge hose must be connected in such a way that it is not slack.

Electrical wiring

- Only a qualified installer(*1) or qualified service person(*1) is allowed to carry out the electrical work of the air conditioner. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and / or electrical leaks.
- To connect the electrical wires, repair the electrical parts or undertake other electrical jobs, wear gloves to provide protection for electricians and from heat, insulating shoes and clothing to provide protection from electric shocks. Failure to wear this protective gear may result in electric shocks.
- Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and / or a fire.
- Connect earth wire. (Grounding work)
Incomplete grounding causes an electric shock.
- Do not connect earth wires to gas pipes, water pipes, and lightning conductor or telephone earth wires.
- After completing the repair or relocation work, check that the earth wires are connected properly.
- Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws.
- Install the circuit breaker where it can be easily accessed by the agent.
- To install the circuit breaker outdoors, install one which is designed to be used outdoors.
- Under no circumstances the power wire must not be extended. Connection trouble in the places where the wire is extended may give rise to smoking and / or a fire.
- Electrical wiring work shall be conducted according to law and regulation in the community and installation manual. Failure to do so may result in electrocution or short circuit.

Test run

- Before operating the air conditioner after having completed the work, check that the electrical control box cover of the indoor unit and service panel of the outdoor unit are closed, and set the circuit breaker to the ON position. You may receive an electric shock if the power is turned on without first conducting these checks.
- If there is any kind of trouble (such as an error display has appeared, smell of burning, abnormal sounds, the air conditioner fails to cool or heat or water is leaking) has occurred in the air conditioner, do not touch the air conditioner yourself but set the circuit breaker to the OFF position, and contact a qualified service person. Take steps to ensure that the power will not be turned on (by marking "out of service" near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the air conditioner in the trouble status may cause mechanical problems to escalate or result in electric shocks or other trouble.
- After the work has finished, use an insulation tester set (500 V Megger) to check the resistance is 1 MΩ or more between the charge section and the non-charge metal section (Earth section). If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.
- Upon completion of the installation work, check for refrigerant leaks and check the insulation resistance and water drainage. Then conduct a test run to check that the air conditioner is operating properly.

Explanations given to user

- Upon completion of the installation work, tell the user where the circuit breaker is located. If the user does not know where the circuit breaker is, he or she will not be able to turn it off in the event that trouble has occurred in the air conditioner.
- If the fan grille is damaged, do not approach the outdoor unit but set the circuit breaker to the OFF position, and contact a qualified service person(*1) to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.
- After the installation work, follow the Owner's Manual to explain to the customer how to use and maintain the unit.

Relocation

- Only a qualified installer(*1) or qualified service person(*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and / or vibration may result.
- When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air or other gas to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in rupture, injury or other trouble.

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, do not let water, dust, former refrigerant, or refrigerating oil enter the refrigerating cycle during installation work.
- 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 changed 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.

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.

The installation fuse (all types can be used) must be used for the power supply line of this conditioner.

(*1) Refer to the "Definition of Qualified Installer or Qualified Service Person."

Merci d'avoir acheté ce climatiseur Toshiba.

Veillez lire attentivement ces instructions qui contiennent des informations importantes qui sont conformes à la directive « Machines » (Directive 2006/42/EC), et assurez-vous de bien les comprendre.

Une fois l'installation terminée, confiez à l'utilisateur le présent manuel d'installation et le manuel du propriétaire et demandez-lui de les ranger, afin qu'il les ait à disposition en cas de besoin.

Dénomination générique : Climatiseur

Définition d'un Installateur qualifié ou Technicien d'entretien qualifié

Le climatiseur doit être installé, entretenu, réparé et enlevé par un installateur qualifié ou une personne d'entretien qualifiée. Lorsqu'une de ces opérations doit être effectuée, demandez à un installateur qualifié ou un technicien d'entretien qualifié de les exécuter pour vous.

Un installateur qualifié ou technicien d'entretien qualifié est un agent qui a les qualifications et connaissances décrites dans le tableau suivant.

Agent	Qualifications et connaissances que cet agent doit posséder
Installateur qualifié	<ul style="list-style-type: none"> L'installateur qualifié est une personne qui installe, entretient, déplace et enlève les climatiseurs fabriqués par Toshiba Carrier Corporation. Il ou elle a été formé pour installer, entretenir, déplacer et enlever les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes concernant de telles opérations par une ou des personnes qui ont été formées et a, par conséquent, acquis toutes les connaissances associées à ces opérations. L'installateur qualifié qui est autorisé à effectuer un travail électrique compris dans l'installation, le déplacement et l'enlèvement possède les qualifications nécessaires à ce travail électrique conformément aux réglementations et à la législation locales, et il ou elle est une personne qui a été formée pour les problèmes relatifs au travail électrique sur les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par une ou des personnes qui ont été formées et possèdent, par conséquent, les connaissances relatives à ce travail. L'installateur qualifié qui est autorisé à manipuler du fluide frigorigène et à réaliser un travail de raccordement compris dans l'installation, le déplacement et l'enlèvement possède les qualifications nécessaires à cette manipulation de fluide frigorigène et de ce travail de raccordement conformément aux réglementations et à la législation locales, et il ou elle est une personne qui a été formée pour les problèmes relatifs à la manipulation de fluide frigorigène et de travail de raccordement sur les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par une ou des personnes qui ont été formées et possèdent, par conséquent, les connaissances relatives à ce travail. L'installateur qualifié qui est autorisé à travailler en hauteur a été formé aux domaines relatifs au travail en hauteur avec les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par une ou des personnes qui ont été formées et possède, par conséquent, toutes les connaissances requises pour ce travail.
Technicien d'entretien qualifié	<ul style="list-style-type: none"> La personne d'entretien qualifiée est une personne qui installe, répare, entretient, déplace et enlève les climatiseurs fabriqués par Toshiba Carrier Corporation. Il ou elle a été formé pour installer, réparer, entretenir, déplacer et enlever les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes pour de telles opérations par une ou des personnes qui ont été formées et a, par conséquent, acquis toutes les connaissances associées à ces opérations. La personne d'entretien qualifiée qui est autorisée à effectuer un travail électrique compris dans l'installation, la réparation, le déplacement et l'enlèvement possède les qualifications nécessaires à ce travail électrique conformément aux réglementations et à la législation locales, et il ou elle est une personne qui a été formée pour les problèmes relatifs au travail électrique sur les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par une ou des personnes qui ont été formées et possèdent, par conséquent, les connaissances relatives à ce travail. La personne d'entretien qualifiée qui est autorisée à manipuler du fluide frigorigène et à réaliser un travail de raccordement compris dans l'installation, la réparation, le déplacement et l'enlèvement possède les qualifications nécessaires à cette manipulation de fluide frigorigène et de ce travail de raccordement conformément aux réglementations et à la législation locales, et il ou elle est une personne qui a été formée pour les problèmes relatifs à la manipulation de fluide frigorigène et de travail de raccordement sur les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par une ou des personnes qui ont été formées et possèdent, par conséquent, les connaissances relatives à ce travail. La personne d'entretien qualifiée qui est autorisée à travailler en hauteur a été formée aux domaines relatifs au travail en hauteur avec les climatiseurs fabriqués par Toshiba Carrier Corporation ou, alternativement, il ou elle a reçu des consignes dans de tels domaines par un ou des personnes qui ont été formées et possèdent, par conséquent, toutes les connaissances requises pour ce travail.

Définition de l'équipement de protection

Lorsque le climatiseur doit être transporté, installé, entretenu, réparé ou enlevé, portez des gants de protection et des vêtements de travail de « sécurité ».

En plus de cette tenue de protection normale, portez la tenue de protection décrite ci-dessous lorsque vous entreprenez les travaux spéciaux détaillés dans le tableau suivant.

Ne pas porter la tenue de protection adéquate est dangereux car vous serez plus susceptible d'être blessé, brûlé, de subir une décharge électrique ou d'autres blessures.

Travaux entrepris	Equipement de protection porté
Tous types de travaux	Gants de protection Vêtement de travail « de Sécurité »
Travaux liés à l'électricité	Gants pour fournir une protection contre les décharges électriques et la chaleur Chaussures isolantes Vêtement protégeant d'une décharge électrique
Travail effectué en hauteur (50 cm minimum)	Casques utilisés dans l'industrie
Transport d'objets lourds	Chaussures avec des bouts renforcés de protection
Réparation de l'unité extérieure	Gants pour fournir une protection contre les décharges électriques et la chaleur

2 Accessory parts

Part name	Q'ty	Shape	Usage
Installation Manual	1	This manual	(Hand over to customers) (For other languages that do not appear in this Installation Manual, please refer to the enclosed CD-R.)
Owner's Manual	1		(Hand over to customers) (For other languages that do not appear in this Installation Manual, please refer to the enclosed CD-R.)
CD-ROM	1	—	Owner's Manual and Installation Manual
Insulating pipe	2		For insulation pipe connecting section
Washer	8	M10 × Ø34	For hanging-down unit
Hose band	1		For connecting drain pipe
Flexible hose	1		For adjusting of drain pipe centering
Heat insulator	1		For insulating drain connecting section

3 Selection of installation place

WARNING

- **Install the air conditioner at enough strong place to withstand the weight of the unit.**
If the strength is not enough, the unit may fall down resulting in injury.
- **Install the air conditioner at a height 2.5 m or more from the floor.**
If you insert your hands or others directly into the unit while the air conditioner operates, it is dangerous because you may contact with revolving fan or active electricity.

CAUTION

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.

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 safety 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.)
- A restaurant kitchen where a lot of oil is used or place near machines in a factory (Oil adhering to the heat exchanger and resin part (turbo fan) in the indoor unit may reduce the performance, generate mist or dew drop, or deform or damage resin parts.)
- Places where iron or other metal dust is present. If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start a fire.
- Place where organic solvent is used nearby.
- Place close to a machine generating high frequency.
- Place where the discharged air blows directly into the window of the neighbour house. (Outdoor unit)
- Place where noise of the outdoor unit is easily transmitted.
(When install the outdoor unit on the boundary with the neighbour, pay due attention to the level of noise.)
- Place with poor ventilation. (Before air ducting work, check whether value of air volume, static pressure and duct resistance are correct.)
- Do not use the air conditioner for special purposes such as preserving food, precision instruments, or art objects, or where breeding animals or growing plants are kept. (This may degrade the quality of preserved materials.)
- Place where any of high-frequency appliances (including inverter devices, private power generators, medical equipment, and communication equipment) and inverter-type fluorescent light is installed.
(A malfunction of the air conditioner, abnormal control, or problems due to noise to such appliances / equipment may occur.)
- When the wireless remote controller is used in a room equipped with an inverter-type fluorescent light or at a place exposed to direct sunlight, signals from the remote controller may not be received correctly.
- Place where organic solvent is used.
- Place where special spray is used frequently.

■ Installation under high-humidity atmosphere

In some cases including the rainy season, especially inside of the ceiling may become high-humidity atmosphere (dew-point temperature: 23 °C or higher).

1. Installation to inside of the ceiling with tiles on the roof
 2. Installation to inside of the ceiling with slated roof
 3. Installation to a place where inside of the ceiling is used for pathway to intake the fresh air
- In the above cases, additionally attach the heat insulator to all positions of the air conditioner, which come to contact with the high-humidity atmosphere. In this case, arrange the side plate (Check port) so that it is easily removed.
 - Apply also a sufficient heat insulation to the duct and connecting part of the duct.

[Reference] Dewing test conditions

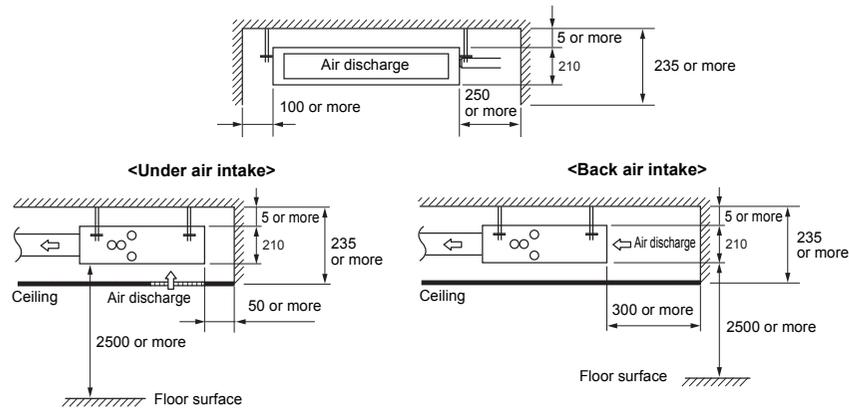
Indoor side: 27 °C dry bulb temperature
24 °C wet bulb temperature

Air volume: Low air volume, operation time 4 hours

■ Installation space

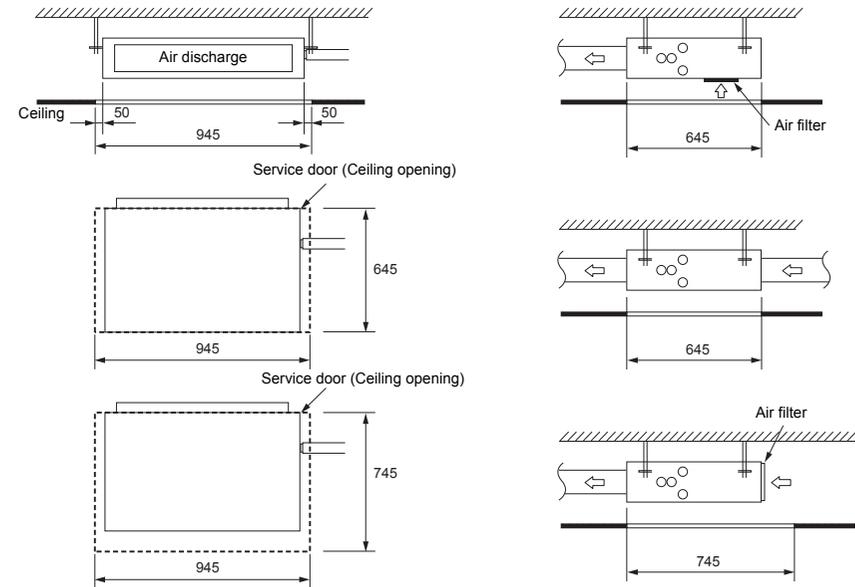
(Unit:mm)

Reserve space required for maintenance the indoor unit and service work.

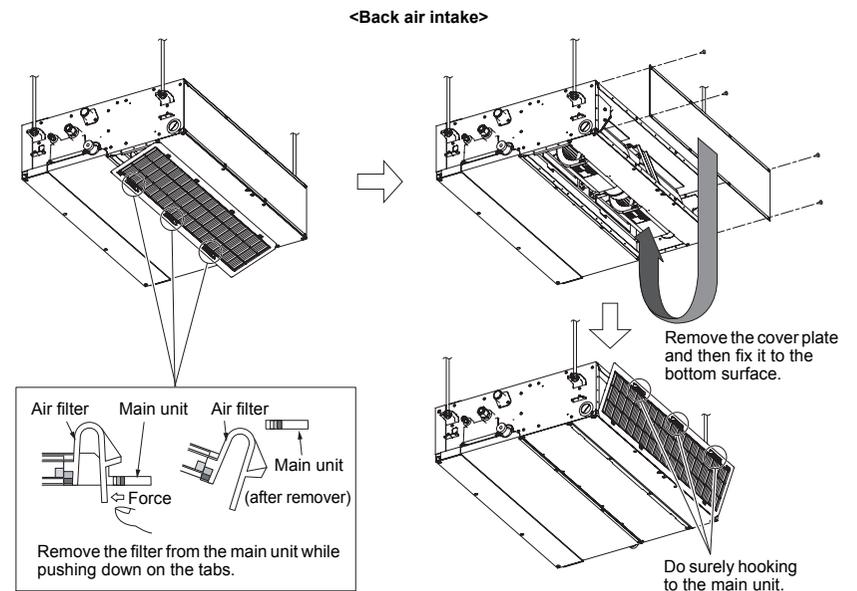


■ Service space

(Unit:mm)



■ Arranging the to back air intake type



■ Notification of filter cleaning term setup

The lighting term setup of the filter sign (Notification of filter cleaning) of the remote controller can be changed according to the condition of installation.

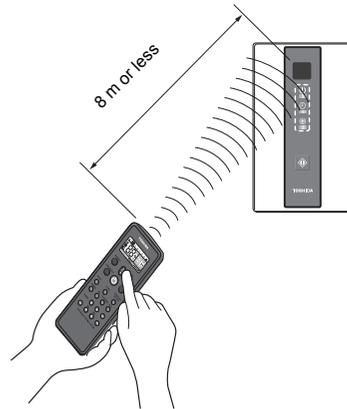
For setup method, refer to "Change of lighting term of filter sign" and "To secure better effect of heating" in the Applicable controls of this Manual.

■ In case of wireless type

The sensor of indoor unit with wireless remote controller can receive a signal 8 m or less.

Based upon it, determine a place where the remote controller is operated and the installation place of the indoor unit.

- To prevent a malfunction, select a place where is not influenced by a florescent light or direct sunlight.
- Two or more (Up to 6 units) indoor units with wireless remote controller can be installed in the same room.



4 Installation

⚠ 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.

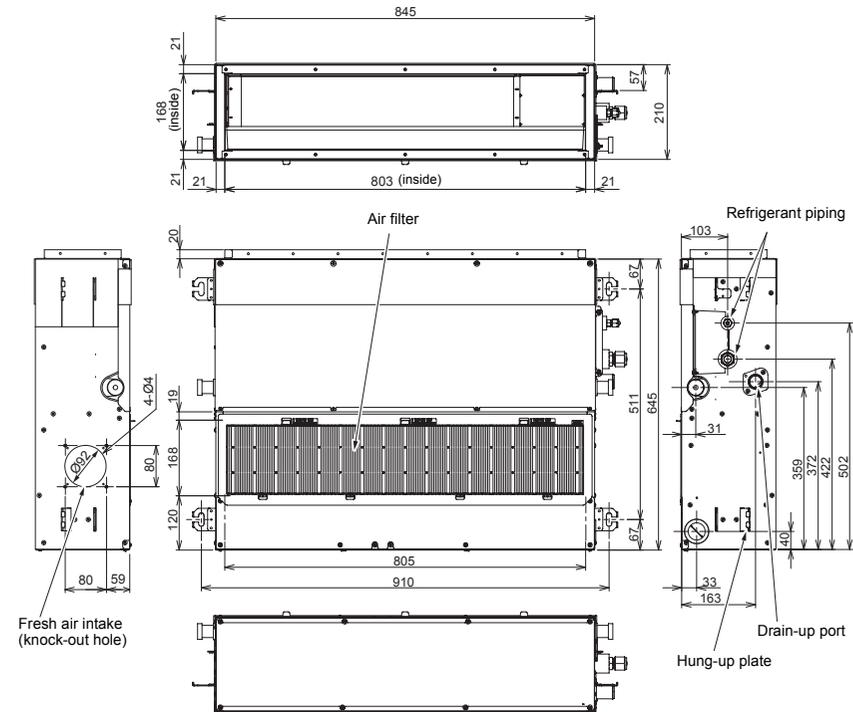
REQUIREMENT

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, hold the hooking metals (4 positions) only.
- Do not apply force to the other parts (refrigerant pipe, drain pan, foamed parts, or resin parts, etc.).
- Carry the package by two or more persons, and do not bundle it with plastic band at positions other than specified.

■ External dimensions

(Unit:mm)



■ Installation of hanging bolt

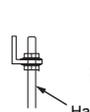
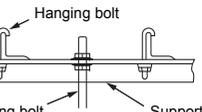
- Considering the indoor unit and the hanged-up piping / wiring work, determine the installation position and direction.
- After installation position of the indoor unit has been determined, open a hole on the wiring and place the hanging bolt.
- For opening size of the ceiling and the hanging bolt pitch, see the external view.
- When the ceiling has already boarded, draw the drain pipe, refrigerant pipe, inter-unit wire between indoor and outdoor units, central control system wire, and remote controller wire up to the position where pipes and wires are connected before hanging-up the indoor unit.

The hanging bolts and nuts will be locally procured.

Hanging bolt	M10 or W3/8	4 pieces
Nut	M10 or W3/8	12 pieces

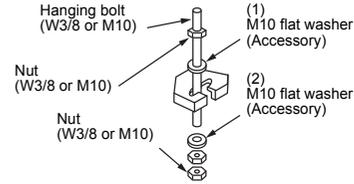
◆ Installation of hanging bolt

Use M10 hanging bolts (4 pcs, to be local procure). Matching to the existing structure, set pitch according to size in the unit external view as shown below.

New concrete slab	
Install the bolts with insert brackets or anchor bolts.	
	
(Blade type bracket)	(Slide type bracket)
	
(Pipe hanging anchor bolt)	(Anchor bolt)
Steel frame structure	
Use existing angles or install new support angles.	
	
(Hanging bolt)	(Support angle)
Existing concrete slab	
Use a hole-in anchors, hole-in plugs, or a hole-in bolts.	
	

■ Installation of indoor unit

- Attach the nuts (M10 or W3/8: Locally procured) and the attached washers (Ø34) to the hanging bolt.
- Put washers at up and down of T-groove of the hanging bracket of the indoor unit to hang down the indoor unit.
- Using a level gauge, check that four sides are horizontal. (Horizontal degree: Within 5 mm)



- Required those other than M10 flat washer at site.
- To prevent falling-off of bolt (safety), be sure to set it just under the hanging bracket as shown in the figure. (910 mm × 511 mm)

5 Drain piping

⚠ CAUTION

Following the Installation Manual, perform the drain piping work so that water is properly drained, and apply a heat insulation so as not to cause a dew drop. Inappropriate piping work may result in water leakage in the room and wet of furniture.

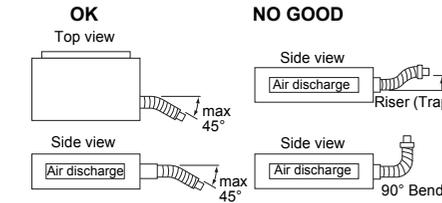
■ Pipe material / Insulator and size

The following materials for piping work and insulating process are locally procured.

Pipe material	Hard vinyl chloride pipe socket for VP25
	Hard vinyl chloride pipe VP25 (Nominal outer diameter Ø32 mm)
Insulator	Foamed polyethylene foam, thickness: 10 mm or more

■ Flexible hose

- Insert the soft socket of the attached flexible hose into the connecting port of the drain pipe until it strikes against the end.
- Align the attached hose band to the end of the pipe connecting port, and then tighten it surely.

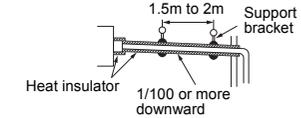


REQUIREMENT

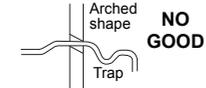
- Be sure to fix the soft socket with the attached hose band and set the tightening position at upper side.
- Use the attached flexible hose by bending it with 45° or less so that no breakage or clogging occurs.

REQUIREMENT

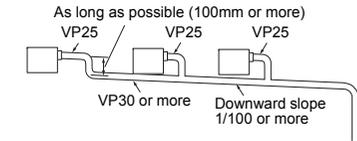
- Be sure to perform heat insulation of the drain pipes of the indoor unit.
- Never forget to perform heat insulation of the connecting part with the indoor unit. An incomplete heat insulation causes dew dropping.
- Set the drain pipe with downward slope (1/100 or more), and do not make swelling or trap on the piping. It may cause an abnormal sound.



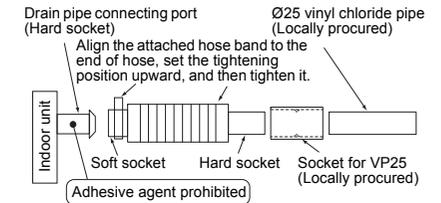
- For length of the traversing drain pipe, restrict to 20 m or less. In case of a long pipe, provide support brackets with interval of 1.5 to 2 m in order to prevent waving.



- Set the collective piping as shown in the below figure.



- The hard vinyl-chloride pipe cannot be directly connected to the drain pipe connecting port of the indoor unit. For connection with the drain pipe connecting port, be sure to fix the attached flexible hose.



- Adhesive agent cannot be used for the pipe connecting port (hard socket) of the indoor unit. Be sure to use the attached hose band for fixing, otherwise damage or water leakage of the drain pipe connecting port is caused.

■ Connecting drain pipe

- Connect the hard socket (Locally procured) to the hard socket side of the attached flexible hose which has been installed.
- Connect the drain pipes (Locally procured) successively to the connected the hard socket.

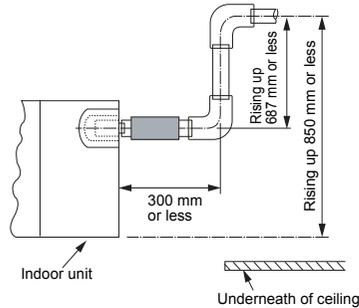
REQUIREMENT

- Using adhesive agent for vinyl chloride, connect the hard vinyl chloride pipes certainly so that water does not leak.
- It requires several times to dry and harden the adhesive agent. (Refer to Guide Manual of the adhesive agent.)
In this time, be sure not to apply force to the connecting section with the drain pipes.

■ Drain up

When a downward grading cannot be secured on the drain pipe, a drain-up work is possible.

- Set the height of the drain pipe within 850mm from the bottom surface of the indoor unit.
- Draw out the drain pipe within 300mm from the end of the drain pipe connecting port of the indoor unit, and then raise it vertically.
- After the drain pipe has been raised, set a grading so that it is immediately bent downward.



■ Check the draining

After drain piping work, check that water drain is properly performed and water does not leak from the connecting part of the pipes. In this time, check also there is no abnormal sound of the motor of the drain pump. Be sure to check draining when installed in the heating period.

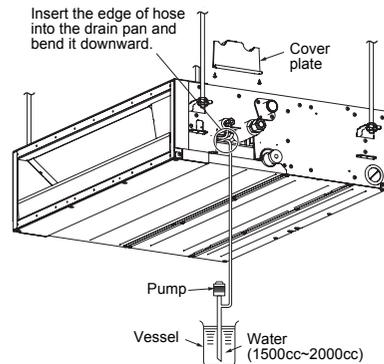
When the electric work has finished:

Pour water as shown in the following figure, check water is drained from the drain pipe connecting port in COOL mode, and then check there is no water leak from the drain pipes.

⚠ CAUTION

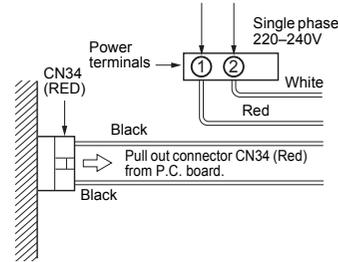
Pour water slowly.

If it is poured urgently, water is spread inside of the indoor unit resulted in a trouble.



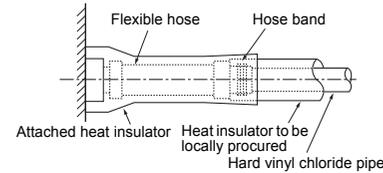
- If the electric work has not yet finished, pull out the float switch connector (CN34 : Red) from the electrical control box, and check draining by plugging the single phase 220 – 240 V power to the terminal blocks ① and ②. If doing so, the drain pump motor operates.
- Test water drain while checking the operation sound of the drain pump motor.
(If the operation sound changes from continuous sound to intermittent sound, water is normally drained.)

- After the check, the drain pump motor runs, connecting the float switch connector.
(In case of check by pulling out the float switch connector, be sure to return the connector to the original position.)



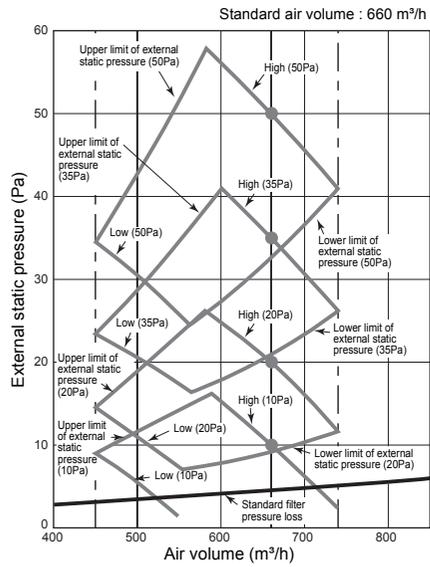
■ Heat insulating

- After drain check, using the attached heat insulator for drain connecting section, wrap the flexible hose without clearance from the end of the drain pipe connecting port of the indoor unit.
- Covering the attached heat insulator for drain connecting section, wrap the drain pipe with heat insulator (Locally procured) without clearance.

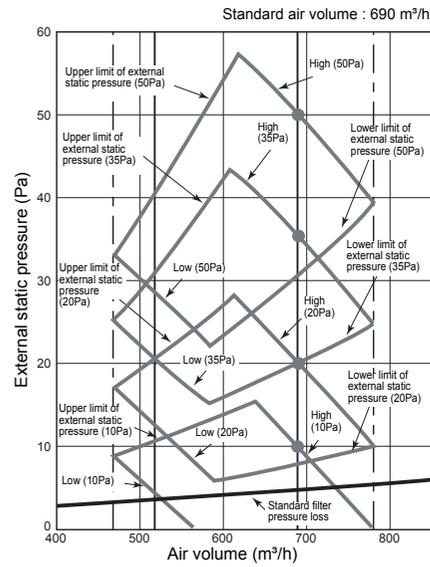


■ Fan characteristics

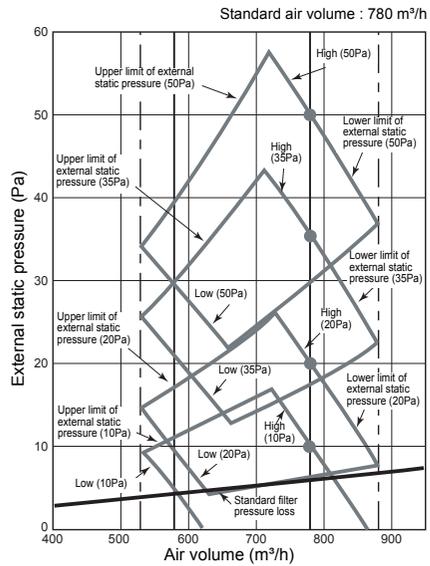
◆ SM30 type



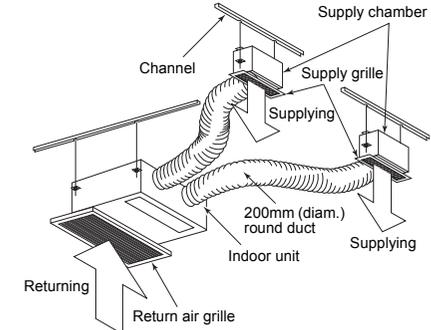
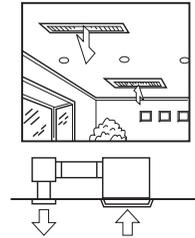
◆ SM40, 45 type



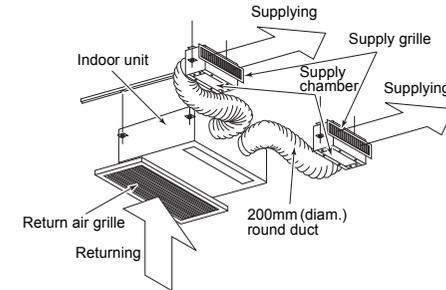
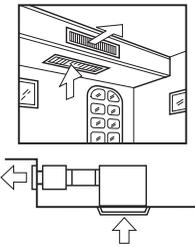
◆ SM56 type



◆ Concealed duct type



◆ Ledge ceiling concealed duct type



7 Refrigerant piping

■ Refrigerant piping

1 If the outdoor units are to be mounted on a wall, make sure that the supporting platform is sufficiently strong. The platform should be designed and manufactured to maintain its strength over a long period of time, and sufficient consideration should be given to ensuring that the outdoor unit will not fall.

2 Use copper pipe with 0.8 mm or more thickness.

3 Flare nut and flare works are also different from those of the conventional refrigerant. Take out the flare nut attached to the main unit of the air conditioner, and use it.

REQUIREMENT

When the refrigerant pipe is long, provide support brackets at intervals of 2.5 to 3m to clamp the refrigerant pipe. Otherwise, abnormal sound may be generated.

CAUTION

IMPORTANT 4 POINTS FOR PIPING WORK

1. Remove dust and moisture from the inside of the connecting pipes.
2. Tight connection (between pipes and unit)
3. Evacuate the air in the connecting pipes using VACUUM PUMP.
4. Check the gas leakage. (Connected points)

■ Pipe size

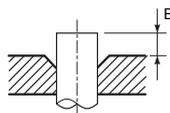
RAV-SM	Pipe size(mm)	
	Liquid side	Gas side
SM30	Ø6.4	Ø9.5
SM40, 45, 56	Ø6.4	Ø12.7

■ Permissible piping length and height difference

They vary according to the outdoor unit. For details, refer to the Installation Manual attached to the outdoor unit.

◆ Flaring

- Cut the pipe with a pipe cutter. Remove burrs completely. Remaining burrs may cause gas leakage.
- 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.



▼ Projection margin in flaring : B (Unit : mm)

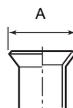
Rigid (Clutch type)

Outer dia. of copper pipe	R410A tool used	Conventional tool used
	R410A	R410A
6.4, 9.5	0 to 0.5	1.5 to 2.0
12.7		

▼ Flaring dia. 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

* 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.



Tightening connection

CAUTION

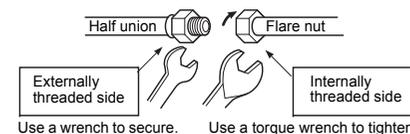
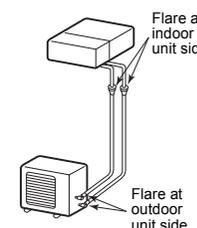
Do not apply excessive torque. Otherwise, the nut may crack depending on the conditions.

(Unit : N·m)

Outer dia. of copper pipe	Tightening torque
6.4 mm (dia.)	14 to 18 (1.4 to 1.8 kgf·m)
9.5 mm (dia.)	34 to 42 (3.4 to 4.2 kgf·m)
12.7 mm (dia.)	49 to 61 (4.9 to 6.1 kgf·m)

▼ Tightening torque of flare pipe connections

Pressure of R410A is higher than that of R22. (Approx. 1.6 times) Therefore, using a torque wrench, tighten the flare pipe connecting sections which connect the indoor and outdoor units of the specified tightening torque. Incorrect connections may cause not only a gas leak, but also of the refrigeration cycle. Align the centres of the connecting pipes and tighten the flare nut as far as possible with your fingers. Then tighten the nut with a spanner and torque wrench as shown in the figure.



REQUIREMENT

Tightening with an excessive torque may crack the nut depending on installation conditions. Tighten the nut within the specified tightening torque.

◆ Piping with outdoor unit

Shape of valve differs according to the outdoor unit. For details of installation, refer to the Installation Manual of the outdoor unit.

■ Air purge

Using a vacuum pump, perform vacuuming from the charge port of valve of the outdoor unit.

For details, follow to the Installation Manual attached to the outdoor unit.

- Never use the refrigerant sealed in the outdoor unit for air purge.

REQUIREMENT

For the tools such as charge hose, etc., use those manufactured exclusively for R410A.

◆ Refrigerant amount to be added

For addition of the refrigerant, add refrigerant "R410A" referring to the attached Installation Manual of outdoor unit. Be sure to use a scale to charge the refrigerant of specified amount.

REQUIREMENT

- Charging an excessive or too little amount of refrigerant causes of the compressor. Be sure to charge the refrigerant of specified amount.
- A personnel who charged the refrigerant should write down the pipe length and the added refrigerant amount in the nameplate attached to the service panel of the outdoor unit. It is necessary to troubleshoot the compressor and refrigeration cycle malfunction.

◆ Open the valve fully

Open the valve of the outdoor unit fully. A 4 mm-hexagonal wrench is required for opening the valve.

For details, refer to the Installation Manual attached to 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.).

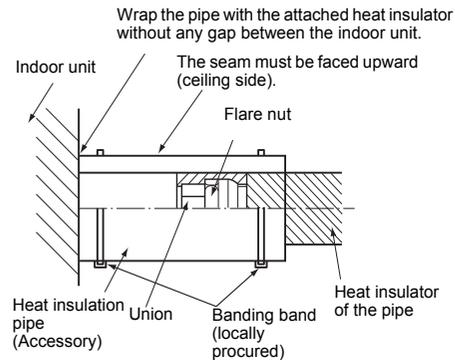
Heat insulation process

Apply heat insulation for the pipes separately at liquid side and gas side.

- For the heat insulation to the pipes at gas side, use the material with heat-resisting temperature 120 °C or higher.
- To use the attached heat insulation pipe, apply the heat insulation to the pipe connecting section of the indoor unit securely without gap.

REQUIREMENT

- Apply the heat insulation to the pipe connecting section of the indoor unit securely up to the root without exposure of the pipe. (The pipe exposed to the outside causes water leak.)
- Wrap heat insulator with its slits facing up (ceiling side).



8 Electrical connection

⚠ WARNING

1. **Using the specified wires, ensure to connect the wires, and fix wires securely so that the external tension to the wires do not affect the connecting part of the terminals.**
Incomplete connection or fixation may cause a fire, etc.
2. **Be sure to connect earth wire. (grounding work)**
Incomplete grounding cause an electric shock.
Do not connect ground wires to gas pipes, water pipes, lightning rods or ground wires for telephone wires.
3. **Appliance shall be installed in accordance with national wiring regulations.**
Capacity shortage of power circuit or incomplete installation may cause an electric shock or a fire.

⚠ CAUTION

- This indoor unit has no power cord.
- If incorrect/incomplete wiring is carried out, it will cause an electrical fire or smoke.
- Be sure to install an earth leakage breaker that is not tripped by shock waves.
If an earth leakage breaker is not installed, an electric shock may be caused.
- Be sure to use the cord clamps attached to the product.
- Do not damage or scratch the conductive core and inner insulator of power and interconnecting wires when peeling them.
- Use the power cord and Interconnecting wire of specified thickness, type, and protective devices required.

REQUIREMENT

- For power supply wiring, strictly conform to the Local Regulation in each country.
- For wiring of power supply of the outdoor units, follow the Installation Manual of each outdoor unit.
- Never connect 220 – 240 V power to the terminal blocks (Ⓐ, Ⓑ, etc.) for control wiring. (Otherwise, the system will fail.)
- Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe. The coating may melt resulting in an accident.
- After connecting wires to the terminal blocks, provide a trap and fix wires with the cord clamp.
- Run 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.

◆ Remote controller wiring

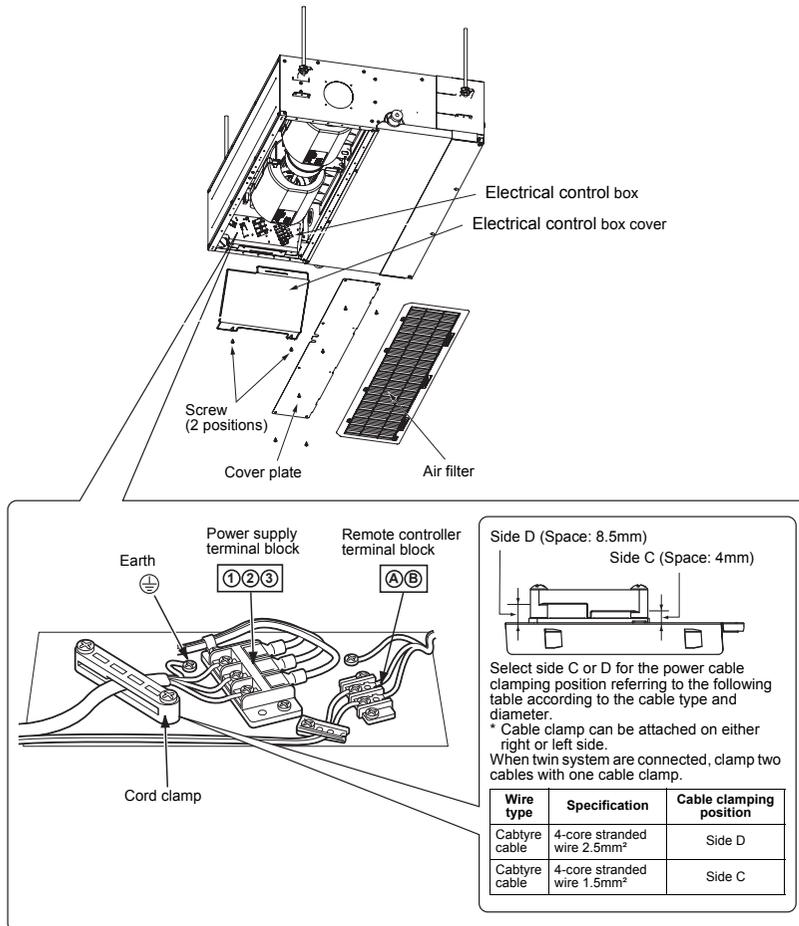
2-core non polarity wire is used for the remote controller wiring.

- 1 **Connect the connecting wire to the terminal as identified with their respective numbers on the terminal block of indoor and outdoor unit.**
H07 RN-F or 60245 IEC 66 (1.5 mm² or more)
- 2 **Insulate the unsheathed redundant cords (conductors) with electrical insulation tape.**
Process them so that they do not touch any electrical or metal parts.

■ Wire connection

REQUIREMENT

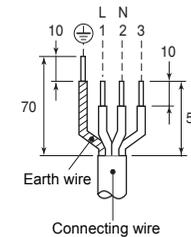
- Connect the wires matching the terminal numbers. Incorrect connection causes.
 - Pass the wires through the bushing of wiring connection port of the indoor unit.
 - Keep a margin (Approx. 100mm) on a wire to hang down the electrical control box at servicing, or other purpose.
 - The low-voltage circuit is provided for the remote controller. (Do not connect the high-voltage circuit)
-
- Before remove the electric parts cover, remove the cover plate and air filter.
 - Remove the cover of the electrical control box by taking off the mounting screws (2 positions) and pushing the hooking section. (The cover of the electrical control box remains hanged to the hinge.)
 - Tighten the screws of the terminal block, and fix the wires with cord clamp to the electrical control box. (Do not apply tension to the connecting section of the terminal block.)
 - Set a loop for the connecting wire of the storing part of the indoor unit electric parts; otherwise the electrical control box cannot be drawn out in service time.
 - Mount the cover of the electrical control box without pinching wires.



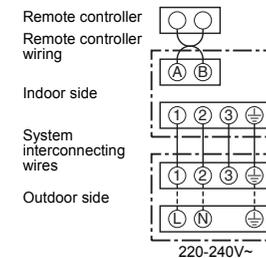
■ Wiring

- 1 Remove a screw and then remove cover of the electrical control box.
- 2 Strip wire ends (10 mm).
- 3 Match wire colours with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals.
- 4 Connect the ground wires to the corresponding terminals.
- 5 Fix the wire with cord clamp.
- 6 Fix cover of the parts box and the terminal block surely with the fixing screws.

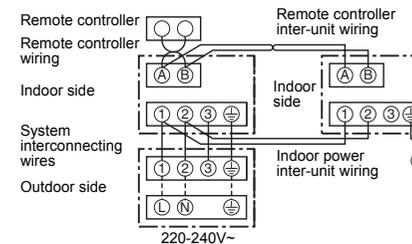
Make a loop on the wire for margin of the length so that the electrical control box can be taken out during servicing.



▼ Single system



▼ Synchronous twin system

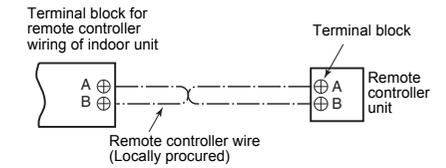


* For details of wiring/installation of the remote controller, refer to the Installation Manual enclosed to in the remote controller.

■ Remote Controller Wiring

- Strip off approx. 9 mm the wire to be connected.
- Non polarity, 2 core wire is used for wiring of the remote controller. (0.5 mm² to 2.0 mm² wires)

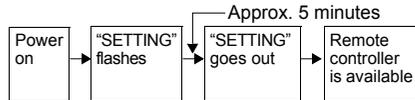
◆ Wiring diagram



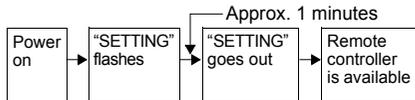
9 Applicable controls

REQUIREMENT

- When you use this air conditioner for the first time, it takes approx. 5 minutes until the remote controller becomes available after power-on. This is normal.
<When power is turned on for the first time after installation>
 It takes **approx. 5 minutes** until the remote controller becomes available.



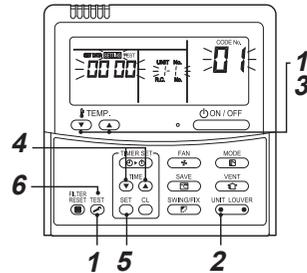
- <When power is turned on for the second (or later time)>**
 It takes **approx. 1 minute** until the remote controller becomes available.



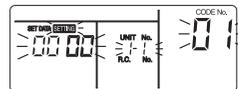
- Normal settings were made when the indoor unit was shipped from factory. Change the indoor unit settings as required.
- Use the wired remote controller to change the settings.
- * The settings cannot be changed using the wireless remote controller, sub remote controller, or remote-controllerless system (for central remote controller only). Therefore, install the wired remote controller to change the settings.

Basic procedure for changing settings

Change the settings while the air conditioner is not working. (Be sure to stop the air conditioner before making settings.)

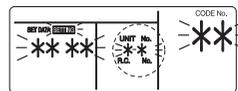


- Push **TEST** button and temp. setup **▼** button **simultaneously for at least 4 seconds or more**. After a while, the display flashes as shown in the figure. Confirm that the CODE No. is [01].
 - If the CODE No. is not [01], push **TEST** button to erase the display content, and repeat the procedure from the beginning. (No operation of the remote controller is accepted for a while after **TEST** button is pushed.)



(* Display content varies with the indoor unit model.)

- Each time you push **UNIT LOUVER** button, indoor unit numbers in the control group change cyclically. **Select the indoor unit you want to change settings for.**
 The fan of the selected unit runs. You can confirm the indoor unit for which you want to change settings.



- Using temp. setup **▼** / **▲** buttons, specify CODE No. [**].
- Using timer time **▼** / **▲** buttons, select SET DATA [****].

- Push **SET** button. When the display changes from flashing to lit, the setup is completed.
 - To change settings of another indoor unit, repeat from 2.
 - To change other settings of the selected indoor unit, repeat from 3. Use **SET** button to clear the settings. To make settings after **SET** button was pushed, repeat from 2.
- When settings have been completed, push **TEST** button to determine the settings. When **TEST** button is pushed, "SETTING" flashes and then the display content disappears and the air conditioner enters the normal stop mode. (While "SETTING" is flashing, no operation of the remote controller is accepted.)



External static pressure settings

Be sure to set up a tap change based upon the resistance (external static pressure) of the duct to be connected. To set up a tap change, follow to the basic operation procedure (1 → 2 → 3 → 4 → 5 → 6).

- Specify [5d] to the item code in 3.
- For the setup data of 4, select a setup data of the external static pressure to be set up from the following table.

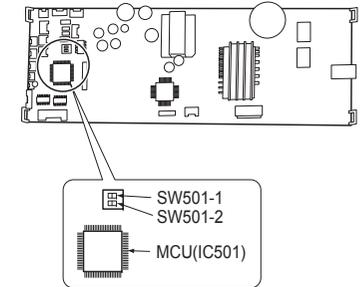
<Change on wired remote controller>

Setup data	External static pressure	
0000	10 Pa	Standard (Factory default)
0001	20 Pa	High static pressure 1
0003	35 Pa	High static pressure 2
0006	50 Pa	High static pressure 3

When wireless remote controller is used

Change the external static pressure setting with the DIP switch on the receiver section P.C. board. For details, refer to the manual of the wireless remote controller kit. The settings can also be changed with the switch on the indoor microcomputer P.C. board.

* However, once the setting is changed, setting to 0001 or 0006 is possible but setting to 0000 requires a setting data change to 0000 using the wired remote controller (separately sold) with the normal switch setting (factory default).



Setup data	SW501-1	SW501-2
0000 (Factory shipping)	OFF	OFF
0001	ON	OFF
0003	OFF	ON
0006	ON	ON

To restore the factory default

To return the DIP switch settings to the factory defaults, set SW501-1 and SW501-2 to OFF, connect a separately sold wired remote controller, and then set the data of CODE No. [5d] to "0000" in "External static pressure settings" on this page.

Filter sign setting

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 CODE No. in 3, specify [01].
- For the [Set data] in 4, select the setup data of filter sign lighting time from the following table.

Setup data	Filter sign lighting time
0000	None
0001	150H
0002	2500H factory default
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).

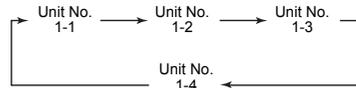
- For the CODE No. in Procedure 3, specify [06].
- For the set data in Procedure 4, select the setup data of shift value of detection temperature to be set up from the table below.

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

Power saving mode setting

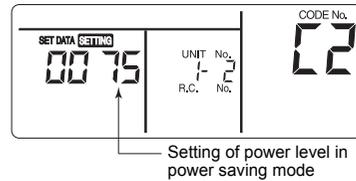
* When an outdoor unit RAV-SP***2AT / SM***3AT type or earlier is used, the power level is fixed to 75 % regardless of the value on the display.

- Push **SAVE** button for at least four seconds when the air conditioner is not working. **SETTING** flashes. Indicates CODE No. "C2."
- Select an indoor unit to be set by pushing **UNIT LOUVER** (left side of the button). Each time you push the button, unit numbers change as follows:



The fan of the selected unit runs.

- Adjust the power save setting by pushing **TIME** (▲) buttons. Each push of the button changes the power level by 1% within the range from 100 % to 50 %.
- * The factory default is 75 %.

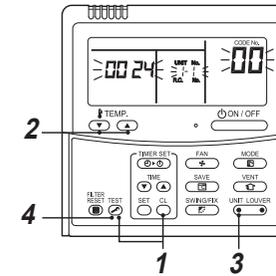


- Determine the setting by pushing **SET** button.
- Push **TEST** button to complete the setting.

Remote controller switch monitoring function

This function is available to call the service monitor mode from the remote controller during a test run to acquire temperatures of sensors of the remote controller, indoor unit, and outdoor unit.

- Push **CL** and **TEST** buttons simultaneously for at least 4 seconds to call the service monitor mode. The service monitor indicator lights up and the header indoor unit number is displayed first. CODE No. **00** is also displayed.
- Pushing **TEMP.** (▼) (▲) buttons, select the number of sensor, etc. (CODE No.) to be monitored. (See the following table.)
- Pushing **UNIT LOUVER** (left side of the button), select an indoor unit to be monitored. The sensor temperatures of indoor units and their outdoor unit in the control group are displayed.
- Push **TEST** button to return to the normal display.



Indoor unit data	
CODE No.	Data name
01	Room temperature (remote controller)
02	Indoor unit intake air temperature (TA)
03	Indoor unit heat exchanger (coil) temperature (TCJ)
04	Indoor unit heat exchanger (coil) temperature (TC)
F3	Indoor unit fan cumulative operating hours (x1 h)

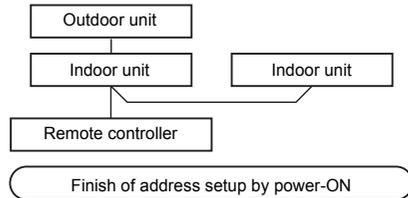
Outdoor unit data	
CODE No.	Data name
60	Outdoor unit heat exchanger (coil) temperature (TE)
61	Outside air temperature (TO)
62	Compressor discharge temperature (TD)
63	Compressor suction temperature (TS)
64	—
65	Heatsink temperature (THS)
6A	Operating current (x1/10)
F1	Compressor cumulative operating hours (x100h)

■ Group control

◆ Simultaneous twin system

A combination with an outdoor unit allows simultaneous ON/OFF operation of two indoor units for the twin system.

▼ Twin system



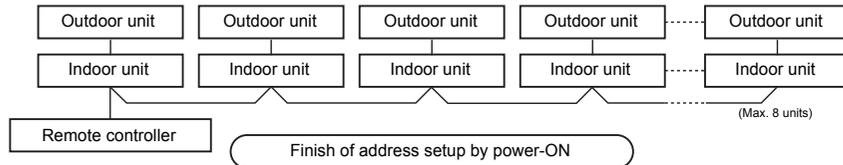
- For wiring procedure and wiring method, follow to the "Electric work" in this manual.
- When the power supply has been turned on, the automatic address setup starts and which indicates that address is being set up flashes on the display part.
During setup of automatic address, the remote controller operation is not accepted.

Required time up to the finish of automatic addressing is approx. 5 minutes.

◆ Group control for multiple units system

One remote controller can control maximum 8 indoor units as a group.

▼ Group control in single system



- For wiring procedure and wiring method of the individual line (Identical refrigerant line) system, follow to "Electric work".
- Wiring between lines is performed in the following procedure.
Connect the terminal block (A/B) of the indoor unit connected with a remote controller to the terminal blocks (A/B) of the indoor units of other indoor units by wiring the inter-unit wire of the remote controller.
- When the power supply has been turned on, the automatic address setup starts and which indicates that address is being set up flashes on the display part. During setup of automatic address, the remote controller operation is not accepted.

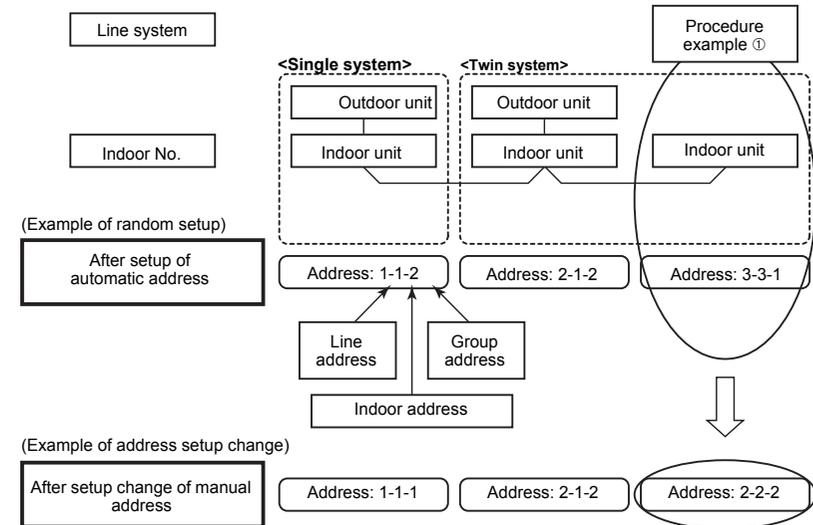
Required time up to the finish of automatic addressing is approx. 5 minutes.

NOTE

In some cases, it is necessary to change the address manually after setup of the automatic address according to the system configuration of the group control.

- The above mentioned system configuration is a case when complex systems in which systems of the multiple twin unit is controlled as a group by a remote controller.

◆ (Example) Group control for complex system

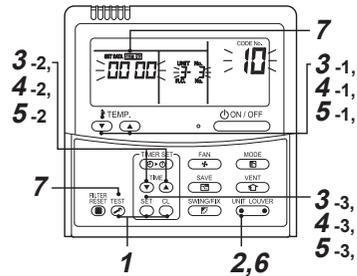


The above address is set by the automatic addressing when the power is turned on. However, line addresses and indoor addresses are set randomly. For this reason, change the setting to match line addresses with indoor addresses.

◆ Procedure example ①

Manual address setup procedure

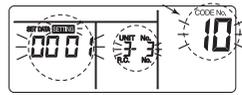
While the operation stops, change the setup.
(Be sure to stop the operation of the unit.)



Procedure 1

Push simultaneously **TEST** + **CL** + **TEST** buttons for 4 seconds or more. After a while, the display part flashes as shown below. Check the displayed CODE No. is [10].

- When the CODE No. is other than [10], push **TEST** button to erase the display and repeat procedure from the first step. (After pushing **TEST** button, operation of the remote controller is not accepted for approx. 1 minute.) (For a group control, No. of the firstly displayed indoor unit becomes the header unit.)



(* Display changes according to the model No. of indoor unit.)

Procedure 2

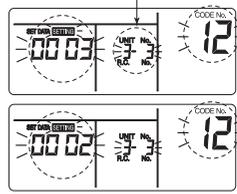
Every pushing **UNIT LOUVER** button, the indoor unit No. in the group control is displayed in order. Select the indoor unit of which setup is changed.

In this time, the position of the indoor unit of which setup is changed can be confirmed because fan of the selected indoor unit operate.

Procedure 3

- Using temp. setup **▼** / **▲** buttons, specify CODE No. [12]. (CODE No. [12]: Line address)
- Using timer time **▼** / **▲** buttons, change the line address from [3] to [2].
- Push **SET** button. In this time, the setup finishes when the display changes from flashing to lighting.

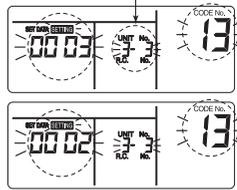
Indoor unit No. before setup change is displayed.



Procedure 4

- Using temp. setup **▼** / **▲** buttons, specify CODE No. [13]. (CODE No. [13]: Indoor address)
- Using timer time **▼** / **▲** buttons, change the indoor address from [3] to [2].
- Push **SET** button. In this time, the setup finishes when the display changes from flashing to lighting.

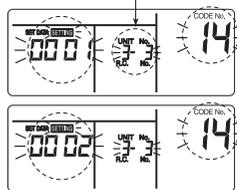
Indoor unit No. before setup change is displayed.



Procedure 5

- Using temp. setup **▼** / **▲** buttons, specify CODE No. [14]. (CODE No. [14]: Group address)
- Using timer time **▼** / **▲** buttons, change the setup data from [0001] to [0002]. (Setup data [Header unit: 0001] [Follower unit: 0002])
- Push **SET** button. In this time, the setup finishes when the display changes from flashing to lighting.

Indoor unit No. before setup change is displayed.



Procedure 6

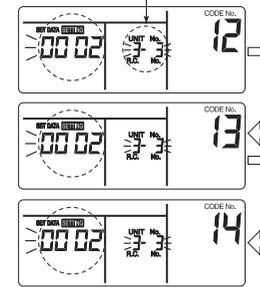
If there is other indoor unit to be changed, repeat procedure 2 to 5 to change the setup.

When the above setup has finished, push **UNIT LOUVER** to select the indoor unit No. before change of setup, specify CODE No. [12], [13], [14] in order with temp. setup **▼** / **▲** buttons, and then check the changed contents.

Address change check Before change: [3-3-1] → After change: [2-2-2]

Pushing **CL** button clears the contents of which setup was changed. (In this case, procedure from 2 is repeated.)

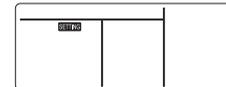
Indoor unit No. before setup change is displayed.



Procedure 7

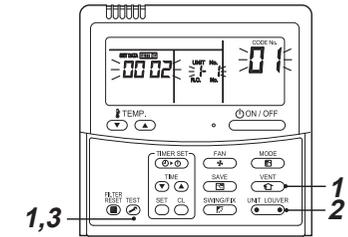
After check of the changed contents, push **TEST** button. (Setup is determined.) When pushing **TEST** button, the display disappears and the status becomes the usual stop status. (When pushing **TEST** button the operation from the remote controller is not accepted for approx. 1 minute.)

- If the operation from the remote controller is not accepted even 1 minute or more passed after pushing **TEST** button, it is considered that the address setup is incorrect. In this case, the automatic address must be again set up. Therefore repeat procedure of the setup change from the Procedure 1.



◆ To recognize the position of the corresponding indoor unit though the indoor unit No. is known

Check the position during operation stop.
(Be sure to stop operation of the set.)



Procedure 1

Push simultaneously **TEST** + **VENT** buttons for 4 seconds or more.

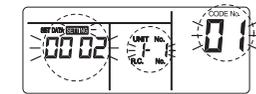
After a while, the display part flashes and the display appears as shown below.

In this time, the position can be checked because fan of the indoor unit operate.

- For the group control, the indoor unit No. is displayed as [ALL] and fans of all the indoor units in the group control operate.

Check the displayed CODE No. is [01].

- When the CODE No. is other than [01], push **TEST** button to erase the display and repeat procedure from the first step. (After pushing **TEST** button, operation of the remote controller is not accepted for approx. 1 minute.)



(* Display changes according to the model No. of indoor unit.)

Procedure 2

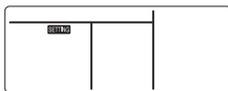
In the group control, every pushing **UNIT LOUVER** button, the indoor unit No. in the group control is displayed in order. In this time, the position of the indoor unit can be confirmed because only fan of the selected indoor unit operate. (For a group control, No. of the firstly displayed indoor unit becomes the header unit.)

Procedure 3

After confirmation, push **TEST** button to return the mode to the usual mode.

When pushing **TEST** button, the display disappears and the status becomes the usual stop status.

(When pushing **TEST** button the operation from the remote controller is not accepted for approx. 1 minute.)



■ 8 °C Operation setting (SDI series4 and DI series4 only)

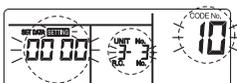
Preheating operation can be set for cold regions where room temperature drops to below zero.

Procedure 1

Push simultaneously **SET** + **CL** + **TEST** buttons for 4 seconds or more when the air conditioner is not working.

After a while, the display part flashes as shown below. Check the Displayed CODE No. is [10].

- When the CODE No. is other than [10], push **TEST** button to erase the display and repeat procedure from the first step. (After pushing **TEST** button, operation of the remote controller is not accepted for approx. 1 minute.)



(* Display changes according to the model No. of indoor unit.)

Procedure 2

Every pushing **UNIT LOUVER** button, the indoor unit No. in the group control is displayed in order. Select the indoor unit of which setup is changed. In this time, the position of the indoor unit of which setup is changed can be confirmed because fan of the selected indoor unit operate.

Procedure 3

Using temp. setup **TEMP.** / **TEMP.** buttons, specify CODE No. [d1].

Procedure 4

Using timer time **TIME** / **TIME** buttons, select SET DATA [0001].

Setup data	8°C Operation setting
0000	None (Factory Shipping)
0001	8°C Operation setting

Procedure 5

Push **TEST** button.

In this time, the setup finishes when the display changes from flashing to lighting.

Procedure 6

Push **TEST** button. (Setup is determined.)

When pushing **TEST** button, the display disappears and the status

Becomes the usual stop status. (When pushing **TEST** button the operation from the remote controller is not accepted for approx. 1 minute.)

- This function is not available for SM56 that has 2-series outdoor unit.

10 Test run

■ Before test run

- Before turning on the power supply, carry out the following procedure.

1. Using 500 V-megger, check that resistance of 1 MΩ or more exists between the terminal block 1 to 3 and the earth (grounding).

If resistance of less than 1 MΩ is detected, do not run the unit.

2. Check the valve of the outdoor unit being opened fully.

- To protect the compressor at activation time, leave power-ON for 12 hours or more before operating.

■ How to execute a test run

Using the remote controller, operate the unit as usual. For the procedure of the operation, refer to the attached Owner's Manual.

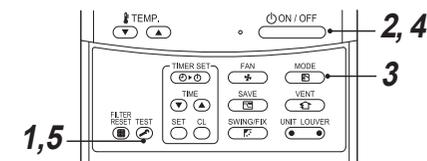
A forced test run can be executed in the following procedure even if the operation stops by thermo.-OFF.

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

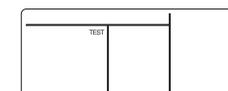
⚠ CAUTION

Do not use the forced test run for cases other than the test run because it applies an excessive load to the devices.

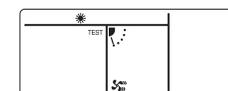
◆ Wired remote controller



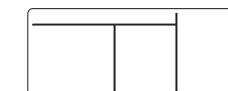
- Keep **TEST** button pushed for 4 seconds or more. [TEST] is displayed on the display part and the selection of mode in the test mode is permitted.



- Push **ON/OFF** button.
- Using **MODE** 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 run.
 - The detection of error is performed as usual.



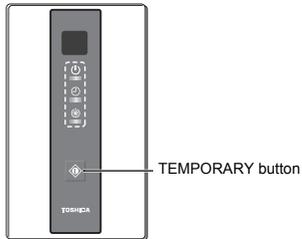
- After the test run, push **ON/OFF** button to stop a test run. (Display part is same as 1.)
- Push **TEST** check button to cancel (release from) the test run mode. ([TEST] disappears on the display and the status returns to a normal.)



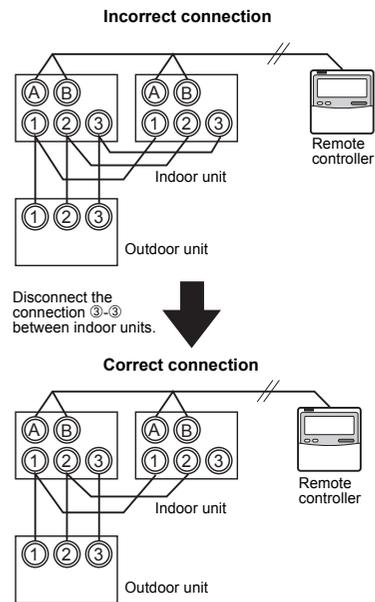
◆ Wireless remote controller

(TCB-AX32E2)

- When TEMPORARY button is pushed 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 forcibly.
Check cool air starts blowing. If the operation does not start, check wiring again.
- To stop a test operation, push TEMPORARY button once again (Approx. 1 second).
 - Check wiring / piping of the indoor and outdoor units in forced cooling operation.

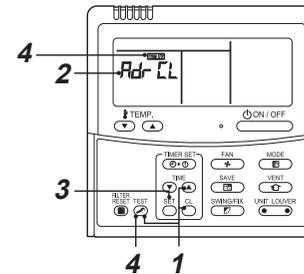


◆ Measures Reconnect cables correctly between indoor units



◆ Set the address again

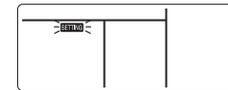
- Push **TEST**, **CL**, and **TIME** buttons simultaneously for at least 4 seconds.



- "Ad-CL" flashes on the display as shown in the following figure.



- Push **SET** button. "Ad-CL" changes from flashing to lighting.
- Push **TEST** button. "Ad-CL" disappears and "SETTING" flashes. (It takes 5 minutes.)



- When "SETTING" disappears, re-setting is completed and the air conditioner enter the normal operation standby mode.

11 Maintenance

For maintenance, be sure to turn off the main power switch.

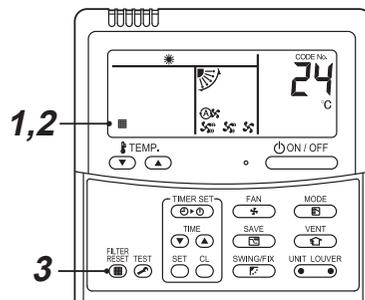
CAUTION

Do not handle the buttons with wet hands; otherwise an electric shock may be caused.

<Daily maintenance>

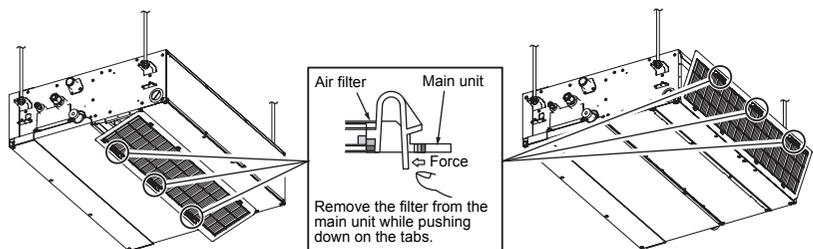
Cleaning of air filter

- 1 If  is displayed on the remote controller, contact to service on maintenance professional to cleaning the air filter.
- 2 Clogging of the air filter decreases cooling/heating efficiency.
- 3 After cleaning, push .  display disappears.

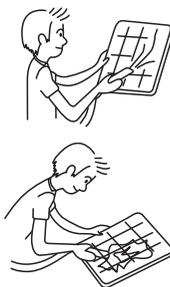


<Air filter cleaning method>

- 1 **Take out the air filter.**
Push the tabs (Forward direction as shown in the figure) of the air filter, and then pull out it to take out the air filter.



- 2 **Cleaning with water or vacuum cleaner**
 - If dirt is heavy, clean the air filter by tepid water with neutral detergent or water.
 - After cleaning with water, dry the air filter sufficiently in a shade place.
- 3 **Mount the air filter.**
Attach the filter to the main unit while pushing the tabs (Forward direction as shown in the figure).
- 4 **Push** .  display disappears.



NOTE

When connecting a return air ducting to the unit, the cleaning method of the air filter differs according to the construction of duct end. Please ask the constructor for construction of air duct.

CAUTION

- Do not start the air conditioner while leaving air filter removed.
- Push the filter reset button. ( indication will be turn off.)

▼ Periodic Maintenance

For environmental conservation, it is strongly recommended that the indoor and outdoor units of the air conditioner in use be cleaned and maintained regularly to ensure efficient operation of the air conditioner. When the air conditioner is operated for a long time, periodic maintenance (once a year) is recommended. Furthermore, regularly check the outdoor unit for rust and scratches, and remove them or apply rustproof treatment, if necessary. As a general rule, when an indoor unit is operated for 8 hours or more daily, clean the indoor unit and outdoor unit at least once every 3 months. Ask a professional for this cleaning / maintenance work. Such maintenance can extend the life of the product though it involves the owner's expense. Failure to clean the indoor and outdoor units regularly will result in poor performance, freezing, water leakage, and even compressor failure.

Inspection before maintenance

Following inspection must be carried out by a qualified installer or qualified service person.

Parts	Inspection method
Heat exchanger	Access from inspection opening and remove the access panel. Examine the heat exchanger if there is any clogging or damages.
Fan motor	Access from inspection opening and check if any abnormal noise can be heard.
Fan	Access from inspection opening and remove the access panel. Examine the fan if there are any waggles, damages or adhesive dust.
Filter	Go to installed location and check if there are any stains or breaks on the filter.
Drain pan	Access from inspection opening and remove the access panel. Check if there is any clogging or drain water is polluted.

▼ Maintenance List

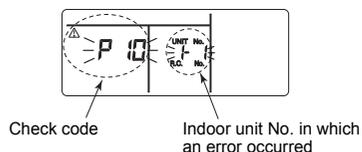
Part	Unit	Check (visual / auditory)	Maintenance
Heat exchanger	Indoor / outdoor	Dust / dirt clogging, scratches	Wash the heat exchanger when it is clogged.
Fan motor	Indoor / outdoor	Sound	Take appropriate measures when abnormal sound is generated.
Filter	Indoor	Dust / dirt, breakage	<ul style="list-style-type: none"> • Wash the filter with water when it is contaminated. • Replace it when it is damaged.
Fan	Indoor	<ul style="list-style-type: none"> • Vibration, balance • Dust / dirt, appearance 	<ul style="list-style-type: none"> • Replace the fan when vibration or balance is terrible. • Brush or wash the fan when it is contaminated.
Air intake / discharge grilles	Indoor / outdoor	Dust / dirt, scratches	Fix or replace them when they are deformed or damaged.
Drain pan	Indoor	Dust / dirt clogging, drain contamination	Clean the drain pan and check the downward slope for smooth drainage.
Ornamental panel, louvres	Indoor	Dust / dirt, scratches	Wash them when they are contaminated or apply repair coating.
Exterior	Outdoor	<ul style="list-style-type: none"> • Rust, peeling of insulator • Peeling / lift of coat 	Apply repair coating.

12 Troubleshooting

Confirmation and check

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

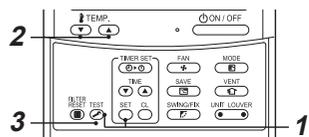
The check code is only displayed during the operation. If the display disappears, operate the air conditioner according to the following "Confirmation of error log" for confirmation.



Confirmation of error log

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

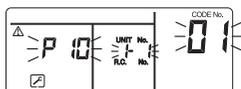
The log can be confirmed from both operating status and stop status.



1 When pushing **SET** and **TEST** buttons at the same time for 4 seconds or more, the following display appears.

If [Service check] is displayed, the mode enters in the error log mode.

- [01 : Order of error log] is displayed in CODE No..
- [Check code] is displayed in CHECK.
- [Indoor unit address in which an error occurred] is displayed in Unit No.



2 Every pushing of **TEMP.** button used to set temperature, the error log stored in memory is displayed in order. The numbers in CODE No. indicate CODE No. [01] (latest) → [04] (oldest).

REQUIREMENT

Do not push **CL** button because all the error log of the indoor unit will be deleted.

Procedure 3

After confirmation, push **TEST** button to return to the usual display.

Check codes and parts to be checked

Wired remote controller display	Wireless remote controller Sensor block display of receiving unit			Main defective parts	Judging device	Parts to be checked / error description	Air conditioner status
	Indication	Operation GR	TimerReady GR				
E01	⊙ ● ●			No header remote controller Remote controller communication error	Remote controller	Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers). No signal can be received from the indoor unit.	*
E02	⊙ ● ●			Remote controller transmission error	Remote controller	System interconnecting wires, indoor P.C. board, remote controller --- No signal can be sent to the indoor unit.	*
E03	⊙ ● ●			Indoor unit-remote controller regular communication error	Indoor	Remote controller, network adapter, indoor P.C. board -- - No data is received from the remote controller or network adapter.	Auto-reset
E04	● ● ⊙			Indoor unit-outdoor unit serial communication error IPDU-CDB communication error	Indoor	System interconnecting wires, indoor P.C. board, outdoor P.C. board --- Serial communication error between indoor unit and outdoor unit	Auto-reset
E08	⊙ ● ●			Duplicated indoor addresses ★	Indoor	Indoor address setting error --- The same address as the self-address was detected.	Auto-reset
E09	⊙ ● ●			Duplicated header remote controllers	Remote controller	Remote controller address setting error --- Two remote controllers are set as header in the double-remote controller control. (* The header indoor unit stops raising alarm and follower indoor units continue to operate.)	*
E10	⊙ ● ●			CPU-CPU communication error	Indoor	Indoor P.C. board --- Communication error between main MCU and motor microcomputer MCU	Auto-reset
E18	⊙ ● ●			Header indoor unit-follower unit regular communication error	Indoor	Indoor P.C. board --- Regular communication is not possible between header and follower indoor units or between twin header (main) and follower (sub) units.	Auto-reset
E31	● ● ⊙			IPDU communication error	Outdoor	Communication error between IPDU and CDB	Entire stop
F01	⊙ ⊙ ●		ALT	Indoor unit heat exchanger sensor (TCJ) error	Indoor	Heat exchanger sensor (TCJ), indoor P.C. board --- Open-circuit or short-circuit of the heat exchanger sensor (TCJ) was detected.	Auto-reset
F02	⊙ ⊙ ●		ALT	Indoor unit heat exchanger sensor (TC) error	Indoor	Heat exchanger sensor (TC), indoor P.C. board --- Open-circuit or short-circuit of the heat exchanger sensor (TC) was detected.	Auto-reset
F04	⊙ ⊙ ○		ALT	Outdoor unit discharge temp. sensor (TD) error	Outdoor	Outdoor temp. sensor (TD), outdoor P.C. board --- Open-circuit or short-circuit of the discharge temp. sensor was detected.	Entire stop
F06	⊙ ⊙ ○		ALT	Outdoor unit temp. sensor (TE/TS) error	Outdoor	Outdoor temp. sensors (TE/TS), outdoor P.C. board --- Open-circuit or short-circuit of the heat exchanger temp. sensor was detected.	Entire stop
F07	⊙ ⊙ ○		ALT	TL sensor error	Outdoor	TL sensor may be displaced, disconnected or short-circuited.	Entire stop
F08	⊙ ⊙ ○		ALT	Outdoor unit outside air temp. sensor error	Outdoor	Outdoor temp. sensor (TO), outdoor P.C. board --- Open-circuit or short-circuit of the outdoor air temp. sensor was detected.	Operation continued
F10	⊙ ⊙ ●		ALT	Indoor unit room temp. sensor (TA) error	Indoor	Room temp. sensor (TA), indoor P.C. board --- Open-circuit or short-circuit of the room temp. sensor (TA) was detected.	Auto-reset
F12	⊙ ⊙ ○		ALT	TS (1) sensor error	Outdoor	TS (1) sensor may be displaced, disconnected or short-circuited.	Entire stop
F13	⊙ ⊙ ○		ALT	Heat sink sensor error	Outdoor	Abnormal temperature was detected by the temp. sensor of the IGBT heat sink.	Entire stop
F15	⊙ ⊙ ○		ALT	Temp. sensor connection error	Outdoor	Temp. sensor (TE/TS) may be connected incorrectly.	Entire stop
F29	⊙ ⊙ ●		SIM	Indoor unit, other P.C. board error	Indoor	Indoor P.C. board --- EEPROM error	Auto-reset

Wired remote controller display	Wireless remote controller Sensor block display of receiving unit			Main defective parts	Judging device	Parts to be checked / error description	Air conditioner status
	Indication	Operation GR	TimerReady GR				
F31	⊙	⊙	○	SIM	Outdoor	Outdoor P.C. board ---- In the case of EEPROM error.	Entire stop
H01	●	⊙	●		Outdoor	Current detect circuit, power voltage --- Minimum frequency was reached in the current releasing control or short-circuit current (Idc) after direct excitation was detected	Entire stop
H02	●	⊙	●		Outdoor	Compressor circuit --- Compressor lock was detected.	Entire stop
H03	●	⊙	●		Outdoor	Current detect circuit, outdoor unit P.C. board --- Abnormal current was detected in AC-CT or a phase loss was detected.	Entire stop
H04	●	⊙	●		Outdoor	Case thermostat operation (1)	Entire stop
H06	●	⊙	●		Outdoor	Current, high-pressure switch circuit, outdoor P.C. board --- Ps pressure sensor error was detected or low-pressure protective operation was activated.	Entire stop
L03	⊙	●	⊙	SIM	Indoor	Duplicated header indoor units ★	Entire stop
L07	⊙	●	⊙	SIM	Indoor	Group line in individual indoor unit ★	Entire stop
L08	⊙	●	⊙	SIM	Indoor	Indoor group address not set ★	Entire stop
L09	⊙	●	⊙	SIM	Indoor	Indoor power level not set	Entire stop
L10	⊙	○	⊙	SIM	Outdoor	Outdoor unit P.C. board jumper wire (for service) setting error	Entire stop
L20	⊙	○	⊙	SIM	Network adapter central control	Address setting, central control remote controller, network adapter --- Duplication of address in central control communication	Auto-reset
L29	⊙	○	⊙	SIM	Outdoor	Other outdoor unit error	Entire stop
						1) Communication error between IPDU MCU and CDB MCU 2) Abnormal temperature was detected by the heat sink temp. sensor in IGBT.	Entire stop
L30	⊙	○	⊙	SIM	Indoor	Abnormal external input into indoor unit (interlock)	Entire stop
L31	⊙	○	⊙	SIM	Outdoor	Power supply phase sequence, outdoor unit P.C. board -- Abnormal phase sequence of the 3-phase power supply	Operation continued (thermostat OFF)
P01	●	⊙	⊙	ALT	Indoor	Indoor fan motor, indoor P.C. board --- Indoor AC fan error (fan motor thermal relay activated) was detected.	Entire stop
P03	⊙	●	⊙	ALT	Outdoor	An error was detected in the discharge temp. releasing control.	Entire stop
P04	⊙	●	⊙	ALT	Outdoor	High-pressure switch --- The IOL was activated or an error was detected in the high-pressure releasing control using the TE.	Entire stop
P05	⊙	●	⊙	ALT	Outdoor	The power cable may be connected incorrectly. Check open phase and voltages of the power supply.	Entire stop
P07	⊙	●	⊙	ALT	Outdoor	Abnormal temperature was detected by the temp. sensor of the IGBT heat sink.	Entire stop
P10	●	⊙	⊙	ALT	Indoor	Drain pipe, clogging of drainage, float switch circuit, indoor P.C. board --- Drainage is out of order or the float switch was activated.	Entire stop
P15	⊙	●	⊙	ALT	Outdoor	There may be gas leakage from the pipe or connecting part. Check for gas leakage.	Entire stop
P19	⊙	●	⊙	ALT	Outdoor (Indoor)	4-way valve, indoor temp. sensors (TC/TCJ) --- An error was detected due to temperature drop of the indoor unit heat exchanger sensor when heating.	Auto-reset (Auto-reset)

Wired remote controller display	Wireless remote controller Sensor block display of receiving unit			Main defective parts	Judging device	Parts to be checked / error description	Air conditioner status
	Indication	Operation GR	TimerReady GR				
P20	⊙	●	⊙	ALT	Outdoor	High-pressure protective operation	Entire stop
P22	⊙	●	⊙	ALT	Outdoor	Outdoor unit fan error	Outdoor unit fan motor, outdoor unit P.C. board --- An error (overcurrent, locking, etc.) was detected in the outdoor unit fan drive circuit.
P26	⊙	●	⊙	ALT	Outdoor	Outdoor unit inverter Idc activated	IGBT, outdoor unit P.C. board, inverter wiring, compressor --- Short-circuit protection for compressor drive circuit devices (G-Tr/IGBT) was activated.
P29	⊙	●	⊙	ALT	Outdoor	Outdoor unit position error	Outdoor unit P.C. board, high-pressure switch --- Compressor motor position error was detected.
P31	⊙	●	⊙	ALT	Indoor	Other indoor unit error	Another indoor unit in the group is raising an alarm.
						E03/L07/L03/L08 alarm check locations and error description	Auto-reset

○ : Lighting ⊙ : Flashing ● : OFF ★ : The air conditioner automatically enters the auto-address setting mode.
 ALT: When two LEDs are flashing, they flash alternately. SIM: When two LEDs are flashing, they flash in synchronization.
 Receiving unit display OR: Orange GR: Green

TOSHIBA CARRIER CORPORATION

336 TADEHARA, FUJI-SHI, SHIZUOKA-KEN 416-8521 JAPAN

EH99885801-1