

TOSHIBA

AIR CONDITIONER (SPLIT TYPE) Installation Manual

R32 or R410A

For commercial use

Indoor Unit

Model name:

Floor Standing Type

RAV-RM561FT-EN

RAV-RM801FT-EN

RAV-RM1101FT-EN

RAV-RM1401FT-EN

RAV-RM1601FT-EN

RAV-RM561FT-ES

RAV-RM801FT-ES

RAV-RM1101FT-ES

RAV-RM1401FT-ES

RAV-RM1601FT-ES



For details of setting up remote controller built in this unit, refer to the separate Owner's Manual and Installation Manual of remote controller. This Installation Manual describes only major items.

Original instruction

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 R32 or R410A REFRIGERANT

This Air Conditioner has adopted a refrigerant HFC (R32 or R410A) which does not destroy the ozone layer. Be sure to check the refrigerant type for outdoor unit to be combined, and then install it.

Product information of ecodesign requirements. (Regulation (EU) 2016/2281)
<http://ecodesign.toshiba-airconditioning.eu/en>

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Thank you for purchasing this Toshiba air conditioner. Please read carefully through these instructions including important information which complies with the "Machinery Directive" (Directive 2006/42/EC), and ensure that you understand them. After reading these instructions, be sure to keep them in a safe place together with the Owner's Manual and Installation Manual supplied with your product.

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 table below.

| 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.

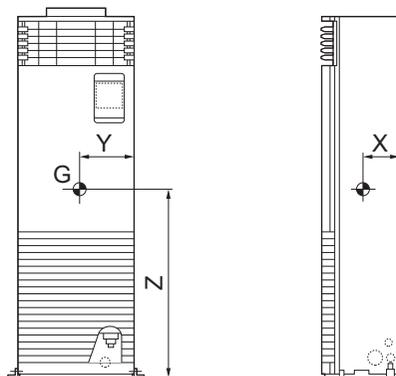
In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.

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 | Clothing to provide protection from electric shock Insulating shoes Gloves 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 toecap |
| Repair of outdoor unit | Gloves to provide protection from electric shock |

Center of gravity

| Model name | X (mm) | Y (mm) | Z (mm) |
|--------------------|--------|--------|--------|
| RAV-RM561FT-EN/ES | 85 | 285 | 820 |
| RAV-RM801FT-EN/ES | | | |
| RAV-RM1101FT-EN/ES | 195 | 290 | 860 |
| RAV-RM1401FT-EN/ES | | | |
| RAV-RM1601FT-EN/ES | | | |



Warning indications on the air conditioner unit

These safety cautions describe important matters concerning safety to prevent injury to users or other people and damages to property. Please read through this manual after understanding the contents below (meanings of indications), and be sure to follow the description.

| Indication | Meaning of Indication |
|----------------|---|
| WARNING | Text set off in this manner indicates that failure to adhere to the directions in the warning could result in serious bodily harm (*1) or loss of life if the product is handled improperly. |
| CAUTION | Text set off in this manner indicates that failure to adhere to the directions in the caution could result in slight injury (*2) or damage (*3) to property if the product is handled improperly. |

*1: Serious bodily harm indicates loss of eyesight, injury, burns, electric shock, bone fracture, poisoning, and other injuries which leave aftereffect and require hospitalization or long-term treatment as an outpatient.

*2: Slight injury indicates injury, burns, electric shock, and other injuries which do not require hospitalization or long-term treatment as an outpatient.

*3: Damage to property indicates damage extending to buildings, household effects, domestic livestock, and pets.

| | | |
|--|----------------------------------|--|
| | WARNING (Risk of fire) | This mark is for R32 refrigerant only. Refrigerant type is written on nameplate of outdoor unit. In case that refrigerant type is R32, this unit uses a flammable refrigerant. If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire. |
| | | Read the OWNER'S MANUAL carefully before operation. |
| | | Service personnel are required to carefully read the OWNER'S MANUAL and INSTALLATION MANUAL before operation. |
| | | Further information is available in the OWNER'S MANUAL, INSTALLATION MANUAL, and the like. |

| 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 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> |

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.

- 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.
- This unit is equipped with a refrigerant leak detection sensor for safety, to be effective, the unit must be electrically powered at all times after installation, other than when servicing. Turning off the circuit breaker cause refrigerant leak detection sensor not to operate and not to enable to detect refrigerant leaks, causing a fire.
- Do not use the refrigerant other than R32 or R410A. For the refrigerant type, check the outdoor unit to be combined.
- 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 four or more people.
- Servicing shall be performed only as recommended by the manufacturer. 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.
- This appliance is intended to be used by expert or trained users in shops, in light industry, or for commercial use by lay persons.

About the refrigerant R32

- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn refrigerant cycle parts.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Be aware that refrigerants may not contain an odor.
- Pipe-work shall be protected from physical damage.
- Compliance with national gas regulations shall be observed.
- If refrigerant leak detection sensor detects R32 refrigerant leak, a fan on indoor unit automatically operates to stir an air in the room. Stirring air flow volume of each model is as shown below.

| Model name | Stirring air flow (m ³ /h) |
|---------------|---------------------------------------|
| RAV-RM561FT* | 820 |
| RAV-RM801FT* | 930 |
| RAV-RM1101FT* | 1,660 |
| RAV-RM1401FT* | 1,760 |
| RAV-RM1601FT* | 1,760 |

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 toecap.
- 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.
- 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.
- When an outdoor unit using R32 refrigerant is combined with indoor unit, be attention to the floor area in the room to be installed. The unit cannot be installed in the room with floor area less than minimum floor area described in Appendix of this Installation Manual.

Installation

- 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 be generated, which may catch a fire.
- Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.
- The installation of pipe work shall be kept to a minimum.

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 an 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, which may catch a fire.
- 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 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 earthing 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.
- When installing the circuit breaker outdoors, install one which is designed to be used outdoors.
- Under no circumstances, the power supply wire or the indoor and outdoor connecting wire must not be connected in the middle (Connection using a solderless terminal etc.)
Connection trouble in the places where the wire is connected in the middle 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.
- Check that wiring will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

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 check code 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 VMΩ) 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.
- 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.

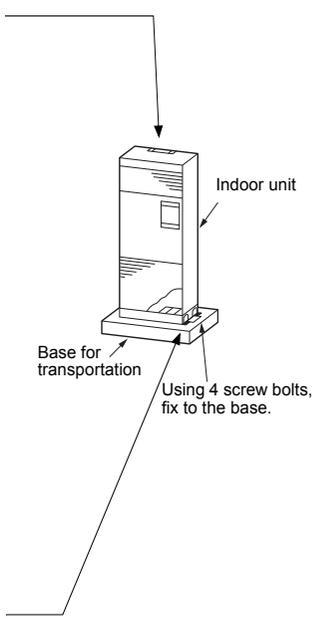
(*1) Refer to the "Definition of qualified installer or qualified service person".

CAUTION

This Air Conditioner has adopted a refrigerant HFC (R32 or R410A) which does not destroy the ozone layer.

- As the R32 or R410A refrigerant is easily affected by impurities such as moisture, oxidized film, oil, etc., due to the high pressure, be careful not to allow the moisture, dirt, existing refrigerant, refrigerating machine oil, etc., to get mixed up in the refrigeration cycle during the installation work.
 - A special tool for the R32 or R410A refrigerant is required for installation.
 - Use a new and clean piping materials for the connecting pipe so that moisture and dirt are not mixed together during the installation work.
 - When using existing pipes, follow the installation manual enclosed with the outdoor unit.
 - Be careful of fan operation when the circuit breaker is turned on. If the refrigerant leak detection sensor detects the refrigerant leak, a fan automatically rotates even while an air conditioner stops. Be careful not to be injured by the fan.
-

2 Accessory parts

| Attached position | Part name | Q'ty | Shape | Stored position |
|-------------------------|--|---|--|--|
| Upper part of main unit | Bracket for fixing to wall | 1 |  |  |
| Accessory bag | Owner's Manual | 1 | — | |
| | Installation Manual | 1 | — | |
| | Owner's Manual of remote controller | 1 | — | |
| | Installation Manual of remote controller | 1 | — | |
| | CD-R | 2 | — | |
| | Heat insulator | 2 |  | |
| | Screw bolt | 2 |  | |
| | Binding band | 4 |  | |
| Rubber bush | 1 |  | | |
| Lower part of main unit | Bracket for fixing to floor | 2 | RM56, RM80 type  | |
| | | 4 | RM110 to RM160 type  | |

3 Selection of installation place

⚠ WARNING

- **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.

⚠ CAUTION

- **Do not install in a location where flammable gas may leak.**
If the gas leaks and accumulates around the unit, it may ignite and cause a fire.
- **Do not install an air conditioner in a place where smoke, chemical agent, or organic solvent is present. Do not use gas equipment using combustion gas (LPG etc.) such as propane, butane, or methane, an insecticide, or sprays or paints containing siloxane, near the indoor unit.**
The refrigerant leak detection sensor operates mistakenly, causing the air conditioner not to operate.
- **When an outdoor unit using R32 refrigerant is combined with indoor unit, be attention to the floor area in the room to be installed.**
The unit cannot be installed in the room with floor space less than minimum floor area described in Appendix of this Installation Manual.

Avoid installing in the following places.

Select a location for the indoor unit where the cool or warm air will circulate evenly.

Avoid installation in the following kinds of locations.

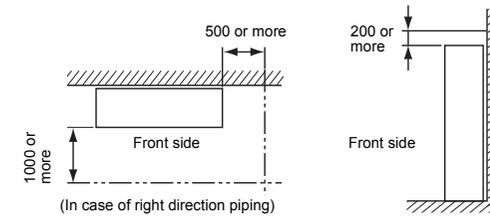
- Saline area (coastal area).
- Locations with acidic or alkaline atmospheres (such as areas with hot springs, factories where chemicals or pharmaceuticals are made and places where the exhaust air from combustion appliances will be sucked into the unit).
Doing so may cause the heat exchanger (its aluminum fins and copper pipes) and other parts to become corroded.
- Locations with atmospheres with mist of cutting oil or other types of machine oil.
Doing so may cause the heat exchanger to become corroded, mists caused by the blockage of the heat exchanger to be generated, the plastic parts to be damaged, the heat insulators to peel off, and other such problems to result.
- 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.
- Locations where vapors from food oils are formed (such as kitchens where food oils are used).
Blocked filters may cause the air conditioner's performance to deteriorate, condensation to form, the plastic parts to be damaged, and other such problems to result.
- Locations near obstructions such as ventilation openings or lighting fixtures where the flow of the blown air will be disrupted (a disruption of the air flow may cause the air conditioner's performance to deteriorate or the unit to shut down).
- Locations where an in-house power generator is used for the power supply.
The power line frequency and voltage may fluctuate, and the air conditioner may not work properly as a result.
- On truck cranes, ships or other moving conveyances.
- The air conditioner must not be used for special applications (such as for storing food, plants, precision instruments or art works).
(The quality of the items stored may be degraded.)
- Locations where high frequencies are generated (by inverter equipment, in-house power generators, medical equipment or communication equipment).
(Malfunctioning or control trouble in the air conditioner or noise may adversely affect the equipment's operation.)
- Locations where there is anything under the unit installed that would be compromised by wetness.
(If the drain has become blocked or when the humidity is over 80%, condensation from the indoor unit will drip, possibly causing damage to anything underneath.)

- In the case of the wireless type of system, rooms with the inverter type of fluorescent lighting or locations exposed to direct sunlight.
(The signals from the wireless remote controller may not be sensed.)
- Locations where organic solvents are being used.
- The air conditioner cannot be used for liquefied carbonic acid cooling or in chemical plants.
- Location near doors or windows where the air conditioner may come into contact with high-temperature, high-humidity outdoor air.
(Condensation may occur as a result.)
- Locations where special sprays are used frequently.

■ Installation space

(Unit: mm)

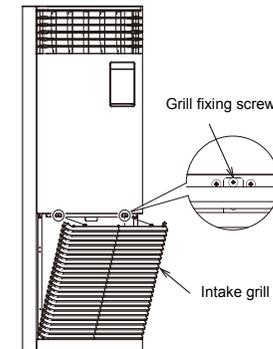
Reserve sufficient space required for installation or service work.



REQUIREMENT

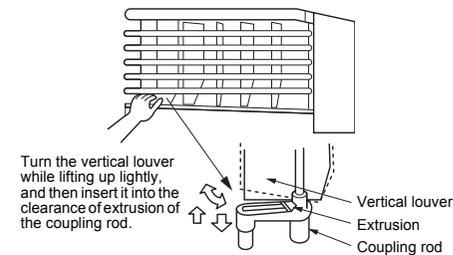
When using the air conditioner under condition of high humidity, attach the heat insulator to the side face and the rear side of the indoor unit.

■ To open the intake grille



The intake grille is fixed by the screws for safety reasons. Use a screwdriver to unfasten the screws of the intake grille (two places) to open the intake grille. The screws are designed to stay on the intake grille.

Direction of vertical louver



The direction of the auto turn louver (Vertical louver) may change during transportation. As shown below, lift up the vertical louver lightly, turn it matching with the direction of the plastic coupling rod, insert it into clearance of the extrusion, and then arrange the direction of the vertical louver to the desired direction.

4 Installation

⚠ WARNING

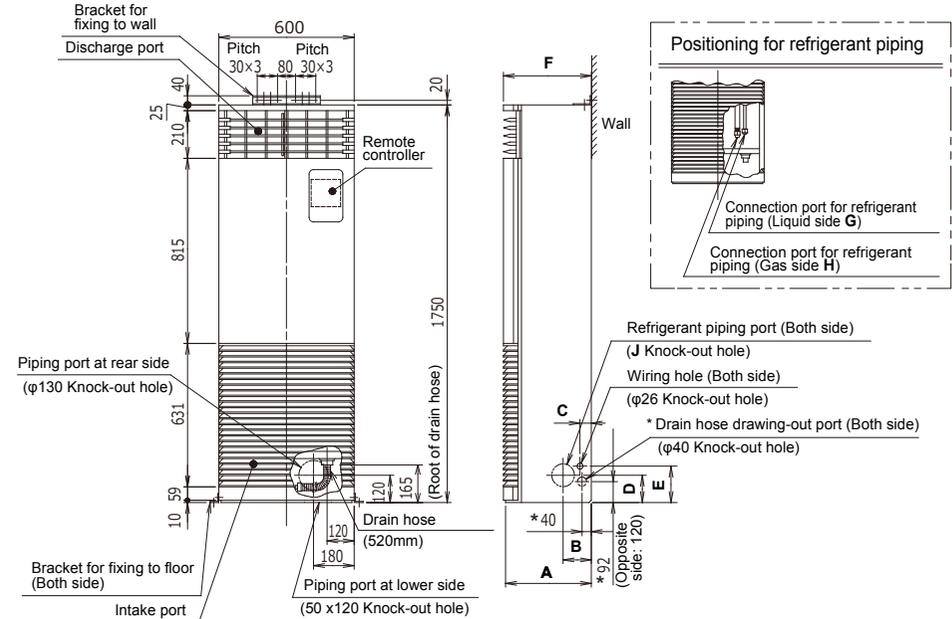
- Install the air conditioner securely in a location where the base can sustain the weight adequately. If the strength is not enough, the unit may fall down resulting in injury.
- Carry out the specified installation work to guard against the possibility of high winds and earthquake. If the air conditioner is not installed appropriately, a unit may topple over or fall down, causing an accident.
- If the unit is installed in a small room, observe applied floor area for the unit and take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult dealer where you purchased the product to install the unit in a small room. Accumulation of highly concentrated refrigerant may cause a fire or oxygen deficiency accident.
- For simultaneous twin, triple, or double twin system, indoor unit must be installed in the same room. If an indoor unit is installed in the small room, an applied floor area for the unit may not be observed.

⚠ CAUTION

- 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 or let a person get on it. (Even units are packaged)
 - Carry in the indoor unit as it is packaged if possible. If carrying in the indoor unit unpacked by necessity, use buffering cloth or other material not to damage the unit.
 - Carry the package by four or more persons, and do not bundle it with plastic band at positions other than specified.
 - Be sure to take measures to prevent falling at the wall surface and the floor and fix it surely considering prevention of accident of falling because this unit is formed into a thin type. If it is not fixed, a falling accident may occur.
 - After carrying in the indoor unit to the specified place, fix it to the wall and the floor immediately for safety.

External views

(Unit: mm)



* Drain hose drawing-out port (Both side) is for only RM110 model to RM160.
To connect drain hose on right or left, route it through the knock-out for refrigerant piping on RM56 to RM80 model.

| Model RAV- | A | B | C | D | E | F | G | H | J |
|----------------|-----|-----|-----|-----|-----|-----|-------|--------|-------|
| RM56 | 200 | 50 | 107 | 132 | 157 | 210 | φ 6.4 | φ 12.7 | φ 80 |
| RM80 | | | | | | | φ 9.5 | φ 15.9 | |
| RM110 to RM160 | 380 | 125 | 50 | 120 | 160 | 390 | | | φ 100 |

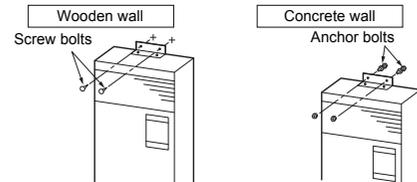
■ Installation of indoor unit

REQUIREMENT

In case of installing the indoor unit to the floor and the wall other than wooden floor and wall, the six anchor bolts (M8 × L50 or longer) are required. Procure them at the local site.

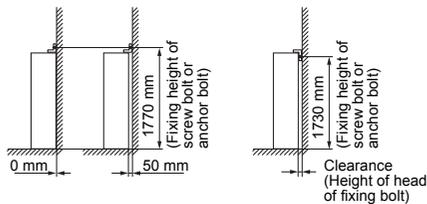
Fixing to the wall surface

Use the attached wall fixing bracket by inverting it at upper side of the unit. Fix the indoor unit to the wall surface using the attached screw bolts, anchor bolts or etc. at two positions. Many holes for fixing the indoor unit to wall surface and for fixing the indoor unit itself are provided on the bracket. Sliding the bracket right and left sides, select a position which can securely fix the indoor unit and then fix it.



A hole on the wall fixing bracket for the indoor unit is a long hole. Therefore the indoor unit can be fixed at any position keeping clearance from 0 to 50 mm.

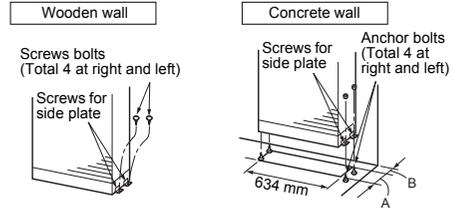
As shown below, it is also possible to fix the indoor unit without inverting the bracket. (In this case, keep clearance with length of head of the bolt between the indoor unit and the wall.)



Fixing to the floor

Use the attached floor fixing bracket to fix the lower right and left sides of the indoor unit to the floor.

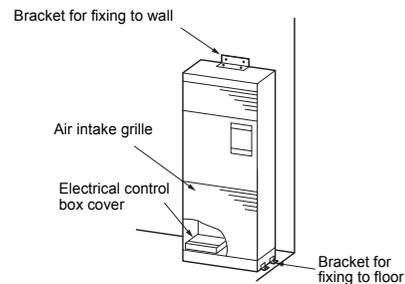
To fix to the indoor unit, use the side plate screws and use the screw bolts or anchor bolts for fixing to the floor respectively, and then fix the indoor unit at total four positions, two positions for right and left each.



(Unit: mm)

| Model | A | B |
|---------------------|-----|----------|
| RM56 to RM80 type | 88 | 30 to 80 |
| RM110 to RM160 type | 258 | 40 to 90 |

Indoor unit fixing figure

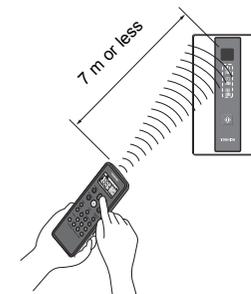


■ Wireless remote controller (Sold separately)

For this indoor unit, a remote controller is built into the unit. To use wireless remote controller, set the remote controller to the Sub remote controller.

The signal receiving unit with wireless remote controller can receive a signal by distance within approx. 7 m. Based upon it, determine a place where the remote controller is operated and the installation place.

- Keep 1 m or more from the devices such as television, stereo. (Disturbance of image or noise may be generated.)
- To prevent a malfunction, select a place where the remote controller is not influenced by a fluorescent light or direct sunlight.
- To individually operate two indoor units installed in the same room, switch setting of signal receiving unit and the wireless remote controller.



5 Drain piping

⚠ CAUTION

- Following the Installation Manual, perform the drain piping work so that water is properly drained. Apply a heat insulation so as not to cause a dew condensation. Inappropriate piping work may result in water leakage in the room and wet furniture.
- After opening the knockout hole, deburr the edge.
Touching burrs adhered to opening of the knockout hole may cause an injury.
- Following the Installation Manual, perform the drain hose work. Inappropriate drain hose work may result in generation of slime in the drain hose and water leakage in the room.

NOTE

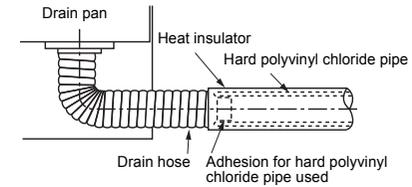
- The drain pipe and drain hose must be sloping downward (at an angle of 1/100 or more), and do not run the pipe up and down (arched shape) or allow it to form traps.
- Be sure to connect the drain hose and drain pipe at the outside of unit and fix them.
- If clearance occurs between piping/wiring and drain hose in opening the knockout hole, apply putty to the clearance.
- Restrict the length of the traversing drain pipe to 20 meters or less. For long pipe, provide support brackets at intervals of 1.5 to 2 meters to prevent flapping. Do not provide any air vents. Otherwise, the drain water will spout, causing water to leak.
- For collective piping, the pipes must be equivalent to VP30 and sloping downward at an angle of 1/100 or more. Provide the indoor drain piping and the refrigerant piping with proper heat insulation. (Foamed polyethylene foam, thickness : 6 mm or more)
- After piping work has been completed, remove the air intake grille and pour water in the drain pan to check water drain and that there is no water leakage from connecting part of the drain hose.
- After check of the water drain, attach the air intake grille as before.
- If the pipe passes through a fire retarding division, apply incombustible material (putty) to the clearance at penetration part.

■ Pipe material, size and heat insulator

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

| | |
|----------------|---|
| Pipe material | Hard vinyl chloride pipe (PVC pipe) VP20 (Internal diameter : 20 mm, external diameter : 26 mm) |
| Heat insulator | Foamed polyethylene foam, thickness: 6 mm or more |

■ Connecting drain pipe



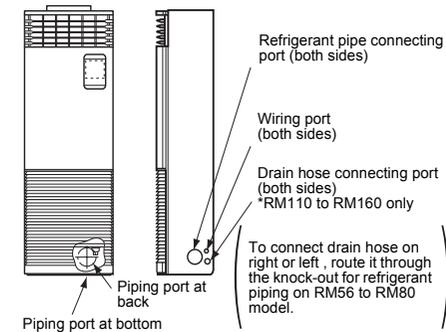
REQUIREMENT

- Using adhesive agent for vinyl chloride, connect the hard vinyl chloride pipes certainly so that water does not leak.
- It requires several hours 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.

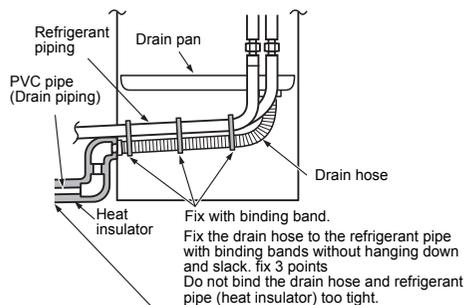
Piping method

Drain and refrigerant pipes can be drew out from left, right, back or bottom depending on the installation location. However, drain pipes can be drew out from left only when the refrigerant pipes are drew out from left. The drain hose must be fix to the refrigerant pipe with binding band and installed with gradient of 1/100 or more. The drain hose end connected to the indoor unit must be free from external force.

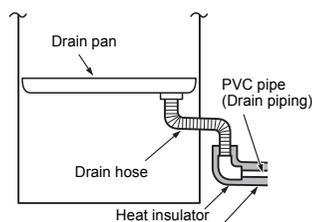
- Do not route the drain hose and refrigerant pipes over the electrical control box. Condensed water from the pipes may enter the electrical control box and cause malfunction. Exclude RM56 to RM80 models.
- On the RM56 to RM80 models, the drain hose and refrigerant pipes coming out of the electrical control box must be 5 mm apart. If the clearance is less than 5 mm, it will be hard to remove the drip-proof cover and the electrical control box cannot be taken out.



• To connect drain hose on left



• To connect drain hose on right



*Connect and fix drain pipe at outside of the unit on site.
 (Install the drain hose with gradient of 1/100 or more to connect it to unit on both left and right sides.)

■ Check the draining

- After piping work has been completed, remove the air intake grille and pour water in the drain pan to check water drain and that there is no water leakage from connecting part of the drain hose.
- After check of the water drain, attach the air intake grille as before.

6 Refrigerant piping

⚠ CAUTION

- Use flare nuts that are included with the unit. Using different flare nuts may cause refrigerant gas leakage.
- After refrigerant piping has been connected, do not turn on the power until gas leakage check is finished. If refrigerant gas leaks, refrigerant leak detection sensor operates and a fan automatically rotates, causing air conditioner not to operate.

■ Refrigerant piping

Use the following item for the refrigerant piping.
Material: Seamless phosphorous deoxidized copper pipe.
 Ø6.35, Ø9.52, Ø12.7 Wall thickness 0.8 mm or more
 Ø15.88 Wall thickness 1.0 mm or more

REQUIREMENT

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

⚠ CAUTION

IMPORTANT 4 POINTS FOR PIPING WORK

1. Reusable mechanical connectors and flared joints are not allowed indoors. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be refabricated.
2. Tight connection (between pipes and unit)
3. Evacuate the air in the connecting pipes by using VACUUM PUMP.
4. Check the gas leakage. (Connected points)

■ Pipe size

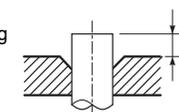
| Model name | RAV- | RM56 type | RM80, RM110 to RM160 type |
|------------|-------------|-----------|---------------------------|
| Pipe size | Gas side | 12.7 mm | 15.9 mm |
| | Liquid side | 6.4 mm | 9.5 mm |

■ 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 R32 or R410A differ from those of refrigerant R22, the flare tools newly manufactured for R32 or 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 | R32 or R410A tool used | Conventional tool used |
|---------------------------|------------------------|------------------------|
| 6.4, 9.5 | 0 - 0.5 | 1.0 - 1.5 |
| 12.7, 15.9 | | |

▼ Flaring dia. meter size: A (Unit: mm)

| Outer dia. of copper pipe | A ⁺⁰ _{-0.4} |
|---------------------------|---------------------------------|
| 6.4 | 9.1 |
| 9.5 | 13.2 |
| 12.7 | 16.6 |
| 15.9 | 19.7 |



⚠ CAUTION

- Do not scratch the inner surface of the flared part when removing burrs.
- Flare processing under the condition of scratches on the inner surface of flare processing part will cause refrigerant gas leak.
- Check that the flared part is not scratched, deformed, stepped, or flattened, and that there are no chips adhered or other problems, after flare processing.
- Do not apply refrigerating machine oil to the flare surface.

■ Tightening connection

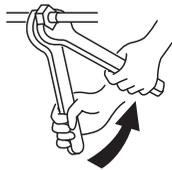
⚠ CAUTION

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

▼ Tightening torque of flare pipe connections

Incorrect connections may cause not only a gas leak, but also a trouble of the refrigeration cycle.

Align the centers of the connecting pipes and tighten the flare nut with your fingers. Then tighten the nut with a spanner and torque wrench as shown in the figure.



Work using two spanners

REQUIREMENT

Tighten the nut within the specified tightening torque.

Unit: N·m

| Outer dia. of copper pipe | Tightening torque |
|---------------------------|-------------------|
| 6.4 mm | 14 - 18 |
| 9.5 mm | 34 - 42 |
| 12.7 mm | 49 - 61 |
| 15.9 mm | 68 - 82 |

■ Evacuation

Perform vacuuming from the charge port of valve of the outdoor unit by using a vacuum pump.

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

- Do not use the refrigerant sealed in the outdoor unit for evacuation.

REQUIREMENT

For the tools such as charge hose, use those manufactured exclusively for R32 or R410A.

■ Refrigerant amount to be added

For addition of the refrigerant, add refrigerant "R32 or R410A" referring to the attached Installation Manual of outdoor unit.

Use a scale to charge the refrigerant of specified amount.

REQUIREMENT

- Charging an excessive or too little amount of refrigerant causes a trouble of the compressor. 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 F-GAS label of the outdoor unit. It is necessary to fix the compressor and refrigeration cycle malfunction.

■ Open the valve fully

⚠ CAUTION

A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts.

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 (R32, R410A, R134a).

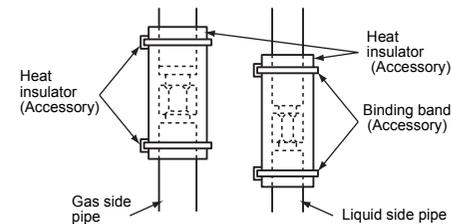
■ Heat insulation process

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.)
- Insulate the refrigerant pipe in the indoor unit securely up to the point shown in the following figure.



7 Electrical connection

⚠ WARNING

- **Use the specified wires for indoor and outdoor connecting wires. Securely fix them to prevent external forces applied to the terminals from affecting the terminals.**
Incomplete connection or fixation may cause a fire or other trouble.
- **Connect earth wire. (grounding work)**
Incomplete earthing cause an electric shock.
Do not connect earth wires to gas pipes, water pipes, lightning conductor or telephone earth wires.
- **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.
- **Under no circumstances, the power supply wire or the indoor and outdoor connecting wire must not be connected in the middle (Connection using a solderless terminal etc.).**
Connection trouble in the places where the wire is connected in the middle may give rise to smoking and/or a fire.

⚠ CAUTION

- For power supply specifications, follow the Installation Manual of outdoor unit.
- Do not connect 220 – 240 V power to the terminal blocks (Ⓐ, Ⓑ) for control wiring.
Otherwise, the system will fail.
- Do not damage or scratch the conductive core and inner insulator of power and system interconnection wires during peeling them.
- 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.
- Be careful of fan operation when the circuit breaker is turned on. If the refrigerant leak detection sensor detects the refrigerant leak, a fan automatically rotates even while an air conditioner stops. Be careful not to be injured by the fan.
- Do not turn on the power of the indoor unit until vacuuming of the refrigerant pipes completes.

■ Wiring connection

Indoor / Outdoor connecting wires specifications

Indoor unit power supplied from outdoor unit

- The outdoor unit power supply patterns vary on models.

| | | |
|------------------------------------|---|------------|
| Indoor unit power supply | 1~50 Hz 220 - 240 V | |
| Indoor / Outdoor connecting wires* | 4 × 1.5 mm ² or more (H07 RN-F or 60245 IEC 66)* | Up to 70 m |

*Number of wire × wire size

*Including earth line

Remote controller wiring

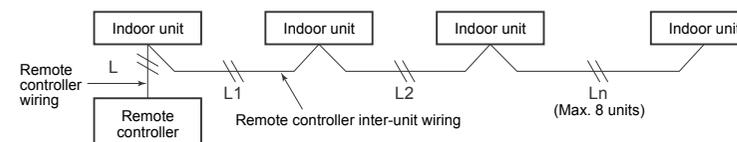
For this indoor unit, a remote controller (RBC-AMS55E*) is built into the unit.

"L" (length of remote controller wiring) is 2.5 m.

| | | |
|--|--|-------------|
| Remote controller wiring, remote controller inter-unit wiring | Wire size: 2 × 0.5 to 2.0 mm ² | |
| Total wire length of remote controller wiring and remote controller inter-unit wiring = L + L1 + L2 + ... Ln | In case of wired type only | Up to 500 m |
| | Two Remote controllers | Up to 300 m |
| | Two Remote controllers with wireless remote controller | Up to 400 m |
| Total wire length of remote controller inter-unit wiring = L1 + L2 + ... Ln | Up to 200 m | |

⚠ CAUTION

- The remote controller wire and Indoor / Outdoor connecting wires cannot be parallel to contact each other and cannot be stored in the same conduits. If doing so, a trouble may be caused on the control system due to noise or other factor.
- For Floor standing type, remote controller is built in. When the units are used as simultaneous operation system, up to two remote controllers of Master and Sub remote controller can be connected. When there are three remote controllers or more in the system, remove connector connecting to the terminal block (A/B) in the Indoor unit for remote controller other than Master or Sub remote controller. Set the Master and Sub of remote controller according to the separate Installation Manual for remote controller.



■ Connecting two remote controllers

Adding RBC-AMS55E* (Sold separately)

According to Installation Manual attached to remote controller, set one of two remote controllers to the Sub remote controller.

Adding remote controller other than RBC-AMS55E* (Sold separately)

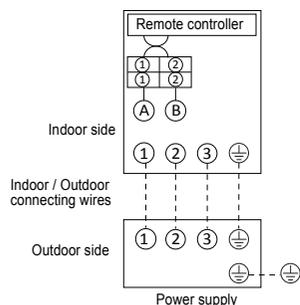
According to Installation Manual attached to remote controller (Sold separately), set the remote controller to the Sub remote controller. (Keep the built-in remote controller as Master remote controller.)

■ Wiring between indoor unit and outdoor unit

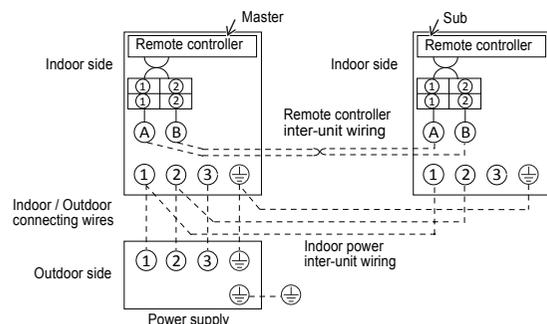
- Figure below shows the wiring connections between the indoor and outdoor units and between the indoor units and remote controller. The wires indicated by the broken lines are provided at the locally.
- Refer to the both indoor and outdoor unit wiring diagrams.
- For details, refer to the Installation Manual for outdoor unit to be connected.

Wiring diagram (Example)

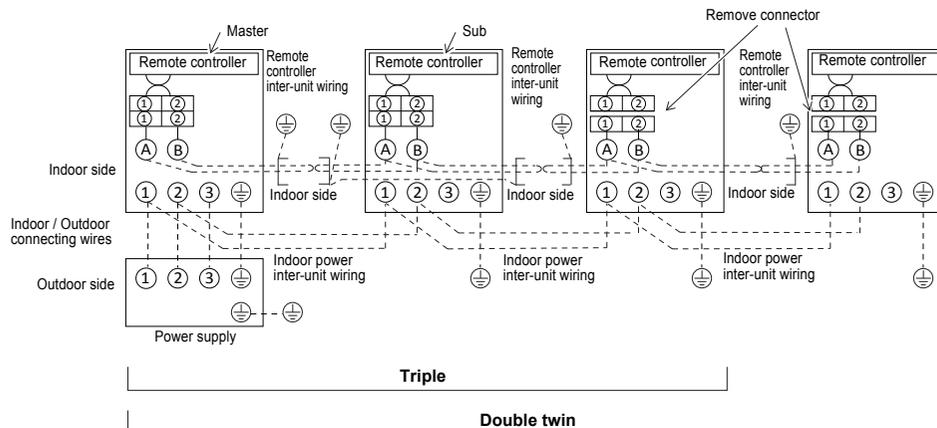
Single operation



Simultaneous twin operation



Simultaneous triple and double twin operation



- * Use 2-core shield wire (MVVS 0.5 to 2.0 mm² or more) for the remote controller wiring in the simultaneous triple and simultaneous double twin systems to prevent noise problems. Connect both ends of the shield wire to earth leads.
- * Connect earth wires for each indoor unit in the simultaneous triple and simultaneous double twin systems.

NOTE

- For the simultaneous twin, simultaneous triple and simultaneous double twin connection, attach the crimp terminal to end of the connecting wire.
- Do not connect wire (Ⓢ - Ⓢ) between header unit and follower unit for simultaneous operation (twin, triple, or double twin). Wiring by mistake cause indoor units not to operate simultaneously and a check code "E18" appears.

■ Wire connection

REQUIREMENT

- Connect the wires matching the terminal numbers. Incorrect connection causes a trouble.
- Pass the wires through the bushing of wiring holes of the indoor unit.
- The low-voltage circuit is provided for the remote controller. (Do not connect the high-voltage circuit)

<How to remove the electrical control box cover>

• RM56, RM80 models

Take off screws (1) and (2) at this side of the electrical control box and remove the drip-proof cover.

Take off screws (3) and (4) at front side of the electrical control box and remove the electrical control box cover.

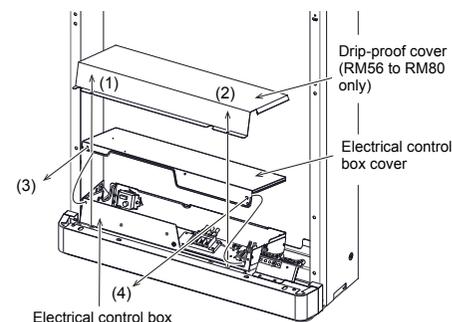
• RM110 to RM160 models

Take off screws (3) and (4) at front side of the electrical control box and remove the cover of the electrical control box.

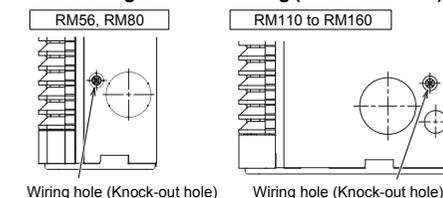
(The drip-proof cover is provided to RM56 to RM80 models only.)

<Wiring>

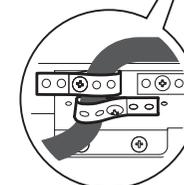
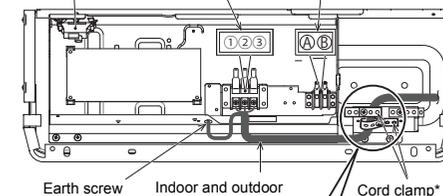
- Draw the wire into the wiring hole (knockout hole).
- Attach a supplied rubber bush to the wiring hole (knockout hole).
- Be sure to fix the connecting wires using two cord clamps as shown in the figure. Do not apply tension on the connecting part of the terminal block.
- Be sure to mount cover of the electrical control box and the drip-proof cover.



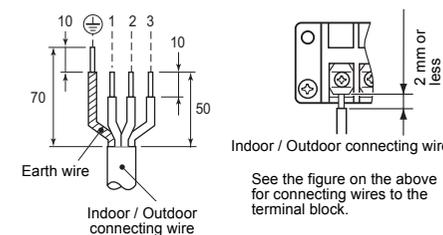
<Positioning of hole for wiring (Knock-out hole)>



Refrigerant leak detection sensor Power supply terminal block Remote controller terminal block



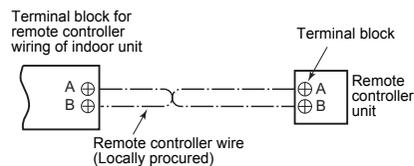
- * Match the cord clamp with size of connecting wires by position of holes on the clamp to hold the wire and fix the cord clamp by screw.
- * Be sure to fix the connecting wires using two cord clamps as shown in the figure.



■ Remote controller wiring

Strip off approx. 9 mm the wire to be connected.

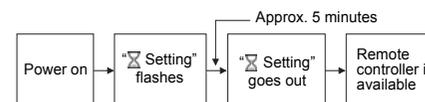
Wiring diagram



8 Applicable controls

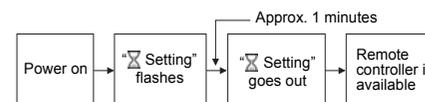
REQUIREMENT

- 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.



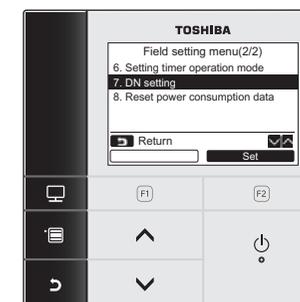
- Normal settings were made when the indoor unit was shipped from factory. Change the indoor unit settings as required.
- Use the built-in remote controller to change the settings.
 - * The settings cannot be changed using the wireless remote controller, simplified wired remote controller, or remote-controller-less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

■ Basic procedure for changing settings

Change the settings while the air conditioner is not working. **(Stop the air conditioner before making settings.)**

CAUTION

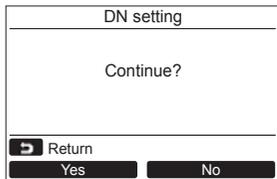
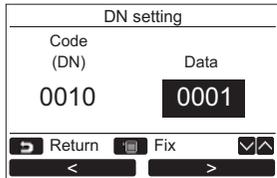
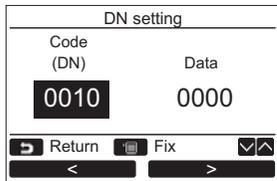
Set only the "Code(DN)" shown in the following table: Do not set any other "Code(DN)". If a "Code(DN)" not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.



1 Push the [MENU] button to display the menu screen.

2 Push and hold the [MENU] button and the [↕] button at the same time to display the "Field setting menu".

→Push and hold the buttons for more than 4 seconds.



3 Push the [▲ ▲]/[▼ ▼] button to select “7. DN setting” on the “Field setting menu” screen, then push the “Set” [F2] button.

→The fan and louver of the indoor unit operate. When the group control is used, the fan and louver of the selected indoor unit operate.

→Move the cursor to select “Code(DN)” with the “<” [F1] button, then set “Code(DN)” with the [▲ ▲]/[▼ ▼] button.

→Move the cursor to select “Data” with the “>” [F2] button, then set “Data” with the [▲ ▲]/[▼ ▼] button.

4 Push the [MENU] button to set the other Code(DN) and Data. After “Continue?” is displayed on the screen, push the “Yes” [F1] button.

5 Push the “No” [F2] button to finish the setting operation. “Setting” appears on the screen for a while, then the screen returns to the “Field setting menu” screen.

→Pushing the “No” [F2] button displays the unit selection screen when the group control is used. Push the [CANCEL] button on the unit selection screen to finish the setting operation. “Setting” appears on the screen for a while, then the screen returns to the “Field setting menu” screen.

Filter sign setting

According to the installation condition, the filter sign term (Notification of filter cleaning) can be changed. Follow to the basic procedure.

(1 → 2 → 3 → 4 → 5).

- For the “Code (DN)” in Procedure 3, specify [0001].
- For the “Data” in Procedure 3, select the Data of filter sign term from the following table.

| Data | Filter sign term |
|------|----------------------------|
| 0000 | None |
| 0001 | 150 H (Factory default) |
| 0002 | 2500 H |
| 0003 | 5000 H |
| 0004 | 10000 H |

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 or other machinery to circulate heat air near the ceiling.

Follow to the basic procedure.

(1 → 2 → 3 → 4 → 5).

- For the “Code (DN)” in Procedure 3, specify [0006].
- For the “Data” in Procedure 3, select the Data of shift value of detection temperature to be set up from the following table.

| Data | Detection temperature shift value |
|------|-----------------------------------|
| 0000 | No shift (Factory default) |
| 0001 | +1 °C |
| 0002 | +2 °C |
| 0003 | +3 °C |
| 0004 | +4 °C |
| 0005 | +5 °C |
| 0006 | +6 °C |

8 °C operation

Pre-heating operation can be set for cold regions where room temperature drops to below zero.

Follow to the basic procedure.

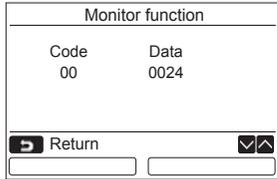
(1 → 2 → 3 → 4 → 5).

- For the “Code (DN)” in Procedure 3, specify [00d1].
- For the “Data” in Procedure.

| Data | 8 °C Operation setting |
|------|---------------------------|
| 0000 | None (Factory default) |
| 0001 | 8 °C Operation setting |

■ Monitor function

The sensor temperature or operational status of indoor unit, outdoor unit, or remote controller can be monitored.



- 1 Push the [MENU] button to display the menu screen.
- 2 Push and hold the [MENU] button and the [▽] button at the same time to display the "Field setting menu".
→ Push and hold the buttons for more than 4 seconds.
- 3 Push the [▲] / [▽] button to select "4. Monitor function" on the "Field setting menu" screen, then push the [Set] button.
→ Push the [▲] / [▽] button to select the code to check data.
- 4 Push the [CANCEL] button to return to the "Field setting menu" screen.

| Indoor unit data | |
|------------------|---|
| Code | 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) |
| E2 | Indoor unit refrigerant leak detection sensor output* |

* Display and the contents
 - - - : Sensor function is not available.
 0000 : Normal
 0001 : Sensor has been used for 5 years.
 0002 : Sensor trouble or exceeding the life of the product for sensor
 0003 : Sensor is detecting refrigerant leak

| Outdoor unit data | |
|-------------------|---|
| Code | 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) |
| 65 | Heatsink temperature (THS) |
| 6A | Operating current (x1/10) |
| 6D | Outdoor heat exchange (coil) temperature (TL) |
| F1 | Compressor cumulative operating hours (x100 h) |

■ Installing optional parts

When installing optional parts, data setup may be required with remote controller. Be sure to set the data, according to Installation Manual for optional parts.

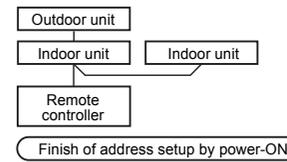
■ Group control

Simultaneous twin, triple or double twin system

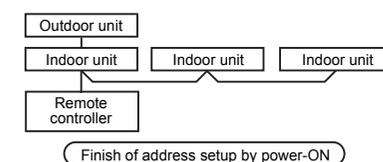
A combination with an outdoor unit allows simultaneous ON / OFF operation of the indoor units. The following system patterns are available.

- Two indoor units for the twin system
- Three indoor units for the triple system
- Four indoor units for the double-twin system
- For Floor standing type, remote controller is built in the unit. When the units are used as simultaneous operation system, up to two remote controllers as Master and Sub remote controller can be connected. When there are three remote controllers or more in the system, remove connector connecting to the terminal block (A/B) in the Indoor unit for remote controller other than Master or Sub remote controller. Set the remote controllers to the Master and Sub remote controller according to the separate Installation Manual for remote controller.

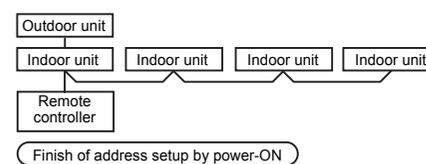
▼ Twin system



▼ Triple system



▼ Double twin



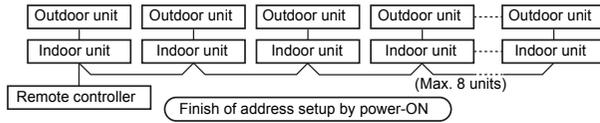
- For wiring procedure and wiring method, follow to the "Electrical connection" in this manual.
- When the power supply has been turned on, the automatic address setup starts and "⊗ setting" that address is being setup flashes on the display part after about 3 minutes. During setup of automatic address, the remote controller operation is not accepted.

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

Group control for system of multiple units

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 "Electrical connection".
- 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 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 "X setting" that address is being setup flashes on the display part after about 3 minutes. During setup of automatic address, the remote controller operation is not accepted.

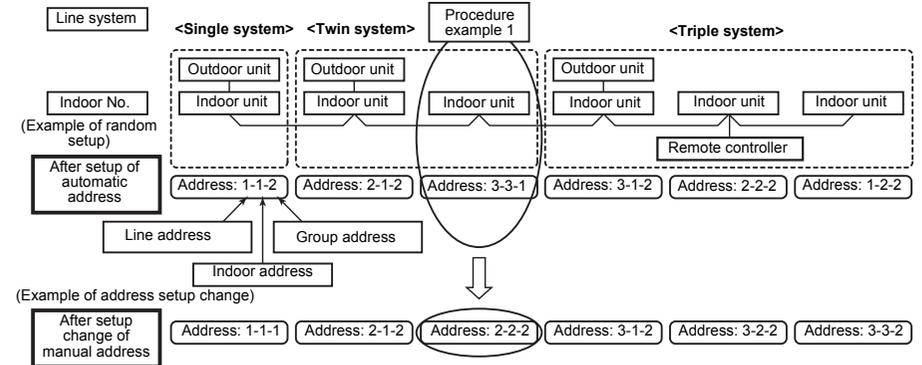
Required time up to the finish of automatic addressing is approx. 5 minutes.

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 following mentioned system configuration is a case of complex systems in which systems of the simultaneous twin and simultaneous triple unit is controlled as a group by a remote controller.

(Example) Group control for complex system

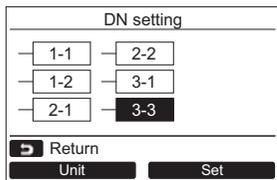
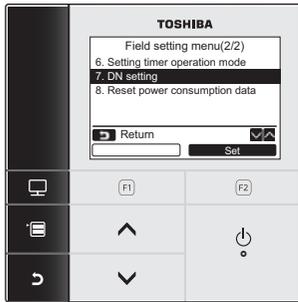


The above address is set by the automatic addressing when the power is turned on. However, line addresses and indoor addresses are set randomly. For this reason, change the setting to match line addresses with indoor addresses.

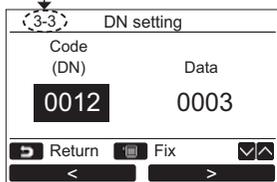
[Procedure example]

Manual address setup procedure

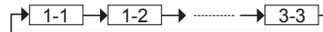
While the operation stops, change the setup.
(Stop the operation of the unit.)



Address is displayed here.

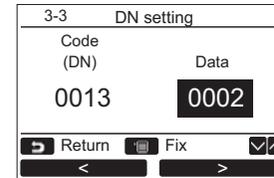
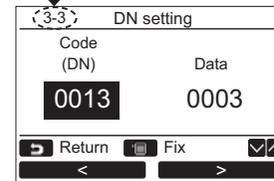


- 1 Push the [MENU] button to display the menu screen.
- 2 Push and hold the [MENU] button and the [v v] button at the same time to display the "Field setting menu".
→Push and hold the buttons for more than 4 seconds.
- 3 Push the [^ ^]/[v v] button to select "7.DN setting" on the "Field setting menu" screen, then push the "Set" [F2] button.
- 4 Push the "Unit" [F1] button to select the indoor unit "3 - 3" to be changed manually.
→The selected unit changes as follows each time the button is pushed:

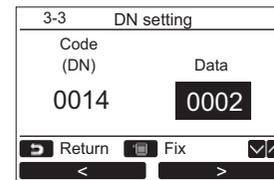
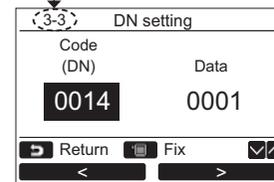


- 5 Push the "Set" [F2] button.
→The setting display for the selected unit appears.
→The fan and louver of the indoor unit operate.
When the group control is used, the fan and louver of the selected indoor unit operate.
- Line address change**
→Change "Code(DN)" from [0010] to [0012] with the [^ ^]/[v v] button.
→Change "Data" from [0003] to [0002] with the [^ ^]/[v v] button.

Address is displayed here.



Address is displayed here.



- 6 Push the [MENU] button to set the other Code(DN) and Data. After "Continue?" is displayed on the screen, push the "Yes Yes" [F1] button.

Indoor address change

→Change "Code(DN)" from [0010] to [0013] with the [^ ^]/[v v] button.
→Change "Data" from [0003] to [0002] with the [^ ^]/[v v] button.

- 7 Push the [MENU] button to set the other Code(DN) and Data. After "Continue?" is displayed on the screen, push the "Yes Yes" [F1] button.

Group address change

→Change "Code(DN)" from [0010] to [0014] with the [^ ^]/[v v] button.
→Change "Data" from [0001] to [0002] with the [^ ^]/[v v] button.

- 8 Push the [MENU] button to set the other Code(DN) and Data. After "Continue?" is displayed on the screen, push the "No No" [F2] button to finish the setting operation. "Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.
→Pushing the "No No" [F2] button displays the unit selection screen when the group control is used. Push the [CANCEL] button on the unit selection screen to finish the setting operation. "Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.

9 Test run

■ Before test run

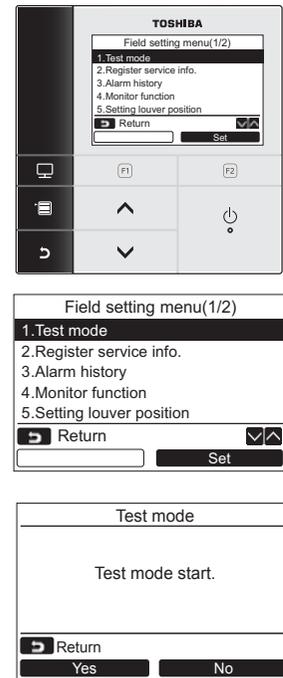
- Before turning on the power supply, carry out the following procedure.
 - 1) By using tester (500 VMΩ), check that resistance of 1 MΩ or more exists between the terminal block 1 to 3 and the earth (grounding).
If resistance of less than 1 MΩ is detected, do not run the unit.
 - 2) Check the valve of the outdoor unit being opened fully.
- To protect the compressor at activation time, leave power-ON for 12 hours or more before operating.

■ Execute a test run

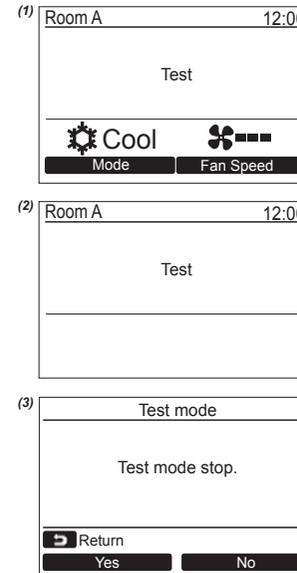
Operate the unit with the remote controller as usual.
For the procedure of the operation, refer to the attached Owner's Manual.
A forced test run can be executed in the following procedure even if the operation stops by thermostat-OFF.
In order to prevent a serial operation, the forced test run is released 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.
- Be careful of fan operation when the circuit breaker is turned on. If the refrigerant leak detection sensor detects the refrigerant leak, a fan automatically rotates even while an air conditioner stops. Be careful not to be injured by the fan.



- 1 Push the [MENU] button to display the menu screen.**
- 2 Push and hold the [MENU] button and the [V V] button at the same time to display the "Field setting menu".**
→Push and hold the buttons for more than 4 seconds.
- 3 Push the [^ ^]/[V V] button to select "1. Test mode" on the "Field setting menu" screen, then push the [Set] [F2] button.**
→Pushing the "Yes" [F1] button sets the test mode and the screen returns to the "Field setting menu" screen.
Push [CANCEL] twice, the screen (2) appears.



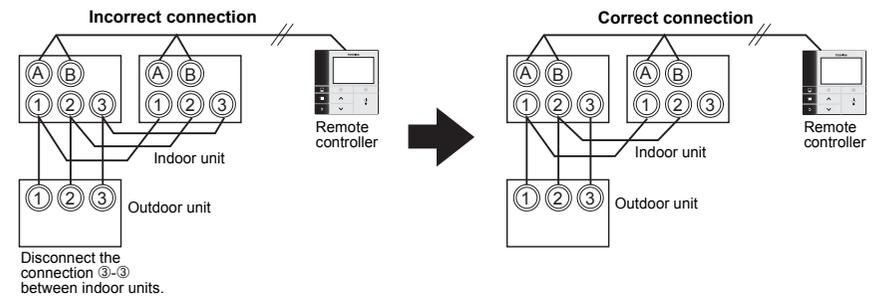
- 4 Push the [ON / OFF] button to start the test mode. The screen (1) shown in the left appears. (The screen (2) appears when the operation is stopped.)**
→Perform the test mode in the "Cool" or "Heat" mode.
→Temperature setting cannot be adjusted during the test mode.
→Check codes are displayed as usual.
- 5 When the test mode is finished, push the [^ ^]/[V V] button to select "1. Test mode" on the "Field setting menu" screen, then push the [Set] [F2] button. The screen (3) appears.**
→Pushing the "Yes" [F1] button stops the test mode screen and continues the normal operation.

NOTE

The test mode stops after 60 minutes and the screen returns to the normal / detailed display.

◆ Measures when a check code "E18" appears at the time of simultaneous (twin, triple, or double twin) connection

- 1 Reconnect the wires between indoor unit and indoor unit correctly.**



- 2 Change each indoor unit into correct address.**

- Change the address of each indoor unit into correct one according to "Manual address setup procedure" in the previous page when the check code "E18" appears on the remote controller.

10 Maintenance

Be sure to turn off the circuit breaker before maintenance.

NOTE

- Do not use alcohol, benzene, thinner, scouring powder, etc. as those may cause deformation or breakage.
- Do not rub the product with a chemical cloth or remain the cloth made contact with the product for a long time. Doing so may cause the product surface to deteriorate and its paint to come off.

Body of indoor unit

Wipe with a dry, soft cloth.

- If heavily stained, wipe off dirt with a cloth soaked in lukewarm water (40°C or less).

Remote controller

Wipe with a dry, soft cloth.

- Do not use water to wipe the remote controller.
- Be sure to turn on the circuit breaker after maintenance is finished. Leaving the circuit breaker turned off cause a refrigerant leak detection sensor not to operate, and result in failing to detect refrigerant leak.

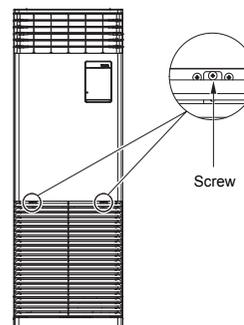
▼ Cleaning of air filter

"!" (filter sign) appears on the detailed display (not displayed when it is in the normal display mode) to tell the time for cleaning the filter.

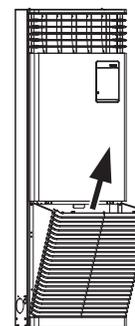


- "Filter check" is displayed on the screen if you start running the air conditioner when "!" (filter sign) appears on the detailed display. Push one of the operation buttons to erase the message or wait for more than 5 seconds until the message disappears.

- 1 Push the [ ON / OFF] button to stop the operation, then turn off the circuit breaker.
- 2 Use a screwdriver to unfasten the screws of the intake grille (two places) to open the intake grille. The screws are designed to stay on the intake grille.

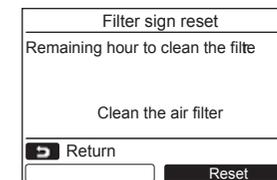


- 3 Take out the air filter.
 - Pull up the air filter toward you.



- 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.
- To attach the air filter, insert it into the unit and push it in.

- 4 Close the intake grille and fasten the screws (two places).
- 5 Turn on the circuit breaker, then push the [ ON / OFF] button on the remote controller to start the operation.
- 6 Reset the filter sign



1. Push the [ ^] / [ v] button to select "Filter sign reset" on the menu screen, then push the " Set" / " F2] button.
2. Push the " Reset" / " F2] button.

⚠ CAUTION

- Do not start the air conditioner while leaving air filter removed.
- Reset the filter sign.

▼ 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.

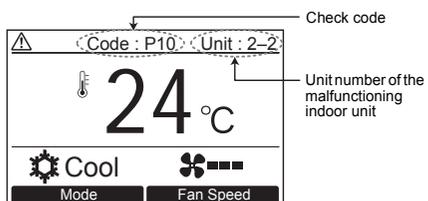
| Parts | Inspection method |
|-----------------------------------|---|
| Heat exchanger | Access from inspection opening and remove the access panel. Examine the heat exchanger if there is any clogging or damages. |
| Fan motor | Access from inspection opening and check if any abnormal noise can be 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. |
| Refrigerant leak detection sensor | Open the intake grille and E-BOX and check if there are any troubles on sensor's appearance or its connector is connected securely. |

▼ 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, louvers | 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. |
| Refrigerant leak detection sensor | Indoor | <ul style="list-style-type: none"> • Is ⚠ (Check indicator) on the remote controller flashing? • Does check code of J29, J30, or J31 appear on the remote controller? | Contact the service man to have the refrigerant leak detection sensor checked. |

11 Troubleshooting

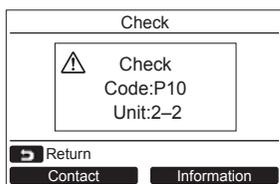
Confirmation and check



When a trouble has occurred in the air conditioner, the check code and the unit number of the indoor unit appear on the display of the remote controller.

* The check code appears only while the unit is running.

Push the [MONITOR] button or [CANCEL] button to display the check information screen.



While the check information screen appears:
 Push the "Contact" [F1] button to display the contact number for service.
 Push the "Information" [F2] button to display the model name and serial number of the unit.

Check codes and parts to be checked

| Remote controller display | Wireless remote controller Sensor block display of receiving unit | | Main defective parts | Judging device | Parts to be checked / trouble description | Air conditioner status |
|---------------------------|---|--------------------------------|---|-------------------|--|------------------------|
| | Indication | Operation Timer Ready GR GR OR | | | | |
| E01 | ● ● ● | | No header remote controller Remote controller communication trouble | 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 trouble | Remote controller | Indoor / outdoor connecting wires, indoor P.C. board, remote controller --- No signal can be sent to the indoor unit. | * |
| E03 | ● ● ● | | Indoor unit-remote controller regular communication trouble | 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 trouble IPDU-CDB communication trouble | Indoor | Indoor / outdoor connecting wires, indoor P.C. board, outdoor P.C. board --- Serial communication trouble between indoor unit and outdoor unit | Auto-reset |
| E08 | ● ● ● | | Duplicated indoor addresses ★ | Indoor | Indoor address setting trouble --- The same address as the self-address was detected. | Auto-reset |
| E09 | ● ● ● | | Duplicated header remote controllers | Remote controller | Remote controller address setting trouble --- 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 trouble | Indoor | Indoor P.C. board --- Communication trouble between main MCU and motor microcomputer MCU | Auto-reset |
| E11 | ● ● ● | | Communication trouble between Application control kit and Indoor unit | Indoor | Communication trouble between Application control kit and Indoor unit | Entire stop |
| E18 | ● ● ● | | Header unit follower unit regular communication trouble | 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 trouble | Outdoor | Communication trouble between IPDU and CDB | Entire stop |
| F01 | ● ● ● | ALT | Indoor unit heat exchanger sensor (TCJ) trouble | 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) trouble | 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) trouble | 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) trouble | 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 trouble | Outdoor | TL sensor may be displaced, disconnected or short-circuited. | Entire stop |
| F08 | ● ● ● | ALT | Outdoor unit outside air temp. sensor trouble | 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) trouble | Indoor | Room temp. sensor (TA), indoor P.C. board --- Open-circuit or short-circuit of the room temp. sensor (TA) was detected. | Auto-reset |

| Remote controller display | Wireless remote controller Sensor block display of receiving unit | | Main defective parts | Judging device | Parts to be checked / trouble description | Air conditioner status |
|---------------------------|---|----------|---|---------------------------------|--|---|
| | Operation Timer Ready GR GR OR | Flashing | | | | |
| F12 | ⊙ ⊙ ○ | ALT | TS sensor trouble | Outdoor | TS sensor may be displaced, disconnected or short-circuited. | Entire stop |
| F13 | ⊙ ⊙ ○ | ALT | Heat sink sensor trouble | Outdoor | Abnormal temperature was detected by the temp. sensor of the IGBT heat sink. | Entire stop |
| F15 | ⊙ ⊙ ○ | ALT | Temp. sensor connection trouble | Outdoor | Temp. sensor (TE / TS) may be connected incorrectly. | Entire stop |
| F29 | ⊙ ⊙ ● | SIM | Indoor unit, other P.C. board trouble | Indoor | Indoor P.C. board --- EEPROM trouble | Auto-reset |
| F31 | ⊙ ⊙ ○ | SIM | Outdoor unit P.C. board | Outdoor | Outdoor P.C. board ---- In the case of EEPROM trouble. | Entire stop |
| H01 | ● ⊙ ● | | Outdoor unit compressor breakdown | 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 unit compressor lock | Outdoor | Compressor circuit --- Compressor lock was detected. | Entire stop |
| H03 | ● ⊙ ● | | Outdoor unit current detect circuit trouble | 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 | ● ⊙ ● | | Case thermostat operation | Outdoor | Malfunction of the case thermostat | Entire stop |
| H06 | ● ⊙ ● | | Outdoor unit low-pressure system trouble | Outdoor | Current, high-pressure switch circuit, outdoor P.C. board --- Pressure sensor trouble was detected or low-pressure protective operation was activated. | Entire stop |
| J29 | ● ⊙ ⊙ | SIM | Refrigerant leak detection sensor trouble | Indoor | A trouble or open-short-circuit was detected by output of refrigerant leak detection sensor. | Operation continued |
| J30 | ● ⊙ ⊙ | SIM | Refrigerant leak detection | Indoor | Refrigerant leak was detected by refrigerant leak detection sensor. | Entire stop |
| J31 | ● ⊙ ⊙ | SIM | Refrigerant leak detection sensor exceeding its life of the product | Indoor | In the case of refrigerant leak detection sensor exceeding its life of the product. | Operation continued |
| L03 | ⊙ ● ⊙ | SIM | Duplicated header indoor units ★ | Indoor | Indoor address setting trouble --- There are two or more header units in the group. | Entire stop |
| L07 | ⊙ ● ⊙ | SIM | Group line in individual indoor unit ★ | Indoor | Indoor address setting trouble --- There is at least one group-connected indoor unit among individual indoor units. | Entire stop |
| L08 | ⊙ ● ⊙ | SIM | Indoor group address not set ★ | Indoor | Indoor address setting trouble --- Indoor address group has not been set. | Entire stop |
| L09 | ⊙ ● ⊙ | SIM | Indoor unit capacity not set | Indoor | Indoor unit capacity has not been set. | Entire stop |
| L10 | ⊙ ○ ⊙ | SIM | Outdoor unit P.C. board | Outdoor | In the case of outdoor P.C. board jumper wire (for service) setting trouble | Entire stop |
| L20 | ⊙ ○ ⊙ | SIM | LAN communication trouble | Network adapter central control | Address setting, central control remote controller, network adapter --- Duplication of address in central control communication | Auto-reset |
| | | | | | | |
| L29 | ⊙ ○ ⊙ | SIM | Other outdoor unit trouble | Outdoor | Other outdoor unit trouble | Entire stop |
| | | | | | | 1) Communication trouble between IPDU MCU and CDB MCU |
| | | | | | 2) Abnormal temperature was detected by the heat sink temp. sensor in IGBT. | Entire stop |
| L30 | ⊙ ○ ⊙ | SIM | Abnormal external input into indoor unit (interlock) | Indoor | External devices, outdoor unit P.C. board --- Abnormal stop due to incorrect external input into CN80 | Entire stop |
| L31 | ⊙ ○ ⊙ | SIM | Phase sequence trouble, etc. | Outdoor | Power supply phase sequence, outdoor unit P.C. board --- Abnormal phase sequence of the 3-phase power supply | Operation continued (thermostat OFF) |

| Remote controller display | Wireless remote controller Sensor block display of receiving unit | | Main defective parts | Judging device | Parts to be checked / trouble description | Air conditioner status |
|---------------------------|---|----------|---|------------------|---|---|
| | Operation Timer Ready GR GR OR | Flashing | | | | |
| P01 | ● ⊙ ⊙ | ALT | Indoor unit fan trouble | Indoor | Indoor fan motor, indoor P.C. board --- Indoor AC fan trouble (fan motor thermal relay activated) was detected. | Entire stop |
| P03 | ⊙ ● ⊙ | ALT | Outdoor unit discharge temp. trouble | Outdoor | A trouble was detected in the discharge temp. releasing control. | Entire stop |
| P04 | ⊙ ● ⊙ | ALT | Outdoor unit high-pressure system trouble | Outdoor | High-pressure switch --- The IOL was activated or an trouble was detected in the high-pressure releasing control using the TE. | Entire stop |
| P05 | ⊙ ● ⊙ | ALT | Open phase detected | Outdoor | The power wire may be connected incorrectly. Check open phase and voltages of the power supply. | Entire stop |
| P07 | ⊙ ● ⊙ | ALT | Heat sink overheat | Outdoor | Abnormal temperature was detected by the temp. sensor of the IGBT heat sink. | Entire stop |
| P10 | ● ⊙ ⊙ | ALT | Indoor unit water overflow detected | 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 |
| P12 | ● ⊙ ⊙ | ALT | The fan trouble of the indoor unit | Indoor | Abnormal operation of the indoor fan motor, indoor P.C. board, or indoor DC fan (over current or lock, etc.) is detected. | Entire stop |
| P15 | ⊙ ● ⊙ | ALT | Gas leakage detected | Outdoor | There may be gas leakage from the pipe or connecting part. Check for gas leakage. | Entire stop |
| P19 | ⊙ ● ⊙ | ALT | 4-way valve trouble | Outdoor (Indoor) | 4-way valve, indoor temp. sensors (TC / TCJ) --- A trouble was detected due to temperature drop of the indoor unit heat exchanger sensor when heating. | Auto-reset |
| P20 | ⊙ ● ⊙ | ALT | High-pressure protective operation | Outdoor | High-pressure protection | Entire stop |
| P22 | ⊙ ● ⊙ | ALT | Outdoor unit fan trouble | Outdoor | Outdoor unit fan motor, outdoor unit P.C. board --- A trouble (overcurrent, locking, etc.) was detected in the outdoor unit fan drive circuit. | Entire stop |
| P26 | ⊙ ● ⊙ | ALT | Outdoor unit inverter ldc activated | Outdoor | IGBT, outdoor unit P.C. board, inverter wiring, compressor --- Short-circuit protection for compressor drive circuit devices (G-Tr / IGBT) was activated. | Entire stop |
| P29 | ⊙ ● ⊙ | ALT | Outdoor unit position trouble | Outdoor | Outdoor unit P.C. board, high-pressure switch --- Compressor motor position trouble was detected. | Entire stop |
| P31 | ⊙ ● ⊙ | ALT | Other indoor unit trouble | Indoor | Another indoor unit in the group is raising an alarm. | Entire stop |
| | | | | | | E03/L07/L03/L08 alarm check locations and trouble description |

○ : 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

APPENDIX

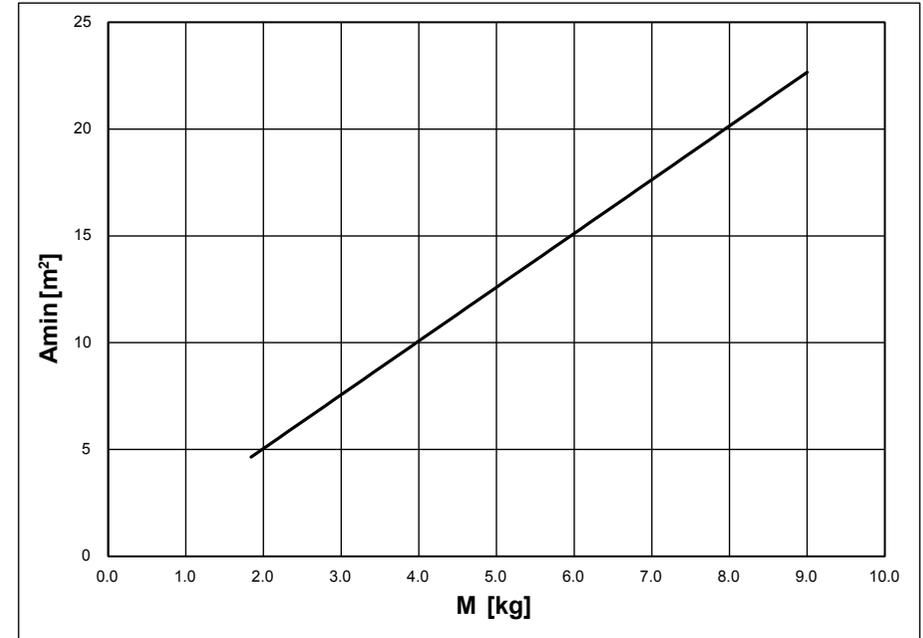
■ Minimum floor area: A_{min} (m²)

When an outdoor unit using R32 refrigerant is combined with this indoor unit, do not install the indoor unit in a poorly ventilated space that is smaller than the minimum floor area (A_{min}).

For refrigerant quantity, refer to Fluorinated Greenhouse Gases label on the outdoor unit.

For the minimum floor area (A_{min}) of this indoor unit, refer to table below.

| Total refrigerant quantity M (kg) | Floor standing unit A_{min} (m ²) | Total refrigerant quantity M (kg) | Floor standing unit A_{min} (m ²) | |
|--------------------------------------|--|--------------------------------------|--|-------|
| 0.90 | No requirements | 5.10 | 12.85 | |
| 1.00 | | 5.20 | 13.10 | |
| 1.10 | | 5.30 | 13.35 | |
| 1.20 | | 5.40 | 13.60 | |
| 1.30 | | 5.50 | 13.85 | |
| 1.40 | | 5.60 | 14.10 | |
| 1.50 | | 5.70 | 14.36 | |
| 1.60 | | 5.80 | 14.61 | |
| 1.70 | | 5.90 | 14.86 | |
| 1.80 | | 6.00 | 15.11 | |
| 1.84 | | 4.64 | 6.10 | 15.36 |
| 1.90 | | 4.79 | 6.20 | 15.62 |
| 2.00 | | 5.04 | 6.30 | 15.87 |
| 2.10 | | 5.29 | 6.40 | 16.12 |
| 2.20 | 5.54 | 6.50 | 16.37 | |
| 2.30 | 5.80 | 6.60 | 16.62 | |
| 2.40 | 6.05 | 6.70 | 16.87 | |
| 2.50 | 6.30 | 6.80 | 17.13 | |
| 2.60 | 6.55 | 6.90 | 17.38 | |
| 2.70 | 6.80 | 7.00 | 17.63 | |
| 2.80 | 7.05 | 7.10 | 17.88 | |
| 2.90 | 7.31 | 7.20 | 18.13 | |
| 3.00 | 7.56 | 7.30 | 18.38 | |
| 3.10 | 7.81 | 7.40 | 18.64 | |
| 3.20 | 8.06 | 7.50 | 18.89 | |
| 3.30 | 8.31 | 7.60 | 19.14 | |
| 3.40 | 8.57 | 7.70 | 19.39 | |
| 3.50 | 8.82 | 7.80 | 19.64 | |
| 3.60 | 9.07 | 7.90 | 19.90 | |
| 3.70 | 9.32 | 8.00 | 20.15 | |
| 3.80 | 9.57 | 8.10 | 20.40 | |
| 3.90 | 9.82 | 8.20 | 20.65 | |
| 4.00 | 10.08 | 8.30 | 20.90 | |
| 4.10 | 10.33 | 8.40 | 21.15 | |
| 4.20 | 10.58 | 8.50 | 21.41 | |
| 4.30 | 10.83 | 8.60 | 21.66 | |
| 4.40 | 11.08 | 8.70 | 21.91 | |
| 4.50 | 11.33 | 8.80 | 22.16 | |
| 4.60 | 11.59 | 8.90 | 22.41 | |
| 4.70 | 11.84 | 9.00 | 22.66 | |
| 4.80 | 12.09 | - | - | |
| 4.90 | 12.34 | - | - | |
| 5.00 | 12.59 | - | - | |



Toshiba Carrier Corporation

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

EB99832901