

# TOSHIBA

Leading Innovation >>>

## AIR CONDITIONER (MULTI TYPE) Installation Manual



1117101201-3

### Outdoor Unit

For commercial use

Model name:

<Heat Pump Model>

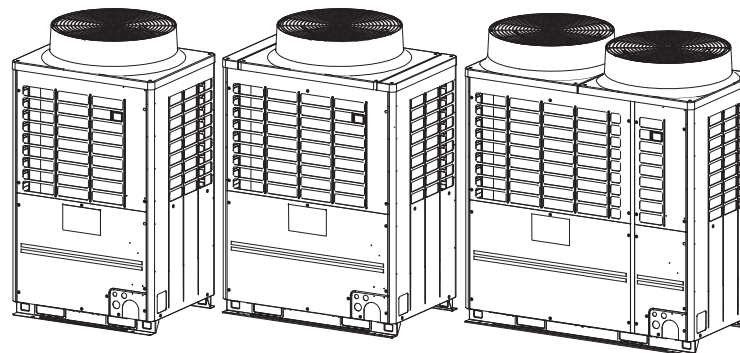
MMY-MAP0806HT8P-E  
MMY-MAP1006HT8P-E  
MMY-MAP1206HT8P-E  
MMY-MAP1406HT8P-E  
MMY-MAP1606HT8P-E  
MMY-MAP1806HT8P-E  
MMY-MAP2006HT8P-E  
MMY-MAP2206HT8P-E

MMY-MAP0806HT8JP-E  
MMY-MAP1006HT8JP-E  
MMY-MAP1206HT8JP-E  
MMY-MAP1406HT8JP-E  
MMY-MAP1606HT8JP-E  
MMY-MAP1806HT8JP-E  
MMY-MAP2006HT8JP-E  
MMY-MAP2206HT8JP-E

<Cooling Only Model>

MMY-MAP0806T8P-E  
MMY-MAP1006T8P-E  
MMY-MAP1206T8P-E  
MMY-MAP1406T8P-E  
MMY-MAP1606T8P-E  
MMY-MAP1806T8P-E  
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MMY-MAP2206T8P-E

MMY-MAP0806T8JP-E  
MMY-MAP1006T8JP-E  
MMY-MAP1206T8JP-E  
MMY-MAP1406T8JP-E  
MMY-MAP1606T8JP-E  
MMY-MAP1806T8JP-E  
MMY-MAP2006T8JP-E  
MMY-MAP2206T8JP-E



Original instruction

**ADOPTION OF NEW REFRIGERANT**

This Air Conditioner uses R410A an environmentally friendly refrigerant.

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Thank you for purchasing this Toshiba air conditioner.

This Installation Manual describes the installation method of the outdoor unit. For installation of indoor units, follow the Installation Manual supplied with the indoor unit.

Moreover, as this installation manual includes the important articles concerning the "Machinery" Directive (Directive 2006/42/EC), please read through the manual and make sure you understand it. After installation, give this Installation Manual with the Owner's Manual, the Owner's Manual and the Installation Manual supplied with the indoor unit to the customer and tell the customer to keep them safe.

Prepare an exclusive power source for indoor units, independent to that for outdoor units.

Y-shaped branching joints or a branching header (separately purchased) are required for connecting pipes between indoor and outdoor units. Choose either of them considering the system capacity concerning piping. For installing branching pipes, refer to the installation manual of the Y-shaped branching unit or branching header (separately purchased).

Outdoor connecting branching joints are required for connecting between outdoor units.

### 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"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>
Qualified service person	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>

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

### Warning indications on the air conditioner unit

Warning indication	Description		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>WARNING</b>  <b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.
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# 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. Otherwise, falling down of the unit may occur, or the unit may cause noise, vibration or water leakage.
- Only a qualified installer(\*1) or qualified service person(\*1) is allowed to do installation work. If installation is carried out by an unqualified individual, a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
- If using separately sold products, make sure to use Toshiba specified products only. Using unspecified products may cause fire, electric shock, water leak or other failure.
- 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 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 service panel of the outdoor unit and do the work required.
- Before carrying out the installation, maintenance, repair or removal work, be sure to set the circuit breakers for both the indoor and outdoor units to the OFF position. Otherwise, electric shock 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 outdoor unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.
- Do not climb onto or place objects on top of the outdoor unit. You may fall or the objects may fall off of the outdoor unit and result in injury.
- When working at height, put a sign in place so that no-one will approach the work location before proceeding with the work. Parts or other objects may fall from above, possibly injuring a person below. Also, be sure that workers put on helmets.
- When cleaning the filter or other parts of the outdoor unit, set the circuit breaker to OFF without fail, and place a “Work in progress” sign near the circuit breaker before proceeding with the work.
- The refrigerant used by this air conditioner is the R410A.
- You shall ensure that the air conditioner is transported in stable condition. If you find any part of the product broken, contact your dealer.
- Do not disassemble, modify or move the product yourself. Doing so may cause fire, electric shock, injury or water leaks.
- This appliance is intended to be used by expert or trained users in shops, in light industry, or for commercial use by lay persons.

### Selection of installation location

- If you install the unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident.
- Do not install in a location where flammable gas may leak is possible. If the gas should leak and accumulate around the unit, it may ignite and cause a fire.
- When transporting the air conditioner, wear shoes with protective toe caps, protective gloves and other protective clothing.
- When transporting the air conditioner, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.
- Other than floor standing and console types, install the indoor unit at least 2.5 m above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.
- Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.
- Places where the operation sound of the outdoor unit may cause a disturbance. (Especially at the boundary line with a neighbour, install the air conditioner while considering the noise.)

### Installation

- 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 failure.
- The designated bolts (M12) and nuts (M12) for securing the outdoor unit must be used when installing the unit.
- Install the outdoor unit properly in a location that is durable enough to support the weight of the outdoor unit. Insufficient durability may cause the outdoor unit to fall, which may result in injury.
- Install the unit in the prescribed manner for protection against strong wind and earthquake. Incorrect installation may result in the unit falling down, or other accidents.
- Be sure to fix the screws back which have been removed for installation or other purposes.

### 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 cycle is overpressurized, which may cause an injury.
- Tighten the flare nut with a torque wrench in the specified manner. Excessive tightening of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
- Ventilate the air if the refrigerant gas leaks during installation. If the leaked refrigerant gas comes into contact with fire, toxic gas may be produced.

- After the installation work, confirm that refrigerant gas does not leak. If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas may be generated.
- When the air conditioner has been installed or relocated, follow the instructions in the Installation Manual and purge the air completely so that no gases other than the refrigerant will be mixed in the refrigerating cycle. Failure to purge the air completely may cause the air conditioner to malfunction.
- Nitrogen gas must be used for the airtight test.
- The charge hose must be connected in such a way that it is not slack.
- 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.

### 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.
- When connecting the electrical wires, repairing the electrical parts or undertaking other electrical jobs, wear gloves to provide protection for electricians and from heat, insulating shoes and clothing to provide protection from electric shocks. Failure to wear this protective gear may result in electric shocks.
- When executing address setting, test run, or troubleshooting through the checking window on the electrical control box, put on insulated heat-proof gloves, insulated shoes and other clothing to provide protection from electric shock. Otherwise you may receive an electric shock.

- 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.
- Check that the product is properly earthed. (grounding work) Incomplete earthing may cause electric shock.
- Do not connect the earth line to a gas pipe, water pipe, lightning conductor, or a telephone earth line.
- After completing the repair or relocation work, check that the ground 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 must the power cable be extended. Connection trouble in the places where the cable is extended may give rise to smoking and/or a fire.
- Electrical wiring work shall be conducted according to law and regulation in the community and installation manual. Failure to do so may result in electrocution or short circuit.
- Do not supply power from the power terminal block equipped on the outdoor unit to another outdoor unit. Capacity overflow may occur on the terminal block and may result in fire.
- When carrying out electric connection, use the wire specified in the Installation Manual and connect and fix the wires securely to prevent them applying external force to the terminals. Improper connection or fixing may result in fire.

### Test run

- Before operating the air conditioner after having completed the work, check that the electrical parts 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.
- When you have noticed that some kind of trouble (such as when an error display has appeared, there is a smell of burning, abnormal sounds are heard, 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 failure.
- After the work has finished, be sure to use an insulation tester set (500V Megger) to check the resistance is 1 MΩ or more between the charge section and the non-charge metal section (Earth section). If the resistance value is low, a disaster such as a leak or electric shock is caused at user’s side.
- Upon completion of the installation work, check for refrigerant leaks and check the insulation resistance and water drainage. Then conduct a test run to check that the air conditioner is operating properly.

### Explanations given to user

- Upon completion of the installation work, tell the user where the circuit breaker is located. If the user does not know where the circuit breaker is, he or she will not be able to turn it off in the event that trouble has occurred in the air conditioner.

- If you have discovered that the fan grille is damaged, do not approach the outdoor unit but set the circuit breaker to the OFF position, and contact a qualified service person(\*1) to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.
- After the installation work, follow the Owner’s Manual to explain to the customer how to use and maintain the unit.

### Relocation

- Only a qualified installer(\*1) or qualified service person(\*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
- When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air or other gas to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in rupture, injury or other trouble.
- Never recover the refrigerant into the outdoor unit. Be sure to use a refrigerant recovery machine to recover the refrigerant when moving or repairing. It is impossible to recover the refrigerant into the outdoor unit. Refrigerant recovery into the outdoor unit may result in serious accidents such as explosion of the unit, injury or other accidents.

(\*1) Refer to the “Definition of Qualified Installer or Qualified Service Person.”

**CAUTION**

**New refrigerant air conditioner installation**

- **This air conditioner adopts the new HFC refrigerant (R410A) which does not destroy ozone layer.**
- The characteristics of R410A refrigerant are; easy to absorb water, oxidizing membrane or oil, and its pressure is approx. 1.6 times higher than that of refrigerant R22. Accompanied with the new refrigerant, refrigerating oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle.
- To prevent charging an incorrect refrigerant and refrigerating oil, the sizes of connecting sections of charging port of the main unit and installation tools are changed from those for the conventional refrigerant.
- Accordingly the exclusive tools are required for the new refrigerant (R410A).
- For connecting pipes, use new and clean piping designed for R410A, and please care so that water or dust does not enter.

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

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

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

**Do not wash air conditioners with pressure washers.**

- Electric leaks may cause electric shocks or fires.

Merci d'avoir acheté ce climatiseur Toshiba.

Ce manuel d'installation décrit la méthode d'installation de l'unité extérieure. Pour l'installation de l'unité intérieure, reportez-vous au manuel d'installation joint à l'unité intérieure.

En outre, ce manuel d'installation contient des mentions importantes relatives à la Directive "Machines" (Directive 2006/42/EC) et doit donc être lu attentivement et compris dans sa totalité. Après l'installation, remettez au client ce manuel d'installation, le manuel du propriétaire et le manuel d'installation joint à l'unité intérieure et demandez au client de les conserver soigneusement.

Préparez pour l'unité intérieure une alimentation propre, indépendante de celle de l'unité extérieure.

Des raccords en Y et des raccords de tête (à approvisionner sur place) sont requis pour la liaison des tuyaux reliant l'unité intérieure à l'unité extérieure. Choisissez ces raccords en tenant compte de la capacité du système et donc de la section de la tuyauterie à utiliser. Pour la pose des tuyaux de branchement, reportez-vous au manuel d'installation des raccords en Y et des raccords de tête (à approvisionner sur place).

Des raccords de branchement extérieur sont requis pour la liaison entre unités extérieures.

**Dénomination générique : Climatiseur**

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

Le climatiseur doit être installé, entretenu, réparé et enlevé par un installateur qualifié ou une personne d'entretien qualifiée.

Lorsqu'une de ces opérations doit être effectuée, demandez à un installateur qualifié ou un technicien d'entretien qualifié de les exécuter pour vous.

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

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



### Définition de l'équipement de protection







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

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

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

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

### ■ Indications d'avertissement relatives au climatiseur

Indication d'avertissement	Description		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>AVERTISSEMENT</b>  <b>RISQUE DE DECHARGE ELECTRIQUE</b> Débranchez toutes les alimentations électriques distantes avant l'entretien.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>AVERTISSEMENT</b>  Pièces mobiles. Ne faites pas fonctionner l'unité avec la grille déposée. Arrêtez l'unité avant l'entretien.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>PRÉCAUTION</b>  Pièces à haute température. Vous pourriez vous brûler en déposant ce panneau.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>PRÉCAUTION</b>  Ne touchez pas les palmes en aluminium de l'unité. Vous pourriez vous blesser.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>PRÉCAUTION</b>  <b>RISQUE D'EXPLOSION</b> Ouvrez les soupapes de service avant l'opération, sinon un éclatement pourrait se produire.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>PRÉCAUTION</b>  <b>Ne montez pas sur la grille du ventilateur.</b> Vous pourriez vous blesser.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 CONSIGNES DE SÉCURITÉ

Le fabricant ne peut être tenu responsable pour tout dommage causé par le non respect des instructions et descriptions de ce manuel.

## AVERTISSEMENT

### Généralités

- Avant d'installer le climatiseur, lisez attentivement le Manuel d'installation et suivez les instructions pour installer le climatiseur. Dans le cas contraire, vous risquez de tomber, l'unité peut devenir bruyante, se mettre à vibrer ou fuir.
- Seul un installateur qualifié (\*1) ou une personne d'entretien qualifiée (\*1) est autorisé à procéder à l'installation. Si l'installation est réalisée par une personne non qualifiée, un incendie, un choc électrique, des blessures, des fuites d'eau, des parasites et/ou des vibrations peuvent en résulter.
- Si des pièces à approvisionner séparément doivent être utilisées, veillez à ce qu'elles soient conformes aux prescriptions de Toshiba. L'utilisation d'une pièce non conforme peut être la source d'un incendie, d'une secousse électrique, d'une fuite d'eau ou d'un autre dommage.
- N'utilisez aucun autre réfrigérant que celui spécifié pour tout rajout ou remplacement. Sinon, une haute pression anormale pourrait être générée dans le circuit de réfrigération, qui pourrait entraîner une panne ou une explosion du produit ou même des blessures corporelles.
- Avant d'ouvrir le panneau de service de l'unité extérieure, basculez le disjoncteur sur la position OFF. Ne pas régler le disjoncteur sur la position OFF peut donner lieu à des chocs électriques par le biais d'un contact avec les pièces intérieures. Seuls un installateur qualifié (\*1) ou un technicien d'entretien qualifié (\*1) sont autorisés à enlever le panneau de service de l'unité extérieure et à effectuer le travail requis.
- Avant de procéder à l'installation, à l'entretien, à la réparation ou à la dépose, basculez le disjoncteur de l'unité intérieure et celui de l'unité extérieure en position OFF. Dans le cas contraire, vous vous exposez à des secousses électriques.

- Placez un panneau indicateur "Travail en cours" à proximité du coupe-circuit pendant l'installation, l'entretien, la réparation ou la dépose. Un danger de choc électrique est possible si le coupe-circuit est réglé sur ON par erreur.
- Seul un installateur qualifié (\*1) ou une personne d'entretien qualifiée (\*1) est autorisé à entreprendre un travail en hauteur à l'aide d'un pied de 50 cm minimum pour déposer la grille d'entrée d'air de l'unité intérieure pour entreprendre le travail.
- Portez des gants de protection ainsi que des vêtements de travail de sécurité pendant l'installation, l'entretien et la dépose.
- Ne touchez pas aux palmes en aluminium de l'unité extérieure. Vous risquez de vous blesser dans le cas contraire. Si vous devez toucher la palme pour une raison ou une autre, mettez d'abord des gants de protection et des vêtements de travail de sécurité, ensuite, procédez à l'opération.
- Ne grimpez pas ou ne placez pas d'objets sur le dessus de l'unité extérieure. Vous ou les objets pourriez tomber de l'unité extérieure et ainsi vous blesser.
- Lors d'un travail en hauteur, placez un panneau indicateur afin que personne ne s'approche du lieu de travail, avant de commencer le travail. Des pièces et d'autres objets risquent de tomber du haut, pouvant blesser une personne se trouvant en dessous. Veillez également à ce que tout intervenant porte un casque.
- Lors du nettoyage du filtre ou d'autres pièces de l'unité extérieure, réglez le coupe-circuit sur OFF sans faute, et placez un panneau indicateur "Travail en cours" à proximité du coupe-circuit avec de commencer le travail.
- Le fluide frigorigène utilisé par ce climatiseur est le R410A.
- Nous garantissons que le climatiseur est transporté dans des conditions stables. Si vous notez la présence d'une pièce endommagée, contactez le revendeur.
- Ne démontez pas, ne modifiez pas, ne réparez pas et ne changez pas l'emplacement du système. Vous pouvez provoquer un incendie, vous vous exposez à une secousse électrique ou à des blessures et vous pouvez provoquer une fuite.
- Cet appareil est destiné aux utilisateurs spécialisés ou formés dans les magasins, l'industrie légère ou pour un usage commercial par les personnes non spécialisées.

## Sélection du lieu d'installation

- Si vous installez l'unité dans une petite pièce, prenez les mesures nécessaires pour éviter que le réfrigérant ne dépasse la concentration limite même en cas de fuite. Consultez le revendeur chez qui vous avez acquis le climatiseur au moment de mettre en pratique ces mesures. Une accumulation de réfrigérant à haute concentration est susceptible de provoquer une insuffisance d'oxygène.
- N'installez pas cet appareil dans un endroit où des fuites de gaz inflammable sont possibles. En cas de fuite de gaz et d'accumulation à proximité du climatiseur, un incendie peut se déclarer.
- Lors du transport du climatiseur, portez des chaussures à coquilles, des gants et des vêtements de protection supplémentaires.
- Lors du transport du climatiseur, n'agrippez pas les bandes du carton d'emballage. Vous risquez de vous blesser si les bandes se brisent.
- Types autres que pied et console, installez l'unité intérieure à au moins 2,5m au dessus du niveau du sol, dans le cas contraire, les utilisateurs peuvent se blesser ou recevoir des chocs électriques s'ils frappent de leurs doigts ou d'autres objets dans l'unité intérieure alors que le climatiseur fonctionne.
- Ne placez aucun appareil à combustion dans un endroit exposé directement au souffle du climatiseur, faute de quoi sa combustion risquerait d'être déficiente.
- Les endroits où de bruit de fonctionnement de l'unité extérieure peut être une nuisance. (En particulier, si le climatiseur doit être installé en limite de propriété, tenez le plus grand compte de sa nuisance sonore.)

## Installation

- Suivez les instructions du Manuel d'installation pour installer le climatiseur. Ne pas suivre ces instructions peut entraîner la chute ou le basculement de l'appareil ou engendrer du bruit, des vibrations, une fuite d'eau, etc.
- Les boulons (M12) et les écrous (M12) désignés pour fixer l'unité extérieure doivent être utilisés lors de l'installation de l'unité.
- Installez l'unité extérieure dans un lieu assez résistant pour supporter le poids de l'unité extérieure. Si la durabilité est insuffisante, l'unité peut tomber et blesser quelqu'un.
- Installez l'appareil comme il convient pour qu'il soit protégé en cas de vents violents ou de tremblements de terre. Une mauvaise installation peut entraîner sa chute et d'autres accidents.
- N'oubliez pas de poser les vis déposées lors de l'installation ou pour d'autres raisons.

## Tuyaux de réfrigérant

- Fixez solidement le tuyau de réfrigérant pendant l'installation, avant de faire fonctionner le climatiseur. Si le compresseur est utilisé avec la vanne ouverte et sans que le tuyau de réfrigérant ne soit connecté, le compresseur aspire l'air et le circuit de réfrigération est alors en surpression. Dans ce cas, les tuyaux risquent de blesser quelqu'un.
- Serrez l'écrou évasé avec une clé dynamométrique de la manière spécifiée. Si vous appliquez un couple excessif, l'écrou risque, après un certain temps, de se casser et de provoquer une fuite de réfrigérant.
- Aérez soigneusement si le gaz réfrigérant a fui lors de l'installation. Si le gaz réfrigérant qui a fui entre en contact avec une flamme vive, un gaz toxique est produit.

- Après l'installation, assurez-vous que le gaz réfrigérant ne fuit pas. Si le gaz réfrigérant fuit dans la pièce et s'écoule à proximité d'une source inflammable, telle qu'une cuisinière, un gaz nocif peut se dégager.
- Lorsque le climatiseur a été installé ou déplacé, suivez les instructions du Manuel d'installation et purgez la totalité de l'air de sorte qu'aucun gaz autre que le fluide frigorigène ne soit mélangé dans le circuit de réfrigération. Ne pas purger complètement l'air peut entraîner un dysfonctionnement du climatiseur.
- De l'azote gazeux doit être utilisé pour le test d'étanchéité à l'air.
- Le tuyau de remplissage doit être raccordé de telle manière qu'il ne soit pas lâche.
- Si le gaz réfrigérant a fui durant l'installation, aérez immédiatement la pièce. Si le gaz réfrigérant qui a fui entre en contact avec le feu, un gaz nocif peut se dégager.

### Raccordement électrique

- Seul un installateur qualifié (\*1) ou une personne d'entretien qualifiée (\*1) est autorisé à réaliser le travail électrique sur le climatiseur. En aucun cas, ce travail doit être effectué par une personne non qualifiée étant donné que si le travail n'est pas correctement effectué, des chocs électriques et/ou des fuites électriques peuvent survenir.
- Lors du raccordement des câbles électriques, la réparation des pièces électriques ou l'exécution d'autres travaux électriques, portez des gants pour vous protéger pour les électriciens et de la chaleur, des chaussures et des vêtements isolants pour vous protéger de chocs électriques. Ne pas porter cette tenue de protection peut entraîner des chocs électriques.
- Lors de l'attribution d'adresse, d'essai de fonctionnement ou de dépannage exigeant d'accéder aux pièces électriques du panneau, portez des gants de protection contre la chaleur, des chaussures isolantes et des vêtements adéquats afin de ne pas être exposé aux secousses électriques. Dans le cas contraire, vous vous exposez à une secousse électrique.

- Utilisez un câblage respectant les spécifications du Manuel d'installation et les dispositions des réglementations et de la législation locales. L'utilisation d'un câblage n'étant pas conforme aux spécifications peut donner lieu à des chocs électriques, une dispersion électrique, de la fumée et/ou un incendie.
- Assurez-vous que l'appareil est correctement mis à la terre. (mise à la terre)  
Une mise à la terre incorrecte peut provoquer une électrocution.
- Ne raccordez pas le fil de terre à une conduite de gaz, une conduite d'eau, un parafoudre ou un fil de terre de téléphone.
- Après avoir terminé le travail de réparation ou de déplacement, assurez-vous que le fil de terre est correctement raccordé.
- Installez un coupe-circuit respectant les spécifications du manuel d'installation et les dispositions des réglementations et de la législation locales.
- Installez le coupe-circuit là où il peut facilement être accessible par l'agent.
- Lors de l'installation du coupe-circuit à l'extérieur, installez-en un qui soit conçu pour être utilisé à l'extérieur.
- Le câble d'alimentation ne doit en aucun cas présenter de rallonge. Des problèmes de raccordement dans des endroits où le câble présente une rallonge peuvent entraîner de la fumée et/ou un incendie.
- Le travail de câblage électrique doit être conduit conformément à la législation et à la réglementation locales et au manuel d'installation.  
Dans le cas contraire, une électrocution ou un court-circuit peut survenir.
- N'alimentez pas une autre unité extérieure à partir du bornier de raccordement d'une unité extérieure. La capacité du bornier peut être dépassée et provoquer un incendie.
- Lors des raccordements électriques, utilisez les conducteurs prescrits dans le manuel d'installation et reliez-les comme il convient pour qu'ils n'exercent aucune traction sur les bornes. Un raccordement ou une fixation incorrecte peuvent provoquer un incendie.

## Essai de fonctionnement

- Avant de faire fonctionner le climatiseur après avoir terminé le travail, assurez-vous que le couvercle du boîtier des pièces électriques de l'unité intérieure et du panneau de service de l'unité extérieure sont fermés, ensuite, réglez le coupe-circuit sur la position ON. Vous pouvez recevoir un choc électrique si l'alimentation est activée sans avoir d'abord effectué ces vérifications.
- Si vous avez remarqué qu'un quelconque problème (comme par exemple lorsque l'affichage d'une erreur est apparue, une odeur de brûlé survient, des sons anormaux sont entendus, le climatiseur ne parvient pas à refroidir ou à réchauffer ou une fuite d'eau est présente) est survenu au niveau du climatiseur, ne touchez pas le climatiseur vous-même et réglez le disjoncteur sur la position OFF, ensuite, contactez une personne d'entretien qualifiée. Prenez des mesures pour garantir que l'alimentation ne sera pas branchée (en indiquant "hors service" près du disjoncteur, par exemple) jusqu'à ce que la personne d'entretien qualifiée arrive. Continuer à utiliser le climatiseur alors qu'il présente un problème peut entraîner des problèmes mécaniques ou donner lieu à des chocs électriques et autres dommages.
- Une fois le travail terminé, veillez à utiliser un contrôleur d'isolement (Mégohmmètre de 500V) afin de vérifier que la résistance est de 1 MΩ minimum entre la section de charge et la section métallique sans charge (Section terre). Si la valeur de résistance est faible, une catastrophe telle qu'une fuite ou un choc électrique se produit sur le côté utilisateur.
- A l'issue du travail d'installation, vérifiez qu'il n'y a pas de fuites de fluide frigorigène et vérifiez la résistance d'isolation ainsi que l'évacuation d'eau. Ensuite, effectuez un essai de fonctionnement afin de vous assurer que le climatiseur fonctionne correctement.

## Explications données à l'utilisateur

- A l'issue du travail d'installation, dites à l'utilisateur où se trouve le coupe-circuit. Si l'utilisateur ne sait pas où se trouve le coupe-circuit, il ou elle ne sera pas capable de le désactiver au cas où un problème surviendrait au niveau du climatiseur.

- Si vous avez découvert que la grille de ventilation est endommagée, n'approchez pas de l'unité extérieure et réglez le coupe-circuit en position OFF, ensuite, contactez une personne d'entretien qualifiée (\*1) afin d'effectuer les réparations. Ne réglez pas le disjoncteur en position ON jusqu'à ce que les réparations soient terminées.
- Après le travail d'installation, reportez-vous au Mode d'emploi pour expliquer au client comment utiliser l'unité et effectuer son entretien.

## Réinstallation

- Seul un installateur qualifié (\*1) ou une personne d'entretien qualifiée (\*1) est autorisé à déplacer le climatiseur. Déplacer le climatiseur par une personne non-qualifiée représente un danger étant donné qu'un incendie, un choc électrique, des blessures, des fuites d'eau, des parasites et/ou des vibrations peuvent en résulter.
- Lors de la réalisation du travail de pompage, coupez le compresseur avant de débrancher le tuyau de réfrigérant. Débrancher le tuyau de réfrigérant alors que la vanne d'entretien est restée ouverte et que le compresseur fonctionne encore peut entraîner une aspiration de l'air ou d'autre gaz, faisant augmenter la pression à l'intérieure du circuit de réfrigération à un niveau anormalement élevé, et pouvant donner lieu à un éclatement, un dommage ou d'autres problèmes.
- Ne récupérez pas le réfrigérant de l'unité extérieure. Utilisez un appareil de récupération de réfrigérant lorsque l'unité doit être réparée ou déplacée. Ne récupérez pas le réfrigérant de l'unité intérieure. La récupération du réfrigérant de l'unité intérieure peut entraîner des accidents graves tels que l'explosion de l'unité et autres dommages.

(\*1) Reportez-vous à "Définition d'installateur qualifié ou personne d'entretien qualifiée".

**⚠ PRÉCAUTION**

**Installation du climatiseur utilisant le nouveau réfrigérant**

- **CE CLIMATISEUR UTILISE LE NOUVEAU REFRIGERANT HFC (R410A) QUI NE DETRUIT PAS LA COUCHE D'OZONE.**
- Le réfrigérant R410A se distingue par son absorption aisée de l'eau, de la membrane oxydante ou de l'huile ainsi que par sa pression, qui est d'environ 1,6 fois celle du réfrigérant R22. Outre l'utilisation du nouveau réfrigérant, l'huile réfrigérante a elle aussi été remplacée. Par conséquent, durant l'installation, assurez-vous que l'eau, la poussière, le réfrigérant précédent ou l'huile réfrigérante n'entrent pas dans le circuit de réfrigération.
- Pour éviter de remplir du réfrigérant et de l'huile réfrigérante inappropriés, la taille des sections de raccordement de l'orifice de remplissage de l'unité principale et les outils d'installation sont différents de ceux qui sont utilisés pour le réfrigérant traditionnel.
- En conséquence, les outils exclusifs sont requis pour le nouveau réfrigérant (R410A).
- Quant aux tuyaux de raccordement, utilisez des tuyaux neufs et propres conçus pour le R410A et veillez à ce que l'eau ou la poussière n'y entrent pas.

**Pour déconnecter l'appareil du secteur**

- Cet appareil doit être connecté au secteur via un interrupteur ayant une séparation de contact d'au moins 3mm.

**Vous devez utiliser un fusible d'installation (tous les types de fusible peuvent être utilisés) pour la ligne d'alimentation de ce climatiseur.**

**Ne lavez pas les climatiseurs avec un nettoyeur à haute pression.**

- Les fuites électriques risquent de provoquer une électrocution ou un incendie.

Vielen Dank, dass Sie sich für ein Klimagerät von Toshiba entschieden haben. Dieses Installationshandbuch beschreibt die Montage des Außengeräts. Zur Installation von Innenraumgeräten folgen Sie dem dem Innenraumgerät beigefügten Installationshandbuch. Lesen Sie dieses Handbuch ganz durch und vergewissern Sie sich, dass Sie alles verstanden haben, da es auch wichtige Abschnitte zur „Maschinenrichtlinie“ (Richtlinie 2006/42/EG) enthält. Nach der Installation dieses Installationshandbuch zusammen mit dem Benutzerhandbuch sowie dem Benutzerhandbuch und dem Installationshandbuch, welche dem Kunden mit dem Innengerät geliefert werden, dem Kunden geben und den Kunden anweisen, diese sicher aufzubewahren. Bereiten Sie eine eigene, von denjenigen für die Außengeräte unabhängige Stromquelle für Innengeräte vor. Für die Verbindungsleitungen zwischen Innen- und Außengeräten sind Y-förmige Abzweigverbindungen oder ein (getrennt zu erwerbender) Abzweigverteiler erforderlich. Treffen Sie Ihre Wahl unter Berücksichtigung der Systemkapazität hinsichtlich der Verrohrung. Schlagen Sie bezüglich der Installation der Abzweigrohre im Installationshandbuch des Y-förmigen Abzweigteils oder des (getrennt zu erwerbenden) Abzweigverters nach. Für Verbindungen zwischen den Außengeräten sind Außenverbindungs-Abzweigverteiler erforderlich.

**Allgemeine Bezeichnung: Klimaanlage**

**Definition der Bezeichnungen Qualifizierter Installateur oder Qualifizierter Servicetechniker**

Die Klimaanlage muss von einem qualifizierten Installateur oder einem qualifizierten Servicetechniker installiert, gewartet, repariert und entsorgt werden. Wenn eine dieser Aufgaben erledigt werden muss, bitten Sie einen qualifizierten Installateur oder einen qualifizierten Servicetechniker, diese für Sie auszuführen. Ein qualifizierter Installateur oder ein qualifizierter Servicetechniker ist ein Auftragnehmer, der über die Qualifikationen und das Fachwissen verfügt, welche in der untenstehenden Tabelle genannt sind.

Auftragnehmer	Qualifikationen und Fachwissen, über welche der Auftragnehmer verfügen muss
Qualifizierter Installateur	<ul style="list-style-type: none"> <li>• Der Installationsfachmann ist eine Person, die Klimageräte der Toshiba Carrier Corporation einbaut, wartet, umzieht und ausbaut. Die Person ist im Einbau und in der Wartung sowie im Umzug und Ausbau von Klimageräten der Toshiba Carrier Corporation geschult oder wurde von einer geschulten Person oder geschulten Personen unterwiesen und verfügt aufgrund dessen über gründliche Kenntnisse, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Installationsfachmann, dem es erlaubt ist, Elektroarbeiten im Zuge des Einbaus, Umzugs oder Ausbaus auszuführen, verfügt über die jeweils gesetzlich vorgeschriebene Qualifikation zur Ausführung von Elektroarbeiten und ist eine Person, die im Zusammenhang mit Elektroarbeiten an Klimageräten der Toshiba Carrier Corporation geschult ist oder in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen wurde, so dass sie über gründliche Kenntnisse verfügt, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Installationsfachmann, dem es erlaubt ist, kältemittel- oder rohrtechnische Arbeiten im Zuge des Einbaus, Umzugs oder Ausbaus auszuführen, verfügt über die jeweils gesetzlich vorgeschriebene Qualifikation zur Ausführung von kältemittel- und rohrtechnischen Arbeiten und ist eine Person, die im Zusammenhang mit kältemittel- und rohrtechnischen Arbeiten an Klimageräten der Toshiba Carrier Corporation geschult ist oder in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen wurde, so dass sie über gründliche Kenntnisse verfügt, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Installationsfachmann, dem es erlaubt ist, Arbeiten in der Höhe auszuführen, ist im Zusammenhang mit Arbeiten in der Höhe an Klimageräten der Toshiba Carrier Corporation geschult oder wurde in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen und verfügt aufgrund dessen über gründliche Kenntnisse, die ihn zur Ausführung dieser Arbeiten befähigen.</li> </ul>
Qualifizierter Servicetechniker	<ul style="list-style-type: none"> <li>• Der Kundendienstfachmann ist eine Person, die Klimageräte der Toshiba Carrier Corporation einbaut, repariert, wartet, umzieht und ausbaut. Die Person ist im Einbau, in der Reparatur und in der Wartung sowie im Umzug und Ausbau von Klimageräten der Toshiba Carrier Corporation geschult oder wurde von einer geschulten Person oder geschulten Personen unterwiesen und verfügt aufgrund dessen über gründliche Kenntnisse, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Kundendienstfachmann, dem es erlaubt ist, Elektroarbeiten im Zuge des Einbaus, der Reparatur, des Umzugs oder Ausbaus auszuführen, verfügt über die jeweils gesetzlich vorgeschriebene Qualifikation zur Ausführung von Elektroarbeiten und ist eine Person, die im Zusammenhang mit Elektroarbeiten an Klimageräten der Toshiba Carrier Corporation geschult ist oder in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen wurde, so dass sie über gründliche Kenntnisse verfügt, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Kundendienstfachmann, dem es erlaubt ist, kältemittel- oder rohrtechnische Arbeiten im Zuge des Einbaus, der Reparatur, des Umzugs oder Ausbaus auszuführen, verfügt über die jeweils gesetzlich vorgeschriebene Qualifikation zur Ausführung von kältemittel- und rohrtechnischen Arbeiten und ist eine Person, die im Zusammenhang mit kältemittel- und rohrtechnischen Arbeiten an Klimageräten der Toshiba Carrier Corporation geschult ist oder in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen wurde, so dass sie über gründliche Kenntnisse verfügt, die sie zur Ausführung dieser Arbeiten befähigen.</li> <li>• Der Kundendienstfachmann, dem es erlaubt ist, Arbeiten in der Höhe auszuführen, ist im Zusammenhang mit Arbeiten in der Höhe an Klimageräten der Toshiba Carrier Corporation geschult oder wurde in diesem Zusammenhang von einer geschulten Person oder geschulten Personen unterwiesen und verfügt aufgrund dessen über gründliche Kenntnisse, die ihn zur Ausführung dieser Arbeiten befähigen.</li> </ul>

### Definitionen zur Schutzkleidung







Bei Transport, Einbau, Wartung, Reparatur und Ausbau des Klimageräts sind Schutzhandschuhe und Sicherheitsarbeitskleidung zu tragen.

Neben dieser normalen Schutzausrüstung wird für die in der Tabelle unten aufgeführten Spezialarbeiten die jeweils genannte Schutzausrüstung benötigt.

Wer auf Schutzausrüstung verzichtet, geht ein hohes Risiko ein, denn die Ausrüstung schützt vor Verletzungen, Verbrennungen, Stromschlag und anderen Gefahren.

Arbeitsaufgabe	Zu tragende Schutzkleidung
Alle Arten von Arbeiten	Schutzhandschuhe Sicherheitsarbeitskleidung
Elektroarbeiten	Isolierhandschuhe zum Schutz vor Stromschlägen und hohen Temperaturen Isolierschuhe Arbeitskleidung, die Schutz vor Elektroschock bietet
Arbeit in der Höhe (50cm und höher)	Industrie-Schutzhelme
Transport schwerer Gegenstände	Schuhe mit Zehenschutzkappen
Reparatur des Außengeräts	Isolierhandschuhe zum Schutz vor Stromschlägen und hohen Temperaturen

### ■ Warnanzeigen an der Klimaanlage

Warnanzeige	Beschreibung		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>WARNUNG</b>  <b>GEFAHR EINES ELEKTRISCHEN SCHLAGS</b> Trennen Sie alle fernen Stromversorgungsquellen vom Netz, bevor Sie Wartungsarbeiten ausführen.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>WARNUNG</b>  Bewegliche Teile. Bedienen Sie nicht das Gerät, wenn das Gitter entfernt wurde. Stoppen Sie das Gerät, bevor Sie es warten.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>VORSICHT</b>  Teile mit hohen Temperaturen. Es besteht die Gefahr, dass Sie sich verbrennen, wenn Sie diese Abdeckung entfernen.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>VORSICHT</b>  Die Aluminiumlamellen des Geräts nicht berühren. Dies kann zu Verletzungen führen.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>VORSICHT</b>  <b>EXPLOSIONSGEFAHR</b> Öffnen Sie vor dem Arbeitsgang die Versorgungsventile, da es anderenfalls zu einer Explosion kommen kann.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>VORSICHT</b>  Steigen Sie nicht auf den Lüfterschutz. Dies kann zu Verletzungen führen.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 SICHERHEITSVORKEHRUNGEN

Der Hersteller übernimmt keine Haftung für die Schäden, die durch Nichtbeachtung der Beschreibung in dieser Bedienungsanleitung verursacht werden.

## **WARNUNG**

### **Allgemeines**

- Bevor Sie mit der Installation des Klimageräts beginnen, lesen Sie das Installationshandbuch sorgfältig durch und befolgen Sie die darin enthaltenen Anweisungen zum Installieren des Klimageräts. Andernfalls könnte das Gerät hinunterfallen oder es könnte Lärm, Vibrationen oder Wasseraustritte verursachen.
- Nur ein qualifizierter Installateur (\*1) oder ein qualifizierter Servicetechniker (\*1) darf die Installationsarbeiten durchführen. Bei einer Installation durch eine nicht dafür qualifizierte Person kann es zu Bränden, elektrischen Schlägen, Verletzungen, Wasseraustritten, Lärm und/oder Vibrationen kommen.
- Verwenden Sie im Fall, dass Sie getrennt erhältliche Produkte verwenden, nur von Toshiba angegebene Produkte. Die Verwendung nicht angegebener Produkte kann zu Bränden, Stromschlägen, Wasseraustritten oder anderen Störungen führen.
- Verwenden Sie kein anderes als das vorgeschriebene Kältemittel zum Nachfüllen oder Ersetzen. Andernfalls kann anormal hoher Druck im Kühlkreislauf erzeugt werden, was zu einem Versagen oder einer Explosion des Produkts oder Verletzungen führen kann.
- Bevor Sie das Wartungspaneel des Außengeräts öffnen, stellen Sie den Schutzschalter auf die Position OFF (aus). Sollten Sie diesen Hinweis nicht beachten, kann es durch Kontakt mit den Innenteilen zu einem Stromschlag kommen. Nur ein qualifizierter Installateur (\*1) oder ein qualifizierter Servicetechniker (\*1) darf das Wartungspaneel des Außengeräts entfernen und die erforderlichen Arbeiten ausführen.
- Bevor Installations-, Wartungs-, Reparatur- oder Entsorgungsarbeiten ausgeführt werden, stellen Sie unbedingt die Schutzschalter sowohl der Innen- als auch der Außengeräte auf die Position OFF (aus). Andernfalls kann es zu einem elektrischen Schlag kommen.

- Befestigen Sie ein Schild „Arbeiten in Ausführung“ neben dem Schutzschalter, während die Installations-, Wartungs-, Reparatur- oder Entsorgungsarbeiten ausgeführt werden. Es besteht die Gefahr von Stromschlägen, wenn der Schutzschalter aus Versehen auf ON (ein) gestellt wird.
- Nur ein qualifizierter Installateur (\*1) oder ein qualifizierter Servicetechniker (\*1) darf Höhenarbeiten unter Verwendung eines 50 cm hohen oder noch höheren Ständers ausführen oder das Einlassgitter des Innengeräts entfernen und die erforderlichen Arbeiten ausführen.
- Tragen Sie bei Installation, Wartung und Entsorgung Schutzhandschuhe und Arbeitsschutzbekleidung.
- Die Aluminiumlamellen des Außengeräts nicht berühren. Andernfalls können Sie sich verletzen. Wenn die Rippen aus einem bestimmten Grund berührt werden muss, ziehen Sie zuerst Schutzhandschuhe und Arbeitsschutzbekleidung an, bevor Sie diese Arbeiten ausführen.
- Klettern Sie nicht auf das Außengerät, und stellen Sie keine Gegenstände darauf ab. Andernfalls können Sie abstürzen, oder Gegenstände können herunterfallen. In beiden Fällen besteht Verletzungsgefahr.
- Stellen Sie vor dem Beginn von Höhenarbeiten ein Warnschild auf, damit sich niemand dem Arbeitsbereich nähert. Teile oder andere Gegenstände können von oben herunterfallen und u. U. unten befindliche Personen verletzen. Tragen Sie außerdem Sorge dafür, dass Arbeiter Schutzhelme tragen.
- Bevor Sie den Filter oder andere Teile des Außengeräts reinigen, stellen Sie unbedingt den Schutzschalter auf OFF (aus), und befestigen Sie ein Schild „Arbeiten in Ausführung“ neben dem Schutzschalter, bevor Sie die Arbeiten ausführen.
- Diese Klimaanlage verwendet das Kühlmittel R410A.
- Sie müssen sicherstellen, dass die Klimaanlage unter stabilen Bedingungen transportiert wird. Setzen Sie sich mit Ihrem Fachhändler in Verbindung, falls Sie feststellen sollten, dass irgendein Teil des Produkts defekt ist.
- Zerlegen, modifizieren und stellen Sie das Produkt nicht selber um. Dies könnte zu Bränden, Stromschlägen, Verletzungen oder Wasseraustritten führen.
- Dieses Gerät ist dafür bestimmt, von Experten oder geschulten Anwendern in Geschäften oder in der Leichtindustrie verwendet zu werden und von Laien für den kommerziellen Einsatz.



## Auswahl des Installationsortes

- Wenn Sie die Anlage in einem kleinen Raum installieren, ergreifen Sie angemessene Vorsichtsmaßnahmen, damit die Kühlmittelkonzentration auch bei Kühlmittelaustritt den Sicherheitsgrenzwert nicht überschreitet. Wenden Sie sich bei Fragen zur Umsetzung der Maßnahmen an den Händler, bei dem Sie die Klimaanlage gekauft haben. Durch Ansammlung von hochkonzentriertem Kühlmittel kann es zu einem Unfall durch Sauerstoffmangel kommen.
- Nehmen Sie keine Installation an einem Ort vor, an dem der Austritt entflammbarer Gase möglich sein könnte. Wenn entflammbares Gas austreten und sich um das Gerät herum ansammeln sollte, könnte es sich entzünden und einen Brand verursachen.
- Tragen Sie beim Transport des Klimageräts Schuhe mit Zehenschutzkappen, Schutzhandschuhe und andere Schutzbekleidung.
- Halten Sie die Klimaanlage beim Tragen nicht an den Bändern des Verpackungskartons fest. Anderenfalls können Sie sich verletzen, wenn die Bänder reißen.
- Andere außer Stand- und Konsolengeräte, installieren Sie das Innengerät mindestens 2,5 m über dem Boden, da sich Personen anderenfalls verletzen oder Stromschläge erleiden können, falls sie ihre Finger oder andere Gegenstände in das Innengerät stecken, während die Klimaanlage läuft.
- Stellen Sie keine Verbrennungsvorrichtung an Orten auf, wo sie direkt dem Wind der Klimaanlage ausgesetzt ist, da anderenfalls eine unvollständige Verbrennung die Folge ist.
- Orte, an denen das Betriebsgeräusch des Außengeräts zu Störungen führen kann. (Installieren Sie das Klimagerät insbesondere an der Grenze zu einem Ihrer Nachbarn, indem Sie dem Geräuschpegel Rechnung tragen.)

## Installation

- Installieren Sie die Klimaanlage entsprechend den Anweisungen im Installationshandbuch. Bei Missachtung dieser Anweisungen kann das Gerät hinunterfallen, umkippen oder Geräusche, Vibrationen, Wasseraustritte oder andere Störungen verursachen.
- Die angegebenen Schrauben (M12) und Muttern (M12) zum Befestigen des Außengeräts müssen beim Installieren des Geräts verwendet werden.
- Installieren Sie das Außengerät ordnungsgemäß an einem Ort, der stark genug ist, das Gewicht des Außengeräts zu tragen. Ist der Ort nicht tragfähig, kann das Außengerät herunterfallen und Verletzungen verursachen.
- Installieren Sie das Gerät zum Schutz vor starken Winden und Erdbeben auf die vorgeschriebene Art und Weise. Eine fehlerhafte Installation kann das Hinunterfallen des Geräts oder andere Unfälle zur Folge haben.
- Vergewissern Sie sich darüber, dass Schrauben, die zu Installations- oder anderen Zwecken entfernt wurden, erneut an Ihrem Platz befestigt werden.

## Kühlmittleitungen

- Überprüfen Sie die sichere Installation der Kühlmittleitung, bevor Sie das Klimagerät in Betrieb nehmen. Falls der Kompressor bei geöffnetem Ventil und ohne Kühlmittelrohr betrieben wird, saugt er Luft ein, und der Gasdruck im Kühlkreislauf wird extrem hoch, was zu Verletzungen führen kann.
- Ziehen Sie die Bördelmutter mit einem Drehmomentschlüssel wie angegeben fest. Übermäßiges Festziehen der Bördelmutter kann nach längerer Zeit zu Rissen in der Bördelmutter führen, wodurch Kühlmittel auslaufen kann.
- Lüften Sie, falls während der Installation Kältemittelgas austritt. Beim Kontakt des ausgetretenen Kältemittelgases mit einer offenen Flamme können sich giftige Gase bilden.

- Vergewissern Sie sich daher nach der Installation noch einmal, dass kein Kühlmittel austreten kann. Wenn Kühlmittelgase austreten und in einen Raum mit einem Herd oder Ofen gelangen, kann es bei einer offenen Flamme zur Bildung von gesundheitsschädlichen Gasen kommen.
- Wenn die Klimaanlage installiert oder umgesetzt wurde, führen Sie gemäß den Anweisungen im Installationshandbuch eine vollständige Luftspülung aus, so dass lediglich das Kühlmittel im Kühlkreislauf gemischt wird. Wird keine vollständige Luftspülung ausgeführt, können Fehlfunktionen der Klimaanlage auftreten.
- Für die Luftdichteprüfung muss Stickstoff verwendet werden.
- Der Zuleitungsschlauch muss so angeschlossen werden, dass er nicht durchhängt.
- Ist während der Installation Kühlmittel ausgetreten, lüften Sie den Raum umgehend. Beim Kontakt des Kältemittelgases mit einer offenen Flamme werden giftige Gase gebildet.

### Elektrische Verdrahtung

- Nur ein qualifizierter Installateur (\*1) oder ein qualifizierter Servicetechniker (\*1) darf Elektroarbeiten an der Klimaanlage ausführen. Unter keinen Umständen dürfen diese Arbeiten von unqualifizierten Mitarbeitern ausgeführt werden, da eine nicht sachgemäße Ausführung der Arbeit zu elektrischen Schlägen und/oder Kriechströmen führen kann.
- Beim Anschließen von elektrischen Drähten, Reparieren von elektrischen Teilen oder Ausführen anderer Elektroarbeiten tragen Sie Isolierhandschuhe zum Schutz vor Stromschlägen und hohen Temperaturen, isolierendes Schuhwerk sowie Arbeitsschutzkleidung zum Schutz vor Stromschlägen. Falls keine Schutzkleidung getragen wird, kann es zu elektrischen Schlägen kommen.
- Ziehen Sie bei der Durchführung der Adressierung, eines Testlaufs oder einer Fehlersuche mittels des Prüfensters am Schaltkasten isolierte hitzefeste Handschuhe, Isolierschuhe und andere Kleidung zum Schutz vor elektrischen Schlägen an. Anderenfalls können Sie einen elektrischen Schlag erleiden.

- Beachten Sie beim Legen von elektrischen Leitungen die Spezifikationen im Installationshandbuch sowie die Bestimmungen der lokalen Gesetze und die Rechtsvorschriften. Bei Verwendung von Kabeln, die die Spezifikationen nicht erfüllen, kann es zu Stromschlägen, Kriechströmen, Rauchentwicklungen und/oder Bränden kommen.
- Stellen Sie sicher, dass das Produkt fachgerecht geerdet ist. (Erdungsarbeiten)  
Eine ungenügende Erdung kann Stromschläge verursachen.
- Schließen Sie die Erdleitung nicht an Gas- oder Wasserrohre, Blitzableiter oder an die Telefonerdungsleitung an.
- Prüfen Sie nach Abschluss der Reparatur- oder Umsetzungsarbeiten, ob die Erdungsleiter korrekt angeschlossen sind.
- Installieren Sie einen Schutzschalter, der die Spezifikationen im Installationshandbuch sowie die Bestimmungen der lokalen Gesetze und die Rechtsvorschriften erfüllt.
- Bringen Sie den Schutzschalter an einem Ort an, wo er vom Bediener problemlos erreicht werden kann.
- Wenn der Schutzschalter im Freien installiert werden soll, verwenden Sie einen Outdoor-Schutzschalter.
- Das Stromkabel darf unter keinen Umständen durch ein Verlängerungskabel erweitert werden. Bei Anschlussproblemen des Kabels an den Verlängerungsstellen kann es zu Rauchentwicklungen und/oder Bränden kommen.
- Alle elektrischen Arbeiten sind nach geltender Vorschrift und unter Beachtung der Installationsanleitung auszuführen. Es besteht Stromschlag- und Kurzschlussgefahr.
- Versorgen Sie kein anderes Außengerät mit Strom vom Stromklemmenblock am Außengerät. Der Klemmenblock könnte überlastet werden und dies kann zu einem Brand führen.
- Verwenden Sie bei der Herstellung der elektrischen Anschlüsse das im Installationshandbuch angegebene Kabel und verbinden und befestigen Sie die Kabel in sicherer Weise, um zu verhindern, dass äußere Kräfte über sie auf die Klemmen wirken können. Wenn Anschlüsse und Befestigungen nicht fachgerecht ausgeführt werden, besteht Brandgefahr.

## Testlauf

- Bevor Sie die Klimaanlage nach Abschluss der Arbeiten betreiben, stellen Sie sicher, dass die Abdeckung des Elektrokastens am Innengerät und das Wartungspaneel des Außengeräts geschlossen sind, und stellen Sie den Schutzschalter auf die Position ON (ein). Sie können einen elektrischen Schlag erleiden, falls der Strom eingeschaltet wird, ohne dass Sie vorher diese Prüfungen durchgeführt haben.
- Wenn Sie festgestellt haben, dass Probleme mit der Klimaanlage aufgetreten sind (z. B. ein Fehler wird angezeigt, es riecht verbrannt, ungewöhnliche Geräusche sind zu hören, die Klimaanlage kühlt bzw. heizt nicht oder Wasser läuft aus), dann manipulieren Sie nicht selbst an der Klimaanlage, sondern stellen Sie den Schutzschalter auf die Position OFF (aus), und wenden Sie sich an einen Servicetechniker. Stellen Sie sicher, dass der Strom nicht wieder eingeschaltet wird (indem Sie beispielsweise den Schutzschalter durch „außer Betrieb“ kennzeichnen), bis ein qualifizierter Servicetechniker eintrifft. Die weitere Verwendung der Klimaanlage in fehlerhaftem Zustand kann zur Verschlimmerung der mechanischen Probleme oder zu elektrischen Schlägen und anderen Störungen führen.
- Nach den Arbeiten mit einem Isolationsprüfgerät (500-Volt-Megaohmmeter) sichergehen, dass der Widerstand zwischen spannungsführendem Abschnitt und nicht spannungsführendem Abschnitt (Erdabschnitt) 1 MΩ oder höher ist. Falls der Widerstandswert zu niedrig ist, können an der Benutzerseite Kriechströme oder Stromschläge verursacht werden.
- Stellen Sie nach Abschluss der Installationsarbeiten sicher, dass kein Kühlmittel ausläuft, und prüfen Sie Isolierwiderstand sowie Wasserableitung. Führen Sie danach einen Testlauf durch, um sicherzustellen, dass die Klimaanlage ordnungsgemäß funktioniert.

## Dem Benutzer mitzuteilende Informationen

- Teilen Sie dem Benutzer nach Abschluss der Installationsarbeiten mit, wo sich der Schutzschalter befindet. Sollte der Benutzer nicht wissen, wo sich der Schutzschalter befindet, kann er diesen nicht ausschalten, falls Probleme mit der Klimaanlage auftreten.

- Wenn das Ventilatorgitter beschädigt ist, das Außengerät selbst nicht anrühren, sondern den Schutzschalter ausschalten und einen Kundendienstfachmann (\*1) rufen. Stellen Sie den Schutzschalter erst wieder auf die Position ON (ein), nachdem die Reparaturen abgeschlossen wurden.
- Nach Abschluss der Installationsarbeiten erläutern Sie dem Kunden die Verwendung und Wartung des Geräts entsprechend dem Benutzerhandbuch.

## Umsetzung

- Nur ein qualifizierter Installateur (\*1) oder ein qualifizierter Servicetechniker (\*1) darf die Klimaanlage umsetzen. Es ist gefährlich, wenn die Klimaanlage durch einen nicht qualifizierten Benutzer umgesetzt wird, da es zu Bränden, elektrischen Schlägen, Verletzungen, Wasseraustritten, Geräuschen und/oder Vibrationen kommen kann.
- Schließen Sie beim Durchführen der Abpumparbeiten zuerst den Kompressor, bevor Sie das Kühlmittelrohr trennen. Wenn die Kältemittelleitung bei offenem Wartungsventil abgetrennt wird und der Kompressor noch läuft, werden Luft oder andere Gase angesaugt. Der Druck im Kältemittelkreislauf steigt, und es besteht die Gefahr eines Leitungsbruchs und dementsprechend die Gefahr von Verletzungen und anderen Störungen.
- Führen Sie zurückgewonnenes Kältemittel nicht in das Außengerät zurück. Verwenden Sie beim Umstellen oder bei Reparaturen unbedingt ein Kältemittelrückgewinnungsgerät zur Rückgewinnung des Kältemittels. Die Rückgewinnung des Kältemittels für das Außengerät ist nicht möglich. Die Rückführung von Kältemittel in das Außengerät kann schwere Unfälle, wie z.B. die Explosion des Geräts und Verletzungen, zur Folge haben.

(\*1) Siehe „Definition der Bezeichnungen Qualifizierter Installateur oder Qualifizierter Servicetechniker“.

**⚠ VORSICHT**

**Installation von Klimageräten mit modernen Kühlmitteln**  
• **DIESES KLIMAGERÄT ARBEITET MIT DEM NEUEN HFC KÄLTEMITTEL (R410A) WELCHES DIE OZONSCHICHT NICHT ANGREIFT.**

- R410A-Kühlmittel absorbiert Wasser sehr schnell, kann Membrane oxidieren und ist empfindlich gegen Öl. Der Druck von R410A liegt etwa 1,6-mal höher als der von R22-Kühlmittel. Gleichzeitig mit dem Einsatz des neuen Kühlmittels wurde auch das bisher verwendete Kühlmaschinenöl gewechselt. Stellen Sie daher sicher, dass bei den Installationsarbeiten kein Wasser oder Staub und kein altes Kühlmittel oder Kühlmaschinenöl in den Kühlmittelkreislauf gelangt.
- Um zu verhindern, dass falsches Kühlmittel und Kühlmaschinenöl eingefüllt wird, wurde, verglichen mit Systemen, die mit konventionellen Kühlmitteln arbeiten, die Größe der Anschlüsse zur Befüllung der Haupteinheit geändert und komplett neue Installationswerkzeuge konzipiert.
- Daher sind für das neue Kühlmittel (R410A) die entsprechenden Spezialwerkzeuge erforderlich.
- Verwenden Sie für die Anschlussleitungen ausschließlich neue, saubere Rohre, die eigens für R410A gefertigt wurden, und achten Sie darauf, dass kein Wasser oder Staub eindringt.

**Trennen des Gerätes von der Hauptstromversorgung**

- Das Gerät muss an die Hauptstromversorgung über einen Schalter angeschlossen werden, dessen Kontakte einen Schaltabstand von mind. 3 mm aufweisen.

**Die Installationssicherung muss für die Stromversorgungsleitung dieses Klimageräts verwendet werden (hierfür können alle Typen verwendet werden).**

**Waschen Sie nicht Klimaanlage mit Druckwaschanlagen.**

- Elektrische Lecks können zu Stromschlägen oder Bränden führen.

Grazie per aver acquistato questo Toshiba condizionatore d'aria.

Questo manuale d'installazione spiega come installare l'unità esterna. Per istruzioni sull'installazione delle unità interne si prega di vedere il manuale d'installazione con esse fornito.

Poiché esso riporta inoltre gli articoli più importanti sulla direttiva "Macchine" 2006/42/CE si raccomanda di leggerlo e comprenderlo a fondo. Dopo l'installazione esso deve essere consegnato all'utilizzatore insieme al manuale d'uso dell'unità interna, raccomandandogli di conservarli in un luogo sicuro.

Le unità interne devono essere alimentate in modo esclusivo e separatamente dalla linea di alimentazione delle unità esterne. Per collegare i tubi tra le unità interne e quelle esterne sono necessarie giunti a Y o a testata chiusa (da approvvigionare a parte). Si dovranno scegliere gli uni o le altre in considerazione della capacità del sistema di condizionamento. Per istruzioni sull'installazione dei tubi a diramazione si prega di vedere il manuale d'installazione dei giunti a Y o di quelli a testata chiusa (da approvvigionare a parte).

I giunti a diramazione per le unità esterne sono necessari soltanto per collegare queste fra loro.

**Denominazione generica: Condizionatore d'aria**

**Definizione di installatore qualificato o tecnico dell'assistenza qualificato**

Il condizionatore d'aria deve essere installato, sottoposto a manutenzione, riparato e rimosso da un installatore qualificato o da un tecnico dell'assistenza qualificato. Quando deve essere eseguito uno di questi lavori, rivolgersi a un installatore qualificato o a un tecnico dell'assistenza qualificato per svolgerli in propria vece.

Un installatore qualificato o un tecnico dell'assistenza qualificato è un agente che dispone delle qualifiche e dell'esperienza descritti nella tabella seguente.







Agente	Qualifiche ed esperienza di cui deve disporre l'agente
Installatore qualificato	<ul style="list-style-type: none"> <li>• L'installatore qualificato è una persona che installa, effettua la manutenzione, sposta e rimuove i condizionatori d'aria costruiti da Toshiba Carrier Corporation. Ha ricevuto la formazione necessaria per installare, mantenere, spostare e rimuovere i condizionatori d'aria costruiti da Toshiba Carrier Corporation o, in alternativa, è stato addestrato da uno o più individui in possesso della necessaria formazione, ed è pertanto idoneo a svolgere tali operazioni.</li> <li>• L'installatore qualificato autorizzato a eseguire i lavori elettrici richiesti per l'installazione, il trasferimento e la rimozione del condizionatore d'aria possiede le qualifiche necessarie per svolgere tali compiti, come stabilito dalle leggi e dai regolamenti locali; è stato addestrato a lavorare sui condizionatori d'aria direttamente da Toshiba Carrier Corporation o da uno o più individui in possesso della necessaria formazione ed è pertanto idoneo a svolgere tale lavoro.</li> <li>• L'installatore qualificato autorizzato a eseguire i lavori di gestione del refrigerante e di posa dei tubi richiesti per l'installazione, il trasferimento e la rimozione del condizionatore d'aria possiede le qualifiche necessarie per svolgere tali compiti, come stabilito dalle leggi e dai regolamenti locali; è stato addestrato a lavorare a svolgere i lavori di gestione del refrigerante e di posa dei tubi direttamente da Toshiba Carrier Corporation o da uno o più individui in possesso della necessaria formazione ed è pertanto idoneo a svolgere tale lavoro.</li> <li>• L'installatore qualificato autorizzato a svolgere lavori in altezza ha ricevuto la formazione necessaria per effettuare tali lavori con i condizionatori d'aria costruiti da Toshiba Carrier Corporation o, in alternativa, è stato addestrato da uno o più individui in possesso della necessaria formazione, ed è pertanto idoneo a svolgere tali operazioni.</li> </ul>
Qualified service person	<ul style="list-style-type: none"> <li>• Il personale di assistenza qualificato è una persona che installa, ripara, effettua la manutenzione, sposta e rimuove i condizionatori d'aria costruiti da Toshiba Carrier Corporation. Ha ricevuto la formazione necessaria per installare, riparare, mantenere, spostare e rimuovere i condizionatori d'aria costruiti da Toshiba Carrier Corporation o, in alternativa, è stato addestrato da uno o più individui in possesso della necessaria formazione, ed è pertanto idoneo a svolgere tali operazioni.</li> <li>• Il personale di assistenza qualificato autorizzato a eseguire i lavori elettrici richiesti per l'installazione, il trasferimento e la rimozione del condizionatore d'aria possiede le qualifiche necessarie per svolgere tali compiti, come stabilito dalle leggi e dai regolamenti locali; è stato addestrato a lavorare sui condizionatori d'aria direttamente da Toshiba Carrier Corporation o da uno o più individui in possesso della necessaria formazione ed è pertanto idoneo a svolgere tale lavoro.</li> <li>• Il personale di assistenza qualificato autorizzato a eseguire i lavori di gestione del refrigerante e di posa dei tubi richiesti per l'installazione, il trasferimento e la rimozione del condizionatore d'aria possiede le qualifiche necessarie per svolgere tali compiti, come stabilito dalle leggi e dai regolamenti locali; è stato addestrato a lavorare a svolgere i lavori di gestione del refrigerante e di posa dei tubi direttamente da Toshiba Carrier Corporation o da uno o più individui in possesso della necessaria formazione ed è pertanto idoneo a svolgere tale lavoro.</li> <li>• Il personale di assistenza qualificato autorizzato a svolgere lavori in altezza ha ricevuto la formazione necessaria per effettuare tali lavori con i condizionatori d'aria costruiti da Toshiba Carrier Corporation o, in alternativa, è stato addestrato da uno o più individui in possesso della necessaria formazione, ed è pertanto idoneo a svolgere tali operazioni.</li> </ul>

### Definizione di attrezzatura protettiva

Prima di procedere alle operazioni di trasporto, installazione, manutenzione, riparazione o rimozione del condizionatore d'aria è necessario indossare sempre guanti e abbigliamento protettivi.  
 In aggiunta ai normali dispositivi di protezione, indossare i dispositivi di protezione descritti di seguito, prima di procedere all'esecuzione dei lavori speciali elencati nella tabella sottostante.  
 La mancata osservanza di questa indicazione espone l'operatore al rischio di lesioni, ustioni, elettrocuzione, ecc.

Lavoro intrapreso	Attrezzatura protettiva indossata
Tutti i tipi di lavori	Guanti protettivi Abbigliamento protettivo da lavoro
Lavoro su impianti elettrici	Guanti di protezione per elettricisti e resistenti al calore Scarpe isolanti Abbigliamento per la protezione da elettrocuzione
Lavori in altezza (50cm o più)	Elmetti per uso industriale
Trasporto di oggetti pesanti	Scarpe con calotte protettive aggiuntive per le dita
Riparazione dell'unità esterna	Guanti di protezione per elettricisti e resistenti al calore

### ■ Indicazioni di avvertimento sul condizionatore d'aria

Indicazione di avvertimento	Descrizione		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>AVVERTENZA</b>  <b>PERICOLO DI SCOSSA ELETTRICA</b> Scollegare tutte le fonti di alimentazione elettrica remote, prima di sottoporre a interventi di assistenza.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>AVVERTENZA</b>  Parti mobili. Non far funzionare l'unità con la griglia rimossa. Arrestare l'unità prima di sottoporla ad assistenza.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>ATTENZIONE</b>  Parti ad alta temperatura. Quando si rimuove questo pannello sussiste il pericolo di ustione.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>ATTENZIONE</b>  Non toccare le alette in alluminio dell'unità. In caso contrario, si potrebbero provocare lesioni personali.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>ATTENZIONE</b>  <b>PERICOLO DI SCOPPIO</b> Aprire le valvole di servizio prima dell'operazione; in caso contrario, si potrebbe verificare uno scoppio.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>ATTENZIONE</b>  <b>Non salire sul paraventola.</b> In caso contrario, si potrebbero provocare lesioni personali.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 PRECAUZIONI PER LA SICUREZZA

Il produttore rifiuta qualsiasi responsabilità per eventuali danni causati dall'inosservanza delle istruzioni fornite in questo manuale.

## AVVERTENZA

### Generali

- Prima d'iniziare l'installazione del condizionatore si raccomanda di leggere con attenzione il manuale d'installazione e di osservarne scrupolosamente ogni istruzione ivi fornita. In caso contrario le unità potrebbero cadere dal supporto, generare rumore o vibrazioni o causare altresì fuoriuscite d'acqua.
- Il lavoro d'installazione deve essere affidato esclusivamente a un tecnico installatore (\*1) o a un tecnico di assistenza (\*1) qualificato. Se la si affida a una persona non qualificata si potrebbero verificare un incendio, scosse elettriche, lesioni alle persone, fuoriuscite d'acqua e rumore o vibrazioni.
- In caso d'uso di parti da acquistare a parte è necessario che siano del tipo specificato da Toshiba. L'uso di parti non esplicitamente autorizzate può divenire causa d'incendio, scosse elettriche, fuoriuscite d'acqua o malfunzionamenti del sistema.
- Sia per la sostituzione sia per il rabbocco si deve usare esclusivamente il tipo di refrigerante specificato. In caso contrario nel circuito di refrigerazione si potrebbe creare una pressione anomala con la conseguente possibilità di guasto o esplosione oltre che di lesione alle persone.
- Prima di aprire i pannelli di servizio dell'unità esterna si deve disinserire l'interruttore di sicurezza automatico. La mancata impostazione dell'interruttore automatico sulla posizione OFF (spento) potrebbe provocare scosse elettriche attraverso il contatto con le parti interne. La rimozione dei pannelli e l'esecuzione dei necessari lavori deve essere affidata esclusivamente a un tecnico installatore (\*1) o a un tecnico di assistenza (\*1) qualificato.
- Prima di procedere con l'installazione, la riparazione o la rimozione delle unità si deve disinserire l'interruttore di sicurezza automatico di entrambe. In caso contrario si potrebbero ricevere scosse elettriche.

- Sistemare un cartello con l'indicazione "Lavori in corso" in prossimità dell'interruttore automatico durante l'esecuzione di lavori di installazione, manutenzione, riparazione o rimozione. Qualora l'interruttore automatico sia impostato su ON (acceso) per errore, sussiste il pericolo di scosse elettriche.
- Solo un installatore qualificato (\*1) o un tecnico dell'assistenza qualificato (\*1) sono autorizzati a svolgere lavori in altezza utilizzando un supporto di altezza pari o superiore a 50 cm per rimuovere la griglia della presa d'aria dell'unità interna al fine dello svolgimento dei lavori.
- Durante l'installazione, la manutenzione e la rimozione, indossare guanti di protezione e indumenti da lavoro di sicurezza.
- Non toccare le alette in alluminio dell'unità esterna. In caso contrario, si potrebbero provocare lesioni personali. Qualora sia necessario toccare l'aletta per qualche motivo, indossare prima guanti di protezione e indumenti da lavoro di sicurezza, quindi procedere.
- Non salire né collocare oggetti sull'unità esterna. Si potrebbe cadere o gli oggetti potrebbero cadere dall'unità esterna e provocare lesioni personali.
- Quando si lavora in altezza, sistemare un cartello in modo che nessuno si avvicini alla sede dei lavori, prima di procedere con i lavori. Dall'alto potrebbero infatti cadere parti o altri corpi, eventualmente causando lesioni alle persone sottostanti. Si raccomanda altresì d'imporre alle persone coinvolte l'uso di un casco di sicurezza.
- Quando si intende pulire il filtro o altre parti dell'unità esterna, accertarsi di aver impostato l'interruttore automatico sulla posizione OFF (spento) e sistemare un cartello con l'indicazione "Lavori in corso" in prossimità dell'interruttore automatico, prima di iniziare il lavoro.
- Il refrigerante utilizzato da questo condizionatore d'aria è l'R410A.
- Accertarsi che il condizionatore d'aria venga trasportato in condizioni stabili. Qualora una parte qualsiasi dovesse apparire non integra si raccomanda di rivolgersi immediatamente al proprio rivenditore.
- Non smontare, modificare o spostare da sé le varie unità del condizionatore. Ciò potrebbe infatti divenire causa d'incendio, scosse elettriche, lesioni personali o fuoriuscita d'acqua.
- Il presente apparecchio deve essere utilizzato da utenti esperti o formati nei negozi, nel settore dell'illuminazione o per uso commerciale dai non addetti ai lavori.

### Selezione della sede di installazione

- Se si installa l'unità in una stanza piccola, adottare le misure appropriate affinché, in caso di perdita di refrigerante, la concentrazione di quest'ultimo nella stanza non superi il limite consentito. Quando si implementano tali misure, consultare il rivenditore da cui si è acquistato il condizionatore d'aria. L'accumulo di elevate concentrazioni di refrigerante potrebbe provocare un incidente dovuto a carenza di ossigeno.
- Non installare le unità in un luogo soggetto a possibili fughe di gas infiammabili. Qualora dovessero raggiungere una concentrazione elevata attorno ad esse potrebbero infatti causare un incendio.
- Durante il trasporto del condizionatore si raccomanda di calzare scarpe rinforzate sulla punta nonché indossare guanti e altro abbigliamento protettivo.
- Quando si trasporta il condizionatore d'aria, non afferrare le fascette che circondano la scatola di imballaggio. Qualora le fascette si rompano, si potrebbero subire lesioni personali.
- Per tipi non a pavimento e console, installare l'unità interna ad almeno 2,5 metri di altezza dal pavimento, poiché, in caso contrario, gli utenti potrebbero subire lesioni personali o scosse elettriche qualora urtino con le dita o altri oggetti l'unità interna mentre il condizionatore d'aria è in funzione.
- Non collocare apparecchi a combustione di alcun genere in luoghi che siano direttamente esposti al flusso d'aria prodotto dal condizionatore d'aria; in caso contrario, il condizionatore potrebbe provocare una combustione imperfetta.
- Fare attenzione ai possibili luoghi d'installazione ove il rumore dell'unità esterna potrebbe arrecare disturbo. (Specialmente nei punti di confine con altre proprietà.)

### Installazione

- Attenersi alle istruzioni nel Manuale di installazione per installare il condizionatore d'aria. La mancata osservanza di queste istruzioni potrebbe infatti causare la caduta o il ribaltamento delle unità, nonché divenire causa di rumore, vibrazioni, fuoriuscite d'acqua o malfunzionamenti.
- È necessario utilizzare i bulloni (M12) e i dadi (M12) specificati per fissare l'unità esterna, quando si installa quest'ultima.
- Installare l'unità esterna correttamente in una sede che sia sufficientemente robusta da sostenere il peso dell'unità esterna. In caso contrario potrebbe ribaltarsi con conseguente pericolo di lesione per le persone.
- L'unità interna deve essere installata nel modo prescritto affinché resista al forte vento e ai movimenti sismici. Se eseguita non adeguatamente, l'installazione può causare la caduta dell'unità o altri incidenti.
- Le viti rimosse durante l'installazione o per altri scopi ancora dovranno essere risistemate nella posizione d'origine.

### Tubi del liquido refrigerante

- Installare il tubo del refrigerante stabilmente durante i lavori di installazione, prima di mettere in funzione il condizionatore d'aria. Se il compressore venisse messo in funzione con la valvola aperta e senza il tubo del refrigerante, il compressore aspirerebbe aria e il circuito di refrigerazione raggiungerebbe una pressione eccessiva, con la possibilità di causare lesioni personali.
- Serrare il dado svasato con una chiave torsiometrica come illustrato. Un serraggio eccessivo del dado svasato potrebbe causare delle spaccature nel lungo periodo, il che potrebbe provocare perdite di refrigerante.
- Se durante l'installazione si verifica una fuoriuscita di gas si deve ventilare bene la zona. A contatto con fiamme libere infatti esso s'incendia generando sostanze nocive.

- Una volta completata l'installazione è quindi di estrema importanza verificare che non vi siano perdite. Qualora si verifichi una perdita di gas refrigerante in una stanza e il gas entri in contatto con delle fiamme, ad esempio in una cucina, si potrebbero generare gas tossici.
- Quando il condizionatore d'aria è stato installato o trasferito, attenersi alle istruzioni nel Manuale di installazione e spurgare completamente l'aria in modo che nessun altro gas si mescoli al refrigerante nel circuito di refrigerazione. Qualora non si effettui lo spurgo completo dell'aria, si potrebbe provocare un malfunzionamento del condizionatore d'aria.
- Per la prova di tenuta dell'aria è necessario utilizzare gas di azoto.
- Il tubo flessibile di carico deve essere collegato in modo tale da non essere lasco.
- Se durante l'installazione si verifica una fuga del gas refrigerante occorre ventilare subito l'ambiente. Se il gas refrigerante fuoriuscito entra in contatto con le fiamme, è possibile che vengano generati gas tossici.

### Cavi elettrici

- Solo un installatore qualificato (\*1) o un tecnico dell'assistenza qualificato (\*1) sono autorizzati a eseguire i lavori sull'impianto elettrico per il condizionatore d'aria. In nessuna circostanza tali lavori devono essere effettuati da una persona non qualificata, poiché un'esecuzione non appropriata dei lavori potrebbe provocare scosse elettriche e/o dispersioni di corrente.
- Quando si intende collegare i cavi elettrici, riparare parti elettriche o iniziare altri tipi di lavori sull'impianto elettrico, indossare guanti di protezione per elettricisti e resistenti al calore, scarpe e indumenti isolanti, per fornire protezione contro le scosse elettriche. Qualora non si indossino queste attrezzature protettive, si potrebbero provocare scosse elettriche.
- Prima d'impostare gli indirizzi, eseguire la prova di funzionamento o ricercare i guasti attraverso il vano di controllo della centralina elettrica si devono indossare guanti anti-termici nonché scarpe e abbigliamento isolato in grado di fornire protezione dalle scosse elettriche. In caso contrario le si potrebbe ricevere.

- Utilizzare cablaggi che soddisfino le specifiche nel Manuale di installazione e le direttive delle norme e nelle leggi locali. L'uso di cablaggi che non soddisfino le specifiche potrebbe provocare scosse elettriche, dispersioni di corrente, fumo e/o un incendio.
- Al termine dell'installazione accertarsi nuovamente che l'unità sia correttamente collegata a terra.  
La messa a terra non correttamente eseguita potrebbe infatti divenire causa di scosse elettriche.
- Non collegare il conduttore di terra ai tubi del gas o dell'acqua, ai parafulmini o al cavo di messa a terra della linea telefonica.
- Dopo aver completato i lavori di riparazione o di trasferimento, verificare che i fili elettrici di messa a terra siano collegati correttamente.
- Installare un interruttore automatico che soddisfi le specifiche nel Manuale di installazione e le direttive delle norme e delle leggi locali.
- Installare l'interruttore automatico in una sede che sia facilmente accessibile dall'agente.
- Quando si installa l'interruttore automatico all'aperto, installarne uno progettato per l'uso per esterno.
- Non utilizzare in alcuna circostanza prolunghe del cavo elettrico di alimentazione. Problemi di collegamento nelle sedi in cui si trovino prolunghe del cavo elettrico possono provocare fumo e/o un incendio.
- I lavori di cablaggio elettrico devono essere effettuati in conformità alle normative vigenti e al manuale di installazione. La mancata osservanza di questa indicazione espone al rischio di elettrocuzione o cortocircuito.
- Non alimentare un'unità esterna attraverso la basetta dei contatti di alimentazione di un'altra unità esterna. L'eventuale eccesso di capacità in questo punto potrebbe infatti causare un incendio.
- Per i collegamenti elettrici si devono usare esclusivamente i tipi di conduttore specificati nel manuale d'installazione, fissandoli quindi saldamente affinché non applichino una forza esterna ai punti di collegamento. Collegamenti non eseguiti correttamente o cavi debolmente fissati potrebbero divenire causa d'incendio.



## Prova di funzionamento

- Prima di far funzionare il condizionatore d'aria, dopo aver completato il lavoro, verificare che il coperchio della cassetta dei componenti elettrici dell'unità interna e il pannello di servizio dell'unità esterna siano chiusi, e che l'interruttore automatico sia impostato sulla posizione ON (acceso). Qualora si accenda l'unità senza aver prima eseguito questi controlli, si potrebbe subire una scossa elettrica.
- Quando si è notato il verificarsi di un problema di qualche tipo con il condizionatore d'aria (ad esempio quando è stata visualizzata un'indicazione di errore, si sente odore di bruciato, si sentono suoni anomali, il condizionatore non raffredda o non riscalda, o è presente una perdita d'acqua), non toccare da soli il condizionatore d'aria, ma impostare l'interruttore automatico sulla posizione OFF (spento) e contattare un tecnico dell'assistenza qualificato. Adottare delle misure per assicurare che l'unità non venga accesa (ad esempio scrivendo "fuori servizio" in prossimità dell'interruttore automatico) fino all'arrivo di un tecnico dell'assistenza qualificato. L'uso continuato del condizionatore in questa condizione anomala potrebbe divenire causa di problemi meccanici, generare scosse elettriche o causare altri guasti.
- Al termine del lavoro di riparazione, utilizzare un tester di isolamento (Megahommetro tipo Megger da 500V) per verificare che la resistenza tra la sezione di carica e la sezione metallica di non carica (Sezione di terra) sia pari o superiore a 1 MΩ. Qualora il valore di resistenza sia basso, potrebbe verificarsi un grave problema, quale una dispersione o una scossa elettrica, dal lato dell'utente.
- Al completamento del lavoro di installazione, controllare eventuali perdite di refrigerante e controllare la resistenza di isolamento e lo scarico dell'acqua. Quindi, eseguire un funzionamento di prova per controllare che il condizionatore d'aria funzioni correttamente.

## Spiegazioni fornite all'utente

- Al completamento del lavoro di installazione, comunicare all'utente dove sia situato l'interruttore automatico. Qualora l'utente non sappia dove si trovi l'interruttore automatico, non sarà in grado di disattivarlo, nell'eventualità che si verifichi un problema con il condizionatore d'aria.

- Se la griglia della ventola è danneggiata, non avvicinarsi all'unità esterna ma portare l'interruttore in posizione OFF (spento) e rivolgersi al personale di assistenza qualificato (\*1) perché provveda a effettuare le necessarie riparazioni. Non impostare l'interruttore automatico sulla posizione ON (acceso) finché non siano state completate le riparazioni.
- Al termine del lavoro di installazione, seguire il Manuale del proprietario per spiegare al cliente come utilizzare e sottoporre a manutenzione l'unità.

## Trasferimento

- Solo un installatore qualificato (\*1) o un tecnico dell'assistenza qualificato (\*1) sono autorizzati a trasferire il condizionatore d'aria. È pericoloso far trasferire il condizionatore d'aria da una persona non qualificata, in quanto si potrebbero provocare incendi, scosse elettriche, lesioni personali, perdite d'acqua, rumori e/o vibrazioni.
- Quando si eseguono lavori di svuotamento del refrigerante (Pump-down), spegnere il compressore prima di scollegare il tubo del refrigerante. Eseguendo questo scollegamento con la valvola di servizio aperta e il compressore in funzione si causerebbe l'aspirazione dell'aria o di altri gas eventualmente presenti nell'atmosfera, elevando in tal modo la pressione interna al circuito refrigerante a un livello eccessivamente alto con possibili rotture, lesioni personali o problemi di funzionamento.
- Non conservare il refrigerante nell'unità esterna. Prima di spostare o riparare l'unità lo si deve estrarre con un'apposita attrezzatura di scarico. Non lo si deve lasciare al suo interno. Questa condizione può infatti divenire causa di gravi incidenti, ad esempio l'esplosione dell'unità esterna con il conseguente rischio di lesioni per le persone.

(\*1) Consultare la "Definizione di installatore qualificato o tecnico dell'assistenza qualificato".

**ATTENZIONE**

**Installazione del condizionatore d'aria che impiega il nuovo refrigerante**

- **QUESTO CONDIZIONATORE D'ARIA UTILIZZA IL NUOVO REFRIGERANTE HFC (R410A) CHE NON DISTRUGGE LO STRATO DI OZONO.**
- Le caratteristiche dell'R410A sono; facilità di assorbimento dell'acqua, membrana od olio ossidante, pressione circa 1,6 superiore a quella dell'R22. Insieme al nuovo refrigerante è stato altresì adottato un nuovo tipo di olio refrigerante. Durante i lavori d'installazione è pertanto indispensabile evitare che nel relativo circuito non penetrino acqua, polvere o refrigerante di tipo diverso.
- Per impedire la carica accidentale di liquido e olio refrigerante di tipo non corretto le bocche di collegamento dell'unità principale e degli attrezzi d'installazione presentano differenze rispetto a quelle usate con il refrigerante di tipo convenzionale.
- Di conseguenza, per la carica del refrigerante R410A è possibile usare soltanto questi attrezzi.
- Per i collegamenti si devono usare tubi nuovi e puliti appositamente concepiti per il refrigerante R410A, impedendo quindi all'acqua e alla polvere di penetrarvi.

**Per scollegare l'apparecchio dalla fonte di alimentazione principale**

- Questo apparecchio deve essere collegato alla fonte di alimentazione principale per mezzo di un interruttore con una separazione di contatti di almeno 3mm.

**La linea di alimentazione elettrica dell'unità esterna deve essere protetta con un fusibile (di qualsiasi tipo).**

**Non lavare i condizionatori d'aria con dispositivi di lavaggio a pressione.**

- Le dispersioni di corrente elettrica possono provocare scosse elettriche o incendi.

Gracias por haber adquirido este aparato de aire acondicionado Toshiba.

En este manual de instalación se describe el método de instalación de la unidad exterior. Para obtener información acerca de la instalación de la unidad interior, consulte el manual de instalación suministrado con la unidad interior. Además, como este manual de instalación incluye información importante relacionada con la Directiva sobre "Maquinaria" (Directiva 2006/42/CE), lea el manual y asegúrese de entenderlo. Después de realizada la instalación, entregue este manual, el Manual del usuario y el Manual de instalación suministrado con la unidad interior al cliente y pídale que los guarde en lugar seguro.

Prepare una fuente de alimentación exclusiva para las unidades interiores, independiente de la de las unidades exteriores. Para la conexión de los tubos entre las unidades exteriores e interiores, se necesitan juntas de bifurcación en forma de Y o un terminal de bifurcación (se vende por separado). Escoja el más adecuado considerando la capacidad de la tubería del sistema. Sobre la instalación de los tubos de bifurcación, consulte el manual de instalación de la unidad de bifurcación en forma de Y o el terminal de bifurcación (se vende por separado).

Para la conexión entre unidades exteriores serán necesarias juntas de bifurcación de conexión exterior.

**Denominación genérica: Aire acondicionado**

**Definición de instalador cualificado o persona de servicio cualificada**

El aparato de aire acondicionado deberá ser instalado, mantenido, reparado y desechado por un instalador cualificado o por una persona de servicio cualificada. Cuando se tenga que hacer uno cualquiera de estos trabajos, solicite a un instalador cualificado o a una persona de servicio cualificada que le haga el trabajo solicitado.

Un instalador cualificado o una persona de servicio cualificada es un agente con las cualificaciones y conocimientos descritos en la tabla de abajo.







Agente	Cualificaciones y conocimientos que debe tener el agente
Instalador cualificado	<ul style="list-style-type: none"> <li>• El instalador cualificado es una persona que se dedica a la instalación, mantenimiento, traslado y retirada de los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation. Dicha persona habrá recibido formación relativa a la instalación, mantenimiento, traslado y retirada de aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruida en dichas operaciones por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• El instalador cualificado que esté autorizado para realizar los trabajos eléctricos propios de la instalación, traslado y retirada poseerá las cualificaciones relativas a dichos trabajos eléctricos, de conformidad con la legislación local vigente, y habrá recibido formación relativa a las tareas eléctricas a realizar en los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruido en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• El instalador cualificado que esté autorizado para realizar los trabajos de canalización y manejo del refrigerante propios de la instalación, traslado y retirada poseerá las cualificaciones relativas a dichos trabajos de canalización y manejo del refrigerante, de conformidad con la legislación local vigente, y habrá recibido formación relativa a las tareas de canalización y uso del refrigerante a realizar en los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruido en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• El instalador cualificado que esté autorizado para trabajar en alturas habrá recibido formación relativa a la realización de trabajos en altura con los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruido en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichos trabajos.</li> </ul>
Persona de servicio cualificada	<ul style="list-style-type: none"> <li>• La persona de mantenimiento cualificado es una persona que se dedica a la instalación, reparación, mantenimiento, traslado y retirada de los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation. Dicha persona habrá recibido formación relativa a la instalación, reparación, mantenimiento, traslado y retirada de aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruida en dichas operaciones por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• La persona de mantenimiento cualificada que esté autorizada para realizar los trabajos eléctricos propios de la instalación, reparación, traslado y retirada poseerá las cualificaciones relativas a dichos trabajos eléctricos, de conformidad con la legislación local vigente, y habrá recibido formación relativa a las tareas eléctricas a realizar en los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruida en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• La persona de mantenimiento cualificada que esté autorizada para realizar los trabajos de canalización y manejo del refrigerante propios de la instalación, reparación, traslado y retirada poseerá las cualificaciones relativas a dichos trabajos de canalización y manejo del refrigerante, de conformidad con la legislación local vigente, y habrá recibido formación relativa a las tareas de canalización y uso del refrigerante a realizar en los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruida en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichas operaciones.</li> <li>• La persona de mantenimiento cualificada que esté autorizada para trabajar en alturas habrá recibido formación relativa a la realización de trabajos en altura con los aparatos de aire acondicionado fabricados por Toshiba Carrier Corporation, o, de otro modo, habrá sido instruida en dichas tareas por otra u otras personas que hayan recibido formación en la materia y que por tanto posean amplios conocimientos relativos a dichos trabajos.</li> </ul>

### Definición del equipo de protección

Cuando vaya a proceder al traslado, instalación, mantenimiento, reparación o retirada del aparato de aire acondicionado, utilice guantes protectores y ropa de trabajo de "seguridad". Además de este equipo protector habitual, utilice el equipo protector que se describe a continuación cuando emprenda las operaciones especiales que se detallan en la tabla siguiente. De no utilizar el equipo protector adecuado, incurrirá en cierto riesgo personal ya que estará más expuesto a sufrir heridas, quemaduras, descargas eléctricas y demás lesiones.

Trabajo realizado	Equipo de protección que usar
Todo tipo de trabajos	Guantes de protección Ropa de trabajo de "seguridad"
Trabajo relacionado con equipos eléctricos	Guantes para protegerse de las descargas eléctricas y de las altas temperaturas Calzado aislante Ropa que ofrezca protección contra descargas eléctricas
Trabajar en alturas (50cm o más)	Cascos de seguridad de uso industrial
Transporte de objetos pesados	Zapatos con protección adicional en las punteras
Reparación de la unidad exterior	Guantes para protegerse de las descargas eléctricas y de las altas temperaturas

### ■ Indicaciones de advertencia en la unidad de aire acondicionado

Indicación de advertencia	Descripción		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>ADVERTENCIA</b>  <b>PELIGRO DE DESCARGA ELÉCTRICA</b> Desconecte todos los suministros eléctricos remotos antes de hacer reparaciones.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>ADVERTENCIA</b>  Piezas móviles. No utilice la unidad con la rejilla retirada. Pare la unidad antes de hacer reparaciones.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>PRECAUCIÓN</b>  Piezas de alta temperatura. Al retirar este panel podría quemarse
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>PRECAUCIÓN</b>  No toque las aletas de aluminio del aparato. De lo contrario, podrían producirse lesiones personales
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>PRECAUCIÓN</b>  <b>PELIGRO DE ROTURA</b> Abra las válvulas de servicio antes de la operación, de lo contrario podrían producirse roturas.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>PRECAUCIÓN</b>  <b>No se trepe a la protección del ventilador.</b> De lo contrario, podrían producirse lesiones personales.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 PRECAUCIONES DE SEGURIDAD

El fabricante no asume responsabilidad alguna por los daños que resulten de la falta de observación de las descripciones de este manual.

## ADVERTENCIA

### Generalidades

- Antes de empezar a instalar el acondicionador de aire, lea atentamente el manual de instalación y siga sus instrucciones para instalarlo. De lo contrario, la unidad podría caerse o producir ruido, vibraciones o fugas de agua.
- Sólo un instalador calificado (\*1) o una persona de servicio calificada (\*1) tiene permiso para instalar el acondicionador de aire. Si un individuo no calificado instala el acondicionador de aire, pueden producirse incendios, descargas eléctricas, lesiones, fugas de agua, ruido y/o vibraciones.
- Si utiliza productos que se venden por separado, asegúrese de utilizar sólo productos especificados por Toshiba. El uso de productos no especificados puede provocar incendios, descargas eléctricas, fugas de agua u otros fallos.
- No utilice ningún refrigerante distinto al especificado para rellenar o reemplazar. De lo contrario, podrá generarse una presión anormalmente alta en el ciclo de refrigeración, lo cual puede producir roturas o explosión, además de lesiones.
- Antes de abrir el panel de servicio de la unidad exterior, coloque el disyuntor en la posición OFF. Si no se pone el disyuntor en la posición OFF se puede producir una descarga eléctrica al tomar las piezas interiores. Sólo un instalador calificado (\*1) o una persona de servicio calificada (\*1) tiene permitido retirar el panel de servicio de la unidad exterior y hacer el trabajo necesario.
- Antes de realizar el trabajo de instalación, mantenimiento, reparación o desmontaje, asegúrese de poner los disyuntores tanto de las unidades interiores como de las exteriores en la posición OFF. De lo contrario se pueden producir descargas eléctricas.

- Ponga un aviso que diga “trabajo en curso” cerca del disyuntor mientras se realiza el trabajo de instalación, mantenimiento, reparación o desecho. Si el disyuntor se pone en ON por error existe el peligro de que se produzcan descargas eléctricas.
- Sólo un instalador calificado (\*1) o una persona de servicio calificada (\*1) tiene permiso para realizar trabajos en lugares altos usando una base de 50cm o más o para quitar la rejilla de admisión de la unidad interior para realizar otros trabajos.
- Póngase guantes de protección y ropa de trabajo segura durante la instalación, reparación y desecho.
- No toque las aletas de aluminio de la unidad exterior. Si lo hace puede lesionarse usted mismo. Si la aleta tiene que tocarse por alguna razón, póngase primero guantes de protección y ropa de trabajo segura, y luego empiece a trabajar.
- No se suba encima ni coloque objetos encima de la unidad exterior. Usted o los objetos pueden caerse de la unidad exterior y provocar lesiones.
- Cuando trabaje en un lugar alto, antes de empezar a trabajar, ponga un aviso para que nadie se acerque al lugar de trabajo. Desde lo alto podrían caer piezas u otros objetos que causarían lesiones a las personas situadas debajo. Además, asegúrese de que los trabajadores utilicen cascos.
- Cuando limpie el filtro u otras partes de la unidad exterior, ponga sin falta el disyuntor en la posición OFF, y ponga un aviso que diga “trabajo en curso” cerca del disyuntor mientras se realiza el trabajo.
- El refrigerante usado por este aparato de aire acondicionado es el R410A.
- Deberá asegurar que el aparato de aire acondicionado sea transportado de forma estable. Si alguna pieza del producto estuviera rota comuníquese con el distribuidor.
- No desarme, modifique ni mueva el producto por sí mismo. Si lo hiciera podría provocar incendios, descargas eléctricas, lesiones o fugas de agua.
- Este aparato está destinado a ser utilizado por usuarios expertos o formados en tiendas, industria ligera o para uso comercial por parte de personas no expertas.

### Selección del lugar de instalación

- Si instala la unidad en una habitación pequeña, tome las medidas apropiadas para impedir que el refrigerante sobrepase la concentración límite aunque tenga fugas. Consulte al concesionario a quien adquirió el aparato de aire acondicionado cuando ponga en práctica las medidas. La acumulación de refrigerante altamente concentrado puede causar un accidente por falta de oxígeno.
- No instale el producto en lugares donde puedan existir fugas de gases inflamables. Si existiera una fuga y se acumulara gas alrededor de la unidad, podría encenderse y provocar un incendio.
- Durante el transporte del acondicionador de aire utilice zapatos con punteras, guantes y vestimenta de protección.
- Cuando transporte el aparato de aire acondicionado, no lo tome por las bandas de alrededor del cartón de embalaje. Usted podría lesionarse si se rompieran las bandas.
- Tipos diferente a los que están de pie en el suelo y a los de consola, instale la unidad interior a 2,5m como mínimo por encima del nivel del suelo, ya que de lo contrario los usuarios podrían lesionarse o recibir descargas eléctricas si meten sus dedos u otros objetos en la unidad interior mientras funciona el aparato de aire acondicionado.
- No ponga ningún aparato de combustión en un lugar expuesto directamente al aire procedente del aparato de aire acondicionado, de lo contrario, la combustión no sería perfecta.
- Lugares donde el ruido de funcionamiento de la unidad exterior puede provocar inconvenientes. (Especialmente en la divisoria con un vecino, instale el acondicionador de aire teniendo en cuenta el ruido.)

### Instalación

- Siga las instrucciones del manual de instalación para instalar el aparato de aire acondicionado. Si no se cumplen estas instrucciones el producto podría caerse o volcarse, o producir ruido, vibraciones, fugas de agua u otros fallos.
- Cuando se instale la unidad deberán usarse los pernos (M12) y las tuercas (M12) designados para asegurarla.
- Instale correctamente la unidad exterior en un lugar que sea lo suficientemente duradero como para aguantar su peso. De lo contrario, la unidad exterior podrá caer y provocar lesiones.
- Instale la unidad de la forma descrita para protegerla contra viento fuerte y terremotos. La instalación incorrecta puede provocar su caída u otro tipo de accidente.
- Asegúrese de fijar nuevamente los tornillos si fueron quitados durante la instalación u otro tipo de trabajo.

### Tubería del refrigerante

- Instale firmemente el tubo del refrigerante durante los trabajos de instalación antes de poner en funcionamiento el aparato de aire acondicionado. Si el compresor funciona con su válvula abierta y sin tubo de refrigerante, el compresor succionará aire y los ciclos de refrigeración tendrán una presión excesiva, lo que puede causar lesiones.
- Apriete la tuerca abocinada con una llave de ajuste dinamométrica como se indica. Un apriete excesivo de tuerca abocinada puede causar grietas en la misma después de pasar mucho tiempo, lo que podría causar fugas de refrigerante.
- Ventile si, durante la instalación, se produjo una fuga de gas refrigerante. Si el gas refrigerante liberado durante la fuga entra en contacto con fuego, pueden generarse gases tóxicos.

- Tras la instalación, asegúrese de que no existen fugas de gas refrigerante. Si se produce una fuga de gas refrigerante en la habitación y hay una fuente de fuego próxima, como una cocina, podría generarse gas nocivo.
- Cuando el aparato de aire acondicionado haya sido instalado o recolocado, siga las instrucciones del manual de instalación y purgue completamente el aire para que no se mezclen otros gases que no sean el refrigerante en el ciclo de refrigeración. Si el aire no se purga completamente puede que el aparato de aire acondicionado funcione mal.
- Para la prueba de hermeticidad al aire deberá usarse nitrógeno.
- La manguera de carga deberá conectarse de forma que no esté floja.
- Si se producen fugas de gas refrigerante durante la instalación, ventile inmediatamente la habitación. Si el gas refrigerante liberado durante la fuga entra en contacto con fuego, pueden generarse gases tóxicos.

### Cableado eléctrico

- Sólo un instalador cualificado (\*1) o una persona de servicio cualificada (\*1) tiene permitido realizar el trabajo eléctrico del aparato de aire acondicionado. Este trabajo no deberá hacerlo, bajo ninguna circunstancia, un individuo que no esté cualificado, porque si el trabajo se hace mal, existe el peligro de que se produzcan descargas eléctricas y/o fugas eléctricas.
- Cuando conecte los cables eléctricos, repare los componentes eléctricos o realice otros trabajos con equipos eléctricos, póngase guantes para protegerse de las descargas eléctricas y de las temperaturas altas, zapatos aislantes y ropa para protegerse contra las descargas eléctricas. Si no se pone este equipo de protección puede recibir descargas eléctricas.
- Cuando realice la configuración de dirección, la prueba de funcionamiento o resolución de problemas mediante la ventana de comprobación de la caja de piezas eléctricas, use guantes aislantes a prueba de calor, zapatos aislantes y vestimenta que suministre protección contra descargas eléctricas. De lo contrario, podría recibir una descarga eléctrica.

- Use cables que cumplan con las especificaciones del manual de instalación y las estipulaciones de las normas y leyes locales. El uso de cables que no cumplen con las especificaciones puede dar origen a descargas eléctricas, fugas eléctricas, humo y/o incendios.
- Compruebe si el producto está conectado a tierra correctamente. (puesta a tierra)  
De lo contrario, pueden producirse descargas eléctricas.
- No conecte el cable de tierra a una tubería de gas, una tubería de agua, un conductor de luz o un cable de tierra telefónico.
- Después de completar el trabajo de reparación y recolocación, verifique que los cables de toma a tierra estén bien conectados.
- Instale un disyuntor que cumpla con las especificaciones del manual de instalación y con las estipulaciones de las normas y las leyes locales.
- Instale el disyuntor donde el agente pueda tener acceso a él fácilmente.
- Cuando instale el disyuntor en el exterior, instale uno diseñado para ser usado en exteriores.
- El cable no deberá alargarse bajo ninguna circunstancia. Los problemas de conexión en lugares donde el cable se extiende pueden producir humo y/o un incendio.
- El cableado eléctrico deberá realizarse de conformidad con la legislación local vigente y el Manual de instalación. No se ser así, podría producirse una electrocución o un cortocircuito.
- No suministre energía del bloque de terminales de alimentación de una unidad exterior a otra. Podría producirse una sobrecarga de capacidad en el bloque de terminales causando un incendio.
- Cuando realice las conexiones eléctricas, utilice los cables especificados en el Manual de instalación; conecte y fije los cables de forma segura para evitar aplicar fuerza externa a los terminales. Una conexión o fijación incorrecta puede provocar un incendio.

### Prueba de funcionamiento

- Antes de utilizar el aparato de aire acondicionado después de completar el trabajo de instalación, verifique que la cubierta de la caja de componentes eléctricos de la unidad interior y del panel de servicio de la unidad exterior esté cerrada, y ponga el disyuntor en la posición ON. Si conecta la alimentación sin realizar primero estas verificaciones puede recibir una descarga eléctrica.
- Cuando note algún problema en el aparato de aire acondicionado (por ejemplo, cuando aparece una visualización de error, hay olor a quemado, se oyen ruidos anormales, el aparato de aire acondicionado no refrigera ni calienta o hay fugas de agua), no lo toque, ponga antes el disyuntor en la posición OFF y póngase en contacto con una persona de servicio cualificada. Tome medidas (poniendo un aviso de “fuera de servicio” cerca del disyuntor, por ejemplo) para asegurar que la alimentación no se conecte antes de que llegue la persona de servicio cualificada. Si continúa usando el acondicionador de aire con fallos se pueden agravar los problemas mecánicos, producir descargas eléctricas u otros tipos de fallo.
- Una vez realizados los trabajos previos, utilice un medidor de aislamiento (Megger de 500V) para comprobar que la resistencia entre la sección con carga y la sección metálica sin carga (Sección de tierra) es de 1 MΩ o más. Si el valor de la resistencia es bajo, esto se debe a un fallo como, por ejemplo, una fuga o una descarga eléctrica en el lado del usuario.
- Al completar el trabajo de instalación, verifique que no haya fugas de refrigerante, y también la resistencia del aislamiento y el drenaje de agua. Luego haga una prueba de funcionamiento para verificar si el aparato de aire acondicionado funciona correctamente.

### Explicaciones para dar al usuario

- Al finalizar el trabajo de instalación dígame al usuario dónde está situado el disyuntor. Si el usuario no sabe dónde está el disyuntor, él o ella no podrán desconectar la alimentación en el caso de que se produzca un fallo en el aparato de aire acondicionado.

- Si detecta que la rejilla del ventilador está dañada, no se dirija a la unidad exterior, sino desconecte el disyuntor, y póngase en contacto con una persona de mantenimiento cualificada (\*1) para que la repare. No ponga el disyuntor en la posición ON hasta después de terminar las reparaciones.
- Después de hacer el trabajo de instalación, siga las indicaciones del manual del propietario para explicar al cliente cómo usar y mantener la unidad.

### Recolocación

- Sólo un instalador cualificado (\*1) o una persona de servicio cualificada (\*1) tiene permiso para recolocar el aparato de aire acondicionado. Es peligroso para el aparato de aire acondicionado que sea recolocado por un individuo no cualificado, porque se puede producir un incendio, descargas eléctricas, lesiones, fugas de agua, ruido y/o vibración.
- Cuando realice trabajos de bombeo de vacío, cierre el compresor antes de desconectar el tubo del refrigerante. Si se desconecta el tubo de refrigerante con la válvula de mantenimiento abierta y el compresor aún en marcha, se aspirará aire u otro gas, elevando la presión dentro del ciclo de refrigeración a niveles anómalamente altos, lo que podrá provocar roturas, lesiones u otros problemas.
- Nunca recupere el refrigerante en la unidad exterior. Asegúrese de utilizar un dispositivo de recuperación de refrigerante cuando tenga que recuperarlo debido a traslados o reparaciones. No es posible recuperar el refrigerante en la unidad exterior. Esto provocaría accidentes graves, como explosión de la unidad, lesiones u otro tipo de accidentes.

(\*1) Consulte la “definición de instalador cualificado o persona de servicio cualificada”.

### PRECAUCIÓN

#### Instalación del aparato de aire acondicionado con nuevo refrigerante

- **ESTE APARATO DE AIRE ACONDICIONADO INCORPORA EL NUEVO REFRIGERANTE HFC (R410A) RESPETUOSO CON LA CAPA DE OZONO.**
- Las características del refrigerante R410A son; fácil absorción de agua, oxidación de membrana o aceite; con una presión de aproximadamente 1,6 veces mayor que la del R22. Junto con el nuevo refrigerante, se ha cambiado también el aceite refrigerante. Por consiguiente, asegúrese de que no entren en el ciclo de refrigeración agua, polvo, refrigerante antiguo o aceite refrigerante durante la instalación.
- Para evitar errores en la carga del refrigerante y el aceite refrigerante, se han cambiado los tamaños de las secciones de conexión del orificio de carga de la unidad principal y las herramientas de instalación para diferenciarlos del refrigerante convencional.
- Por lo tanto, es necesario emplear herramientas exclusivas para el nuevo refrigerante (R410A).
- Para conectar los tubos, utilice tubería nueva y limpia diseñada para R410A, y tenga la precaución de evitar la entrada de agua o polvo.

#### Para desconectar el dispositivo de la fuente de alimentación

- Este dispositivo debe conectarse a la fuente de alimentación mediante un interruptor cuya separación de contacto sea como mínimo de 3mm.

**Debe utilizarse un fusible de instalación (se pueden utilizar fusibles de todos los tipos) para la línea de suministro de energía eléctrica de esta unidad.**

#### No lave los aparatos de aire acondicionado con lavadoras a presión.

- Las fugas eléctricas podrían causar descargas eléctricas o incendios.

Obrigado por ter adquirido este ar condicionado Toshiba.

Este Manual Instalação descreve o método de instalação da unidade exterior. Para a instalação das unidades interiores, consulte o Manual de Instalação fornecido com a unidade interior.

Além disso, como este manual de instalação inclui artigos importantes referentes à Directiva de "Maquinaria" (Directiva 2006/42/EC), leia completamente o manual e certifique-se de compreendê-lo bem. Após a instalação, entregue este Manual de Instalação com o Manual do Proprietário, o Manual do Proprietário e o Manual de Instalação fornecidos com a unidade interior ao cliente, e diga ao cliente para guardá-los num lugar seguro.

Prepare uma fonte de alimentação exclusiva para as unidades interiores, independente da fonte para as unidades exteriores.

É preciso ter disponível juntas de derivação em "Y" ou um tubo colector (adquisição separada) para a conexão dos tubos entre as unidades interiores e exteriores. Escolha o tipo de conexão levando em consideração a capacidade do sistema referente à tubagem. Para instalar os tubos de derivação, consulte o manual de instalação da unidade de derivação em "Y" ou do tubo colector (adquisição separada).

É preciso utilizar juntas de derivação de conexão exterior para a conexão entre as unidades exteriores.

#### Denominação Genérica: Ar Condicionado

#### Definição de Instalador Qualificado ou de Técnico de Assistência Qualificado

O ar condicionado deve ser instalado, mantido, reparado e eliminado por um instalador qualificado ou um técnico de assistência qualificado. Quando for necessário efectuar qualquer um destes trabalhos, peça a um instalador qualificado ou a um técnico de assistência qualificado para efectuar estes trabalhos.

Um instalador qualificado ou um técnico de assistência qualificado é um agente com as qualificações e os conhecimentos descritos na tabela abaixo.

Agente	Qualificações e conhecimentos necessários do agente
Instalador qualificado	<ul style="list-style-type: none"> <li>• O instalador qualificado é uma pessoa que instala, dá manutenção a, muda de lugar e remove os ares condicionados fabricados pela Toshiba Carrier Corporation. Esta pessoa deve ter formação para instalar, dar manutenção a, mudar de lugar e remover ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, deve ter sido instruída nessas operações por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com estas operações.</li> <li>• O instalador qualificado que tem permissão para levar a cabo as ligações eléctricas envolvidas na instalação, deslocação e remoção tem as qualificações necessárias para realizar essas tarefas conforme estipulado pelas leis e regulamentos locais, sendo uma pessoa que fez formação nas matérias relacionadas com o manuseamento do trabalho eléctrico nos ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, que foi instruída nessas matérias por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com este trabalho.</li> <li>• O instalador qualificado que tem permissão para realizar as tarefas de manuseamento do refrigerante e de instalação das tubagens envolvidas na instalação, deslocação e remoção dos aparelhos tem as qualificações necessárias para o manuseamento do refrigerante e a instalação das tubagens conforme estipulado pelas leis e regulamentos locais, sendo uma pessoa que fez formação nas matérias relacionadas com o manuseamento de refrigerante e a instalação de tubagens nos ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, que foi instruída nessas matérias por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com estas tarefas.</li> <li>• O instalador qualificado, a quem é permitido trabalhar em altura, foi formado em matérias relacionadas com o trabalho em altura com ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, foi instruído nessas matérias por indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com este trabalho.</li> </ul>
Técnico de assistência qualificado	<ul style="list-style-type: none"> <li>• O técnico de assistência qualificado é uma pessoa que instala, repara, dá manutenção a, muda de lugar e remove os ares condicionados fabricados pela Toshiba Carrier Corporation. Esta pessoa deve ter formação para instalar, reparar, dar manutenção a, mudar de lugar e remover ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, deve ter sido instruído nessas operações por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com estas operações.</li> <li>• O técnico de assistência qualificado que tem permissão para levar a cabo as ligações eléctricas envolvidas na instalação, reparação, deslocação e remoção tem as qualificações necessárias para realizar essas tarefas conforme estipulado pelas leis e regulamentos locais, sendo uma pessoa que fez formação nas matérias relacionadas com o trabalho eléctrico nos ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, que foi instruída nessas matérias por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com este trabalho.</li> <li>• O técnico de assistência qualificado que tem permissão para realizar as tarefas de manuseamento do refrigerante e de instalação das tubagens envolvidas na instalação, reparação, deslocação e remoção dos aparelhos tem as qualificações necessárias para o manuseamento do refrigerante e a instalação das tubagens conforme estipulado pelas leis e regulamentos locais, sendo uma pessoa que fez formação nas matérias relacionadas com o manuseamento de refrigerante e a instalação de tubagens nos ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, que foi instruída nessas matérias por parte de indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com estas tarefas.</li> <li>• O técnico de assistência qualificado, a quem é permitido trabalhar em altura, foi formado em matérias relacionadas com o trabalho em altura com ares condicionados fabricados pela Toshiba Carrier Corporation ou, como alternativa, foi instruído nessas matérias por indivíduos com a formação devida e, portanto, que adquiriram todo o conhecimento relacionado com este trabalho.</li> </ul>



### Definição do Equipamento de Protecção







Aquando do transporte, instalação, manutenção, reparação ou remoção do ar condicionado, use luvas e vestuário de protecção.

Além do equipamento de protecção normal, use o equipamento de protecção descrito abaixo, se levar a cabo os trabalhos especiais detalhados na tabela abaixo.

É perigoso não usar o equipamento de protecção adequado porque fica mais susceptível a sofrer lesões, queimaduras, choques eléctricos e outros ferimentos.

Trabalho efectuado	Equipamento de protecção a usar
Todos os tipos de trabalhos	Luvas de protecção Vestuário de protecção
Trabalho eléctrico	Luvas para proteger electricistas e calor Sapatos isoladores Vestuário que proteja contra choques eléctricos
Trabalho em altura (50cm ou mais)	Capacetes industriais
Transporte de objectos pesados	Sapatos com protecção adicional para os dedos dos pés
Reparação da unidade exterior	Luvas para proteger electricistas e calor

### ■ Indicações de Aviso sobre o Ar Condicionado

Indicação de aviso	Descrição		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>AVISO</b>  <b>PERIGO DE CHOQUE ELÉCTRICO</b> Desligue todas as fontes de alimentação eléctrica remotas antes de uma operação de assistência.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>AVISO</b>  Peças rotativas. Não utilize a unidade com a grelha retirada. Pare a unidade antes de uma operação de assistência.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>ATENÇÃO</b>  Peças com elevadas temperaturas. Pode queimar-se quando retirar este painel.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>ATENÇÃO</b>  Não toque nas barbatanas de alumínio da unidade. Caso contrário, poderá ferir-se.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>ATENÇÃO</b>  <b>PERIGO DE EXPLOSÃO</b> Abra as válvulas de serviço antes de utilizar o equipamento, caso contrário, pode ocorrer uma explosão.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>ATENÇÃO</b>  <b>Não suba na protecção da ventoinha.</b> Caso contrário, poderá ferir-se.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 PRECAUÇÕES DE SEGURANÇA

O fabricante não assumirá nenhuma responsabilidade por danos causados pela não observação das descrições dadas neste manual.

## AVISO

### Geral

- Antes de instalar o ar condicionado, leia cuidadosamente o Manual de Instalação e siga as instruções fornecidas para instalar o ar condicionado. Caso contrário, a unidade poderá cair, causar ruídos, vibração ou vazamento de água.
- Somente um instalador qualificado (\*1) ou um técnico de assistência qualificado (\*1) pode realizar o trabalho de instalação. Se a instalação for realizada por uma pessoa não qualificada, pode ocorrer um incêndio, choques eléctricos, lesões, vazamento de água, ruídos e/ou vibrações.
- Se utilizar produtos vendidos separadamente, certifique-se de utilizar somente produtos especificados pela Toshiba. Utilizar produtos não especificados pode causar um incêndio, choque eléctrico, vazamento de água ou outras falhas.
- Não utilize um refrigerante diferente do especificado para complementação ou substituição. Caso contrário, uma pressão anormalmente alta pode ser gerada no ciclo de refrigeração, o que pode causar uma falha ou explosão do produto ou ferimentos.
- Antes de abrir o painel de serviço da unidade interior, coloque o disjuntor de circuito na posição OFF. A não colocação do disjuntor eléctrico na posição OFF pode provocar choques eléctricos devido ao contacto com as peças internas. Somente um instalador qualificado (\*1) ou um técnico de assistência qualificado (\*1) pode retirar o painel de serviço da unidade exterior e efectuar os trabalhos necessários.
- Antes de efectuar o trabalho de instalação, manutenção, reparação ou remoção, certifique-se de colocar os disjuntores de circuito das unidades interiores e exteriores na posição OFF. Caso contrário, podem ocorrer choques eléctricos.

- Coloque um sinal “Trabalho em progresso” junto ao disjuntor eléctrico durante a realização de trabalhos de instalação, manutenção, reparação ou eliminação. Existe um perigo de choques eléctricos se colocar o disjuntor eléctrico na posição ON por engano.
- Apenas um instalador qualificado (\*1) ou um técnico de assistência qualificado (\*1) pode efectuar o trabalho em altura com um suporte de 50cm ou mais, ou retirar a grelha de entrada da unidade interior para efectuar o trabalho.
- Use luvas de protecção e vestuário de trabalho de segurança durante a instalação, a assistência e a eliminação.
- Não toque na barbatana de alumínio da unidade exterior. Pode ferir-se, se o fizer. Se for necessário tocar na palheta por algum motivo, coloque primeiro as luvas de protecção e o vestuário de trabalho de segurança e, em seguida, prossiga.
- Não suba para nem coloque objectos sobre a unidade exterior. Pode cair ou os objectos podem cair da unidade exterior e provocar ferimentos.
- Quando trabalhar em lugares altos, coloque um sinal no local para que ninguém se aproxime do local de trabalho antes de continuar com o trabalho. As peças ou outros objectos podem cair da parte superior, ferindo possivelmente uma pessoa que esteja por baixo. Da mesma forma, certifique-se de que os trabalhadores utilizem capacetes.
- Quando limpar o filtro ou outras peças da unidade exterior, não se esqueça de colocar o disjuntor eléctrico na posição OFF e um sinal “Trabalho em progresso” junto ao disjuntor eléctrico antes de continuar o trabalho.
- O refrigerante utilizado por este ar condicionado é o R410A.
- Certifique-se de que o ar condicionado é transportado de uma forma estável. Se encontrar qualquer parte do produto quebrada, contacte o seu revendedor.
- Não desmonte, modifique, repare ou mova o produto por si mesmo. Fazer isso pode causar um incêndio, choques eléctricos, ferimentos ou vazamentos de água.
- Este aparelho foi feito para ser utilizado por peritos ou utilizadores treinados, nas lojas, na indústria leve ou para utilização comercial por pessoas leigas.

### Seleção do local de instalação

- Se instalar a unidade numa sala pequena, tome as medidas adequadas para evitar que o refrigerante exceda o limite de concentração mesmo em caso de derrame. Consulte o revendedor a quem adquiriu o ar condicionado quando implementar as medidas. A acumulação de refrigerante altamente concentrado pode provocar um acidente devido à falta de oxigénio.
- Não instale num local onde gases inflamáveis possam vazar. Se algum gás vazar e acumular-se ao redor da unidade, o mesmo pode inflamar e causar um incêndio.
- Quando transportar o aparelho de ar condicionado, utilize sapatos com protecção adicional para os dedos, luvas de protecção e outro vestuário de protecção.
- Quando transportar o ar condicionado, não segure nas faixas existentes à volta da embalagem de cartão. Pode ferir-se, se as faixas se partirem.
- À excepção de chão e tipos de consolas, instale a unidade interior a pelo menos 2,5m acima do nível do chão, caso contrário, os utilizadores podem ferir-se ou sofrerem choques eléctricos se tocarem com os dedos ou outros objectos na unidade interior com o ar condicionado em funcionamento.
- Não coloque nenhum aparelho de combustão num local exposto directamente ao vento do ar condicionado, caso contrário, pode provocar uma combustão imperfeita.
- Lugares onde o som de funcionamento da unidade exterior possa causar perturbações. (Especialmente na linha de demarcação com um vizinho, instale o ar condicionado levando o ruído em consideração.)

### Instalação

- Siga as instruções fornecidas no Manual de Instalação para instalar o ar condicionado. O incumprimento destas instruções pode provocar a queda do produto ou produzir ruído, vibração, vazamento de água ou outras falhas.
- Deve utilizar os parafusos (M12) e as porcas (M12) especificados para fixar a unidade exterior quando instalar a unidade.
- Instale a unidade exterior num local suficientemente forte para suportar o peso da unidade exterior. Uma resistência insuficiente pode causar a queda da unidade exterior, o que poderia provocar ferimentos.
- Instale a unidade conforme especificado para a protecção contra ventos fortes e tremores de terra. Uma instalação incorrecta pode resultar na queda da unidade ou outros acidentes.
- Certifique-se de voltar a fixar os parafusos que foram retirados para a instalação ou outras finalidades.

### Tubagem do refrigerante

- Instale correctamente o tubo de refrigeração durante a instalação antes de colocar o ar condicionado em funcionamento. Se operar o compressor com a válvula aberta e sem o tubo de refrigerante, o compressor suga o ar e os ciclos de refrigeração ficam sobrepresurizados, esta situação pode provocar uma lesão.
- Aperte a porca de alargamento com uma chave dinamométrica e da forma especificada. O aperto excessivo da porca de alargamento pode provocar uma racha na porca de alargamento após um longo período, que pode resultar na fuga de refrigerante.
- Ventile o ar se o gás refrigerante escapar durante a instalação. Se o gás refrigerante que escapou entrar em contacto com fogo, isso poderá produzir um gás tóxico.

- Após o trabalho de instalação, confirme que não haja nenhuma fuga do gás refrigerante. Se houver uma fuga de gás refrigerante para o compartimento que entre em contacto com uma chama, por exemplo, no caso de um fogão, poderá gerar gás tóxico.
- Quando instalar ou mudar o ar condicionado, siga as instruções fornecidas no Manual de Instalação e elimine o ar completamente para que nenhum gás para além do refrigerante seja misturado no ciclo de refrigeração. A não eliminação completa do ar pode provocar uma avaria no ar condicionado.
- Tem de utilizar gás de nitrogénio para o teste de impermeabilidade.
- Tem de ligar o tubo de carga para que não exista nenhuma folga.
- Se o gás refrigerante vazar durante o trabalho de instalação, ventile o ambiente imediatamente. Se o gás refrigerante que escapou entrar em contacto com fogo, poderá dar origem a gás tóxico.

### **Cablagem eléctrica**

- Apenas um instalador qualificado (\*1) ou um técnico de assistência qualificado (\*1) pode efectuar o trabalho eléctrico do ar condicionado. Este trabalho não deve ser efectuado por uma pessoa não qualificada em nenhuma circunstância porque um trabalho executado incorrectamente pode resultar em choques eléctricos e/ou fugas eléctricas.
- Quando ligar os fios eléctricos, reparar peças eléctricas ou efectuar outros trabalhos eléctricos, use luvas para proteger os electricistas e o calor, sapatos isoladores e vestuário para proteger contra choques eléctricos. A não utilização deste equipamento de protecção pode resultar em choques eléctricos.
- Quando efectuar a definição de endereço, teste de funcionamento, ou localização e solução de problemas através da janela de verificação na caixa eléctrica, coloque luvas isoladas resistentes ao calor, sapatos isolados e outro vestuário para proporcionar a protecção apropriada contra choques eléctricos. Caso contrário, poderá sofrer choques eléctricos.

- Utilize cablagens que cumpram as especificações fornecidas no Manual de Instalação e as condições nas leis e regulamentos locais. A utilização de cablagens que não cumpram as especificações pode originar choques eléctricos, fugas eléctricas, fumo e/ou um incêndio.
- Verifique se o produto está correctamente ligado à terra. (trabalho de conexão à terra) Uma conexão à terra inadequada pode provocar choques eléctricos.
- Não ligue o fio de terra a um tubo de gás, tubo de água, condutor de iluminação ou ao fio de terra do telefone.
- Depois de concluir o trabalho de reparação ou mudança, verifique se os fios de ligação à massa estão ligados correctamente.
- Instale um disjuntor eléctrico que cumpra as especificações fornecidas no manual de instalação e as condições nas leis e regulamentos locais.
- Instale o disjuntor eléctrico num local de fácil acesso ao agente.
- Quando instalar um disjuntor eléctrico no exterior, instale um disjuntor concebido para utilizar no exterior.
- Não deve ampliar o cabo de alimentação em nenhuma circunstância. O problema da ligação em locais em que o cabo é ampliado pode originar fumo e/ou um incêndio.
- O trabalho de ligação de cabos e fios eléctricos deve ser feito em conformidade com as leis e regulamentos da comunidade em questão e com o manual de instalação. Se assim não for, o resultado pode ser electrocussão ou curto-circuito.
- Não forneça energia desde o bloco de terminais de energia equipado na unidade exterior para outra unidade interior. A capacidade pode ser excedida no bloco de terminais e pode resultar num incêndio.
- Quando realizar a conexão eléctrica, utilize a cablagem especificada no Manual de Instalação e conecte e fixe os fios firmemente para prevenir que os mesmos apliquem uma força externa sobre os terminais. A conexão ou a fixação inadequada pode provocar um incêndio.

### Teste de funcionamento

- Antes de utilizar o ar condicionado após a conclusão do trabalho, verifique se a tampa da caixa do equipamento eléctrico da unidade interior e o painel de serviço da unidade exterior estão fechados e coloque o disjuntor eléctrico na posição ON. Pode sofrer um choque eléctrico se ligar a corrente eléctrica sem efectuar primeiro estas verificações.
- Quando detectar algum tipo de problema (como, por exemplo, quando aparecer um visor de erro, existir um cheiro a queimado, ouvir sons anormais, o ar condicionado não arrefecer ou aquecer, ou existir uma fuga de água) no ar condicionado, não toque no ar condicionado, coloque o disjuntor eléctrico na posição OFF e contacte um técnico de assistência qualificado. Tome as medidas necessárias para garantir que a corrente eléctrica não será ligada (através da colocação do aviso “fora de serviço” junto ao disjuntor de serviço, por exemplo) até chegar o técnico de assistência qualificado. Se continuar a utilizar o ar condicionado com problemas, pode aumentar a ocorrência de problemas mecânicos e provocar choques eléctricos ou outras falhas.
- Terminados os trabalhos, certifique-se de que usa um aparelho de testes de isolamento (megaohmímetro de 500V) para assegurar que a resistência é de 1 MΩ ou mais entre a secção de carga e a secção metálica sem carga (secção de Terra). Se o valor da resistência for baixo, ocorre uma fuga ou um choque eléctrico no lado do utilizador.
- Depois de concluir o trabalho de instalação, verifique se existem fugas de refrigerante, a resistência do isolamento e a drenagem de água. Realize um teste para verificar se o ar condicionado está a funcionar correctamente.

### Explicações fornecidas ao utilizador

- Depois de concluir o trabalho de instalação, indique o local de instalação do disjuntor eléctrico ao utilizador. Se o utilizador não souber a localização do disjuntor eléctrico, não será capaz de o desligar no caso de ocorrer um problema no ar condicionado.

- Se descobrir que a grelha da ventoinha está danificada, não se aproxime da unidade exterior, mas coloque o disjuntor na posição desligada e contacte um técnico de assistência qualificado (\*1) para proceder à reparação. Não coloque o disjuntor eléctrico na posição ON até ao fim das reparações.
- Depois de concluir o trabalho de instalação, utilize o Manual do Proprietário para explicar ao cliente como utilizar e manter a unidade.

### Mudança

- Apenas um instalador qualificado (\*1) ou um técnico de assistência qualificado (\*1) pode mudar o ar condicionado. É perigoso o ar condicionado ser mudado por uma pessoa não qualificada porque pode ocorrer um incêndio, choques eléctricos, lesões, fugas de água, ruídos e/ou vibrações.
- Quando efectuar o trabalho de bombagem, encerre o compressor antes de desligar o tubo de refrigerante. Se desconectar o tubo do refrigerante com a válvula de serviço ainda aberta e o compressor ainda em funcionamento, faz com que o ar ou outros gases sejam aspirados, aumentando a pressão interna do ciclo de refrigeração para um nível anormalmente elevado, podendo causar a ruptura, lesões ou outros problemas.
- Nunca recupere o refrigerante na unidade exterior. Certifique-se de utilizar a máquina de recuperação de refrigerante para recuperar o refrigerante quando mover ou reparar a unidade. É impossível recuperar o refrigerante para a unidade exterior. A recuperação do refrigerante para a unidade exterior pode resultar em sérios acidentes tais como a explosão da unidade, ferimentos ou outros acidentes.

(\*1) Consulte a “Definição de Instalador Qualificado ou Técnico de Instalação Qualificado”.

## ⚠ ATENÇÃO

### Instalação do ar condicionado de novo refrigerante

- **ESTE APARELHO DE AR CONDICIONADO UTILIZA O NOVO REFRIGERANTE HFC (R410A) QUE NÃO DESTRÓI A CAMADA DE OZONO.**
- As características do refrigerante R410A são; absorve com facilidade a água, membrana oxidante ou óleo, e a sua pressão é aproximadamente 1,6 vez mais alta do que a do refrigerante R22. O óleo de refrigeração também foi modificado em conformidade com o novo refrigerante. Portanto, durante o trabalho de instalação, certifique-se de impedir a entrada de água, poeira, refrigerante anterior ou óleo de refrigeração anterior no ciclo de refrigeração.
- Para prevenir o carregamento dum refrigerante ou óleo de refrigeração incorrecto, os tamanhos das secções de conexão do orifício de carga da unidade principal e das ferramentas de instalação foram modificados dos tamanhos utilizados para o refrigerante convencional.
- Portanto, é preciso utilizar ferramentas especiais para o novo refrigerante (R410A).
- Para a conexão da tubagem, utilize uma tubagem nova e limpa projectada para o refrigerante R410A, e tome cuidado para evitar a entrada de água ou poeira.

### Para desligar o aparelho da alimentação eléctrica principal

- Este aparelho tem de ser ligado à alimentação eléctrica principal através de um interruptor com uma distância de contacto de, pelo menos, 3mm.

**Deve utilizar um fusível de instalação (qualquer tipo pode ser utilizado) para a linha de fornecimento de energia deste ar condicionado.**

**Não lave condicionadores de ar com máquinas de lavar a pressão.**

- As fugas eléctricas podem provocar choques eléctricos ou incêndios.

Hartelijk dank voor uw aankoop van deze Toshiba-airconditioner.

Deze installatiehandleiding beschrijft de installatiemethode voor de buitenunit. Zie de installatiehandleiding van de binnenunit voor het installeren van binnenunits.

Lees tevens deze installatiehandleiding goed door daar deze belangrijke informatie geeft aangaande "Machinery" Richtlijnen (Richtlijn 2006/42/EC). Geef deze installatiehandleiding, de gebruiksaanwijzing en installatiehandleiding van de binnenunit na het installeren aan de klant en vertel de klant deze documentatie op een veilige plaats te bewaren.

Geef deze installatiehandleiding met de gebruiksaanwijzing, de gebruiksaanwijzing en installatiehandleiding van de binnenunit na het installeren aan de klant en vertel de klant deze documentatie op een veilige plaats te bewaren.

Voor de verbindingen tussen de binnen- en buitenunits heeft u Y-vormige vertakkingen of verdeelstukken (los verkrijgbaar) nodig. Kies in overeenstemming met de systeemcapaciteit wat leidingwerk betreft het juiste onderdeel. Zie de aanwijzingen van de Y-vormige vertakking of het verdeelstuk (los verkrijgbaar) voor details aangaande het monteren.

Vertakkingen of verdeelstukken geschikt voor buitenshuis zijn vereist voor verbindingen tussen buitenunits.

### Algemene beschrijving: Airconditioner

#### Definitie van bevoegd installateur of bevoegd onderhoudsmonteur

De airconditioner moet worden geïnstalleerd, onderhouden, gerepareerd en uiteindelijk weggedaan door een bevoegd installateur of bevoegd onderhoudsmonteur. Wanneer een van deze taken verricht moet worden, verzoekt u dan een bevoegd installateur of bevoegd onderhoudsmonteur om dit voor u te doen.

Een bevoegd installateur of bevoegd onderhoudsmonteur is een persoon die beschikt over de kennis en bevoegdheden die staan vermeld in de onderstaande tabel.

Persoon	Kennis en bevoegdheden waarover de persoon moet beschikken
Bevoegd installateur	<ul style="list-style-type: none"> <li>• De bevoegde installateur is een persoon die door Toshiba Carrier Corporation gemaakte airconditioners installeert, onderhoudt, verplaatst en verwijdert. Hij of zij is opgeleid om door Toshiba Carrier Corporation gemaakte airconditioners te installeren, onderhouden, verplaatsen en te verwijderen. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor deze taken.</li> <li>• De bevoegde installateur die bevoegd is om het elektrische gedeelte van de installatie, verplaatsing en verwijdering op zich te nemen beschikt over de kwalificaties voor deze elektrische werkzaamheden zoals voorzien in plaatselijke wetten en regelgeving. Deze persoon is opgeleid voor werkzaamheden aan het elektrische systeem van de airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> <li>• De bevoegde installateur die bevoegd is om het koel- en leidingenwerk van de installatie, verplaatsing en verwijdering op zich te nemen beschikt over de kwalificaties voor deze koel- en leidingenwerkzaamheden zoals voorzien in plaatselijke wetten en regelgeving. Deze persoon is opgeleid voor koel- en leidingenwerkzaamheden aan de airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> <li>• De bevoegde installateur die bevoegd is om op hoogte te werken is opgeleid om op hoogten te werken met airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> </ul>
Bevoegd onderhoudsmonteur	<ul style="list-style-type: none"> <li>• De bevoegde onderhoudspersoon is een persoon die door Toshiba Carrier Corporation gemaakte airconditioners installeert, repareert, onderhoudt, verplaatst en verwijdert. Hij of zij is opgeleid om door Toshiba Carrier Corporation gemaakte airconditioners te installeren, repareren, onderhouden, verplaatsen en te verwijderen. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor deze taken.</li> <li>• De bevoegde onderhoudspersoon die bevoegd is om het elektrische gedeelte van de installatie, reparatie, verplaatsing en verwijdering op zich te nemen beschikt over de kwalificaties voor deze elektrische werkzaamheden zoals voorzien in plaatselijke wetten en regelgeving. Deze persoon is opgeleid voor werkzaamheden aan het elektrische systeem van de airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> <li>• De bevoegde installateur die bevoegd is om het koel- en leidingenwerk van de installatie, reparatie, verplaatsing en verwijdering op zich te nemen beschikt over de kwalificaties voor deze koel- en leidingenwerkzaamheden zoals voorzien in plaatselijke wetten en regelgeving. Deze persoon is opgeleid voor koel- en leidingenwerkzaamheden aan de airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> <li>• De bevoegde onderhoudspersoon die bevoegd is om op hoogte te werken is opgeleid om op hoogten te werken met airconditioners gemaakt door Toshiba Carrier Corporation. Deze persoon kan ook iemand zijn die in dergelijke taken is geïnstrueerd door een persoon of personen die zijn opgeleid en is dus goed op de hoogte van de kennis voor dit soort werk.</li> </ul>

### Definitie van beschermende kleding







Wanneer de airconditioner wordt vervoerd, geïnstalleerd, onderhouden, gerepareerd of verwijderd, draag beschermende handschoenen en veiligheidswerkleding.

Draag naast dergelijke normale beschermende kleding de hieronder beschreven beschermende uitrusting bij het uitvoeren van speciale taken zoals aangegeven in onderstaande tabel.

Niet dragen van de juiste beschermende uitrusting is gevaarlijk omdat u dan meer blootstaat aan letsel, brandwonden, elektrische schokken en andere verwondingen.

Te verrichten werkzaamheden	Beschermende kleding
Alle soorten werk	Werkhandschoenen Veiligheidswerkleding
Elektrische werkzaamheden	Handschoenen die bescherming bieden tegen hitte en elektriciteit Isolerende schoenen Beschermende kleding tegen elektrische schokken
Werk op hoogte (50cm of meer)	Veiligheidshelm voor industrieel gebruik
Vervoer van zware voorwerpen	Schoenen met verstevigde neuzen
Reparatie van buiteneenheden	Handschoenen die bescherming bieden tegen hitte en elektriciteit

### ■ Waarschuwingsaanduidingen op de airconditioner

Waarschuwingsaanduiding	Beschrijving		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>WAARSCHUWING</b>  <b>GEVAAR VOOR ELEKTRISCHE SCHOK</b> Verbreek alle externe stroomvoorzieningsaansluitingen alvorens enig onderhoud te verrichten.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>WAARSCHUWING</b>  Bewegende delen. Schakel het apparaat niet in wanneer het voorrooster is verwijderd. Stop de werking van het apparaat alvorens enig onderhoud te verrichten.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>VOORZICHTIG</b>  Delen met hoge temperaturen. Bij het verwijderen van dit paneel is bestaan de kans dat u zich brandt.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>VOORZICHTIG</b>  De aluminium vinnen van de unit niet aanraken. Dat zou tot ernstige verwondingen kunnen leiden.
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<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>VOORZICHTIG</b>  <b>Klim niet op de ventilatorbescherming.</b> Dat zou tot ernstige verwondingen kunnen leiden.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 VEILIGHEIDSVORZORGEN

De fabrikant is niet aansprakelijk voor schade veroorzaakt door het niet opvolgen van de in de handleiding gegeven aanwijzingen.

## WAARSCHUWING

### Algemeen

- Alvorens u begint met het installeren van de airconditioner, moet u de installatiehandleiding aandachtig doorlezen. Volg beslist alle gegeven aanwijzingen voor het installeren van de airconditioner op. De unit zou anders namelijk kunnen vallen of extra lawaai, trillingen en waterlekkage kunnen veroorzaken.
- Alleen een bevoegd installateur (\*1) of een bevoegd onderhoudsmonteur (\*1) mag de airconditioner installeren. Als het installeren van de airconditioner wordt verricht door een onbevoegd persoon, kan dat brand, elektrische schokken, letsel, waterlekkage, extra lawaai en/of trillingen veroorzaken.
- Gebruik uitsluitend de door Toshiba gespecificeerde, los verkrijgbare onderdelen en producten. Het gebruik van nietgespecificeerde onderdelen en producten kan brand, elektrische schokken, waterlekkage en andere problemen veroorzaken.
- Gebruik geen ander koelmiddel dan het gespecificeerde middel voor het bijvullen of verversen. De koelcyclus zal anders mogelijk onder extreem hoge druk komen, wat een onjuiste werking, ontploffing van het toestel of lichamenlijk letsel zou kunnen veroorzaken.
- Stel de circuitonderbreker beslist in de OFF (UIT) stand alvorens het onderhoudspaneel van de buitenunit te openen. Als u verzuimt de stroomonderbreker in de OFF-stand te zetten, loopt u de kans op een elektrische schok bij aanraken van de inwendige onderdelen. Alleen een bevoegd installateur (\*1) of een bevoegd onderhoudsmonteur (\*1) mag het onderhoudspaneel van de buitenunit verwijderen en de vereiste werkzaamheden uitvoeren.
- Alvorens u begint met installeren, onderhoud, reparaties of het verwijderen, moet u eerst de circuitonderbrekers voor zowel de binnen- als buitenunits in de OFF (UIT) stand zetten. U krijgt anders mogelijk een elektrische schok.

- Plaats een bordje “werk in uitvoering” bij de stroomonderbreker tijdens het installeren, onderhoud, reparatiewerk of werk voor afdanken van het apparaat. Als iemand per vergissing de stroomonderbreker in de ON-stand zet, loopt u de kans een elektrische schok te krijgen.
- Alleen een bevoegd installateur (\*1) of een bevoegd onderhoudsmonteur (\*1) mag werkzaamheden op hoogte verrichten met een trapje van 50 cm of meer, of het inlaatrooster van de binneneenheid verwijderen om daarbinnen werk te verrichten.
- Draag tijdens het installeren, onderhoud en afdanken van het apparaat altijd werkhandschoenen en veiligheidskleding.
- De aluminium vin van de buitenunit niet aanraken. Anders zou u zich er aan kunnen verwonden. Als het nodig is de koelvin aan te raken, trekt u eerst werkhandschoenen en beschermende kleding aan en begint u dan pas met het werk.
- Plaats nooit voorwerpen op de buiteneenheid en klim er niet bovenop. U zou er af kunnen vallen of een voorwerp kan van de buiteneenheid af vallen en letsel veroorzaken.
- Bij het werken op hoogte dient u een waarschuwingsbord te plaatsen opdat niemand uw werkplek te dicht nadert, voordat u aan het werk gaat. Onderdelen of andere voorwerpen zouden kunnen vallen en mogelijk lichamenlijk letsel veroorzaken. Zorg dat gerelateerde werknemers beslist helmen dragen.
- Voor schoonmaken van het filter of andere onderdelen van de buiteneenheid zet u altijd eerst de stroomonderbreker in de OFF-stand en plaatst u een bordje “werk in uitvoering” bij de stroomonderbreker voordat u aan het werk gaat.
- Het koelmiddel dat is toegepast in deze airconditioner is R410A.
- U dient te zorgen dat de warmtewisselingsventilator wordt vervoerd in een stabiele toestand. Neem direct contact op met de plaats van aankoop indien onderdelen beschadigd zijn.
- Demonteer het systeem niet, maak er geen veranderingen in en verplaats het niet alleen. Dit zou namelijk brand, elektrische schokken, letsel of waterlekkage kunnen veroorzaken.
- Dit apparaat is bedoeld voor gebruik door deskundige of ervaren gebruikers in winkels, in de lichte industrie of voor commercieel gebruik door een leek.



## Keuze van de installatieplaats

- Als u het apparaat installeert in een kleine kamer, dient u maatregelen te treffen om bij lekkage van koelmiddel in elk geval te zorgen dat de kritieke dampspanning in de kamer niet wordt overschreden. Raadpleeg de dealer van wie u de airconditioner hebt gekocht voor nader advies over de maatregelen. Als er zich sterk geconcentreerd koelmiddel ophoopt, kan dat ongelukken door zuurstofgebrek veroorzaken.
- Installeer niet op plaatsen waar ontvlambaar gas kan lekken. Lekkend gas zou namelijk rond de unit op kunnen hopen, worden ontstoken en brand veroorzaken.
- Draag beschermende werkschoenen, handschoenen en andere geschikte werkkleding voor het vervoeren en verplaatsen van de airconditioner.
- Bij het vervoeren van de airconditioner mag u die niet optillen aan de banden rond de verpakkingendoos. Als de banden zouden breken, loopt u de kans op verwondingen.
- Anders dan vloerstaande en types console, installeer de binneneenheid tenminste 2,5m boven de vloer, anders zouden gebruikers letsel of een elektrische schok kunnen oplopen als ze hun vingers of iets anders in de binneneenheid steken terwijl de airconditioner werkt.
- Zet geen verbrandingsapparaat op een plaats waar het in de directe luchtstroom van de airconditioner staat, anders kan er onvolledige verbranding plaatsvinden.
- Plaatsen waar het bedrijfsgeluid van de buitenunit storend kan zijn. (Let bij het installeren vooral op dat eventuele burens geen last van het bedrijfsgeluid van de airconditioner kunnen hebben.)

## Installatie

- Bij het installeren van de airconditioner volgt u de aanwijzingen in de installatiehandleiding. Het systeem zou kunnen vallen, kantelen of extra ruis, trillingen, waterlekkage en andere problemen veroorzaken indien u deze aanwijzingen niet opvolgt.
- Gebruik bij het installeren de bouten (M12) en moeren (M12) die bestemd zijn voor het vastzetten van de buiteneenheid.
- Installeer de buiteneenheid zorgvuldig op een plaats die stevig genoeg is om het gewicht van de buiteneenheid te dragen. De buitenunit kan omvallen en letsel veroorzaken indien deze op de verkeerde plaats wordt gemonteerd.
- Installeer de unit op de voorgeschreven wijze ter bescherming tegen harde wind en aardschokken. De unit kan vallen en ernstige ongelukken veroorzaken indien deze verkeerd is gemonteerd.
- Bevestig beslist de voor het installeren of andere doeleinden verwijderde schroeven weer.

## Koelmiddelleiding

- Monteer tijdens de installatiewerkzaamheden de koelmiddelleiding nauwkeurig voordat de airconditioner wordt bediend. Als de compressor wordt bediend met de klep open en zonder koelmiddelbuis, zuigt de compressor lucht aan en ontstaat er overdruk in het koelsysteem, hetgeen kan leiden tot verwondingen.
- Draai de flensmoer met een momentsleutel aan op de voorgeschreven manier. Als de flensmoer al te krachtig wordt aangedraaid, kan de moer een tijd later barsten, waardoor koelmiddel kan gaan lekken.
- Ventileer de ruimte goed indien er tijdens het installeren koelgas lekt. Indien koelgas in contact komt met vuur, wordt mogelijk giftig gas geproduceerd.

- Controleer na het installeren dat er geen koelmiddel lekt. Wanneer ontsnapt gasvormig koelmiddel in de buurt of in contact komt met open vuur, zoals bij een gasfornuis, kunnen giftige gassen worden gevormd.
- Na het installeren of verplaatsen van de airconditioner volgt u de aanwijzingen in de installatiehandleiding voor het volledig ontluichten van de leidingen, zodat er in het koelsysteem geen ander gas overblijft dan alleen het koelmiddel. Bij onvolledig ontluichten kan de airconditioner niet goed functioneren.
- Gebruik stikstofgas voor de test op luchtdichtheid.
- De oplaadslang moet zo worden aangesloten dat deze niet slap hangt.
- Ventileer de ruimte direct indien er tijdens het installeren koelmiddel lekt. Wanneer koelgas uit het toestel lekt en in contact komt met open vuur, kunnen giftige gassen ontstaan.

### Elektrische bedrading

- Alleen een bevoegd installateur (\*1) of een bevoegd onderhoudsmonteur (\*1) mag elektrische werkzaamheden aan de airconditioner verrichten. Onder geen voorwaarde mag dit werk worden verricht door een onbevoegde, aangezien fouten of vergissingen kunnen leiden tot elektrische schokken en/of kortsluiting of lekstroom.
- Bij het aansluiten van de stroomdraden, het repareren van elektrische onderdelen of het verrichten van andere elektrische werkzaamheden dient u handschoenen te dragen ter bescherming tegen hitte en elektrische stroom en isolerend schoeisel en beschermende kleding tegen elektrische schokken. Als u dergelijke beschermende kleding niet draagt, loopt u de kans op elektrische schokken.
- Draag hittebestendige werkhandschoenen, isolerende schoenen en andere geschikte werkkleding ter bescherming tegen elektrische schokken tijdens het uitvoeren van de adresinstellingen, een test of oplossen van problemen via het controlevenster op de elektraregelbox. U krijgt anders mogelijk een elektrische schok.

- Gebruik bedrading die voldoet aan de specificaties in de installatiehandleiding en de ter plaatse geldende voorschriften en wetten. Het gebruik van bedrading die niet voldoet aan de specificaties kan resulteren in elektrische schokken, kortsluiting en lekstroom, rookontwikkeling en/of brandgevaar.
- Controleer dat het systeem goed geaard wordt. (aarden) Een foute aarding kan een elektrische schok veroorzaken.
- Sluit de aarding niet aan op een gasleiding, waterleiding, bliksemafleider of een aardleiding voor telefoonkabels.
- Na het voltooiën van de verplaatsing of het reparatiewerk dient u te controleren of de aardleidingen naar behoren zijn aangesloten.
- Installeer een stroomonderbreker die voldoet aan de specificaties in de installatiehandleiding en de ter plaatse geldende voorschriften en wetten.
- Installeer de stroomonderbreker op een plaats waar die goed toegankelijk is voor de gebruiker.
- Als u de stroomonderbreker buitenshuis aanbrengt, let dan goed op dat het een specifiek voor buitengebruik geschikt type is.
- Onder geen voorwaarde mag het netsnoer worden verlengd. Aansluitproblemen op een plaats waar het netsnoer is verlengd kunnen leiden tot rookontwikkeling en/of brandgevaar.
- Werkzaamheden met elektrische bedrading moeten altijd worden uitgevoerd in overeenstemming met de plaatselijke regelgeving, wetten en de installatiehandleiding. Doet u dit niet, dan kan dat leiden tot elektrocutie of kortsluiting.
- Tap geen stroom af van het stroomaansluitblok op de buitenunit voor een andere buitenunit. De capaciteit van het aansluitblok wordt anders namelijk overschreden met mogelijk brand als gevolg.
- Gebruik voor elektraverbindingen het in de installatiehandleiding gespecificeerde draad, en verbind en bevestig de draden goed zodat deze geen extra kracht op aansluitingen kunnen uitoefenen of losschieten. Onjuiste aansluitingen en verbindingen kunnen brand veroorzaken.

## Testen

- Nadat u de werkzaamheden hebt voltooid dient u voor het inschakelen van de airconditioner eerst te controleren of het deksel van de elektriciteitskast van de binneneenheid en het onderhoudspaneel van de buiteneenheid zijn gesloten, om vervolgens de stroomonderbreker in de ON-stand te zetten. Als u de stroom inschakelt zonder eerst deze punten te controleren, kunt u een elektrische schok krijgen.
- Als u merkt dat er iets mis is met de airconditioner (wanneer u een foutmelding ziet of een schroeilucht ruikt, vreemde geluiden hoort of wanneer de airconditioner niet koelt of verwarmt, of wanneer er water uit lekt), raakt u dan zelf de airconditioner niet aan maar zet u de stroomonderbreker in de OFF-stand en neemt u contact op met een bevoegd onderhoudsmonteur. Neem de nodige maatregelen om te voorkomen dat het apparaat wordt ingeschakeld (schrijf bijvoorbeeld “defect” dichtbij de stroomonderbreker e.d.) totdat de bevoegde onderhoudsmonteur arriveert. Het voortzetten van het gebruik van de airconditioner terwijl er iets mis mee is, kan leiden tot ernstige mechanische defecten, elektrische schokken en andere problemen.
- Gebruik na beëindiging van het werk een isolatietester (500V Megger) om te controleren of de weerstand 1 MΩ of meer is tussen het stroomgedeelte en het metalen niet-stroomgedeelte (Aardingsgedeelte). Als de weerstandswaarde te gering is, kan er kortsluiting, lekstroom of een elektrische schok optreden aan de gebruikerskant.
- Na voltooiing van het installatiewerk controleert u of er geen koelmiddel lekt, of de waterafvoer in orde is en controleert u de weerstand van de isolatie. Vervolgens laat u de airconditioner proefdraaien, om te zien of het apparaat goed werkt.

## Uitleg aan de gebruiker

- Na voltooiing van het installatiewerk vertelt u de gebruiker waar de stroomonderbreker zich bevindt. Als de gebruiker niet weet waar de stroomonderbreker zit, kan hij of zij de airconditioner niet uitschakelen wanneer er zich een storing voordoet in de werking.

- Als u bemerkt dat het ventilatierooster is beschadigd, blijft u uit de buurt van de buitenunit, zet de stroomonderbreker op de positie OFF (UIT) en neem contact op met bevoegd onderhoudspersoneel (\*1) om de reparaties uit te voeren. Zet de stroomonderbreker niet terug in de ON-stand totdat alle vereiste reparaties zijn voltooid.
- Na voltooiing van het installatiewerk vertelt u aan de hand van de eigenaarshandleiding de gebruiker hoe het apparaat te bedienen en te onderhouden.

## Elders opstellen

- Alleen een bevoegd installateur (\*1) of een bevoegd onderhoudsmonteur (\*1) mag de airconditioner verplaatsen. Het is gevaarlijk als een onbevoegde de airconditioner verplaatst, aangezien dat kan leiden tot gevaar voor brand, elektrische schokken, verwondingen, waterlekage, bijgeluiden en/of trillingen.
- Bij uitvoeren van werkzaamheden wanneer de pomp gestopt is, schakelt u eerst de compressor uit voordat u de koelmiddelbuis losmaakt. Wanneer u de koelmiddelleiding loskoppelt met de onderhoudsklep open en de compressor in bedrijf, wordt lucht en gas opgezogen waardoor de druk binnen de koelcyclus te hoog oploopt, wat mogelijk kan leiden tot barsten, letsel of andere problemen.
- Herwin koelmiddel niet met de buitenunit. Gebruik beslist geschikte apparatuur voor het herwinnen van koelmiddel alvorens het systeem te verplaatsen of repareren. Het herwinnen van koelmiddel met de buitenunit is onmogelijk. Het herwinnen van koelmiddel met de buitenunit kan ernstige ongelukken veroorzaken, bijvoorbeeld ontploffing van de unit, persoonlijk letsel en andere ernstige ongelukken.

(\*1) Zie de “Definitie van een bevoegd installateur of bevoegd onderhoudsmonteur”.

**⚠ VOORZICHTIG**

**Installeren van een airconditioner met een nieuw koelmiddel**

- **DEZE AIRCONDITIONER WERKT MET HET NIEUWE HFC-KOELMIDDEL (R410A) DAT DE OZONLAAG NIET AANTAST.**
- Het R410A koelmiddel heeft de volgende karakteristieken: het absorbeert gemakkelijk water, oxidatiemiddel of olie en de druk is ongeveer 1,6 keer hoger dan de druk van R22 koelmiddel. Behalve het nieuwe koelmiddel is ook de koelolie veranderd. Zorg derhalve dat er tijdens het installeren geen water, stof, ander koelmiddel of olie in de koelcyclus komt.
- Om te voorkomen dat een onjuist koelmiddel en koelolie wordt bijgevuld, is het formaat van de verbindingen en bijvulpoort op de unit en het te gebruiken gereedschap voor het installeren anders dan in geval van het conventionele koelmiddel.
- U heeft derhalve het speciale gereedschap voor het nieuwe koelmiddel (R410A) nodig.
- Gebruik voor het verbinden nieuwe en schone leidingen die voor R410A zijn gefabriceerd zodat er geen water of stof in het systeem kan komen.

**Het toestel loskoppelen van de netvoeding**

- Dit toestel moet aangesloten worden op de netvoeding via een schakelaar met een contactafstand van ten minste 3mm.

**De stroomtoevoer van de airconditioner moet voorzien zijn van een installatiezekering (alle types zekeringen kunnen gebruikt worden).**

**Was airconditioners niet met hogedrukreinigers.**

- Elektrische lekkages kunnen elektrische schokken of brand veroorzaken.

Σας ευχαριστούμε για την αγορά αυτού του κλιματιστικού Toshiba.

Το παρόν Εγχειρίδιο εγκατάστασης περιγράφει τη μέθοδο εγκατάστασης της εξωτερικής μονάδας. Για την εγκατάσταση των εσωτερικών μονάδων, ακολουθήστε τις οδηγίες που αναφέρονται στο Εγχειρίδιο εγκατάστασης που παρέχεται με την εσωτερική μονάδα.

Επιπλέον, καθώς το παρόν εγχειρίδιο εγκατάστασης περιλαμβάνει τα σημαντικά άρθρα σχετικά με την οδηγία "Μηχανήματα" (Οδηγία 2006/42/ΕΚ), διαβάστε προσεκτικά το εγχειρίδιο και βεβαιωθείτε ότι το έχετε κατανοήσει. Μετά την εγκατάσταση, δώστε αυτό το Εγχειρίδιο εγκατάστασης με το Εγχειρίδιο χρήσης, το Εγχειρίδιο χρήσης και το Εγχειρίδιο εγκατάστασης που παρέχονται με την εσωτερική μονάδα στον πελάτη και πείτε στον πελάτη να τα διατηρεί ασφαλή. Προετοιμάστε μια αποκλειστική πηγή τροφοδοσίας για τις εσωτερικές μονάδες, ανεξάρτητη από την αντίστοιχη πηγή τροφοδοσίας για τις εξωτερικές μονάδες.

Απαιτούνται αρθρώσεις διακλάδωσης σε σχήμα Υ ή συλλέκτης διακλάδωσης (πωλούνται ξεχωριστά) για τη σύνδεση των σωλήνων των εσωτερικών και των εξωτερικών μονάδων. Επιλέξτε μία από τις δύο λύσεις λαμβάνοντας υπόψη την ικανότητα του συστήματος σχετικά με τις σωληνώσεις. Για την εγκατάσταση των σωλήνων διακλάδωσης, ανατρέξτε στο εγχειρίδιο εγκατάστασης της μονάδας διακλάδωσης σε σχήμα Υ ή του συλλέκτη διακλάδωσης (πωλούνται ξεχωριστά). Απαιτούνται αρθρώσεις διακλάδωσης που συνδέονται εξωτερικά για τη σύνδεση εξωτερικών μονάδων μεταξύ τους.

**Γενικός χαρακτηρισμός: Κλιματιστική μονάδα**

**Ορισμός Εξειδικευμένου Εγκαταστάτη ή Εξειδικευμένου Τεχνικού Σέρβις**

Απαιτείται εγκατάσταση, συντήρηση, επισκευή και απόρριψη του κλιματιστικού από εξειδικευμένο εγκαταστάτη ή εξειδικευμένο τεχνικό σέρβις. Όταν απαιτείται εκτέλεση οποιασδήποτε από τις συγκεκριμένες εργασίες, αναθέστε την εκτέλεσή της σε εξειδικευμένο εγκαταστάτη ή εξειδικευμένο τεχνικό σέρβις.

Ένας εξειδικευμένος εγκαταστάτης ή εξειδικευμένος τεχνικός σέρβις είναι αντιπρόσωπος ο οποίος διαθέτει τα προσόντα και τις γνώσεις που περιγράφονται στον πίνακα κατωτέρω.

Αντιπρόσωπος	Προσόντα και γνώσεις τα οποία απαιτείται να διαθέτει ο αντιπρόσωπος
Εξειδικευμένος εγκαταστάτης	<ul style="list-style-type: none"> <li>• Ο εξειδικευμένος εγκαταστάτης είναι ένα άτομο που πραγματοποιεί εργασίες εγκατάστασης, συντήρησης, αλλαγής θέσης και αφαίρεσης των κλιματιστικών που κατασκευάζει η Toshiba Carrier Corporation. Το άτομο αυτό έχει εκπαιδευτεί στην εγκατάσταση, συντήρηση, αλλαγή θέσης και αφαίρεση των κλιματιστικών που κατασκευάζει η Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και είναι επομένως πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος εγκαταστάτης που επιτρέπεται να κάνει τις ηλεκτρικές εργασίες που σχετίζονται με την εγκατάσταση, αλλαγή θέσης και αφαίρεση, διαθέτει τα προσόντα που σχετίζονται με αυτές τις ηλεκτρικές εργασίες όπως ορίζεται από τους τοπικούς νόμους και κανονισμούς, και είναι άτομο που έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις ηλεκτρικές εργασίες σε κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος εγκαταστάτης που επιτρέπεται να χειρίζεται το ψυκτικό και να εκτελεί τις εργασίες σωληνώσης που σχετίζονται με την εγκατάσταση, αλλαγή θέσης και αφαίρεση, διαθέτει τα προσόντα που σχετίζονται με αυτές τις εργασίες χειρισμού του ψυκτικού και τις εργασίες σωληνώσης όπως ορίζεται από τους τοπικούς νόμους και κανονισμούς, και είναι άτομο που έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις εργασίες σωληνώσης σε κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος εγκαταστάτης που επιτρέπεται να εργάζεται σε ύψη έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις εργασίες σε ύψη με κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> </ul>
Εξειδικευμένος τεχνικός σέρβις	<ul style="list-style-type: none"> <li>• Ο εξειδικευμένος τεχνικός επισκευών είναι ένα άτομο που πραγματοποιεί εργασίες εγκατάστασης, επισκευής, συντήρησης, αλλαγής θέσης και αφαίρεσης των κλιματιστικών που κατασκευάζει η Toshiba Carrier Corporation. Το άτομο αυτό έχει εκπαιδευτεί στην εγκατάσταση, επισκευή, συντήρηση, αλλαγή θέσης και αφαίρεση των κλιματιστικών που κατασκευάζει η Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και είναι επομένως πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος τεχνικός επισκευών που επιτρέπεται να κάνει τις ηλεκτρικές εργασίες που σχετίζονται με την εγκατάσταση, επισκευή, αλλαγή θέσης και αφαίρεση, διαθέτει τα προσόντα που σχετίζονται με αυτές τις ηλεκτρικές εργασίες όπως ορίζεται από τους τοπικούς νόμους και κανονισμούς, και είναι άτομο που έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις ηλεκτρικές εργασίες σε κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος τεχνικός επισκευών που επιτρέπεται να χειρίζεται το ψυκτικό και να εκτελεί τις εργασίες σωληνώσης που σχετίζονται με την εγκατάσταση, επισκευή, αλλαγή θέσης και αφαίρεση, διαθέτει τα προσόντα που σχετίζονται με αυτές τις εργασίες χειρισμού του ψυκτικού και τις εργασίες σωληνώσης όπως ορίζεται από τους τοπικούς νόμους και κανονισμούς, και είναι άτομο που έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις εργασίες χειρισμού του ψυκτικού και τις εργασίες σωληνώσης σε κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> <li>• Ο εξειδικευμένος τεχνικός επισκευών που επιτρέπεται να εργάζεται σε ύψη έχει εκπαιδευτεί σε θέματα που σχετίζονται με τις εργασίες σε ύψη με κλιματιστικά που κατασκευάζονται από την Toshiba Carrier Corporation ή, εναλλακτικά, έχει διδαχθεί αυτές τις εργασίες από άτομα που έχουν εκπαιδευτεί και, επομένως, είναι πλήρως εξοικειωμένος με τις γνώσεις που σχετίζονται με αυτές τις εργασίες.</li> </ul>

### Ορισμός εξοπλισμού προστασίας







Όταν πραγματοποιείται μεταφορά, εγκατάσταση, συντήρηση, επισκευή ή αφαίρεση του κλιματιστικού, να φοράτε προστατευτικά γάντια και ρουχισμό εργασίας "ασφαλείας".

Εκτός από τον συνηθισμένο προστατευτικό εξοπλισμό, να φοράτε τον προστατευτικό εξοπλισμό που περιγράφεται παρακάτω κατά την εκτέλεση των ειδικών εργασιών που περιγράφονται στον παρακάτω πίνακα.

Αν παραλείψετε να φορέσετε το σωστό προστατευτικό εξοπλισμό, θέτετε τον εαυτό σας σε κίνδυνο καθώς θα είστε πιο ευάλωτοι σε τραυματισμούς, εγκαύματα, ηλεκτροπληξίες και άλλους τραυματισμούς.

Εκτελούμενη εργασία	Προστατευτικός εξοπλισμός που φοριέται
Κάθε τύπος εργασίας	Γάντια προστασίας Ρουχισμός εργασίας "ασφαλείας"
Ηλεκτρολογικές εργασίες	Γάντια προστασίας από ηλεκτροπληξία και θερμότητα Μονωμένα παπούτσια Ρουχισμός που παρέχει προστασία από ηλεκτροπληξία
Εργασία σε ύψη (50cm ή περισσότερο)	Κράνη βιομηχανικής χρήσης
Μεταφορά βαρέων αντικειμένων	Υποδήματα με πρόσθετη προστασία των άκρων των ποδιών
Επισκευή εξωτερικής μονάδας	Γάντια προστασίας από ηλεκτροπληξία και θερμότητα

### ■ Προειδοποιητικές ενδείξεις πάνω στην κλιματιστική μονάδα

Προειδοποιητική ένδειξη	Περιγραφή		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>ΠΡΟΕΙΔΟΠΟΙΗΣΗ</b>  <b>ΚΙΝΔΥΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ</b> Αποσυνδέστε όλες τις απομακρυσμένες παροχές ηλεκτρικής τροφοδοσίας πριν από τη διενέργεια σέρβις.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>ΠΡΟΕΙΔΟΠΟΙΗΣΗ</b>  Κινούμενα μέρη. Μην θέσετε τη μονάδα σε λειτουργία, εάν έχετε αφαιρέσει τη γρίλια. Διακόψτε τη λειτουργία της μονάδας πριν από τη διενέργεια σέρβις.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>ΠΡΟΣΟΧΗ</b>  Μέρη με υψηλή θερμοκρασία. Ενδέχεται να υποστείτε έγκαυμα κατά την αφαίρεση αυτού του πίνακα.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>ΠΡΟΣΟΧΗ</b>  Μην ακουμπάτε τα πτερύγια αλουμινίου της μονάδας. Η μη συμμόρφωση ενδέχεται να προκαλέσει τραυματισμό.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>ΠΡΟΣΟΧΗ</b>  <b>ΚΙΝΔΥΝΟΣ ΕΚΡΗΞΗΣ</b> Ανοίξτε τις βαλβίδες σέρβις πριν από τη λειτουργία, διαφορετικά ενδέχεται να προκληθεί έκρηξη.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not climb onto the fan guard. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not climb onto the fan guard. Doing so may result in injury.	<b>ΠΡΟΣΟΧΗ</b>  <b>Μην ανεβαίνετε επάνω στο κάλυμμα του ανεμιστήρα.</b> Η μη συμμόρφωση ενδέχεται να προκαλέσει τραυματισμό.
<b>CAUTION</b>			
Do not climb onto the fan guard. Doing so may result in injury.			

# 1 ΠΡΟΦΥΛΑΞΕΙΣ ΓΙΑ ΑΣΦΑΛΕΙΑ

Ο κατασκευαστής αποποιείται κάθε ευθύνη για ζημιές που τυχόν προκύψουν λόγω της μη τήρησης των οδηγιών του παρόντος εγχειριδίου.

## ⚠ ΠΡΟΕΙΔΟΠΟΙΗΣΗ

### Γενικά

- Πριν ξεκινήσετε με την εγκατάσταση του κλιματιστικού, διαβάστε με προσοχή το Εγχειρίδιο εγκατάστασης και ακολουθήστε τις οδηγίες για την εγκατάσταση του κλιματιστικού. Σε διαφορετική περίπτωση, η μονάδα ενδέχεται να πέσει ή να προκληθεί θόρυβος, κραδασμοί ή διαρροή νερού.
- Οι εργασίες εγκατάστασης επιτρέπεται να πραγματοποιηθούν μόνο από εξειδικευμένο εγκαταστάτη (\*1) ή εξειδικευμένο τεχνικό σέρβις (\*1). Σε περίπτωση εγκατάστασης του κλιματιστικού από ανειδίκευτο άτομο, ενδέχεται να προκληθεί πυρκαγιά, ηλεκτροπληξία, τραυματισμός, διαρροή νερού, θόρυβος και/ή κραδασμοί.
- Εάν χρησιμοποιείτε προϊόντα που πωλούνται ξεχωριστά, φροντίστε να είναι αποκλειστικά και μόνο προϊόντα με προδιαγραφές Toshiba. Η χρήση απροσδιόριστων προϊόντων ενδέχεται να προκαλέσει πυρκαγιά, ηλεκτροπληξία, διαρροή νερού ή άλλη βλάβη.
- Να χρησιμοποιείτε αποκλειστικά και μόνο το καθορισμένο ψυκτικό για συμπλήρωση ή αντικατάσταση. Σε διαφορετική περίπτωση, ενδέχεται να προκληθεί αφύσικα υψηλή πίεση στον κύκλο ψύξης, η οποία μπορεί να οδηγήσει σε αστοχία ή έκρηξη του προϊόντος ή στον σωματικό τραυματισμό του χρήστη.
- Πριν ανοίξετε τον πίνακα σέρβις της εξωτερικής μονάδας, θέστε τον αυτόματο διακόπτη κυκλώματος στη θέση OFF. Εάν δεν θέσετε τον αυτόματο διακόπτη κυκλώματος στη θέση OFF ενδέχεται να προκληθεί ηλεκτροπληξία λόγω τυχαίας επαφής με τα εξαρτήματα στο εσωτερικό της μονάδας. Η αφαίρεση του πίνακα σέρβις της εξωτερικής μονάδας και η εκτέλεση των απαιτούμενων εργασιών επιτρέπεται να εκτελεστεί μόνο από έναν εξειδικευμένο εγκαταστάτη (\*1) ή έναν εξειδικευμένο τεχνικό σέρβις (\*1).
- Πριν από την εκτέλεση εργασιών εγκατάστασης, σέρβις, επισκευής ή απόρριψης, βεβαιωθείτε ότι οι αυτόματοι διακόπτες κυκλώματος της εσωτερικής και της εξωτερικής μονάδας βρίσκονται στη θέση OFF. Διαφορετικά, ενδέχεται να προκληθεί ηλεκτροπληξία.

- Αναρτήστε μια πινακίδα με την ένδειξη “Εκτελούνται εργασίες” κοντά στον αυτόματο διακόπτη κυκλώματος ενόσω εκτελούνται εργασίες εγκατάστασης, σέρβις, επισκευής ή απόρριψης. Υπάρχει κίνδυνος πρόκλησης ηλεκτροπληξίας, εάν ο αυτόματος διακόπτης κυκλώματος τεθεί στη θέση ON τυχαία.
- Μόνον εξειδικευμένος εγκαταστάτης (\*1) ή εξειδικευμένος τεχνικός σέρβις (\*1) επιτρέπεται να αναλαμβάνει την εκτέλεση εργασιών σε υψηλά σημεία χρησιμοποιώντας βάση ύψους 50cm ή υψηλότερη ή να αφαιρεί τη γρίλια εισαγωγής της εσωτερικής μονάδας για την εκτέλεση εργασιών.
- Να φοράτε γάντια προστασίας και ρουχισμό για την ασφάλεια κατά την εργασία, όταν εκτελείτε εργασίες εγκατάστασης, σέρβις και απόρριψης.
- Μην ακουμπάτε το πτερύγιο αλουμινίου της εξωτερικής μονάδας. Ενδέχεται να τραυματιστείτε εάν το πράξετε. Εάν απαιτείται να αγγίξετε το πτερύγιο για οποιοδήποτε λόγο, φορέστε πρώτα γάντια προστασίας και ρουχισμό για την ασφάλεια κατά την εργασία και τότε μόνον προχωρήστε.
- Μην ανεβαίνετε πάνω στην εξωτερική μονάδα και μην τοποθετείτε αντικείμενα πάνω σε αυτήν. Ενδέχεται να πέσετε εσείς ή τα αντικείμενα και να προκληθεί τραυματισμός.
- Όταν εργάζεστε σε υψηλό σημείο, αναρτήστε μια προειδοποιητική πινακίδα σε κατάλληλο σημείο ώστε να μην πλησιάζει κανείς στον χώρο των εργασιών, πριν προχωρήσετε στην εκτέλεση των εργασιών. Εξαρτήματα και άλλα αντικείμενα ενδέχεται να πέσουν από ψηλά, τραυματίζοντας ενδεχομένως κάποιο άτομο που βρίσκεται από κάτω. Επίσης, βεβαιωθείτε ότι οι εργάτες φορούν προστατευτικά κράνη.
- Όταν καθαρίζετε το φίλτρο ή άλλα μέρη της εξωτερικής μονάδας, να φροντίζετε πάντα να έχει ρυθμιστεί ο αυτόματος διακόπτης κυκλώματος στη θέση OFF και να έχει αναρτηθεί μια πινακίδα με την ένδειξη “Εκτελούνται εργασίες” κοντά στον αυτόματο διακόπτη κυκλώματος, πριν προχωρήσετε στην εκτέλεση των εργασιών.
- Το ψυκτικό υγρό το οποίο χρησιμοποιείται στο συγκεκριμένο κλιματιστικό είναι τύπου R410A.
- Φροντίστε για τη μεταφορά του κλιματιστικού σε σταθεροποιημένη κατάσταση. Επικοινωνήστε με τον τοπικό σας αντιπρόσωπο εάν εντοπίσετε κάποιο χαλασμένο εξάρτημα του προϊόντος.
- Μην αποσυναρμολογείτε, τροποποιείτε, επισκευάζετε ή μετακινείτε το προϊόν μόνοι σας. Κάτι τέτοιο μπορεί να προκαλέσει πυρκαγιά, ηλεκτροπληξία, τραυματισμό ή διαρροές νερού.
- Η συσκευή αυτή προορίζεται για χρήση από έμπειρους ή εκπαιδευμένους χρήστες σε καταστήματα, στην ελαφριά βιομηχανία ή για εμπορική χρήση από ανειδίκευτα άτομα.

## Επιλογή θέσης εγκατάστασης

- Σε περίπτωση εγκατάστασης της μονάδας σε μικρό δωμάτιο, φροντίστε για τη λήψη κατάλληλων μέτρων, ώστε το ψυκτικό υγρό να μην υπερβεί το όριο συγκέντρωσης ακόμη και σε περίπτωση διαρροής. Κατά την εφαρμογή των μέτρων, συμβουλευτείτε τον αντιπρόσωπο από τον οποίο αγοράσατε το κλιματιστικό. Η συσσώρευση υψηλής συγκέντρωσης ψυκτικού υγρού ενδέχεται να προκαλέσει ατύχημα λόγω έλλειψης οξυγόνου.
- Μην εγκαθιστάτε το προϊόν σε μέρη όπου ενδέχεται να υπάρξει διαρροή εύφλεκτου αερίου. Σε περίπτωση διαρροής και συσσώρευσης αερίου γύρω από τη μονάδα, ενδέχεται να υπάρξει ανάφλεξη και να προκληθεί πυρκαγιά.
- Κατά τη μεταφορά του κλιματιστικού, να φοράτε υποδήματα με προστασία των άκρων των ποδιών, προστατευτικά γάντια και λοιπό προστατευτικό ρουχισμό.
- Κατά τη μεταφορά του κλιματιστικού, μην επιχειρήσετε να το συγκρατήσετε από τις ταινίες πρόσδεσης γύρω από το χαρτοκιβώτιο συσκευασίας. Ενδέχεται να τραυματιστείτε, εάν οι ταινίες σπάσουν.
- Εκτός από τύπους δαπέδου και κονσόλας, εγκαταστήστε την εσωτερική μονάδα σε ύψος 2,5m τουλάχιστον πάνω από το δάπεδο, διότι διαφορετικά οι χρήστες ενδέχεται να τραυματιστούν ή να υποστούν ηλεκτροπληξία σε περίπτωση που εισάγουν τα δάκτυλά τους ή άλλα αντικείμενα στο εσωτερικό της εσωτερικής μονάδας ενώ το κλιματιστικό βρίσκεται σε λειτουργία.
- Μην τοποθετείτε συσκευή καύσης σε σημείο το οποίο εκτίθεται απευθείας στη ροή αέρα του κλιματιστικού, ενδέχεται να προκληθεί ατελής καύση.
- Χώροι όπου ο θόρυβος από τη λειτουργία της εξωτερικής μονάδας ενδέχεται να προκαλέσει ενόχληση. (Ειδικά στη διαχωριστική γραμμή με τους γείτονες τοποθετήστε το κλιματιστικό λαμβάνοντας υπόψη τον θόρυβο.)

## Εγκατάσταση

- Ακολουθήστε τις οδηγίες που αναγράφονται στο Εγχειρίδιο Εγκατάστασης για να εγκαταστήσετε το κλιματιστικό. Η μη τήρηση αυτών των οδηγιών ενδέχεται να προκαλέσει πτώση ή αναποδογύρισμα του προϊόντος ή δημιουργία θορύβου, κραδασμών, διαρροής νερού ή άλλης βλάβης.
- Κατά την εγκατάσταση της μονάδας, απαιτείται η χρήση των κοχλιών (M12) και των περικοχλίων (M12) αποκλειστικής χρήσης για την ασφάλιση της εξωτερικής μονάδας.
- Εγκαταστήστε την εξωτερική μονάδα σε κατάλληλη θέση, η οποία είναι αρκετά ανθεκτική για να αντέξει το βάρος της εξωτερικής μονάδας. Η ανεπαρκής ανθεκτικότητα μπορεί να οδηγήσει σε πτώση της εξωτερικής μονάδας, με αποτέλεσμα τον ενδεχόμενο τραυματισμό.
- Εγκαταστήστε τη μονάδα με τον προβλεπόμενο τρόπο για προστασία από ισχυρούς ανέμους και σεισμό. Εσφαλμένη εγκατάσταση ενδέχεται να έχει ως αποτέλεσμα πτώση της μονάδας ή άλλα ατυχήματα.
- Φροντίστε να βιδώσετε εκ νέου τις βίδες που αφαιρέθηκαν για την εγκατάσταση ή άλλον λόγο.

## Σωλήνωση ψυκτικού

- Εγκαταστήστε το σωλήνα ψυκτικού με ασφάλεια στη διάρκεια της εργασίας εγκατάστασης πριν θέσετε σε λειτουργία το κλιματιστικό. Εάν ο συμπιεστής λειτουργήσει με τη βαλβίδα ανοιχτή και χωρίς σωλήνα ψυκτικού υγρού, ο συμπιεστής αναρροφά αέρα και ο κύκλος ψύξης υπερσυμπιέζεται, πράγμα το οποίο ενδέχεται να προκαλέσει τραυματισμό.
- Σφίξτε το ρακόρ με ένα ροτόκλειδο ακολουθώντας τον καθορισμένο τρόπο. Τυχόν υπερβολικό σφίξιμο του ρακόρ ενδέχεται να προκαλέσει ράγισμα του ρακόρ μετά από μακρό χρονικό διάστημα, πράγμα το οποίο ενδέχεται να καταλήξει σε διαρροή ψυκτικού υγρού.
- Αερίστε τον χώρο σε περίπτωση διαρροής αερίου κατά την εγκατάσταση. Αν η διαρροή του ψυκτικού αερίου έρθει σε επαφή με φλόγα, ενδέχεται να εκλυθούν τοξικά αέρια.

- Μετά τις εργασίες εγκατάστασης, βεβαιωθείτε ότι δεν υπάρχει διαρροή του ψυκτικού αερίου. Τυχόν διαρροή του ψυκτικού αερίου στο χώρο και κίνησή του κοντά σε πηγή φωτιάς, όπως εστία κουζίνας, ενδέχεται να δημιουργήσει επιβλαβείς αναθυμιάσεις.
- Μόλις ολοκληρωθεί η εγκατάσταση ή η αλλαγή θέσης του κλιματιστικού, ακολουθήστε τις οδηγίες που αναγράφονται στο Εγχειρίδιο Εγκατάστασης για πλήρη εξαέρωση, ώστε στον κύκλο ψύξης να μην αναμιγνύονται άλλα αέρια εκτός του ψυκτικού υγρού. Εάν δεν πραγματοποιήσετε πλήρη εξαέρωση, ενδέχεται να προκληθεί δυσλειτουργία του κλιματιστικού.
- Απαιτείται η χρήση αερίου αζώτου για τη δοκιμή στεγανότητας.
- Ο σωλήνας πλήρωσης πρέπει να συνδεθεί με τρόπο ώστε να μην παρουσιάζει χαλαρότητα.
- Σε περίπτωση διαρροής του ψυκτικού αερίου κατά τη διάρκεια των εργασιών εγκατάστασης, αερίστε τον χώρο αμέσως. Αν η διαρροή του ψυκτικού αερίου έλθει σε επαφή με φλόγα, ενδέχεται να εκλυθούν δηλητηριώδη αέρια.

### Ηλεκτρική καλωδίωση

- Η εκτέλεση των ηλεκτρολογικών εργασιών στο κλιματιστικό επιτρέπεται μόνον από εξειδικευμένο εγκαταστάτη (\*1) ή εξειδικευμένο τεχνικό σέρβις (\*1). Σε καμία περίπτωση δεν επιτρέπεται η εκτέλεση των εν λόγω εργασιών από ανειδίκευτο άτομο, επειδή τυχόν μη κατάλληλη εκτέλεση των εργασιών ενδέχεται να καταλήξει σε ηλεκτροπληξία ή/και διαρροές ρεύματος.
- Όταν συνδέετε ηλεκτρικά καλώδια, επισκευάζετε ηλεκτρικά εξαρτήματα ή αναλαμβάνετε άλλες ηλεκτρολογικές εργασίες, να φοράτε γάντια προστασίας κατά της ηλεκτροπληξίας και της θερμότητας, υποδήματα με μόνωση και ρουχισμό προστασίας από ηλεκτροπληξία. Η μη χρήση του συγκεκριμένου εξοπλισμού προστασίας ενδέχεται να καταλήξει σε ηλεκτροπληξία.
- Κατά την εκτέλεση ρύθμισης διεύθυνσης, δοκιμαστικής λειτουργίας ή αντιμετώπισης προβλημάτων μέσω του παραθύρου ελέγχου του ηλεκτρικού κουτιού, φορέστε μονωμένα θερμοανθεκτικά γάντια, μονωμένα υποδήματα και λοιπό ρουχισμό για προστασία από ηλεκτροπληξία. Διαφορετικά, ενδέχεται να υποστείτε ηλεκτροπληξία.

- Να χρησιμοποιείτε καλωδιώσεις οι οποίες πληρούν τις προδιαγραφές του Εγχειριδίου Εγκατάστασης και τις απαιτήσεις των τοπικών κανονισμών και νομοθεσίας. Η χρήση καλωδιώσεων οι οποίες δεν πληρούν τις προδιαγραφές ενδέχεται να προκαλέσει ηλεκτροπληξία, διαρροές ρεύματος, καπνό ή/και πυρκαγιά.
- Βεβαιωθείτε ότι το προϊόν είναι κατάλληλα γειωμένο. (εργασίες γείωσης)  
Η ατελής γείωση μπορεί να οδηγήσει σε ηλεκτροπληξία.
- Μη συνδέετε το καλώδιο γείωσης σε σωλήνα αερίου, σωλήνα νερού, μεταλλική ράβδο αλεξικέραυνου ή καλώδιο γείωσης τηλεφώνου.
- Μόλις ολοκληρωθούν οι εργασίες επισκευής ή αλλαγής θέσης του κλιματιστικού, βεβαιωθείτε ότι τα καλώδια γείωσης έχουν συνδεθεί κατάλληλα.
- Φροντίστε για την εγκατάσταση αυτόματου διακόπτη κυκλώματος ο οποίος πληροί τις προδιαγραφές του Εγχειριδίου Εγκατάστασης και τις απαιτήσεις των τοπικών κανονισμών και νομοθεσίας.
- Εγκαταστήστε τον αυτόματο διακόπτη κυκλώματος σε σημείο όπου θα διευκολύνεται η πρόσβασή του από τον αντιπρόσωπο.
- Όταν πραγματοποιείτε εγκατάσταση του αυτόματου διακόπτη κυκλώματος σε εξωτερικό χώρο, φροντίστε για την εγκατάσταση διακόπτη κατάλληλου τύπου για εξωτερική χρήση.
- Σε καμία περίπτωση δεν επιτρέπεται προέκταση του καλωδίου τροφοδοσίας. Τυχόν προβλήματα σύνδεσης στα σημεία προέκτασης του καλωδίου ενδέχεται να προκαλέσουν καπνό ή/και πυρκαγιά.
- Οι εργασίες ηλεκτρικής καλωδίωσης πρέπει να εκτελούνται σύμφωνα με τους νόμους και κανονισμούς της κοινότητας και το εγχειρίδιο εγκατάστασης.  
Διαφορετικά μπορεί να προκληθεί ηλεκτροπληξία ή βραχυκύκλωμα.
- Μην τροφοδοτείτε με ρεύμα άλλη εξωτερική μονάδα από την πλακέτα σύνδεσης ακροδεκτών τροφοδοσίας της εξωτερικής μονάδας. Ενδέχεται να προκύψει υπερροή ισχύος στην πλακέτα σύνδεσης ακροδεκτών, η οποία μπορεί να οδηγήσει σε πυρκαγιά.
- Κατά την εκτέλεση ηλεκτρικής σύνδεσης, χρησιμοποιήστε το καλώδιο που ορίζεται στο Εγχειρίδιο Εγκατάστασης και στερεώστε με ασφάλεια τα καλώδια ώστε να μην ασκούν εξωτερική ισχύ στους ακροδέκτες. Η εσφαλμένη σύνδεση ή στερέωση ενδέχεται να προκαλέσει πυρκαγιά.



### Δοκιμαστική λειτουργία

- Μόλις ολοκληρωθούν οι εργασίες και πριν θέσετε το κλιματιστικό σε λειτουργία, βεβαιωθείτε ότι το κάλυμμα του κιβωτίου ηλεκτρικών εξαρτημάτων της εσωτερικής μονάδας και ο πίνακας σέρβις της εξωτερικής μονάδας είναι κλειστά και θέστε τον αυτόματο διακόπτη κυκλώματος στη θέση ON. Εάν δεν πραγματοποιήσετε αυτούς τους ελέγχους, ενδέχεται να υποστείτε ηλεκτροπληξία σε περίπτωση που ενεργοποιηθεί η τροφοδοσία.
- Εάν παρατηρήσετε κάποιο πρόβλημα (όπως εμφάνιση ένδειξης σφάλματος, οσμή καμένου, αφύσικοι θόρυβοι, το κλιματιστικό δεν ψύχει ούτε θερμαίνει ή παρουσιάζεται διαρροή νερού) στη λειτουργία του κλιματιστικού, μην αγγίζετε το κλιματιστικό εσείς οι ίδιοι αλλά θέστε τον αυτόματο διακόπτη κυκλώματος στη θέση OFF και απευθυνθείτε σε εξειδικευμένο τεχνικό σέρβις. Λάβετε μέτρα, ώστε να μην είναι εφικτή η ενεργοποίηση της παροχής τροφοδοσίας (αναρτώντας μια πινακίδα με την ένδειξη “εκτός λειτουργίας” κοντά στον αυτόματο διακόπτη κυκλώματος, για παράδειγμα), έως ότου φθάσει ο εξειδικευμένος τεχνικός σέρβις. Εάν συνεχίσετε τη χρήση του κλιματιστικού, όταν έχει παρουσιαστεί πρόβλημα, ενδέχεται να προκληθεί κλιμάκωση των μηχανικών προβλημάτων ή να προκληθεί ηλεκτροπληξία ή άλλη βλάβη.
- Μόλις ολοκληρωθούν οι εργασίες, φροντίστε να χρησιμοποιήσετε μια συσκευή για τη μέτρηση της αντίστασης μόνωσης (500V Megger) για να ελέγξετε ότι η αντίσταση είναι 1 MΩ ή περισσότερο μεταξύ του τμήματος πλήρωσης και του μεταλλικού τμήματος (Τμήμα γείωσης). Εάν η τιμή της αντίστασης είναι χαμηλή, προκαλείται σοβαρή ζημιά στην πλευρά του χρήστη, όπως διαρροή ρεύματος ή ηλεκτροπληξία.
- Μόλις ολοκληρωθούν οι εργασίες εγκατάστασης, ελέγξτε για διαρροές ψυκτικού υγρού, την αντίσταση μόνωσης και την αποστράγγιση νερού. Στη συνέχεια, εκτελέστε δοκιμαστική λειτουργία ώστε να ελεγχθεί ότι το κλιματιστικό λειτουργεί κανονικά.

### Επεξηγήσεις που παρέχονται στο χρήστη

- Μόλις ολοκληρωθούν οι εργασίες εγκατάστασης, ενημερώστε το χρήστη για τη θέση του αυτόματου διακόπτη κυκλώματος. Εάν ο χρήστης δεν γνωρίζει που βρίσκεται ο αυτόματος διακόπτης κυκλώματος, δεν θα μπορεί να τον απενεργοποιήσει σε περίπτωση που παρουσιαστεί κάποιο πρόβλημα στο κλιματιστικό.

- Αν διαπιστώσετε ότι η γρίλια του ανεμιστήρα έχει βλάβη, μην πλησιάσετε την εξωτερική μονάδα, αλλά θέστε το διακόπτη κυκλώματος στη θέση OFF και επικοινωνήστε με έναν εξειδικευμένο τεχνικό επισκευών (\*1) για να προβεί στις απαραίτητες επισκευές. Μην θέσετε τον αυτόματο διακόπτη κυκλώματος στη θέση ON, εάν δεν ολοκληρωθούν οι επισκευές.
- Μόλις ολοκληρωθούν οι εργασίες εγκατάστασης, ακολουθήστε τις οδηγίες που αναγράφονται στο Εγχειρίδιο κατόχου, για να εξηγήσετε στον πελάτη τον τρόπο χρήσης και συντήρησης της μονάδας.

### Αλλαγή θέσης

- Η μεταφορά του κλιματιστικού σε άλλη θέση επιτρέπεται μόνον από εξειδικευμένο εγκαταστάτη (\*1) ή εξειδικευμένο τεχνικό σέρβις (\*1). Σε περίπτωση εγκατάστασης του κλιματιστικού από ανειδίκευτο άτομο, υπάρχει μεγάλος κίνδυνος να προκληθεί πυρκαγιά, ηλεκτροπληξία, τραυματισμός, διαρροή νερού, θόρυβος ή/και κραδασμοί.
- Κατά την εργασία περισυλλογής ψυκτικού υγρού, διακόψτε τη λειτουργία του συμπιεστή πριν από την αποσύνδεση του σωλήνα ψυκτικού υγρού. Η αποσύνδεση του σωλήνα ψυκτικού ενώ η βαλβίδα συντήρησης είναι ανοικτή και ο συμπιεστής λειτουργεί, θα προκαλέσει την αναρρόφηση αέρα ή άλλου αερίου, την αύξηση της πίεσης στο εσωτερικό του κύκλου ψύξης σε μη φυσιολογικά υψηλά επίπεδα και μπορεί πιθανώς να προκληθεί ρήξη, τραυματισμός ή άλλη βλάβη.
- Ποτέ μην εκτελείτε ανάκτηση το ψυκτικό στην εξωτερική μονάδα. Χρησιμοποιήστε ένα μηχάνημα ανάκτησης ψυκτικού για την ανάκτηση του ψυκτικού κατά τη μετακίνηση ή την επισκευή. Δεν είναι δυνατή η ανάκτηση του ψυκτικού στην εξωτερική μονάδα. Η ανάκτηση ψυκτικού στην εξωτερική μονάδα ενδέχεται να προκαλέσει σοβαρό ατύχημα, όπως έκρηξη της μονάδας, τραυματισμό ή άλλα ατυχήματα.

(\*1) Ανατρέξτε στην ενότητα “Ορισμός εξειδικευμένου εγκαταστάτη ή εξειδικευμένου τεχνικού σέρβις”.

## ⚠ ΠΡΟΣΟΧΗ

### Εγκατάσταση κλιματιστικού με νέο ψυκτικό

- **ΤΟ ΠΑΡΟΝ ΚΛΙΜΑΤΙΣΤΙΚΟ ΥΙΟΘΕΤΕΙ ΕΝΑ ΝΕΟΥ ΤΥΠΟΥ ΨΥΚΤΙΚΟ ΥΔΡΟΦΘΟΡΙΟΑΝΘΡΑΚΑ (R410A) ΠΟΥ ΔΕΝ ΚΑΤΑΣΤΡΕΦΕΙ ΤΗ ΣΤΙΒΑΔΑ ΤΟΥ ΟΖΟΝΤΟΣ.**
- Τα χαρακτηριστικά του ψυκτικού R410A είναι; ευκολία απορρόφησης νερού, οξειδωτικής μεμβράνης ή ελαίων και η πίεσή του είναι περίπου 1,6 φορές μεγαλύτερη από αυτήν του ψυκτικού R22. Όταν συνοδεύεται με το νέο ψυκτικό, το λάδι ψύξης έχει αλλάξει ήδη. Για το λόγο αυτό, κατά τη διάρκεια των εργασιών εγκατάστασης, φροντίστε ώστε να μην εισχωρήσει νερό, σκόνη, παλαιότερο ψυκτικό ή λάδι ψύξης στον κύκλο ψύξης.
- Για την αποφυγή πλήρωσης εσφαλμένου ψυκτικού και λαδιού ψύξης, το μέγεθος του ανοίγματος σύνδεσης στη θύρα πλήρωσης της κύριας μονάδας και τα εργαλεία εγκατάστασης έχουν αλλάξει σε σύγκριση με το συμβατικό ψυκτικό.
- Αντίστοιχα, απαιτούνται αποκλειστικά εργαλεία για το νέο ψυκτικό (R410A).
- Για τους σωλήνες σύνδεσης, χρησιμοποιήστε καινούργια και καθαρή σωλήνωση σχεδιασμένη για R410A και φροντίστε ώστε να μην εισχωρήσει νερό ή σκόνη.

### Για να αποσυνδέσετε τη συσκευή από την κύρια παροχή ισχύος

- Η συσκευή αυτή πρέπει να συνδέεται με την κύρια παροχή ισχύος μέσω ενός διακόπτη με απόσταση μεταξύ επαφών τουλάχιστον 3mm.

### Πρέπει να χρησιμοποιηθεί ασφάλεια (μπορούν να χρησιμοποιηθούν όλοι οι τύποι) στη γραμμή ηλεκτρικής τροφοδοσίας του παρόντος κλιματιστικού.

### Μην πλένετε τα κλιματιστικά με πλυστικά μηχανήματα υψηλής πίεσης.

- Η διαρροή ηλεκτρικού ρεύματος μπορεί να προκαλέσει ηλεκτροπληξία ή πυρκαγιά.

Благодарим вас за то, что приобрели кондиционер Toshiba.

В данном Руководстве по установке описан метод установки наружного блока. Для выполнения установки внутренних блоков следуйте инструкциям в Руководстве по установке, поставляемому вместе с внутренним блоком.

Кроме того, поскольку в данном Руководстве по установке содержится важная информация, касающаяся директивы "Оборудование" (Директива 2006/42/ЕС), пожалуйста, внимательно прочтите руководство и убедитесь в том, что вы поняли его содержание. После выполнения установки передайте покупателю данное Руководство по установке вместе с Руководством пользователя, Руководство пользователя и Руководство по установке, прилагаемые к внутреннему блоку, и попросите покупателя хранить их в надежном месте.

Подготовьте выделенный источник питания для внутренних блоков, независимый от источника питания, используемого для наружных блоков.

Для подсоединения труб между внутренними и наружными блоками требуются Y-образные разветвители (тройники) или коллектор (продаются отдельно). Выберите их в зависимости от возможностей системы с учетом прокладки трубопровода. За информацией по монтажу разводных труб обращайтесь к руководству по установке Y-образного разветвителя или коллектора (продаются отдельно).

Для выполнения соединений между наружными блоками требуются разветвители (тройники) для применения вне помещений.

#### Общее Обозначение: Кондиционер Воздуха

#### Определение квалифицированного монтажника или квалифицированного специалиста по обслуживанию

Этот кондиционер должен устанавливаться, обслуживаться, ремонтироваться и демонтироваться квалифицированным монтажником или квалифицированным специалистом по обслуживанию. Каждый раз, когда вам нужно будет проделать какую-либо из этих операций, обращайтесь к квалифицированному монтажнику или специалисту по обслуживанию. Квалифицированный монтажник или квалифицированный специалист по обслуживанию—это лицо, имеющее квалификацию и знания, указанные в таблице ниже.

Лицо	Необходимые квалификация и знание
Квалифицированный монтажник	<ul style="list-style-type: none"> <li>• Квалифицированный монтажник—это лицо, которое устанавливает, обслуживает, перемещает и демонтирует кондиционеры производства компании Toshiba Carrier Corporation. Он или она прошел обучение по вопросам установки, технического обслуживания, переустановки и демонтажа кондиционеров производства компании Toshiba Carrier Corporation, или же был научен таким действиям лицом или лицами, получившими необходимое обучение, и поэтому детально знаком со всем, что относится к указанным действиям.</li> <li>• Квалифицированный монтажник, допущенный к выполнению необходимых электротехнических работ при установке, переустановке и демонтаже, имеет соответствующую этим работам квалификацию, предусмотренную местным законодательством и нормативами, и представляет собой лицо, обученное вопросам электротехнического характера, связанным с кондиционерами производства компании Toshiba Carrier Corporation, или же он был научен таким вопросам лицом или лицами, прошедшими необходимую подготовку, и поэтому детально знаком со всем, что относится к такой работе.</li> <li>• Квалифицированный монтажник, допущенный к выполнению необходимых работ по прокладке труб хладагента и обращению с хладагентом при установке, переустановке и демонтаже, имеет соответствующую этим работам квалификацию, предусмотренную местным законодательством и нормативами, и представляет собой лицо, обученное вопросам прокладки труб хладагента и обращению с хладагентом производства компании Toshiba Carrier Corporation, или же он был научен таким вопросам лицом или лицами, прошедшими необходимую подготовку, и поэтому детально знаком со всем, что относится к такой работе.</li> <li>• Квалифицированный монтажник, допущенный к выполнению высотных работ, был обучен по вопросам, связанным с работой на высоте с кондиционерами производства Toshiba Carrier Corporation, или же получил указания по данному вопросу от лица или лиц, которые были этому обучены, и поэтому детально знаком со всем, что относится к такой работе.</li> </ul>
Квалифицированный специалист по обслуживанию	<ul style="list-style-type: none"> <li>• Квалифицированный специалист по обслуживанию—это лицо, которое устанавливает, ремонтирует, обслуживает, перемещает и демонтирует кондиционеры производства компании Toshiba Carrier Corporation. Он или она прошел обучение по вопросам установки, ремонта, технического обслуживания, переустановки и демонтажа кондиционеров производства компании Toshiba Carrier Corporation, или же был обучен таким действиям лицом или лицами, получившими необходимое обучение, и поэтому детально знаком со всем, что относится к указанным действиям.</li> <li>• Квалифицированный специалист по обслуживанию, допущенный к выполнению необходимых электротехнических работ при установке, ремонте, переустановке и демонтаже, имеет соответствующую этим работам квалификацию, предусмотренную местным законодательством и нормативами, и представляет собой лицо, обученное вопросам электротехнического характера, связанным с кондиционерами производства компании Toshiba Carrier Corporation, или же он был обучен таким вопросам лицом или лицами, прошедшими необходимую подготовку, и поэтому детально знаком со всем, что относится к такой работе.</li> <li>• Квалифицированный специалист по обслуживанию, допущенный к выполнению необходимых работ по прокладке труб хладагента и обращению с хладагентом при установке, ремонте, переустановке и демонтаже, имеет соответствующую этим работам квалификацию, предусмотренную местным законодательством и нормативами, и представляет собой лицо, обученное вопросам прокладки труб хладагента и обращению с хладагентом, связанным с кондиционерами производства компании Toshiba Carrier Corporation, или же он был обучен таким вопросам лицом или лицами, прошедшими необходимую подготовку, и поэтому детально знаком со всем, что относится к такой работе.</li> <li>• Квалифицированный специалист по обслуживанию, допущенный к выполнению высотных работ, был обучен по вопросам, связанным с работой на высоте с кондиционерами производства Toshiba Carrier Corporation, или же получил указания по данному вопросу от лица или лиц, которые были этому обучены, и поэтому детально знаком со всем, что относится к такой работе.</li> </ul>

### Определение средств индивидуальной защиты







При перевозке, установке, техническом обслуживании, ремонте или демонтаже кондиционера следует носить защитные рукавицы и спецодежду.

В дополнение к обычным средствам индивидуальной защиты нужно пользоваться средствами индивидуальной защиты, указанными ниже, при выполнении специальных работ, перечисленных в таблице ниже.

Если не использовать надлежащие средства индивидуальной защиты, возрастает опасность получить травму, ожоги, удар электрическим током или другие повреждения.

Выполняемая работа	Средства индивидуальной защиты
Все типы работы	Защитные рукавицы Защитная рабочая спецодежда
Работы, связанные с электричеством	Перчатки для электриков, теплозащитные рукавицы Изоляционные ботинки Одежда, обеспечивающая защиту от удара электрическим током
Работа на высоте (50см или выше)	Промышленная каска
Переноска тяжелых предметов	Ботинки с дополнительным защитным носком
Ремонт наружных блоков	Перчатки для электриков, теплозащитные рукавицы

### ■ Предупреждающие символы на корпусе кондиционера

Предупреждающий символ	Описание		
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>	<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.	<b>ПРЕДУПРЕЖДЕНИЕ</b>  <b>ОПАСНОСТЬ ПОРАЖЕНИЯ ЭЛЕКТРИЧЕСКИМ ТОКОМ</b> Перед выполнением обслуживания нужно отключить все внешние источники электроэнергии.
<b>WARNING</b>			
<b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.			
 <table border="1"> <tr> <td><b>WARNING</b></td> </tr> <tr> <td>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</td> </tr> </table>	<b>WARNING</b>	Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.	<b>ПРЕДУПРЕЖДЕНИЕ</b>  Движущиеся части. Запрещается работать на устройстве при движущейся решетке. Перед обслуживанием устройство нужно остановить.
<b>WARNING</b>			
Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>High temperature parts. You might get burned when removing this panel.</td> </tr> </table>	<b>CAUTION</b>	High temperature parts. You might get burned when removing this panel.	<b>ВНИМАНИЕ</b>  Горячие детали. При снятии этой панели можно получить ожог.
<b>CAUTION</b>			
High temperature parts. You might get burned when removing this panel.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	Do not touch the aluminum fins of the unit. Doing so may result in injury.	<b>ВНИМАНИЕ</b>  Не касайтесь алюминиевого оребрения на устройстве. Это может привести к травме.
<b>CAUTION</b>			
Do not touch the aluminum fins of the unit. Doing so may result in injury.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</td> </tr> </table>	<b>CAUTION</b>	<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.	<b>ВНИМАНИЕ</b>  <b>ОПАСНОСТЬ РАЗРЫВА</b> Отсоедините все дистанционные устройства. Перед обслуживанием нужно открыть вентили, иначе может произойти разрыв.
<b>CAUTION</b>			
<b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.			
 <table border="1"> <tr> <td><b>CAUTION</b></td> </tr> <tr> <td><b>Do not climb onto the fan guard.</b> Doing so may result in injury.</td> </tr> </table>	<b>CAUTION</b>	<b>Do not climb onto the fan guard.</b> Doing so may result in injury.	<b>ВНИМАНИЕ</b>  Запрещается взбираться на кожух вентилятора. Это может привести к травме.
<b>CAUTION</b>			
<b>Do not climb onto the fan guard.</b> Doing so may result in injury.			

# 1 ПРАВИЛА ТЕХНИКИ БЕЗОПАСНОСТИ

Производитель не несет никакой ответственности за ущерб, понесенный в результате несоблюдения описания в данном руководстве.

## ПРЕДУПРЕЖДЕНИЕ

### Общие меры предосторожности

- Прежде чем приступить к установке кондиционера, внимательно прочтите Руководство по установке и в процессе работы соблюдайте изложенные в нем инструкции. Несоблюдение этого указания может привести к падению блока, появлению шума, вибрации или утечки воды в блоке.
- Выполнять работы по установке разрешается только квалифицированному монтажнику (\*1) или квалифицированному специалисту по обслуживанию (\*1). В случае выполнения работ по установке кондиционера неквалифицированным лицом возможны пожар, поражение электрическим током, травмы, утечка воды, появление шума и/или вибрации.
- В случае использования отдельно продающихся изделий обязательно используйте только изделия, указанные компанией Toshiba. Использование изделий, не указанных производителем, может привести к пожару, поражению электрическим током, утечке воды или другим поломкам.
- Не используйте какой-либо другой хладагент, отличный от указанного, для пополнения или замены. В противном случае в контуре охлаждения может генерироваться аномально высокое давление, что может привести к сбоям в работе или взрыву изделия, а также к травмам.
- Прежде чем снимать служебную панель на наружном блоке, установите сетевой выключатель (рубильник) в положение OFF (ВЫКЛ). Если сетевой выключатель не установить в положение OFF (ВЫКЛ), можно получить удар электрическим током при контакте с внутренними узлами кондиционера. Снимать служебную панель наружного блока и выполнять требуемую работу разрешается только квалифицированным монтажникам (\*1) или квалифицированным специалистам по обслуживанию (\*1).
- Перед тем как проводить работы по установке, обслуживанию, ремонту или демонтажу, убедитесь в том, что сетевые выключатели как для внутреннего, так и для наружного блока находятся в положении OFF (ВЫКЛ). Несоблюдение этого указания может привести к поражению электрическим током.

- На время выполнения работ по установке, обслуживанию, ремонту или перемещению кондиционера рядом с сетевым выключателем следует поместить знак "Ведутся работы". Если кто-либо по ошибке установит выключатель в положение ON (ВКЛ), возможно поражение работающего электрическим током.
- Только квалифицированному монтажнику (\*1) или квалифицированному специалисту по обслуживанию (\*1) разрешается производить работы на высоте с использованием подставки высотой 50см или выше для того, чтобы снять решетку воздухозаборника внутреннего блока для выполнения работ.
- При ремонте, обслуживании и перемещении следует пользоваться защитными перчатками и спецодеждой.
- Не касайтесь алюминиевого оребрения на устройстве. В противном случае можно получить травму. Если нужно зачистить оребрение, сначала наденьте защитные перчатки и спецодежду, а затем продолжайте работу.
- Запрещается залезать или класть какие-либо предметы на верхнюю часть наружного блока. Вы можете упасть, или же эти предметы могут свалиться с наружного блока и причинить травму.
- До начала выполнения высотных работ нужно выставить предупреждающий знак, чтобы никто не приближался к зоне проведения работ. Сверху могут упасть детали или другие предметы и нанести травму людям, находящимся внизу. Кроме того, убедитесь в том, что рабочие надели каски.
- При чистке фильтров или других узлов наружного блока нужно надежно установить сетевой выключатель в положение OFF (ВЫКЛ) и до начала работ выставить рядом с ним знак "Ведутся работы".
- В данном кондиционере используется хладагент R410A.
- Необходимо убедиться, что кондиционер перевозится в устойчивом положении. Если на какой-либо части изделия вы заметите повреждения, обратитесь к вашему дилеру.
- Запрещается самостоятельно разбирать, модифицировать или перемещать изделие. Такие действия могут привести к возникновению пожара, поражению электрическим током, травме или утечке воды.
- Это устройство предназначено для использования специалистом или обученными пользователями в магазинах, на предприятиях легкой промышленности для коммерческого использования непрофессионалами.

### Выбор места установки

- При установке в небольшом помещении нужно принять меры к тому, чтобы даже в случае утечки хладагента не создавалась его предельная концентрация в воздухе помещения. При применении указанных мер нужно консультироваться с дилером, у которого был приобретен данный кондиционер. Накопление паров хладагента в высоких концентрациях может вызвать несчастный случай из-за кислородной недостаточности.
- Запрещается устанавливать изделие в месте, где возможны утечки горючего газа. В случае утечки газа и концентрации его вокруг блока, газ может воспламениться и стать причиной пожара.
- При перевозке кондиционера необходимо надевать ботинки с защитными носками, защитные перчатки и другую защитную одежду.
- При транспортировке кондиционера не беритесь за обвязку вокруг картонной упаковки. Если обвязка лопнет, вы можете получить травму.
- Кроме напольного исполнения и консольных типов, в помещении кондиционер следует устанавливать на высоте не менее 2,5 м от пола, так как в противном случае пользователи могут получить удар электрическим током или травмировать себя, если их пальцы или другие предметы попадут внутрь работающего кондиционера.
- Нельзя устанавливать какие-либо отопительные приборы в местах, где на них будет непосредственно попадать воздушный поток от кондиционера, так как это может приводить к неполному сгоранию.
- Места, где шум работы наружного блока может причинить беспокойство. (При установке наружного блока на границе с соседями учитывайте уровень шума.)

### Установка

- При установке кондиционера следуйте указаниям руководства по установке. Несоблюдение этих инструкций может привести к падению или опрокидыванию изделия, появлению шума, вибрации, утечки воды или других поломок.
- При установке для закрепления наружного блока необходимо использовать специально предназначенные для этого болты (M12) и гайки (M12).
- Наружный блок нужно установить в месте, прочность которого позволяет выдерживать вес наружного блока. При недостаточной прочности площадки наружный блок может упасть и причинить кому-либо травму.
- Устанавливайте устройство указанным в руководстве способом в целях обеспечения защиты от сильного ветра и землетрясений. Неправильная установка может привести к падению блока или другим несчастным случаям.
- Обязательно вновь устанавливайте винты, снятые во время установки или в других целях.

### Трубопровод хладагента

- Перед началом эксплуатации кондиционера надежно смонтируйте и закрепите трубопровод. Если кондиционер работает с открытым клапаном и без трубопровода, компрессор засасывает воздух и в контуре охлаждения давление поднимается выше нормы, что может привести к его разрыву или травмированию окружающих.
- Затягивайте конусную гайку динамометрическим ключом с заданным моментом. Чрезмерная затяжка конусной гайки может привести к тому, что со временем на ней образуется трещина, которая может привести к утечке хладагента.
- В случае утечки хладагента во время работ по установке, проветрите помещение. При контакте газообразного хладагента с огнем может образоваться токсичный газ.

- По окончании монтажных работ убедитесь в отсутствии утечек хладагента. Утечка хладагента и формирование его потока в непосредственной близости от источников огня, например, кухонной плиты, может приводить к образованию токсичного газа.
- При установке и переустановке кондиционера соблюдайте инструкции, приведенные в руководстве по установке, и выдувайте весь воздух из контура хладагента, чтобы в нем не могли смешиваться никакие другие газы, кроме хладагента. Если не удалить воздух полностью, это может привести к неисправностям в работе кондиционера.
- Для проверки на герметичность пользуйтесь азотом.
- Загрузочный шланг нужно подсоединять так, чтобы в нем нигде не было слабины.
- В случае утечки хладагента во время монтажных работ, немедленно проветрите помещение. При контакте хладагента с огнем может образоваться токсичный газ.

### Электропроводка

- Проводить электротехнические работы по установке кондиционера разрешается только квалифицированному монтажнику (\*1) или квалифицированному специалисту по обслуживанию (\*1). Ни при каких обстоятельствах эти работы нельзя поручать неквалифицированным лицам, иначе при неправильном выполнении работ возможны поражения электрическим током и/или утечка электроэнергии.
- При подключении электропроводки, ремонте электрических узлов или выполнении других электротехнических работ нужно носить защитные перчатки для электриков и теплозащитные рукавицы, изолирующие ботинки и одежду, чтобы защититься от поражения электрическим током. Если этого не сделать, возможно поражение электрическим током.
- При выполнении настройки адреса, пробного пуска или операций по поиску и устранению неполадок через контрольное окно на коробке электрических частей, надевайте изолирующие теплостойкие перчатки, изолирующую обувь и другие защитные средства и одежду для обеспечения защиты от удара электрическим током. Несоблюдение этого указания может привести к поражению электрическим током.

- Используйте электропроводку, которая отвечает техническим характеристикам, приведенным в данном руководстве по установке, а также местным нормативам и требованиям законодательства. Использование электропроводки, не отвечающей техническим требованиям, может привести к поражению электрическим током, утечкам электроэнергии, задымлению и/или пожару.
- Убедитесь в том, что изделие надлежаще заземлено. (работы по заземлению)  
Неполное заземление может привести к поражению электрическим током.
- Не замыкайте заземляющий провод на газовые или водопроводные трубы, громоотводы или провода заземления телефонных линий.
- По окончании ремонтных работ или работ по переустановке кондиционера убедитесь, что провода заземления правильно подсоединены.
- Пользуйтесь сетевыми выключателями, которые отвечают техническим характеристикам, приведенным в данном руководстве по установке, а также местным нормативам и требованиям законодательства.
- Устанавливать сетевой выключатель нужно так, чтобы обслуживающее лицо могло легко до него добраться.
- При установке наружных сетевых выключателей нужно использовать такие их типы, которые специально приспособлены для установки на открытом воздухе.
- Ни в коем случае не разрешается наращивать электрические кабели. Нарушение соединения в местах сращивания может вызвать задымление и/или пожар.
- Работы по прокладке электропроводки должны выполняться в соответствии с законодательством и нормативами, принятыми в данной стране, и отвечать требованиям руководства по установке. В противном случае возможно поражение электрическим током или короткое замыкание.
- Не подавайте питания с клеммника питания, имеющегося на наружном блоке, на другой наружный блок. Это может вызвать превышение допустимой нагрузки по току на клеммнике питания и привести к пожару.
- При выполнении электрических соединений используйте провода, указанные в Руководстве по установке, надежно соединяйте провода и закрепляйте их прочно, чтобы предотвратить передачу через них внешней силы на разъемы. Ненадлежащее соединение или крепление может привести к пожару.

### Пробный пуск

- Перед тем как запускать кондиционер после окончания работ на нем, проверьте, что крышка электрического отделения внутреннего блока и служебная панель наружного блока закрыты, и переставьте сетевой выключатель в положение ON (ВКЛ). Если этого не проверить, можно получить удар электрическим током.
- Если вы обнаружили какие-либо неполадки в работе кондиционера (например, появилось сообщение об ошибке, запах гари, слышны странные звуки, кондиционер не охлаждает или не нагревает воздух, подтекает вода)— не трогайте кондиционер самостоятельно, переведите его сетевой выключатель в положение выключения OFF (ВЫКЛ) и вызовите квалифицированного специалиста по обслуживанию. До прибытия квалифицированного специалиста по обслуживанию позаботьтесь о том, чтобы электропитание кондиционера не могло быть случайно включено (например, поставьте знак “Не работает” рядом с сетевым выключателем). Продолжение эксплуатации неисправного кондиционера может привести к усугублению механических проблем и стать причиной поражения электрическим током и поломок.
- По окончании работ убедитесь при помощи устройства для проверки изоляции (Мегомметр на 500В), что сопротивление между участком под напряжением и у (Заземлением) равно 1 МΩ или более. Если сопротивление мало, это значит, что на стороне пользователя произошла утечка электричества или пробой.
- По завершении установочных работ проверьте, нет ли утечек хладагента, проверьте сопротивление изоляции и слив воды. Затем проведите рабочее испытание, чтобы удостовериться в правильной работе кондиционера.

### Пояснения для пользователя

- По завершении установочных работ покажите пользователю, где находится сетевой выключатель. Если пользователь не знает расположения сетевого выключателя, он не сможет выключить его в случае проблем с кондиционером.

- Если вы обнаружили повреждение решетки воздухозаборника, не подходите к наружному блоку, вместо этого установите сетевой выключатель в положение OFF (ВЫКЛ) и вызовите квалифицированного специалиста по обслуживанию (\*1) для ремонта. До окончания ремонта не возвращайте сетевой выключатель в положение ON (ВКЛ).
- По окончании установочных работ объясните заказчику, как эксплуатировать устройство и ухаживать за ним с помощью руководством по эксплуатации.

### Переустановка на другое место

- Переустанавливать кондиционер разрешается только квалифицированному монтажнику (\*1) или квалифицированному специалисту по обслуживанию (\*1). В результате переустановки кондиционера неквалифицированным лицом возможны пожар, поражение электрическим током, травмы, утечка воды, шум и/или вибрация.
- При выполнении сливных работ нужно остановить компрессор до того, как отключать контур хладагента. Отсоединение трубы хладагента при открытом рабочем клапане и все еще работающем компрессоре приведет к подосу воздуха или другого газа., в результате чего давление в холодильном цикле достигнет ненормально высокого уровня, что может привести к разрыву контура, травме и другим проблемам.
- Никогда не собирайте хладагент в наружный блок. Для сбора хладагента при перемещении или ремонте используйте специально предназначенный для этого аппарат. Сбор хладагента в наружный блок невозможен. Сбор хладагента в наружный блок может привести к серьезным несчастным случаям, таким как взрыв блока, травмы или другие несчастные случаи.

(\*1) См. “Определение квалифицированного монтажника или квалифицированного специалиста по обслуживанию”.

**⚠ ВНИМАНИЕ**

**Установка кондиционера с новым типом хладагента**

- **ДАННЫЙ КОНДИЦИОНЕР РАБОТАЕТ С НОВЫМ ХЛАДАГЕНТОМ НА ОСНОВЕ ХФУ (R410A), НЕ РАЗРУШАЮЩИМ ОЗОНОВЫЙ СЛОЙ.**
- Характеристики хладагента R410A; легко абсорбирует воду, окисную пленку или масло, а его давление примерно в 1,6 раз выше давления хладагента R22. Одновременно с началом использования нового хладагента произошла замена компрессорного масла. Поэтому, при выполнении монтажа следите за тем, чтобы в контур охлаждения не попали вода, пыль, ранее использовавшийся хладагент или компрессорное масло.
- Для предотвращения заправки хладагента и компрессорного масла неправильных типов, размеры заправочных соединений основного устройства и размеры приспособлений отличаются от размеров аналогичных элементов для заправки обычного хладагента.
- Соответственно, для нового хладагента (R410A) требуются подходящие только для него приспособления.
- Для соединительных труб используйте новые, чистые соединения, предназначенные для R410A, и не допускайте попадания в них воды или пыли.

**Для отключения устройства от источника питания**


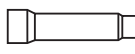
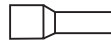
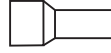
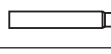
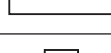

- Это устройство должно подключаться к источнику питания с помощью выключателя с зазором между разомкнутыми контактами не менее 3мм.

**В цепи подачи питания данного кондиционера при установке должен быть установлен предохранитель (могут использоваться предохранители любого типа).**

**Не промывайте кондиционеры с помощью напорных промывателей.**

- Утечки электричества могут привести к поражениям электрическим током или возгораниям.

## 2 Accessory parts

Part name	Q'ty	Shape	Usage
Owner's Manual	1	–	(Be sure to hand it to the customers.)
Installation Manual	1	–	(Be sure to hand it to the customers.)
CD-ROM (Owner's Manual, Installation Manual)	1	–	For other languages that do not appear in this Installation Manual, Please refer to the enclosed CD-ROM.
Attached clamp filter	1		For earth line (MAP180, MAP200, MAP220 type)
Attached binding band	1		
Attached pipe (for Ø19.1)	1		Connecting pipe for gas side piping. (MAP080 type)
Attached pipe (for Ø22.2)	1		Connecting pipe for gas side piping. (MAP100 type)
Attached pipe (for Ø28.6)	1		Connecting pipe for gas side piping. (MAP120, MAP140, MAP160, MAP180, MAP200, MAP220 type)
Attached pipe (for Ø15.9)	1		Connecting pipe for liquid side piping. (MAP180, MAP200 type)
Attached pipe (for Ø19.1)	1		Connecting pipe for liquid side piping. (MAP220 type)
F-GAS label	1		Fill the items on the label after adding refrigerant.



### 3 Installation of new refrigerant air conditioner

This air conditioner adopts the new HFC refrigerant (R410A) which does not deplete the ozone layer.

- R410A refrigerant is vulnerable to impurities such as water, oxidizing membranes, or oils because the pressure of R410A refrigerant is higher than that of the former refrigerant by approximately 1.6 times. As well as the adoption of the new refrigerant, the refrigerating oil has been also changed. Therefore, pay attention so that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle of the new refrigerant air conditioner during installation.
- To prevent mixing of refrigerant or refrigerating oil, the size of the charge port of the main unit or connecting section of the installation tool differs to that of an air conditioner for the former refrigerant. Accordingly, exclusive tools are required for the new refrigerant (R410A) as shown below.
- For connecting pipes, use new and clean piping materials so that water or dust does not enter.

#### ■ Required tools and cautions on handling

It is necessary to prepare the tools and parts for installation as described below. The tools and parts which will be newly prepared in the following items should be restricted to exclusive use.

##### Explanation of symbols

- △ : Newly prepared (It is necessary to use it exclusively with R410A, separately from those for R22 or R407C.)
- ◎ : Former tool is available.

Used tools	Usage	Proper use of tools/parts
Gauge manifold	Vacuuming, charging refrigerant and operation check	△ Exclusive to R410A
Charging hose		△ Exclusive to R410A
Charging cylinder	Charging refrigerant	Unusable (Use the Refrigerant charging balance.)
Gas leak detector	Checking gas leak	△ Exclusive to R410A
Vacuum pump	Vacuum drying	Usable if a counter-flow preventive adapter is attached
Vacuum pump with counterflow	Vacuum drying	◎ R22 (Existing article)
Flare tool	Flare processing of pipes	◎ Usable by adjusting size
Bender	Bending processing of pipes	◎ R22 (Existing article)
Refrigerant recovery device	Recovering refrigerant	△ Exclusive to R410A
Torque wrench	Tightening flare nut	△ Exclusive to Ø12.7mm and Ø15.9mm
Pipe cutter	Cutting pipes	◎ R22 (Existing article)
Refrigerant canister	Charging refrigerant	△ Exclusive to R410A Enter the refrigerate name for identification
Brazing machine/Nitrogen gas cylinder	Brazing of pipes	◎ R22 (Existing article)
Refrigerant charging balance	Charging refrigerant	◎ R22 (Existing article)

### 4 Selection of installation place

Upon customer's approval, install the air conditioner in a place which satisfies the following conditions:

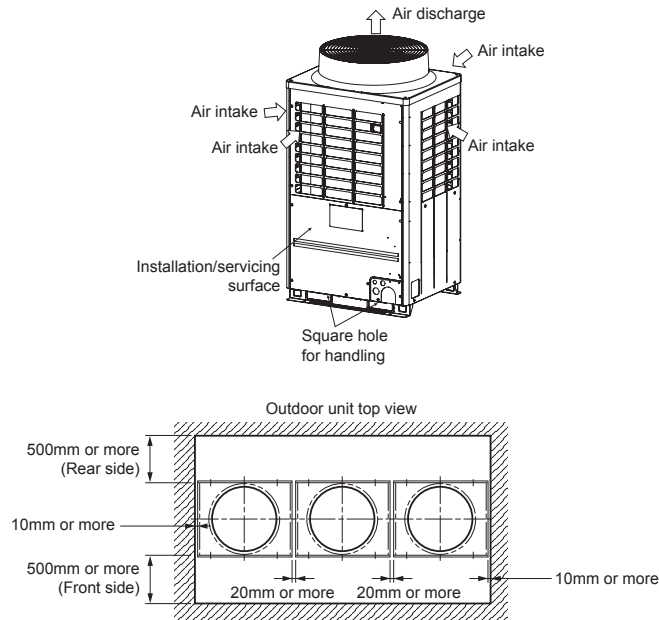
- Place where it can be installed horizontally.
- Place which can reserve a sufficient service space for safe maintenance or checks.
- Place where there is no problem even if the drained water overflows.

##### Avoid the following places:

- Salty places (seaside area) or places with much gas sulfide (hot spring area) (If selecting such a place, special maintenance is required.)
- Places where oil (including machine oil), steam, oil smoke or corrosive gas is generated.
- 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.
- Places where an organic solvent is used.
- Chemical plants with a cooling system using liquid carbon dioxide.
- Places where a device generating high frequency (inverter, non-utility generator, medical apparatus, or communication equipment) is set. (Malfunction or abnormal control of the air conditioner, or interference to devices listed above may occur.)
- Places where discharged air from the outdoor unit blows against the windows of a neighbour's house.
- Places unable to bear the weight of the unit.
- Places with poor ventilation.

## ■ Installation space

Leave space necessary for running, installation and servicing.



### NOTE

- If there is an obstacle above the outdoor unit, leave a space of 2000mm or more to the top end of the outdoor unit.
- If there is a wall around the outdoor unit, make sure that its height does not exceed 800mm.

## ▼ Combination of outdoor units

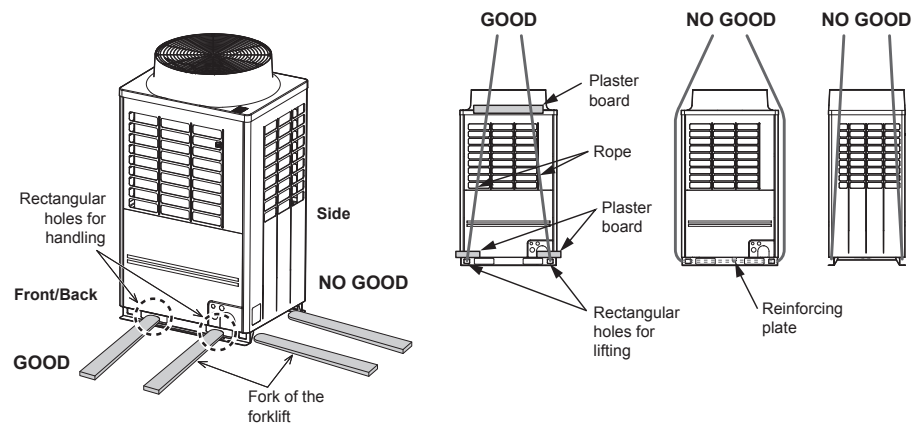
Model name (Standard type)	Unit 1	Unit 2	Unit 3
MMY-MAP0806*	MMY-MAP0806*	-	-
MMY-MAP1006*	MMY-MAP1006*	-	-
MMY-MAP1206*	MMY-MAP1206*	-	-
MMY-MAP1406*	MMY-MAP1406*	-	-
MMY-MAP1606*	MMY-MAP1606*	-	-
MMY-MAP1806*	MMY-MAP1806*	-	-
MMY-MAP2006*	MMY-MAP2006*	-	-
MMY-MAP2206*	MMY-MAP2206*	-	-
MMY-AP2416*	MMY-MAP1206*	MMY-MAP1206*	-
MMY-AP2616*	MMY-MAP1406*	MMY-MAP1206*	-
MMY-AP2816*	MMY-MAP1606*	MMY-MAP1206*	-
MMY-AP3016*	MMY-MAP1606*	MMY-MAP1406*	-
MMY-AP3216*	MMY-MAP1606*	MMY-MAP1606*	-
MMY-AP3416*	MMY-MAP1806*	MMY-MAP1606*	-
MMY-AP3616*	MMY-MAP2006*	MMY-MAP1606*	-
MMY-AP3816*	MMY-MAP2206*	MMY-MAP1606*	-
MMY-AP4016*	MMY-MAP2006*	MMY-MAP2006*	-
MMY-AP4216*	MMY-MAP2206*	MMY-MAP2006*	-
MMY-AP4416*	MMY-MAP2206*	MMY-MAP2206*	-
MMY-AP4616*	MMY-MAP1606*	MMY-MAP1606*	MMY-MAP1406*
MMY-AP4816*	MMY-MAP1606*	MMY-MAP1606*	MMY-MAP1606*
MMY-AP5016*	MMY-MAP1806*	MMY-MAP1606*	MMY-MAP1606*
MMY-AP5216*	MMY-MAP2006*	MMY-MAP1606*	MMY-MAP1606*
MMY-AP5416*	MMY-MAP2206*	MMY-MAP1606*	MMY-MAP1606*
MMY-AP5616*	MMY-MAP2006*	MMY-MAP2006*	MMY-MAP1606*
MMY-AP5816*	MMY-MAP2206*	MMY-MAP2006*	MMY-MAP1606*
MMY-AP6016*	MMY-MAP2206*	MMY-MAP2206*	MMY-MAP1606*

Model name (High Efficiency Model)	Unit 1	Unit 2	Unit 3
MMY-AP2026*	MMY-MAP1006*	MMY-MAP1006*	-
MMY-AP2226*	MMY-MAP1206*	MMY-MAP1006*	-
MMY-AP3626*	MMY-MAP1206*	MMY-MAP1206*	MMY-MAP1206*
MMY-AP3826*	MMY-MAP1406*	MMY-MAP1206*	MMY-MAP1206*
MMY-AP4026*	MMY-MAP1406*	MMY-MAP1406*	MMY-MAP1206*
MMY-AP4226*	MMY-MAP1406*	MMY-MAP1406*	MMY-MAP1406*
MMY-AP4426*	MMY-MAP1606*	MMY-MAP1406*	MMY-MAP1406*
MMY-AP5426*	MMY-MAP2006*	MMY-MAP2006*	MMY-MAP1406*

# 5 Carrying in the outdoor unit

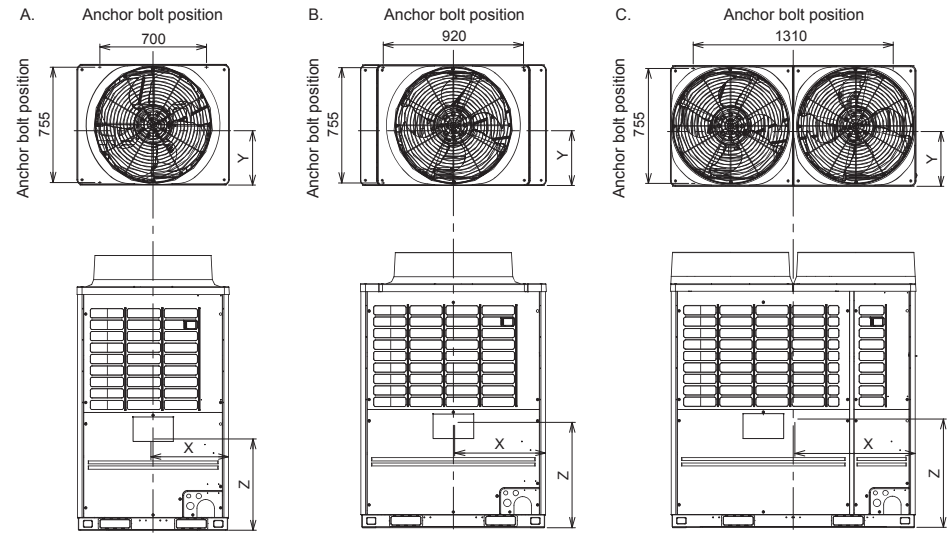
## CAUTION

- Handle the outdoor unit carefully, observing the following items.
- When using a forklift or other machinery for loading/unloading in transportation, insert the fork of the forklift into the rectangular holes for handling as shown below.
  - When lifting up the unit, insert a rope able to bear the unit's weight into the rectangular holes for handling, and tie the unit from 4 sides.  
(Apply padding in positions where the rope comes into contact with the outdoor unit so that no damage is caused to the outer surface of the outdoor unit.)  
(There are reinforcing plates on the side surfaces, so the rope cannot be passed through.)



## Weight centre and weight

### Weight centre of an outdoor unit



(Unit : mm)

No.	Model type	X (mm)	Y (mm)	Z (mm)	Weight (kg)	
					Heat pump model	Cooling only model
A	MMY-MAP080*	510	355	600	242	241
	MMY-MAP100*					
	MMY-MAP120*					
B	MMY-MAP140*	595	360	690	300	299
	MMY-MAP160*					
C	MMY-MAP180*	790	360	710	371	370
	MMY-MAP200*					
	MMY-MAP220*					

# 6 Installation of the outdoor unit

## ⚠ WARNING

- Be sure to install the outdoor unit in a place able to bear its weight. If strength is insufficient, the unit may fall down resulting in human injury.
- Perform specified installation work to protect against strong wind and earthquakes. If the outdoor unit is imperfectly installed, an accident by falling or dropping may be caused.

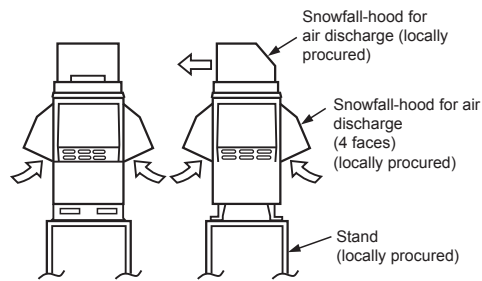
## ⚠ CAUTION

- Drain water is discharged from the outdoor unit. (Especially while heating)
- Install the outdoor unit in a place with good drainage.
- For installation, be careful of the strength and level of the foundation so that abnormal sounds (vibration or noise) are not generated.

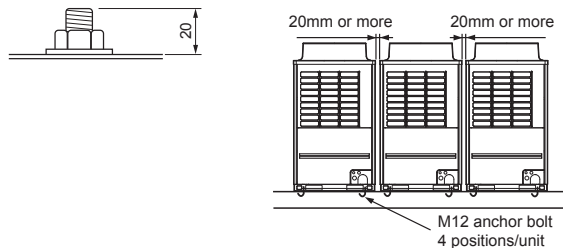
## REQUIREMENT

### Installation in a snowfall area

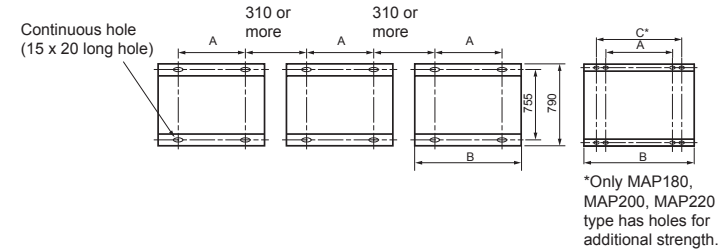
1. Install the outdoor unit on a higher foundation than the snowfall or set up a stand to install the unit so that snowfall will not affect the unit.
  - Set up a stand higher than the snowfall.
  - Apply an angled structure to the stand so that drainage will not be prevented. (Avoid using a stand with a flat surface.)
2. Mount a snowfall-hood onto the air intake and the air discharge.
  - Leave enough space for the snowfall-hood so that it will not be an obstacle for the air intake and the air discharge.



1. To install multiple outdoor units, arrange them with 20mm or more spaces in between. Fix each outdoor unit with M12 anchor bolts at 4 positions. 20mm projection is appropriate for an anchor bolt.



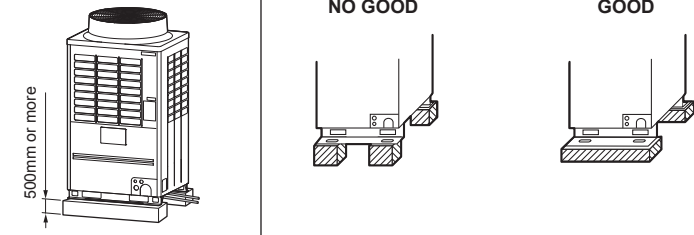
• Anchor bolt positions are as shown below:



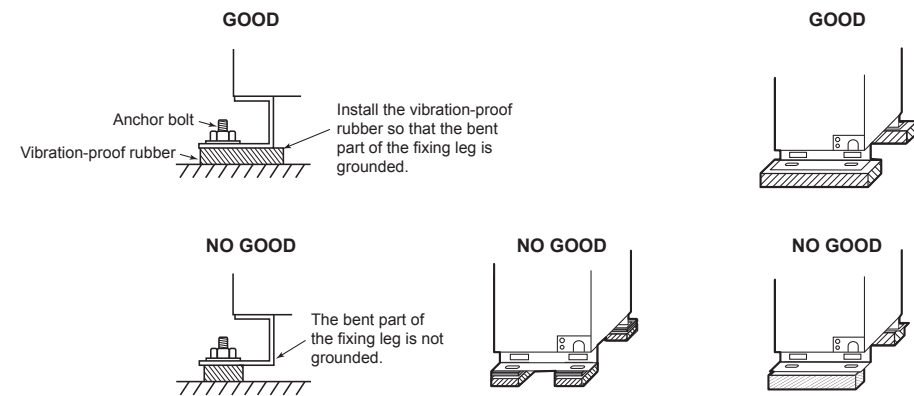
(Unit : mm)

Model type	A	B	C
MAP080*, MAP100*, MAP120*	700	990	-
MAP140*, MAP160*	920	1210	-
MAP180*, MAP200*, MAP220*	1310	1600	1500

2. When drawing out the refrigerant pipe from the underside, set the height of the stand to 500mm or more.
3. Do not use 4 stands on the corner to support the outdoor unit.



4. Mount the vibration-proof rubber (including vibration-proof blocks) so that it fits under the whole clamping leg.



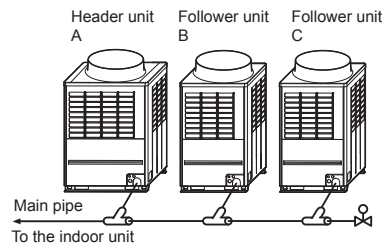
5. Be careful of the connecting arrangement of the header unit and follower units. Set the outdoor units in order of capacity from the one with the largest capacity. (A (Header unit)  $\geq$  B  $\geq$  C)

- Be sure to use a header unit for the leading outdoor unit to be connected to the main pipe. (Figure 1 and 3)
- Be sure to use a T-shaped branch joint (RBM-BT14E/RBM-BT24E: separately purchased) to connect each outdoor unit.
- Be careful of the direction of the Outdoor unit connection piping kit for the liquid side. (As shown in Figure 2, a Outdoor unit connection piping kit cannot be attached so that the refrigerant of the main pipe flows directly into the header unit.)

### Liquid piping

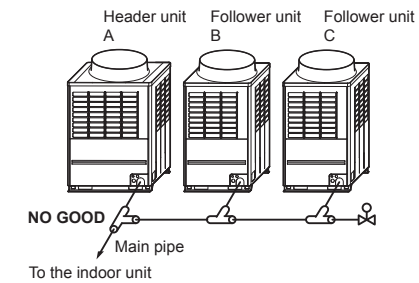
▼ Figure 1

GOOD



▼ Figure 2

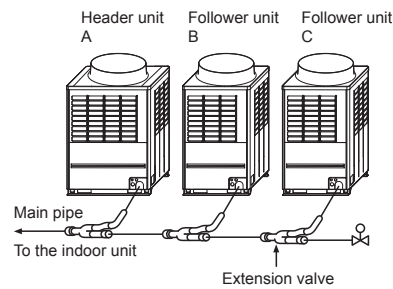
NO GOOD



### Gas piping

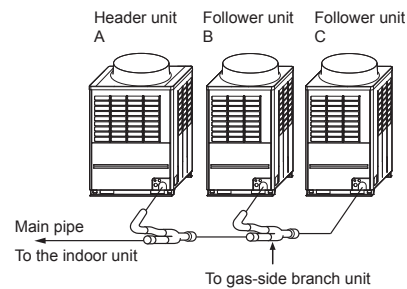
▼ Figure 3

GOOD

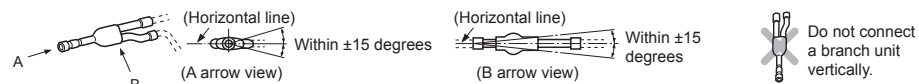


▼ Figure 4

NO GOOD



- When attaching a Y-shaped branch unit for the gas side, attach it level with the ground (Be sure not to exceed  $\pm 15$  degrees.). Regarding a T-shape branch joints for the liquid side, there is no restriction for its angle.



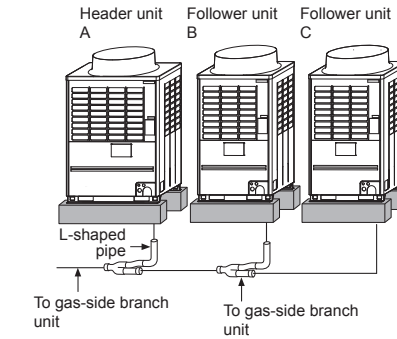
At a level position

### When drawing pipes downward

[Vertical connection of branch units]

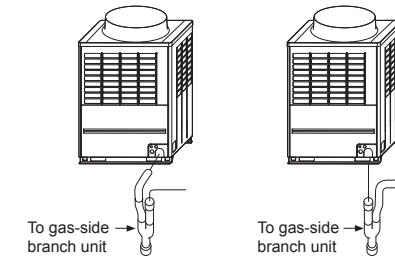
▼ Figure 5

GOOD



▼ Figure 6

NO GOOD



- Adding only one follower unit is possible. Install the additional unit so that its position is opposite to the header unit. Use an extension valve for installation (See the figure above.). Specify the pipe diameter in advance to allow for adding another unit.

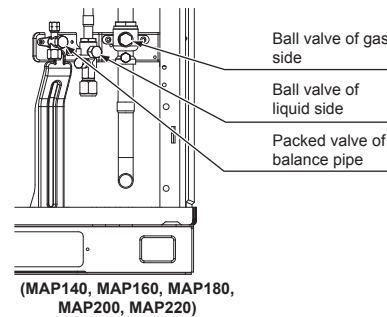
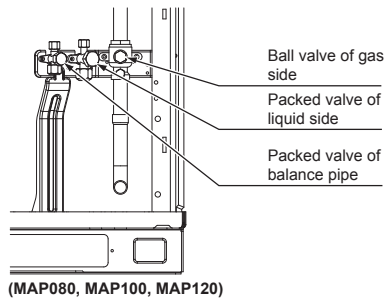
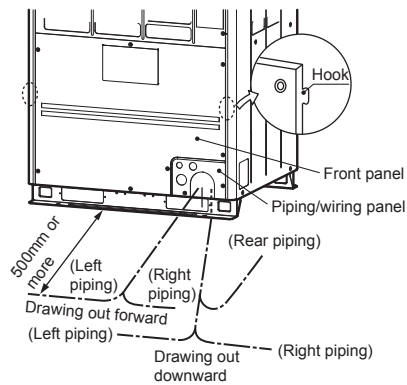
# 7 Refrigerant piping

## ⚠ WARNING

- If the refrigerant gas leaks during installation, ventilate the room.  
If the leaked refrigerant gas comes into contact with fire, noxious gas may be generated.
- After installation, check that the refrigerant gas does not leak.  
If the refrigerant gas leaks into the room and comes into contact with fire such as a fan heater, stove, or kitchen range, noxious gas may be generated.

## ■ Connection of refrigerant pipe

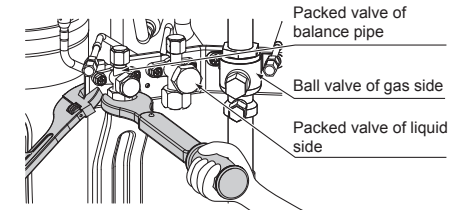
- The refrigerant pipe connecting section is set in the outdoor unit. Remove the front panel and the piping/wiring panel. (M5: 9 pcs.)
- As shown in the illustration on the right, the hooks are at the right and left sides of the front panel. Lift up and remove the front panel.
- Pipes can be drawn out forward or downward from the outdoor unit.
- When drawing out the pipe forward, draw it out to the outside via the piping/wiring panel, and leave a space of 500mm or more from the main pipe connecting the outdoor unit with the indoor unit, considering service work or other work on the unit. (For replacing the compressor, 500mm or more space is required.)
- When drawing out the pipe downward, remove the knockouts on the base plate of the outdoor unit, draw the pipes out of the outdoor unit, and perform piping on the right/left or rear side. Downward length of the balance pipe should be 5m or less.



## REQUIREMENT

- For Brazing work of the refrigerant pipes, be sure to use nitrogen gas in order to prevent oxidation of the inside of the pipes; otherwise clogging of the refrigerating cycle due to oxidized scale may occur.
- Use clean and new pipes for the refrigerant pipes and perform piping work so that water or dust does not contaminate the refrigerant.
- Be sure to use two spanners to loosen or tighten the flare nut. If a single spanner is used, the required level of tightening cannot be obtained. Tighten the flare nut with the specified torque. (If it is hard to loosen or tighten the flare nut of the balance pipe or packed valve of the liquid side with two spanners, loosen or tighten the flare nut while holding the valve mounting plate with a spanner.)

Outer dia. of copper pipe	Tightening torque (N·m)
6.4 mm	14 to 18 (1.4 to 1.8 kgf·m)
9.5 mm	33 to 42 (3.3 to 4.2 kgf·m)
12.7 mm	50 to 62 (5.0 to 6.2 kgf·m)
15.9 mm	68 to 82 (6.8 to 8.2 kgf·m)
19.1 mm	100 to 120 (10 to 12 kgf·m)



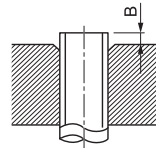
## Pipe connection method of valve at the gas side (Example)

Type	Pipe-diameter		Draw-out forward	Draw-out downward
	Gas	Liquid		
MAP080	Ø19.1	Ø12.7	Cut the L-shaped pipe at the horizontal straight section, then braze the supplied attachment pipe and the socket and pipe procured locally.	Cut the L-shaped pipe at the vertical straight section, then braze the supplied attachment pipe and the socket and pipe procured locally.
MAP100	Ø22.2	Ø12.7		
MAP120	Ø28.6	Ø12.7		
MAP140 MAP160	Ø28.6	Ø15.9		

Type	Pipe-diameter		Draw-out forward	Draw-out downward
	Gas	Liquid		
MAP180 MAP200	Ø28.6	Ø15.9	<p>Cut the L-shaped pipe at the horizontal straight section, then braze the supplied attachment pipe, and the socket, elbow and pipe procured locally.</p>	<p>Cut the L-shape pipe at the vertical straight section, then braze the supplied attachment pipe, and the socket and pipe procured locally.</p>
MAP220	Ø28.6	Ø19.1		

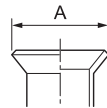
### Extruding margin of copper pipe with flare machining: B (Unit: mm)

Copper pipe outer dia.	When using R410A tool	When using conventional tool
9.5	0 to 0.5	1.0 to 1.5
12.7		
15.9		
19.1		



### Extruding margin of copper pipe with flare tools: A (Unit: mm)

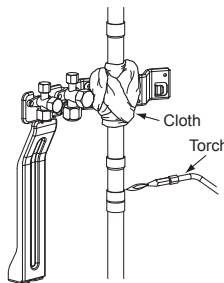
Copper pipe outer dia.	A <sup>+0</sup> <sub>-0.4</sub>
9.5	13.2
12.7	16.6
15.9	19.7
19.1	24.0



\* When using the conventional flare tool, to connect R410A pipes with flaring, make a margin approx. 0.5mm longer than that of an R22 pipe so that the flare size matches the one specified. It is convenient to use a copper pipe gauge for size adjustment of the extruding margin.

### CAUTION

Wrap the ball valve in a wet cloth to keep it cool and prevent the heat from the torch from damaging it when connecting the pipe to the ball valve on the gas line.



### Coupling size of brazed pipe

Connected section	
External size	Internal size

(Unit: mm)

Standard outer dia. of connected copper pipe	Connected section					Min. thickness of coupling
	External size	Internal size	Min. depth of insertion		Oval value	
			Standard outer dia. (Allowable difference)			
	C	F	K	G		
6.35	6.35 (±0.03)	6.45 ( <sup>+0.02</sup> / <sub>-0.02</sub> )	7	6	0.06 or less	0.50
9.52	9.52 (±0.03)	9.62 ( <sup>+0.02</sup> / <sub>-0.02</sub> )	8	7	0.08 or less	0.60
12.70	12.70 (±0.03)	12.81 ( <sup>+0.04</sup> / <sub>-0.02</sub> )	9	8	0.10 or less	0.70
15.88	15.88 (±0.03)	16.00 ( <sup>+0.04</sup> / <sub>-0.02</sub> )	9	8	0.13 or less	0.80
19.05	19.05 (±0.03)	19.19 ( <sup>+0.03</sup> / <sub>-0.03</sub> )	11	10	0.15 or less	0.80
22.22	22.22 (±0.03)	22.36 ( <sup>+0.03</sup> / <sub>-0.03</sub> )	11	10	0.16 or less	0.82
28.58	28.58 (±0.04)	28.75 ( <sup>+0.05</sup> / <sub>-0.05</sub> )	13	12	0.20 or less	1.00
34.92	34.92 (±0.04)	35.11 ( <sup>+0.04</sup> / <sub>-0.04</sub> )	14	13	0.25 or less	1.20
38.10	38.10 (±0.05)	38.31 ( <sup>+0.05</sup> / <sub>-0.02</sub> )	15	14	0.27 or less	1.26
41.28	41.28 (±0.05)	41.50 ( <sup>+0.05</sup> / <sub>-0.02</sub> )	15	14	0.28 or less	1.35

## Selection of pipe materials and sizes

### Selection of pipe materials

Materials : Phosphorus deoxidation seam-less pipe  
Minimum wall thickness for R410A application

Soft	Half hard or hard	OD (Inch)	OD (mm)	Minimum wall thickness (mm)
OK	OK	1/4"	6.35	0.80
OK	OK	3/8"	9.52	0.80
OK	OK	1/2"	12.70	0.80
OK	OK	5/8"	15.88	1.00
No Good	OK	3/4"	19.05	1.00
No Good	OK	7/8"	22.22	1.00
No Good	OK	1-1/8"	28.58	1.00
No Good	OK	1-3/8"	34.92	1.20
No Good	OK	1-5/8"	41.28	1.40

### Capacity code of indoor and outdoor units

- For the indoor unit, the capacity code is decided at each capacity rank. (Table 1)
- The capacity codes of the outdoor units are decided at each capacity rank. The maximum number of connectable indoor units and the total value of capacity codes of the indoor units are also decided. (Table 2)

#### NOTE

- Compared with the capacity code of the outdoor unit, the total value of capacity codes of the connectable indoor units differs based on the height difference between the indoor units.
- When the height difference between the indoor units is 15m or less: Up to 135% of the capacity code (Equivalent to HP) of the outdoor unit.
  - When the height difference between the indoor units is over 15m: Up to 105% of the capacity code.

Table 1

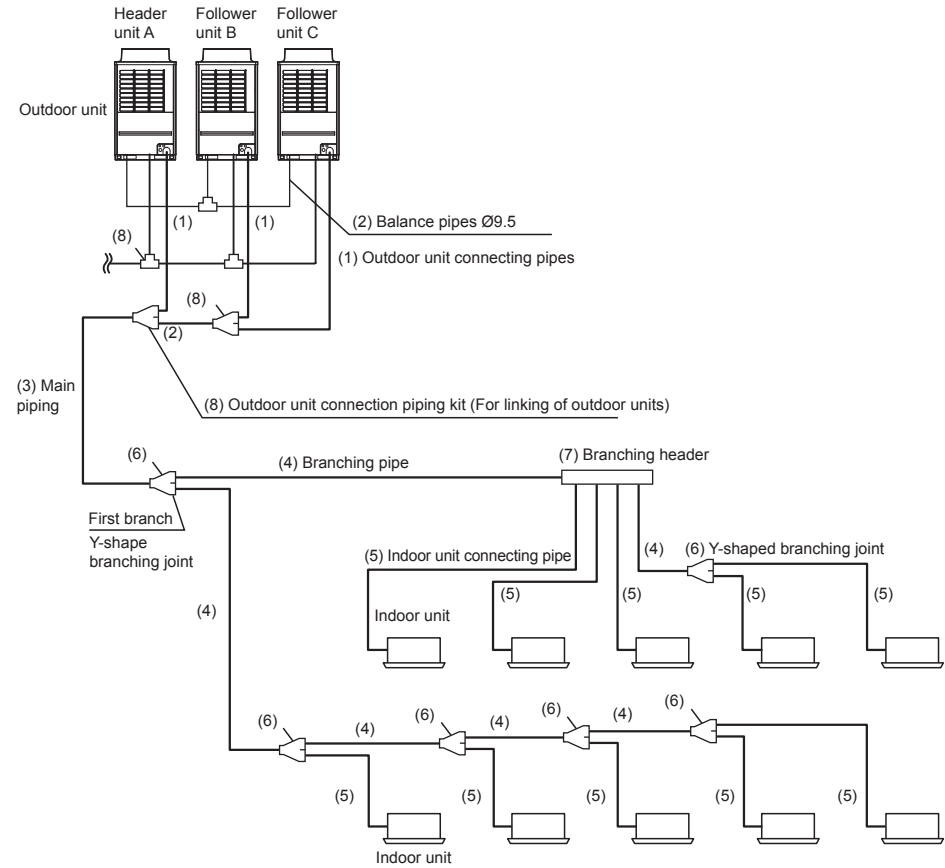
Indoor unit capacity rank	Capacity code	
	Equivalent to HP	Equivalent to capacity
*005	0.6	1.7
005	0.8	2.2
007	0.8	2.2
009	1	2.8
012	1.25	3.6
015	1.7	4.5
018	2	5.6
024	2.5	7.1
027	3	8
030	3.2	9
036	4	11.2
048	5	14
056	6	16
072	8	22.4
096	10	28

\*005 Indoor model: MMU-AP0056MH\*, MMD-AP0056SPH\*, MMK-AP0054MHP\*

Table 2

Outdoor unit model name (Standard model)	Capacity code		Max. No. of indoor units	Outdoor unit model name (High Efficiency model)	Capacity code		Max. No. of indoor units
	Equivalent to HP	Equivalent to capacity			Equivalent to HP	Equivalent to capacity	
MMY-MAP0806*	8	22.4	13	-	-	-	-
MMY-MAP1006*	10	28	16	-	-	-	-
MMY-MAP1206*	12	33.5	20	-	-	-	-
MMY-MAP1406*	14	40	23	-	-	-	-
MMY-MAP1606*	16	45	27	-	-	-	-
MMY-MAP1806*	18	50.4	30	-	-	-	-
MMY-MAP2006*	20	56	33	MMY-AP2026*	20	56	33
MMY-MAP2206*	22	61.5	37	MMY-AP2226*	22	61.5	37
MMY-AP2416*	24	67	40	-	-	-	-
MMY-AP2616*	26	73.5	43	-	-	-	-
MMY-AP2816*	28	78.5	47	-	-	-	-
MMY-AP3016*	30	85	50	-	-	-	-
MMY-AP3216*	32	90	54	-	-	-	-
MMY-AP3416*	34	95.4	57	-	-	-	-
MMY-AP3616*	36	101	60	MMY-AP3626*	36	100.5	60
MMY-AP3816*	38	106.5	64	MMY-AP3826*	38	107	64
MMY-AP4016*	40	112	64	MMY-AP4026*	40	113.5	64
MMY-AP4216*	42	117.5	64	MMY-AP4226*	42	120	64
MMY-AP4416*	44	123	64	MMY-AP4426*	44	125	64
MMY-AP4616*	46	130	64	-	-	-	-
MMY-AP4816*	48	135	64	-	-	-	-
MMY-AP5016*	50	140.4	64	-	-	-	-
MMY-AP5216*	52	146	64	-	-	-	-
MMY-AP5416*	54	151.5	64	MMY-AP5426*	54	152	64
MMY-AP5616*	56	157	64	-	-	-	-
MMY-AP5816*	58	162.5	64	-	-	-	-
MMY-AP6016*	60	168	64	-	-	-	-

\* For combination of the outdoor units, refer to "Combination of outdoor units".

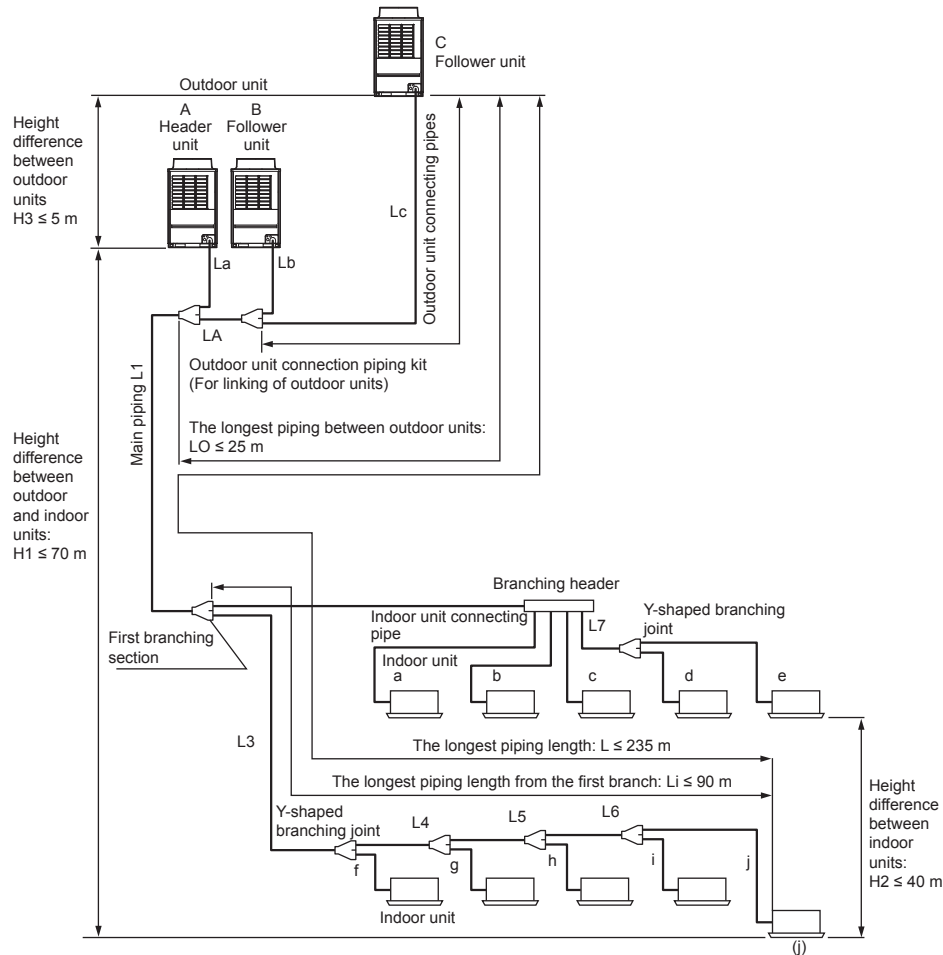




No.	Piping parts	Name	Selection of pipe size	Remarks																																						
(1)	Outdoor unit ↓ Outdoor unit connection piping kit	Outdoor unit connecting pipe	<b>Connecting pipe size of outdoor unit</b> <table border="1"> <thead> <tr> <th>Type</th> <th>Gas side</th> <th>Liquid side</th> </tr> </thead> <tbody> <tr> <td>MMY-MAP0806*</td> <td>Ø19.1</td> <td>Ø12.7</td> </tr> <tr> <td>MMY-MAP1006*</td> <td>Ø22.2</td> <td>Ø12.7</td> </tr> <tr> <td>MMY-MAP1206*</td> <td>Ø28.6</td> <td>Ø12.7</td> </tr> <tr> <td>MMY-MAP1406*</td> <td>Ø28.6</td> <td>Ø15.9</td> </tr> <tr> <td>MMY-MAP1606*</td> <td>Ø28.6</td> <td>Ø15.9</td> </tr> <tr> <td>MMY-MAP1806*</td> <td>Ø28.6</td> <td>Ø15.9</td> </tr> <tr> <td>MMY-MAP2006*</td> <td>Ø28.6</td> <td>Ø15.9</td> </tr> <tr> <td>MMY-MAP2206*</td> <td>Ø28.6</td> <td>Ø19.1</td> </tr> </tbody> </table>	Type	Gas side	Liquid side	MMY-MAP0806*	Ø19.1	Ø12.7	MMY-MAP1006*	Ø22.2	Ø12.7	MMY-MAP1206*	Ø28.6	Ø12.7	MMY-MAP1406*	Ø28.6	Ø15.9	MMY-MAP1606*	Ø28.6	Ø15.9	MMY-MAP1806*	Ø28.6	Ø15.9	MMY-MAP2006*	Ø28.6	Ø15.9	MMY-MAP2206*	Ø28.6	Ø19.1	Same as connecting pipe size of the outdoor unit.											
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(3)	Outdoor unit connection piping kit of header unit ↓ First branching section	Main piping	<b>Size of main piping</b> <table border="1"> <thead> <tr> <th colspan="2">Total capacity codes of all outdoor units</th> <th rowspan="2">Gas side</th> <th rowspan="2">Liquid side</th> </tr> <tr> <th>Equivalent to HP</th> <th>Equivalent to capacity</th> </tr> </thead> <tbody> <tr> <td>8 to below 10</td> <td>22.4 to below 28.0</td> <td>Ø19.1</td> <td>Ø12.7</td> </tr> <tr> <td>10 to below 12</td> <td>28.0 to below 33.5</td> <td>Ø22.2</td> <td>Ø12.7</td> </tr> <tr> <td>12 to below 14</td> <td>33.5 to below 38.4</td> <td>Ø28.6</td> <td>Ø12.7</td> </tr> <tr> <td>14 to below 22</td> <td>38.4 to below 61.5</td> <td>Ø28.6</td> <td>Ø15.9</td> </tr> <tr> <td>22 to below 24</td> <td>61.5 to below 67.0</td> <td>Ø28.6</td> <td>Ø19.1</td> </tr> <tr> <td>24 to below 26</td> <td>67.0 to below 73.0</td> <td>Ø34.9</td> <td>Ø19.1</td> </tr> <tr> <td>26 to below 36</td> <td>73.0 to below 100.0</td> <td>Ø34.9</td> <td>Ø19.1</td> </tr> <tr> <td>36 or more</td> <td>100.0 or more</td> <td>Ø41.3</td> <td>Ø22.2</td> </tr> </tbody> </table>	Total capacity codes of all outdoor units		Gas side	Liquid side	Equivalent to HP	Equivalent to capacity	8 to below 10	22.4 to below 28.0	Ø19.1	Ø12.7	10 to below 12	28.0 to below 33.5	Ø22.2	Ø12.7	12 to below 14	33.5 to below 38.4	Ø28.6	Ø12.7	14 to below 22	38.4 to below 61.5	Ø28.6	Ø15.9	22 to below 24	61.5 to below 67.0	Ø28.6	Ø19.1	24 to below 26	67.0 to below 73.0	Ø34.9	Ø19.1	26 to below 36	73.0 to below 100.0	Ø34.9	Ø19.1	36 or more	100.0 or more	Ø41.3	Ø22.2	Pipe size differ based on all capacity code value of outdoor unit.
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	14.2 to below 25.2	40.0 to below 70.5	RBM-BY205E																										
	25.2 or more	70.5 or more	RBM-BY305E																										
(7)	Branching section	Branching header	<b>Selection of branching section (Branching header)</b> <table border="1"> <thead> <tr> <th rowspan="2">Branching header</th> <th colspan="2">Total capacity code of indoor units</th> <th rowspan="2">Model name</th> </tr> <tr> <th>Equivalent to HP</th> <th>Equivalent to capacity</th> </tr> </thead> <tbody> <tr> <td rowspan="4">*2 Branching header</td> <td>For 4 branches</td> <td>Below 14.2</td> <td>Below 40.0</td> <td>RBM-HY1043E</td> </tr> <tr> <td rowspan="2">For 8 branches</td> <td>14.2 to below 25.2</td> <td>40.0 to below 70.5</td> <td>RBM-HY2043E</td> </tr> <tr> <td>Below 14.2</td> <td>Below 40.0</td> <td>RBM-HY1083E</td> </tr> <tr> <td>14.2 to below 25.2</td> <td>40.0 to below 70.5</td> <td>RBM-HY2083E</td> </tr> </tbody> </table> <p>*2: Up to a total of 6.0 maximum equivalent to HP capacity codes is connectable to one line after branching of header. When the total capacity codes of all outdoor units are 12 to below 26 (equivalent to HP) and you use a branching header for the first branching section, use a RBM-HY2043E or RBM-HY2083E regardless of the total capacity codes of outdoor units at downstream side. In addition, you cannot use a branching header for the first branching section when the total capacity codes of all outdoor units are over 26 (equivalent to HP).</p>	Branching header	Total capacity code of indoor units		Model name	Equivalent to HP	Equivalent to capacity	*2 Branching header	For 4 branches	Below 14.2	Below 40.0	RBM-HY1043E	For 8 branches	14.2 to below 25.2	40.0 to below 70.5	RBM-HY2043E	Below 14.2	Below 40.0	RBM-HY1083E	14.2 to below 25.2	40.0 to below 70.5	RBM-HY2083E					
Branching header	Total capacity code of indoor units		Model name																										
	Equivalent to HP	Equivalent to capacity																											
*2 Branching header	For 4 branches	Below 14.2	Below 40.0	RBM-HY1043E																									
	For 8 branches	14.2 to below 25.2	40.0 to below 70.5	RBM-HY2043E																									
		Below 14.2	Below 40.0	RBM-HY1083E																									
	14.2 to below 25.2	40.0 to below 70.5	RBM-HY2083E																										
(8)	Branching section	Outdoor unit connection piping kit (For linking of outdoor units)	<b>Outdoor unit connection piping kit (For linking of outdoor units)</b> <table border="1"> <thead> <tr> <th rowspan="2">Outdoor unit connection piping kit (For linking of outdoor units)</th> <th colspan="2">Total capacity code of outdoor units<sup>3</sup></th> <th rowspan="2">Model name</th> </tr> <tr> <th>Equivalent to HP</th> <th>Equivalent to capacity</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Outdoor unit connection piping kit (For linking of outdoor units)</td> <td>Below 26.0</td> <td>Below 73.0</td> <td>RBM-BT14E</td> </tr> <tr> <td>26.0 or more</td> <td>Above 73.0</td> <td>RBM-BT24E</td> </tr> </tbody> </table> <p>*3: Downstream side when regarding the main piping as the start point</p>	Outdoor unit connection piping kit (For linking of outdoor units)	Total capacity code of outdoor units <sup>3</sup>		Model name	Equivalent to HP	Equivalent to capacity	Outdoor unit connection piping kit (For linking of outdoor units)	Below 26.0	Below 73.0	RBM-BT14E	26.0 or more	Above 73.0	RBM-BT24E													
Outdoor unit connection piping kit (For linking of outdoor units)	Total capacity code of outdoor units <sup>3</sup>		Model name																										
	Equivalent to HP	Equivalent to capacity																											
Outdoor unit connection piping kit (For linking of outdoor units)	Below 26.0	Below 73.0	RBM-BT14E																										
	26.0 or more	Above 73.0	RBM-BT24E																										

### ■ Allowable length of refrigerant pipes and allowable height difference between units



### ◆ System restriction

Outdoor unit combination	Up to 3 units	
Total capacity of outdoor units	Up to 60 HP	
Indoor unit connection	Up to 64 units	
Total capacity of indoor units (varies depending on the height difference between indoor units.)	H2 ≤ 15m	135% of outdoor units' capacity
	15m < H2	105% of outdoor units' capacity

### ◆ Cautions for installation

- Set the outdoor unit first connected to the bridging pipe to the indoor units as the header unit.
- Install the outdoor units in order of their capacity codes: A (header unit) ≥ B ≥ C
- When connecting gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.
- When piping to outdoor units using Outdoor unit connection piping kits, intersect the pipes to the outdoor unit and those to indoor units at a right angle as shown in figure 1 on "6. Installation of the outdoor unit". Do not connect them as in figure 2 on "6. Installation of the outdoor unit".

### ◆ Allowable length and allowable height difference of refrigerant piping

Item		Allowable value	Piping section	
Piping length	Total extension of pipe (Liquid pipe, real length)	Below 34HP	300m	
		34HP or more	1000m (*6)	
	Farthest piping Length L (*1)	Equivalent length	235m	LA + La + Lb + Lc + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j
		Real length	190m	Lc + LA + L1 + L3 + L4 + L5 + L6 + j
	Equivalent length of farthest piping from 1st branching Li (*1)	90m (*2)	L3 + L4 + L5 + L6 + j	
	Equivalent length of farthest piping between outdoor units LO	25m	LA + Lc(LA + Lb)	
	Max. equivalent length of main piping	Equivalent length	120m (*3)	L1
		Real length	100m (*3)	
	Max. equivalent length of outdoor unit connecting piping		10m	Lc(La, Lb)
	Max. real length of indoor unit connecting piping		30m	a, b, c, d, e, f, g, h, i, j
Max. equivalent length between branches		50m	L2, L3, L4, L5, L6, L7	
Difference in height	Height between indoor and outdoor units H1	Upper outdoor unit	70 m (*4,*7)	-
		Lower outdoor unit	40m (*5)	-
	Height between indoor units H2		40m	-
	Height between outdoor units H3		5m	-

- (\*1) : (C) is outdoor unit furthest from the 1st branch and (j) is the indoor unit furthest from the 1st branch.  
 (\*2) : If the height difference (H1) between indoor and outdoor unit exceeds 3m, set 65m or less.  
 (\*3) : If the max. combined outdoor unit capacity is 46HP or more, then max. equivalent length is 70m or less (real length is 50m or less).  
 (\*4) : If the height difference (H2) between indoor units exceeds 3m, set 50m or less.  
 (\*5) : If the height difference (H2) between indoor units exceeds 3m, set 30m or less.  
 (\*6) : Total charging refrigerant is 140kg or less  
 (\*7) : Extension up till 90m is possible with conditions below.  
 - Outdoor Temperature Cooling : 10°C to 46°C (Dry-bulb temp.) Heating : -5°C to 15.5°C (Wet-bulb temp.)  
 - Equivalent length of farthest piping from 1st branching Li < 50m  
 - Real length of main piping L1 < 100m  
 - Height difference between indoor units H2 < 3m  
 - Total capacity of combined indoor units : 90%-105%  
 - Single CDU, and up to 20HP  
 - Minimum capacity of connectable indoor unit : 4HP or Larger

## ■ Airtightness test

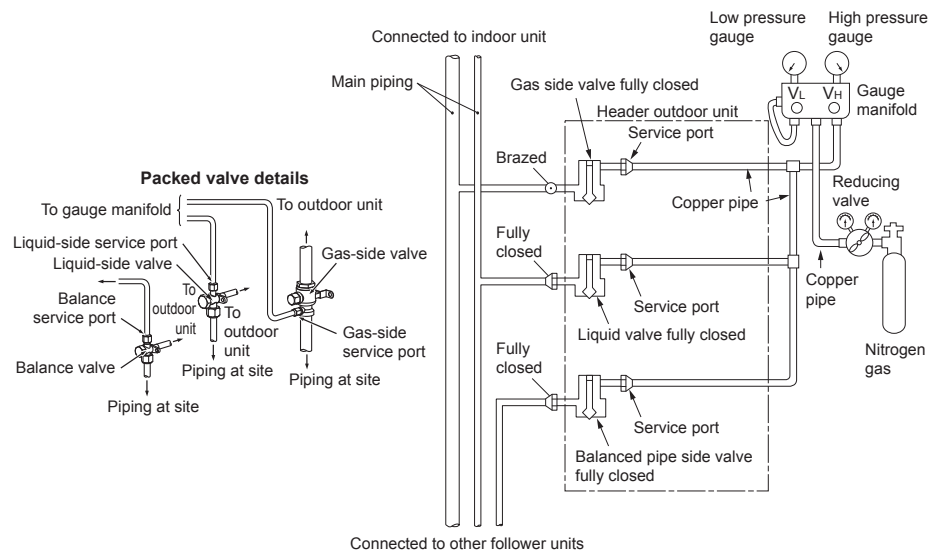
After the refrigerant piping has been finished, execute an airtight test.

For an airtight test, connect a nitrogen gas canister as shown in the figure on this page and apply pressure.

- Be sure to apply pressure from the service ports of the packed valves (or ball valves) at the liquid side, gas side and balance pipe side.
- An airtight test can only be performed at the service ports at the liquid side, gas side and balance pipe side on header unit.
- Close the valves fully at the gas side, liquid side and balance pipe side. As there is a possibility that the nitrogen gas will enter into the cycle of outdoor units, re-tighten the valve rods at the liquid side and balance pipe side before applying pressure.  
(When using MAP140, MAP160, MAP180, MAP200 or MAP220, you do not have to re-tighten the liquid side valve rod as their valves at the liquid side are ball valves.)
- For each refrigerant line, apply pressure gradually in steps at the liquid side, gas side and balance pipe side.  
**Be sure to apply pressure at the gas side, liquid side, and balance pipe side.**

## ⚠ WARNING

Never use oxygen, flammable gases, or noxious gases in an airtight test.



### Able to detect a serious leakage

1. Apply pressure 0.3MPa (3.0kg/cm<sup>2</sup>G) for 5 minutes or more.
2. Apply pressure 1.5MPa (15kg/cm<sup>2</sup>G) for 5 minutes or more.

### Available to detect slow leakage

3. Apply pressure 4.15MPa (42.3kg/cm<sup>2</sup>G) for approx. 24 hours.

- If there is no pressure decrease after 24 hours, the test is passed.

### NOTE

However, if the environmental temperature changes from the moment of applying pressure to 24 hours after that, the pressure will change by about 0.01MPa (0.1kg/cm<sup>2</sup>G) per 1°C. Consider the pressure change when checking the test result.

### REQUIREMENT

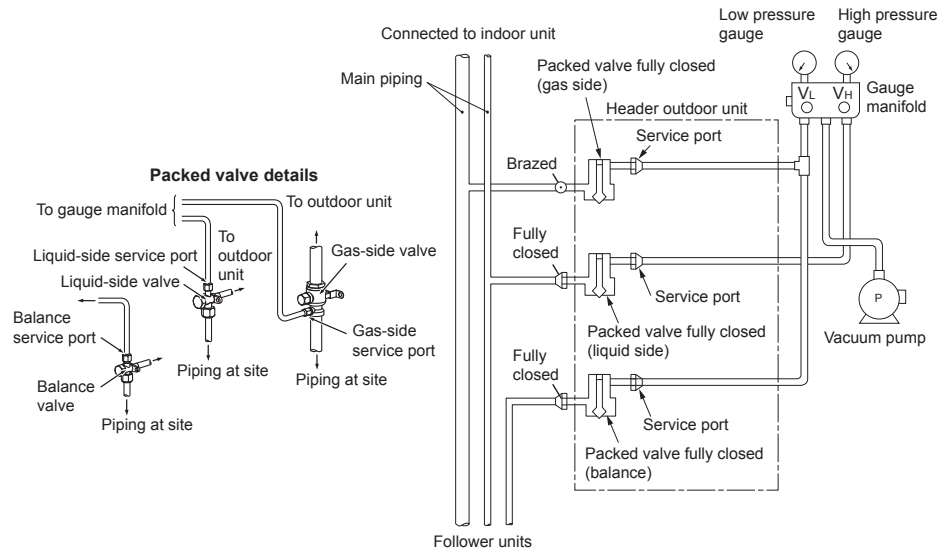
When pressure decrease is detected in steps 1-3, check the leakage at the connecting points.

Check the leakage using a foaming agent or other measures and seal the leak with re-brazing, flare retightening or other methods. After sealing, execute an airtight test again.

## ■ Vacuum drying

- Be sure to perform vacuuming from both liquid and gas sides.
- Be sure to use a vacuum pump equipped with the counter-flow prevention function so that oil in the pump will not flow back into piping for air conditioners. (If oil in the vacuum pump enters in the air conditioner with R410A refrigerant, a problem may be caused in the refrigerating cycle.)

After finishing the airtight test and discharging nitrogen gas, connect the gauge manifold to the service ports of the liquid side, gas side, and balance pipe side and connect a vacuum pump as shown in the figure below. Be sure to perform vacuuming for the liquid, gas, and balance pipe sides.



- Use a vacuum pump with a high vacuuming degree [-100.7kPa (5Torr, -755mmHg)] and large exhaust gas amount (40L/minute or larger).
- Perform vacuuming for 2 or 3 hours, though the time differs depending on the pipe length. Check that all the packed valves at the liquid side, gas side, and balance pipe side are fully closed.
- If the pressure does not reach -100.7kPa or less, continue vacuuming for 1 hour or more. If the pressure does not reach -100.7kPa after 3 hours of vacuuming, stop vacuuming and check for air leakage.
- If the pressure reaches -100.7kPa or less after vacuuming for 2 hours or more, close the valves VL and VH on the gauge manifold fully and stop the vacuum pump. Leave it as it is for 1 hour to confirm that the vacuuming degree does not change.  
If the degree of vacuum loss is large, moisture may remain in the pipes. In that case, inject dry nitrogen gas and apply pressure to 0.05MPa and perform vacuuming again.
- After finishing the above procedure of vacuuming, exchange the vacuum pump with a refrigerant canister and advance to the additional charging of refrigerant.

## ■ Adding refrigerant

After finishing vacuuming, exchange the vacuum pump with a refrigerant canister and start additional charging of refrigerant.

### Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipes at the local site. For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

#### NOTE

If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without additional refrigerant.

Heat pump type	Outdoor unit type	MAP080	MAP100	MAP120	MAP140	MAP160	MAP180	MAP200	MAP220
	Charged amount (kg)	11.5							
Cooling only type	Outdoor unit type	MAP080	MAP100	MAP120	MAP140	MAP160	MAP180	MAP200	MAP220
	Charged amount (kg)	10.5			11.5				

Additional refrigerant charge amount at site = [1] + [2] + [3]

[1]. Compensation by system HP (Table 1)

[2]. Additional refrigerant charge amount indoor unit (Table 2)

[3]. (Real length of liquid pipe × Additional refrigerant charge amount per liquid pipe 1 m (Table 3)) × 1.2

Table 1

	System	Combination			Charged refrigerant (kg)		Compensation by System HP kg
		HP	HP	HP	Heat pump type	Cooling only type	
Standard model	8	8	-	-	11.5	10.5	-3.5
	10	10	-	-	11.5	10.5	-3.5
	12	12	-	-	11.5	10.5	-1.5
	14	14	-	-	11.5	11.5	-1.0
	16	16	-	-	11.5	11.5	-0.5
	18	18	-	-	11.5	11.5	1.5
	20	20	-	-	11.5	11.5	1.5
	22	22	-	-	11.5	11.5	1.5
	24	12	12	-	23	21	-3.0
	26	14	12	-	23	22	-2.5
	28	16	12	-	23	22	-2.0
	30	16	14	-	23	23	-1.5
	32	16	16	-	23	23	-1.0
	34	18	16	-	23	23	1.0
	36	20	16	-	23	23	1.0
	38	22	16	-	23	23	1.0
	40	20	20	-	23	23	3.0
	42	22	20	-	23	23	3.0
	44	22	22	-	23	23	3.0
	46	16	16	14	34.5	34.5	-6.5
48	16	16	16	34.5	34.5	-6.5	
50	18	16	16	34.5	34.5	-0.5	
52	20	16	16	34.5	34.5	-0.5	
54	22	16	16	34.5	34.5	-0.5	
56	20	20	16	34.5	34.5	2.5	
58	22	20	16	34.5	34.5	2.5	
60	22	22	16	34.5	34.5	2.5	
High efficiency model	20	10	10	-	23	21	-7.0
	22	12	10	-	23	21	-7.0
	36	12	12	12	34.5	31.5	-12.5
	38	14	12	12	34.5	32.5	-10.5
	40	14	14	12	34.5	33.5	-8.5
	42	14	14	14	34.5	34.5	-4.5
	44	16	14	14	34.5	34.5	-4.5
	54	20	20	14	34.5	34.5	1.5

**Table 2**

Additional refrigerant charge amount Indoor unit	Standard Indoor unit	Fresh Air Intake Indoor Unit	Air to Air Heat exchanger with DX-coil	Hot Water Module
Additional refrigerant charge amount kg/HP	0.4	0.2	0.2	0

**Table 3**

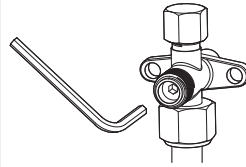
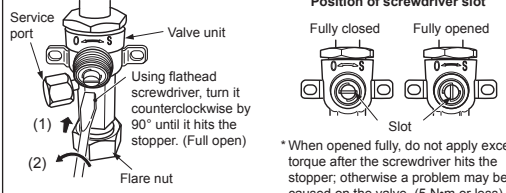
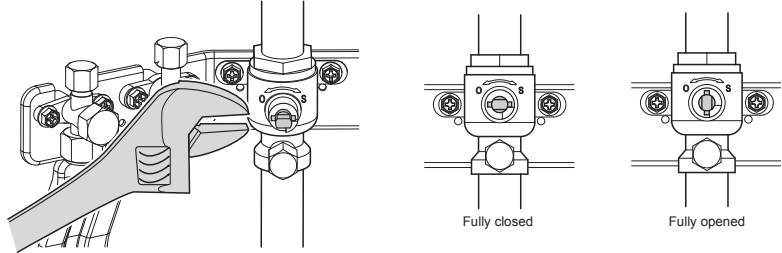
Pipe dia. at liquid side	mm	ø6.4	ø9.5	ø12.7	ø15.9	ø19.0	ø22.2
Additional refrigerant amount/1m	kg/m	0.025	0.055	0.105	0.160	0.250	0.350

**Charging of refrigerant**

- Keeping the valve of the outdoor unit closed, be sure to charge the liquid refrigerant into the service port at the liquid side.
- If the specified amount of refrigerant cannot be charged, fully open the valves of the outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode, and then charge refrigerant into service port at the gas side. In this time, choke the refrigerant slightly by operating the valve of the canister to charge liquid refrigerant.
- The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.

**Full opening of the valve**

Open the valves of the outdoor unit fully.

	MAP080 MAP100 MAP120	MAP140 MAP160 MAP180 MAP200 MAP220
Liquid side	<p><b>Packed valve</b> Using a 4mm-hexagonal wrench, fully open the valve rods.</p> 	<p><b>Ball valve</b> Using a flathead screwdriver, turn it counterclockwise by 90° until it hits the stopper. (Full open)</p>  <p>* When opened fully, do not apply excessive torque after the screwdriver hits the stopper; otherwise a problem may be caused on the valve. (5 N·m or less)</p>
Balance pipe	<p><b>Balance packed valve</b> Using a 4mm-hexagonal wrench, fully open the valve rods.</p>	
Gas side	<p><b>Balance valve</b> Using a wrench, turn it counterclockwise by 90° until it hits the stopper. (Full open)</p> 	

## ■ F-GAS label

This product contains fluorinated greenhouse gases

- Chemical Name of Gas R410A
- Global Warming Potential (GWP) of Gas 2088 (ex.R410A ref.AR4)

### ⚠ CAUTION

1. Stick the enclosed refrigerant label adjacent to the service ports for charging or recovering location and where possible adjacent to existing nameplates or product information label.
2. Clearly write the charged refrigerant quantity on the refrigerant label using indelible ink. Then, place the included transparent protective sheet over the label to prevent the writing from rubbing off.
3. Prevent emission of the contained fluorinated greenhouse gas. Ensure that the fluorinated greenhouse gas is never vented to the atmosphere during installation, service or disposal. When any leakage of the contained fluorinated greenhouse gas is detected, the leak shall be stopped and repaired as soon as possible.
4. Only qualified service personnel are allowed to access and service this product.
5. Any handling of the fluorinated greenhouse gas in this product, such as when moving the product or recharging the gas, shall comply under (EU) Regulation No. 517/2014 on certain fluorinated greenhouse gases and any relevant local legislation.
6. Periodical inspections for refrigerant leaks may be required depending on European or local legislation.
7. Contact dealers, installers, etc., for any questions.

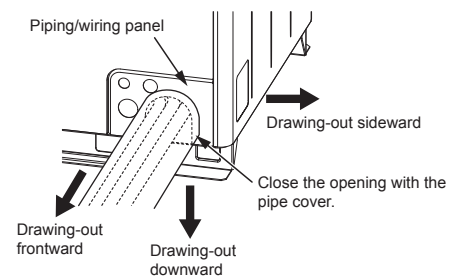
## ■ Heat insulation for pipe

- Apply heat insulation of pipe separately at the liquid, gas, and balance sides.
- Be sure to use thermal insulator resistant up to 120°C or higher for pipes at the gas side.

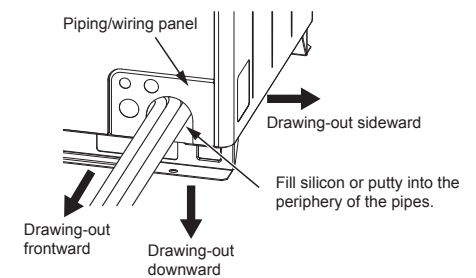
## ■ Finishing after connecting pipes

- After piping connection work has been finished, cover the opening of the piping/wiring panel with the piping cover, or fill silicon or putty into the space between the pipes.
- In case of drawing-out the pipes downward or sideward, also close the openings of the base plate and the side plate.
- Under the opened condition, a problem may be caused due to the entering of water or dust.

### When using the piping cover



### When not using the piping cover



## ◆ Pipe holding bracket

Attach pipe holding brackets following the table below.

Diameter of pipe (mm)	Interval
Ø15.9 - Ø19.1	2m
Ø22.2 - Ø41.3	3m

# 8 Electric wiring

## ⚠ WARNING

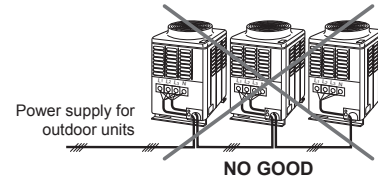
The appliance shall be installed in accordance with national wiring regulations. Capacity shortages of the power circuit or an incomplete installation may cause an electric shock or fire.

## ⚠ CAUTION

- Perform wiring of power supply complying with the rules and regulations of the local electric company.
- Do not connect 380V - 415V power to the terminal blocks for control cables (U1, U2, U3, U4, U5, U6, U7, U8); otherwise, the unit may break down.
- Be sure that electric wiring does not come into contact with high-temperature parts of piping; otherwise, the coating of cables may melt and cause an accident.
- After connecting wires to the terminal block, take off the traps and fix the wires with cord clamps.
- Follow the same structure for both the control wiring and refrigerate piping.
- Do not conduct power to indoor units until vacuuming of the refrigerant pipes has finished.
- For the wiring of power to indoor units and that between indoor and outdoor units, follow the instructions in the installation manual of each indoor unit.

## ■ Power supply specifications

Do not bridge the power between outdoor units through the equipped terminal blocks (L1, L2, L3, N)



## ◆ Power wiring selection

- Select the power supply cabling of each outdoor unit from the following specifications: Cable 5-core, in conformance with design H07 RN-F or 60245 IEC 66.
- To decide nominal cross sectional area of conductor, refer to following table of Maximum Overcurrent Protection (Amps).

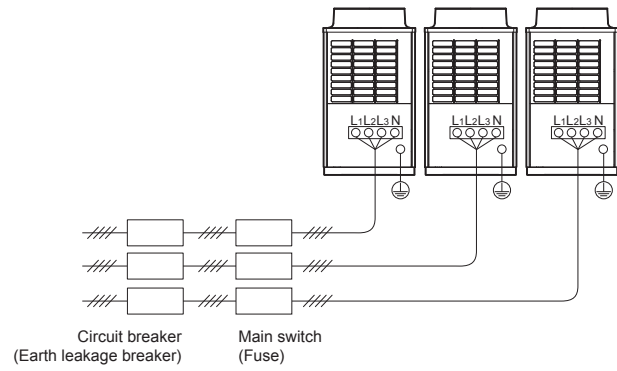
### Standard model

MCA:Minimum Circuit Amps  
MOCP:Maximum Overcurrent Protection (Amps)

Model name	Power Supply		MCA (A)	MOCP (A)		
	Phase and frequency	Nominal Voltage				
MMY-MAP0806*	3N~50Hz	380-400-415V	20.5	25		
MMY-MAP1006*			21.5	25		
MMY-MAP1206*			26.1	32		
MMY-MAP1406*			31.0	40		
MMY-MAP1606*			35.8	40		
MMY-MAP1806*			40.6	50		
MMY-MAP2006*			44.9	63		
MMY-MAP2206*			49.3	63		
MMY-AP2416*			3N~50Hz	380-400-415V	52.2	63
MMY-AP2616*					57.1	63
MMY-AP2816*	61.9	80				
MMY-AP3016*	66.8	80				
MMY-AP3216*	71.6	80				
MMY-AP3416*	76.4	100				
MMY-AP3616*	80.7	100				
MMY-AP3816*	85.1	100				
MMY-AP4016*	89.8	100				
MMY-AP4216*	94.2	125				
MMY-AP4416*	98.6	125				
MMY-AP4616*	3N~50Hz	380-400-415V	102.6	125		
MMY-AP4816*			107.4	125		
MMY-AP5016*			112.2	125		
MMY-AP5216*			116.5	160		
MMY-AP5416*			120.9	160		
MMY-AP5616*			125.6	160		
MMY-AP5816*			130.0	160		
MMY-AP6016*			134.4	160		

### High efficiency model

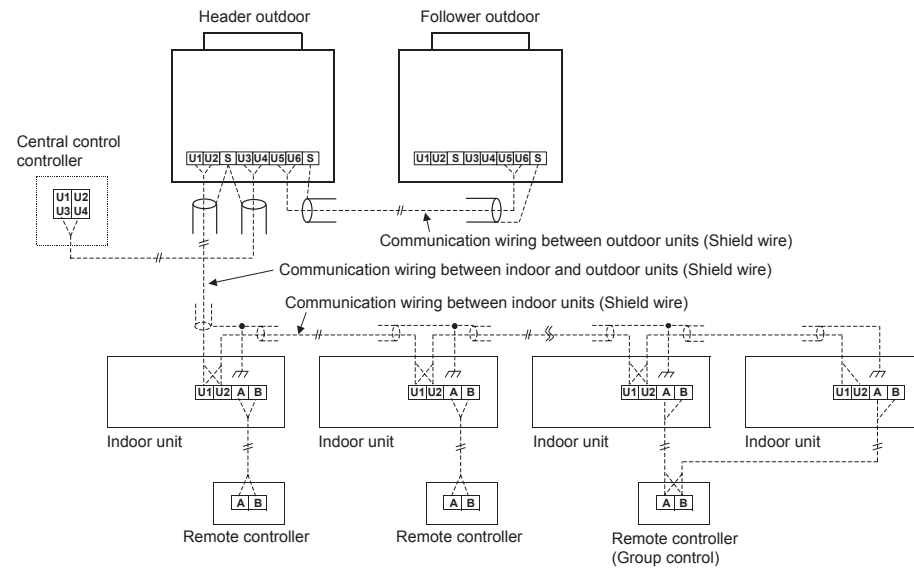
Model name	Power Supply		MCA (A)	MOCP (A)
	Phase and frequency	Nominal Voltage		
MMY-AP2026*	3N~50Hz	380-400-415V	43.0	63
MMY-AP2226*			47.6	63
MMY-AP3626*	3N~50Hz	380-400-415V	78.3	100
MMY-AP3826*			83.2	100
MMY-AP4026*			88.1	100
MMY-AP4226*			93.0	125
MMY-AP4426*			97.8	125
MMY-AP5426*			120.8	160



## ■ Specifications for communication wiring

### ◆ Design of communication wiring

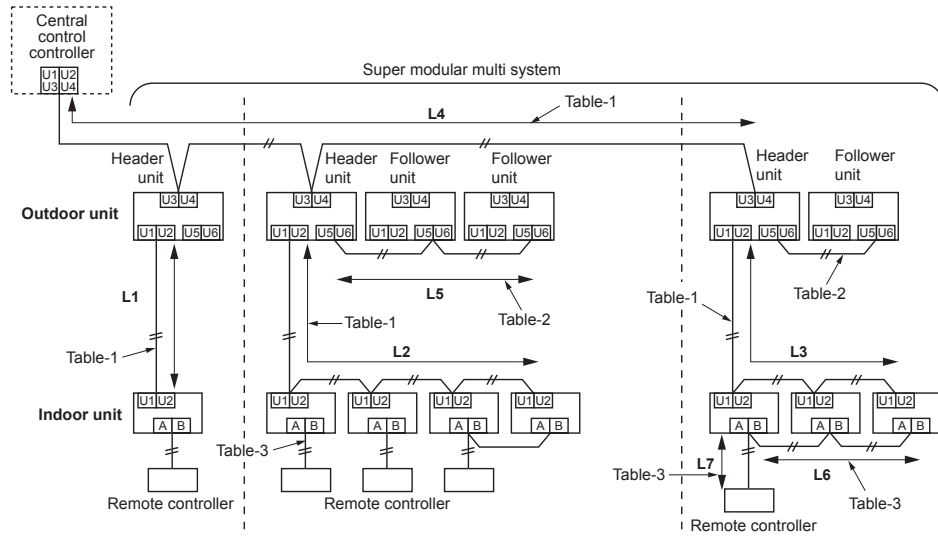
#### Summary of communication wiring



- Communication wiring and central control wiring use 2-core non-polarity wires.  
Use 2-core shield wires to prevent noise trouble.  
In this case, both ends of the communication wire must be grounded.
- Use 2-core non-polarity wire for remote controller. (A, B terminals)  
Use 2-core non-polarity wire for wiring of group control. (A, B terminals)



Be sure to keep the rule of below tables about size and length of communication wiring.



**Table-1 Communication wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)**

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm <sup>2</sup> : Up to 1000 m/2.0 mm <sup>2</sup> : Up to 2000 m (*1)

(\*1): Total length of Communication wiring length for all refrigerant circuits (L1 + L2 + L3 + L4)

**Table-2 Communication wiring between outdoor units (L5)**

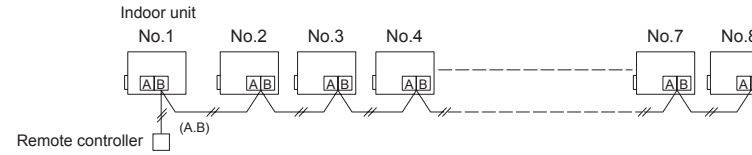
Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm <sup>2</sup> to 2.0 mm <sup>2</sup> /Up to 100 m (L5)

**Table-3 Remote controller wiring (L6, L7)**

Wiring	2-core, non-polarity
Size	0.5 mm <sup>2</sup> to 2.0 mm <sup>2</sup>
Length	<ul style="list-style-type: none"> <li>• Up to 500 m (L6 + L7)</li> <li>• Up to 400 m in case of wireless remote controller in group control.</li> <li>• Up to 200 m total length of communication wiring between indoor units (L6)</li> </ul>

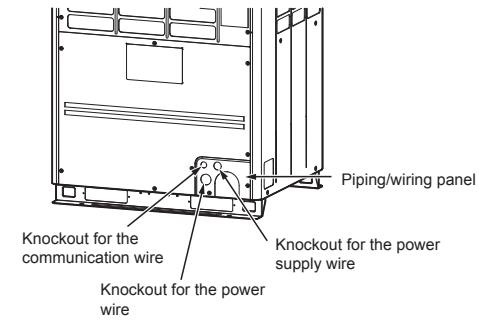
### ◆ Group control through a Remote Controller

Group control of multiple indoor units (8 units) through a single remote controller switch



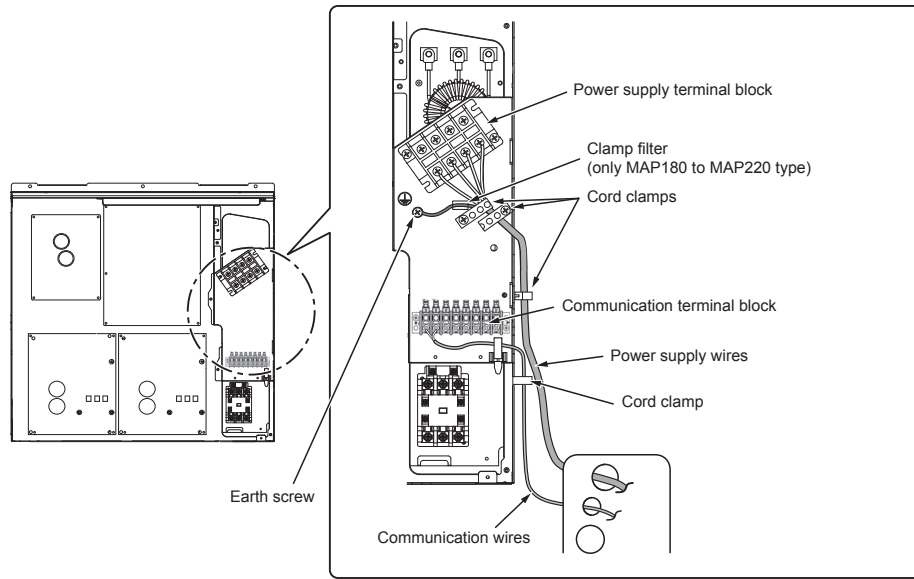
### ■ Connection of power wires and communication wires

Remove knockouts on the piping/wiring panel on the front of the unit and the panel on the bottom to get the power and communication wires through the holes.



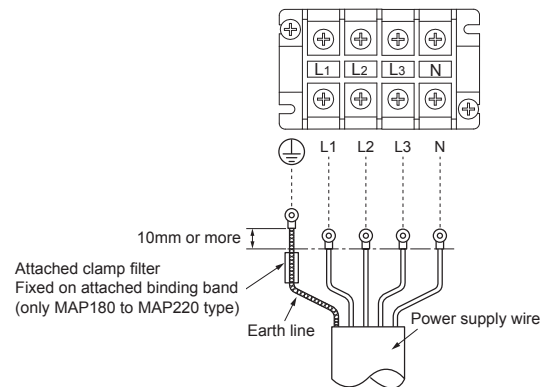
#### NOTE

Be sure to separate the power wire and communication wires.



### ◆ Power supply wire connection

1. Insert the power supply wire through the cutout on the side of the electrical control box and connect the power supply wire to the power supply terminal block and the earth line to the earth screw. After that, fix the power supply wire with the 2 cord clamps.
2. Be sure to use round-type crimping terminals for power connection. Also, apply insulating sleeves to the crimping parts. Use a driver of appropriate size to fix the terminal screws.

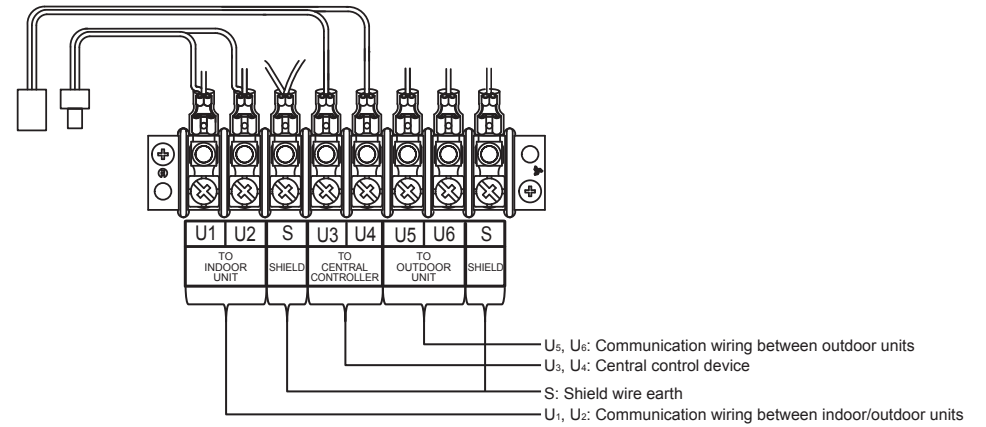


### Screw size and tightening torque

	Screw size	Tightening torque (N·m)
Power supply terminal	M6	2.5 to 3.0
Earth screw	M8	5.5 to 6.6

### ◆ Communication wire connection

Get the communication wire through the cutout on the side of the electrical control box and connect it to the communication wire terminals, then fix it with the communication cable clamp.



### Screw size and tightening torque

	Screw size	Tightening torque (N·m)
Communication wire terminal	M4	1.2 to 1.4

## ■ Regulation of high frequency wave

This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc (\*1) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc (\*1)

Furthermore, when similar equipment or other equipment which may cause harmonic current emissions are to be connected to the same interface point with this equipment, to reduce the risk of possible problems which may be caused from addition of those harmonic current emissions, it is recommended to make sure that the short-circuit power Ssc at the interface point is greater than the sum of the minimum Ssc required by all the equipment which will be connected to the interface point.

Ssc (\*1) :

Model	Ssc (kVA)
MMY-MAP0806HT8P(JP)-E MMY-MAP0806T8P(JP)-E	716
MMY-MAP1006HT8P(JP)-E MMY-MAP1006T8P(JP)-E	742
MMY-MAP1206HT8P(JP)-E MMY-MAP1206T8P(JP)-E	906
MMY-MAP1406HT8P(JP)-E MMY-MAP1406T8P(JP)-E	1026
MMY-MAP1606HT8P(JP)-E MMY-MAP1606T8P(JP)-E	1112
MMY-MAP1806HT8P(JP)-E MMY-MAP1806T8P(JP)-E	1309
MMY-MAP2006HT8P(JP)-E MMY-MAP2006T8P(JP)-E	1462
MMY-MAP2206HT8P(JP)-E MMY-MAP2206T8P(JP)-E	1609

## 9 Address setting

On this unit, it is required to set the addresses of the indoor units before starting air conditioning. Set the addresses following the steps below.

### ⚠ CAUTION

- Be sure to complete the electric wiring before setting the addresses.
- If you turn on the outdoor unit before turning on the indoor units, the CODE No. [E19] is indicated on the 7-segment display on the interface P.C. board of the outdoor unit until the indoor units are turned on. This is not a malfunction.
- It may take up to ten minutes (normally about five minutes) to address one refrigerant line automatically.
- Settings on the outdoor unit are required for automatic addressing. (Address setting is not started simply by turning on the power.)
- Running the unit is not required for address setting.
- The addresses can be set manually.

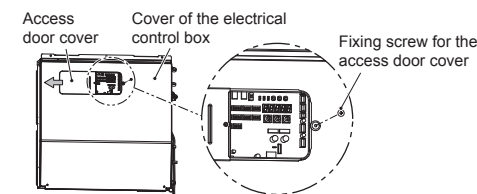
Automatic addressing: setting addresses using SW15 on the interface P.C. board on the header outdoor unit  
Manual addressing: setting addresses on the wired remote controller.

\* When setting an address manually, the wired remote controller must temporarily be paired with an indoor unit one-to-one. (when the system is organized for group operation and no Remote controller)

### REQUIREMENT

- High voltage parts exist in the electrical control box. If you set addresses on an outdoor unit, operate the unit through the access door shown on the illustration on the right to avoid electric shock. Do not remove the cover of electrical control box.

\* After finishing operations, close the access door cover and fix it with the screw.



## ■ Automatic address setting

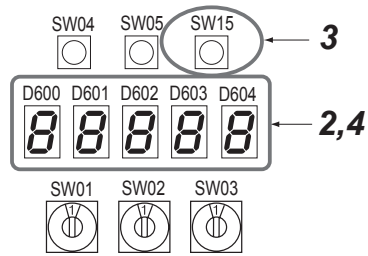
No central control: go to Address setting procedure 1  
Central control of 2 or more refrigerant lines: go to Address setting procedure 2

(Example)	When controlling a single refrigerant line centrally	When controlling 2 or more refrigerant lines centrally
Address setting procedure	To procedure 1	To procedure 2
System wiring diagram		

### ◆ Address setting procedure 1

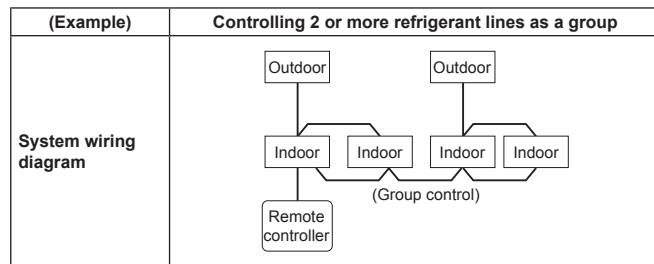
- 1 Turn on indoor units first, and then turn on outdoor units.
- 2 About one minute after turning the power on, confirm that the 7-segment display on the interface P.C. board of the header outdoor unit indicates **U. 1. L08 (U. 1. flash)**.
- 3 Press SW15 to start the automatic address setting.  
(It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)
- 4 The 7-segment display indicates **Auto 1 → Auto 2 → Auto 3**.  
After the indication, **U. 1. --- (U. 1. flash)** starts flashing on the display.  
When the flashing stops and **U. 1. --- (U. 1. light)** remain lit on the display, the setting is complete.

Interface P.C. board on the header outdoor unit



#### REQUIREMENT

- When 2 or more refrigerant lines are controlled as a group, be sure to turn on all the indoor units in the group before setting addresses.
- If you set the unit addresses of each line separately, each line's header indoor unit is set separately. In that case, the CODE No. "L03" (Indoor header unit overlap) is indicated as running starts. Change the group address to make one unit the header unit using wired remote controller.



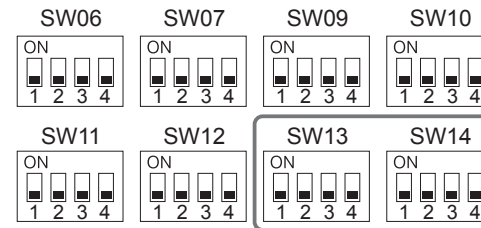
### ◆ Address setting procedure 2

- 1 Set a system address for each system using SW13 and 14 on the interface P.C. board on the header outdoor unit of each system.  
(Factory default: Address 1)

#### NOTE

Be sure to set a unique address on each system. Do not use a same address as another system (refrigerant line) or a custom side.

Interface P.C. board on the header outdoor unit



Switch settings for a line (system) address on the interface P.C. board on the outdoor unit

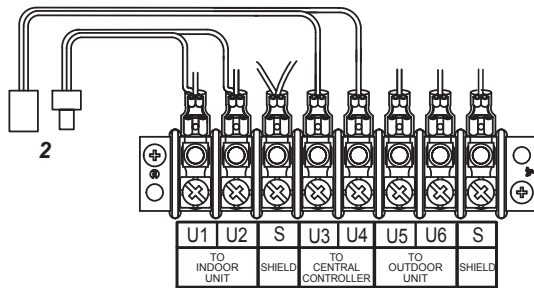
(○: switch ON, ×: switch OFF)

Line (system) address	SW13				SW14			
	1	2	3	4	1	2	3	4
1	-	-	-	×	×	×	×	×
2	-	-	-	×	○	×	×	×
3	-	-	-	×	×	○	×	×
4	-	-	-	×	○	○	×	×
5	-	-	-	×	×	×	○	×
6	-	-	-	×	○	×	○	×
7	-	-	-	×	×	○	○	×
8	-	-	-	×	○	○	○	×
9	-	-	-	×	×	×	×	○
10	-	-	-	×	○	×	×	○
11	-	-	-	×	×	○	×	○
12	-	-	-	×	○	○	×	○
13	-	-	-	×	×	×	○	○
14	-	-	-	×	○	×	○	○
15	-	-	-	×	×	○	○	○
16	-	-	-	×	○	○	○	○
17	-	-	-	○	×	×	×	×
18	-	-	-	○	○	×	×	×
19	-	-	-	○	×	○	×	×
20	-	-	-	○	○	○	×	×
21	-	-	-	○	×	×	○	×
22	-	-	-	○	○	×	○	×
23	-	-	-	○	×	○	○	×
24	-	-	-	○	○	○	○	×
25	-	-	-	○	×	×	×	○

Line (system) address	SW13				SW14			
	1	2	3	4	1	2	3	4
26	-	-	-	○	○	×	×	○
27	-	-	-	○	×	○	×	○
28	-	-	-	○	○	○	×	○

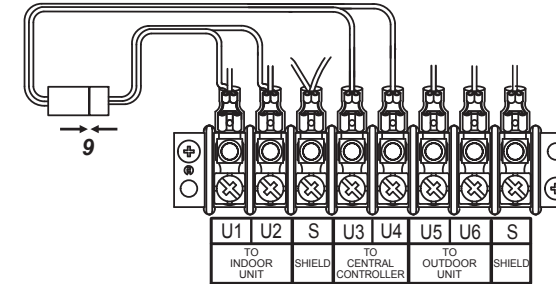
"-": not used for system address setting (Do not change their positions.)

- 2** Be sure to disconnect the relay connectors between the [U1U2] and [U3U4] terminals on all the header outdoor units that will be connected to the central control. (Factory default: disconnected)



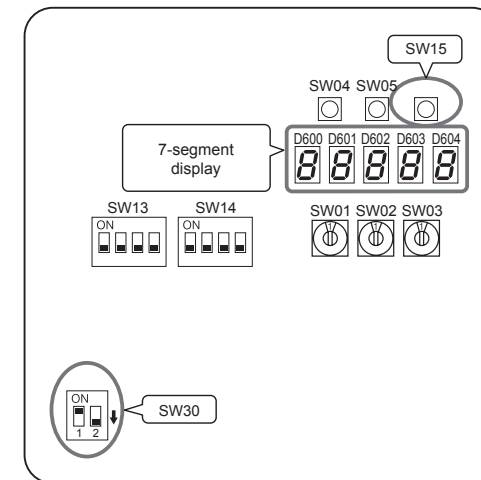
- 3** Turn on indoor units first, and then turn on outdoor units.
- 4** About 1 minute after turning the power on, confirm that the 7-segment display on the interface P.C. board of the header outdoor unit indicates **U. 1. L08 (U. 1. flash)**.
- 5** Press SW15 to start the automatic address setting.  
(It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)
- 6** The 7-segment display indicates **Auto 1 → Auto 2 → Auto 3**.  
After the indication, **U. 1. --- (U. 1. flash)** starts flashing on the display.  
When the flashing stops and **U. 1. --- (U. 1. light)** remains lit on the display, the setting is complete.
- 7** Repeat steps 4 to 6 for other refrigerant lines.
- 8** After completing address setting of all systems, turn off DIP switch 2 of SW30 on the interface P.C. boards of all the header outdoor units connected to the same central control, except the unit that has the lowest address.  
(For unifying the termination of the wiring for the central control of indoor and outdoor units)

- 9** Connect the relay connectors between the [U1, U2] and [U3, U4] terminals of the header outdoor unit of each refrigerant line.



- 10** Set the central control address.  
(For the setting of the central control address, refer to the installation manuals of the central control devices.)

Header unit interface P.C. board

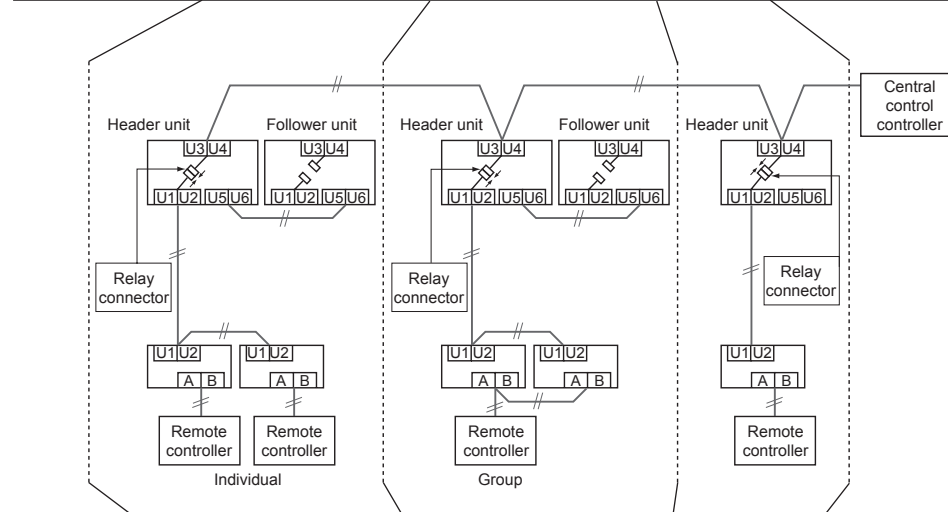


**Switch setting (setting example when controlling 2 or more refrigerant lines centrally)**

**Outdoor units (setting manually)**

\*The items in bold font must be set manually.

Outdoor unit's interface P.C. board	Header unit	Follower unit	Header unit	Follower unit	Header unit	Factory default
SW13, 14 (Line (system) address)	1	(No setting required)	2	(No setting required)	3	1
DIP switch 2 of SW30 (Terminator of indoor/outdoor communication line and central control line)	ON	(No setting required)	<b>Set to OFF after setting addresses.</b>	(No setting required)	<b>Set to OFF after setting addresses.</b>	ON
Relay connector	<b>Connect after setting addresses.</b>	Open	<b>Connect after setting addresses.</b>	Open	<b>Connect after setting addresses.</b>	Open



Indoor units (automatic setting)

Line (system) address	1	1	2	2	3
Indoor unit address	1	2	1	2	1
Group address	0	0	1	2	0

**CAUTION**

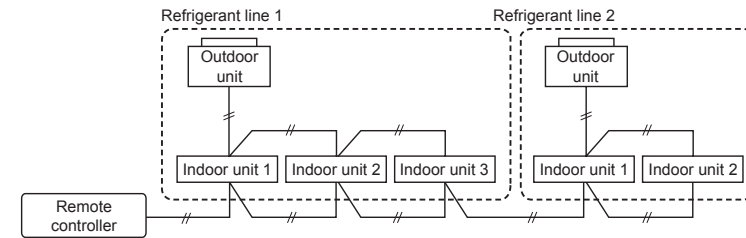
**Relay connector connection**

Never connect relay connectors between the [U1, U2] and [U3, U4] terminals before completing address setting of all the refrigerant lines. Otherwise, the addresses cannot be set correctly.

**Manual address setting using the remote controller**

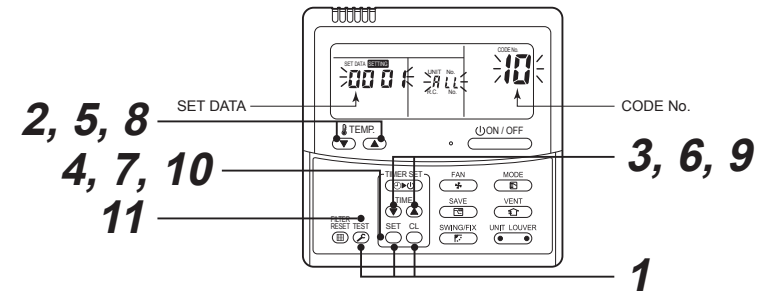
Procedure when setting indoor units' addresses first under the condition that indoor wiring has been completed and outdoor wiring has not been started (manual setting using the remote controller)

**Wiring example of 2 refrigerant lines**



Line (system) address	1	1	1	2	2
Indoor unit address	1	2	3	1	2
Group address	1	2	2	2	2
	Header unit	Follower unit	Follower unit	Follower unit	Follower unit

In the example above, disconnect the remote controller connections between the indoor units and connect a wired remote controller to the target unit directly before address setting.



Pair the indoor unit to set and the remote controller one-to-one.

Turn on the power.

- 1 Push and hold the SET, CL, and TEST buttons at the same time for more than 4 seconds. LCD starts flashing.

<Line (system) address>

- 2 Push the TEMP. (▼) / (▲) buttons repeatedly to set the CODE No. to 12.**
- 3 Push the TIME (▼) / (▲) buttons repeatedly to set a system address.**  
(Match the address with the address on the interface P.C. board of the header outdoor unit in the same refrigerant line.)
- 4 Push the SET button.**  
(It is OK if the display turns on.)

<Indoor unit address>

- 5 Push the TEMP. (▼) / (▲) buttons repeatedly to set the CODE No. to 13.**
- 6 Push the TIME (▼) / (▲) buttons repeatedly to set an indoor unit address.**
- 7 Push the SET button.**  
(It is OK if the display turns on.)

<Group address>

- 8 Push the TEMP. (▼) / (▲) buttons repeatedly to set the CODE No. to 14.**
- 9 Push the TIME (▼) / (▲) buttons repeatedly to set a group address. If the indoor unit is individual, set the address to 0000; header unit, 0001; follower unit, 0002.**

Individual	: 0000	}	In case of group control
Header unit	: 0001		
Follower unit	: 0002		
- 10 Push the SET button.**  
(It is OK if the display turns on.)
- 11 Push the TEST button.**  
The address setting is complete.  
(SETTING flashes. You can control the unit after SETTING has disappeared.)

**NOTE**

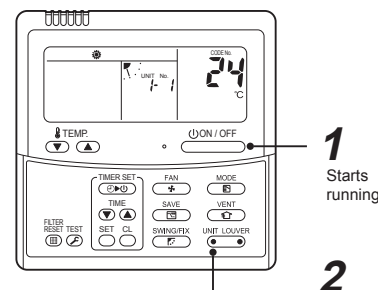
1. Do not use address numbers **29** or **30** when setting system addresses using the remote controller. These 2 address numbers cannot be used on outdoor units and the CODE No. [E04] (Indoor/outdoor communication error) will appear if they are mistakenly used.
2. If you set addresses to indoor units in 2 or more refrigerate lines manually using the remote controller and will control them centrally, set the header outdoor unit of each line as below.
  - Set a system address for the header outdoor unit of each line with SW13 and 14 of their interface P.C. boards.
  - Turn off DIP switch 2 of SW30 on the interface P.C. boards of all the header outdoor units connected to the same central control, except the unit that has the lowest address. (For unifying the termination of the wiring for the central control of indoor and outdoor units)
  - Connect the relay connectors between the [U1, U2] and [U3, U4] terminals on the header outdoor unit of each refrigerate line.
  - After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the installation manuals of the central control devices.)

**■ Confirming the indoor unit addresses and the position of an indoor unit using the remote controller**

**◆ Confirming the numbers and positions of indoor units**

**To see the indoor unit address of an indoor unit which you know the position of**

- ▼ When the unit is individual (the indoor unit is paired with a wired remote controller one-to-one), or it is a group-controlled one.

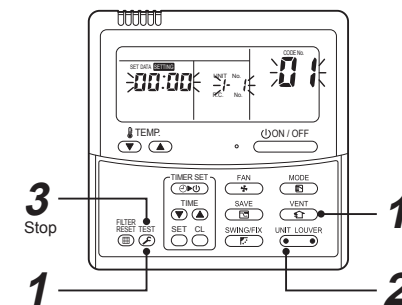


(Execute it while the units are running.)

- 1 Push the (ON/OFF) button if the units stop.**
- 2 Push the UNIT LOUVER button (left side of the button).**  
A unit numbers / - / is indicated on the LCD (it will disappear after a few seconds).  
The indicated number shows the system address and indoor unit address of the unit.  
When 2 or more indoor units are connected to the remote controller (group-controlled units), a number of other connected units appears each time you push the UNIT LOUVER button (left side of the button).

**To find an indoor unit's position from its address**

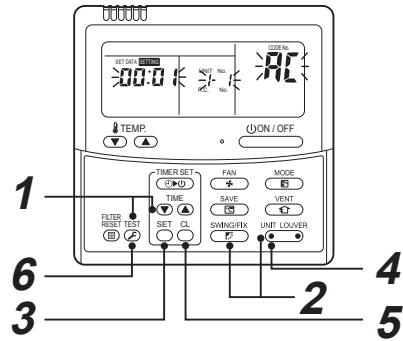
- ▼ When checking unit numbers controlled as a group



(Execute it while the units are stopped.)

The indoor unit numbers in a group are indicated one after another. The fan and louvers of the indicated units are activated.

- 1 Push and hold the VENT and TEST buttons at the same time for more than 4 seconds.**
    - ALL appears on UNIT No. on the LCD display.
    - The fans and louvers of all the indoor units in the group are activated.
  - 2 Push the UNIT LOUVER button (left side of the button). Each time you push the button, the indoor unit numbers are indicated one after another.**
    - The first-indicated unit number is the address of the header unit.
    - Only the fan and louvers of the indicated indoor unit are activated.
  - 3 Push the TEST button to finish the procedure.**  
All the indoor units in the group stop.
- ▼ To check all the indoor unit addresses using an arbitrary wired remote controller.  
(When communication wirings of 2 or more refrigerant lines are interconnected for central control)



**(Execute it while the units are stopped.)**  
 You can check indoor unit addresses and positions of the indoor units in a single refrigerant line.  
 When an outdoor unit is selected, the indoor unit numbers of the refrigerant line of the selected unit are indicated one after another and the fan and louvers of the indicated indoor units are activated.

**1** Push and hold the **TIME** and **TEST** buttons at the same time for more than 4 seconds. At first, the line 1 and CODE No. **RL** (Address Change) are indicated on the LCD display. (Select an outdoor unit.)

**2** Push the **UNIT LOUVER** (left side of the button) and **SWINGFIX** buttons repeatedly to select a system address.

**3** Push the **SET** button to confirm the system address selection.  
 • The address of an indoor unit connected to the selected refrigerant line is indicated on the LCD display and its fan and louvers are activated.

**4** Push the **UNIT LOUVER** button (left side of the button). Each time you push the button, the indoor unit numbers of the selected refrigerant line are indicated one after another.  
 • Only the fan and louvers of the indicated indoor unit are activated.

◆ **To select another system address**

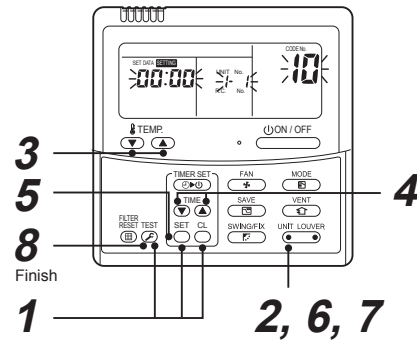
**5** Push the **CL** button to return to step 2.  
 • After returning to step 2, select another system address and check the indoor unit addresses of the line.

**6** Push the **TEST** button to finish the procedure.

■ **Changing the indoor unit address using a remote controller**

**To change an indoor unit address using a wired remote controller.**

▼ The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one-to-one), or an indoor unit in a group. (The method is available when the addresses have already been set automatically.)



**(Execute it while the units are stopped.)**

**1** Push and hold the **SET**, **CL**, and **TEST** buttons at the same time for more than 4 seconds. (If 2 or more indoor units are controlled in a group, the first indicated UNIT No. is that of the head unit.)

**2** Push the **UNIT LOUVER** button (left side of the button) repeatedly to select an indoor unit number to change if 2 or more units are controlled in a group. (The fan and louvers of the selected indoor unit are activated.) (The fan of the selected indoor unit is turned on.)

**3** Push the **TEMP.** buttons repeatedly to select **13** for CODE No..

**4** Push the **TIME** buttons repeatedly to change the value indicated in the SET DATA section to that you want.

**5** Push the **SET** button.

**6** Push the **UNIT LOUVER** button (left side of the button) repeatedly to select another indoor UNIT No. to change.

Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.

**7** Push the **UNIT LOUVER** button (left side of the button) to check the changed addresses.

**8** If the addresses have been changed correctly, push the **SET** button to finish the procedure.

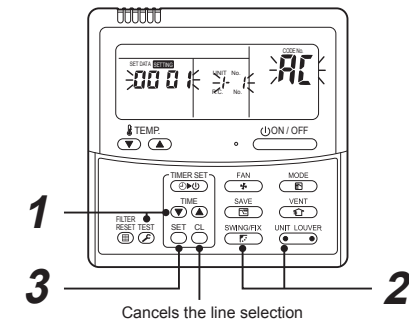
▼ **To change all the indoor unit addresses using an arbitrary wired remote controller.** (The method is available when the addresses have already been set automatically.)

(When communication wirings of 2 or more refrigerant lines are interconnected for central control)

**NOTE**

You can change the addresses of indoor units in each refrigerant line using an arbitrary wired remote controller.

\* Enter the address check/change mode and change the addresses.



If no number appears on UNIT No., no outdoor unit exists on the line. Push **CL** button and select another line following step 2.

**(Execute it while the units are stopped.)**

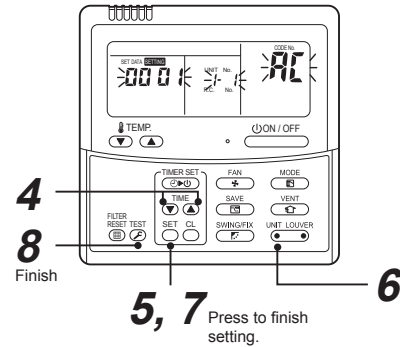
**1** Push and hold the **TIME** and **TEST** buttons at the same time for more than 4 seconds. At first, the line 1 and CODE No. **RL** (Address Change) are indicated on the LCD display.

**2** Push the **UNIT LOUVER** (left side of the button) and **SWINGFIX** buttons repeatedly to select a system address.



### 3 Push the **SET** button.

- The address of one of the indoor units connected to the selected refrigerant line is indicated on the LCD display and the fan and louvers of the unit are activated. At first, the current indoor unit address is displayed in SET DATA. (No system address is indicated.)



### 4 Push the **TIME** (▼) / (▲) buttons repeatedly to change the value of the indoor unit address in SET DATA. Change the value in SET DATA to that of a new address.

### 5 Push the **SET** button to confirm the new address on SET DATA.

### 6 Push the **UNIT LOUVER** button (left side of the button) repeatedly to select another address to change. Each time you push the button, the indoor unit numbers in a refrigerant line are indicated one after another. Only the fan and louvers of the selected indoor unit are activated.

Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.

### 7 Push the **SET** button. (All the segments on the LCD display light up.)

### 8 Push the **TEST** button to finish the procedure.

## Resetting the address (Resetting to the factory default (address undecided))

### Method 1

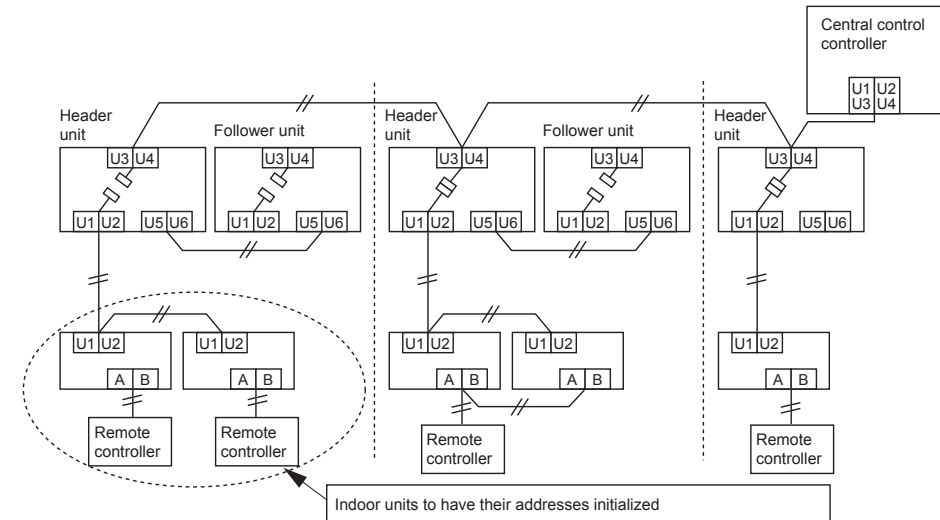
Clearing each address separately using a wired remote controller. Set the system address, indoor unit address and group address to "0099" using a wired remote controller. (For the setting procedure, refer to the address setting procedures using the wired remote controller on the previous pages.)

### Method 2

Clearing all the indoor unit addresses on a refrigerate line at once from the outdoor unit.

### 1 Turn off the refrigerant line to reset to the factory default and set the header outdoor unit of the line as below.

- Disconnect the relay connectors between the [U1, U2] and [U3, U4] terminals. (Leave them as they are if they have already been disconnected.)
- Turn on DIP switch 2 of SW30 on the interface P.C. board of the header outdoor unit if the switch is OFF. (Leave it as it is if it has already been set to ON.)



### 2 Turn on the indoor and outdoor units of the refrigerant line for which you want to initialize the addresses. About one minute after turning on the power, confirm that the 7-segment display on the header outdoor unit indicates "U.1. - - -" and operate the interface P.C. board on the header outdoor unit of the refrigerant line as follows.

SW01	SW02	SW03	SW04	Clearable addresses
2	1	2	Confirm that the 7-segment display indicates "A.d.buS" and turn SW04 ON for more than five seconds.	System/indoor unit/group address
2	2	2	Confirm that the 7-segment display indicates "A.d.nEt" and turn SW04 ON for more than five seconds.	Central control address

### 3 Confirm that the 7-segment display indicates "A.d. c.L." and set SW01, SW02 and SW03 to 1, 1, 1 respectively.

### 4 After a time "U.1.L08" appears on the 7-segment display if the address clearing has been completed successfully. If the 7-segment display indicates "A.d. n.G.", the outdoor unit may still be connected with other refrigerant lines. Check the connection of the relay connectors between [U1, U2] and [U3, U4].

#### NOTE

Take care to carry out the procedure above correctly; otherwise, addresses in other refrigerate lines may also be cleared.

### 5 Set the addresses again after finishing the clearance.

# 10 Test run

## ■ Before test run

Confirm that the valve of the refrigerate pipe of the outdoor unit is OPEN.

- Before turning on the power, confirm that the resistance between the terminal block of power supply and the earth is more than 1MΩ using a 500V megohmmeter.  
Do not run the unit if it is less than 1MΩ.

### ⚠ CAUTION

- Turn on the power and turn on the case heater of the compressor.  
To save the compressor when it is activated, leave the power on for more than 12 hours.

## ■ Methods of test run

### ◆ When executing a test run using a remote controller

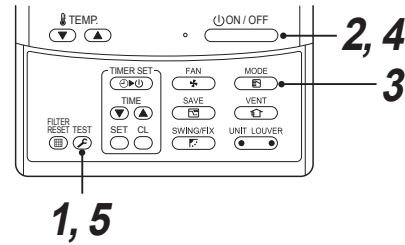
Operate the system normally to check the running condition using the wired remote controller. Follow the instructions in the supplied owner's manual when operating the unit.

If you use a wireless remote controller for operations, follow the instructions in the installation manual supplied with the indoor unit.

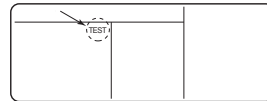
To execute a test run forcibly under the condition that the thermostat automatically turns the unit off due to the indoor temperature, follow the procedure below. The forcible test run will automatically stop after 60 minutes to prevent continuous forcible running and return to normal running.

### ⚠ CAUTION

Do not use forcible running except for a test run as it overloads the unit.



- 1 Push and hold the **TEST** button for more than 4 seconds. **TEST** appears on the LCD display and the unit enters the trial mode. (**TEST** is indicated on the LCD display during the test run.)

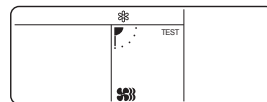


- 2 Push the **ON/OFF** button.

- 3 Push the **MODE** button to switch the running mode to COOL or HEAT.

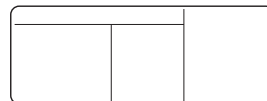
### NOTE

- Do not run the unit in any mode other than COOL or HEAT.
- You cannot change the temperature setting during the test run.
- Errors are detected as usual.



- 4 Push the **ON/OFF** button to stop running after finishing the trial run. The indication on the LCD display returns to the status of procedure 1.

- 5 Push the **TEST** button to exit the trial mode. (**TEST** disappears on the LCD display and the status changes to normal stopped mode.)



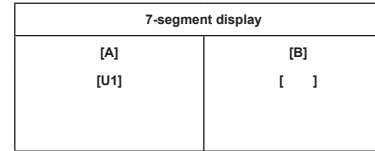
### ◆ When executing a test run using the interface P.C. board on the outdoor unit

You can execute a test run by operating switches on the interface P.C. board of the header outdoor unit. "Individual trial", which tests each indoor unit separately, and "corrective trial", which tests all the indoor units connected, are available.

#### <Individual test operation>

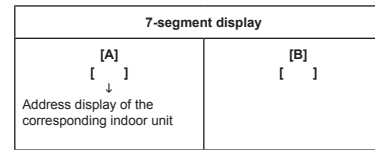
##### ▼ Starting operation

- 1 Set the running mode to "COOL" or "HEAT" on the remote controller of the indoor unit to be tested. (The unit will run in the current mode unless you set the mode otherwise.)

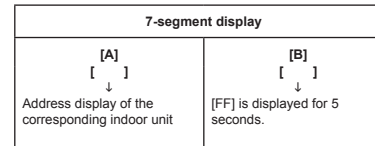


- 2 Set the rotary switches on the interface P.C. board of the header outdoor unit: SW01 to [16], SW02 and SW03 to the address of the indoor unit to be tested.

SW02	SW03	Indoor unit address	
1 to 16	1	1 to 16	Set number of SW02
1 to 16	2	17 to 32	Set number of SW02 + 16
1 to 16	3	33 to 48	Set number of SW02 + 32
1 to 16	4	49 to 64	Set number of SW02 + 48



- 3 Push and hold SW04 for more than 10 seconds.

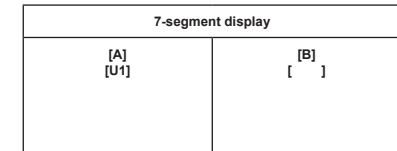


### NOTE

- The running mode follows the mode setting on the remote controller of the target indoor unit.
- You cannot change the temperature setting during the test run.
- Errors are detected as usual.
- The unit does not perform test run for 3 minutes after turning the power on or stopping running.

##### ▼ Finishing operation

- 1 Set the rotary switches on the interface P.C. board of the header unit back: SW01 to [1], SW02 to [1] and SW03 to [1].



<Corrective trial>

▼ Start operation

- 1 Set the rotary switches on the interface P.C. board of the header outdoor unit as below.  
When in "COOL" mode: SW01=[2], SW02=[5], SW03=[1].  
When in "HEAT" mode: SW01=[2], SW02=[6], SW03=[1].

7-segment display	
[A]	[B]
[C ]	[ ]
[H ]	[ ]

- 2 Push and hold SW04 for more than 2 seconds.

NOTE

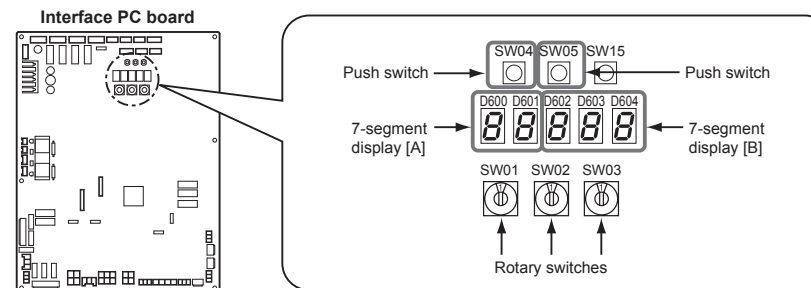
- You cannot change the temperature setting during the test run.
- Errors are detected as usual.
- The unit does not perform test run for 3 minutes after turning the power on or stopping running.

7-segment display	
[A]	[B]
[C ]	[ -C ]
[H ]	[ -H ]

▼ Stop operation

- 1 Set the rotary switches on the interface P.C. board of the header unit back:  
SW01 to [1], SW02 to [1] and SW03 to [1].

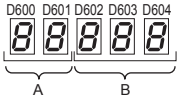
7-segment display	
[A]	[B]
[U1]	[ ]



# 11 Troubleshooting

In addition to the CODE No. on the remote controller of an indoor unit, you can diagnose failure type of an outdoor unit by checking the 7-segment display on the interface P.C. board.  
Use the function for various checks.  
Set every DIP switch to OFF after checking.

## 7-Segment display and check code

Rotary switch setting value			Indication	LED	
SW01	SW02	SW03			
1	1	1	Outdoor unit check code	A B	Outdoor unit number (U <sub>1</sub> to U <sub>3</sub> ) Check code display*

\* If a check code has an auxiliary code, the display indicates the check code for three seconds and the auxiliary code for one second alternately.

### Check code (indicated on the 7-segment display on the outdoor unit)

Indicated when SW01 = [1], SW02 = [1], and SW03 = [1].

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
Auxiliary code		
E06	Number of indoor units which received normally	Decrease of number of indoor units
E07	—	Indoor/outdoor communication circuit error
E08	Duplicated indoor addresses	Duplication of indoor addresses.
E12	01: Communication between indoor and outdoor units 02: Communication between outdoor units	Automatic addressing start error
E15	—	No indoor unit during automatic addressing
E16	00: Capacity over 01~: Number of connected units	Capacity over / number of connected indoor units
E19	00: Header is nothing 02: 2 or more header units	Number of header outdoor unit error
E20	01: Other line outdoor connected 02: Other line indoor connected	Other lines connected during automatic addressing
E23	—	Sending error between outdoor units communication
E25	—	Duplicated follower outdoor address set up
E26	Number of outdoor units which received normally	Decrease of connected outdoor units
E28	Detected outdoor unit No.	Follower outdoor unit error
E31	IPDU quantity information <sup>(*)</sup>	IPDU communication error
E31	80	Communication error between MCU and sub MCU
F04	—	TD1 sensor error
F05	—	TD2 sensor error
F06	01: TE1 sensor 02: TE2 sensor	TE1 sensor error TE2 sensor error
F07	01: TL1 sensor 02: TL2 sensor 03: TL3 sensor	TL1, TL2 or TL3 sensor error
F08	—	TO sensor error
F09	01: TG1 sensor 02: TG2 sensor	TG1 or TG2 sensor error
F12	01: TS1 sensor 03: TS3 sensor	TS1 or TS3 sensor error
F13	01: Compressor 1 02: Compressor 2	TH (Heat sink) sensor error

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
Auxiliary code		
F15	—	Outdoor temp. sensor miswiring (TE1, TL1)
F16	—	Outdoor pressure sensor miswiring (Pd, Ps)
F23	—	Ps sensor error
F24	—	Pd sensor error
F31	—	Outdoor EEPROM error
H01	01: Compressor 1 02: Compressor 2	Compressor breaking down
H02	01: Compressor 1 02: Compressor 2	Compressor error (Locked)
H03	01: Compressor 1 02: Compressor 2	Current detection circuit error
H05	—	TD1 sensor miswiring
H06	—	Low pressure protective operation
H07	—	Oil level down detection
H08	01: TK1 sensor error 02: TK2 sensor error 04: TK4 sensor error 05: TK5 sensor error	Temperature sensor error for oil level
H15	—	TD2 sensor miswiring
H16	01: TK1 oil circuit error 02: TK2 oil circuit error 04: TK4 oil circuit error 05: TK5 oil circuit error	Oil level detector circuit error
L02	Model mismatch of indoor and outdoor unit	System shutdown error from indoor unit
L04	—	Outdoor system address duplication
L06	Number of prior indoor units	Duplication of indoor units with priority
L08	—	Indoor unit group/address unset
L10	—	Outdoor unit capacity unset.
L17	—	Inconsistent models of outdoor units
L28	—	Outdoor connected quantity over
L29	IPDU number information <sup>(*)</sup>	IPDU quantity error
L30	Detected indoor unit address	External interlock of indoor unit
L31	—	Other compressor errors
P03	—	Discharge temperature TD1 error
P04	01: Compressor 1 02: Compressor 2	High-pressure SW system operation
P05	00: 01: Compressor 1 02: Compressor 2	Phase missing detection/Phase order error Compressor Vdc error

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
Auxiliary code		
P07	01: Compressor 1 02: Compressor 2	Heat sink overheat error
P10	Detected indoor unit address	Indoor overflow error
P13	—	Outdoor unit flow back error detected
P15	01: TS condition 02: TD condition	Gas leak detection
P17	—	Discharge temperature TD2 error
P19	Detected outdoor unit number	4-way valve inverse error
P20	—	High-pressure protective operation
P22	#0: Element short circuit #E: Vdc voltage error #1: Position detection circuit error #2: Input current sensor error #3: Motor lock error #C: Sensor temperature error (No TH sensor) #4: Motor current error #D: Sensor short circuit/release error (No TH sensor) #5: Synchronization/step-out error *Put in Fan IPDU No. in [#] mark.	Outdoor fan IPDU error
P26	01: Compressor 1 02: Compressor 2	G-TR short protection error
P29	01: Compressor 1 02: Compressor 2	Compressor position detecting circuit error

#### \*IPDU number information

01: Compressor 1 error	11: Compressor 1, Fan 2 error
02: Compressor 2 error	12: Compressor 2, Fan 2 error
03: Compressor 1 and 2 error	13: Compressor 1 and 2, Fan2 error
08: Fan1 error	18: Fan 1 and 2 error
09: Compressor 1, Fan1 error	19: Compressor 1, Fan1 and 2 error
0A: Compressor 2, Fan1 error	1A: Compressor 2, Fan1 and 2 error
0B: Compressor 1 and 2, Fan1 error	1B: All

# 12 Machine card and logbook

## ■ Machine card

After test run, fill the items on the machine card and paste the card on an accessible place on the product securely before delivery to the customer.

#### Describe the following items on the machine card:

name, address and telephone number of the installer, his service department, the service department of the party concerned or at any addresses and telephone numbers of fire department, police, hospitals and burn centres;

## ■ Logbook

Update the log periodically after maintenance as defined in EN378-4.

#### Describe the following items on the logbook:

1. details of the maintenance and repair works;
2. quantities, kind of (new, reused, recycled) refrigerant which have been charged on each occasion, the quantities of refrigerant which have been transferred from the system on each occasion (see also EN378-4);
3. if there is an analysis of a reused refrigerant, the results shall be kept in the logbook;
4. source of the reused refrigerant;
5. changes and replacements of components of the system;
6. result of all periodic routine tests;
7. significant periods of non-use.

## WARNINGS ON REFRIGERANT LEAKAGE

### Check of Concentration Limit

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

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively.

Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

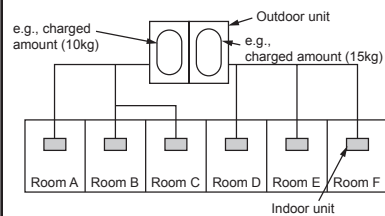
The concentration is as given below.

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

The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m<sup>3</sup>.

#### NOTE 1 :

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



For the amount of charge in this example:

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

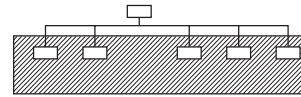
The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

### Important

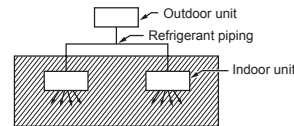
#### NOTE 2 :

The standards for minimum room volume are as follows.

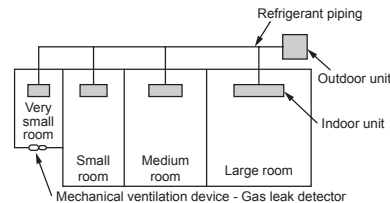
(1) No partition (shaded portion)



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

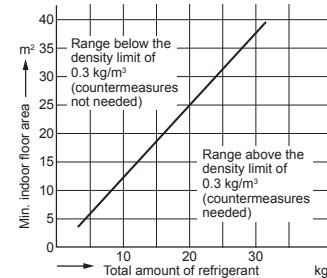


(3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the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



#### NOTE 3 :

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





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