

TOSHIBA

AIR CONDITIONER (MULTI TYPE)

Installation Manual

R410A

Outdoor Unit

Model name:

<Heat Pump Model>

MMY-MUP0801HT8P-E

MMY-MUP1001HT8P-E

MMY-MUP1201HT8P-E

MMY-MUP1401HT8P-E

MMY-MUP1601HT8P-E

MMY-MUP1801HT8P-E

MMY-MUP2001HT8P-E

MMY-MUP2201HT8P-E

MMY-MUP2401HT8P-E

MMY-MUP0801HT8JP-E

MMY-MUP1001HT8JP-E

MMY-MUP1201HT8JP-E

MMY-MUP1401HT8JP-E

MMY-MUP1601HT8JP-E

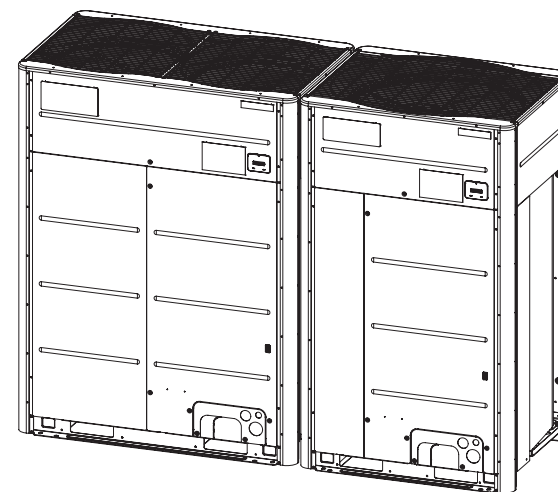
MMY-MUP1801HT8JP-E

MMY-MUP2001HT8JP-E

MMY-MUP2201HT8JP-E

MMY-MUP2401HT8JP-E

For commercial use



Original instruction

- Please read this Installation Manual carefully before installing the Air Conditioner.
- This Manual describes the installation method of the outdoor unit.
 - For installation of the indoor unit, follow the Installation Manual attached to the indoor unit.

ADOPTION OF R410A REFRIGERANT

This Air Conditioner uses R410A an environmentally friendly refrigerant.

Contents

1	Precautions for safety.....	3
2	Accessory parts.....	7
3	Installation of R410A refrigerant air conditioner	8
4	Selection of installation place.....	8
5	Carrying in the outdoor unit.....	10
6	Installtion of the outdoor unit.....	11
7	Refrigerant piping.....	13
8	Electric wiring	24
9	Address setting	29
10	Communication setting.....	34
11	Applicable control settings	35
12	Test run.....	36
13	Troubleshooting	38
14	Machine card and logbook	39

Thank you for purchasing this Toshiba air conditioner.

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, hand the Owner's Manual and Installation Manual (indoor unit and outdoor unit) to the customer and tell the customer to store them.

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.

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 (*1)	<ul style="list-style-type: none"> • The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person (*1)	<ul style="list-style-type: none"> • The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear



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

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

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

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

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



















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

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

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

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

■ Warning indications on the air conditioner unit

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

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 aluminum 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.
- Do not power other equipment such as vacuum pump from the outdoor unit. Doing so may cause a fire or a malfunction of the air conditioner.
- 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.
 - We do not take any responsibility on the local design.

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 leaks are 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 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.
- Do not install in location where operation sound of the outdoor unit may cause a disturbance. (Especially at the boundary line with a neighbor, 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 property 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 cycles is over pressurized, which may cause a injury.
- Tighten the flare nut with a torque wrench in the specified manner. Excessive tighten of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
- 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 the power cable must not 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 2MΩ 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

R410A refrigerant air conditioner installation

- **This air conditioner adopts the 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 R410A 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 R410A refrigerant.
- 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.

Do not wash air conditioners with pressure washers.

- Electric leaks may cause electric shocks or fires.

2 Accessory parts

Part name	Q'ty	Shape	Usage
Owner's Manual	1	—	(Be sure to hand over to customers)
Installation Manual	1	—	(Be sure to hand over to 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.
Binding band	6	—	For all models

3 Installation of R410A refrigerant air conditioner

This air conditioner adopts the R410A refrigerant 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 R410A 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 R410A 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 R410A refrigerant 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
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:

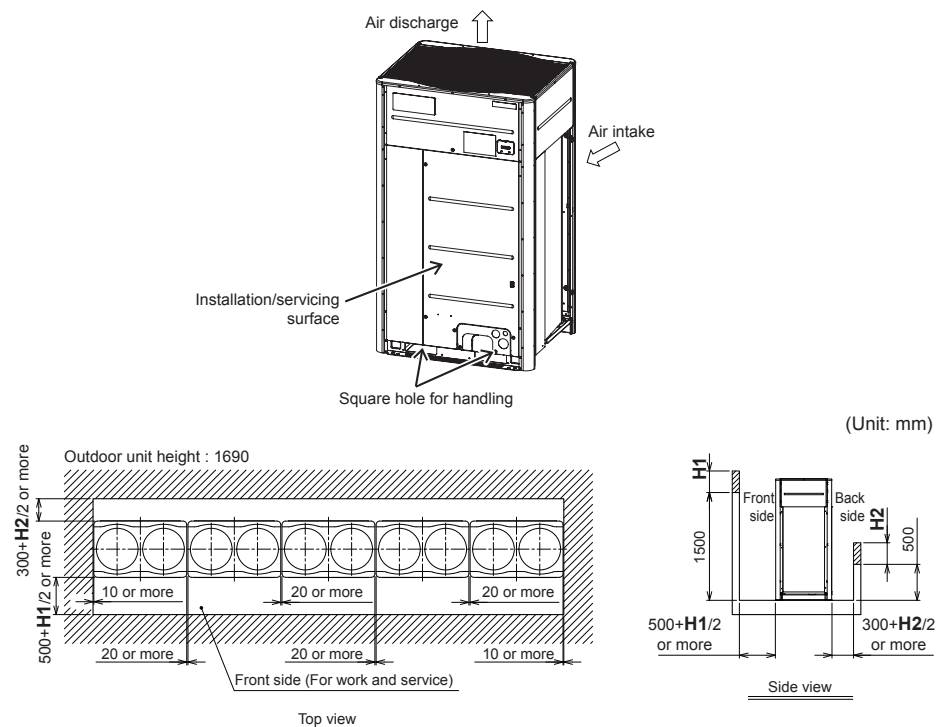
- Place where it can be installed horizontally.
- Place which can reserve a sufficient service space for safe maintenance or checks.
- Place where there is no problem even if the drained water overflows.

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 2000 mm or more from the top of the outdoor unit.
- When the obstacle height in front side exceeds 1500 mm, take a space of 500 mm or more plus half length of the portion (H1) exceeding 1500 mm between the outdoor unit and the obstacle. (500 + H1/2)
- When the obstacle height in back side exceeds 500 mm, take a space of 300 mm or more plus half length of the portion (H2) exceeding 500 mm between the outdoor unit and the obstacle. (300 + H2/2)
- When attaching a snowfall-hood take a space for the unit height plus the snowfall-hood height.

▼ Combination of outdoor units

Model name (Standard type)	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
MMY-MUP0801 *	MMY-MUP0801 *	—	—	—	—
MMY-MUP1001 *	MMY-MUP1001 *	—	—	—	—
MMY-MUP1201 *	MMY-MUP1201 *	—	—	—	—
MMY-MUP1401 *	MMY-MUP1401 *	—	—	—	—
MMY-MUP1601 *	MMY-MUP1601 *	—	—	—	—
MMY-MUP1801 *	MMY-MUP1801 *	—	—	—	—
MMY-MUP2001 *	MMY-MUP2001 *	—	—	—	—
MMY-MUP2201 *	MMY-MUP2201 *	—	—	—	—
MMY-MUP2401 *	MMY-MUP2401 *	—	—	—	—

Model name (Standard type)	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
MMY-UP2611 *	MMY-MUP1401 *	MMY-MUP1201 *	—	—	—
MMY-UP2811 *	MMY-MUP1401 *	MMY-MUP1401 *	—	—	—
MMY-UP3011 *	MMY-MUP1801 *	MMY-MUP1201 *	—	—	—
MMY-UP3211 *	MMY-MUP2001 *	MMY-MUP1201 *	—	—	—
MMY-UP3411 *	MMY-MUP2001 *	MMY-MUP1401 *	—	—	—
MMY-UP3611 *	MMY-MUP2401 *	MMY-MUP1201 *	—	—	—
MMY-UP3811 *	MMY-MUP2401 *	MMY-MUP1401 *	—	—	—
MMY-UP4011 *	MMY-MUP2001 *	MMY-MUP2001 *	—	—	—
MMY-UP4211 *	MMY-MUP2401 *	MMY-MUP1801 *	—	—	—
MMY-UP4411 *	MMY-MUP2401 *	MMY-MUP2001 *	—	—	—
MMY-UP4611 *	MMY-MUP2401 *	MMY-MUP2201 *	—	—	—
MMY-UP4811 *	MMY-MUP2401 *	MMY-MUP2401 *	—	—	—
MMY-UP5011 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1201 *	—	—
MMY-UP5211 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1401 *	—	—
MMY-UP5411 *	MMY-MUP2001 *	MMY-MUP2001 *	MMY-MUP1401 *	—	—
MMY-UP5611 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1201 *	—	—
MMY-UP5811 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1401 *	—	—
MMY-UP6011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1201 *	—	—
MMY-UP6211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	—	—
MMY-UP6411 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP2001 *	—	—
MMY-UP6611 *	MMY-MUP2401 *	MMY-MUP2201 *	MMY-MUP2001 *	—	—
MMY-UP6811 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	—	—
MMY-UP7011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2201 *	—	—
MMY-UP7211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	—	—
MMY-UP7411 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1201 *	—
MMY-UP7611 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1401 *	—
MMY-UP7811 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP2001 *	MMY-MUP1401 *	—
MMY-UP8011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1201 *	—
MMY-UP8211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1401 *	—
MMY-UP8411 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1201 *	—
MMY-UP8611 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	—
MMY-UP8811 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP2001 *	—
MMY-UP9011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2201 *	MMY-MUP2001 *	—
MMY-UP9211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	—
MMY-UP9411 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2201 *	—
MMY-UP9611 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	—
MMY-UP9811 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1201 *
MMY-UP10011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *	MMY-MUP1401 *
MMY-UP10211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP2001 *	MMY-MUP1401 *
MMY-UP10411 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1201 *
MMY-UP10611 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP1401 *
MMY-UP10811 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1201 *
MMY-UP11011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP1401 *
MMY-UP11211 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *	MMY-MUP2001 *
MMY-UP11411 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2201 *	MMY-MUP2001 *
MMY-UP11611 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2001 *
MMY-UP11811 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2201 *
MMY-UP12011 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *	MMY-MUP2401 *

5 Carrying in the outdoor unit

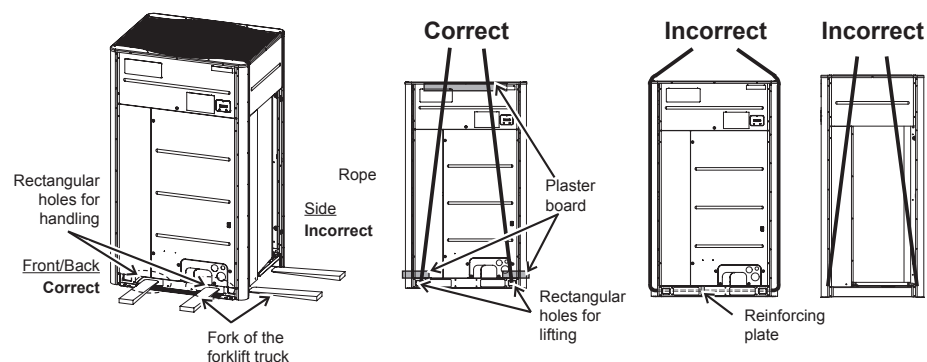
⚠ CAUTION

Handle the outdoor unit carefully, observing the following items.

- When using a forklift truck or other machinery for loading/unloading in transportation, insert the fork of the forklift truck 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.

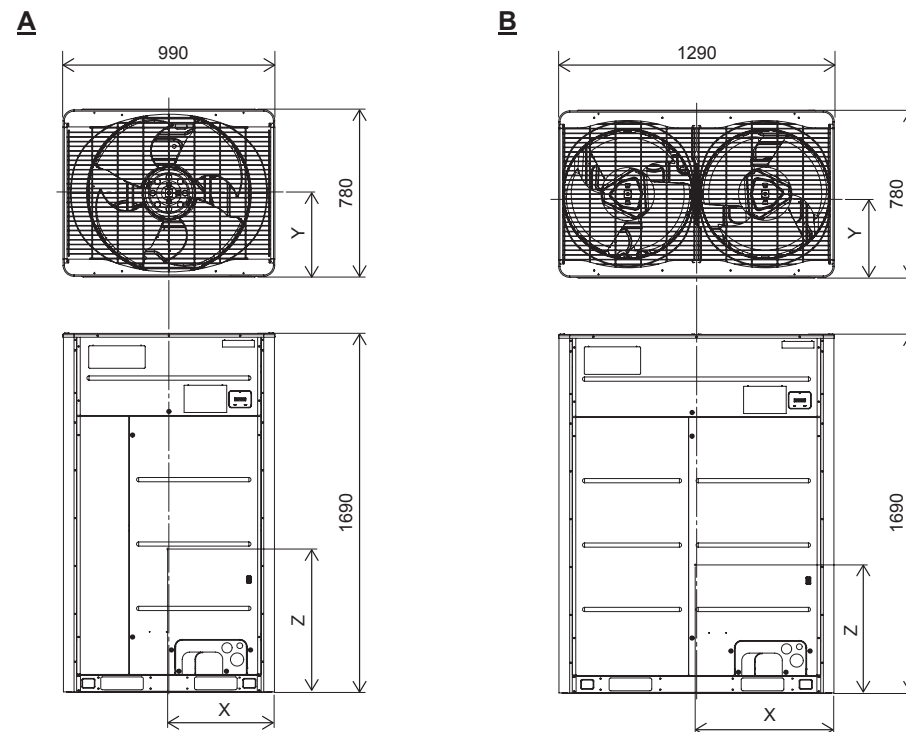
(Apply padding in positions where the rope comes into contact with the outdoor unit so that no damage is caused to the outer surface of the outdoor unit.)

(There are reinforcing plates on the side surfaces, so the rope cannot be passed through.)



■ Weight centre and weight

◆ Weight center of an outdoor unit



No.	Model	X (mm)	Y (mm)	Z (mm)	Mass (kg)
A	MMY-MUP0801 *	500	400	675	228
	MMY-MUP1001 *				
	MMY-MUP1201 *				
	MMY-MUP1401 *				
B	MMY-MUP1601 *	650	370	605	312
	MMY-MUP1801 *				334
	MMY-MUP2001 *	640	360	680	356
	MMY-MUP2201 *				356
	MMY-MUP2401 *				

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.

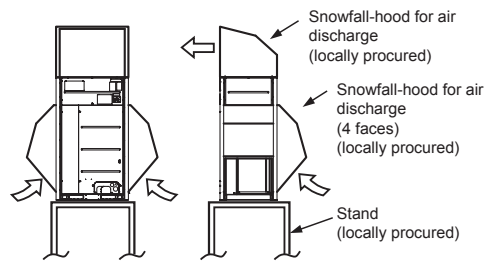
⚠ CAUTION

- 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.

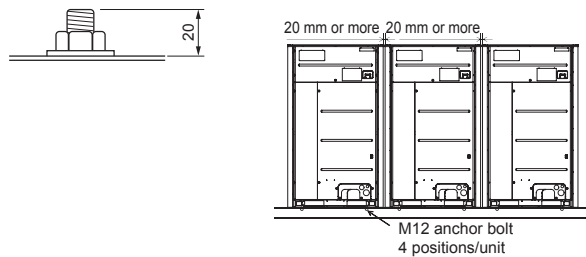
REQUIREMENT

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.

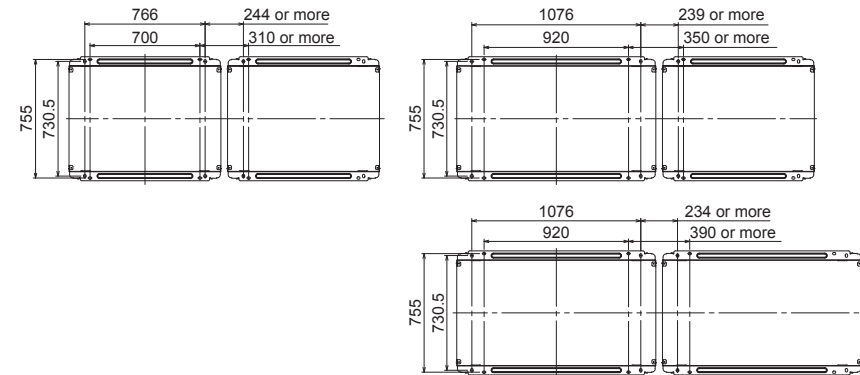


1. To install multiple outdoor units, arrange them with 20 mm or more spaces in between.
Fix each outdoor unit with M12 anchor bolts at 4 positions. 20 mm projection is appropriate for an anchor bolt.

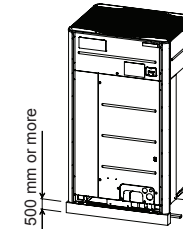


- Anchor bolt positions are as shown below:

(Unit : mm)

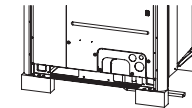


2. When drawing out the refrigerant pipe from the underside, set the height of the stand to 500 mm or more.

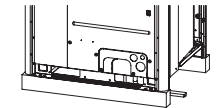


3. Do not use 4 stands on the corner to support the outdoor unit.

Incorrect

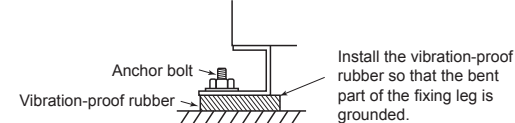


Correct

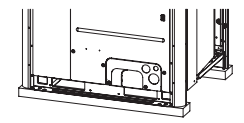


4. Mount the vibration-proof rubber (including vibration-proof blocks) so that it fits under the whole clamping leg.

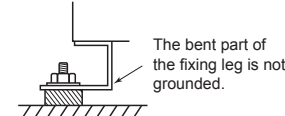
Correct



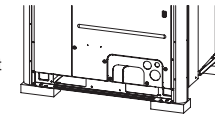
Correct



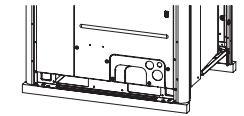
Incorrect



Incorrect



Incorrect



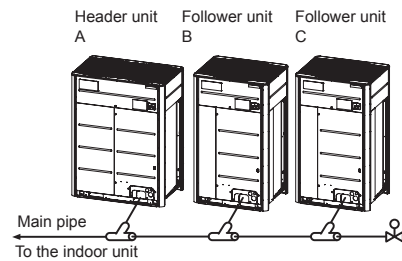
5. Be careful of the connecting arrangement of the header unit and follower units. Set the outdoor units in order of capacity from the one with the largest capacity. (A (Header unit) \geq B \geq C)

- 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 outdoor unit connection piping kit (RBM-BT14E / RBM-BT24E/ RBM-BT34E : 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

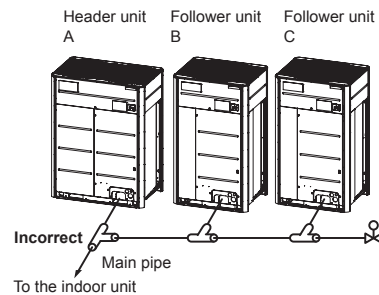
▼ Figure 1

Correct



▼ Figure 2

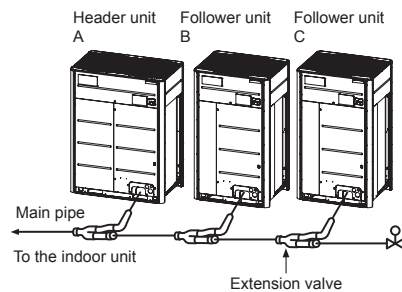
Incorrect



Gas piping

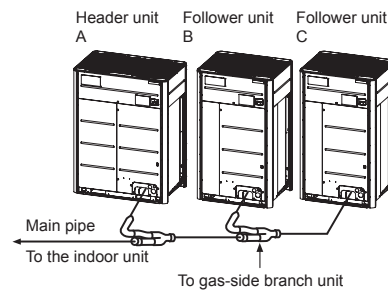
▼ Figure 3

Correct

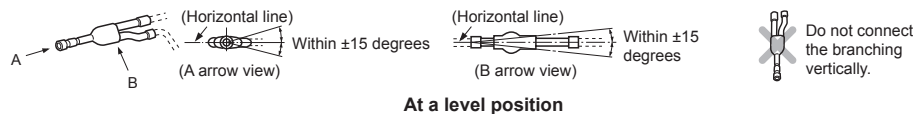


▼ Figure 4

Incorrect

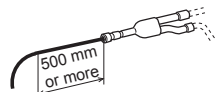


- When attaching a Y-shaped branching joint for the gas side, attach it level with the ground (Be sure not to exceed ± 15 degrees.). Regarding a T-shape branching joint for the liquid side, there is no restriction for its angle.



At a level position

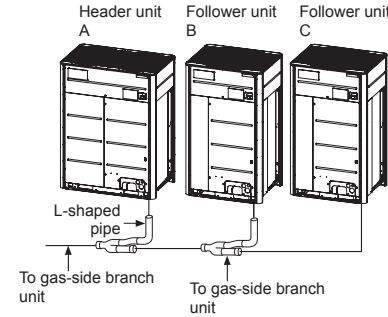
- In case of using the Y-shaped branching joint for connecting between outdoor units (Discharge gas joint and Suction gas joint), please keep the straight part of at least 500 mm at the inlet.



When drawing pipes downward

▼ Figure 5

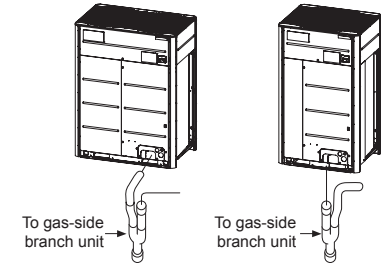
Correct



[Vertical connection of branch units]

▼ Figure 6

Incorrect



- 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.

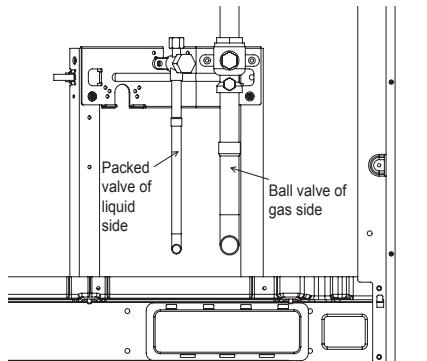
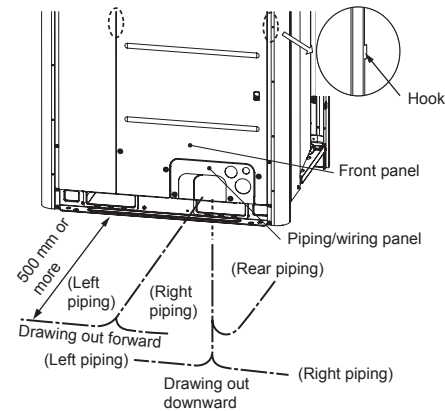
7 Refrigerant piping

⚠ 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: 8 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 500 mm 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, 500 mm 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.
- Do not apply any load to the pipes.

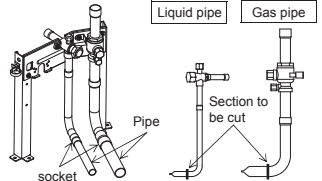
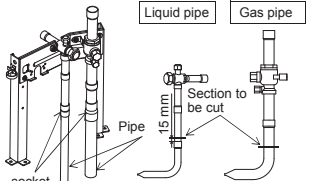
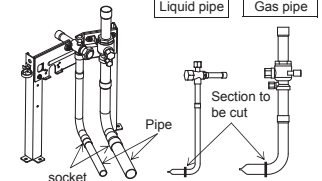
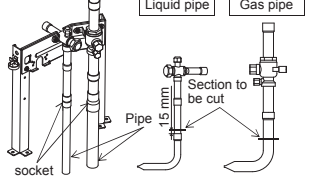


REQUIREMENT

- For a welding 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.

Pipe connection method of valve (Example)

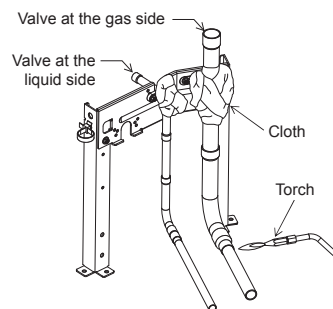
Type	Pipe diameter		Draw-out forward	Draw-out downward
	Liquid	Gas		
MUP080	12.7	19.1	Cut the L-shaped pipe at the horizontal straight section, then braze the socket and pipe procured locally. 	Cut the L-shape pipe at the vertical straight section, then braze the socket and pipe procured locally.
MUP100	12.7	22.2		
MUP120	12.7	28.6	Cut the L-shaped pipe at the horizontal straight section, then braze the socket and pipe procured locally. 	Cut the L-shape pipe at the vertical straight section, then braze the socket and pipe procured locally.
MUP140	15.9	28.6		
MUP160 MUP180 MUP200	15.9	28.6	Cut the L-shaped pipe at the horizontal straight section, then braze the socket and pipe procured locally. 	Cut the L-shape pipe at the vertical straight section, then braze the socket and pipe procured locally.

Type	Pipe diameter		Draw-out forward	Draw-out downward
	Liquid	Gas		
MUP220	19.1	28.6	<p>Cut the L-shaped pipe at the horizontal straight section, then braze the socket and pipe procured locally.</p> 	<p>Cut the L-shape pipe at the vertical straight section, then braze the socket and pipe procured locally.</p> 
MUP240	19.1	34.9	<p>Cut the L-shaped pipe at the horizontal straight section, then braze the socket and pipe procured locally.</p> 	<p>Cut the L-shape pipe at the vertical straight section, then braze the socket and pipe procured locally.</p> 

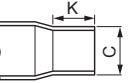
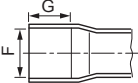
* For drawing out downward, cut the pipe at the position of 15 mm above the brazing part.

CAUTION

Wrap the valves at the gas and the liquid side in wet cloth to keep it cool and prevent the heat from the torch from damaging it when connecting the pipe to the valve on the gas and the liquid 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 (±0.03)	7	6	0.06 or less	0.50
9.52	9.52 (±0.03)	9.62 (±0.03)	8	7	0.08 or less	0.60
12.70	12.70 (±0.03)	12.81 (±0.03)	9	8	0.10 or less	0.70
15.88	15.88 (±0.03)	16.00 (±0.03)	9	8	0.13 or less	0.80
19.05	19.05 (±0.03)	19.19 (±0.03)	11	10	0.15 or less	0.80
22.22	22.22 (±0.03)	22.36 (±0.03)	11	10	0.16 or less	0.90
25.40	25.40 (±0.04)	25.56 (±0.04)	13	12	0.18 or less	0.95
28.58	28.58 (±0.04)	28.75 (±0.04)	13	12	0.20 or less	1.00
34.92	34.90 (±0.04)	35.11 (±0.04)	13	12	0.24 or less	1.20
38.10	38.10 (±0.05)	38.31 (±0.05)	15	14	0.27 or less	1.35
41.28	41.28 (±0.05)	41.50 (±0.05)	15	14	0.29 or less	1.45
44.45	44.45 (±0.05)	44.68 (±0.05)	17	14	0.31 or less	1.25
53.98	53.98 (±0.05)	54.22 (±0.05)	17	16	0.32 or less	1.50

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)
✓	✓	1/4"	6.35	0.80
✓	✓	3/8"	9.52	0.80
✓	✓	1/2"	12.70	0.80
✓	✓	5/8"	15.88	1.00
	✓	3/4"	19.05	1.00
	✓	7/8"	22.22	1.00
	✓	1"	25.40	1.00
	✓	1-1/8"	28.58	1.00
	✓	1-3/8"	34.92	1.20
	✓	1-5/8"	41.28	1.40
	✓	1-3/4"	44.45	1.40
	✓	2-1/4"	53.98	1.50

◆ 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 2-1, Table 2-2)

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 15 m or less: Up to 200% of the capacity code (Equivalent to HP) of the outdoor unit.
- When the height difference between the indoor units is over 15 m: Up to 105% of the capacity code.
- If MMU-UP *** H is include in the system, total indoor capacity code must be between 50% and 105% of outdoor unit capacity.
- If the system diversity is more than 135%, check the maximum number of indoor unit connections in table 2-1, 2-2, and then turn on DIP switch 3 of SW103 on the interface P.C. boards.

Table 1

Indoor unit capacity rank	Capacity code	
	Equivalent to HP	Equivalent to capacity
003	0.3	0.9
005	0.6	1.7
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	8.0
030	3.2	9.0
036	4	11.2
048	5	14.0
056	6	16.0
072	8	22.4
096	10	28.0

Table 2-1 [Diversity 135%]

Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units *	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
MUP0801*	8	22.4	18 (23)	30.2	135%
MUP1001*	10	28.0	22 (28)	37.8	135%
MUP1201*	12	33.5	27 (34)	45.2	135%
MUP1401*	14	40.0	31 (39)	54.0	135%
MUP1601*	16	45.0	36 (46)	60.7	135%
MUP1801*	18	50.4	40 (51)	68.0	135%
MUP2001*	20	56.0	45 (57)	75.6	135%
MUP2201*	22	61.5	49 (62)	83.0	135%
MUP2401*	24	67.0	54 (69)	90.4	135%
UP2611*	26	73.5	58 (74)	99.2	135%
UP2811*	28	80.0	63 (80)	108.0	135%
UP3011*	30	83.9	64 (81)	113.2	135%
UP3211*	32	89.5	65 (83)	120.8	135%
UP3411*	34	96.0	66 (84)	129.6	135%
UP3611*	36	100.5	67 (85)	135.6	135%
UP3811*	38	107.0	68 (87)	144.4	135%
UP4011*	40	112.0	69 (88)	151.2	135%
UP4211*	42	117.4	70 (89)	158.4	135%
UP4411*	44	123.0	71 (90)	166.0	135%
UP4611*	46	128.5	72 (92)	173.4	135%
UP4811*	48	134.0	73 (93)	180.9	135%
UP5011*	50	140.5	74 (94)	189.6	135%
UP5211*	52	147.0	75 (96)	198.4	135%
UP5411*	54	152.0	76 (97)	205.2	135%
UP5611*	56	156.5	77 (98)	211.2	135%
UP5811*	58	163.0	78 (99)	220.0	135%
UP6011*	60	167.5	79 (101)	226.1	135%
UP6211*	62	174.0	80	234.9	135%
UP6411*	64	179.0	81	241.6	135%
UP6611*	66	184.5	82	249.0	135%
UP6811*	68	190.0	83	256.5	135%
UP7011*	70	195.5	84	263.9	135%
UP7211*	72	201.0	85	271.3	135%
UP7411*	74	207.5	86	280.1	135%
UP7611*	76	214.0	87	288.9	135%
UP7811*	78	219.0	88	295.6	135%
UP8011*	80	223.5	90	301.7	135%
UP8211*	82	230.0	92	310.5	135%
UP8411*	84	234.5	94	316.5	135%
UP8611*	86	241.0	96	325.3	135%
UP8811*	88	246.0	98	332.1	135%
UP9011*	90	251.5	100	339.5	135%
UP9211*	92	257.0	102	346.9	135%
UP9411*	94	262.5	104	354.3	135%
UP9611*	96	268.0	106	361.8	135%
UP9811*	98	274.5	108	370.5	135%
UP10011*	100	281.0	110	379.3	135%

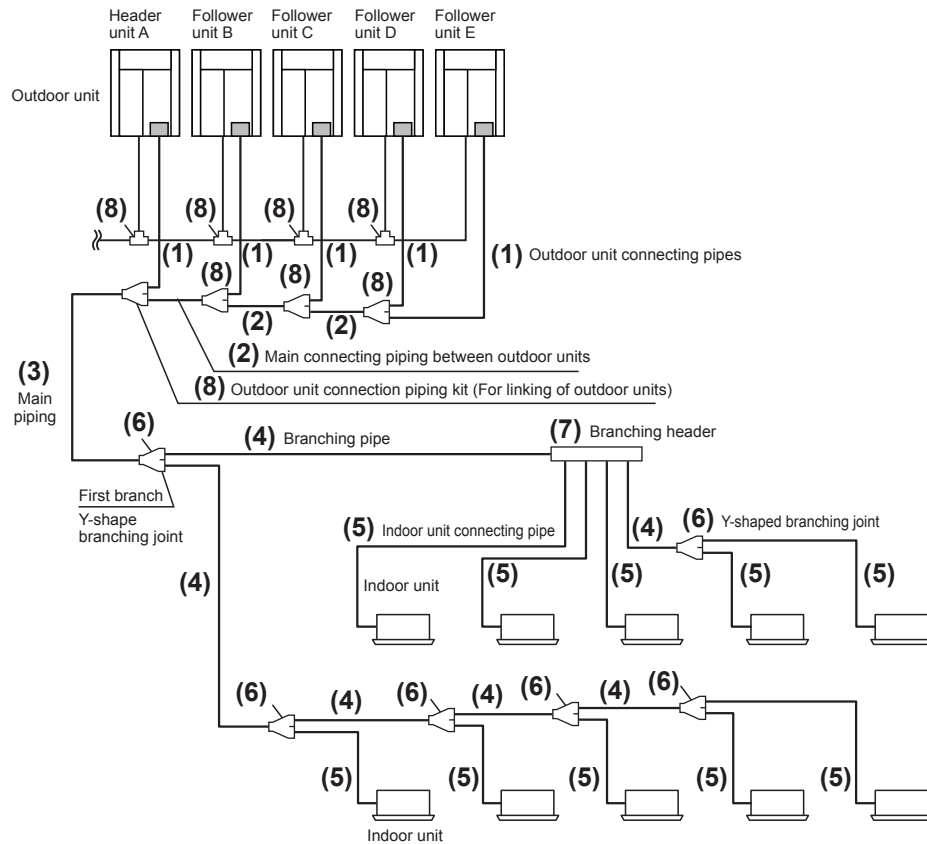
Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units ※	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
UP10211*	102	286.0	112	386.1	135%
UP10411*	104	290.5	114	392.1	135%
UP10611*	106	297.0	116	400.9	135%
UP10811*	108	301.5	118	407.0	135%
UP11011*	110	308.0	120	415.8	135%
UP11211*	112	313.0	122	422.5	135%
UP11411*	114	318.5	124	429.9	135%
UP11611*	116	324.0	126	437.4	135%
UP11811*	118	329.5	128	444.8	135%
UP12011*	120	335.0	128	452.2	135%

※ () = Maximum indoor units when 0.3HP indoor units only are connected
It is not possible to only connect 0.3HP indoor units when outdoor unit capacity is more than 62HP

Table 2-2 [Diversity 150-200%]

Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units ※	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
MUP0801*	8	22.4	12	44.8	200%
MUP1001*	10	28.0	15	56.0	200%
MUP1201*	12	33.5	18	67.0	200%
MUP1401*	14	40.0	21	80.0	200%
MUP1601*	16	45.0	24	90.0	200%
MUP1801*	18	50.4	27	100.8	200%
MUP2001*	20	56.0	30	112.0	200%
MUP2201*	22	61.5	33	123.0	200%
MUP2401*	24	67.0	36	134.0	200%
UP2611*	26	73.5	52	110.2	150%
UP2811*	28	80.0	57	120.0	150%
UP3011*	30	83.9	58	125.8	150%
UP3211*	32	89.5	59	134.2	150%
UP3411*	34	96.0	59	144.0	150%
UP3611*	36	100.5	60	150.7	150%
UP3811*	38	107.0	61	160.5	150%
UP4011*	40	112.0	62	168.0	150%
UP4211*	42	117.4	63	176.1	150%
UP4411*	44	123.0	64	184.5	150%
UP4611*	46	128.5	65	192.7	150%
UP4811*	48	134.0	66	201.0	150%
UP5011*	50	140.5	67	210.7	150%
UP5211*	52	147.0	68	220.5	150%
UP5411*	54	152.0	68	228.0	150%
UP5611*	56	156.5	69	234.7	150%
UP5811*	58	163.0	70	244.5	150%
UP6011*	60	167.5	71	251.2	150%
UP6211*	62	174.0	72	261.0	150%
UP6411*	64	179.0	73	268.5	150%
UP6611*	66	184.5	74	276.7	150%
UP6811*	68	190.0	75	285.0	150%

Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units ※	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
UP7011*	70	195.5	76	293.2	150%
UP7211*	72	201.0	77	301.5	150%
UP7411*	74	207.5	77	311.2	150%
UP7611*	76	214.0	78	321.0	150%
UP7811*	78	219.0	79	328.5	150%
UP8011*	80	223.5	81	335.2	150%
UP8211*	82	230.0	83	345.0	150%
UP8411*	84	234.5	85	351.7	150%
UP8611*	86	241.0	86	361.5	150%
UP8811*	88	246.0	88	369.0	150%
UP9011*	90	251.5	90	377.2	150%
UP9211*	92	257.0	92	385.5	150%
UP9411*	94	262.5	94	393.7	150%
UP9611*	96	268.0	95	402.0	150%
UP9811*	98	274.5	97	411.7	150%
UP10011*	100	281.0	99	421.5	150%
UP10211*	102	286.0	101	429.0	150%
UP10411*	104	290.5	103	435.7	150%
UP10611*	106	297.0	104	445.5	150%
UP10811*	108	301.5	106	452.2	150%
UP11011*	110	308.0	108	462.0	150%
UP11211*	112	313.0	110	469.5	150%
UP11411*	114	318.5	112	477.7	150%
UP11611*	116	324.0	113	486.0	150%
UP11811*	118	329.5	115	494.2	150%
UP12011*	120	335.0	115	502.5	150%



No.	Piping parts	Name	Selection of pipe size			Remarks		
(1)	Outdoor unit ↓ Outdoor unit connection piping kit	Outdoor unit connecting pipe	Connecting pipe size of outdoor unit			Same as connecting pipe size of the outdoor unit.		
			Type	Gas side	Liquid side			
			MMY-MUP080	19.1	12.7			
			MMY-MUP100	22.2	12.7			
			MMY-MUP120	28.6	12.7			
			MMY-MUP140	28.6	15.9			
			MMY-MUP160	28.6	15.9			
			MMY-MUP180	28.6	15.9			
			MMY-MUP200	28.6	15.9			
			MMY-MUP220	28.6	19.1			
MMY-MUP240	34.9	19.1						
(2)	Between Outdoor unit connection piping kit	Main connecting piping between outdoor units	Pipe size for connecting piping between outdoor units			Pipe size differs based on the total capacity code value of outdoor units.		
			Total capacity codes of the total outdoor units at the downstream side	Gas side	Liquid side			
			Equivalent to capacity (HP)					
			16 to 20	28.6	15.9			
			22	28.6	19.1			
			24	34.9	19.1			
			26 to 34	34.9	19.1			
			36 to 60	41.3	22.2			
			62 to 74	44.5	22.2			
			76 or more	54.0	22.2			
(3)	Outdoor unit connection piping kit of header unit ↓ First branching section Outdoor unit ↓ First branching section	Main piping	Size of main piping				Pipe size differs based on the total capacity code value of outdoor units. If the allowable length has the allowable value or less, the refrigerant saving pipe size can be selected.	
			Total capacity codes of all outdoor units	Gas side	Liquid side			
			Equivalent to capacity (HP)		Standard Pipe	Refrigerant saving pipe size		Allowable Length
			8	19.1	12.7	9.5		30 m
			10	22.2	12.7	9.5		30 m
			12	28.6	12.7	-		-
			14 to 18	28.6	15.9	12.7		50 m
			20	28.6	15.9	-		-
			22	28.6	19.1	15.9		80 m
			24 to 26	34.9	19.1	15.9		80 m
			28 to 34	34.9	19.1	-		-
			36 to 42	41.3 ³	22.2	19.1		80 m
			44 to 52	41.3 ³	22.2	19.1		50 m
			54	41.3	22.2	19.1		50 m
			56 to 60	41.3	22.2	-		-
			62 to 74	44.5	22.2	-		-
			76 to 92	54.0	22.2	-		-
			94 or more	54.0	22.2 ¹⁾²	-		-

*1 Maximum length for the main piping is 30 m.

*2 If the length for main piping is extended up to 70 m, change the liquid side piping size to Ø25.4 (one size up).

*3 It is possible to change pipe size from Ø41.8 to Ø38.1, if it is available at size.

No.	Piping parts	Name	Selection of pipe size	Remarks					
(4)	Branching section ↓ Branching section	Branching pipe	Pipe size between branching sections	Pipe size differs based on the total capacity code value of indoor units at the downstream side. If the total capacity code value of indoor units exceeds that of the outdoor units, apply the capacity code of the outdoor units.					
			Total capacity codes of indoor units at downstream side						
			Equivalent to capacity (HP)		Gas side	Liquid side			
			Below 2.4		12.7	9.5			
			2.4 to below 6.4		15.9	9.5			
			6.4 to below 12.2		22.2	12.7			
			12.2 to below 20.2		28.6	15.9			
			20.2 to below 22.4		28.6	19.1			
			22.4 to below 25.2		34.9	19.1			
			25.2 to below 35.2		34.9	19.1			
			35.2 to below 61.2		41.3	22.2			
			61.2 to below 75.2		44.5	22.2			
			75.2 or more		54.0	22.2 ^{*1}			
			*1 If the liquid side piping size of main piping is increased to Dia. 25.4 (one size up), the liquid side piping size also has to change to Dia. 25.4.						
			(5)		Branching section ↓ Indoor unit	Indoor unit connecting pipe	Connecting pipe size of indoor unit		
Capacity rank		Gas side		Liquid side					
003 to 012 type	15 m or less real length	9.5		6.4					
	Real length exceeds 15 m	12.7		6.4					
014 to 018 type		12.7		6.4					
020 to 056 type		15.9		9.5					
072 to 096 type		22.2		12.7					
112 type		28.6		12.7					
128 type		28.6		15.9					
(6)	Branching section	Y-shaped branching joint		Selection of branching section (Y-shaped branching joint)					
							Total capacity code of indoor		Model name
							Equivalent to capacity (HP)		
			Y-shape branching joint	Below 6.4	RBM-BY55E				
				6.4 to below 14.2	RBM-BY105E				
				14.2 to below 25.2	RBM-BY205E				
				25.2 to below 61.2	RBM-BY305E				
				61.2 or more	RBM-BY405E				

No.	Piping parts	Name	Selection of pipe size	Remarks
(7)	Branching section	Branching header	Selection of branching section (Branching header)	*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).
			Total capacity code of indoor units	
			Equivalent to capacity (HP)	
			Model name	
			*2	
			Branching header	
			For 4 branches	
			Below 14.2	
			14.2 to below 25.2	
			RBM-HY1043E	
			For 8 branches	
			Below 14.2	
			14.2 to below 25.2	
			61.2 or more	
			RBM-HY1083E	
			RBM-HY2083E	
(8)	Branching section	Outdoor unit connection piping kit (For linking of outdoor units)	Outdoor unit connection piping kit (For linking of outdoor units)	*3: Upstream side when regarding the main piping as the start point
			Total capacity code of outdoor units^{*3}	
			Equivalent to capacity (HP)	
			Model name	
			Outdoor unit connection piping kit (For linking of outdoor units)	
			Below 26	
			RBM-BT14E	
			26 to below 62	
			RBM-BT24E	
			62 or more	
			RBM-BT34E	

■ Airtightness test

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

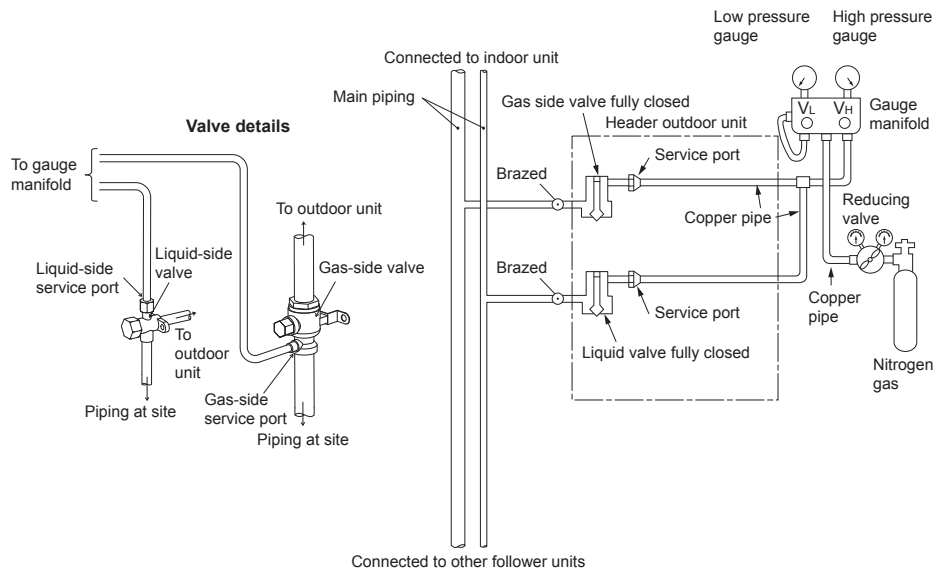
For an airtight test, connect a nitrogen gas canister as shown in the figure on this page and apply pressure.

- Be sure to apply pressure from the service ports of the packed valves (or ball valves) at the liquid side and gas side.
- An airtight test can only be performed at the service ports at the liquid side and gas side on header unit.
- Close the valves fully at the gas side and liquid 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 before applying pressure.
- For each refrigerant line, apply pressure gradually in steps at the liquid side and gas side.

Be sure to apply pressure at the gas side and liquid side.

⚠ WARNING

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



Able to detect a serious leakage

1. Apply pressure 0.3 MPa (3.0 kg/cm²G) for 5 minutes or more.
2. Apply pressure 1.5 MPa (15 kg/cm²G) for 5 minutes or more.

Available to detect slow leakage

3. Apply pressure 4.15 MPa (42.3 kg/cm²G) 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 0.01 MPa (0.1 kg/cm²G) per 1°C. Consider the pressure change when checking the test result.

REQUIREMENT

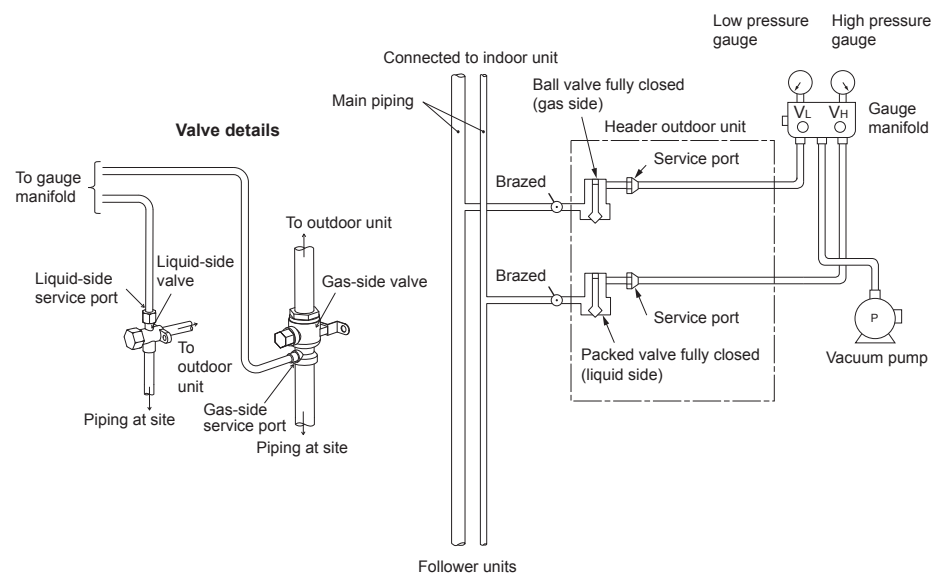
When pressure decrease is detected in steps 1-3, check the leakage at the connecting points.

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 and gas side and connect a vacuum pump as shown in the figure below. Be sure to perform vacuuming for the liquid and gas pipe sides.



- Use a vacuum pump with a high vacuuming degree [-100.7 kPa (5 Torr, -755 mmHg)] and large exhaust gas amount (40 L/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 -100.7 kPa or less, continue vacuuming for 1 hour or more. If the pressure does not reach -100.7 kPa after 3 hours of vacuuming, stop vacuuming and check for air leakage.
- If the pressure reaches -100.7 kPa 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 0.05 MPa 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.

Outdoor unit type	MUP0801	MUP1001	MUP1201	MUP1401	MUP1601	MUP1801	MUP2001	MUP2201	MUP2401
Charging amount (kg)	6.0				9.0				

Additional refrigerant charge amount at site = [1] + [2] + [3] + [4]

- [1] Compensation by system HP (Table 1)*
 - [2] Real Length of liquid pipe X additional refrigerant charge amount per 1 m liquid pipe (Table 2)
 - [3] Corrective amount of refrigerant depending on the Indoor units (Table 3-1, 3-2 and 3-3)
 - [4] Corrective amount of refrigerant depending on the outdoor unit diversity (Connected ratio of indoor units to outdoor units). (Table 4)
- *If combination of the outdoor units is not same as listed at Table 1, calculate the correction amount refrigerant of the combination outdoor units refers to the each outdoor unit's additional refrigerant

Table 1
Standard

System HP	Combination HP					Compensation by System HP (kg)
8	8	-	-	-	-	1.5
10	10	-	-	-	-	1.7
12	12	-	-	-	-	2.3
14	14	-	-	-	-	2.3
16	16	-	-	-	-	1.0
18	18	-	-	-	-	2.0
20	20	-	-	-	-	4.0
22	22	-	-	-	-	5.0
24	24	-	-	-	-	5.5
26	14	12	-	-	-	4.6
28	14	14	-	-	-	4.6
30	18	12	-	-	-	4.3
32	20	12	-	-	-	6.3
34	20	14	-	-	-	6.3
36	24	12	-	-	-	7.8
38	24	14	-	-	-	7.8
40	20	20	-	-	-	8.0
42	24	18	-	-	-	7.5
44	24	20	-	-	-	9.5
46	24	22	-	-	-	10.5
48	24	24	-	-	-	11.0

System HP	Combination HP					Compensation by System HP (kg)
50	24	14	12	-	-	10.1
52	24	14	14	-	-	10.1
54	20	20	14	-	-	10.3
56	24	20	12	-	-	11.8
58	24	20	14	-	-	11.8
60	24	24	12	-	-	13.3
62	24	24	14	-	-	13.3
64	24	20	20	-	-	13.5
66	24	22	20	-	-	14.5
68	24	24	20	-	-	15.0
70	24	24	22	-	-	16.0
72	24	24	24	-	-	16.5
74	24	24	14	12	-	15.6
76	24	24	14	14	-	15.6
78	24	20	20	14	-	15.8
80	24	24	20	12	-	17.3
82	24	24	20	14	-	17.3
84	24	24	24	12	-	18.8
86	24	24	24	14	-	18.8
88	24	24	20	20	-	19.0
90	24	24	22	20	-	20.0
92	24	24	24	20	-	20.5
94	24	24	24	22	-	21.5
96	24	24	24	24	-	22.0
98	24	24	24	14	12	21.1
100	24	24	24	14	14	21.1
102	24	24	20	20	14	21.3
104	24	24	24	20	12	22.8
106	24	24	24	20	14	22.8
108	24	24	24	24	12	24.3
110	24	24	24	24	14	24.3
112	24	24	24	20	20	24.5
114	24	24	24	22	20	25.5
116	24	24	24	24	20	26.0
118	24	24	24	24	22	27.0
120	24	24	24	24	24	27.5

Table 2

Liquid pipe dia. (mm)	6.4	9.5	12.7	15.9	19.1	22.2	25.4
Additional refrigerant amount per 1 m liquid pipe (kg/m)	0.025	0.055	0.105	0.160	0.250	0.350	0.470

Table 3-1

Corrective amount of refrigerant varies according to indoor unit capacity rank.

Indoor unit Capacity rank	003	005	007	008	009	010	012	014	015	018	020	024	027	030	036	048	056	072	096
Capacity code (Equivalent to HP)	0.3	0.6	0.8	0.9	1	1.1	1.25	1.5	1.7	2	2.25	2.5	3	3.2	4	5	6	8	10
Corrective amount of refrigerant (kg)	0.2								0.4				0.6				1.0		

- If the Fresh Air Intake Indoor Unit (MMD-UP **** HFP *) is connected, the correction amount refrigerant for Fresh Air Intake Indoor Unit is 0 Kg.

Table 3-2

Corrective amount of refrigerant varies for DX Coil Interface

Capacity code (Equivalent to HP)	8	10	16	18	20	32	36	40	48	54	60
Corrective amount of refrigerant (kg)	1.4	1.8	2.9	3.2	3.6	5.8	6.5	7.2	8.6	9.7	10.8

Table 3-3

Corrective amount of refrigerant varies for Hot Water Module

Indoor unit Capacity rank	024	048
Capacity code (Equivalent to HP)	2.5	5
Corrective amount of refrigerant (kg)	0.2	

Table 3-4

Corrective amount of refrigerant varies for (MMU-UP *** H-E) High Efficiency 4 way cassette

Indoor unit capacity rank	009	012	015	018	024	027	030	036	048	056
Capacity code (Equivalent to HP)	1	1.25	1.7	2	2.5	3	3.2	4	5	6
Corrective amount of refrigerant (kg)	0.2			0.6						

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.

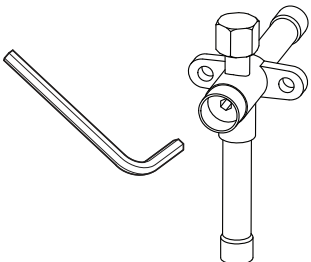
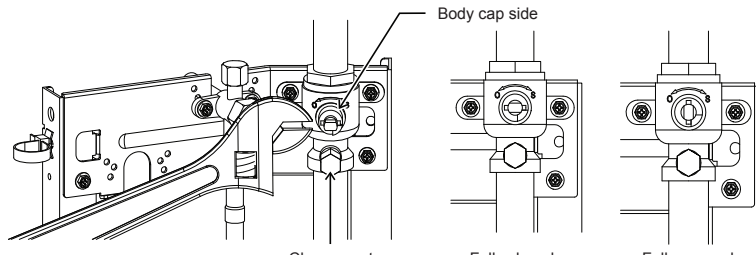
Table 4

Corrective amount of refrigerant varies according to the outdoor unit diversity

Diversity D (%)	Corrective amount of refrigerant (kg)
50% ≤ D < 60%	-2.5
60% ≤ D < 70%	-2.0
70% ≤ D < 80%	-1.5
80% ≤ D < 90%	-1.0
90% ≤ D < 95%	-0.5
95% ≤ D	0

■ Full opening of the valve

Open the valves of the outdoor unit fully.

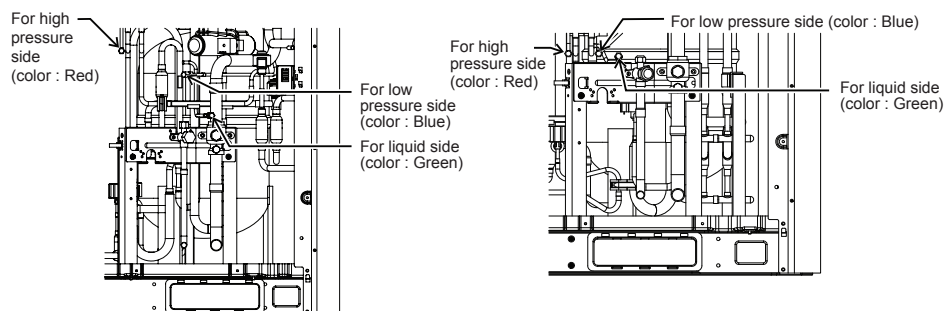
Liquid side	<p>Packed valve Using a 5 mm-hexagonal wrench, turn the valve shaft counterclockwise fully to open it.</p> 
Gas side	<p>Ball valve Using a wrench, turn it counterclockwise by 90° until it hits the stopper. (Full open) For the ball valve with the stopper, release the stopper to opened or closed the ball valve. When finished working, to set the stopper. Pay attention so that the wrench does not come into contact with the charge port when the body cap is opened or closed.</p>  <p>Charge port Body cap side Fully closed Fully opened</p>

■ Position of the Check-joint

The figure below shows the position of the check-joint.

MMY-MUP0801, 1001, 1201, 1401HT8

MMY-MUP1601, 1801, 2001, 2201, 2401HT8



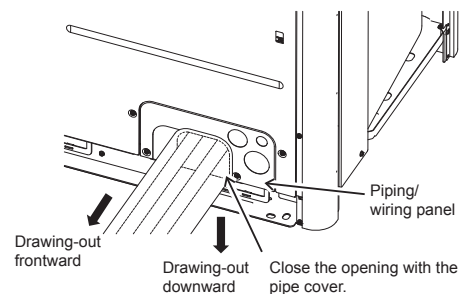
■ Heat insulation for pipe

- 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.

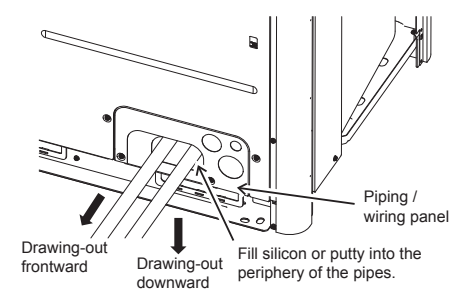
■ Finishing after connecting pipes

- 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, also close the openings of the base 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
15.9 - 19.1	2 m
22.2 - 54.0	3 m

8 Electric wiring

⚠ WARNING

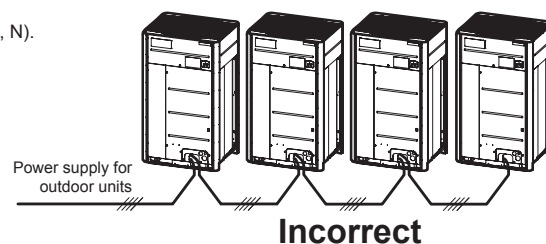
The appliance shall be installed in accordance with national wiring regulations.
Capacity shortages of the power circuit or an incomplete installation may cause an electric shock or fire.

⚠ 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 (Uv (U1, U2), Uh (U3, U4), Uc (U5, U6)); 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.
- Process both electric wiring and refrigerant piping into the same system.
- Do not conduct power to indoor units until vacuuming of the refrigerant pipes has finished.
- For the power supply wiring of indoor units, follow the instructions in the Installation Manual of each indoor unit.

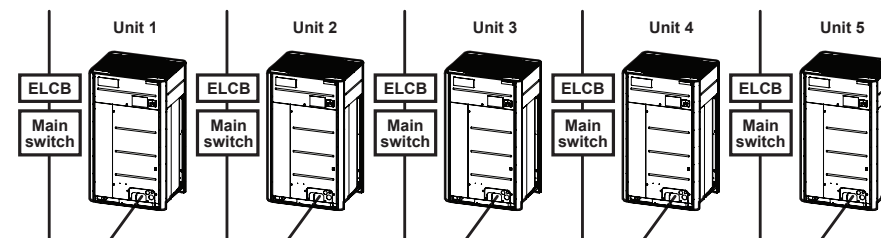
■ Power supply specifications

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



◆ Power wiring selection

1 Single unit



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

Model name	Phase supply	MCA	MOCP
MMY-MUP0801 *	3N~ 50Hz 380-400-415V	17	20
MMY-MUP1001 *		23	32
MMY-MUP1201 *		27	32
MMY-MUP1401 *		31	40
MMY-MUP1601 *		34	40
MMY-MUP1801 *		38	50
MMY-MUP2001 *		40	50
MMY-MUP2201 *		57	63
MMY-MUP2401 *		60	80

2 Combination of outdoor unit

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

Model name	Phase supply	Unit 1			Unit 2			Unit 3			Unit 4			Unit 5		
			MCA	MOCP		MCA	MOCP		MCA	MOCP		MCA	MOCP		MCA	MOCP
MMY-UP2611 *		MMY-MUP1401 *	31	40	MMY-MUP1201 *	27	32	–	–	–	–	–	–	–	–	–
MMY-UP2811 *		MMY-MUP1401 *	31	40	MMY-MUP1401 *	31	40	–	–	–	–	–	–	–	–	–
MMY-UP3011 *		MMY-MUP1801 *	38	50	MMY-MUP1201 *	27	32	–	–	–	–	–	–	–	–	–
MMY-UP3211 *		MMY-MUP2001 *	40	50	MMY-MUP1201 *	27	32	–	–	–	–	–	–	–	–	–
MMY-UP3411 *		MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40	–	–	–	–	–	–	–	–	–
MMY-UP3611 *		MMY-MUP2401 *	60	80	MMY-MUP1201 *	27	32	–	–	–	–	–	–	–	–	–
MMY-UP3811 *		MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	–	–	–	–	–	–	–	–	–
MMY-UP4011 *		MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	–	–	–	–	–	–	–	–	–
MMY-UP4211 *		MMY-MUP2401 *	60	80	MMY-MUP1801 *	38	50	–	–	–	–	–	–	–	–	–
MMY-UP4411 *		MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	–	–	–	–	–	–	–	–	–
MMY-UP4611 *		MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	–	–	–	–	–	–	–	–	–
MMY-UP4811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	–	–	–	–	–	–	–	–	–
MMY-UP5011 *		MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1201 *	27	32	–	–	–	–	–	–
MMY-UP5211 *		MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1401 *	31	40	–	–	–	–	–	–
MMY-UP5411 *		MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40	–	–	–	–	–	–
MMY-UP5611 *		MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1201 *	27	32	–	–	–	–	–	–
MMY-UP5811 *		MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40	–	–	–	–	–	–
MMY-UP6011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1201 *	27	32	–	–	–	–	–	–
MMY-UP6211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	–	–	–	–	–	–
MMY-UP6411 *		MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	–	–	–	–	–	–
MMY-UP6611 *		MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	MMY-MUP2001 *	40	50	–	–	–	–	–	–
MMY-UP6811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	–	–	–	–	–	–
MMY-UP7011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	–	–	–	–	–	–
MMY-UP7211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	–	–	–	–	–	–
MMY-UP7411 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1201 *	27	32	–	–	–
MMY-UP7611 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1401 *	31	40	–	–	–
MMY-UP7811 *		MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40	–	–	–
MMY-UP8011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1201 *	27	32	–	–	–
MMY-UP8211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40	–	–	–
MMY-UP8411 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1201 *	27	32	–	–	–
MMY-UP8611 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	–	–	–
MMY-UP8811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	–	–	–
MMY-UP9011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	MMY-MUP2001 *	40	50	–	–	–
MMY-UP9211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	–	–	–
MMY-UP9411 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	–	–	–
MMY-UP9611 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	–	–	–
MMY-UP9811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1201 *	27	32
MMY-UP10011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40	MMY-MUP1401 *	31	40
MMY-UP10211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40
MMY-UP10411 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1201 *	27	32
MMY-UP10611 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP1401 *	31	40
MMY-UP10811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1201 *	27	32
MMY-UP11011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP1401 *	31	40
MMY-UP11211 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50	MMY-MUP2001 *	40	50
MMY-UP11411 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63	MMY-MUP2001 *	40	50
MMY-UP11611 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2001 *	40	50
MMY-UP11811 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2201 *	57	63
MMY-UP12011 *		MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80	MMY-MUP2401 *	60	80

■ Communication line

TU2C-Link models (U series) can be combined with TCC-Link models (other than U series).
For details of communication type, refer to the following table.

Communication type and model names

Communication type	TU2C-Link (U series and future models)	TCC-Link (Other than U series)
Outdoor unit	MMY-MUP *** ↑ This letter indicates U series model.	Other than U series MMY-MAP *** MCY-MAP ***
Indoor unit	MM * -UP *** ↑ This letter indicates U series model.	Other than U series MM * -AP ***
Wired remote controller	RBC-A ** U*** ↑ This letter indicates U series model.	Other than U series
Wireless remote controller kit & receiver unit	RBC-AXU*** ↑ This letter indicates U series model.	Other than U series

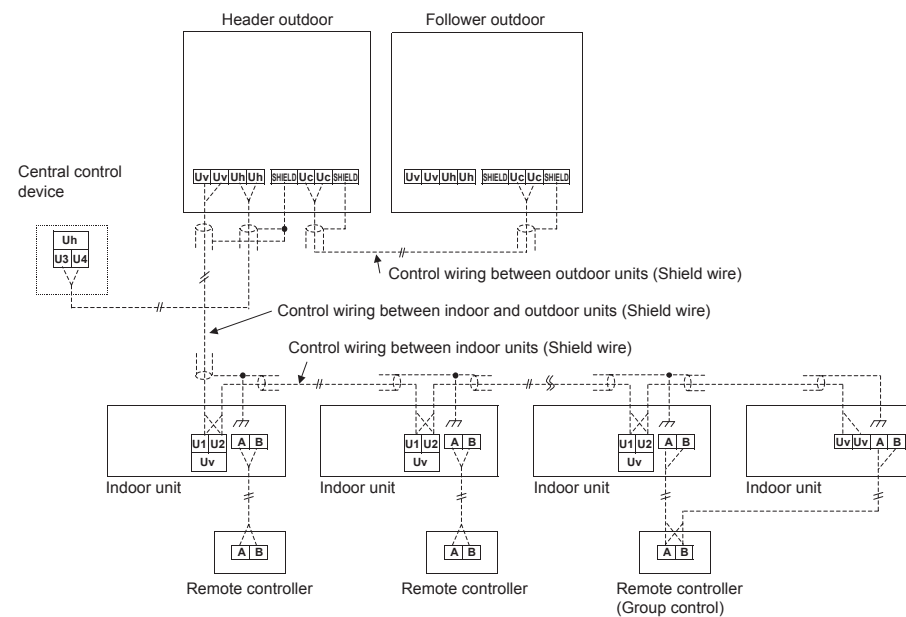
U series outdoor unit: SMMS-u (MMY-MUP ***)

Other than U series outdoor unit: SMMS-i, SMMS-e etc. (MMY-MAP***)

■ 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, ends of the communication wire must be grounded.
- Use 2-core non-polarity wire for remote control. (A, B terminals)
Use 2-core non-polarity wire for wiring of group control. (A, B terminals)

Table-1 Uv line and Uc line

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.0 to 1.5 mm ² : Up to 1000 m

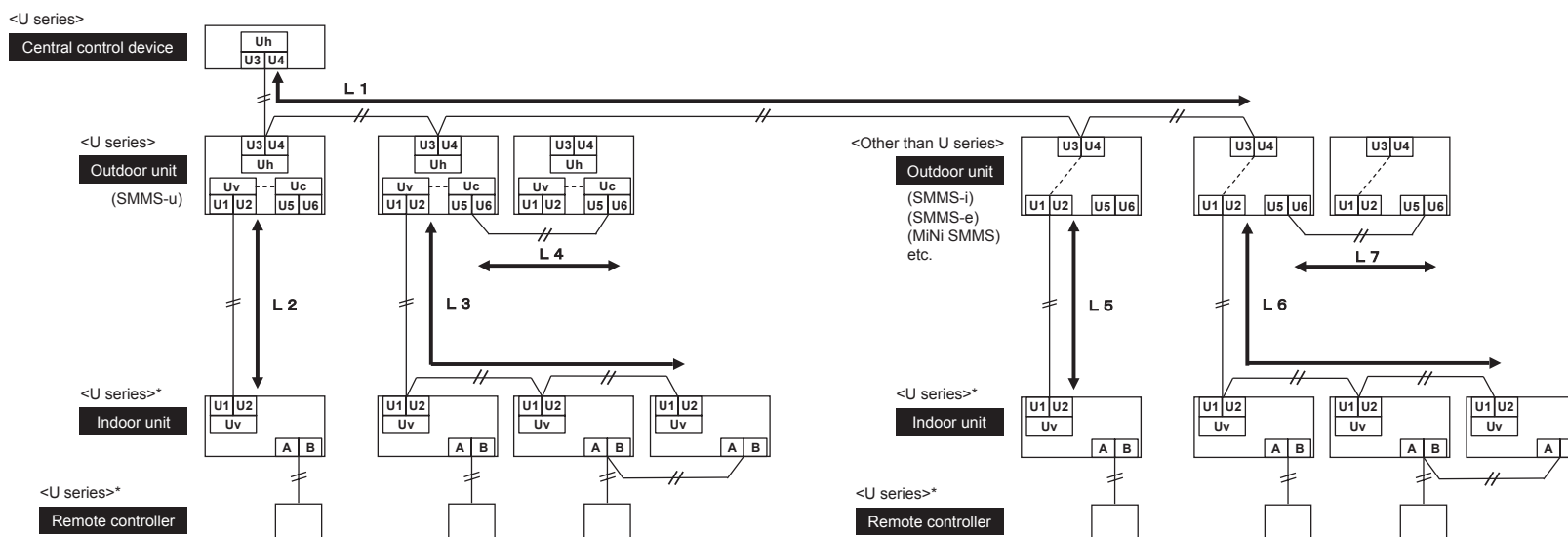
Table-2 Uh line

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.0 to 1.5 mm ² : Up to 1000 m 2.0 mm ² : Up to 2000 m

Table-3 Remote controller wiring

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

- U (v, h, c) line means of control wiring.
Uv line: Between indoor and outdoor units.
Uh line: Central control line.
Uc line: Between outdoor and outdoor units.



* Even if the indoor units, the remote controllers, and the central control device are models other than U series, their system diagrams for the wiring specifications are the same as the system diagram above.

REQUIREMENT

- For the central control line (L1) when U-series outdoor units and outdoor units other than U-series are connected to the central control device, follow the communication wiring specifications for outdoor unit other than U-series.
- Using the same wire type and size, wire each line below.
If the different wire types and sizes are mixed in each line, communication trouble is caused.
 - Central control line and wiring between indoors and outdoor units other than U-series
 - Uv line (wiring between indoor and outdoor units) and Uc line (wiring between outdoor and outdoor units) in U-series
 - Wiring between outdoor and outdoor units other than U-series
- For communication wiring specifications for outdoor unit other than U-series, refer to the Installation Manual attached to the outdoor unit to be connected.

[Uh-line and line / wiring between outdoor and outdoor units other than U series]
UP to 2000 m (**L1 + L5 + L6**)

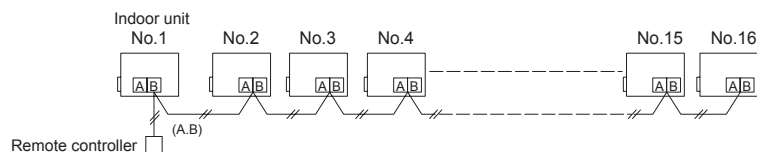
[Uv line and Uc line in U series]
Up to 1000 m (**L2**)
Up to 1000 m (**L3 + L4**)

[Between outdoor and outdoor units other than U series]
UP to 100 m (**L7**)

◆ Group control through a remote controller

If U series models (TU2C-Link) are combined with models other than U series (TCC-Link), the wiring specifications and maximum number of connectable indoor units will be changed.

Group control of multiple indoor units (16 units) through a single remote controller switch



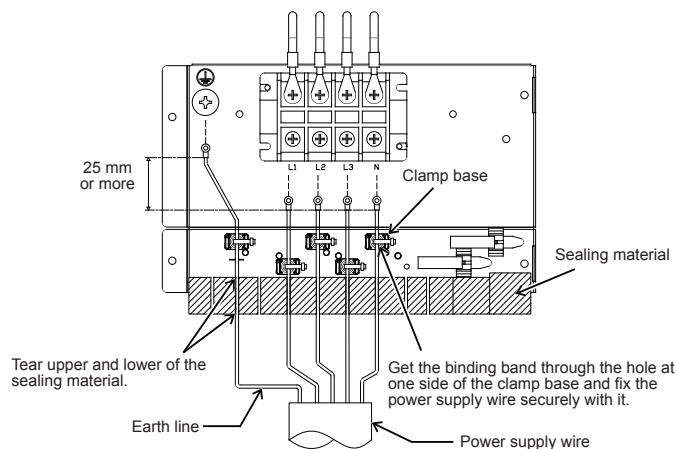
Max. number of connectable indoor units, and communication type

	Unit type							
	U series	U series	U series	U series	*	*	*	*
Outdoor unit	U series	U series	*	*	U series	U series	*	*
Indoor unit	U series	U series	*	*	U series	U series	*	*
Remote controller	U series	*	U series	*	U series	*	U series	*
Communication type	TU2C-Link	TCC-Link						
Max. number of connectable units	16	8						

* : Other than U series

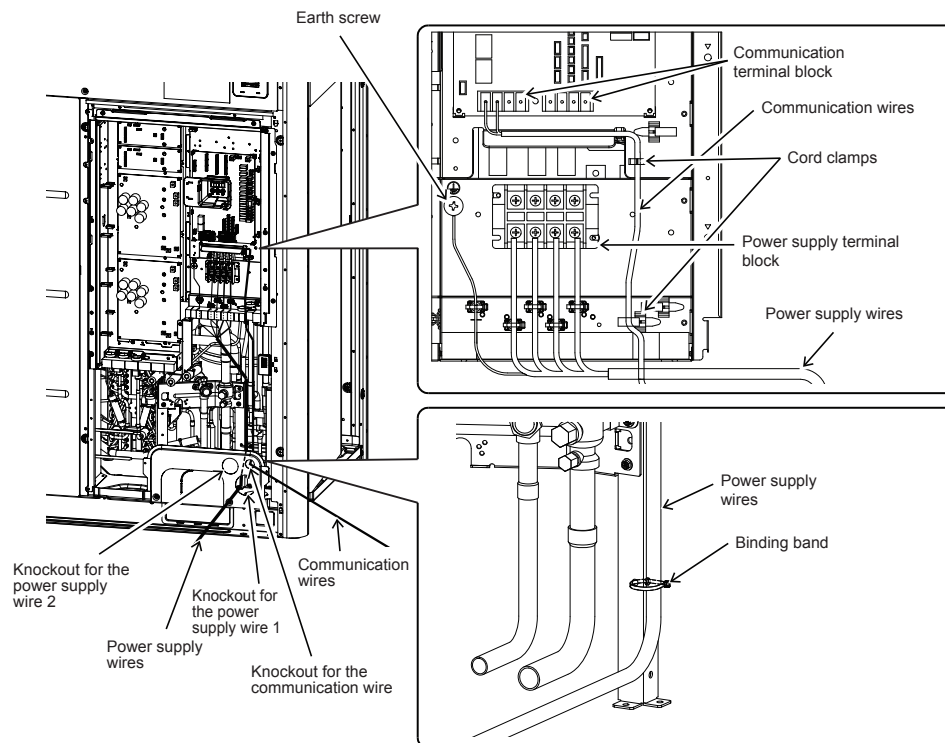
◆ Power supply wire connection

1. Insert the power supply wires from lower right of the electrical control box and connect them to the power terminal blocks and the earth line to the earth screw, and then fix each of the five wires with each cord clamp and binding band.
2. When finished wiring the power supply wires, get each of five wires through the cutout on the sealing material (black) under the cord clamp to pull it outside the electrical control box. Tear upper and lower of the cutout on the sealing material with your hands before getting the wires through the cutout.
3. Get the binding band through two holes in the right part of the valve fixing plate and fix the power supply wires with it.



■ Connection of power supply 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

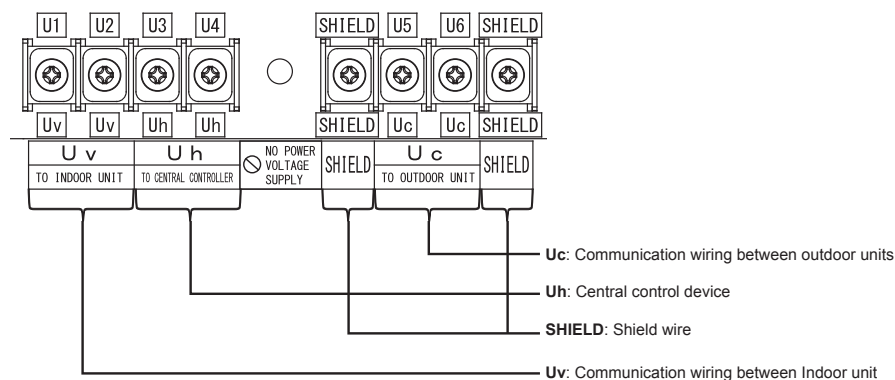
Be sure to separate the power supply wire and communication wires.

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

1. Insert the communication wires from lower right of the electrical control box and connect them to the communication terminal blocks.
2. Fix the communication wires with the cord clamp on the right of the terminal block and fix them with the cord clamp on the sealing material under the electrical control box, and then get the wires through the cutout on the sealing material to pull them outside the electrical control box. Tear upper and lower of the cutout on the sealing material with your hands before getting the wires through the cutout.



Screw size and tightening torque

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

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.

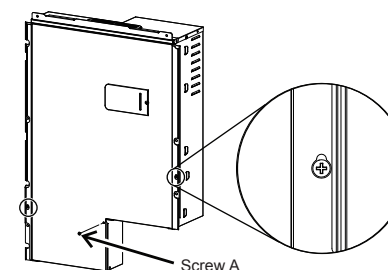
⚠ CAUTION

- 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.

Before setting the address, set the DIP-SW on the header outdoor unit interface P.C. board.

1. Follow the steps below to open the electrical control box cover

- (1). Loosen the screws on the left and right side of the electrical control box cover.
- (2). Remove the screw A for MMY-MUP220 and MUP240.
(There is no screw A for MMY-MUP080, MUP100, MUP120, MUP140, MUP160, MUP180 and MUP200)



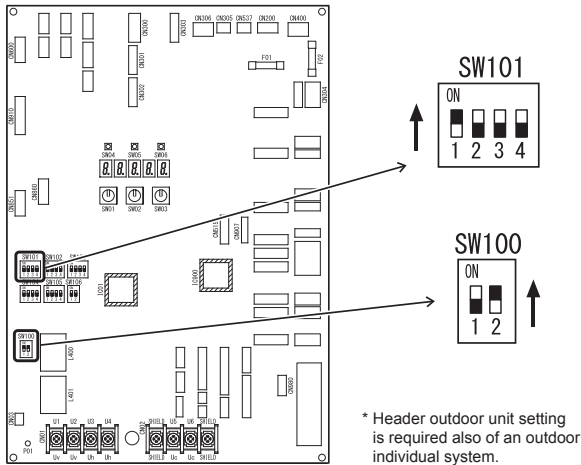
- (3). Hold the lower side of the electrical control box cover to draw it toward you while lifting it up, and remove the electrical control box cover.

2. Follow the steps below to set the DIP switch on the header outdoor unit interface P.C. board.

2-1.Header outdoor unit setting

Turn on DIP switch 1 of SW101 on the header outdoor unit interface P.C. boards.
And, turn on DIP switch 2 of SW100.

Interface P.C. board on the header outdoor unit



2-2.Line (system) address setting

For the central control among two or more refrigerant lines or group control among two or more refrigerant lines, set the line (system) address.

(Example)	Controlling a single refrigerant line centrally	Controlling 2 or more refrigerant lines centrally
System wiring diagram		
Line (system) address setting	No	Set the address

(Example)	Controlling 2 or more refrigerant lines as a group (*)
System wiring diagram	
Line (system) address setting	Set the address

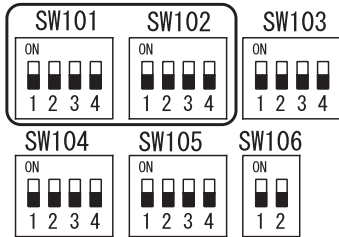
* Only if each refrigerant line has the same communication type (either TU2C-Link or TCC-Link), the group control among multiple refrigerant lines is available. If one refrigerant line has TU2C-Link and another refrigerant line has TCC-Link in the system, the group control among multiple refrigerant lines is unavailable.

- (1) Set a line (system) address for each system using SW101 and 102 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



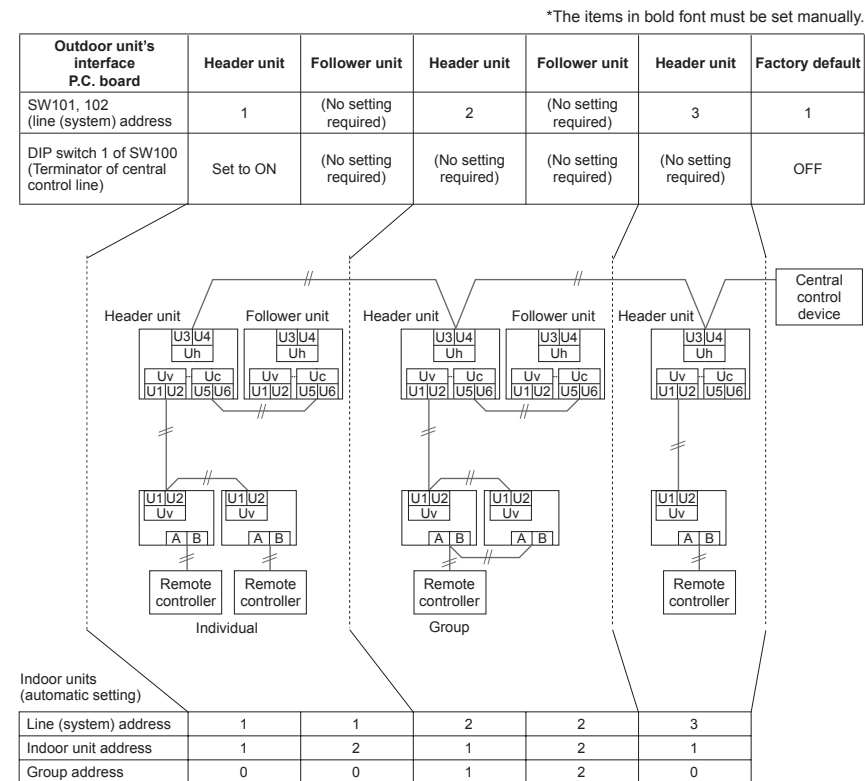
Switch settings for a line (system) address on the interface P.C. board on the outdoor unit
(○: switch ON, ×: switch OFF)

Line (system) address	SW101				SW102			
	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	-	-	-	○	○	×	×	×
26	-	-	-	○	○	×	×	○
27	-	-	-	○	○	×	○	×
28	-	-	-	○	○	×	○	○

(2) Turn on DIP switch 1 of SW100 on the header outdoor unit interface P.C. board of the lowest system address number.

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

Outdoor units (setting manually)

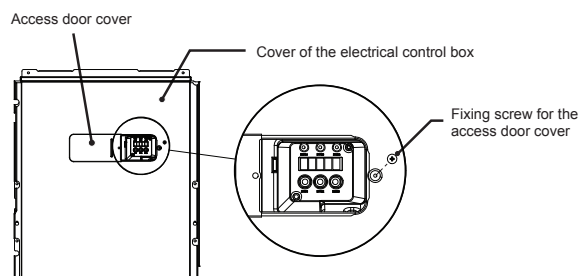


3. Attach the electrical control box cover.

4. Open the access door cover and follow the steps below to set the address.

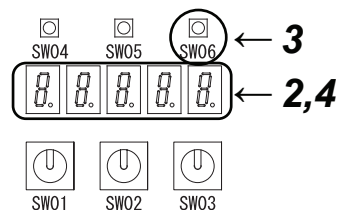
REQUIREMENT

- High voltage parts exist in the electrical control box.
If you set addresses on an outdoor unit, operate the unit through the access door as shown in the illustration below 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.



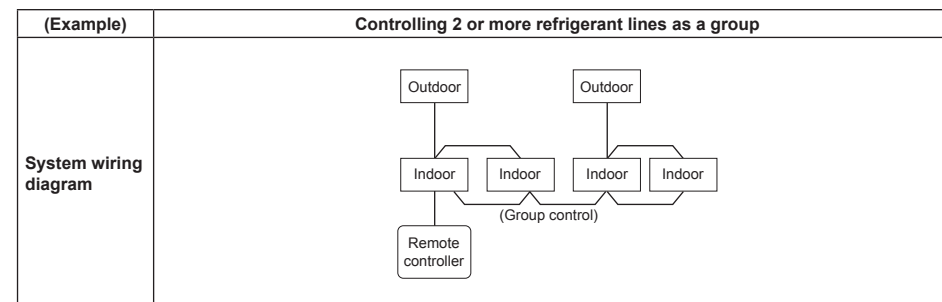
- Turn on indoor units first, and then turn on outdoor units.
- About 1 minute after turning the power on, confirm that the 7-segment display on the interface P.C. board of the header outdoor unit indicates **U. 1. Err (U. 1. flash)** and **L08** alternately at 1 second intervals.
- Press **SW06** to start the automatic address setting.
(It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)
- The 7-segment display indicates **Auto 1 → Auto 2 → Auto 3**.
The setting is complete when the display changes to **U. 1. --- (U. 1. flash)** or **U. 1. --- (U. 1. light)**.
- Repeat steps 2 to 4 for other refrigerant lines.
- Set the central control address.
(For the setting of the central control address, refer to the installation manuals of the central control devices.)

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.

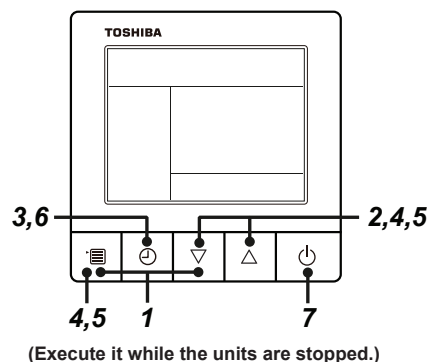


■ Changing the indoor unit address using a remote controller

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

Remote controller model name : RBC-ASCU11-E

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



- 1** Push and hold menu button and [▽] setting button simultaneously for 10 seconds or more.
(If 2 or more indoor units are controlled in a group, the first indicated UNIT No. is that of the head unit.)
- 2** Each time [▽] [△] setting button is pushed, indoor unit numbers in the group control change cyclically. Select the indoor unit to change settings for. (The fan and louvers of the selected indoor unit are activated.)
(The fan of the selected indoor unit is turned on.)
- 3** Push the Timer off button.
- 4** Push the menu button to make Code No. flash. Change Code No. [13] with [▽] [△] setting button.
- 5** Push the menu button to make Set data [****] flash. Push the [▽] [△] buttons repeatedly to change the value indicated in the SET DATA section to that you want.
- 6** Push the Timer off button.
(When the display changes from [—] to Set data [****] flashing, the setup is completed.)
- 7** When all the settings have been completed, push ON/OFF button to determine the settings.
SETTING flashes and then the display content disappears and the air conditioner enters the normal stop mode.
(The remote controller is unavailable while SETTING is flashing.)
- 8** To change settings of another indoor unit, repeat from Procedure 1.

NOTE

1. The Code No. [E04] (Indoor / outdoor communication trouble) will appear if line (system) addresses are mistakenly set.
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 SW101 and 102 of their interface P.C. boards.
 - Turn on DIP switch 1 of SW100 on the header outdoor unit interface P.C. board of the lowest system address number.
 - 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.)

■ 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 "00Un" 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 indoor and outdoor units of the refrigerant line to reset to the factory default and set the header outdoor unit of the line as below.
- 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 finished clearing the address successfully, "U.1.Err" and "L08" appear alternatively at 1 second intervals on the 7-segment display.
- 5** Set the addresses again after finishing the clearance.

10 Communication setting

This product needs setting either TU2C-Link or TCC-Link communication after the address setting. Follow the procedure below for the communication setting. TCC-Link communication has been set as the factory default.

CAUTION

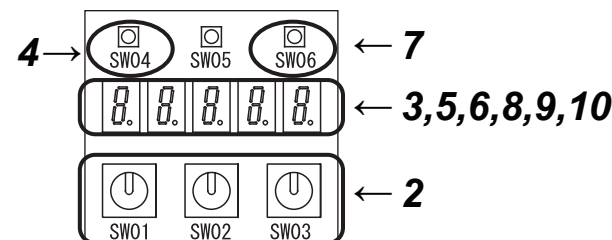
- Be sure to complete the electric wiring before setting the addresses.
- It may take approximately 1 to 3 minutes to address one refrigerant line.
- Settings on the outdoor unit are required for communication setting.
(Communication setting is not started simply by turning on the power.)
- If outdoor units for which communication setting has already been made are connected, the setting cannot be made correctly.
In this case, reset the communication setting and perform the setting again.

Communication setting

- 1 Turn on indoor units first, and then turn on outdoor units.
- 2 Set the rotary switch of the interface P.C. board on the header outdoor unit to SW01= [2], SW02= [16] and SW03= [2].
- 3 The 7-segment display switches between “c.c. b p s” and “c.c. 0” at 1-second intervals.
- 4 Push and hold SW04 for more than 5 seconds.
- 5 The 7-segment display flashes “c.c.i n”.
- 6 The 7-segment display switches between “c.c. i n” and “c.c.***” at 1-second intervals.
The number of connected indoor unit is displayed in [***], so if it is correct, proceed to “ 7 ”.
In parentheses are the measures to be taken when the number of indoor units is different.
(When the number of the connected indoor units differs from the number of indoor units displayed on the 7-segment display, clear the communication type setting to eliminate the cause. To clear the communication type setting, push and hold the SW05 for 5 seconds or more.
The 7-segment display flashes “c.c.r S t”.
After a while, the 7-segment display switches between “c.c. b p s” and “c.c. 0”.
Set the rotary switch back to SW01 to [1], SW02 to [1] and SW03 to [1].)
- 7 Push and hold SW06 for more than 5 seconds.
- 8 The 7-segment display flashes “c.c.b p s”.
After that, the setting is complete when the 7-segment display changes to “c.c F i n”.
(If the 7-segment display changes to “c.c. E r r”, try again.)
- 9 After a while, the 7-segment display switches between “c.c. b p s” and “c.c. 1” (or “c.c. o”) at 1-second intervals.
- 10 Set the rotary switch on the interface P.C. board of the header outdoor unit back to SW01= [1], SW02= [1], SW03= [1].

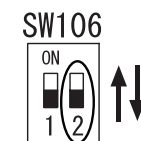
7-segment display		Communication type
[A] [c.c.] [c.c.]	[B] [b p s] [1]	TU2C-Link (U series and future models)
[A] [c.c.] [c.c.]	[B] [b p s] [0]	TCC-Link (Other than U series)

Interface P.C. board on the header outdoor unit



Resetting the communication (Return to factory default)

- 1 Turn off indoor units first, and then turn off outdoor units.
- 2 Set SW106-2 on the interface P.C. board of the header outdoor unit to ON.
- 3 Turn on outdoor units first, and then turn on indoor units.
(Turn on the header unit, and then 20 seconds or more later, turn on the follower units and indoor units. If the follower units cannot be turned on after the header unit has been turned on, turn on both of them simultaneously. After that, turn on the indoor unit.)
- 4 The 7-segment display indication “ - r S t. - ”. Check all the units have turned on more than approx. 1 minute. Turn off all the indoor and outdoor units.
- 5 Set SW106-2 on the interface P.C. board of the header outdoor unit to OFF.



11 Applicable control settings

When connecting an optional P.C. board (sold separately) for outdoor units, it is necessary to change the settings of the outdoor unit.

All are set to [Standard (factory setting)] at the time of shipment, so change the settings of the outdoor unit as necessary.

The settings can be changed by operating the switches on the interface board.

In the TU2C-Link communication system, it can also be done by operating the wired remote controller.

◆ Applicable controls setup

(settings at the site)

Basic procedure

Be sure to stop the air conditioner before making settings.

(Change the setup while the air conditioner is not working.)

⚠ CAUTION

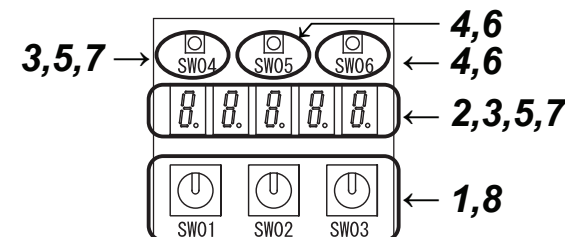
Set only the Code No. shown in the following table: Do NOT set any other Code No.

If a Code No. not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

When switching settings from the interface P.C. board of the outdoor unit

- 1 Set the rotary switch of the interface P.C. board on the outdoor unit to SW01= [9], SW02= [1] and SW03= [1].
- 2 The 7-segment display shows “d n.S E t”.
- 3 When SW04 is pressed, the 7-segment display switches to “d n.0 1” and the outdoor unit code NO. [001] is displayed.
- 4 Change outdoor unit code NO. [****] with SW05 or SW06.
Press SW05 to advance the code. Press and hold SW05 to advance in 5 steps.
Press SW06 to return the code. Press and hold SW06 to return in 5 steps.
- 5 When SW04 is pressed, the 7-segment display blinks “d.* * *” and the setting data [****] being set is displayed.
- 6 Change setting data [****] with SW05 or SW06.
Press SW05 to advance the data. Press SW06 to return the setting data.
- 7 Push and hold SW04 for more than 2 seconds.
When the flashing stops and remain lit on the display, the setting is complete.
(To return to the item code setting after completing the setting, or to return to the item code setting without setting, press SW04 once.)
- 8 Set the rotary switch on the interface P.C. board of the outdoor unit back to SW01= [1], SW02= [1], SW03= [1].
- 9 Reset the power of the outdoor unit (power off for one minute or more).

Interface P.C. board of header unit

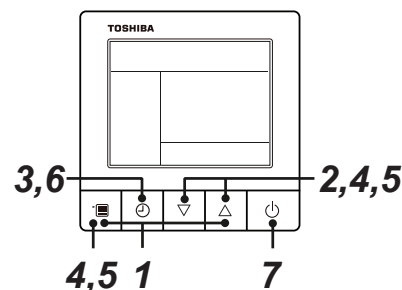


When switching from the wired remote controller (RBC-ASCU11-E)

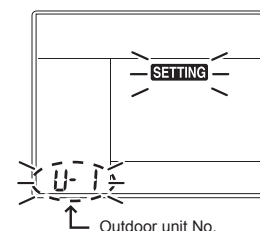
Basic procedure

Be sure to stop the air conditioner before making settings.

(Change the setup while the air conditioner is not working.)



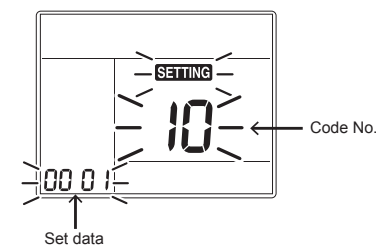
- 1 Push and hold menu button and [Δ] setting button simultaneously for 10 seconds or more.
• After a while, the display flashes as shown in the figure. ALL is displayed as indoor unit numbers during initial communication immediately after the power has been turned on.



- 2 Each time [▽] [Δ] setting button is pushed, outdoor unit numbers in the group control change cyclically. Select the outdoor unit to change settings for.

- The fan of the selected outdoor unit runs.
The outdoor unit can be confirmed for which to change settings.

- 3 Push OFF timer button to confirm the selected outdoor unit.



- 4 Push the menu button to make Code No. [**] flash. Change Code No. [**] with [▽] [Δ] setting button.
- 5 Push the menu button to make Set data [****] flash. Change Set data [****] with [▽] [Δ] setting button.
- 6 Push OFF timer button to complete the set up.
• To change other settings of the selected outdoor unit, repeat from Procedure 4.
- 7 When all the settings have been completed, push ON/OFF button to finish the settings.
(Return to the normal mode)
SETTING flashes and then the display content disappears and the air conditioner enters the normal stop mode. (The remote controller is unavailable while SETTING is flashing.)
• To change settings of another outdoor unit, repeat from Procedure 1.

12 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 2MΩ using a 500V megohmmeter.

Do not run the unit if it is less than 2MΩ.

⚠ 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.

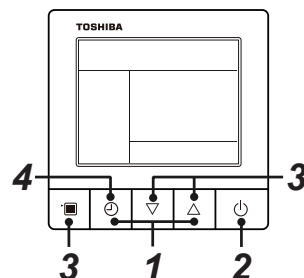
⚠ CAUTION

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

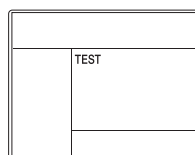
Wired remote controller

Be sure to stop the air conditioner before making settings.

(Change the setup while the air conditioner is not working.)



- 1 Push and hold OFF timer button and [△] setting button simultaneously for 10 seconds or more. [TEST] is displayed on the display part and the test run is permitted.



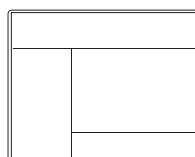
- 2 Push ON/OFF button.

- 3 Push menu button to select the operation mode. Select [Cool] or [Heat] with [△] [▽] setting button, and then push menu button (three times) again to determine the operation mode.

- Do not run the air conditioner in a mode other than [Cool] or [Heat].
- The temperature setting function does not work during test run.
- The check code is displayed as usual.

- 4 After the test run, push OFF timer button to stop a test run.

([TEST] disappears on the display and the air conditioner enters the normal stop 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 "collective 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.)

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

- 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.

SW 01	SW 02	SW 03	Indoor unit address	
16	1 to 16	1	1 to 16	Set number of SW02
16	1 to 16	2	17 to 32	Set number of SW02 + 16
16	1 to 16	3	33 to 48	Set number of SW02 + 32
16	1 to 16	4	49 to 64	Set number of SW02 + 48
16	1 to 16	5	65 to 80	Set number of SW02 + 64
16	1 to 16	6	81 to 96	Set number of SW02 + 80
16	1 to 16	7	97 to 112	Set number of SW02 + 96
16	1 to 16	8	113 to 128	Set number of SW02 + 112

7-segment display	
[A] []] ↓ Address display of the corresponding indoor unit	[B] []]

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

7-segment display	
[A] []] ↓ Address display of the corresponding indoor unit	[B] []] ↓ [FF] is displayed for 5 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].

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

<Collective trial>

▼ Start operation

- 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].
When in “FAN” mode: SW01=[2], SW02=[9], SW03=[1].

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

- 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.

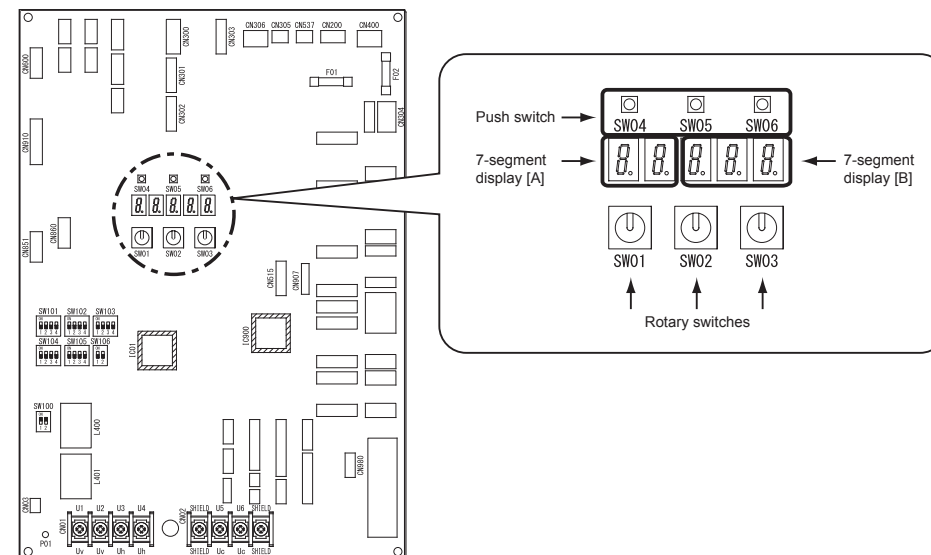
7-segment display	
[A]	[B]
[C]	[- C]
[H]	[- H]
[F]	[- F]

▼ Stop operation

- 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]	[]

Interface P.C. board



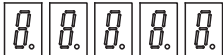
13 Troubleshooting

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	7 - segment LED	
SW01	SW02	SW03			
1	1	1	Outdoor unit check code	Display contents	 [U.*Err] ⇔ [○○○.△△] Display alternately every 2 seconds * : Outdoor Unit No.(1~5) ○○○: Check code △△ : Sub code

* 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	<ul style="list-style-type: none">• Decrease of number of indoor units• In TU2C-LINK communication system, if the termination resistance is not set in any of the indoor units. (In TU2C-LINK communication system only.)
E07	—	Indoor / outdoor communication circuit trouble
E08	Duplicated indoor addresses	Duplication of indoor addresses.
E12	01: Communication between indoor and outdoor units 02: Communication between outdoor units	Automatic addressing start trouble
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 not detected 02: 2 or more header units	Number of header outdoor unit trouble
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	Follower outdoor unit trouble
E31	Inverter quantity information ⁽¹⁾	Inverter communication trouble
E31	80	Communication trouble between MCU and sub MCU
F04	—	TD1 sensor trouble
F05	—	TD2 sensor trouble
F06	01: TE1 sensor 02: TE2 sensor 03: TE3 sensor	TE1, TE2 or TE3 sensor trouble
F07	01: TL1 sensor 02: TL2 sensor 03: TL3 sensor	TL1, TL2 or TL3 sensor trouble
F08	—	TO sensor trouble

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
	Auxiliary code	
F09	01: TG1 sensor 02: TG2 sensor 03: TG3 sensor	TG1,TG2 or TG3 sensor trouble
F12	01: TS1 sensor 03: TS3 sensor	TS1 or TS3 sensor trouble
F13	1*: Compressor 1 side 2*: Compressor 2 side	TH (Heat sink) sensor trouble
F15	—	Outdoor pressure sensor miswiring (TE1, TL1)
F16	—	Outdoor pressure sensor miswiring (Pd, Ps)
F23	—	Ps sensor trouble
F24	—	Pd sensor trouble
F31	—	Outdoor EEPROM trouble
H01	1*: Compressor 1 side 2*: Compressor 2 side	Compressor breaking down
H02	1* : Compressor 1 side 2* : Compressor 2 side	Compressor trouble (Locked)
H03	1* : Compressor 1 side 2* : Compressor 2 side	Current detection circuit trouble
H05	—	TD1 sensor miswiring
H06	—	Low pressure protective operation
H07	—	Oil level down detection
H08	01: TK1 sensor trouble 02: TK2 sensor trouble	Temperature sensor trouble for oil level
H15	—	TD2 sensor miswiring
H16	01: TK1 oil circuit trouble 02: TK2 oil circuit trouble	Oil level detector circuit trouble
H17	1* : Compressor 1 side 2* : Compressor 2 side	Compressor trouble (step out)
L02	Model mismatch of indoor and outdoor unit	System shutdown trouble 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
L23	02: HWM (Hot Water Module)	Switch setting trouble of outdoor unit
L28	—	Outdoor units mismatch
L29	00 : when there are many inverter P.C. board. ** : Inverter number information ^(*)	Inverter quantity trouble
L30	Detected indoor unit address	External interlock of indoor unit
L31	—	Other compressor troubles
P03	—	Discharge temperature TD1 trouble
P04	1* : Compressor 1 side 2* : Compressor 2 side	High-pressure SW system operation
P05	1* : Compressor 1 side 2* : Compressor 2 side	Inverter DC voltage (Vdc) trouble (compressor) MG-CTT trouble
	00: Power detection trouble 01: Phase missing detection 02: Phase order trouble	Detection of open phase/phase sequence

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
	Auxiliary code	
P07	1* : Compressor 1 side 2* : Compressor 2 side 00: Compressor 1 side or Compressor 2 side	Heat sink overheating trouble
	04: Heat sink	Heat sink condensation trouble
P10	Detected indoor unit address	Indoor overflow error
P11	—	Outdoor heat exchanger freezing trouble
P13	—	Outdoor unit flow back error detected
P15	01: TS condition 02: TD condition	Gas leak detection
P17	—	Discharge temperature TD2 trouble
P19	Detected outdoor unit number	4-way valve inverse trouble
P20	—	High-pressure protective operation
P22	1* : Fan P.C. board 1 2* : Fan P.C. board 2	Outdoor fan inverter trouble
P26	1* : Compressor 1 side 2* : Compressor 2 side	IPM short protection trouble
P29	11: Compressor 1 side 21: Compressor 2 side	Compressor position detecting circuit system trouble

A value from 0 to F is displayed in “*”.

*1 Inverter quantity information

01: Compressor 1 trouble
02: Compressor 2 trouble
03: Compressor 1 and 2 trouble
08: Fan 1 trouble
09: Compressor 1, Fan 1 trouble
0A: Compressor 2, Fan 1 trouble
0B: Compressor 1 and 2, Fan 1 trouble

11: Compressor 1, Fan 2 trouble
12: Compressor 2, Fan 2 trouble
13: Compressor 1 and 2, Fan 2 trouble
18: Fan 1 and 2 trouble
19: Compressor 1, Fan 1 and 2 trouble
1A: Compressor 2, Fan 1 and 2 trouble
1B: Compressor 1 and 2, Fan 1 and 2 trouble

14 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.

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;
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.

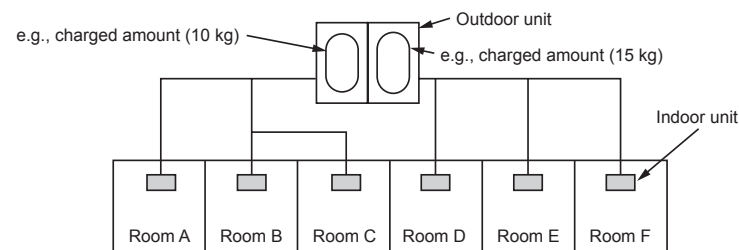
The concentration is as given below.

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

Refrigerant Concentration Limit shall be in accordance with local regulations.

▼ 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 10 kg.

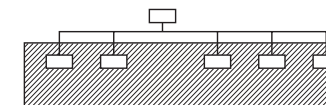
The possible amount of leaked refrigerant gas in rooms D, E and F is 15 kg.

■ Important

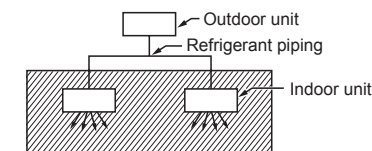
▼ NOTE 2

The standards for minimum room volume are as follows.

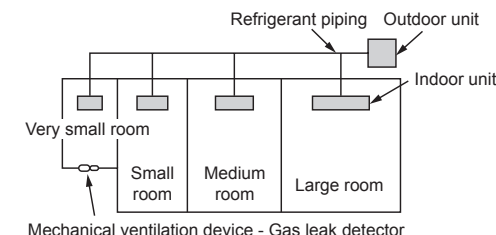
- 1) No partition (shaded portion)



- 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.



Toshiba Carrier (Thailand) Co., Ltd.

144 / 9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi, Amphur Muang, Pathumthani 12000, Thailand

1141001201