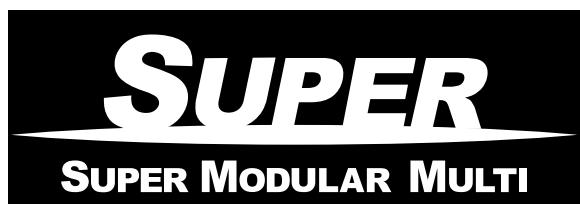


TOSHIBA

**INSTALLATION MANUAL
MANUEL D'INSTALLATION
INSTALLATIONS-HANDBUCH
MANUALE DI INSTALLAZIONE
MANUAL DE INSTALACIÓN**



For commercial use (Not accessible to the general public)
Pour usage commercial (Vente interdite au grand public)
Nur für gewerbliche Nutzung (Kein öffentlicher Zugang)
Per uso commerciale (Non accessibile a clienti generici)
Para uso comercial (No destinado al público en general)

**SUPER MODULAR MULTI SYSTEM AIR CONDITIONER
SMMS CLIMATISEUR
SMMS KLIMAGERÄT
SMMS CONDIZIONATORE D'ARIA
SMMS DE AIRE ACONDICIONADO**



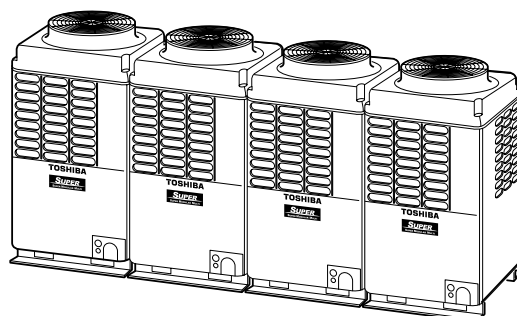
**Outdoor Unit / Unité extérieure /
Außengerät / Unità esterna / Unidad exterior**

**Cooling Only Model / Modèle à froid seul / Geräte nur zur Kühlung
Modello solo raffreddamento / Modelo de sólo frío**

**MMY-MAP0501T8-E, MAP0601T8-E, MAP0801T8-E,
MMY-MAP1001T8-E, MAP1201T8-E**

**Heat Pump Model / Modèle à thermopompe / Geräte mit Heizung
Modello con pompa per riscaldamento / Modelo con bomba de calor**

**MMY-MAP0501HT8-E, MAP0601HT8-E, MAP0801HT8-E,
MMY-MAP1001HT8-E, MAP1201HT8-E**



ADOPTION OF NEW REFRIGERANT

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

Thank you very much for purchasing TOSHIBA Air Conditioner.

- This manual describes the installation method at the outdoor unit side.
- Before installation, please read this Manual thoroughly to perform correct installation.
- For pipe connection for the indoor and outdoor units, Y-shape branching joint or branch header required sold separately. Select it according to the capacity.
- For pipe connection between the outdoor units, T-shape branching joint which is sold separately is required.

UTILISATION DU NOUVEAU REFRIGERANT

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

Nous vous remercions d'avoir choisi un climatiseur TOSHIBA.

- Ce manuel décrit la méthode d'installation du côté de l'unité intérieure.
- Avant de procéder à l'installation, veuillez lire attentivement ce manuel pour que l'installation soit correcte.
- Pour effectuer le raccordement de la tuyauterie entre les unités intérieure et extérieure vous devez vous procurer sur place un joint de ramification en Y ou un joint collecteur. Choisissez en fonction de la capacité.
- Pour effectuer le raccordement de la tuyauterie entre les unités extérieures vous devez vous procurer sur place un joint de ramification en T.

EINFÜHRUNG EINES NEUEN KÜHLMITTELS

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

Wir danken Ihnen, dass Sie sich für ein TOSHIBA Klimagerät entschieden haben.

- In diesem Handbuch wird die Installation der Außeneinheit beschrieben.
- Bevor Sie mit der Installation beginnen, lesen Sie die dieses Handbuch sorgfältig und installieren Sie das Produkt entsprechend.
- Für die Rohrleitungsverbindungen zwischen Innen- und Außeneinheit sind Y-Abzweige oder Verteiler erforderlich, die bauseits beige stellt werden müssen. Wählen Sie diese Teile entsprechend der Leistung des Systems.
- Für die Rohrleitungsverbindungen zwischen den Außeneinheiten sind T-Abzweige erforderlich, die bauseits beige stellt werden müssen.

ADOZIONE DI UN NUOVO REFRIGERANTE

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

Grazie di aver acquistato il condizionatore d'aria TOSHIBA.

- Questo manuale descrive il metodo d'installazione dell'unità esterna.
- Prima d'iniziare il lavoro d'installazione, leggere attentamente questo manuale, per installare correttamente.
- Per la connessione dei tubi per le unità interna ed esterna, bisogna usare dei giunti di derivazione a forma di Y o delle testate di diramazione, da acquistare a parte. Scegliere le parti in funzione della capacità del modello.
- Per la connessione dei tubi per le unità interna ed esterna, bisogna usare un giunto di derivazione a forma di T, da acquistare a parte.

ADOPCIÓN DE NUEVO REFRIGERANTE

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

Muchas gracias por haber adquirido este aparato de aire acondicionado TOSHIBA.

- Este manual describe el método de instalación de la unidad exterior.
- Lea con atención este manual antes de instalar la unidad para hacerlo correctamente.
- Para la conexión de tubos entre las unidades interiores y exteriores, es necesario utilizar una junta de derivación en forma de Y o un colector de derivaciones (vendidos por separado). Seleccione este accesorio según la capacidad del sistema.
- Para la conexión de tubos entre las unidades exteriores, es necesario utilizar una junta de derivación en forma de T (vendido por separado).

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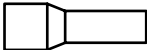
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ACCESSORY PARTS

□ Accessory parts

| Part name | Q'ty | Shape | Usage |
|---------------------|--------|---|--|
| Installation Manual | 2 | — | (Be sure to hand it to the customers.) |
| Owner's Manual | 1 | — | (Be sure to hand it to the customers.) |
| Attached pipes | Each 1 |  | Connecting pipes for pipe at gas side (Except MMY-MAP0501*) |

- This air conditioner requires the indoor unit, remote controller and Y-shape branching joint or branching header. Select one according to the capacity.

SAFETY CUTION

- Please read this “Safety Cautions” thoroughly before installation to install the air conditioner correctly.
- The important contents concerned to the safety are described in the “Safety Cautions”. Be sure to keep them. For Indications and their meanings, see the following description.

■ Explanation of indications

WARNING

Indicates possibilities that a death or serious injury of personnel is caused by an incorrect handling.

CAUTION

Indicates contents that an injury (*1) or property damage (*2) only may be caused when an incorrect work has been executed.

*1 : “Injury” means a hurt, a burn, or an electric shock which does not require hospitalization or a long-term going to the hospital.

*2 : “Property damage means an enlarged damage concerned to property, or breakage of materials.

- After installation work has finished, check there is no trouble by a test operation, and explain using method and maintenance method to the customers based on the Owner’s Manual.

Please ask the customers to keep this Installation Manual together with the Owner’s Manual.

⚠ WARNING**Ask a shop or a professional dealer to install the air conditioner.**

If you will install by yourself, a fire, an electric shock, or water leak is caused.

Using the tool or piping materials exclusive to R410A, install the air conditioner surely according to this Installation Manual.

The pressure of the used HFC system R410A refrigerant is higher approx. 1.6 times of that of the former refrigerant.

If the exclusive piping materials are not used, or there is imperfection in installation, a crack or an injury is caused and also a water leak, an electric shock, or a fire may be caused.

Take measures so that the refrigerant does not exceed the limit concentration even if it leaks when installing the air conditioner in a small room.

For the measures not to exceed the limit of concentration, contact the dealer. If the refrigerant leaks and it exceeds the limit of concentration, an accident of oxygen shortage is caused.

Install the air conditioner at a place which is satisfactorily bearable to weight.

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

Perform a specified installation work against a strong wind such as typhoon or earthquake.

If the air conditioner is imperfectly installed, an accident by falling or dropping may be caused.

If refrigerant gas leaks during installation work, ventilate the room.

If the leaked refrigerant gas approaches to fire, noxious gas may generate.

After installation work, confirm that refrigerant gas does not leak.

If refrigerant gas leaks in the room, and approaches to fire such as fan heater, stove or kitchen range, generation of noxious gas may be caused.

Never recover refrigerant in the outdoor unit.

Be sure to use a refrigerant recovery device to recover refrigerant in reinstallation or repair work. Recovery of refrigerant in the outdoor unit is unavailable; otherwise a serious accident such as crack or human injury is caused.

A person qualified for the electric work should deal with the electric construction conforming to the regulations of the local electric company and the Installation Manual. Be sure to use the exclusive circuit.

If there is capacity shortage of the power supply circuit or incomplete installation, a fire or an electric shock is caused.

For cabling, use the specified cables and connect them securely so that external force of cable does not transmit to the terminal connecting section.

If connection or fixing is incomplete, a fire, etc may be caused.

Be sure to connect earth wire.

Do not connect earth wire to gas pipe, water pipe, lightning rod, nor earth wire of telephone. If grounding is incomplete, an electric shock is caused.

⚠ CAUTION**Do not install the air conditioner at a place where combustible gas may leak.**

If gas leaks and is collected at surrounding the unit, the production of fire may be caused.

Be sure to attach an earth leakage breaker; otherwise an electric shock may be caused.**Using a torque wrench, tighten the flare nut in the specified method.**

If the flare nut is exceedingly tightened, the flare nut is broken and a refrigerant leakage may be caused after a long time has passed.

1 INSTALLATION OF NEW REFRIGERANT AIR CONDITIONER

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

- R410A refrigerant is apt to be affected by impurity such as water, oxidizing membrane, or oils because the pressure of R410A refrigerant is higher than that of the former refrigerant by approx. 1.6 times.
Accompanied with adoption of the new refrigerant, refrigerating oil has been also changed. Therefore pay attention so that water, dust, former refrigerant, or refrigerating oil does not enter into the refrigerating cycle of the new refrigerant air conditioner during installation work.
- To prevent from mixing of refrigerant or refrigerating oil, the size of charge port of the main unit or connecting section of installation tool differs from that of the air conditioner for the former refrigerant.
Accordingly the exclusive tools are required for the new refrigerant (R410A) as shown below.
- For connecting pipes, use the 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 as described below for the installation work.

The tools and parts which will be newly prepared in the following items should be restricted to the exclusive use.

Explanation of symbols

- : Newly prepared (It is necessary to use it properly exclusive to R410A separated from those for R22 or R407C.)
- : Former tool is available.

| Used tools | Usage | Proper use of tools/parts |
|--|--|---|
| Gauge manifold | Vacuuming or charging of refrigerant and operation check | ● Newly prepared, Exclusive to R410A |
| Charging hose | | ● Newly prepared, Exclusive to R410A |
| Charging cylinder | Charges refrigerant | Unusable (Use the Refrigerant charging balance.) |
| Gas leak detector | Checks gas leak | ● Newly prepared |
| Vacuum pump | Vacuum drying | Usable if a counter-flow preventive adapter is attached |
| Vacuum pump with counter-flow preventive adapter | 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 | Recovers refrigerant | ● Exclusive to R410A |
| Torque wrench | Tightens flare nut | ● Newly prepared, exclusive to Ø12.7mm and Ø15.9mm |
| Pipe cutter | Cuts pipes | ○ : R22 (Existing article) |
| Refrigerant cylinder | Charges refrigerant | ● Exclusive to R410A ID : Refrigerant name entered |
| Welding machine/ Nitrogen gas cylinder | Welding of pipes | ○ : R22 (Existing article) |
| Refrigerant charging balance | Charges refrigerant | ○ : R22 (Existing article) |

2 SELECTION OF INSTALLATION PLACE

⚠ WARNING

Install the air conditioner certainly at a place bearable to weight.

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

⚠ CAUTION

Do not install the air conditioner at a place where combustible gas may leak.

If gas leaks and is collected at surrounding the unit, the production of fire may be caused.

Upon customer's approval, install the air conditioner at a place where satisfies the following conditions.

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

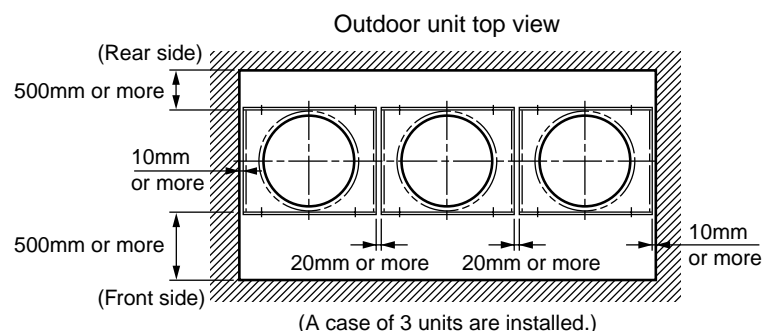
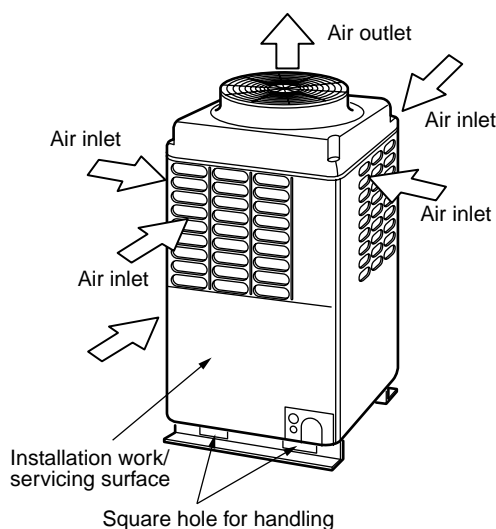
Apply electric insulation between metal section of the building and metal section of the air conditioner in conformance with the Local Regulation.

Avoid the following places.

- Salty place (seaside area) or place with much gas sulfide (hot spring area)
(If selecting such a place, a special maintenance is required.)
- Place where oil (including machine oil), steam, oil smoke or corrosive gas generates.
- Place where a device generating high frequency (inverter, non-utility generator, medical apparatus, or communication equipment) is set. (A bad influence may generate by malfunction of the air conditioner, control error, or noise for such equipment.)
- Place where discharged air of the outdoor unit blows against windows of neighbor.
- Place where operation sound of the outdoor unit transmits.
(Especially at the boundary line with neighbor, install the air conditioner considering the noise.)
- Place unbearable to weight of the unit.
- Place with ill ventilation.

Installation space

Considering functions, reserve space necessary for installation work and servicing.



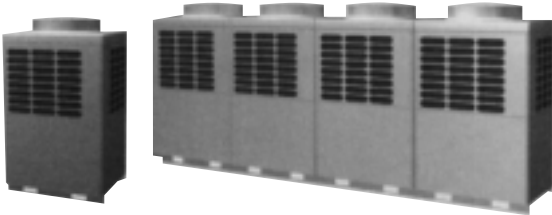
NOTES)

- *1 : If there is an obstacle at the upper side of the outdoor unit, reserve a space by 2000mm or more to the top end of the outdoor unit.
- *2 : Arrange the height of obstacle around two outdoor units up to below 800mm from the bottom end of the outdoor unit.

2 SELECTION OF INSTALLATION PLACE

Equipments

1. Outdoor units

| Corresponding HP | | | Inverter unit | | | | |
|--|--------------|------|---------------|--------------|--------------|--------------|--------------|
| | | | 5 HP | 6 HP | 8 HP | 10 HP | 12 HP |
| Model name | Heat pump | MMY- | MAP0501HT8-E | MAP0601HT8-E | MAP0801HT8-E | MAP1001HT8-E | MAP1201HT8-E |
| | Cooling only | MMY- | MAP0501T8-E | MAP0601T8-E | MAP0801T8-E | MAP1001T8-E | MAP1201T8-E |
| Cooling capacity (kW) | | | 14.0 | 16.0 | 22.4 | 28.0 | 33.5 |
| Heating capacity (kW) | | | 16.0 | 18.0 | 25.0 | 31.5 | 37.5 |
| Appearance | | | | | | | |
|  | | | | | | | |

2. Outdoor units (Combination of outdoor units)

| Corresponding HP | | 5 HP | 6 HP | 8 HP | 10 HP | 12 HP | 14 HP | 16 HP |
|---------------------------------|------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|
| Combined Model | MMY- | MAP0501HT8-E | MAP0601HT8-E | MAP0801HT8-E | MAP1001HT8-E | MAP1201HT8-E | AP1401HT8-E | AP1601HT8-E |
| | MMY- | MAP0501T8-E | MAP0601T8-E | MAP0801T8-E | MAP1001T8-E | MAP1201T8-E | AP1401T8-E | AP1601T8-E |
| Cooling capacity (kW) | | 14.0 | 16.0 | 22.4 | 28.0 | 33.5 | 38.4 | 45.0 |
| Heating capacity (kW) | | 16.0 | 18.0 | 25.0 | 31.5 | 37.5 | 43.0 | 50.0 |
| Combined outdoor units | | 5 HP | 6 HP | 8 HP | 10 HP | 12 HP | 8 HP | 8 HP |
| | | — | — | — | — | — | 6 HP | 8 HP |
| | | — | — | — | — | — | — | — |
| | | — | — | — | — | — | — | — |
| No. of connectable indoor units | | 8 | 10 | 13 | 16 | 20 | 23 | 27 |

| Corresponding HP | | 18 HP | 20 HP | 22 HP | 22 HP | 24 HP | 24 HP | 26 HP |
|---------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Combined Model | MMY- | AP1801HT8-E | AP2001HT8-E | AP2201HT8-E | AP2211HT8-E | AP2401HT8-E | AP2411HT8-E | AP2601HT8-E |
| | MMY- | AP1801T8-E | AP2001T8-E | AP2201T8-E | AP2211T8-E | AP2401T8-E | AP2411T8-E | AP2601T8-E |
| Cooling capacity (kW) | | 50.4 | 56.0 | 61.5 | 61.5 | 68.0 | 68.0 | 73.0 |
| Heating capacity (kW) | | 56.5 | 63.0 | 69.0 | 69.0 | 76.5 | 76.5 | 81.5 |
| Combined outdoor units | | 10 HP | 10 HP | 8 HP | 12 HP | 8 HP | 12 HP | 10 HP |
| | | 8 HP | 10 HP | 8 HP | 10 HP | 8 HP | 12 HP | 8 HP |
| | | — | — | 6 HP | — | 8 HP | — | 8 HP |
| | | — | — | — | — | — | — | — |
| No. of connectable indoor units | | 30 | 33 | 37 | 37 | 40 | 40 | 43 |

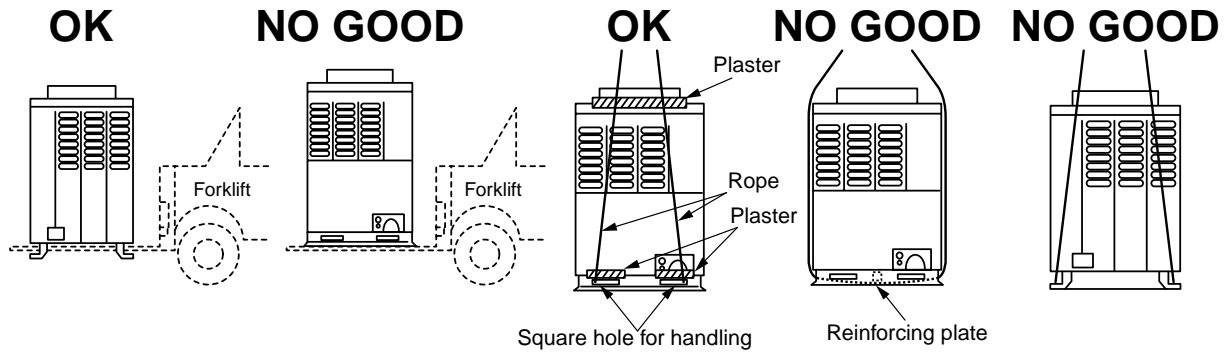
| Corresponding HP | | 28 HP | 30 HP | 32 HP | 32 HP | 34 HP | 34 HP | 36 HP |
|---------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Combined Model | MMY- | AP2801HT8-E | AP3001HT8-E | AP3201HT8-E | AP3211HT8-E | AP3401HT8-E | AP3411HT8-E | AP3601HT8-E |
| | MMY- | AP2801T8-E | AP3001T8-E | AP3201T8-E | AP3211T8-E | AP3401T8-E | AP3411T8-E | AP3601T8-E |
| Cooling capacity (kW) | | 78.5 | 84.0 | 90.0 | 90.0 | 96.0 | 96.0 | 101.0 |
| Heating capacity (kW) | | 88.0 | 95.0 | 100.0 | 100.0 | 108.0 | 108.0 | 113.0 |
| Combined outdoor units | | 10 HP | 10 HP | 8 HP | 12 HP | 10 HP | 12 HP | 10 HP |
| | | 10 HP | 10 HP | 8 HP | 10 HP | 8 HP | 12 HP | 10 HP |
| | | 8 HP | 10 HP | 8 HP | 10 HP | 8 HP | 10 HP | 8 HP |
| | | — | — | 8 HP | — | 8 HP | — | 8 HP |
| No. of connectable indoor units | | 47 | 48 | 48 | 48 | 48 | 48 | 48 |

| Corresponding HP | | 36 HP | 38 HP | 40 HP | 42 HP | 44 HP | 46 HP | 48 HP |
|---------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Combined Model | MMY- | AP3611HT8-E | AP3801HT8-E | AP4001HT8-E | AP4201HT8-E | AP4401HT8-E | AP4601HT8-E | AP4801HT8-E |
| | MMY- | AP3611T8-E | AP3801T8-E | AP4001T8-E | AP4201T8-E | AP4401T8-E | AP4601T8-E | AP4801T8-E |
| Cooling capacity (kW) | | 101.0 | 106.5 | 112.0 | 118.0 | 123.5 | 130.0 | 135.0 |
| Heating capacity (kW) | | 113.0 | 119.5 | 126.5 | 132.0 | 138.0 | 145.0 | 150.0 |
| Combined outdoor units | | 12 HP | 10 HP | 10 HP | 12 HP | 12 HP | 12 HP | 12 HP |
| | | 12 HP | 10 HP | 10 HP | 10 HP | 12 HP | 12 HP | 12 HP |
| | | 12 HP | 10 HP | 10 HP | 10 HP | 10 HP | 12 HP | 12 HP |
| | | — | 8 HP | 10 HP | 10 HP | 10 HP | 10 HP | 12 HP |
| No. of connectable indoor units | | 48 | 48 | 48 | 48 | 48 | 48 | 48 |

3 OUTDOOR UNIT CARRYING IN

Handle the outdoor unit in care with the following items.

1. When using a forklift, etc for loading/unloading in transportation, insert pawl of the forklift into the square hole for handling as shown below.
2. When lifting up the unit, insert a rope sufficiently bearable to unit mass into the square hole for handling, and cord the unit from four sides. (Apply a plaster to position where rope fits outdoor unit itself so that flaw or deformation does not generate on the outer surface of the outdoor unit.)
(There provided the reinforcing plates on the side surfaces, so the rope cannot be passed.)



4 INSTALLATION OF OUTDOOR UNIT

⚠ WARNING

Perform a specified installation work against a strong wind such as typhoon or earthquake.

If the air conditioner is imperfectly installed, an accident by falling or dropping may be caused.

Install the air conditioner certainly at a place bearable to weight.

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

Drain water is discharged from the outdoor unit. (Especially in heating time)

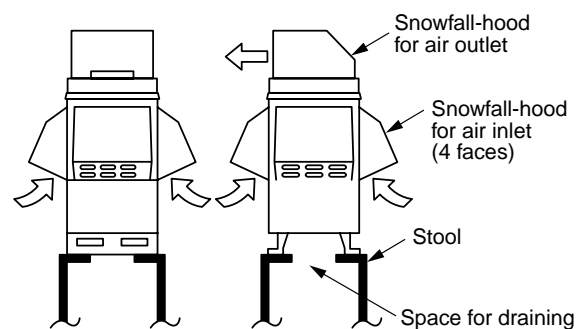
Install the outdoor unit at a place where has good drainage.

For installation, be careful to the strength and the level of the foundation so that an abnormal sound (Vibration, noise) does not generate.

In the snowfall area, apply the following measures against snowfall for the outdoor unit. (See the figure on the right.)
(Incomplete snowfall-proof measures causes a trouble.)

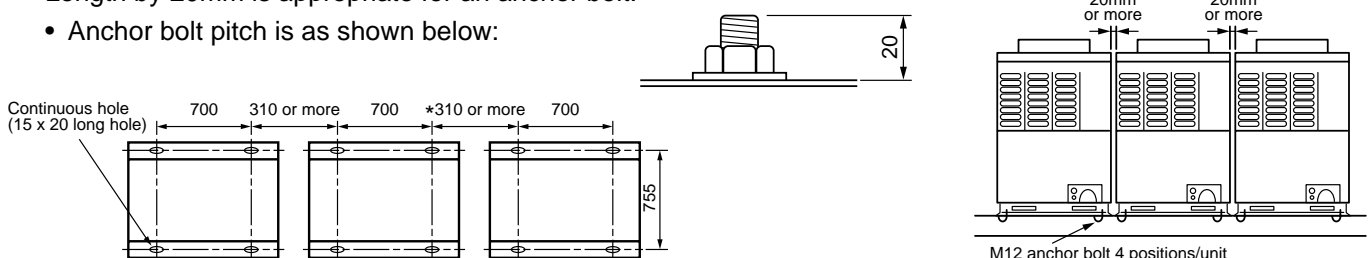
Place a higher stool under the unit, and mount the snowfall-hoods to air inlet and air outlet so that snows do not have influence.

(For the above works, please arrange at the field.)



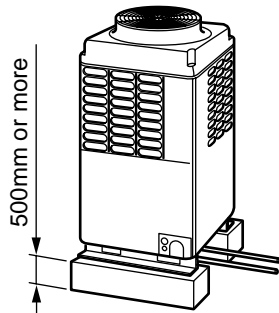
1. To install the multiple outdoor units, arrange them with 20mm or more intervals.
Fix each outdoor unit with M12 anchor bolts at 4 positions.
Length by 20mm is appropriate for an anchor bolt.

- Anchor bolt pitch is as shown below:



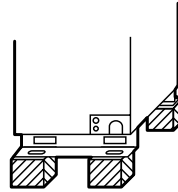
4 INSTALLATION OF OUTDOOR UNIT

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

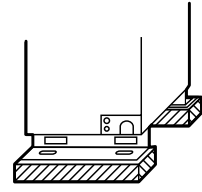


3. Do not use four stools to set the four corners.

NO GOOD

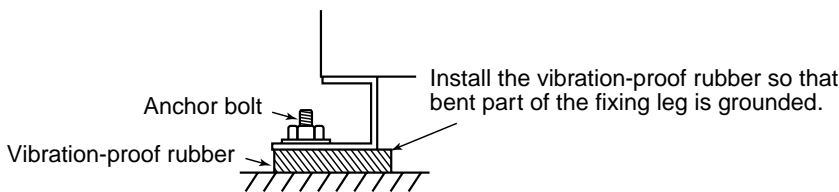


OK

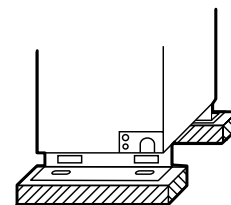


4. Mount the vibration-proof rubber (vibration-proof block etc.) so that it catch whole the clamping leg.

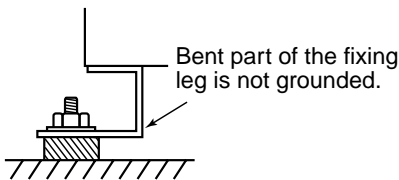
OK



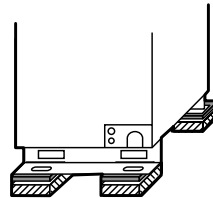
OK



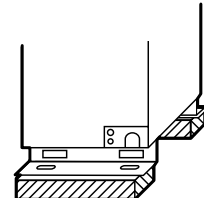
NO GOOD



NO GOOD



NO GOOD



5. Be careful to connecting arrangement of the header unit and the follower units.

Set the outdoor units in the order from one with large capacity. (A (Header unit) \geq B \geq C \geq D)

- 1) Be sure to use a header unit for the leading outdoor unit to be connected to the main pipe. (Figure 1)
- 2) However, as shown in the figure below, T-shape branching joint which is sold separately can be connected to connect to the main pie within piping indicated with a bold line in the following figure. (Figure 2)
- 3) Be careful to direction of T-shape branching joint. (As shown in Figure 3, T-shape branching joint cannot be attached so that refrigerant of the main pipe flows directly to the header unit.)

OK

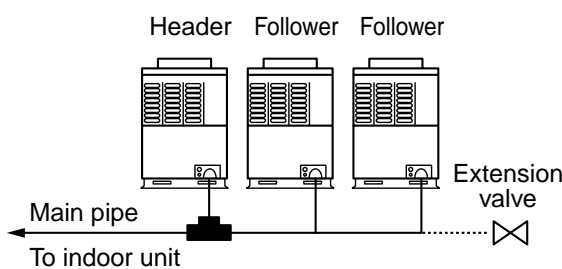


Figure 1

OK

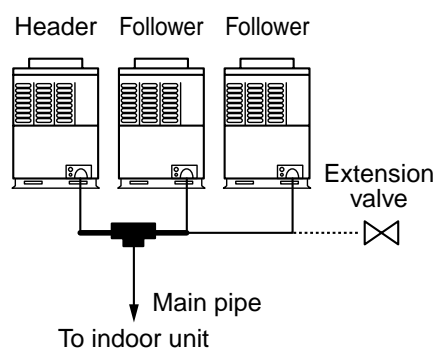


Figure 2

NO GOOD

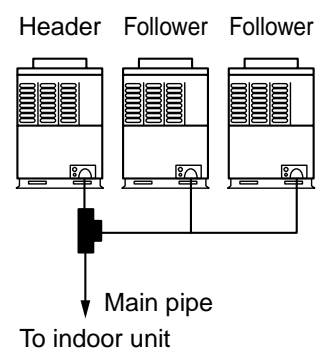


Figure 3

5 REFRIGERANT PIPING

⚠ WARNING

If the refrigerant gas leaks during installation work, ventilate the room.

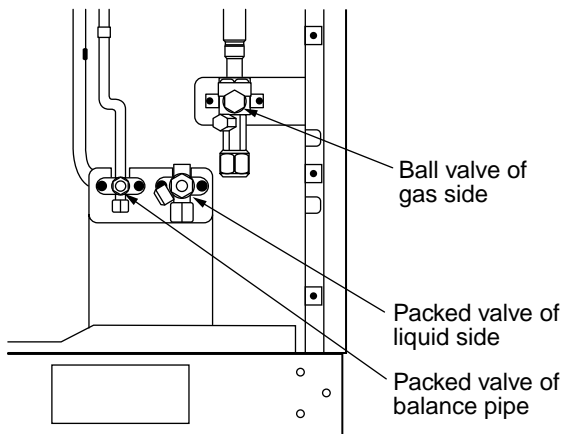
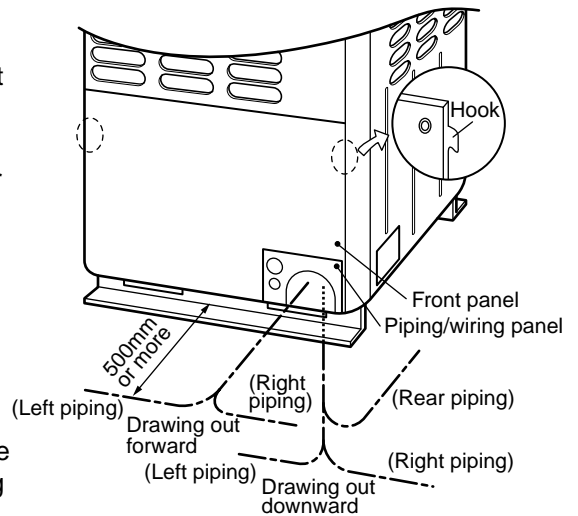
If the leaked refrigerant gas comes to contact with a fire, the noxious gas may generate.

After installation work, check that the refrigerant gas does not leak.

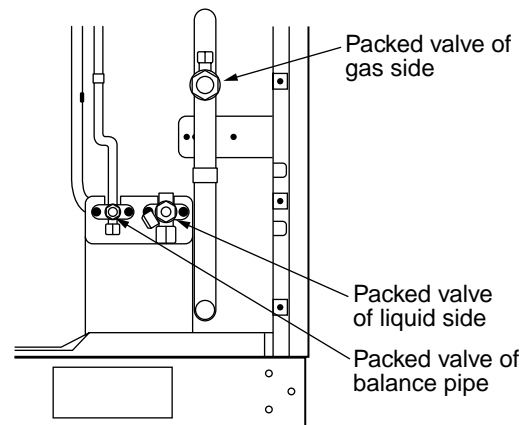
If the refrigerant gas leaks in the room and comes to contact with a fire such as fan heater, stove, or kitchen range, the noxious gas may generate.

Connection of refrigerant pipe

- The refrigerant pipe connecting section is set in the outdoor unit. Remove the front panel and the piping/wiring panel. (M5: 9 pcs.)
 - As shown in the right figure, the hooking hooks are attached at right and left sides each on the front panel. Lift up and remove the front panel.
- Pipes can be drawn out forward and downward from the outdoor unit.
- When drawing out the pipe forward, draw out the pipe to outside via piping/wiring panel, and keep space of 500mm or more from the main pipe connecting the outdoor unit with the indoor unit, considering service work, etc. (For replacing the compressor, 500mm or more space is required.)
- When drawing out the pipe downward, remove the knockout of the base plate of the outdoor unit, apply the pipe to outside of the outdoor unit, and perform piping at right/left or rear side. Leading pipe of the balancing should be within 4m.



(MMY-MAP0501*, MAP0601*)



(MMY-MAP0801*, MAP1001*, MAP1201*)

REQUIREMENT

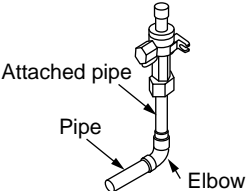
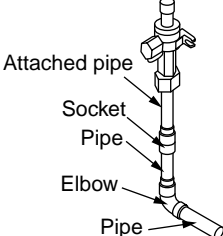
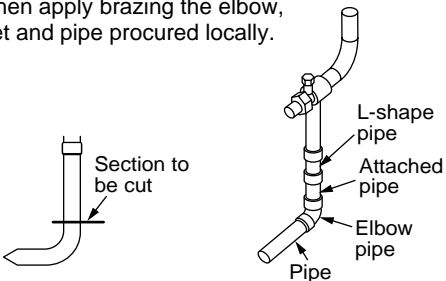
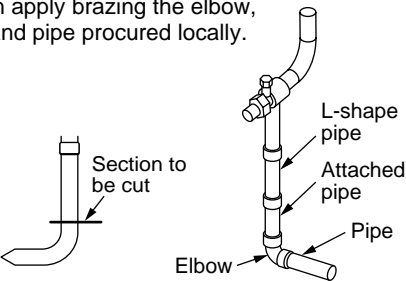
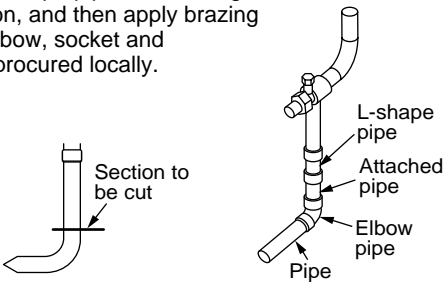
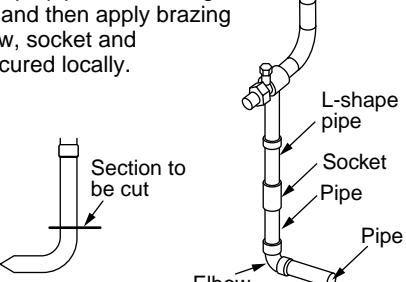
For brazing, be sure to use nitrogen gas to avoid oxidation of pipe inside.

- In a welding work for the refrigerant pipes, be sure to use the nitrogen gas in order to prevent oxidation inside of the pipes; otherwise clogging of the refrigerating cycle due to oxidized scale generates.
- Use clean and new pipes for the refrigerant pipes and perform piping work so that water or dust is not mixed.
- Be sure to use a double spanner to loosen or tighten the flare nut. If a single spanner is used, a required tightening cannot be obtained. Tighten the flare not with the specified torque.

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

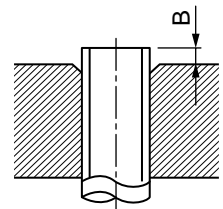
5 REFRIGERANT PIPING

Pipe connecting method of valve at gas side (Example)

| MMY- | Pipe diameter | Draw-out forward | Draw-out downward |
|----------------------|---------------|--|---|
| MAP0501* | Ø15.9 | Connect Ø15.9 pipe with flaring. | Connect Ø15.9 pipe with flaring. |
| MAP0601* | Ø19.1 | Connect the attached pipe to the valve with flaring, and then braze the elbow and pipe procured locally.  | Connect the attached pipe to the valve with flaring, and then braze the socket, elbow and pipe procured locally.  |
| MAP0801* MAP1001* | Ø22.2 | Cut L-shape pipe at the straight section, and then apply brazing the elbow, socket and pipe procured locally.  | Cut L-shape pipe at the straight section, and then apply brazing the elbow, socket and pipe procured locally.  |
| MAP1201* | Ø28.6 | Cut L-shape pipe at the straight section, and then apply brazing the elbow, socket and pipe procured locally.  | Cut L-shape pipe at the straight section, and then apply brazing the elbow, socket and pipe procured locally.  |

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

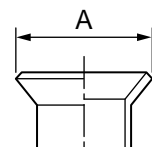
| Copper pipe outer dia. | Rigid (Clutch type) | | Imperial (Wing nut) |
|------------------------|---------------------|------------------------|---------------------|
| | R410A tool used | Conventional tool used | |
| 9.5 | 0 to 0.5 | 1.0 to 1.5 | 1.5 to 2.0 |
| 12.7 15.9 | | | 2.0 to 2.5 |



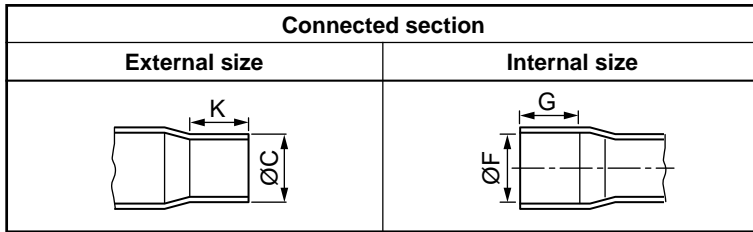
* When using the conventional flare tool, to connect R410A pipes with flaring, make a margin approx. 0.5mm longer than that of R22 pipe so that the flare size matches with the specified one. It is convenient to use a copper pipe gauge for size adjustment of the extruding margin.

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

| Copper pipe outer dia. | A ⁺⁰ _{-0.4} |
|------------------------|---------------------------------|
| 9.5 | 13.2 |
| 12.7 | 16.6 |
| 15.9 | 19.7 |



• Coupling size of brazed pipe



(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) | | K | G | | |
| | C | F | | | | |
| 6.35 | 6.35 (±0.03) | 6.45 (+0.04/-0.02) | 7 | 6 | 0.06 or less | 0.50 |
| 9.52 | 9.52 (±0.03) | 9.62 (+0.04/-0.02) | 8 | 7 | 0.08 or less | 0.60 |
| 12.70 | 12.70 (±0.03) | 12.81 (+0.04/-0.02) | 9 | 8 | 0.10 or less | 0.70 |
| 15.88 | 15.88 (±0.03) | 16.00 (+0.04/-0.02) | 9 | 8 | 0.13 or less | 0.80 |
| 19.05 | 19.05 (±0.03) | 19.19 (+0.03/-0.03) | 11 | 10 | 0.15 or less | 0.80 |
| 22.22 | 22.22 (±0.03) | 22.36 (+0.03/-0.03) | 11 | 10 | 0.16 or less | 0.82 |
| 28.58 | 28.58 (±0.04) | 28.75 (+0.06/-0.02) | 13 | 12 | 0.20 or less | 1.00 |
| 34.92 | 34.90 (±0.04) | 35.11 (+0.04/-0.04) | 14 | 13 | 0.25 or less | 1.20 |
| 38.10 | 38.10 (±0.05) | 38.31 (+0.08/-0.02) | 15 | 14 | 0.27 or less | 1.26 |
| 41.28 | 41.28 (±0.05) | 41.50 (+0.08/-0.02) | 15 | 14 | 0.28 or less | 1.35 |

Selection of pipe materials and size

• Selection of pipe material

Material: Phosphorus deoxidation seam-less pipe

• Capacity code of indoor and outdoor units

- For the indoor unit, the capacity code is decided at each capacity rank.
- The capacity codes of the outdoor units are decided at each capacity rank. The maximum No. of connectable indoor unit and the total value of capacity codes of the indoor units are also decided.

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 height difference between the indoor units is below 15m: Up to 135% of capacity code (Equivalent to HP) of the outdoor unit
- When height difference between the indoor units is over 15m: Up to 105% of capacity code (Equivalent to HP) of the outdoor unit

Table 1

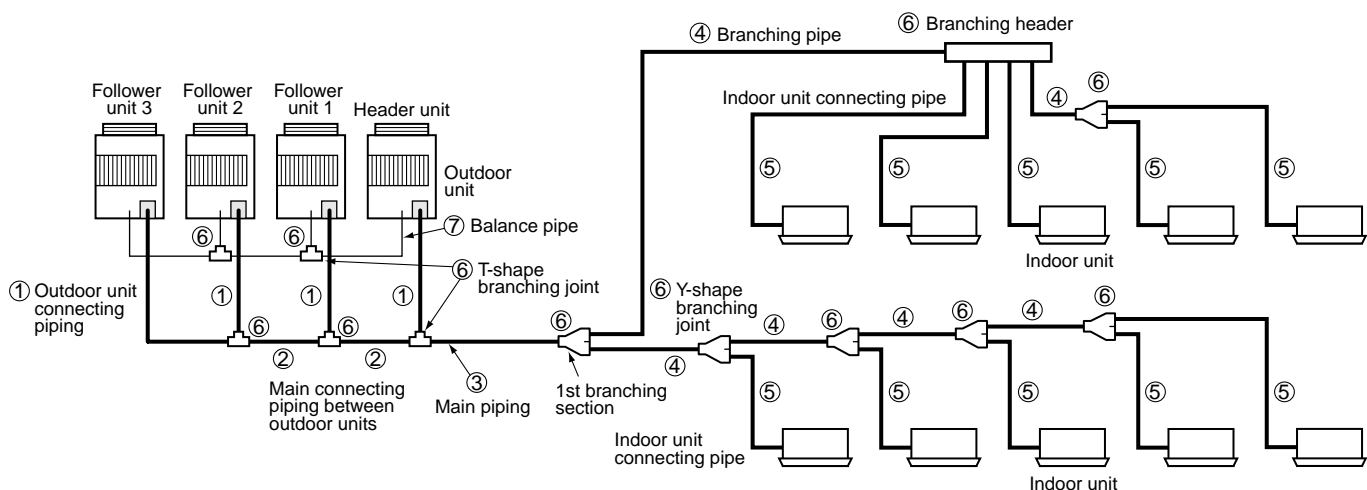
| Indoor unit capacity rank | Capacity code | |
|---------------------------|------------------|------------------------|
| | Equivalent to HP | Equivalent to capacity |
| 007 type | 0.8 | 2.2 |
| 009 type | 1 | 2.8 |
| 012 type | 1.25 | 3.6 |
| 015 type | 1.7 | 4.5 |
| 018 type | 2 | 5.6 |
| 024 type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

Table 2

| Outdoor unit model name | Capacity code | | No. of indoor units | Outdoor unit model name | Capacity code | | No. of indoor units |
|-------------------------|------------------|------------------------|---------------------|-------------------------|------------------|------------------------|---------------------|
| | Equivalent to HP | Equivalent to capacity | | | Equivalent to HP | Equivalent to capacity | |
| MMY-MAP0501 * | 5 | 14 | 8 | MMY-AP2801 * | 28 | 78.5 | 47 |
| MMY-MAP0601 * | 6 | 16 | 10 | MMY-AP3001 * | 30 | 84 | 48 |
| MMY-MAP0801 * | 8 | 22.4 | 13 | MMY-AP3201 * | 32 | 90 | 48 |
| MMY-MAP1001 * | 10 | 28 | 16 | MMY-AP3211 * | | | |
| MMY-MAP1201 * | 12 | 33.5 | 20 | MMY-AP3401 * | 34 | 96 | 48 |
| MMY-AP1401 * | 14 | 38.4 | 23 | MMY-AP3411 * | | | |
| MMY-AP1601 * | 16 | 45 | 27 | MMY-AP3601 * | 36 | 101 | 48 |
| MMY-AP1801 * | 18 | 50.4 | 30 | MMY-AP3611 * | | | |
| MMY-AP2001 * | 20 | 56 | 33 | MMY-AP3801 * | 38 | 106.5 | 48 |
| MMY-AP2201 * | 22 | 61.5 | 37 | MMY-AP4001 * | 40 | 112 | 48 |
| MMY-AP2211 * | | | | 42 | 118 | 48 | |
| MMY-AP2401 * | | | | 44 | 123.5 | 48 | |
| MMY-AP2411 * | 24 | 68 | 40 | MMY-AP4601 * | 46 | 130 | 48 |
| MMY-AP2601 * | 26 | 73 | 43 | MMY-AP4801 * | 48 | 135 | 48 |

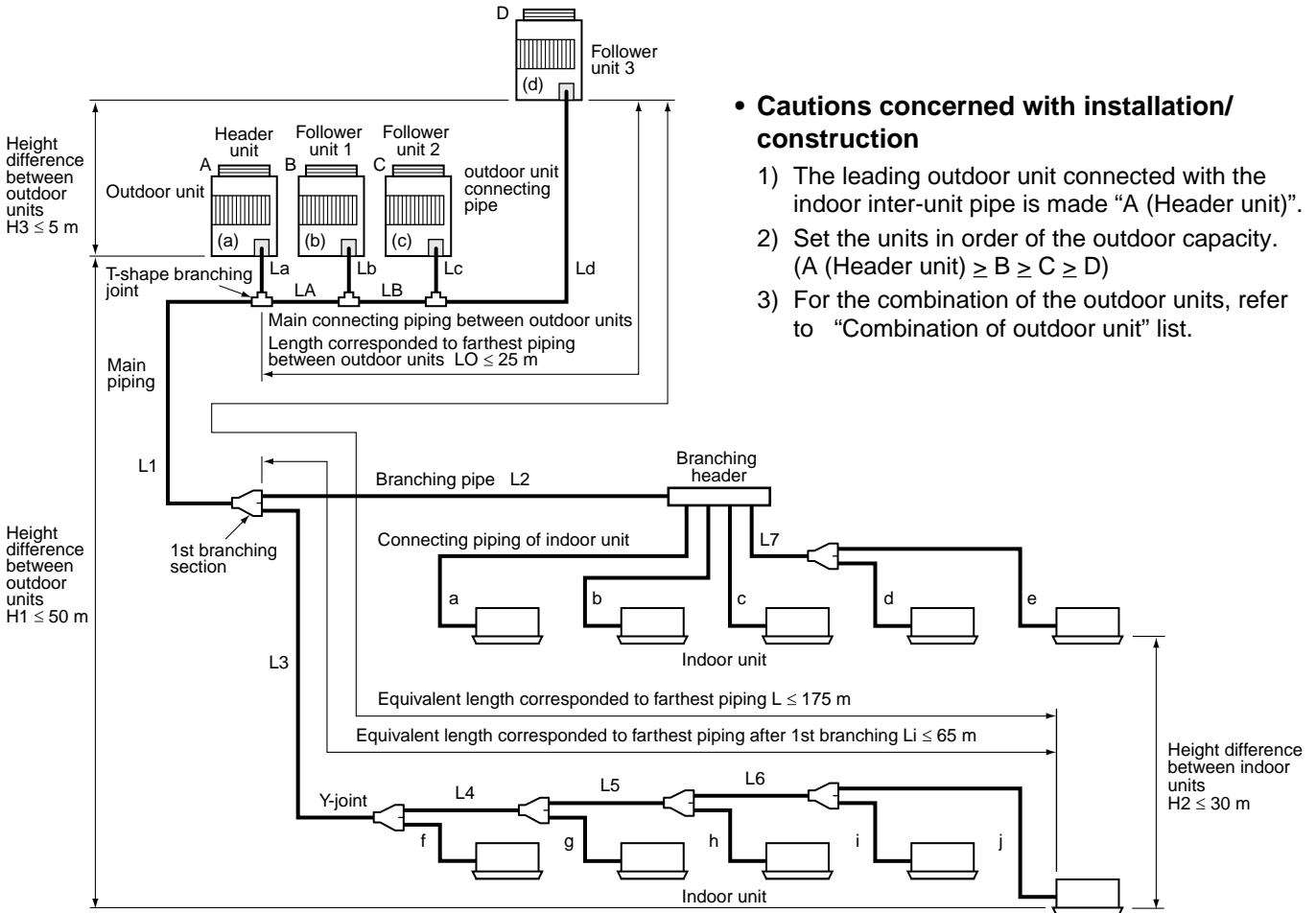
* For combination of the outdoor units, refer to "Combination of outdoor units".

| No. | Piping parts | Name | Selection of pipe size | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|-------------------------------------|--|------------|------------------|------------------------|-----------------------------------|-----------|--|-------------------------|----|-------------------|--------------------|--------------------|--------------------|------------|------------|--------------------------------|----------------|------------|-------------|--------------------|-------------|----------------|------------|-------------|--------------------|-------------|--|--|--|-----------|----------------|---|-----------------------|---|--|--|--------------------|--|
| ⑥ | Branching section | Y-shape branching joint Branching header T-shape branching joint | <p>6) Selection of branching section</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Total capacity code of indoor units</th> <th rowspan="2">Model name</th> </tr> <tr> <th>Equivalent to HP</th> <th>Equivalent to capacity</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Y-shape branching joint *2, *3</td> <td colspan="2">Below 6.4</td> <td>RBM-BY53E, RBM-BY54E</td> </tr> <tr> <td rowspan="3">*1</td> <td>6.4 to below 14.2</td> <td>18.0 to below 40.0</td> </tr> <tr> <td>14.2 to below 25.2</td> <td>40.0 to below 70.5</td> </tr> <tr> <td>Above 25.2</td> <td>Above 70.5</td> </tr> <tr> <td rowspan="4">Branching header *2, *3, *4</td> <td rowspan="2">For 4 branches</td> <td>Below 14.2</td> <td>RBM-HY1043E</td> </tr> <tr> <td>14.2 to below 25.2</td> <td>RBM-HY2043E</td> </tr> <tr> <td rowspan="2">For 8 branches</td> <td>Below 14.2</td> <td>RBM-HY1083E</td> </tr> <tr> <td>14.2 to below 25.2</td> <td>RBM-HY2083E</td> </tr> <tr> <td rowspan="3">T-shape branching joint (For link of outdoor units)</td> <td colspan="2">The following 3 types of T-shape branching joint pipes are made to one set. Arrange the required quantities and combine at the local site.</td> <td rowspan="3">RBM-BT13E</td> </tr> <tr> <td>• Balance pipe</td> <td>(Corresponding dia. $\varnothing 9.5$) x 1</td> </tr> <tr> <td>• Pipe at liquid side</td> <td>($\varnothing 9.5$ to $\varnothing 22.1$) x 1</td> </tr> <tr> <td></td> <td></td> <td>• Pipe at gas side</td> <td>($\varnothing 15.9$ to $\varnothing 41.3$) x 1</td> </tr> </tbody> </table> <p>*1: If exceeding the main pipe size, decide the size same to main pipe size. *2: Select the branching pipe of the 1st branching section according to the capacity code of the outdoor unit. *3: When the total capacity code of the indoor units exceeds the capacity code of the outdoor units, select the branching pipe according to the capacity code of the outdoor units. *4: Up to total 6.0 of Max. Equivalent to HP capacity codes is connectable to one line after branching of header.</p> | | Total capacity code of indoor units | | Model name | Equivalent to HP | Equivalent to capacity | Y-shape branching joint *2, *3 | Below 6.4 | | RBM-BY53E, RBM-BY54E | *1 | 6.4 to below 14.2 | 18.0 to below 40.0 | 14.2 to below 25.2 | 40.0 to below 70.5 | Above 25.2 | Above 70.5 | Branching header *2, *3, *4 | For 4 branches | Below 14.2 | RBM-HY1043E | 14.2 to below 25.2 | RBM-HY2043E | For 8 branches | Below 14.2 | RBM-HY1083E | 14.2 to below 25.2 | RBM-HY2083E | T-shape branching joint (For link of outdoor units) | The following 3 types of T-shape branching joint pipes are made to one set. Arrange the required quantities and combine at the local site. | | RBM-BT13E | • Balance pipe | (Corresponding dia. $\varnothing 9.5$) x 1 | • Pipe at liquid side | ($\varnothing 9.5$ to $\varnothing 22.1$) x 1 | | | • Pipe at gas side | ($\varnothing 15.9$ to $\varnothing 41.3$) x 1 |
| | Total capacity code of indoor units | | Model name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Equivalent to HP | Equivalent to capacity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y-shape branching joint *2, *3 | Below 6.4 | | RBM-BY53E, RBM-BY54E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | *1 | 6.4 to below 14.2 | 18.0 to below 40.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14.2 to below 25.2 | 40.0 to below 70.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Above 25.2 | Above 70.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Branching header *2, *3, *4 | For 4 branches | Below 14.2 | RBM-HY1043E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14.2 to below 25.2 | RBM-HY2043E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | For 8 branches | Below 14.2 | RBM-HY1083E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14.2 to below 25.2 | RBM-HY2083E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T-shape branching joint (For link of outdoor units) | The following 3 types of T-shape branching joint pipes are made to one set. Arrange the required quantities and combine at the local site. | | RBM-BT13E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • Balance pipe | (Corresponding dia. $\varnothing 9.5$) x 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • Pipe at liquid side | ($\varnothing 9.5$ to $\varnothing 22.1$) x 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | • Pipe at gas side | ($\varnothing 15.9$ to $\varnothing 41.3$) x 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



5 REFRIGERANT PIPING

Allowable length of refrigerant pipe and height difference



• Cautions concerned with installation/ construction

- 1) The leading outdoor unit connected with the indoor inter-unit pipe is made "A (Header unit)".
- 2) Set the units in order of the outdoor capacity. (A (Header unit) ≥ B ≥ C ≥ D)
- 3) For the combination of the outdoor units, refer to "Combination of outdoor unit" list.

• Restriction to the system

| | | |
|--|----------------|----------------------------------|
| Max. No. of combined outdoor units | 4 units | |
| Max. capacity of combined outdoor units | 48HP | |
| Max. No. of connected indoor units | 48 units | |
| Max. capacity of connected indoor units (Differs by height difference between indoor units) | H2 ≤ 15m | 135% of capacity of outdoor unit |
| | 15m < H2 ≤ 30m | 105% of capacity of outdoor unit |

• Allowable length/height difference of the refrigerant pipe

| | | Allowable value | Pipe section |
|-------------------|---|-----------------------|--|
| Pipe length | Total extended pipe length (Liquid pipe/real length) | 300m | LA + LB + La + Lb + Lc + Ld + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j |
| | Farthest equivalent piping length L (*1) | 175m | LA + LB + Ld + L1 + L3 + L4 + L5 + L6 + j |
| | Max. equivalent length of main pipe (*3) | 85m | L1 |
| | Farthest equivalent piping length from 1st branch Li (*1) | 65m | L3 + L4 + L5 + L6 + j |
| | Farthest equivalent piping length between outdoor units LO (*1) | 25m | LA + LB + Ld (LA + Lb, LA + LB + Lc) |
| | Max. equivalent length of outdoor unit connecting pipe | 10m | Ld (La, Lb, Lc) |
| | Max. real length of outdoor unit connecting pipe | 30m | a, b, c, d, e, f, g, h, i, j |
| Height difference | Height difference between indoor unit and outdoor unit H1 | Outdoor at upper side | 50m |
| | | Outdoor at lower side | 40m (*2) |
| | Height difference between indoor units H2 | 30m | — |
| | Height difference between outdoor units H3 | 5m | — |

*1 : Farthest outdoor unit: (d), farthest indoor unit: (j) from 1st branch

*2 : If the height difference (H2) between indoor units exceeds 3m, set below 30m.

*3 : If Maximum capacity of the combined outdoor units exceeds 46HP, Maximum equivalent length is up to 70m.

Airtight test

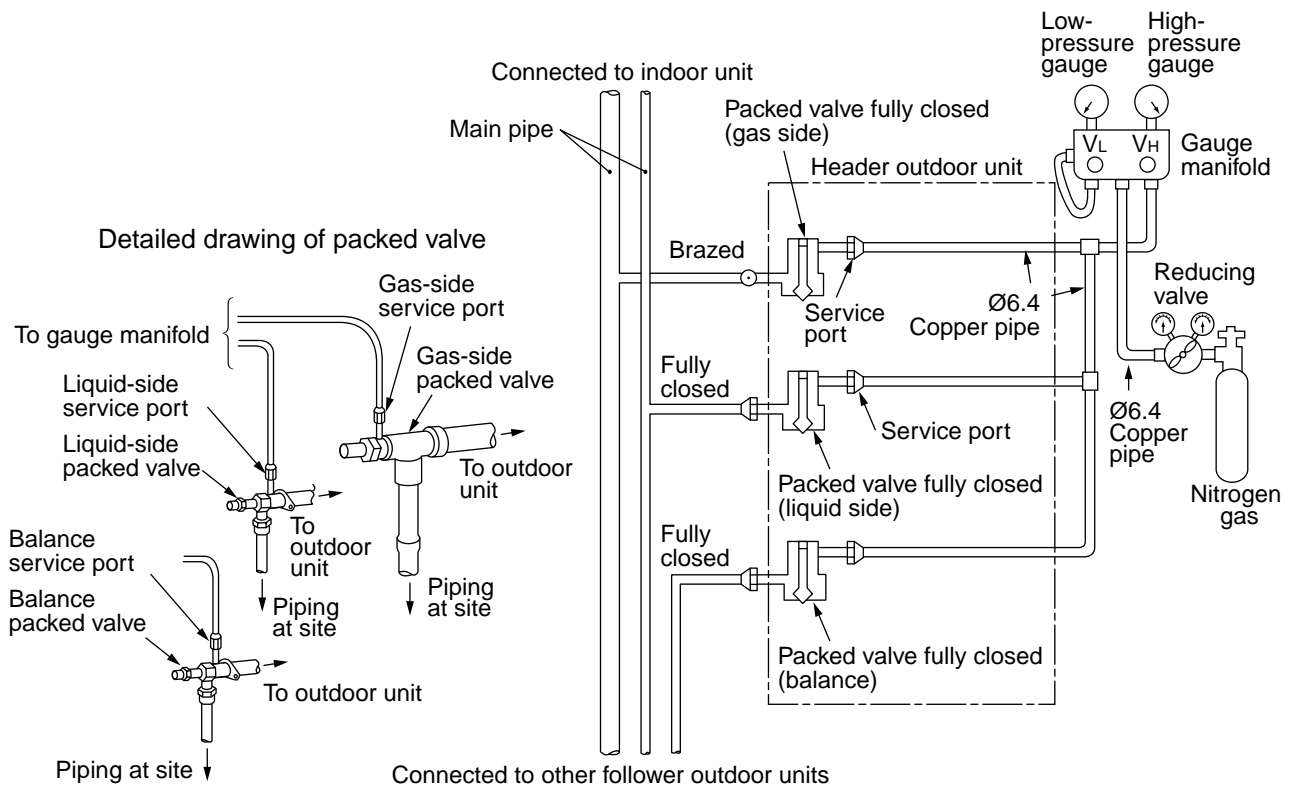
After the refrigerant piping has finished, execute an airtight test. For an airtight test, connect a nitrogen gas bomb as shown in the figure below, and apply pressure.

- Be sure to apply pressure from the service ports of the packed valves (or ball valves) at liquid side, gas side, and balance pipe side.
- An airtight test can be only performed to the service ports at liquid side, gas side, and balance side of the header outdoor unit.
- Close fully valves at liquid side, gas side, and balance side. As there is possibility that nitrogen gas enters in the refrigerant cycle, re-tighten the valve rods before applying pressure. (Re-tightening of the valve rods are unnecessary for valves at gas side of MMY-MAP0501* and MAP0601* because they are ball valves.)
- For each refrigerant line, apply pressure gradually with steps at liquid side, gas side, and balance side.

Be sure to apply pressure to liquid side, gas side, and balance side.

REQUIREMENT

Never use "Oxygen", "Flammable gas" and "Noxious gas" in an airtight test.



- STEP 1** : Apply pressure 0.3MPa (3.0kg/cm²G) for 3 minutes or more.) Available to detect a gross leakage
- STEP 2** : Apply pressure 1.5MPa (15kg/cm²G) for 3 minutes or more.) Available to detect a gross leakage
- STEP 3** : Apply pressure 3.73MPa (38kg/cm²G) for approx. 24 hours. Available to detect slow leakage

- Check pressure down.

No pressure down: Accepted Pressure down: Check the leaked position.

(However, if there is difference of ambient temp. between when pressure has been applied and when 24 hours passed, pressure changes by approx. 0.01MPa (0.1kg/cm²G) per 1°C. Correct the pressure.)

Leaked position check

When a pressure-down is detected in STEP 1, STEP 2, or STEP 3, check the leakage at the connecting points. Check leakage with hearing sense, feeler, foaming agent, etc, and perform re-brazing or re-tightening of flare if leakage is detected.

5 REFRIGERANT PIPING

Air purge

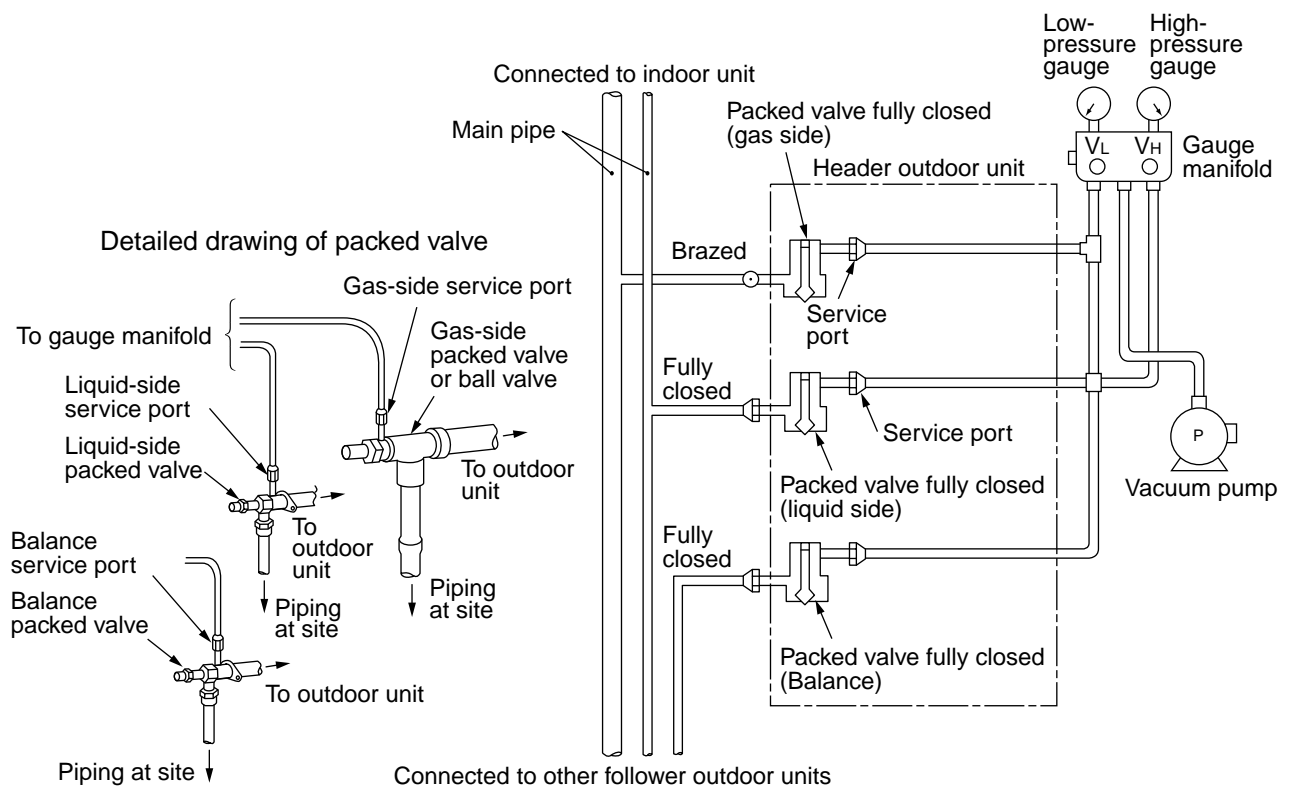
For the air purge at installation time (Discharge of air in connecting pipes), use “**Vacuum pump method**” from viewpoint of protection of earth environment.

- For protection of earth environment, do not discharge the flon gas in the air.
- Using a vacuum pump, eliminate the remained air (nitrogen gas, etc.) in the unit. If gas remains, an absence of faculties may be caused.

After the airtight test, discharge nitrogen gas. Then connect the gauge manifold to the service ports at liquid, gas, and balance sides, and connect the vacuum pump as shown in the following figure.

Be sure to perform vacuuming for liquid, gas and balance sides.

- Be sure to perform vacuuming from both liquid and gas sides.
- Be sure to use a vacuum pump with counter-flow preventive function so that oil in the pump does not back up in the pipe of the air conditioner while the pump stops. (If oil in the vacuum pump enters in the air conditioner with R410A refrigerant, a trouble is caused in the refrigerating cycle.)



- Use a vacuum pump having a high vacuuming degree (below -755mmHg) and a large exhaust gas amount (over 40L/minute).
- Perform vacuuming for 2 or 3 hours though time differs due to pipe length. In this time, check all packed valves at liquid, gas, and balance sides are fully closed.
- If vacuuming valve amount is not decreased to below -755mmHg even after vacuuming for 2 hours or more, continue vacuuming for 1 hour or more.
If -755mmHg or less cannot be obtained by 3 hours or more vacuuming, check the leaked position.
- When vacuuming valve reached to -755mmHg or less after vacuuming for 2 hours or more, close valves VL and VH of the gauge manifold fully, stop the vacuum pump, leave it as it is for 1 hour, and then check the vacuuming degree does not change. If it changed, there may be a leaked position. Check the leaked position.
- After the above procedure of vacuuming has finished, exchange the vacuum pump with a refrigerant cylinder and advance to the additional charging of refrigerant.

Addition of refrigerant

After vacuuming work, exchange the vacuum pump with the refrigerant bomb and then start the additional charging work of refrigerant.

Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipe at the local site. For refrigerant to be charged in pipe 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 addition of refrigerant.

| Heat pump model | Outdoor unit Model MMY- | MAP0501HT8-E | MAP0601HT8-E | MAP0801HT8-E | MAP1001HT8-E | MAP1201HT8-E |
|-----------------|-------------------------|--------------|--------------|--------------|--------------|--------------|
| | Charging amount (kg) | | 8.5 | | 12.0 | |

| Cooling only model | Outdoor unit Model MMY- | MAP0501T8-E | MAP0601T8-E | MAP0801T8-E | MAP1001T8-E | MAP1201T8-E |
|--------------------|-------------------------|-------------|-------------|-------------|-------------|-------------|
| | Charging amount (kg) | | 8.0 | | 11.0 | |

$$\text{Additional refrigerant charge amount at local site} = \text{Real length of liquid pipe} \times \text{Additional refrigerant charge amount per 1m liquid pipe (Table 1)} + \text{Corrective amount of refrigerant combined horse power (Table 2)}$$

Table 1

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

Table 2

| Combined HP (HP) | Combined outdoor units (HP) | | | C (Corrective amount of refrigerant) (kg) | Combined HP (HP) | Combined outdoor units (HP) | | | | C (Corrective amount of refrigerant) (kg) |
|------------------|-----------------------------|----|---|---|------------------|-----------------------------|----|----|----|---|
| | | | | | | | | | | |
| 5 | 5 | | | 0.0 | 28 | 10 | 10 | 8 | | -2.0 |
| 6 | 6 | | | 0.0 | 30 | 10 | 10 | 10 | | 0.0 |
| 8 | 8 | | | 1.5 | 32 | 12 | 10 | 10 | | 1.0 |
| 10 | 10 | | | 2.5 | | 8 | 8 | 8 | 8 | -6.0 |
| 12 | 12 | | | 3.5 | 34 | 12 | 12 | 10 | | 3.0 |
| 14 | 8 | 6 | | 0.0 | | 10 | 8 | 8 | 8 | -6.0 |
| 16 | 8 | 8 | | 0.0 | 36 | 12 | 12 | 12 | | 4.0 |
| 18 | 10 | 8 | | 0.0 | | 10 | 10 | 8 | 8 | -6.0 |
| 20 | 10 | 10 | | 3.0 | 38 | 10 | 10 | 10 | 8 | -6.0 |
| 22 | 12 | 10 | | 5.0 | 40 | 10 | 10 | 10 | 10 | -5.0 |
| | 8 | 8 | 6 | 0.0 | 42 | 12 | 10 | 10 | 10 | -4.0 |
| 24 | 12 | 12 | | 7.0 | 44 | 12 | 12 | 10 | 10 | -2.0 |
| | 8 | 8 | 8 | -4.0 | 46 | 12 | 12 | 12 | 10 | 0.0 |
| 26 | 10 | 8 | 8 | -4.0 | 48 | 12 | 12 | 12 | 12 | 2.0 |

Charging of refrigerant

- Keeping valve of the outdoor unit closed, be sure to charge the liquid refrigerant into service port at liquid side.
- If the specified amount of refrigerant cannot be charged, open fully valves of outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode under condition that valve at gas side is a little returned to close side (MAP0801*, MAP1001*, MAP1201* only), and then charge refrigerant into service port at gas side. In this time, choke the refrigerant slightly by operating valve of the bomb to charge liquid refrigerant.
The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.
- When refrigerant leaks and refrigerant shortage occurs in the system, recover the refrigerant in the system and recharge refrigerant newly up to the correct level.

REQUIREMENT

<Entry of refrigerant charge amount>

- Fill the additional refrigerant record column of the wiring diagram indication plate with the additional refrigerant amount at installation work, total refrigerant amount and the name of the service man who charged refrigerant at installation time.
- The total refrigerant amount means the total value of the refrigerant amount at shipment and the additional refrigerant amount at installation time.
The refrigerant amount at the shipment is one described on the "Unit nameplate".

5 REFRIGERANT PIPING

Full opening of valve

- Open valve of the outdoor unit fully.
- Using 4mm-hexagonal wrench, open fully the valve rods at liquid and balance sides.
- Using a spanner, etc, open fully the valve rod of packed valve (MMY-MAP0801*, MAP1001*, MAP1201*) at gas side.

How to open the ball valve at gas side

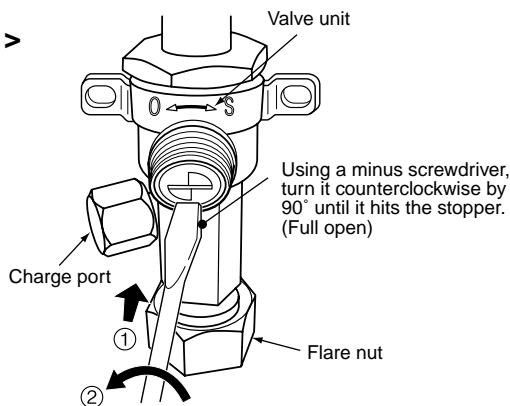
(MMY-MAP0501*, MAP0601*)

Two types of valves are provided to the gas side. Refer to the corresponding one.

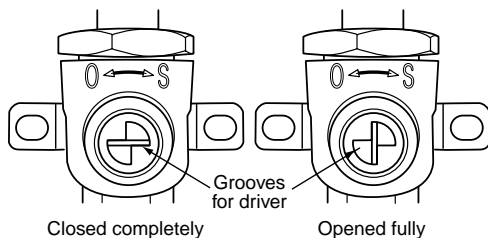
The valve is changed to a renewal one from type 1 to type 2. (Both functions are same, but structure of the stem stoppers are different.)

Therefore confirm the structure surely and then open or close the valve.

<TYPE 1>



Position of grooves for driver



- *1. When opened fully, do not apply an excessive torque after the screwdriver hit the stopper; otherwise a trouble may be caused on the valve. (5 N•m or less)

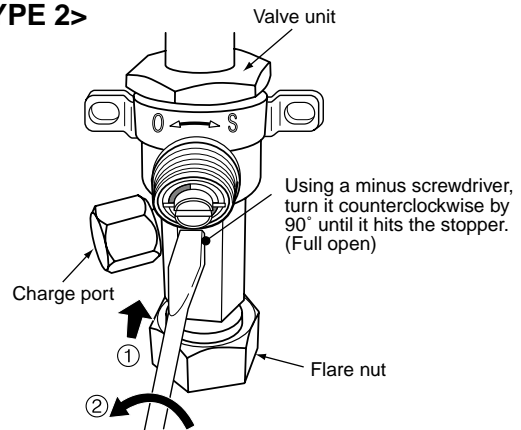
Heat insulation for pipe

- Apply heat insulation of pipe separately at liquid, gas, and balance sides.
- Be sure to use thermal insulator with heat-resisting temp. 120°C or more.

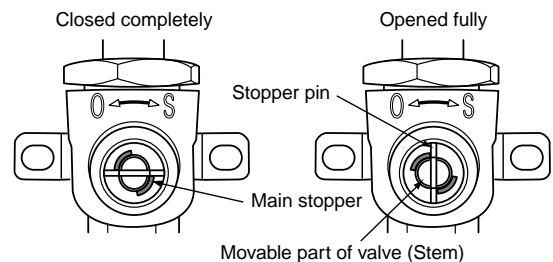
CAUTION

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

<TYPE 2>

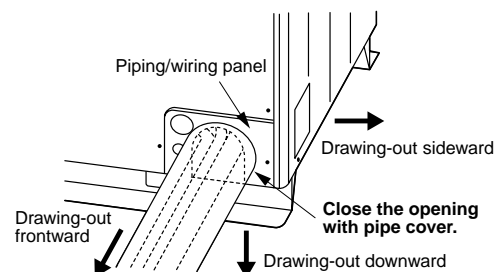


Handle position

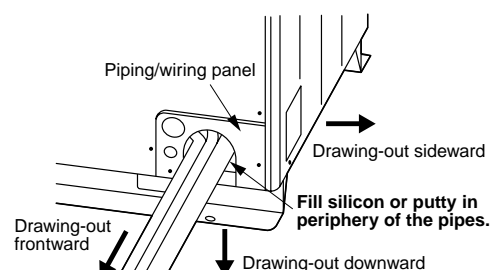


- *1. Use the vacuum pump, vacuum pump adapters, and gauge manifold referring to the manuals attached to each tool before using them. For the vacuum pump, check oil is filled up to the specified line of the oil gauge.
- *2. While the air is purged, check again that the connecting port of charge hose, which has a projection to push the valve core, is firmly connected to the charge port.

In case of using pipe cover



In case of using no pipe cover



6 ELECTRIC WIRING

WARNING

Using the exclusive circuit, a person qualified for electrician shall work for the electric work in conformance with the regulations of the local electric company and the Installation Manual.

If there is capacity shortage of the power circuit or incomplete electric work, a fire or electric shock is caused.

For cabling, use the specified cables and connect them securely so that external force of cable does not transmit to the terminal connecting section.

If connection or fixing is incomplete, a fire is caused.

Be sure to connect the earth wire.

Grounding work is necessary based upon a law. If the earth grounding is incomplete, an electric shock is caused.

Do not connect earth wire to gas pipe, lightning rod, or earth wire of telephone.

CAUTION

Be sure to attach an earth leakage breaker; otherwise an electric shock may be caused.

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.

REQUIREMENT

- Perform wiring of the power supply in conformance with the regulations of the local electric company.
- For cabling of the power supply of the indoor unit and the inter-unit cabling between indoor and outdoor units, refer to the Installation Manual of indoor unit.
- Never connect the 220–240V power to the terminal block (U1, U2, U3, U4, U5, U6) for control cables. (Trouble is caused.)
- Arrange the cables so that the electric wires do not come to contact with high-temperature part of the pipe; otherwise coating melts and an accident may be caused.
- After connecting cable to the terminal block, take off the trap and then fix the cable with cable clamp.
- Store wiring system for control and refrigerant piping system in the same line.
- Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe will finish.

6 ELECTRIC WIRING

Power supply specifications

- Power supply specifications of outdoor unit**

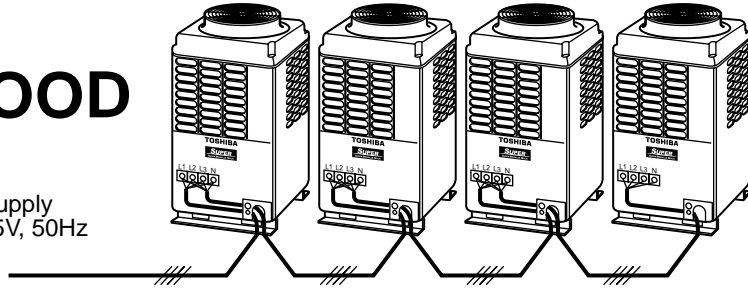
Select the power supply cabling and fuse of each outdoor unit from the following specifications:

Cable 5-core, in conformance with Design 60245 IEC 66

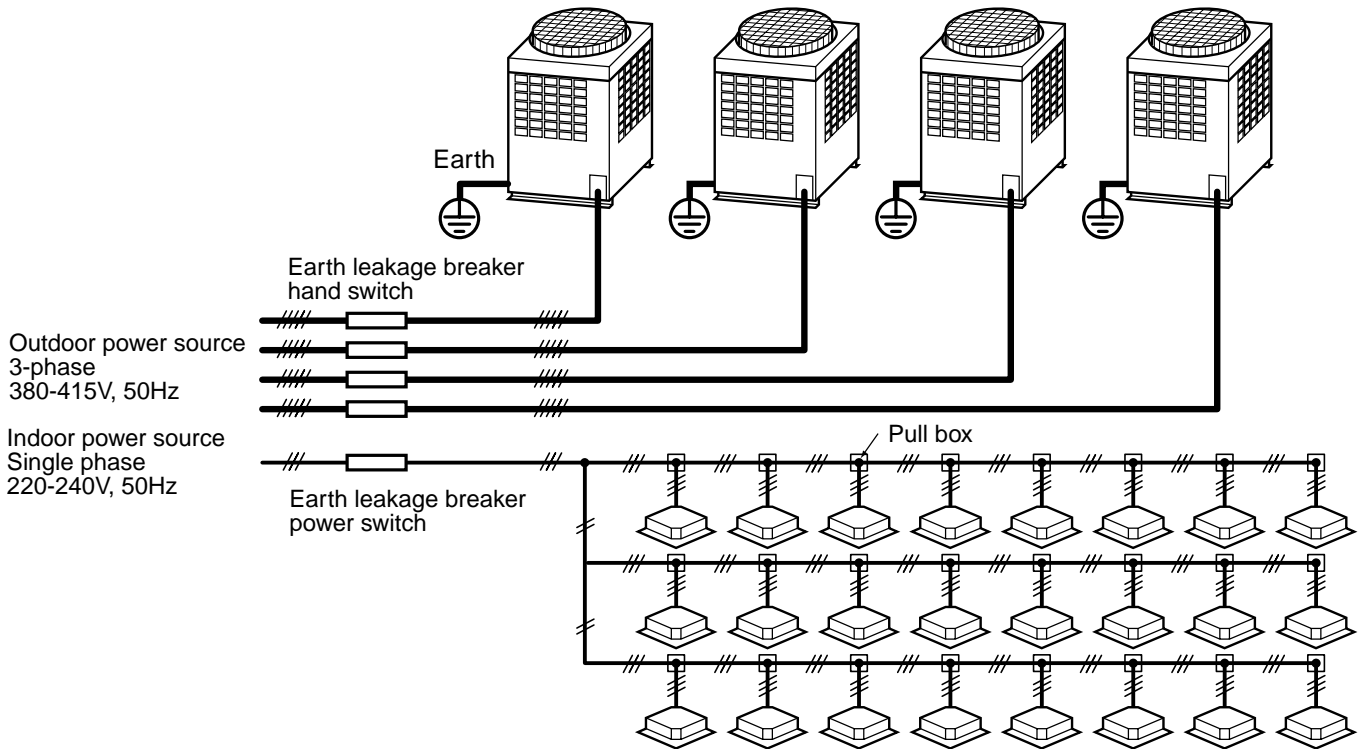
- Do not connect the outdoor units by crossing outside of them, but connect them via the incorporated terminal block (L1, L2, L3, N).

NO GOOD

Outdoor power supply
3-phase 380-415V, 50Hz



Electrical wiring design



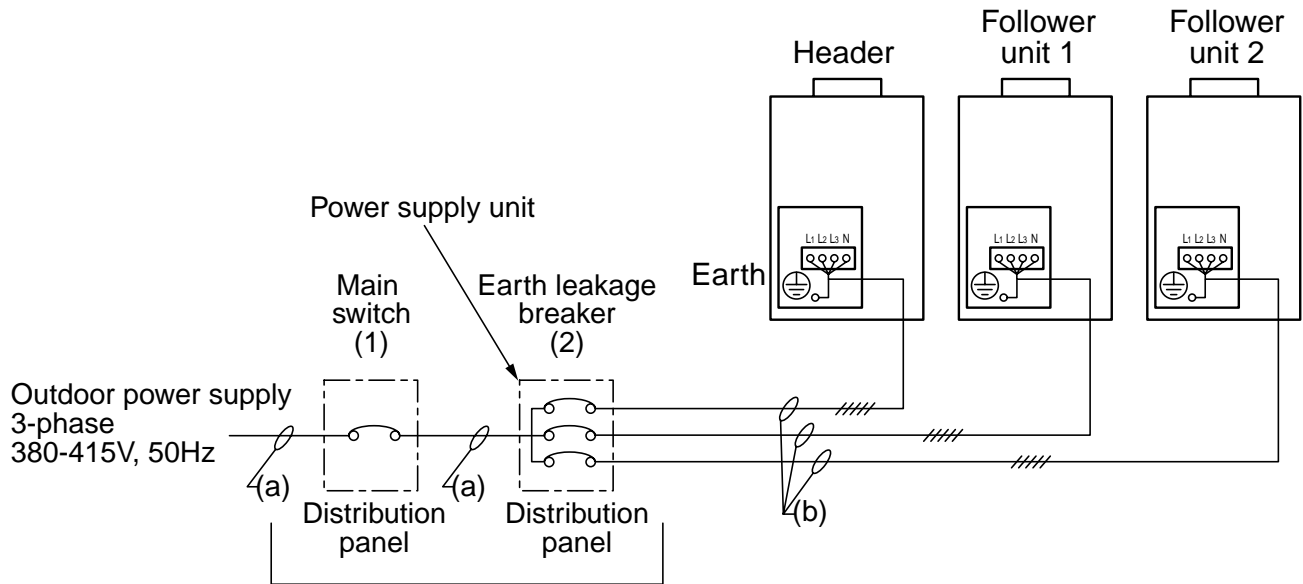
- Unit capacities and power supply wire sizes (Reference)

| Model | MMY- | Power supply wiring | |
|-------------|--------------|---|------------|
| | | Wire size | Field fuse |
| MAP0501T8-E | MAP0501HT8-E | 3.5 mm ² (AWG #12) Max. 26 m | 20 A |
| MAP0601T8-E | MAP0601HT8-E | 3.5 mm ² (AWG #12) Max. 26 m | 20 A |
| MAP0801T8-E | MAP0801HT8-E | 3.5 mm ² (AWG #12) Max. 20 m | 30 A |
| MAP1001T8-E | MAP1001HT8-E | 5.5 mm ² (AWG #10) Max. 28 m | 30 A |
| MAP1201T8-E | MAP1201HT8-E | 5.5 mm ² (AWG #10) Max. 27 m | 30 A |

- Determine the wire size for indoor unit according to the number of connected indoor units downstream.
- Observe local regulation regarding wire size selection and installation.

• **Power supply specifications of combined outdoor units**

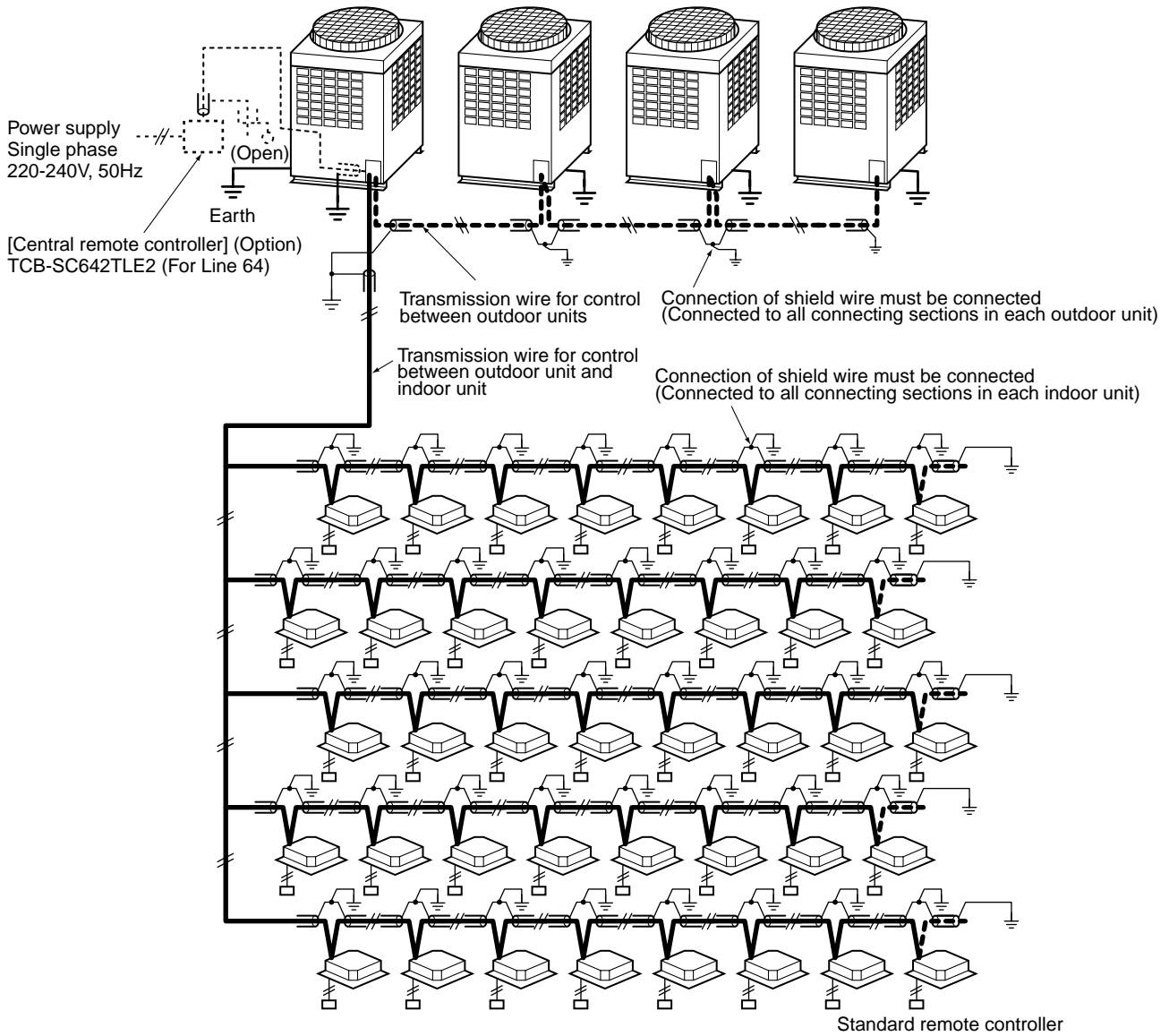
When a distribution panel is provided for each combined outdoor units as shown in the following figure, select the power supply wiring of the main trunk line (a) up to the distribution panel and fuse from the table below.



| Cooling only model | Heat pump model | Power supply wiring | |
|--------------------|-----------------|---------------------------------------|------------|
| | | Wire size | Field fuse |
| MMY-AP1401T8-E | MMY-AP1401HT8-E | 14 mm ² (AWG #6) Max. 45 m | 40 A |
| MMY-AP1601T8-E | MMY-AP1601HT8-E | 14 mm ² (AWG #6) Max. 39 m | 50 A |
| MMY-AP1801T8-E | MMY-AP1801HT8-E | 14 mm ² (AWG #6) Max. 37 m | 50 A |
| MMY-AP2001T8-E | MMY-AP2001HT8-E | 14 mm ² (AWG #6) Max. 35 m | 60 A |
| MMY-AP2201T8-E | MMY-AP2201HT8-E | 22 mm ² (AWG #4) Max. 45 m | 75 A |
| MMY-AP2211T8-E | MMY-AP2211HT8-E | 14 mm ² (AWG #6) Max. 35 m | 60 A |
| MMY-AP2401T8-E | MMY-AP2401HT8-E | 22 mm ² (AWG #4) Max. 41 m | 75 A |
| MMY-AP2411T8-E | MMY-AP2411HT8-E | 14 mm ² (AWG #6) Max. 34 m | 60 A |
| MMY-AP2601T8-E | MMY-AP2601HT8-E | 22 mm ² (AWG #4) Max. 40 m | 75 A |
| MMY-AP2801T8-E | MMY-AP2801HT8-E | 38 mm ² (AWG #1) Max. 66 m | 75 A |
| MMY-AP3001T8-E | MMY-AP3001HT8-E | 38 mm ² (AWG #1) Max. 64 m | 100 A |
| MMY-AP3201T8-E | MMY-AP3201HT8-E | 38 mm ² (AWG #1) Max. 53 m | 100 A |
| MMY-AP3211T8-E | MMY-AP3211HT8-E | 38 mm ² (AWG #1) Max. 63 m | 100 A |
| MMY-AP3401T8-E | MMY-AP3401HT8-E | 38 mm ² (AWG #1) Max. 52 m | 100 A |
| MMY-AP3411T8-E | MMY-AP3411HT8-E | 38 mm ² (AWG #1) Max. 62 m | 100 A |
| MMY-AP3601T8-E | MMY-AP3601HT8-E | 38 mm ² (AWG #1) Max. 51 m | 100 A |
| MMY-AP3611T8-E | MMY-AP3611HT8-E | 38 mm ² (AWG #1) Max. 61 m | 100 A |
| MMY-AP3801T8-E | MMY-AP3801HT8-E | 38 mm ² (AWG #1) Max. 49 m | 100 A |
| MMY-AP4001T8-E | MMY-AP4001HT8-E | 60 mm ² (AWG #0) Max. 76 m | 125 A |
| MMY-AP4201T8-E | MMY-AP4201HT8-E | 60 mm ² (AWG #0) Max. 75 m | 125 A |
| MMY-AP4401T8-E | MMY-AP4401HT8-E | 60 mm ² (AWG #0) Max. 74 m | 125 A |
| MMY-AP4601T8-E | MMY-AP4601HT8-E | 60 mm ² (AWG #0) Max. 73 m | 125 A |
| MMY-AP4801T8-E | MMY-AP4801HT8-E | 60 mm ² (AWG #0) Max. 73 m | 125 A |

6 ELECTRIC WIRING

Design of control wiring



- Wire specification, quantity, size of crossover wiring and remote controller wiring

| Name | Q'ty | Size | | | Specification |
|---|---------|---------------------------|-------------|--------------------|---------------|
| | | Up to 500m | Up to 1000m | 1000 to 2000m | |
| Crossover wiring (indoor-indoor / indoor-outdoor / outdoor-indoor control wiring, central control wiring) | 2 cores | 1.25mm ² | | 2.0mm ² | Shield wire |
| Remote controller wiring | 2 cores | 0.5 to 2.0mm ² | — | — | — |

- 1) The crossover wiring and central control wiring use 2-core non-polarity transmission wires. Use 2-core shield wires to prevent noise trouble. In this case, for the system grounding, close (connect) the end of shield wires, and isolate the end of terminal. Perform the ground of wires at one side only for the header outdoor unit.
- 2) Use 2-core and non-polarity wire for remote controller. (A, B terminals)
Use 2-core and non-polarity wire for wiring of group control. (A, B terminals)

Design of control wiring

- All control wiring is 2-core and non-polarity wire.
- Be sure to use shield wire for the following wiring to prevent noise trouble.
 - Outdoor-outdoor / indoor-indoor / outdoor-indoor control wiring, Central control wiring.

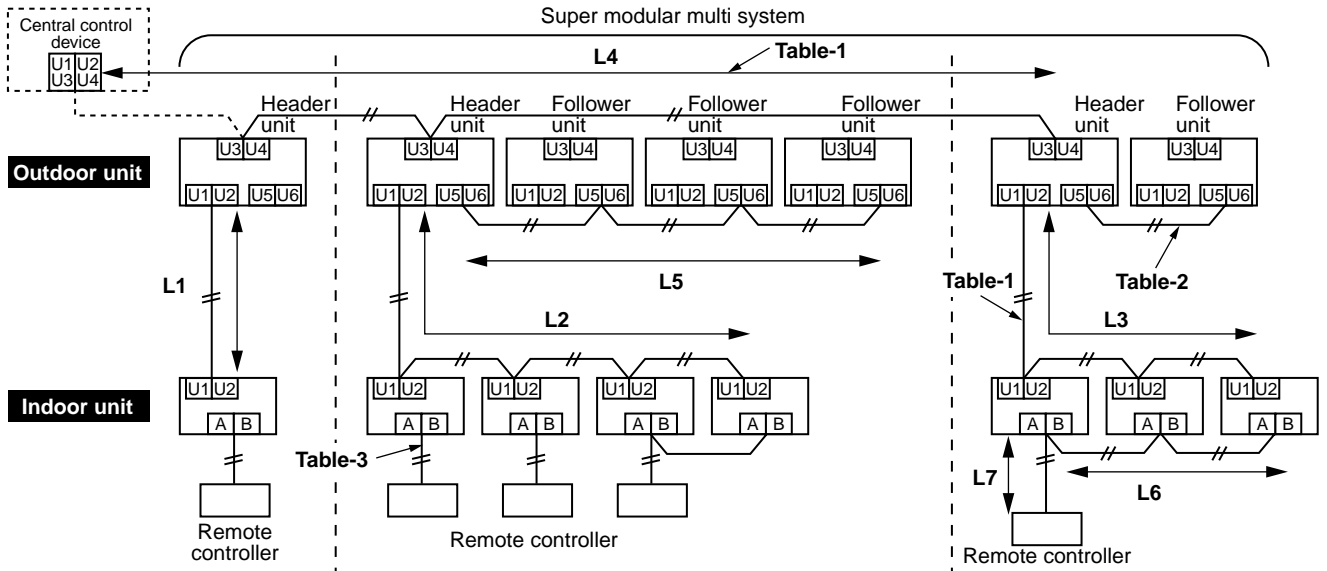


Table-1 Control wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)

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

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

Table-2 Control wiring between outdoor units (L5)

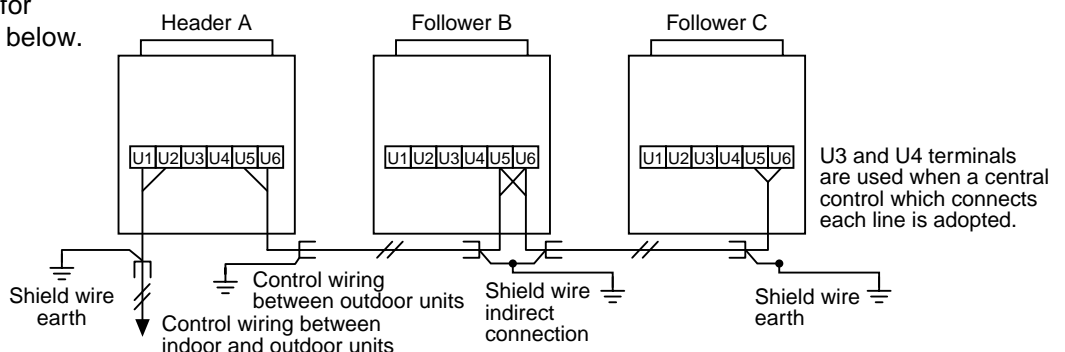
| | |
|----------------------|--|
| Wiring | 2-core, non-polarity |
| Type | Shield wire |
| Size / Length | 1.25 mm ² to 2.0 mm ² / Up to 100 m (L5) |

Table-3 Remote controller wiring (L6, L7)

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

Specifications of cables for controlling

- Connect each cable for controlling as shown below.



■ Single outdoor unit

| Heat Pump Model MMY-MAP | Cooling only Model MMY-MAP | Nominal Voltage (V-Ph-Hz) | Voltage Range | | Compressor | | | | Fan Motor | | Power Supply | | | |
|----------------------------|-------------------------------|------------------------------|---------------|------|------------|-----|----|-----|-----------|------|--------------|------|----|---|
| | | | Min. | Max. | RLA | LRA | kW | FLA | MCA | MOCP | ICF | | | |
| 0501HT8-E | 0501T8-E | 400-3-50 | 342 | 457 | 4.0 + 4.0 | — | | | | 0.60 | 0.8 | 16.5 | 20 | — |
| 0601HT8-E | 0601T8-E | 400-3-50 | 342 | 457 | 4.6 + 4.6 | — | | | | 0.60 | 0.8 | 16.5 | 20 | — |
| 0801HT8-E | 0801T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | | | | 0.60 | 1.0 | 20.0 | 30 | — |
| 1001HT8-E | 1001T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | | | | 0.60 | 1.1 | 22.5 | 30 | — |
| 1201HT8-E | 1201T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | | | | 0.60 | 1.1 | 24.5 | 30 | — |

■ Combination of outdoor unit

| Heat Pump Model MMY-AP | Cooling only model MMY-AP | Nominal Voltage (V-Ph-Hz) | Voltage Range | | Compressor | | | | | | | | Fan Motor | | Power Supply | | |
|---------------------------|------------------------------|------------------------------|---------------|------|------------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----------------------|--------------|------|-----|
| | | | | | Unit No.1 | | Unit No.2 | | Unit No.3 | | Unit No.4 | | | | | | |
| | | | Min | Max | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | kW | FLA | MCA | MOCP | ICF |
| 1401HT8-E | 1401T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | 4.6 + 4.6 | — | — | — | — | — | 0.6 x 2 | 1.0 + 0.8 | 36.5 | 40 | — |
| 1601HT8-E | 1601T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | 5.2 + 5.2 | — | — | — | — | — | 0.6 x 2 | 1.0 + 1.0 | 40.0 | 50 | — |
| 1801HT8-E | 1801T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 5.2 + 5.2 | — | — | — | — | — | 0.6 x 2 | 1.0 + 1.1 | 42.5 | 50 | — |
| 2001HT8-E | 2001T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 6.5 + 6.5 | — | — | — | — | — | 0.6 x 2 | 1.1 + 1.1 | 45.0 | 60 | — |
| 2201HT8-E | 2201T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 4.6 + 4.6 | — | — | — | 0.6 x 3 | 1.0 + 1.0 + 0.8 | 56.5 | 70 | — |
| 2211HT8-E | 2211T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 6.5 + 6.5 | — | — | — | — | — | 0.6 x 2 | 1.1 + 1.1 | 47.0 | 60 | — |
| 2401HT8-E | 2401T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | — | — | 0.6 x 3 | 1.0 + 1.0 + 1.0 | 60.0 | 70 | — |
| 2411HT8-E | 2411T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | — | — | — | — | 0.6 x 2 | 1.1 + 1.1 | 49.0 | 60 | — |
| 2601HT8-E | 2601T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.0 | 62.5 | 70 | — |
| 2801HT8-E | 2801T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 5.2 + 5.2 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.0 | 65.0 | 80 | — |
| 3001HT8-E | 3001T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.1 | 67.5 | 80 | — |
| 3201HT8-E | 3201T8-E | 400-3-50 | 342 | 457 | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 0.6 x 4 | 1.0 + 1.0 + 1.0 + 1.0 | 80.0 | 90 | — |
| 3211HT8-E | 3211T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.1 | 69.5 | 80 | — |
| 3401HT8-E | 3401T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 0.6 x 4 | 1.1 + 1.0 + 1.0 + 1.0 | 82.5 | 100 | — |
| 3411HT8-E | 3411T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 6.5 + 6.5 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.1 | 71.5 | 80 | — |
| 3601HT8-E | 3601T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 5.2 + 5.2 | — | 5.2 + 5.2 | — | 0.6 x 4 | 1.1 + 1.1 + 1.0 + 1.0 | 85.0 | 100 | — |
| 3611HT8-E | 3611T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 9.5 + 9.5 | — | — | — | 0.6 x 3 | 1.1 + 1.1 + 1.1 | 73.5 | 90 | — |
| 3801HT8-E | 3801T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 9.5 + 9.5 | — | 6.5 + 6.5 | — | 5.2 + 5.2 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.0 | 87.5 | 100 | — |
| 4001HT8-E | 4001T8-E | 400-3-50 | 342 | 457 | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.1 | 90.0 | 100 | — |
| 4201HT8-E | 4201T8-E | 400-3-50 | 342 | 2457 | 9.5 + 9.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.1 | 92.0 | 110 | — |
| 4401HT8-E | 4401T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 6.5 + 6.5 | — | 6.5 + 6.5 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.1 | 94.0 | 110 | — |
| 4601HT8-E | 4601T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 6.5 + 6.5 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.1 | 96.0 | 110 | — |
| 4801HT8-E | 4801T8-E | 400-3-50 | 342 | 457 | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 9.5 + 9.5 | — | 0.6 x 4 | 1.1 + 1.1 + 1.1 + 1.1 | 98.0 | 110 | — |

Legend
MCA : Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection (Amps)
ICF : Maximum Instantaneous Current Flow Start
RLA : Rated Load Amps

LRA : Locked Rotor Amps
FLA : Full Load Amps
kW : Fan Motor Rated Output (kW)

NOTE : RLA is based on the following conditions.
Indoor temperature : 27°C DB/19°C WB
Outdoor temperature : 35°C DB

For Indoor unit power supply (The outdoor unit has a separate power supply.)

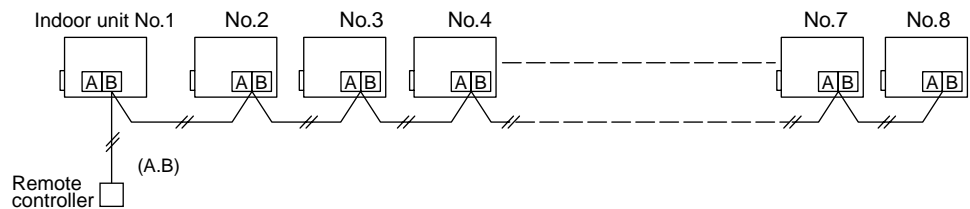
| Model | Item | Power supply wiring | |
|----------------------------|------|---------------------------------------|---------------------------------------|
| | | Wire size | |
| All models of indoor units | | 2.0 mm ² (AWG#14) Max. 20m | 3.5 mm ² (AWG#12) Max. 50m |

NOTE :

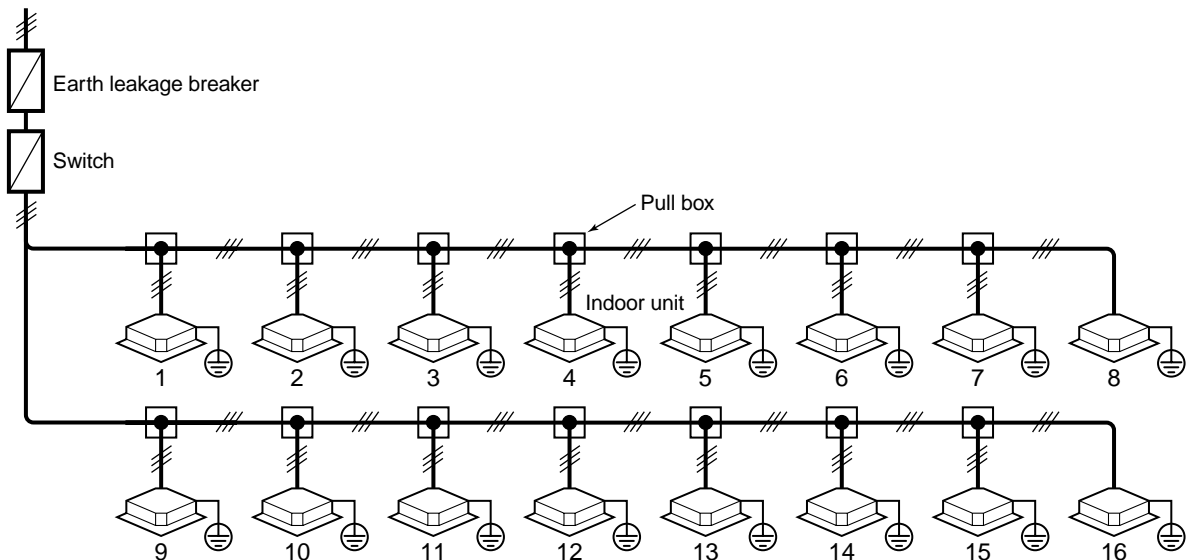
The connecting length indicated in the table represents the length from the pull box to the outdoor unit when the indoor units are connected in parallel for power, as shown in the illustration below. A voltage drop of no more than 2% is also assumed. If the connecting length will exceed the length indicated in the table, select the wire thickness in accordance with indoor wiring standards.

• Group Operation through a Remote Controller Switch

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



Indoor power source
single phase 220–240V, 50Hz



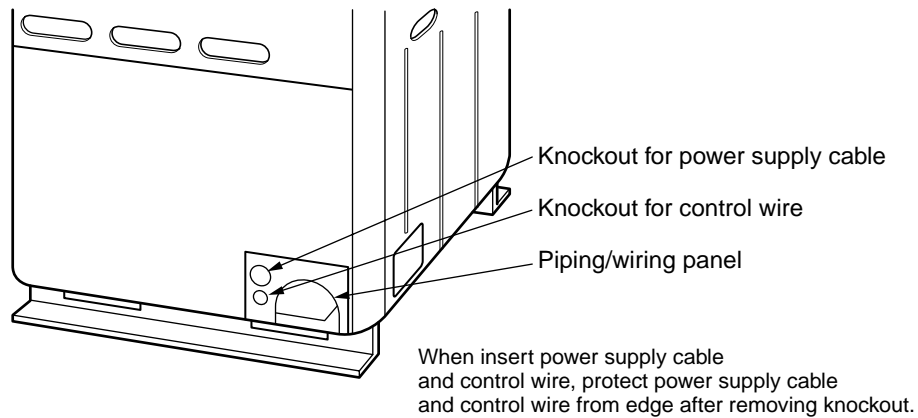
CAUTION

- 1) Keep the refrigerant piping system and the indoor-indoor/indoor-outdoor control wiring systems together.
- 2) When running power wires and control wires parallel to each other, either run them through separate conduits, or maintain a suitable distance between them.
(Current capacity of power wires: 10A or less for 300mm, 50A or less for 500mm)

6 ELECTRIC WIRING

Connection of power supply cable with control cable

Insert power supply cable and control wire after removing knockout of the piping/wiring panel at front side of the outdoor unit.



■ Power supply cable

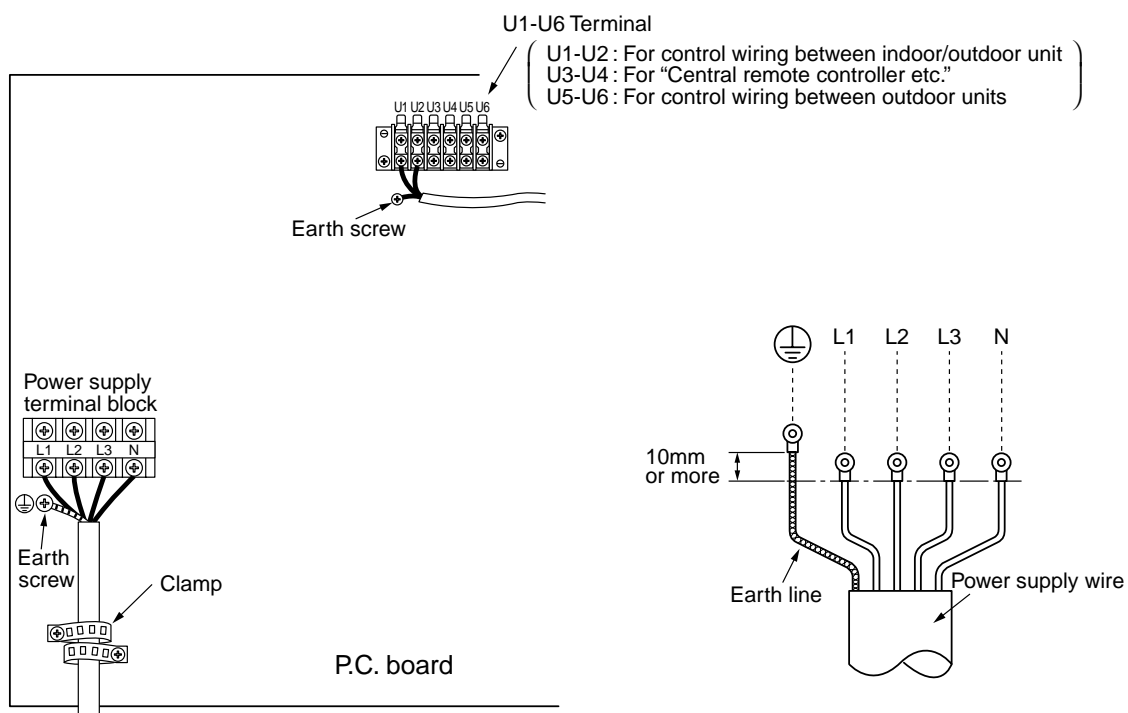
1. Connect the power supply cables and earthing wire to the terminal block of the power supply through a notched section at side of the electric parts box, and fix with a clamp.
2. Bundle the power supply cables using the hole so that they are not out of the notched section of the electric parts box.

■ Control wire

1. Connect the control wire between indoor and outdoor units and the control wire between outdoor units to (U1 to U4) terminal section through a hole at side of the electric parts box, and fix with a clamp.
2. Use the control wire with 2-core shield wire (1.25mm² or more) in order to prevent noise trouble. (Non-polarity)

NOTE :

- 1) Be sure to separate the power supply cables and each control cable.
- 2) Arrange the power supply cables and each control cable so that they do not contact with the bottom surface of the outdoor unit.
- 3) A terminal block (U5, U6 terminal blocks) for connecting an optional part "Central remote controller etc." is provided on the inverter unit, so be careful to miswiring.



7 ADDRESS SETUP

In this air conditioner, it is necessary to set up the indoor address before starting the operation. Set up the address in the following procedure.

CAUTION

1. Set up address after wiring work.
 2. Be sure to turn on the power in order of indoor unit → outdoor unit. If turning on the power in the reverse order, a check code [E19] (Error of No. of header units) is output. When a check code is output, turn on the power again.
 3. It requires maximum 10 minutes (Usually, approx. 5 minutes) to set up automatically an address to 1 line.
 4. To set up an address automatically, the setup at outdoor side is necessary.
(Address setup cannot be performed by power-ON only.)
 5. To set up an address, it is unnecessary to operate the air conditioner.
 6. Manual address setup is also available besides automatic setup.
Automatic address : Setup from SW15 on the interface P.C. board of the header unit
Manual address : Setup from the weird remote controller
- * It is temporarily necessary to set the indoor unit and wired to 1 : 1.
(In group operation and in time without remote controller)

Automatic Address Setup

Without central control : To the address setup procedure 1

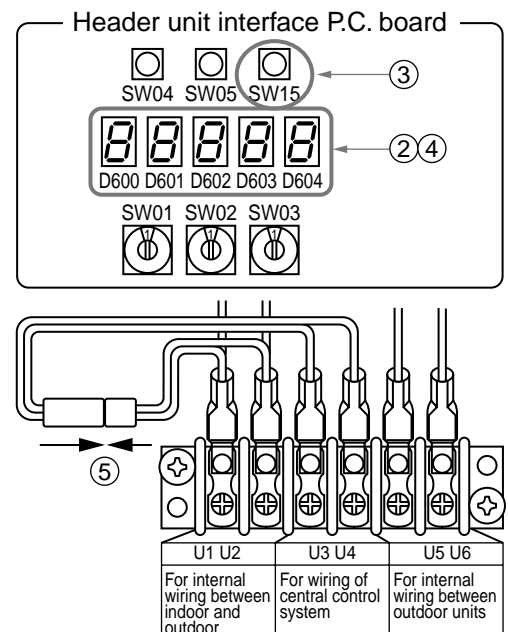
With central control : To the address setup procedure 2

(However, go to the procedure 1 when the central control is performed in a single refrigerant line.)

| (Example) | In case of central control in a single refrigerant line | In case of central control over refrigerant lines |
|-------------------------|---|---|
| Address setup procedure | To procedure 1 | To procedure 2 |
| Wire systematic diagram | | |

Address setup procedure 1

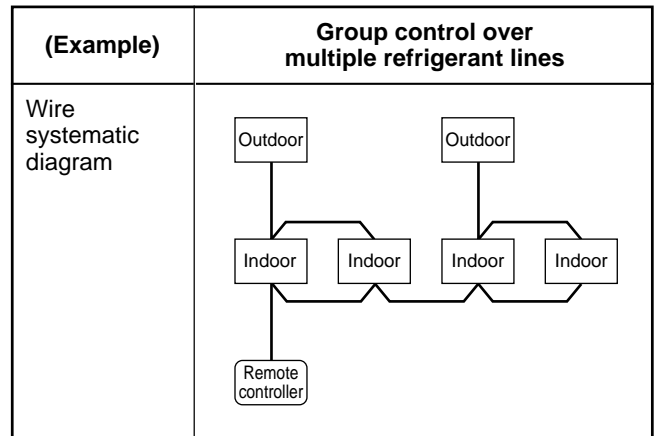
- ① Turn on power of indoor/outdoor units.
(In order of indoor → Outdoor)
- ② After approx. 1 minute, check that **U. 1. L08 (U. 1. flash)** is displayed in 7-segment display section on the interface P.C. board of the header unit.
- ③ **Push SW15 and start setup the automatic address.**
(Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
- ④ When the count **Auto 1 → Auto 2 → Auto 3** is displayed in 7-segment display section, and it changes from **U. 1. - - - (U. 1. flash)** to **U. 1. - - - (U. 1. light)**, the setup finished.
- ⑤ **When perform a central control, connect a relay connector between [U1U2] of the header unit and [U3U4] terminals.**



7 ADDRESS SETUP

REQUIREMENT

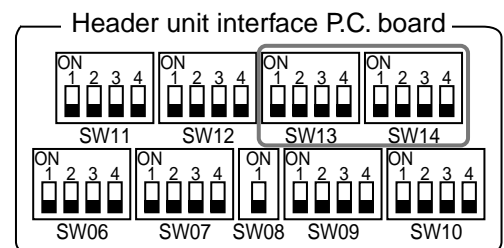
- When a group control is performed over the multiple refrigerant lines, be sure to turn on the power supplies of all the indoor units connected in a group in the time of address setup.
- If turning on the power for each refrigerant line to set up address, a header indoor unit is set for each line. Therefore, an alarm code "L03" (Duplicated indoor header units) is output in operation after address setup. In this case, change the group address from the wired remote controller so that only one header unit is set up.



Address setup procedure 2

- ① Using SW13 and 14 on the interface P.C. board of the header unit in each system, set up the system address for each system. (At shipment from factory: Set to Address 1)

Note) Be careful not to duplicate with other refrigerant line or other system address.



(○ : Switch ON, × : Switch OFF)

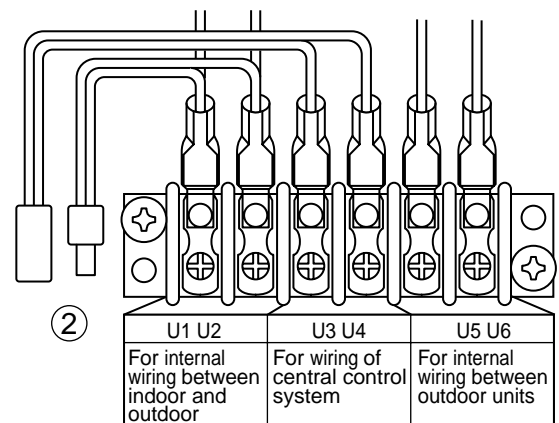
System address switch on outdoor interface P.C. board

| System address | SW13 | | | | SW14 | | | |
|----------------|------|---|---|---|------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1 | | | | × | × | × | × | × |
| 2 | | | | × | ○ | × | × | × |
| 3 | | | | × | × | ○ | × | × |
| 4 | | | | × | ○ | ○ | × | × |
| 5 | | | | × | × | × | ○ | × |
| 6 | | | | × | ○ | × | ○ | × |
| 7 | | | | × | × | ○ | ○ | × |
| 8 | | | | × | ○ | ○ | ○ | × |
| 9 | | | | × | × | × | × | ○ |
| 10 | | | | × | ○ | × | × | ○ |
| 11 | | | | × | × | ○ | × | ○ |
| 12 | | | | × | ○ | ○ | × | ○ |
| 13 | | | | × | × | × | ○ | ○ |
| 14 | | | | × | ○ | × | ○ | ○ |

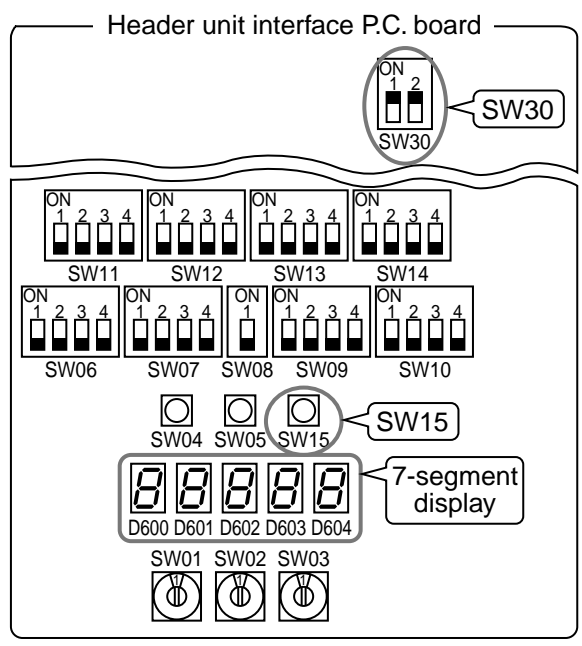
| System address | SW13 | | | | SW14 | | | |
|----------------|------|---|---|---|------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 15 | | | | × | × | ○ | ○ | ○ |
| 16 | | | | × | ○ | ○ | ○ | ○ |
| 17 | | | | ○ | × | × | × | × |
| 18 | | | | ○ | ○ | × | × | × |
| 19 | | | | ○ | × | ○ | × | × |
| 20 | | | | ○ | ○ | ○ | × | × |
| 21 | | | | ○ | × | × | ○ | × |
| 22 | | | | ○ | ○ | × | ○ | × |
| 23 | | | | ○ | × | ○ | ○ | × |
| 24 | | | | ○ | ○ | ○ | ○ | × |
| 25 | | | | ○ | × | × | × | ○ |
| 26 | | | | ○ | ○ | × | × | ○ |
| 27 | | | | ○ | × | ○ | × | ○ |
| 28 | | | | ○ | ○ | ○ | × | ○ |

: Is not used for setup of system address. (Do not change setup.)

- ② Check that the relay connectors between [U1U2] and [U3U4] terminals are come out in all the header units to which the central control is connected. (At shipment from factory: No connection of connector)
- ③ Turn on power of indoor/outdoor.
(In order of indoor → outdoor)
- ④ After approx. 1 minute, check that 7-segment display is **U.1.L08 (U.1. flash)** on the interface P.C. board of the header unit.
- ⑤ **Push SW15 and start setup the automatic address.** (Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
- ⑥ When the count **Auto 1 → Auto 2 → Auto 3** is displayed in 7-segment display section, and it changes from **U. 1. - - - (U. 1. flash)** to **U. 1. - - - (U. 1. light)**, the setup finished.
- ⑦ Procedure ④ to ⑥ are repeated in other refrigerant lines.



- ⑧ When address setup has finished in all the lines, turn off SW30-2 on the interface P.C. boards of the header units of the lines connected to the identical central control except a line with least address marker.
(The end terminal resistances of the wires in the central control system of indoor/outdoor are unified.)
- ⑨ Connect the relay connector between [U1U2] and [U3U4] of the header unit for each refrigerant line.
- ⑩ Then set up the central control address.
(For the central control address setup, refer to the Installation manual of the central control devices.)

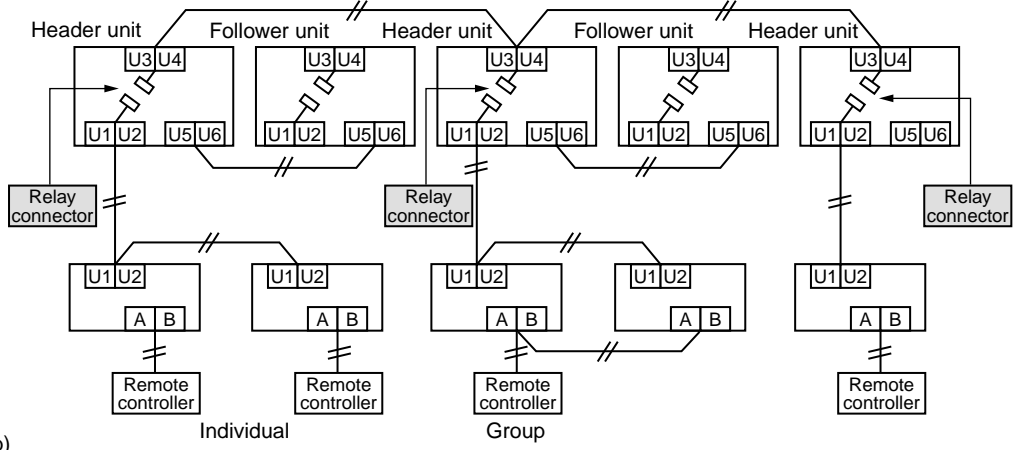


Switch setup
(Example in case of central control over refrigerant lines)

Outdoor side (Manual setup)

* Manual setup is necessary for column of which letter color is reversed.

| Outdoor interface P.C. board | Header unit | Follower unit | Header unit | Follower unit | Header unit | Setup at shipment from factory |
|---|----------------------------------|-------------------------|----------------------------------|-------------------------|----------------------------------|--------------------------------|
| SW13, 14 (Line address) | 1 | (Setup is unnecessary.) | 2 | (Setup is unnecessary.) | 3 | 1 |
| SW30-2 (End terminal resistance of indoor/outdoor communication line/central control communication line) | ON | (Setup is unnecessary.) | OFF after address setup | (Setup is unnecessary.) | OFF after address setup | ON |
| Relay connector | Short after address setup | Open | Short after address setup | Open | Short after address setup | Open |



| | 1 | 1 | 2 | 2 | 3 |
|---------------------|---|---|---|---|---|
| Line address | 1 | 1 | 2 | 2 | 3 |
| Indoor unit address | 1 | 2 | 1 | 2 | 1 |
| Group address | 0 | 0 | 1 | 2 | 0 |

CAUTION

For relay connector
Never connect a relay connector until address setup for all the refrigerant lines finishes; otherwise address cannot be correctly set up.

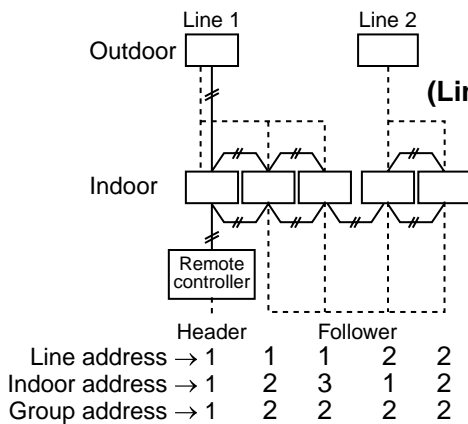
7 ADDRESS SETUP

Manual address setup from remote controller

In case to decide an address of the indoor unit prior to finish of indoor electric wiring work and unpracticed outdoor electric wiring work. (Manual setup from wired remote controller)

Arrange indoor unit in which address is set up and the wired remote controller to 1 : 1.

(Cabling example in 2 lines)



(Indoor address) →

In the above example, under condition of no inter-unit wire of the wired remote controller, set the address after individual connecting of the wired remote controller.

Group address

Individual : 0000
Center unit : 0001
Terminal unit : 0002 } In case of group control

(Group address) →

Operation procedure

1 → 2 → 3 → 4 → 5 → 6 →
7 → 8 → 9 → 10 → 11 End

Turn on the power.

1 Push simultaneously **SET** + **CL** + **TEST** buttons for 4 seconds or more.

LCD changes to flashing.

2 Using the setup temp. **▼** / **▲** buttons, set **12** to the item code.

3 Using the timer time **▼** / **▲** buttons, set up the line address.

(Match it with the line address on the interface P.C. board of the header unit in the identical refrigerant line.)

4 Push **SET** button.

(OK when display goes on.)

5 Using the setup temp. **▼** / **▲** buttons, set **13** to the item code.

6 Using the timer time **▼** / **▲** buttons, set up the indoor address.

7 Push **SET** button.

(OK when display goes on.)

8 Using the setup temp. **▼** / **▲** buttons, set **14** to the item code.

9 Using the timer time **▼** / **▲** buttons, set Individual = 0000, Header unit = 0001, Follower unit = 0002.

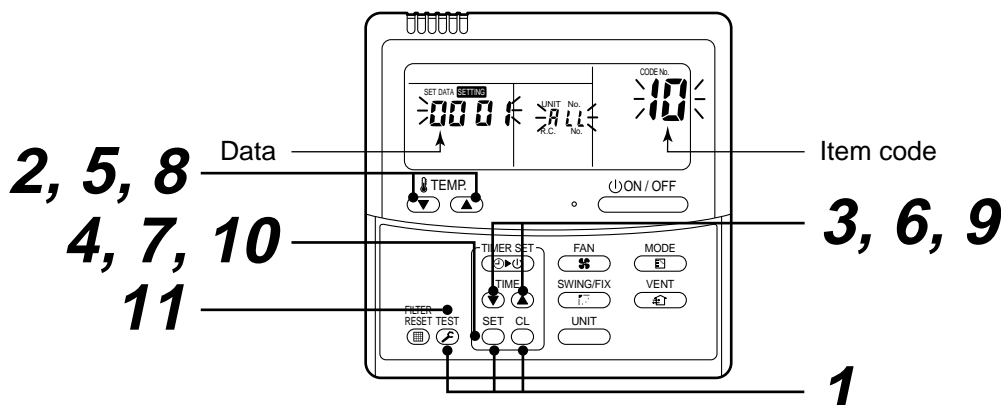
10 Push **SET** button.

(OK when display goes on.)

11 Push **TEST** button.

Setup operation finished.

(Status returns to normal stop status.)



Note 1)

When setting the line address from the wired remote controller, do not use address **29** and **30**.

The address **29** and **30** cannot be set up in the outdoor unit.

Therefore if they are incorrectly set up, a check code **[E04]** (Indoor/outdoor communication circuit error) is output.

Note 2)

When manual address has been set up from the wired remote controller, set up the following items for header unit of each line if performing a central control over refrigerant lines.

- Using SW13 and 14 on the interface P.C. board of the header unit in each line, set up the line address for each line.
- Turn off SW30-2 on the interface P.C. boards of the header units of the lines connected to the identical central control except a line with least address number.
(The terminal resistances of the cables in the central control system of indoor/outdoor are unified.)
- Connect the relay connector between [U1U2] and [U3U4] of the header unit for each refrigerant line.
- Then set up the central control address.
(For the central control address setup, refer to the Installation manual of the central control devices.)

Confirmation of indoor address and the main unit position on the remote controller

[Confirmation of indoor unit No. and position]

1. When you want to know the indoor address though position of the indoor unit itself can be recognized;

- In case of individual operation (Wired remote controller : Indoor unit = 1 : 1) or group control

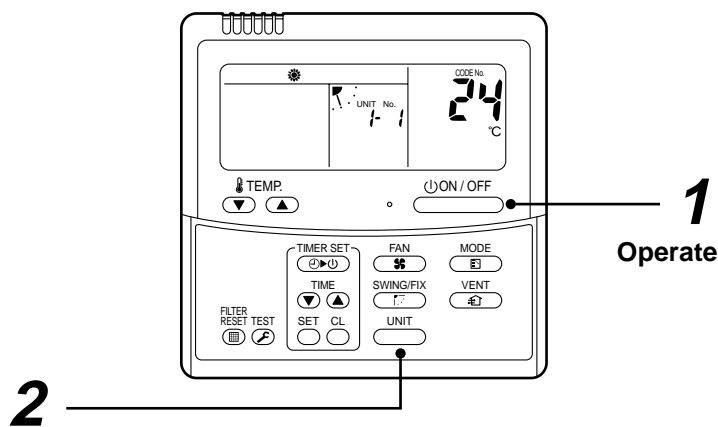
<Procedure> (Operation while the air conditioner operates)

1 If it stops, push **ON/OFF** button.

2 Push **UNIT** button.

The unit NO **1-1** is displayed on the LCD. (Disappears after several seconds)

The displayed unit No indicates the line address and indoor address. (If there is other indoor unit connected to the same remote controller (Group control unit), other unit No is displayed every pushing **UNIT** button.)



Operation procedure

1 → 2

7 ADDRESS SETUP

2. When you want to know position of the indoor unit using the address

- To confirm the unit numbers in a group control;

<Procedure> (Operation while the air conditioner stops)

The indoor unit numbers in a group control are successively displayed, and the corresponding indoor fan is turned on.

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

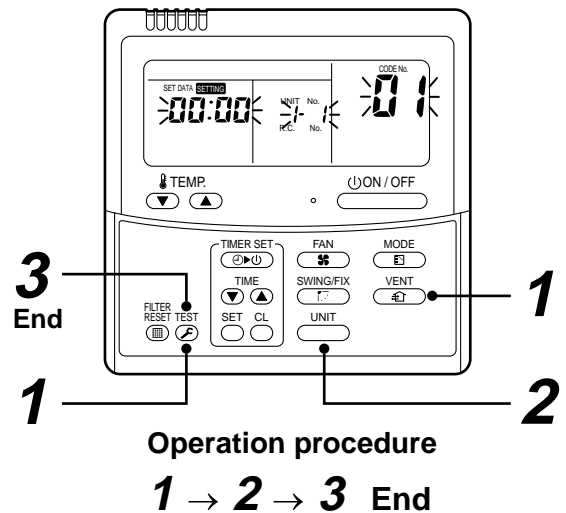
- Unit No **ALL** is displayed.
- The fans of all the indoor units in a group control are turned on.

2 Every pushing **UNIT** button, the indoor unit numbers in the group control are successively displayed.

- The firstly displayed unit No. on number indicates the address of the header unit.
- Only fan of the selected indoor unit is turned on.

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

All the indoor units in group control stop.



- To confirm all the unit numbers from an arbitrary wired remote controller;

<Procedure> (Operation while the air conditioner stops)

The indoor unit No. and position in the same refrigerant line can be confirmed. An outdoor unit is selected, the indoor unit numbers in the same refrigerant line are successively displayed, and then its indoor unit fan is turned on.

1 Push the timer time **▼** + **TEST** buttons simultaneously for 4 seconds or more.

Firstly, the line 1, item code **RL** (Address Change) is displayed. (Select outdoor unit.)

2 Using **UNIT** + **SWING/FIX** buttons, select the line address.

3 Using **SET** button, determine the selected line address.

- The indoor address, which is connected to the refrigerant line of the selected outdoor unit is displayed and the fan is turned on.

4 Every pushing **UNIT** button, the indoor unit numbers in the same refrigerant line are successively displayed.

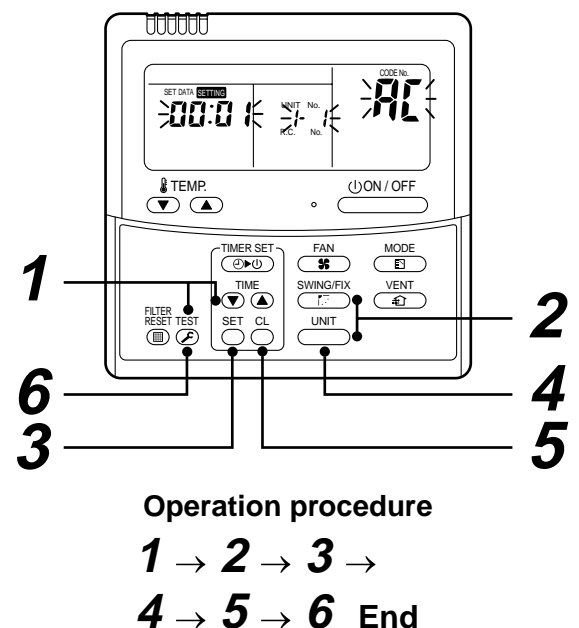
- Only fan of the selected indoor unit operates.

[To select another line address]

5 Push **CL** button to return to procedure 2.

- The indoor address of another line can be successively confirmed.

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

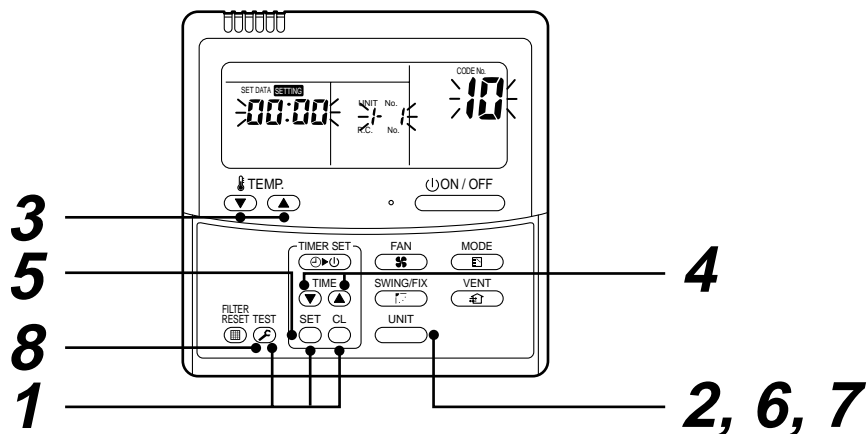


Change of indoor address from wired remote controller

- To change the indoor address in individual operation (Wired remote controller : Indoor unit = 1 : 1) or group control (When the setup operation with automatic address has finished, this change is available.)

<Procedure> (Operation while air conditioner stops)

- 1 Push simultaneously **SET** + **CL** + **TEST** buttons for 4 seconds or more.
(The firstly displayed unit No indicates the header unit in group control.)
- 2 In group control, select an indoor unit No to be changed by **UNIT** button.
(The fan of the selected indoor unit is turned on.)
- 3 Using the setup temp. **TEMP.** / **▲** / **▼** buttons, set **13** to the item code.
- 4 Using the timer time **TIME** / **▲** / **▼** buttons, change the displayed setup data to a data which you want to change.
- 5 Push **SET** button.
- 6 Using the **UNIT** button, select the unit No. to be changed at the next time.
Repeat the procedure **4** to **6** and change the indoor address so that it is not duplicated.
- 7 After the above change, push **UNIT** button to confirm the changed contents.
- 8 If it is acceptable, push **TEST** button to finish confirmation.



Operation procedure

1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 End

7 ADDRESS SETUP

- To change all the indoor addresses from an arbitrary wired remote controller;
(When the setup operation with automatic address has finished, this change is available.)

Contents : Using an arbitrary wired remote controller, the indoor unit address can be changed for each same refrigerant cycle line

* Change the address in the address check/change mode.

<Procedure> (Operation while air conditioner stops)

1 Push the timer time + buttons simultaneously for 4 seconds or more.

Firstly, the line 1, item code **AC** (Address Change) is displayed.

2 Using + buttons, select the line address.

3 Push button.

- The indoor address, which is connected to the refrigerant line of the selected outdoor unit is displayed and the fan is turned on.

First the current indoor address is displayed on the setup data. (Line address is not displayed.)

4 The indoor address of the setup data moves up/down by the timer time / buttons.

Change the setup data to a new address.

5 Push button to determine the setup data.

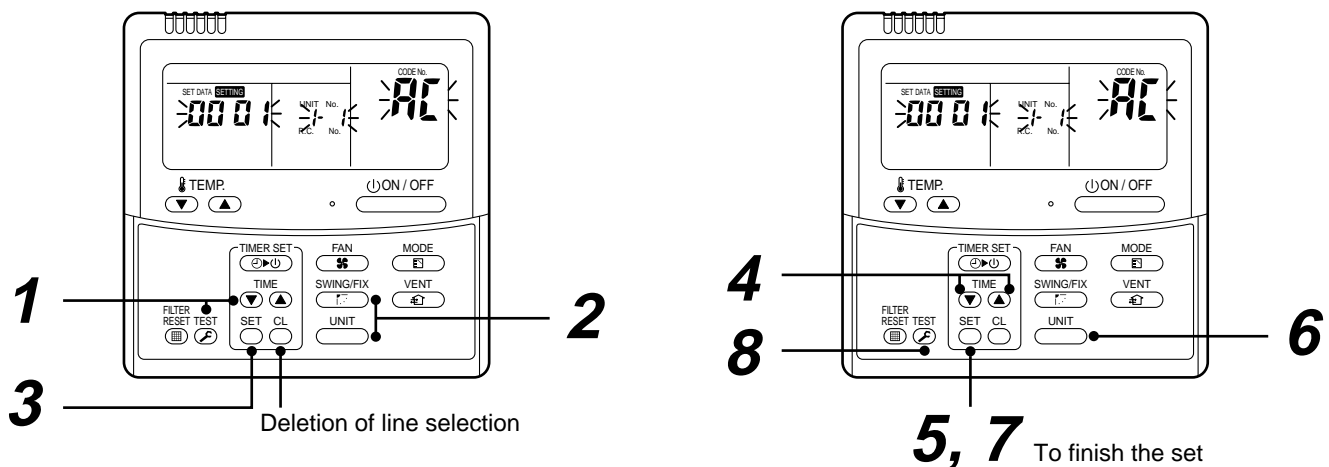
6 Every pushing button, the indoor unit numbers in the same refrigerant line are successively displayed. Only fan of the selected indoor unit operates.

Repeat the procedure **4** to **6** and change all the indoor addresses so that they are not duplicated.

7 Push button.

(All the displays on LCD go on.)

8 Push button to finish the procedure.



Here, if the unit No. is not called up, the outdoor unit in this line does not exist.

Push button, and then select a line according to procedure **2**.

Operation procedure

1 → **2** → **3** → **4** → **5** → **6** → **7** → **8** End

Clearance of address (Return to status (Address undecided) at shipment from factory)

Method 1

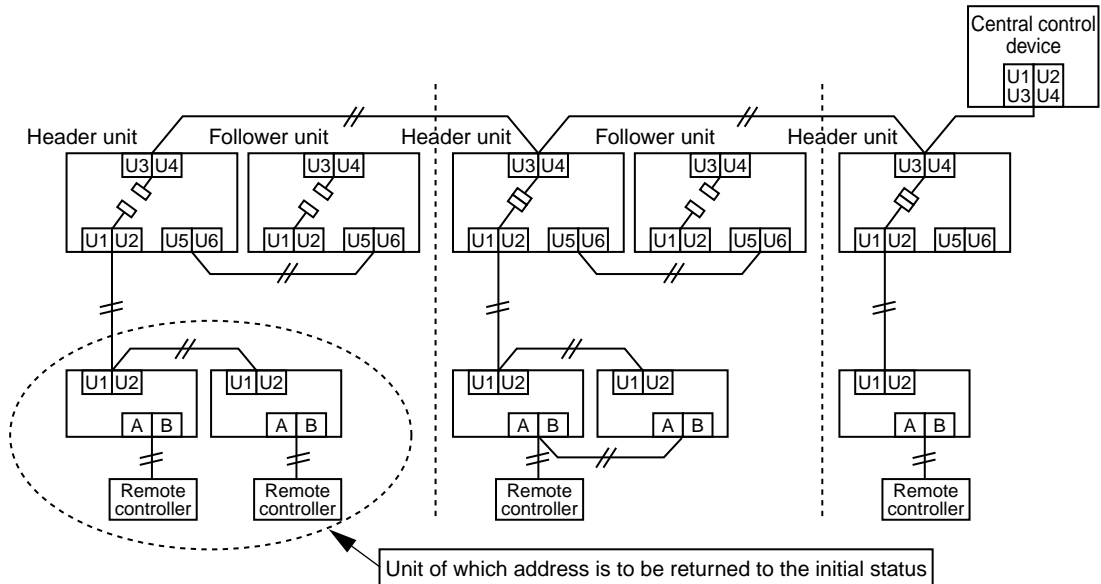
An address is individually cleared from a wired remote controller.

“0099” is set up to line address, indoor address, and group address data from the wired remote controller. (For the setup procedure, refer to the above-mentioned address setup from the wired remote controller.)

Method 2

Clear the indoor addresses in the same refrigerant line from the outdoor unit.

1. Turn off the power of the refrigerant line to be returned to the status at shipment from factory, and change the header unit to the following status.
 - 1) Remove the relay connector between [U1U2] and [U3U4].
(If it has been already removed, leave it as it is.)
 - 2) Turn on SW30-2 on the interface P.C. board of the header unit if it is ON.
(If it has been already ON, leave it as it is.)



2. Turn on the indoor/outdoor power of which address is to be cleared.

After approx. 1 minute, check that “U.1. - - -” is displayed, and then execute the following operation on the interface P.C. board of the header unit of which address is to be cleared in the refrigerant cycle line.

| SW01 | SW02 | SW03 | SW04 | Address which can be cleared |
|------|------|------|---|-------------------------------|
| 2 | 1 | 2 | After checking that “A.d.buS” is displayed on 7-degmet display, and then push SW04 for 5 seconds or more. | Line + Indoor + Group address |
| 2 | 2 | 2 | After checking that “A.d.nEt” is displayed on 7-degmet display, and then push SW04 for 5 seconds or more. | Central address |

3. After “A.d. c.L.” has been displayed on 7-degmet display, return SW01/SW02/SW03 to 1/1/1.
4. When the address clearing has correctly finished, “U.1.L08” is displayed on 7-degmet display after a while. If “A.d. n.G.” is displayed on 7-degmet display, there is a possibility which is connected with the other refrigerant cycle line. Check again the relay connector between [U1U2] and [U3U4] terminals.

NOTE) Be careful that the other refrigerant cycle line address may be also cleared if clearing operation is not correctly executed.

5. After clearing of the address, set up an address again.

8 TEST OPERATION

Before test operation

Check valve of the refrigerant pipe of the outdoor unit is "OPEN".

- Using 500V-megger, check there is 1MΩ or more between the terminal block of the power supply and the earth. If the value is below 1MΩ, do not operate the air conditioner.

WARNING

- Turn on the power and then turn on the case heater of the compressor. To protect the compressor at start time, keep power-ON before 12 hours or more.

How to perform a test operation

In case of test operation on the wired remote controller

Check the operation of the air conditioner in usual operation by the wired remote controller.

For the procedure of the operation, refer to the attached Owner's Manual.

For a case of using a wireless remote controller, refer to the Installation Manual of the indoor unit.

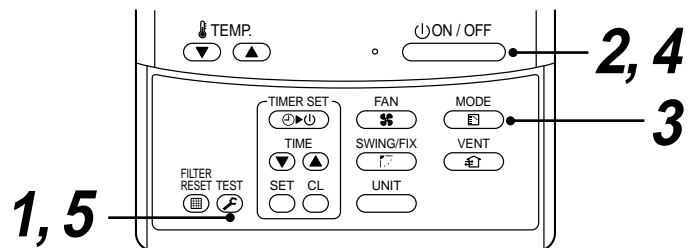
A forced test operation is available in the following procedure under condition that the thermostat-OFF in the room.


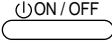

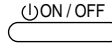

In a forced test operation, the test operation is cleared after operation for 60 minutes and then returns to the usual operation in order to prevent a serial operation.

NOTE

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

In case of wired remote controller



| Procedure | Operation |
|-----------|---|
| 1 | When pushing  button for 4 seconds or more, [TEST] is displayed on the display part and the mode changes to test operation mode. ([TEST] is displayed on the display part during test operation.) |
| 2 | Push  button. |
| 3 | Using  button, change the operation mode to [COOL] or [HEAT]. <ul style="list-style-type: none"> Do not drive the air conditioner with a mode other than [COOL] or [HEAT]. The temperature cannot be adjusted during test operation. An error is detected as usual. |
| 4 | After the test operation has finished, push  button to stop the operation. (Display is same to that in procedure 1 .) |
| 5 | Push  button to clear the test operation mode. ([TEST] in the display part disappears and the status changes to the usual stop status.) |

In case of test operation on the interface P.C. board of the header outdoor unit

This air conditioner has a function which executes a test operation by operation of the switches on the interface P.C. board of the header unit.

This function is classified into "Individual test operation" which performs a test operation individually in each indoor unit and "Collective test operation" which performs a test operation for all the connected indoor units.

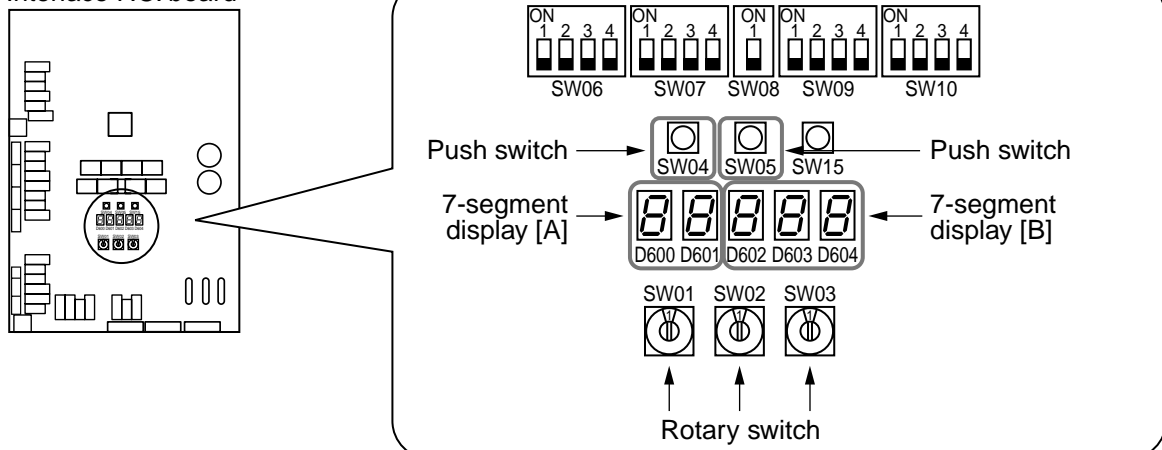
<Individual test operation>

| | Procedure | Operation | 7-segment display | |
|-----------------|-----------|--|---|---|
| Start operation | 1 | Set operation mode on wired remote controller of the indoor unit which is operated with test mode to [COOL] or [HEAT]. (When it is not set up, operate the air conditioner with the current operation mode.) | [A] [U1] | [B] [] |
| | 2 | Set the rotary switch SW01 on the interface P.C. board of the header unit to [16], and match SW02 and SW03 to the address of the indoor unit to be operated with test mode. | [A] [] ↓ Address display of the corresponding indoor unit | [B] [] |
| | 3 | Push SW04 for 10 seconds or more. <ul style="list-style-type: none"> Operation mode changes to the operation mode of wired remote controller of the corresponding indoor unit. Temperature cannot be adjusted during "Test operation". Error is detected as usual. Test operation is not performed 3 minutes after power was turned on or operation has stopped. | [A] [] ↓ Address display of the corresponding indoor unit | [B] [] ↓ [FF] is displayed for 5 seconds. |
| Stop operation | 1 | Return the rotary switches on the interface P.C. board of the header unit, SW01 = [1], SW02 = [1], SW03 = [1]. | [A] [U1] | [B] [] |

<Collective test operation>

| | Procedure | Operation | 7-segment display | |
|-----------------|-----------|--|---------------------|-------------------------|
| Start operation | 1 | Set the rotary switches of interface P.C. board of the header unit; COOL: SW01 = [2], SW02 = [5], SW03 = [1] HEAT: SW01 = [2], SW02 = [6], SW03 = [1] | [A] [C] [H] | [B] [] [] |
| | 2 | Push SW04 for 2 seconds or more. <ul style="list-style-type: none"> Temperature cannot be adjusted during "Test operation". Error is detected as usual. Test operation is not performed 3 minutes after power was turned on or operation has stopped. | [A] [C] [H] | [B] [-C] [-H] |
| Stop operation | 1 | Return the rotary switches on the interface P.C. board of the header unit, SW01 = [1], SW02 = [1], SW03 = [1]. | [A] [U1] | [B] [] |

Interface P.C. board



9 TROUBLESHOOTING

In addition to the check code on the remote controller of the indoor unit, a trouble of the outdoor unit can be diagnosed by 7-segment display of the control P.C. board of the outdoor unit.
Make good use of this function for various checks. After check, return each bit of Dip switch to OFF position.

■ Segment display and check code

| Rotary switch setup value | | | Displayed contents | LED | |
|---------------------------|------|------|----------------------------|-----|-----------------------------|
| SW01 | SW02 | SW03 | | | |
| 1 | 1 | 1 | Check code of outdoor unit | A | Outdoor unit No. (U1 to U4) |
| | | | | B | Check code display* |

* However, when there is an auxiliary code, the check code (for 3 seconds) and the auxiliary code (for 1 second) are alternately displayed.

Check Code (Outdoor 7-segment display [B])

Displayed when SW01: 1, SW02: 1, SW03: 1

| Check code Outdoor 7-segment display | Auxiliary code | Check code name |
|---|---|---|
| E06 | Number of indoor unit which received normally | Decrease of number of indoor units |
| E07 | — | Indoor/Outdoor communication circuit error |
| E08 | Duplicated indoor addresses | Duplication of indoor addresses |
| E12 | 01: Communication between indoor and outdoor 02: Communication between outdoor units | Automatic address start error |
| E15 | — | Indoor is nothing during automatic addressing |
| E16 | 00: Capacity over 01~: No. of connected units | Capacity over / Number of connected indoor units |
| E19 | 00: Header is nothing 02: Two or more header units | Number of header outdoor units error |
| E20 | 01: Other line outdoor connected 02: Other line indoor connected | Other line connected during automatic addressing |
| E23 | — | Sending error between outdoor units communication |
| E25 | — | Duplicated follower outdoor address setup |
| E26 | Number of outdoor unit which received normally | Decrease of connected outdoor units |
| E28 | Detected outdoor unit No. | Follower outdoor unit error |
| E31 | IPDU quantity information | IPDU communication error |
| F04 | — | TD1 sensor error |
| F05 | — | TD2 sensor error |
| F06 | — | TE1 sensor error |
| F07 | — | TL sensor error |
| F08 | — | TO sensor error |
| F12 | — | TS1 sensor error |
| F13 | 01: Compressor 1 side 02: Compressor 2 side | TH sensor error |
| F15 | — | Outdoor temp. sensor miswiring (TE, TL) |
| F16 | — | Outdoor pressure sensor miswiring (Pd, Ps) |
| F23 | — | Ps sensor error |
| F24 | — | Pd sensor error |
| F31 | — | Outdoor EEPROM error |

| Check code Outdoor 7-segment display | Auxiliary code | Check code name |
|---|--|--|
| H01 | 01: Compressor 1 side 02: Compressor 2 side | Compressor breakdown |
| H02 | 01: Compressor 1 side 02: Compressor 2 side | Magnet switch error Overcurrent relay operation Compressor trouble (Lock) |
| H03 | 01: Compressor 1 side 02: Compressor 2 side | Current detective circuit system error |
| H04 | — | Compressor 1 case thermo operation |
| H06 | — | Low-pressure protective operation |
| H07 | — | Oil level down detection protection |
| H08 | 01: TK1 sensor error 02: TK2 sensor error 03: TK3 sensor error 04: TK4 sensor error | Temp sensor error for oil level detection |
| H14 | — | Compressor 2 case thermo operation |
| H16 | 01: TK1 oil circuit system error 02: TK2 oil circuit system error 03: TK3 oil circuit system error 04: TK4 oil circuit system error | Magnet switch error Overcurrent relay operation Oil level detective circuit system error |
| L04 | — | Outdoor system address duplicated |
| L06 | Number of indoor units with priority | Duplication of indoor units with priority |
| L08 | — | Indoor group/Address unset |
| L10 | — | Outdoor capacity unset |
| L28 | — | Outdoor connected quantity over |
| L29 | IPDU quantity information | IPDU quantity error |
| L30 | Detected indoor address | External interlock of indoor unit |
| L31 | — | Extended I/C error |
| P03 | — | Discharge temp TD1 error |
| P04 | 01: Compressor 1 side 02: Compressor 2 side | High-pressure SW system operation |
| P05 | 01: Phase missing detection 02: Phase order error | Phase missing detection / Phase order error |
| P07 | 01: Compressor 1 side 02: Compressor 2 side | Heat sink overheat error |
| P10 | Detected indoor address | Indoor overflow error |
| P13 | — | Outdoor liquid back detection error |
| P15 | 01: TS condition 02: TD condition | Gas leak detection |
| P17 | — | Discharge temp. TD2 error |
| P19 | Detected outdoor unit number | 4-way valve inverse error |
| P20 | — | High-pressure protective operation |
| P22 | 0 *: IGBT short 1 *: Fan motor position detective circuit error 3 *: Fan motor trouble C *: TH sensor temp. error (Heat sink overheat) D *: TH sensor error E *: Vdc output error | Outdoor fan IPDU error |
| P26 | 01: Compressor 1 side 02: Compressor 2 side | IGBT short protection error |
| P29 | 01: Compressor 1 side 02: Compressor 2 side | Compressor position detective circuit system error |

ENGLISH**This product contains fluorinated greenhouse gases covered by the Kyoto Protocol**

| | | | |
|-----------------------------|--------------|--|--------------|
| Chemical Name of Gas | R410A | Global Warming Potential (GWP) of Gas | 1 975 |
|-----------------------------|--------------|--|--------------|

Caution

- 1) Paste the enclosed refrigerant label adjacent to the charging and/or recovering location.
- 2) Clearly write the charged refrigerant quantity on the refrigerant label using indelible ink.
- 3) Prevent emission of the contained fluorinated gas. Ensure that the fluorinated gas is never vented to the atmosphere during installation, service or disposal. When any leakage of the contained fluorinated gas is detected, the leak shall be stopped and repaired as soon as possible.
- 4) Only qualified service personnel are allowed to access and service this product.
- 5) Any handling of the fluorinated gas in this product, such as when moving the product or recharging the gas, shall comply under (EC) Regulation No. 842/2006 on certain fluorinated greenhouse gases and any relevant local legislation.
- 6) Contact dealers, installers, etc., for any questions.

FRANCAIS**Contient des gaz fluorés à effet de serre cités par le protocole de Kyoto.**

| | | | |
|----------------------------|--------------|--|--------------|
| Nom chimique du gaz | R410A | Potentiel de réchauffement de la planète (GWP) du gaz | 1 975 |
|----------------------------|--------------|--|--------------|

Attention

- 1) Collez l'étiquette fournie indiquant le fluide frigorigène utilisé à côté de l'emplacement de remplissage et/ou récupération.
- 2) Indiquez clairement à l'encre indélébile sur l'étiquette la quantité de fluide frigorigène remplie.
- 3) Empêchez l'émission du gaz fluoré contenu. Assurez-vous que le gaz fluoré n'est jamais libéré dans l'atmosphère pendant l'installation, l'entretien ou la mise au rebut. En cas de détection d'une fuite du gaz fluoré contenu, arrêtez la fuite et remédiez-y aussi vite que possible.
- 4) Seul un technicien d'entretien qualifié est autorisé à accéder à ce produit et à le dépanner.
- 5) Toute manipulation du gaz fluoré contenu dans ce produit (déplacement du produit ou remplissage du gaz, par exemple) doit être conforme à la réglementation (CE) N°842/2006 relative à certains gaz à effet de serre fluorés et à toute législation locale applicable.
- 6) Prenez contact avec votre revendeur, installateur ou autre si vous avez des questions.

DEUTSCH**Enthält laut Kyoto-Protokoll fluorierte Treibhausgase**

| | | | |
|--|--------------|---|--------------|
| Chemische Bezeichnung des Gases | R410A | Globales Erwärmungspotential (GWP) des Gases | 1 975 |
|--|--------------|---|--------------|

Vorsicht

- 1) Befestigen Sie die beiliegende Kennzeichnung des Kältemittels an der Wartungsstelle für das Befüllen und/oder die Rückgewinnung.
- 2) Schreiben Sie die Menge des eingefüllten Kältemittels deutlich lesbar und mit unverlöschbarer Tinte auf die Kennzeichnung des Kältemittels.
- 3) Vermeiden Sie eine Emission des enthaltenen fluorierten Gases. Stellen Sie stets sicher, dass das fluorierte Gas während der Installation, Wartung oder Entsorgung nicht in die Atmosphäre entweichen kann. Wenn undichte Stellen erkannt werden, aus denen das eingeschlossene fluorierte Gas austritt, müssen diese unverzüglich abgedichtet und repariert werden.
- 4) Der Zugriff auf dieses Produkt sowie sämtliche Reparatur- und Wartungsarbeiten dürfen ausschließlich von qualifiziertem Servicepersonal durchgeführt werden.
- 5) Bei der Handhabung des fluorierten Gases in diesem Produkt (z. B. beim Transport des Produkts oder Nachfüllen des Gases) müssen die Verordnung (EG) Nr. 842/2006 des Europäischen Parlaments und des Rates über bestimmte fluorierte Treibhausgase sowie die jeweils geltenden gesetzlichen Bestimmungen eingehalten werden.
- 6) Wenn Sie Fragen haben, wenden Sie sich an Ihre Fachhändler, Installateure usw.

ITALIANO**Contiene gas sottoposti a fluorurazione che contribuiscono all'effetto serra secondo il protocollo di Kyoto.**

| | | | |
|-----------------------------|--------------|--|--------------|
| Nome chimico del gas | R410A | Potenziale di riscaldamento globale (GWP) del gas | 1 975 |
|-----------------------------|--------------|--|--------------|

Attenzione

- 1) Incollare l'etichetta del refrigerante acclusa in prossimità del punto di carica e/o ripristino.
- 2) Annotare chiaramente la quantità di refrigerante caricato sull'etichetta del refrigerante, utilizzando inchiostro indelebile.
- 3) Evitare l'emissione del gas fluorurato contenuto. Assicurarsi che il gas fluorurato non venga mai rilasciato nell'atmosfera durante l'installazione, l'assistenza o lo smaltimento. Qualora si rilevi una perdita del gas fluorurato contenuto, la perdita deve essere arrestata e riparata il più presto possibile.
- 4) L'accesso e l'assistenza al presente prodotto sono consentiti solo a personale di assistenza qualificato.
- 5) Qualsiasi utilizzo del gas fluorurato nel presente prodotto, ad esempio durante lo spostamento del prodotto o la ricarica del gas, deve essere conforme alla normativa (CE) N. 842/2006 su determinati gas serra fluorurati e alle eventuali normative locali applicabili.
- 6) Per eventuali domande, contattare rivenditori, installatori, ecc.

ESPAÑOL**Contiene gases fluorados de efecto invernadero cubiertos por el Protocolo de Kyoto**

| | | | |
|-------------------------------|--------------|--|--------------|
| Nombre químico del gas | R410A | Potencial del gas sobre el calentamiento global (GWP en sus siglas en inglés) | 1 975 |
|-------------------------------|--------------|--|--------------|

Precaución

- 1) Adhiera la etiqueta de refrigerante adjunta junto a la ubicación de carga y/o recuperación.
- 2) Anote claramente en la etiqueta de refrigerante con tinta imborrable la cantidad de refrigerante cargada.
- 3) Evite la emisión del gas fluorado contenido. Asegúrese de que el gas fluorado no sea liberado nunca a la atmósfera durante la instalación, el servicio o el desecho. Si se detecta alguna fuga del gas fluorado contenido, la fuga deberá ser detenida y reparada lo antes posible.
- 4) El acceso y servicio a este producto solamente está permitido a personal cualificado.
- 5) Cualquier manejo del gas fluorado contenido en este producto, tal como cuando haya que mover el producto o recargar el gas, deberá cumplir con el reglamento N° 842/2006 (EC) sobre ciertos gases fluorados de efecto invernadero y cualquier otra legislación local pertinente.
- 6) Póngase en contacto con el distribuidor, instalador, etc., si tiene alguna pregunta.

