1P660656-1

DAIKIN

INSTALLATION MANUAL (1)
RXYMQ4AYFK, RXYMQ5AYFK, RXYMQ6AYFK

The two-dimensional bar code is a manufacturing code.

Be sure to read this manual before installation and conduct installation according to this manual.

1. This series air conditioner uses R410A refrigerant. Strictly observe the precautions under the **6 Refrigerant piping connection** as there are strict requirements for how to prevent entry of impurities (mineral oils such as specialized lubricating oil and moisture) for R410A.
   - Clean and dry
     Strict measures must be taken to keep impurities (including SUNISO oil and other mineral oils as well as moisture) out of the system.
   - Tightly sealed
     R410A contains no chlorine, does not destroy the ozone layer and so does not reduce the earth's protection against harmful ultraviolet radiation. R410A will contribute only slightly to the greenhouse effect if released into the atmosphere.
2. Since the design pressure is 4.0MPa, refer to the **6 Refrigerant piping connection** for selection of pipe thickness.
3. Since R410A is a mixed refrigerant, it must be charged in liquid phase. (If the refrigerant is charged in gaseous phase, its composition can change and the system may not work properly.)
4. Be sure to connect a special indoor unit for R410A. Refer to the product catalogue for the model names of the indoor units which can be connected with this unit. (If connected with other indoor units, the air conditioning system will not operate normally.)
5. Power voltage of this series product is 3N~ 380-415/400V, 50/60Hz.

Please read the these "SAFETY PRECAUTIONS" carefully before installing air conditioning unit and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation.

- Please instruct the customer on how to operate the unit and keep it maintained.
- The precautions described herein are classified as WARNING and CAUTION, fielding which is the important safety information, it is strongly recommended to observe.
- This air conditioner comes under the term "appliances not accessible to the general public".
- Meaning of WARNING and CAUTION notices.

⚠ WARNING	Improper handling may result in major accidents such as death and serious injury.
⚠ CAUTION	Improper handling may result in injury or property damage, or even serious consequence under some circumstances.

- After completing installation, perform a test run to check for normal operation and explain to the customer how to operate and maintain the air conditioner.
  In addition, ask the customer to keep this installation manual together with the operation manual for future reference.
- Also, inform customers that they should store this installation manual along with the operation manual for future reference.

⚠ WARNING

Ask the dealer or specialized personnel to carry out the installation work.
Do not install the machine by yourself. Otherwise, it may result in water leakage, electric shocks or fire hazards.

Perform installation work following the instructions contained in this manual.
Improper installation may result in water leakage, electric shocks or fire hazards.

When installing the units in a small room, implement the following measures in order to prevent the refrigerant concentration from exceeding the allowable safety limit in the event of refrigerant leakage. Contact your dealer for appropriate measures.
Excessive refrigerant concentration in a closed ambient space may result in oxygen deficiency.

Be sure to use the specified accessories and parts for installation.
Failure to use the specified parts may result in water leakage, electric shocks, fire hazards or the unit failing to operate normally.

Install the unit on a solid foundation which can withstand the weight of the unit.
A foundation of insufficient strength may result in the unit falling and causing injuries.

Install the unit at designated places by taking into considerating strong winds such as typhoons and earthquakes.
Improper installation may result in the unit falling and causing accidents.

Make sure that all electrical work is carried out by the specialized personnel in accordance with local laws and regulations and this manual, and a special power supply circuit is provided for the unit.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire hazards.

Use the specified wires and attach them securely, with no external forces acting on the terminal connections or wires.
Improper connections or securing of wire may result in abnormal heat build-up or fire hazards.

When connecting the indoor and outdoor units and the power supply wiring, to avoid the service lid being protruded and deformed, lay the wires in a smooth and regular way to attach the shell plate properly.
Otherwise, the terminals will give out heat and may result in electric shocks or fire hazards.

If refrigerant leakage occurs during installation, immediately open the windows and doors for ventilation.
Gaseous refrigerant will produce toxic gas if it comes into contact with fire.

After installation is completely finished, check for refrigerant leakage.
If the refrigerant leaks inside the room, it may generate noxious gas if in contact with the fire of an air heater, burner or cooker, etc.

Do not touch the electrical parts when the unit is powered on.

After completing installation, make sure that no residual voltage exists on the live parts (such as the terminals of earth leakage circuit breakers and terminal blocks) before operating the breakers such as changing.

Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage.
Otherwise, this may lead to an accident due to oxygen depletion.

Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.

Do not allow children to climb on the outdoor unit and avoid placing objects on the unit.
Injury may result if the unit becomes loose and falls.

⚠ CAUTION

Be sure to earth the unit.
Do not connect the earth wire to gas pipes, water pipes, lightning rods or telephone earth wires.
- Gas pipes – gas leaks can cause explosion or fire.
- Water pipes – cannot be grounded if hard vinyl pipes are used.
- Lightning rods or telephone earth wires – the ground potential when struck by lightning gets extremely high.

Be sure to install a branch circuit breaker, over current circuit breaker (fuse) and earth leakage circuit breaker.
Failure to do so may result in electric shocks and fire hazards.

Install the drain piping according to the installation manual to ensure proper drainage, then insulate the piping to prevent condensation from accumulating. Improper drain piping installation may result in water leakage and household items wet.

Keep the indoor unit, outdoor unit, power wiring and transmission wiring at least 1m away from televisions and radios to prevent image or noise interference. (A distance of 1m or more may not be sufficient to eliminate the noise in the case of strong radio wave.)

Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit as far away from fluorescent lamps as possible.

Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

Do not install the air conditioner in the following locations:
(a) Where mineral oil mist, oil spray or vapour is produced, for example, in a kitchen.
Plastic parts may be aged and damaged, and result in water leakage.
(b) Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding copper pipes or soldered parts may result in refrigerant leakage.
(c) Near machinery emitting electromagnetic waves.
Electromagnetic waves may disturb the operation of the control system and cause the unit malfunction.
(d) Where flammable gas may leak, where there is air borne carbon fibre or ignitable dust, or where volatile flammables such as gasoline or thinner are placed. Operating the unit in such conditions may result in fire hazards.
(e) Do not install the outdoor unit at the place where there is a shelter of the small animals.
Once in the unit, leaves and small animals making contact with the electrical parts can cause malfunction, smoke or fire. Ask the customer to maintain a clean and tidy environment around the outdoor unit.

Do not climb up the outdoor unit or place objects on it. Falling or tumbling may result in injury.

Do not wash the outdoor or indoor units with water. Otherwise, it may cause electric shocks and fire hazards.

In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Disposal requirements
Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.

[Note]
- **For how to install the indoor unit and the remote controller, refer to the installation manual of each equipment.**

1 Introduction

Combination

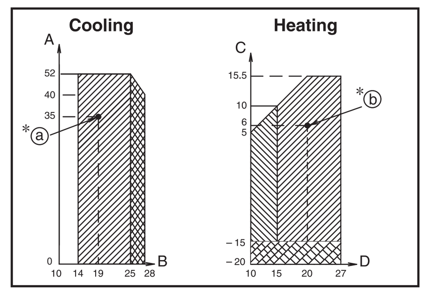
The indoor units can be connected in the following range.

- **Be sure to install the dedicated indoor units.**
  Refer to the product catalogue for the model names of the indoor units which can be connected with this unit.
- Combination capacity ratio and number of the indoor units.

Outdoor unit	Combination	Combination capacity ratio (%)	Maximum number of indoor unit
RXYMQ4AYFK RXYMQ5AYFK RXYMQ6AYFK	VRV only	50~130	RXYMQ4: 6 RXYMQ5: 8 RXYMQ6: 9

Standard operation range

The values below are the supposed working environment for the outdoor and indoor units:



Equivalent piping length...7.5m
Difference in height...........0m
A Outdoor temperature (°CDB)
B Indoor temperature (°CWB)
C Outdoor temperature (°CWB)
D Indoor temperature (°CDB)
Range for continuous operation
Range for pull down operation
Range for warming up operation
Possible operation range (Out of unit capability guaranteed)

Technical specifications

For operation conditions *ⓐ, *ⓑ in the table below, refer to the operation range (above figure).

Model			RXYMQ4AYFK	RXYMQ5AYFK	RXYMQ6AYFK	Remark
Refrigerant			R410A			
Cooling capacity		kW	11.3	14.1	16.0	*ⓐ
Heating capacity		kW	12.6	16.0	18.0	*ⓑ
Cooling input		kW	2.770	3.595	4.097	*ⓐ
Heating input		kW	2.797	3.670	4.240	*ⓑ
Dimensions (H × W × D)		mm	870 × 1100 × 460			
Connection piping	Gas side	inch mm	5/8 Ø15.9		3/4 Ø19.1	
	Liquid side	inch mm	3/8 Ø9.5		3/8 Ø9.5	

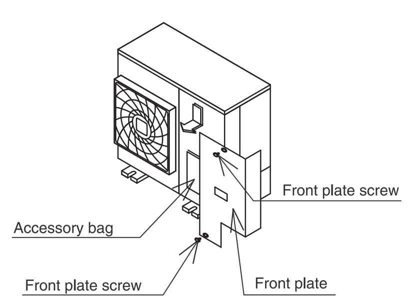
Electrical specifications

Model			RXYMQ4AYFK	RXYMQ5AYFK	RXYMQ6AYFK
Power supply	Phase		3N~		
	Voltage	V	380-415/400		
	Frequency	Hz	50/60		
	Allowable voltage fluctuation	%	±10		
	Fuse rated current	A	25		
Outdoor unit maximum running current		A	18.9		

Accessories

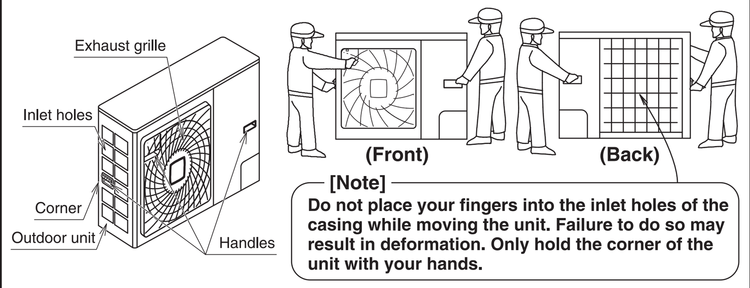
Check if the following accessories are supplied with the unit.
(Remove the front plate and they are in the accessory bag)

Operation manual	Auxiliary pipe (1)	Others
(1 pc.)	(1 pc.)	• Installation manual (3 pcs.)



2 Before installation

[About carrying]
Hold the 2 handles at both sides as shown in the figure below and move it slowly.
(Pay attention not to touch the fins at the back.)



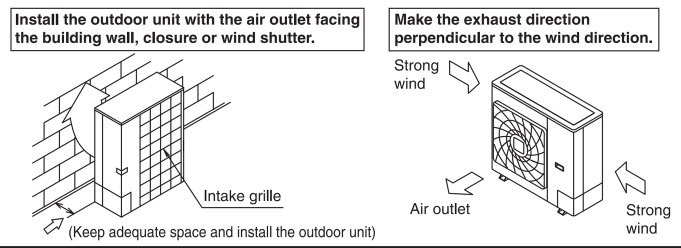
[Note]
Do not place your fingers into the inlet holes of the casing while moving the unit. Failure to do so may result in deformation. Only hold the corner of the unit with your hands.

- Use the accessories or the specified parts to install the required parts.

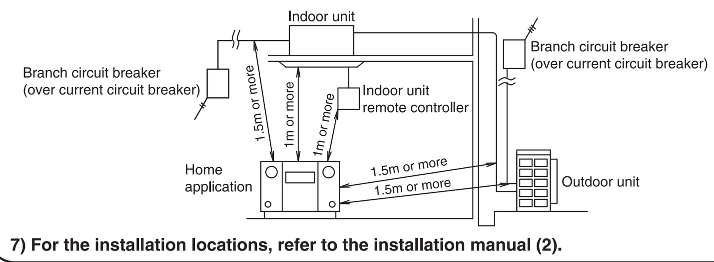
3 Selecting installation location

1) **Select a location for installation that meets the following conditions and get the customer's approval.**
   - Good ventilation.
   - Not disturbing the neighbours.
   - No shelters of the small animals.
   - Solid enough to support the weight and vibration of the unit which can be placed horizontally.
   - Able to avoid raining as much as possible.
   - Adequate space kept around the unit for installation.
   - Outdoor piping and wiring within the allowable length range.
   - No risk of flammable gas leaks.
2) **When installing in locations where there is a possibility of strong wind, take the following measures.**
   - If the strong wind with speed over 5m/s blowing to the exhaust side of the outdoor unit, the decreased air flow rate and re-absorbed exhausted gas (short circuit) etc. by the outdoor unit will lead to:
     - Decreased capability
     - Increased frost during heating
     - Operation stopped as high pressure increases
   - Excessive strong wind continually blowing to the front exhaust side of the outdoor unit will result in the fan reversing at a high speed and being damaged. Refer to the figure below for installation.

Install the outdoor unit with the air outlet facing the building wall, closure or wind shutter.	Make the exhaust direction perpendicular to the wind direction.



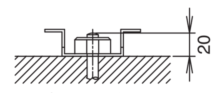
3) **When installing in locations where there is heavy snowfall, take the following measures.**
   - Block up the base.
   - Install snow hoods (field supply).
   - Remove the rear suction grille to prevent snow from accumulating on the fins.
4) **If there is a risk of short circuit for the outdoor unit in the ambient environment, use air flow direction adjustment plate (optional accessory).**
5) **The refrigerant gas (R410A) is nontoxic, non-flammable and safe. It is necessary to take measures against to keep refrigerant concentration from exceeding allowable safety limits in a small room in the event of refrigerant leakage.**
6) **An inverter air conditioner may cause home appliances produce noise.**
   When selecting the location for installation, keep the air conditioner and wiring a proper distance away from radios, computers and stereo equipment as shown in the following figure.
   Particularly for location with weak wave reception, be sure to keep a distance of at least 3m between the indoor unit and the remote controllers and place the power supply wiring and transmission wiring in conduits, and connect the conduits to the ground.
   In addition, use the shielded wires for all electric wires between units.



7) **For the installation locations, refer to the installation manual (2).**

4 Precautions during installation

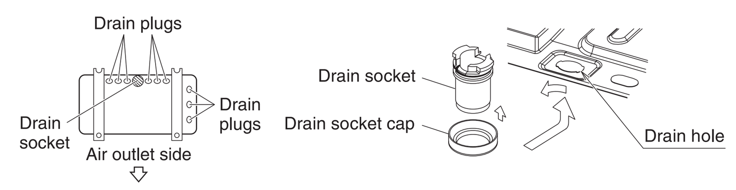
- To prevent vibration and noise, check the foundation is solid and level before installation.
- As shown in the following figure, firmly secure the unit to a stable base using anchor bolts. (Use four sets of commercially-available W12 anchor bolts, nuts and washers.)
- The section of the anchor bolts above the base 20mm in length is the most appropriate. (Refer to the figure below)



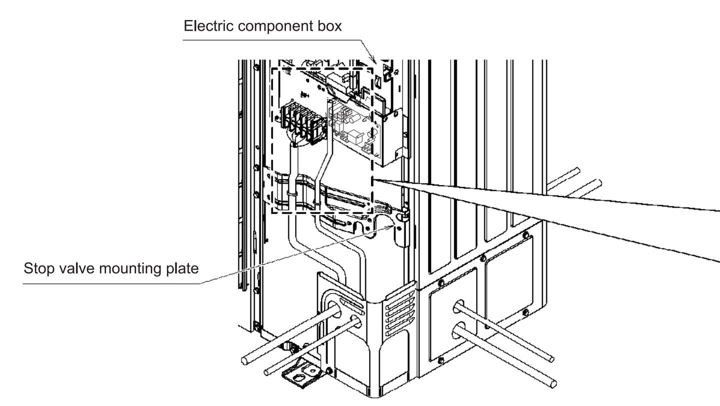
Ground plan

[About drainage handling]
- Perform drain pipe installation work using the optional drain plug if the drainage from the outdoor unit may lead to problems (such as water drained from the outdoor unit dripping down to the pedestrians).
- It is necessary to keep an interspace 100mm or more under the air conditioner leg in order to handle the drainage.
- Make sure the drain functions properly.
  (Beware of water leaks if the piping is brought out from the bottom.)

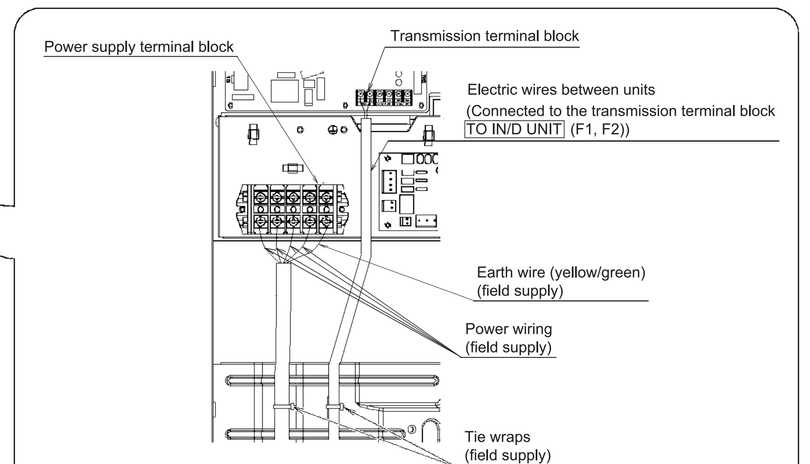
- Drain plugs are not supplied with the unit. They are commercially-available, so you can purchase them separately.



1) Insert the drain plugs into the drain holes of the bottom flame.
2) Attach drain socket cap to drain socket.
3) Insert drain socket to drain hole by turning about 40°
   to install it to the bottom flame.



[Note]
After the electrical work is completed, check to make sure there are no loose connections for the connectors of each electrical component in the electrical component box and the terminals.

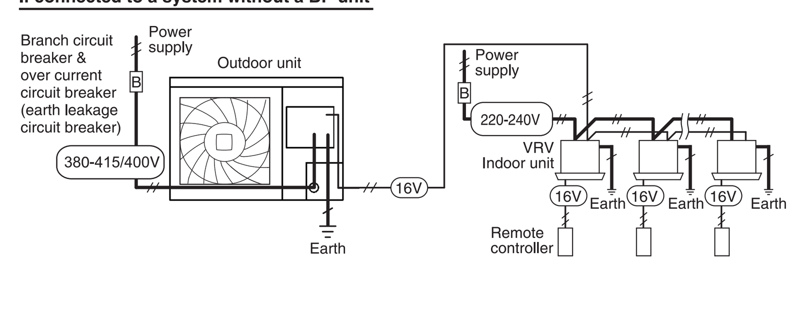


5 Electrical wiring

⚠CAUTION To those doing electrical work
- **Do not operate the unit before completing refrigerant piping connection. (Failure to do so will result in compressor malfunction.)**
- **Install the earth leakage circuit breaker. (Since this unit is equipped with an inverter, to prevent malfunction of the earth leakage circuit breaker itself, select the breaker that be capable of handling high harmonics.)**

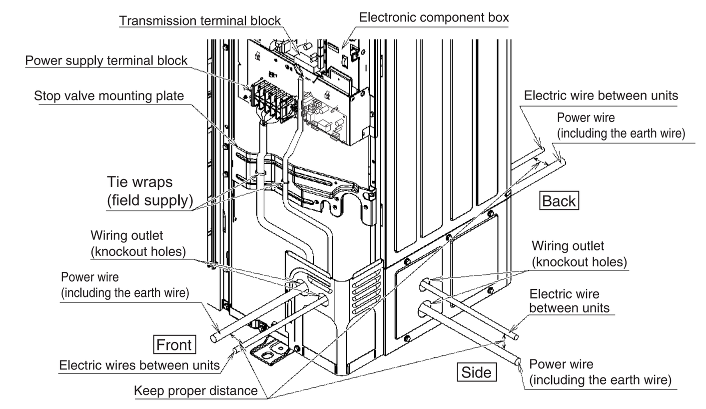
5-1. Example of whole system wiring connection

If connected to a system without a BP unit



Transmission wiring (shielded wire) (16V)
Power supply wiring (sheathed cable) (3N~ 380-415/400V, ~220-240V)

- The electrical wiring must be installed by the trained electricians.
- Perform wiring connection in accordance with "Wiring Diagram Label".
  Only conduct the wiring connection after turning of the branch circuit breaker and the over current circuit breaker.
- The grounding impedance must be 4Ω or less.
- Set the earth leakage circuit breaker.
- Earth the indoor and outdoor units.
- Do not connect the earth wire to the gas pipes, water pipes, lightning rods or telephone earth wires.
  - Gas pipes – gas leaks can cause explosion or fire.
  - Water pipes – cannot be grounded if hard vinyl pipes are used.
  - Telephone earth wires or lightning rods – the ground potential when struck by lightning may get extremely high.
- Only use the copper wires.
- Be sure to turn off the power supply before performing the electrical wiring work.
  Do not switch on the breakers until all wiring work being completed.



⚠ WARNING:
After the fuse is blown, ask the serving agency to replace it.
Do not replace the fuse by yourself. Otherwise, it may cause accidents such as electric shock.

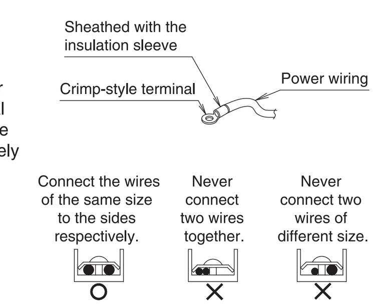
- Install the earth leakage circuit breaker.
  (Since this unit is equipped with an inverter, to prevent malfunction of the earth leakage circuit breaker itself, select the breaker that be capable of handling high harmonics.)
- Since this product is equipped with an inverter, harmonics will be generated.
  If local laws require the suppression of harmonics on the building, please take harmonic suppression measures on the electrical equipment side.
  Connect the power wiring and the power supply terminal blocks as shown in the following figure and tighten the clamps.
  Fuse models of the outdoor unit see "Wiring Diagram label" for details:
  F1U, F2U (T, 3.15A, 250V)
- The unit is equipped with an inverter. Always connect the earth wire to discharge the unit and eliminate the impact on other devices by reducing the noise generated from the inverter, and to prevent the unit casing from being live due to electric leakage.
- Never install a phase advancing capacitor to improve the power factor. (Installing a phase advancing capacitor will not improve the power factor, but may cause the capacitor abnormal heating and accidents.)
- For the wiring, use the designated electric wires and connect firmly, then secure them with the accessory clamps to prevent outside force from being applied to the terminal area (terminals of the transmission wiring and earth wire connected on site).
  For details, please refer to **5-3. Precautions for power wiring connection** .
- Do not tie the remaining wires in a bunch and tuck into the unit.
- Place the electric wires in the conduits or plastic sleeves to prevent them from being scratched by the edge of the knockout hole.
- Secure the electric wires with the accessory buckles to prevent it from touching the piping and stop valves.
  (Refer to **5-3. Precautions for power wiring connection**)

[Note]
- **Use the sheathed wires for the power wiring.**
- **Do not route the weak electric wiring (remote controller wire and wiring between units) together with the strong one outside the air conditioner, keeping them at least 25mm apart. Otherwise, being affected by the electrical noise (external noise) may result in malfunction or breakdown.**
- **Be sure to connect the power wiring to the power supply terminal blocks and hold it in place in accordance with 5-3. Precautions for power wiring connection .**
- **Hold the wiring between air conditioner units in place in accordance with 5-4. Precautions for wiring connection between units .**
- **Secure the electric wires using the tie wraps to prevent it from touching the piping etc.**
- **After connecting the electric wires, lay the wires in a smooth and regular way to avoid the electronic component box cover being protruded, then close the cover tightly.**

[Precautions for routing power wiring]
- Never connect two electric wires of different sizes to one power supply terminal. (Phenomenons such as loose electric wire connection may cause abnormal heating.)
- For the electric wires connected to the power supply terminals, use the crimp-style terminal with insulation sleeve. Otherwise, connect the wires of the same size to the sides respectively as shown in the figure.

Phenomenons such as loose electric wire connection may cause abnormal heating. Strictly follow the instructions below.

- Use the specified electric wires and secure them firmly without applying external stress to the terminal block.
- Tighten the terminal screws with a suitable screwdriver. Use of small screwdriver would damage the screw head and could not achieve the proper tightening effect.
- Secure the terminal screws overtight may break them.



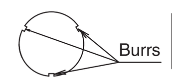
- Refer to the table below for the tightening torque of the terminal screws.

	Tightening torque (N • m)
M5 (power supply terminal)	2.39~2.91
M4 (shield earthing)	1.18~1.44
M3.5 (Internal unit wiring terminal)	0.8~0.97

5-2. Precautions for routed power wiring and transmission wiring

Route the power wiring (including the earth wire) from the wiring outlets (knockout holes) on the sides, front, or back of the units.
Route the electric wires between units from the piping outlet, or from the wiring outlets (knockout holes) on the sides, front, or back of the units.

[Precautions when punching through the knockout holes]
- Punch through the knockout holes with a hammer.
- After punching through the holes, it is recommended to coat the holes at the edge and the area around them with anti-corrosion paint to prevent rusting.
- Before leading the electric wires through the knockout holes, scrape the burrs around the holes and wrap the wires with the protective tape.



If small animals might enter the unit, block off the knockout holes with sealing material (field supply)

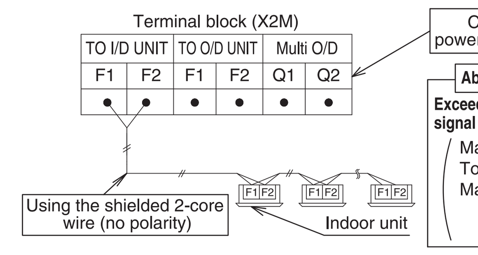
5-3. Precautions for power wiring connection

NOTICE
When using residual current operated circuit breakers, be sure to use a high-speed type 100 mA rated residual.

[Note]
- Select the power wiring in accordance with the local and national regulations in your area.
- Specifications of the field power wiring should be in compliance with IEC60245.
- Use wire type H05VV when the protective conduits are used for the power wiring.
- Use wire type H07RNF when the protective conduits are not used.
- Only proceed with wiring work after turning off all the power.
- Always earth the unit in accordance with the local and national regulations in your area.

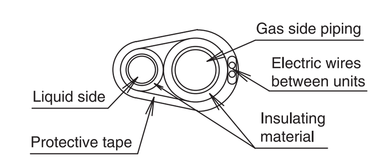
5-4. Precautions for wiring connection between units

- **Connected the wiring between units of the single system as shown in the figure below. (No polarity)**

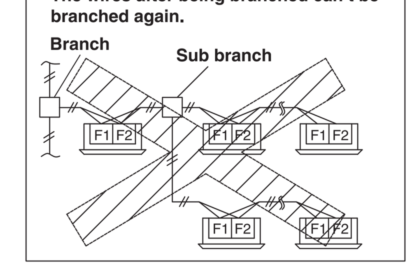


About length of the electric wires between units
Exceeding the following length may result in abnormal signal transmission. Be sure to observe.
Max. wiring length 300m or less
Total wiring length 600m or less
Max. number of branches : RXYMQ4: 6
RXYMQ5: 8
RXYMQ6: 9

Precautions for wiring connection between units
- Do not connect the power supply to the single-phase wiring terminals.
  Otherwise, the whole system will be damaged.
- The wiring from the indoor unit must be connected to the PC board terminal F1/F2 (TO I/D UNIT) of the outdoor unit.
- For the electric wires between units, after being secured within the unit, wrap them together with the refrigerant piping connected locally using the protective tape as shown in the figure below.



Precautions when branching the wiring between units
- **The electric wires between units can hold up to the number of branches noted in "Max. number of branches" shown above. The wires after being branched can't be branched again.**



- **Use 0.75~1.25 mm² shielded 2-core wire for the above wiring.**
  (For how to earth the shielded part, refer to the figure on the left.)
- **All electric wire between units are field supply.**

6 Refrigerant piping connection

6-1. Installation tools

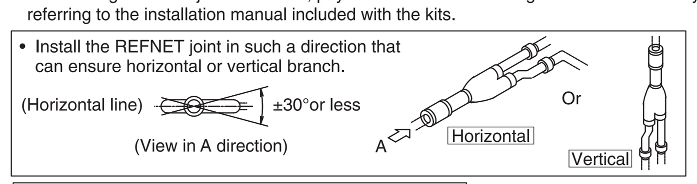
To withstand the pressure and prevent entry of any impurities into the air conditioning system, always use the special installation tools for R410A.

Multi-purpose gauge hose	• **To withstand the pressure and prevent entry of any impurities (mineral oils such as specialized lubricating oil and moisture), be sure to use the special installation tools for R410A. (Screw specifications for R410A and R407C are different.)**
Vacuum pump	• **Make sure that the engine oil in the pump will not flow backward into the air conditioner system when the pump stops.** • **Use the vacuum pump able to lower the pressure to -100.7Pa (5Torr, -755mmHg).**

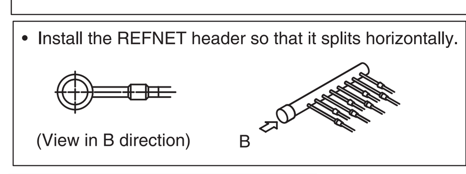
6-2. Selecting piping material

- Do not use the pipes covered with sulphur, iron oxide, dust, cutting oil, moisture or other contamination inside. (Better not to exceed 30mg/10m for the oil inside the pipes).
- Determine the thickness and size of refrigerant piping based on the precautions for piping size selection on the back, while also taking into account local laws and regulations. For R410A, the design pressure is 4.0 MPa.
- Be sure to use REFNET joint or header for the piping branches.
- While performing the piping work, make sure that the piping is within the maximum allowable ranges for length, height in difference and branch piping length.
- When using REFNET joint or header, pay attention to the following items and install it by referring to the installation manual included with the kits.

- Install the REFNET joint in such a direction that can ensure horizontal or vertical branch.



- Install the REFNET header so that it splits horizontally.



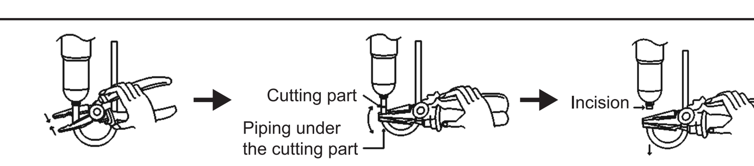
6-3. Piping protection

- Maintain and protect the piping to prevent moisture from getting into and the entry of the impurities and dust, etc.
- Pay special caution when penetrating the copper pipes through the walls till outside.

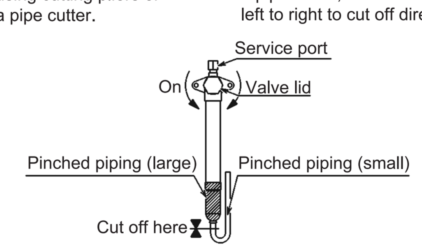
Location	Installation schedule	Protection measure
Outdoor	More than a month	Pinch
	Less than a month	Pinch or seal with tape
Indoor	Random	

6-4. Pipe connection

- **For how to use the stop valves, refer to the Stop valve operation procedure under 6-7. Air tight test and vacuum drying .**
- **Before removing the pinched piping (large)**
  1) Remove the valve lid, and check the stop valve is completely closed.
  2) Connect a vacuum gauge to the service port, and check there is no residual pressure.
  3) Cut off the pinched piping (small) with cutting pliers or a pipe cutter, and check that there is no residual pressure again.

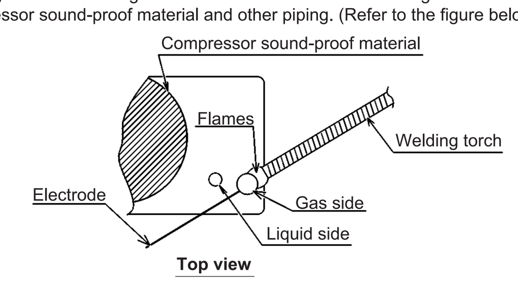


Cut at the middle of the pinched piping (small) using cutting pliers or a pipe cutter.
Clamp the lower part of the cutting part with cutting pliers or a pipe cutter, then wrench from left to right to cut off directly.
After cutting off, check the residual oil and gas coming out from the incision completely.



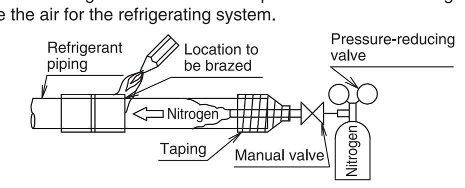
⚠ WARNING
While removing the pinched piping (large), the residual gas and oil remained in the piping of the valve body may cause the stop valve cracks, and the flames of the latter may result in burns also

- **Before brazing the removed pinched piping (large) and field piping connection.**
  Take cooling measures for the stop valves (such as wrapping a wet and dripless cloth to them).
  Failure to do so will result in damage to the valve body and cause the system leaks.
- **Brazing piping locally (gas side)**
  1) Remove the two piping outlets plates.
  2) When brazing, it is necessary to penetrate the electrode from the front of the unit and the welding torch from the right side to braze with the flames facing outside and avoid the compressor sound-proof material and other piping. (Refer to the figure below)



Top view

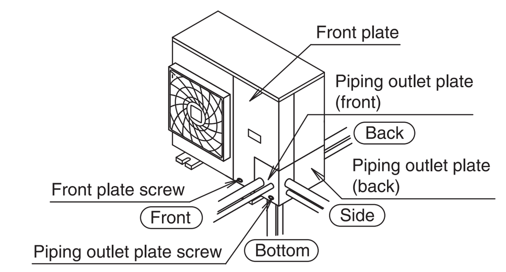
- **Be sure to charge nitrogen into the pipe when brazing.**
  (Be sure to perform nitrogen purge or nitrogen charge when brazing. Failure to do this will create large quantities of oxide film on the inside surface of the pipes, which would adversely affect the valves and compressors in the refrigerating system and prevent the normal operation.)
  Note) When charging nitrogen before brazing, the pressure-reducing valve must be set to 0.02 MPa (0.2 kg • f/cm2 or less: as a slight breeze on your cheek).
  - Do not charge other refrigerant other than the specified one for the refrigerating system.
  - Do not charge the air for the refrigerating system.



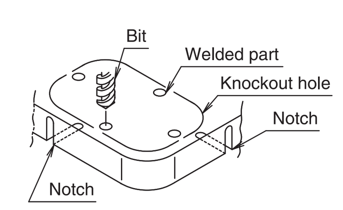
[Note]
Do not use flux when brazing the refrigerant piping.
Use the phosphor copper electrode which does not require flux (BCu93P-710/795:ISO 3677).
(Flux has extremely harmful influence on refrigerant piping system. If the chlorine based flux is used, it will cause pipe corrosion or in particular if the flux contains fluorine, it will damage the refrigerant oil and adversely affect the refrigerant piping system.)

6-5. Precautions for refrigerant piping connection

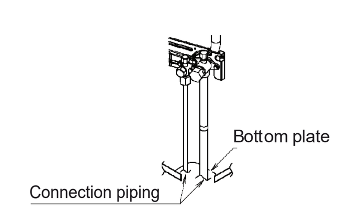
- The field piping can be connected in 4 directions.



- While connecting downward, open up a round hole (knockout hole) by drilling holes near the welded part of the knockout hole (4 places) with a Ø6mm bit.

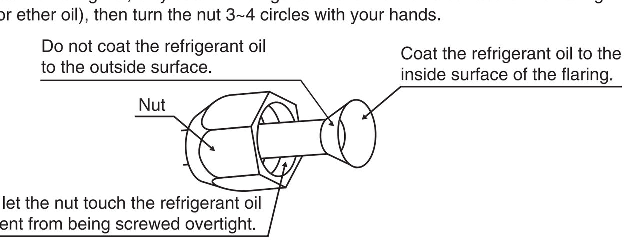


- Cutting out the 2 notches makes it possible to carry out installation as shown in the figure below. Use a metal saw when cutting out the notches.



- After drilling through the knockout hole, it is recommended to coat the edges of the notches and the area around them with anti-corrosion paint to prevent rusting.

[Precaution for piping connection]
- For machining the flaring part, refer to the following table.
- To install the flaring nut, only coat the refrigerant oil to the inside surface of the flaring (ester or ether oil), then turn the nut 3~4 circles with your hands.



- To prevent gas leakage, coat the refrigerant oil (ester or ether oil) to the inside surface of the flaring part.
- Refer to the following table for the tightening torque. (Being screwed overtight will damage the flaring part.)

Piping size	Tightening torque	Machining size A	Type
Ø9.5	32.7~39.9N•m	12.8~13.2mm	90°±2°, 45°±2°, A, R0.4~0.8
Ø15.9	61.8~75.4N•m	19.3~19.7mm	
Ø19.1	97.2~118.8N•m	23.6~24.0mm	

- If there is no torque wrench, tighten the flaring nut with a normal wrench instead of it.
- When tightening the nut, there is a possibility that the tightening torque is suddenly increased. In this case, tighten it again based on the angles in the table below from this position.

Piping size	Tightening angle (reference)	Recommended tool arm length
Ø9.5	60°~90°	Around 200mm
Ø15.9	30°~60°	Around 300mm
Ø19.1	20°~35°	Around 450mm

- After piping connection is finished, perform gas leak inspection with nitrogen for the piping connection parts.

Continued on the back page

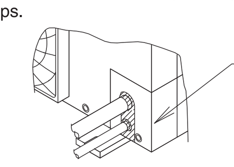
6 Refrigerant piping connection

Precautions to piping connection

- If there is a possibility that the condensed water on the stop valve might flow into the indoor unit through gaps between the insulation material and piping because the outdoor unit is located higher than the indoor unit, caulk the gaps at the connection.

[How to prevent entry of small animals]

- Caulk the piping through holes with putty or insulation material (field supply) as shown in the right figure to prevent gaps. (For the outdoor unit, entry by insects could cause short circuit of the electrical component box.)



Selection of piping material

NOTICE

- Joint less phosphor-deoxidized copper pipe.
- Installation shall be done by a licensed installer, the choice of materials and installation shall conform completely with the applicable nation and international codes.

- Foreign materials inside pipes (including oils for fabrication) must be ≤30 mg/10 m.
- Temper grade: use piping with temper grade in function of the pipe diameter as listed in table below.

Pipe Ø (mm)	Temper grade of piping material
≤15.9 (5/8")	O (annealed)
≥19.1 (3/4")	1/2H (half hard)

Selection pipe thickness

- The pipe thickness of the refrigerant piping shall comply with the applicable legislation. The minimal pipe thickness for R410A piping must be in accordance with the table below.

Pipe Ø (mm)	Minimal thickness t (mm)
Ø6.4 (1/4")	0.80
Ø9.5 (3/8")	
Ø12.7 (1/2")	
Ø15.9 (5/8")	0.99
Ø19.1 (3/4")	0.80
Ø22.2(7/8")	
Ø25.4(1")	0.88

6-6. Piping insulation

- The connection piping (liquid side, gas side) and the refrigerant branch kit must be insulated. (Otherwise, it may cause water dripping.)
- Reinforce the insulation on the refrigerant piping according to the installation environment.

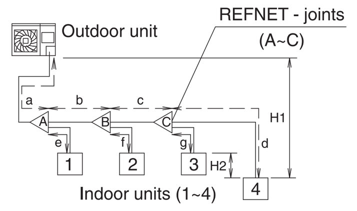
Ambient temperature	Humidity	Minimum thickness
≤30°C	75% to 80% RH	15 mm
>30°C	≥80% RH	20 mm

(Be sure to use heat resistant polyethylene foam which can withstand a temperature of 70°C for liquid piping and polyethylene foam which can withstand a temperature of 120°C for gas piping.)

CAUTION **For piping connected locally, wrap the insulation material till the piping connections. The naked piping may result in condensation and burns.**

Example of connection

(Connecting 4 indoor units)



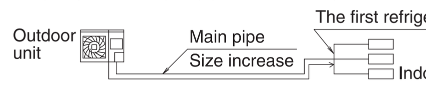
Max. allowable length	Between outdoor unit and indoor unit	Actual piping length	Piping length between outdoor unit and indoor unit ≤120m Take connection of 4 indoor units as example: a + b + c + d ≤120m. (In case of manual refrigerant charging, piping length will be decreased to ≤ 90m.)
		Equivalent length	Equivalent piping length between outdoor unit and indoor unit ≤150m (Assume equivalent piping length of REFNET joint to be 0.5m that of REFNET header to be 1m.)
		Total piping length	Total piping length from outdoor unit to all indoor units ≤300m
Allowable height difference	Between outdoor unit and indoor unit	Difference in height	Difference in height between outdoor unit and indoor unit (H1) ≤50m (Max 40m if the outdoor unit is in the lower part)
	Between indoor units	Difference in height	Difference in height between indoor units (H2) ≤ 10m for RXYMQ4AYFK, ≤ 15m for RXYMQ5.6AYFK .
Allowable length after the branch		Actual piping length	Piping length from the first refrigerant branch kit (REFNET joint or header) to indoor unit ≤40m (Example) 4 : b + c + d ≤40m

Selecting refrigerant branch kit

Selecting the piping size

[Precautions to select connection piping]

- If the equivalent piping length between outdoor and indoor units is over 90m, size of the main pipe on the gas side must be increased. In addition, depending on the distance of the refrigerant piping, size of the main pipe also can be increased if capability decreased.
[Gas side] Ø15.9(5/8") → Ø19.1(3/4") (RXYMQ4.5AYFK)
Ø19.1(3/4") → Ø22.2 (7/8") (RXYMQ6AYFK)



Note)
To increase the size of the piping joint, connect it using joints of different apertures (field supply). Connection part is beside the outdoor unit (behind the 1st bending outside the unit).

Piping between outdoor unit and refrigerant branch kit

- Should correspond to the size of the connection piping of outdoor unit.

Size of the piping connected to outdoor unit. (Unit: mm)

Outdoor unit capacity type (HP)	Piping size (outer diameter) Gas side piping	Liquid side piping
4	Ø15.9 (5/8")	Ø9.5 (3/8")
5	Ø15.9 (5/8")	Ø9.5 (3/8")
6	Ø19.1 (3/4")	Ø9.5 (3/8")

Piping between refrigerant branch kits

- Select piping size based on the following table.

(Unit: mm)

Total capacity index of connected indoor units	Gas pipe	Liquid pipe
X<150	Ø15.9 (5/8")	Ø9.5 (3/8")
150≤X<200	Ø19.1 (3/4")	
X≥200	Ø22.2(7/8")	

Piping between refrigerant branch kit and indoor unit

- Should correspond to the size of the connection piping of indoor unit.

Size of the piping connected to indoor unit. (Unit: mm)

Indoor unit capacity type	Piping size (outer diameter) Gas side piping	Liquid side piping
≤50	Ø12.7 (1/2")	Ø6.4 (1/4")
≥63	Ø15.9 (5/8")	Ø9.5 (3/8")

How to calculate the additional refrigerant to be charged

Additional refrigerant to be charged: R(kg)
(R should be rounded off in units of 0.1 kg.)

$$R = \left(\begin{array}{c}\text{Total length of}\\ \text{liquid side piping}\\ \text{size at Ø9.5}\end{array}\right) \times 0.059 + \left(\begin{array}{c}\text{Total length of}\\ \text{liquid side piping}\\ \text{size at Ø6.4}\end{array}\right) \times 0.022$$

For refrigerant branch piping with REFNET joint

Example: $R = \underbrace{25 \times 0.059}_{a+b+c+f} + \underbrace{15 \times 0.022}_{d+e+g} = 1.805 \Rightarrow \boxed{1.8}$

a: Ø9.5×10m	d: Ø6.4×5m	g: Ø6.4×5m
b: Ø9.5×5m	e: Ø6.4×5m	
c: Ø9.5×5m	f: Ø9.5×5m	

INFORMATION

The refrigerant amount that can be automatically charged may differ from the additional refrigerant amount that is provided from calculations, but there are no problems in performance and quality.

Pipe size selection

Choose from the following table in accordance with outdoor unit total capacity type, connected downstream. (Unit: mm)

Symbol			Piping size (Outer diameter) Gas pipe	Liquid pipe
Between outdoor and first refrigerant branch kit	a	RXYMQ4AYFK RXYMQ5AYFK	Ø15.9 (5/8")	Ø9.5 (3/8")
		RXYMQ6AYFK	Ø19.1 (3/4")	
Piping between refrigerant branch kits - Choose from the following table in accordance with the total capacity index of all units connected below this. - Do not let the connection piping exceed the refrigerant piping size chosen by general system model name.	b,c	**Total capacity index of connected indoor units**	**Gas pipe**	**Liquid pipe**
		X<150	Ø15.9 (5/8")	Ø9.5 (3/8")
		150≤X<200	Ø19.1 (3/4")	
		X≥200	Ø22.2(7/8")	

(a) The refrigerant sound from the outdoor unit can be transmitted.
(b) A liquid/gas size up is required for all the piping between the branch kit and VRV unit. If the piping diameter of the sized up piping exceeds the diameter of the piping before the first refrigerant branch kit, then the latter also requires a liquid/gas size up.
(c) In some indoor units, the piping size is different. Choose from the size of each indoor units.

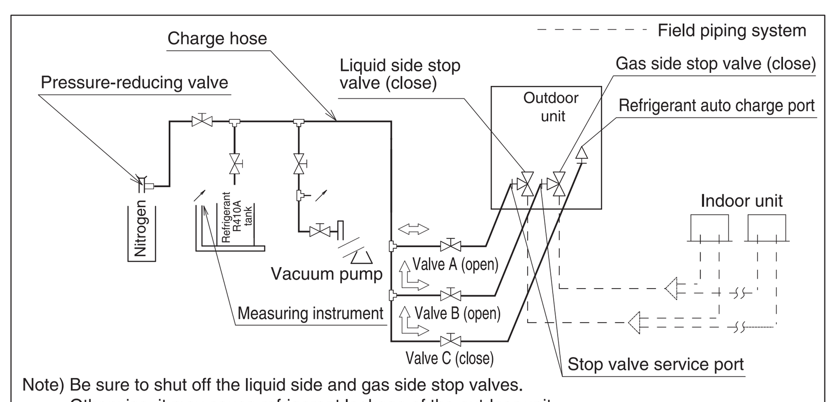
6-7. Air tight test and vacuum drying

Check the following after piping connection is finished.

CAUTION **To those doing piping work** • **Be sure to open the stop valves after completing wiring connection, air tight test and vacuum drying (Operation with the stop valve closed will result in compressor malfunction.)**

- **Air tight test** - Always use nitrogen. (Refer to **Stop valve operation procedure** for service port's position.)
[Procedure] : Pressurize the liquid side piping and the gas side piping to 4.0MPa (do not exceed 4.0 MPa). If the pressure does not drop within 24 hours, the system passes the test. If there is a pressure drop, check for leaks. (Discharge the nitrogen after confirming there is no leakage.)
- **Vacuum drying** - Use a vacuum pump able to evacuate the system to -100.7 kPa (5Torr, -755mmHg) or less.
[Procedure] : Evacuate the system from the liquid side piping and gas side piping using a vacuum pump for more than 2 hours to -100.7 kPa or less. Keep the system under this condition for more than 1 hour, check if the vacuum gauge indication rises or not. (If it rises, the system may either contain moisture inside or have gas leak.)

If moisture might enter the piping (e.g. if doing work during the rainy season, if the actual work takes long enough that condensation may form on the inside of the pipes, if rain might enter the pipes during work, etc.)
After performing the vacuum drying for 2 hours, pressurize to 0.05 MPa (vacuum breakdown) with nitrogen gas, then depressurize down to -100.7 kPa or less and hold for an hour using the vacuum pump (vacuum drying).
(If the pressure does not reach -100.7 kPa even after depressurizing for at least 2 hours, repeat the vacuum breakdown-vacuum drying process.) After vacuum drying, maintain the vacuum for an hour and make sure the pressure does not rise by monitoring with a vacuum gauge.



Note) Be sure to shut off the liquid side and gas side stop valves. Otherwise, it may cause refrigerant leakage of the outdoor unit.

Stop valve operation procedure

Precautions to stop valve operation

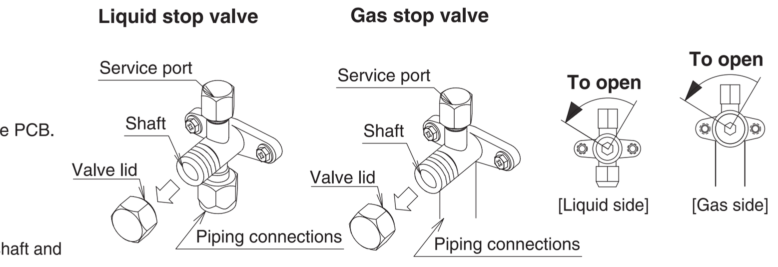
- Name of each part should be known before operating the stop valve (as shown in the right figure). When shipped, the stop valve is left closed.
- Simply using a torque wrench to loosen or tighten the flaring nut may cause deformation of the side panel. Be sure to fix the flaring nut with a normal wrench, then operate it with the torque wrench.
- When opening or closing the stop valve lid and flaring nut, make sure that the tool does not touch the PCB. It may cause an electric shock or a fire, and cause damage to electrical components.

[Stop valve operation procedure]

Prepare two inner hexagon wrenches: size 4mm, 6mm.

To open
1. Put the inner hexagon wrench to the valve shaft and turn it counterclockwise.
2. Turn it until the shaft stops. The valve is opened.

To close
1. Put the inner hexagon wrench to the valve shaft and turn it clockwise.
2. Turn it until the shaft stops. The valve is closed.

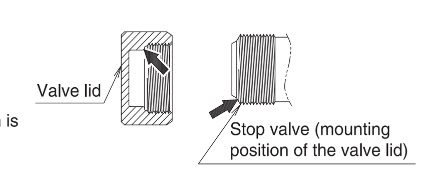


About valve lid

- Position indicated by the arrow has been caulked. Pay attention not to damage it.
- Be sure to tighten the valve lid after valve operation is completed.

About service port

- Operate with the charge hose with a pushing stick.
- Be sure to tighten the valve lid after operating. Tightening torque……11.5~13.9 N•m



Liquid side tightening torque	Gas side tightening torque
13.5~16.5N•m	22.5~27.5N•m

7 Charging refrigerant

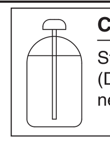
WARNING • **Be sure to inform other installers or attach the front panel well before you leaving with the power supply turned on for the outdoor unit.**

7-1. Before charging refrigerant

- Check the following works are completed in accordance with the installation manual.
• Piping work • Electrical work • Air tight test and vacuum drying

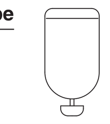
7-2. About refrigerant tank

- Check whether the tank has a siphon pipe before charging and place the tank properly so that the refrigerant is charged in the liquid phase (see the right figure).



Charge refrigerant using tank with siphon pipe

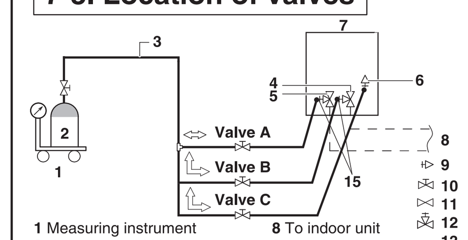
Stand the tank upright and charge.
(Due to the siphon pipe within the tank, there's no need to turn over the tank to charge).



Charge refrigerant using other tanks

Stand the tank upside-down and charge.

7-3. Location of valves



1 Measuring instrument
2 Refrigerant R410A tank (siphon system)
3 Charge hose
4 Gas side stop valve
5 Liquid side stop valve
6 Refrigerant auto charge port
7 Outdoor unit
8 To indoor unit
9 Needle valve
10 Stop valve
11 Globe valve
12 Stop valve with service port
13 Field piping
14 Gas flow
15 Stop valve service port

7-4. Charging refrigerant

7.4.1 Flow chart

Step 1
- Select additional refrigerant charge function

A (Automatic refrigerant charge)

Step 2A
- Automatic refrigerant charge procedure

Step 3A
- Push 1x BS2: "888"
- Push BS2 for more than 5 seconds "t01" pressure equalization

Cooling charging ("t02" startup control) ("t03" waiting for stable cooling)

"t03" is flashing
- Push BS2 within 5 minutes
- Open valve C

Display show "t03" and low pressure value with an interval of 1 second. Refrigerant will be charged automatically "P9" = charging finished

- Close valve C
- Push BS1 to leave program
- Charging is finished
- Fill in the amount on the "Service Precautions" label.
- Go to test run (see "**9. About test run**")

Finished

B (Manual refrigerant charge)

Step 2B
- Calculate additional refrigerant charge amount: R (kg) (see "Calculating the additional refrigerant charge".)

Step 3B
- Open valve A to field piping via liquid stop valve
- Execute refrigerant charging while the outdoor unit is not operating amount: Q (kg)
- Close valve A if no additional refrigerant can be charged

R>Q

Step 4Bb+5B
Manual refrigerant charging method (in cooling operation)

Step 6B
Activate field setting [2-20]=1 Unit will start manual refrigerant charge operation.

- Open valve B
- Charge remaining amount of refrigerant P (kg) R=Q+P

- Close valve B
- Push BS3 to stop manual charging
- Charging is finished
- Fill in the amount on the "Service Precautions" label.
- Go to test run (see "**9. About test run**")

Finished

R<Q

Refrigerant overcharge happened
- Recover refrigerant to reach R=Q
- Go to step **4Ba**

R=Q

Step 4Ba
- Close valve A
- Charging is finished
- Fill in the amount on the "Service Precautions" label.
- Go to test run (see "**9. About test run**")

Finished

INFORMATION

Details about the maximum allowable piping length are as described below:
Automatic refrigerant charge: ≤ 120m
Manual refrigerant charge: ≤ 90m

NOTICE

Charging with an unsuitable substance may cause explosions and accidents, so always make sure that the appropriate refrigerant (R410A) is charged. Refrigerant containers must be opened slowly.

CAUTION

- If charge refrigerant without automatic charging procedure, refrigerant amount might over the permissible quantity and result to liquid hammer.
- Always use protective gloves and protect your eyes when charging refrigerant.
- When the refrigerant charging procedure is done or when pausing, close the valve of the refrigerant tank immediately. If the tank is left with the valve open, the amount of refrigerant which is properly charged may get off point. More refrigerant may be charged by any remaining pressure after the unit has stopped.

NOTICE

- If the power of some units is turned off, the charging procedure cannot be finished properly.
- Make sure to turn ON the power 6 hours before starting the operation. This is necessary to warm the crankcase by the electric heater.
- If operation is performed within 12 minutes after the indoor and outdoor units are turned on, the compressor will not operate before the communication is established in a correct way between outdoor unit and indoor units.
- Before starting charging procedures, check if the segment display indication of the outdoor unit A1P PCB is as normal. If a malfunction code is present, see "Malfunction code list".
- Make sure all connected indoor units are recognised.

NOTICE

In case of maintenance and the system (outdoor unit+field piping+indoor units) does not contain any refrigerant any more (e.g., after refrigerant reclaim operation), the unit has to be charged with its original amount of refrigerant (refer to the nameplate on the unit).

7.4.2 Charging method

As explained during vacuum drying method, once vacuum drying is finished, additional refrigerant charging can start.
There are two methods to charge additional refrigerant. Use the selected method following the described procedure below.
• Adding refrigerant by using the automatic refrigerant charging function. See "A. Adding refrigerant by using the automatic charging function". This method uses an automated method for charging refrigerant.
• Adding refrigerant by using the manual refrigerant charging function. See "B. Adding refrigerant by using the manual charging function". This method uses a manual method for charging refrigerant.
A flow chart is available which gives an overview of the possibilities and actions to be taken (see "**7.4.1 Flow chart**").
Follow the steps as described below and take into account whether you want to use the automatic charge function or not.
1) Select additional refrigerant charge function **A** or **B**.
A Perform Automatic refrigerant charge function.

NOTICE

- The unit's internal piping is already factory charged with refrigerant, so be careful when connecting the charge hose.
- After adding the refrigerant, do not forget to close the lid of the refrigerant charging port. The tightening torque for the lid is 11.5 to 13.9 N•m.
- In order to ensure uniform refrigerant distribution, it may take the compressor ±10 minutes to start up after the unit has started operation. This is not a malfunction.

2A) Adding refrigerant by using the automatic charging function.

INFORMATION

The automatic refrigerant charging has limits as described below.
- Outdoor temperature: 0°C DB~43°C DB.
- Indoor temperature: 10°C DB~32°C DB.

When the outdoor temperature is lower than 5°C, the refrigerant tank should be warmed during refrigerant charging.

3A) Additional refrigerant charge can be charged by operating the outdoor unit depending on the ambient limitation conditions.
Procedure
- Idle (default) screen is shown.
- Push BS2 once, indication "888".
- Push BS2 for more than 5 seconds, wait while the unit is preparing for operation.
Segment display indication: "t01" (pressure control is executed):
- Cooling operation is started: indication "t02" till "t03" will be displayed (start up control; waiting stable cooling operation).
- When "t03" starts flashing (ready for charging), push BS2 within 5 minutes. Open valve C.
If BS2 is not pushed within 5 minutes, a malfunction code will appear:
- Cooling operation: malfunction code "P2" will appear. Push BS3 to restart the procedure.

Cooling (middle segment indicates "0")
Automatic charging will continue, the segment indication shows the current low pressure value and the status indication "t03" intermittent.
When the unit stops operating, close valve C and check whether the segment indication/user interface of indoor unit shows "P9".
This indicates the automatic charging in cooling program was finished successfully.

INFORMATION

When "t03" starts to flash, push BS2 within 5 minutes. Be aware that refrigerant will not be added to the system immediately after BS2 is pushed, however this is not a malfunction.
The system will automatically begin adding refrigerant once the liquid conditions are stable.

INFORMATION

- When a malfunction is detected during the procedure (e.g., in case of closed stop valve), a malfunction code will be displayed. In that case, refer to "Malfunction code list" and solve the malfunction accordingly. Resetting the malfunction can be done by pushing BS3. The procedure can be restarted from **3A**.
- Aborting the automatic refrigerant charge is possible by pushing BS1. The unit will stop and return to idle condition.

Information which may occur during additional refrigerant charging procedures:
P8: Indoor unit freeze up prevention
Action: Close valve C. Reset malfunction by pushing BS1. Retry auto charge procedure.
P2: Abnormal low pressure drop
Action: Close valve C. Reset malfunction by pushing BS1. Check following items before retry auto charge procedure:
- Check if the gas side stop valve is opened correctly.
- Check if the valve of the refrigerant cylinder is opened.
- Check if the air inlet and outlet of the indoor units are not obstructed.

Other malfunction code: Close valve C. Confirm the malfunction code and take corresponding action, "Malfunction code list".
B Perform Manual refrigerant charge function.
2B) Calculate the additional amount of refrigerant to be added using the formula mentioned in "Calculating the additional refrigerant charge".
3B) Perform additional refrigerant charging while the outdoor unit is not operating.
4Ba) If the calculated additional refrigerant amount is reached after charging with additional refrigerant while the outdoor unit is not operating, close valve A. Refrigerant charging is finished.
4Bb) If the total amount of refrigerant could not be charged by charging with additional refrigerant while the outdoor unit was not operating, close valve A and go to step **5B**. Follow step **6B** depending on the chosen charging method. Perform the test procedure as described in "Test operation".
5B) Perform the refrigerant charge operation as shown below and charge the remaining refrigerant of the additional charging amount through valve B. Open the liquid and gas side stop valves. Valves A and B must remain closed!

NOTICE

- The unit's internal piping is already factory charged with refrigerant, so be careful when connecting the charge hose.
- After adding the refrigerant, do not forget to close the lid of the refrigerant charging port. The tightening torque for the lid is 12.7±1.2 N•m.
- In order to ensure uniform refrigerant distribution, it may take the compressor ±10 minutes to start up after the unit has started operation. This is not a malfunction.

6B) The remaining additional refrigerant charge can be charged by operating the outdoor unit by means of the manual refrigerant charge operation mode:
- Turn on the power of the indoor units and outdoor unit.
- Take all the precautions mentioned in "start-up and configuration" into account.
- Activate outdoor unit setting [2-20]=1 to start manual refrigerant charge mode.
Result: The unit will start operation. Valve B can be opened.
Charging of remaining additional refrigerant can be done.
When the remaining calculated additional refrigerant amount is added, close valve B and push BS3 to stop the manual refrigerant charging procedure.

INFORMATION

- The manual refrigerant charge operation will automatically stop within 30 minutes. If charging is not completed after 30 minutes, perform the additional refrigerant charging operation again.
- When a malfunction is detected during the procedure (e.g., in case of closed stop valve), a malfunction code will be displayed. In that case, refer to "Malfunction code list" and solve the malfunction accordingly. Resetting the malfunction can be done by pushing BS3. The procedure can be restarted from **6B**.
- Aborting the manual refrigerant charge is possible by pushing BS3. The unit will stop and return to idle condition.

8 After installation completed

Be sure to check the following after installation

1) Connection of the drainage piping → Refer to **4 Precautions during installation**.
2) Incorrect power wiring and loose screws → Refer to 5-3. Precautions to power wiring connection.
3) Incorrect transmission wiring and loose screws → Refer to 5-4. Precautions to wiring connection between units.
4) Incorrect refrigerant piping → Refer to **6 Refrigerant piping connection**
5) Piping size and insulation → Refer to 6-2. Selecting piping material, 6-6. Piping insulation.
6) Stop valves → Check if the liquid side and gas side stop valves are opened.
7) Record refrigerant charge → Keep a record in the "Refrigerant charge" in the "Service Precautions" label.
8) Insulation test on main power circuit →
- Use 500V insulation tester.
- Do not use it in low voltage circuit less than 220V. (Connection wiring between outdoor and indoor units)

9 About test run

To start smoothly, be sure to turn on the power supply to the heating compressor crankcase 6 hours before operation.

WARNING **Be sure to inform other installers or attach the front panel well before leaving with the power supply turned on for the outdoor unit.**

Before powering on

- **Protect the electronic components with insulating tape in accordance with the "Service Precautions" label attached to the front panel.**
- **All indoor units connected with the outdoor unit will operate automatically after powering on.
To ensure safety, check the indoor unit installation has been completed.**

9-1. Powering on ~ test run

- Make sure to perform a test run first after installation. (If the unit is operated with the indoor unit's remote controller but without performing test run, the malfunction code "U3" will be indicated on the display of the remote controller and the unit will not operate normally.)
- After turning on the power supply, do not touch any switches excluding push button switches and DIP switches when setting the outdoor unit's PC board (A1P). (For positions of the button switches (BS1~3) and DIP switches (DS1, 2) on PC board, refer to the "Service Precautions" label.)
- Check the state of the outdoor units and fault wiring with this operation.

① • Attach the front panel of the outdoor unit.
• Turn on the power supply of the outdoor and indoor units.

② Make sure all field settings you want are set.

③ Turn ON the power to the outdoor unit and the connected indoor units.

④ Make sure the default (idle) situation is existing. Push BS2 for 5 seconds or more. The unit will start test operation.
- The test operation is automatically carried out, the outdoor unit display will indicate "t01" and the indication "Test operation" and "Under centralized control" will display on the user interface of indoor units.
Steps during the automatic system test run procedure:
- "t01" : control before start up (pressure equalization)
- "t02" : cooling start up control
- "t03" : cooling stable condition
- "t04" : communication check
- "t05" : stop valve check
- "t06" : pipe length check
- "t07" : refrigerant amount check
- "t09" : pump down operation
- "t10" : unit stop

INFORMATION

- If the automatic refrigerant charge function has been used, "t07" will not be displayed during the test run, as they have already been checked during automatic refrigerant charge operation.
- During test operation, it is not possible to stop operation of the unit from a user interface. To abort operation, press BS3. The unit will stop after ±30 seconds.

⑤ Check the test operation results on the outdoor unit segment display.
- Normal completion: no indication on the segment display (idle)
- Abnormal completion: indication of malfunction code on the segment display
Refer to "Correcting after abnormal completion of the test operation" to take action for correcting the abnormality.
When the test operation is fully completed, normal operation will be possible after 5 minutes.

Correcting after abnormal completion of the test operation
The test operation is only completed if there is no malfunction code displayed on the user interface or outdoor unit segment display.
In case of a displayed malfunction code, perform correcting actions as explained in the malfunction code table.
Carry out the test operation again and confirm that the abnormality is properly corrected.

INFORMATION

Refer to the installation manual of the indoor unit for other detailed malfunction codes related to indoor units.

⑥ Be sure to attach the front panel of the outdoor unit after test run is completed.

[About test run]

- In order to ensure uniform refrigerant distribution, it may take up to around 10 minutes for the compressor to start up after the power supply on. This is not malfunction.
- Meaning of operation check is not to check individual indoor unit. After completing operation check, operate the system normally with the remote controller.
- Test run can't be performed when the unit is in other mode such as refrigerant recycling mode.
- Never perform test run with discharge pipe thermistor (R2T), suction pipe thermistor (R3T) and pressure sensor (S1NPH, S1NPL) removed. Failure to do so will result in compressor damaged.

9-2. For normal operation

[Set the master unit (the indoor unit with cooling and heating option rights).]

For wired remote controller
- After test run is completed, symbol " " flashes on all remote controllers connected here.
- Set the master unit as customer's request. (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit.
- Conduct cool/heat changeover with this remote controller and the symbol " " vanishes.
- For other remoter controllers excluding the above, symbol " " lights up.

For wireless remote controller
- After test run is completed, timer lamps flash on all indoor units connected here.
- Set the master unit as customer's request. (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit. Then a sound of beeps can be heard and the timer lamps on all indoor units go out.
- The indoor unit has the option rights to change over to cooling/heating operation.

For details, refer to the installation manual included with the indoor unit.

- After test run is completed, operate the unit normally.
1) Check the indoor and outdoor units are in normal operation.
(If a knocking sound can be heard produced by liquid compression of the compressor, stop the unit immediately.)
2) Operate each indoor unit one by one and check the corresponding outdoor unit is also in operation.
3) Check to see if cold (or hot) air is coming out from the indoor unit.
4) Press the fan direction and strength buttons of the indoor unit to see if they operate properly.

[About normal operation check]

- The compressor will not restart in about 5 minutes even if the ON/OFF button of the remote controller is pressed.
- When the system operation is stopped by the remote controller, the outdoor unit may continue operating for further 1 minute at maximum.
- If any check operation was not performed through test run at first installation, the malfunction code "U3" will be displayed. In this case, perform check operation in accordance with **9-1. Powering on ~ test run**.

Malfunction codes displayed on the remote controller (check the remote controller connected with the indoor unit)

Malfunction code Main code	Sub code Master	Contents	Solution
E3	01	High pressure switch was activated (S1PH) - A1P(X2A).	Check stop valve situation or abnormalities in (field) piping or airflow over air cooled coil.
	02	• Refrigerant overcharge. • Stop valve closed.	• Check refrigerant amount+recharge unit. • Open stop valve.
	13	Stop valve closed (liquid).	Open liquid stop valve.
E4	01	Low pressure malfunction: • Stop valve closed. • Refrigerant shortage. • Indoor unit malfunction.	• Open stop valve. • Check refrigerant amount+recharge unit. • Check the user interface's display or Transmission wiring between the outdoor unit and the indoor unit.
E9	01	Electronic expansion valve malfunction (main) (Y1E) - A1P(X21A).	Check connection on PCB or actuator.
	03	Electronic expansion valve malfunction (subcool) (Y2E) - A1P(X22A).	Check connection on PCB or actuator.
	04	Electronic expansion valve malfunction (Inverter cooling) (Y3E) - A1P(X23A).	Check connection on PCB or actuator.
	26	Electronic expansion valve malfunction (refrigerant auto charge) (Y4E) - A1P(X25A).	Check connection on PCB or actuator.
F3	01	Discharge temperature too high (R21T) : • Stop valve closed. • Refrigerant shortage.	• Open stop valve. • Check refrigerant amount+recharge unit.
F6	02	• Refrigerant overcharge. • Stop valve closed.	• Check refrigerant amount+recharge unit. • Open stop valve.
H9	01	Ambient temperature sensor malfunction (R1T) - A1P(X18A).	Check connection on PCB or actuator.
J3	16	Discharge temperature sensor malfunction (R21T): open circuit - A1P (X19A).	Check connection on PCB or actuator.
	17	Discharge temperature sensor malfunction (R21T): short circuit - A1P (X19A).	Check connection on PCB or actuator.
J5	01	Suction temperature sensor malfunction (R3T) - A1P (X30A).	Check connection on PCB or actuator.
J6	01	De-icing temperature sensor malfunction (R7T) - A1P (X30A)	Check connection on PCB or actuator.
J7	06	Liquid temperature sensor (after subcool HE) malfunction (R5T) - A1P (X30A).	Check connection on PCB or actuator.
J8	01	Liquid temperature sensor (coil) malfunction (R4T) - A1P (X30A).	Check connection on PCB or actuator.
J9	01	Gas temperature sensor (after subcool HE) malfunction (R6T) - A1P (X30A).	Check connection on PCB or actuator.
JA	06	High pressure sensor malfunction (S1NPH): open circuit - A1P (X32A).	Check connection on PCB or actuator.
	07	High pressure sensor malfunction (S1NPH): short circuit - A1P (X32A).	Check connection on PCB or actuator.
JC	06	Low pressure sensor malfunction (S1NPL): open circuit - A1P (X31A).	Check connection on PCB or actuator.
	07	Low pressure sensor malfunction (S1NPL): short circuit - A1P (X31A).	Check connection on PCB or actuator.
LC	14	Transmission outdoor unit - inverter: INV1 transmission trouble - A1P	Check connection
	19	Transmission outdoor unit - inverter: FAN1 transmission trouble - A1P	Check connection
P1	01	INV1 unbalanced power supply voltage.	Check if power supply is within range.
U2	01	INV1 voltage power shortage.	Check if power supply is within range.
	02	INV1 power phase loss.	Check if power supply is within range.
U3	03	Malfunction code: System test run not yet executed (system operation not possible).	Execute system test run.
	10	Malfunction code: System refrigerant auto charge run not yet executed.	Execute auto charge function (see manual).
	04	System test run abnormal ending.	Execute test run again.
U4	01	Faulty wiring to indoor - outdoor.	Check (F1/F2) wiring.
	03	Faulty indoor system.	Check indoor system transmissions wire.
U7	11	• Too many indoor units are connected to F1/F2 line. • Bad wiring between outdoor and indoor units.	Check indoor unit amount and total capacity connected.
U9	01	• System mismatch. Wrong type of indoor units combined (R410A, R407C, RA). • Indoor unit malfunction.	Check if other indoor units have malfunction and confirm indoor unit mix is allowed.
UA	03	Connection malfunction over indoor units or type mismatch (R410A, R407C, RA).	Check if other indoor units have malfunction and confirm indoor unit mix is allowed.
	18	Refrigerant type mismatch (Field setting error).	Check if other indoor units have malfunction and confirm indoor unit mix is allowed.
UF	01	Auto address malfunction (inconsistency).	Check if transmission wired unit amount matches with powered unit amount (by monitor mode) or wait till initialization is finished.
	05	Stop valve closed or wrong (during system test run).	Open stop valves.
UH	01	Auto address malfunction (inconsistency).	Check if transmission wired unit amount matches with powered unit amount (by monitor mode) or wait till initialization is finished.

For the case with centralized controller used, refer to the installation manual included with it under service manual.

No display on the remote controller

- Connection and communication error occurred between the indoor unit and the remote controller. Check wiring connection for the broken and loose.

Note

- In the event that there is any conflict in the interpretation of this manual and any translation of the same in any language, the English version of this manual shall prevail.
- The manufacturer reserves the right to revise any of the specification and design contain herein at any time without prior notification.

CAUTION **To those doing piping work** **To those doing electrical work** • **After test run is completed, check whether the casing of the units has been attached and whether the screws have been tightened before transferring the air conditioner to your customer.**

The two-dimensional bar code is a manufacturing code.

1P660661-1

1P660667-1

DAIKIN

دليل التركيب (1)

RXYMQ4AYFK, RXYMQ5AYFK, RXYMQ6AYFK

احرص قبل القيام بالتركيب على قراءة هذا الدليل وإجراء التركيب وفقا لما هو وارد فيه.

٣- نظراً لأن R410A عبارة عن غاز تبريد مختلط، يجب تعبئته في الطور السائل. (إذا تم تعبئة غاز التبريد في الطور الغازي، يمكن أن يتغير تركيبه وقد لا يعمل النظام بشكل صحيح).

٤- تأكد من توصيل وحدة داخلية خاصة بالنموذج R410A. راجع دليل المنتج لمعرفة أسماء نماذج الوحدات الداخلية التي يمكن توصيلها بهذه الوحدة. (إذا تم توصيله بوحدات داخلية أخرى، فلن يعمل نظام تكييف الهواء بشكل طبيعي).

5- إن جهد الطاقة لهذه السلسلة من المنتجات هو 3N~ 380-415/400V, 50/60Hz.

يرجى قراءة "تدابير الوقاية" هذه بعناية قبل تركيب وحدة تكييف الهواء وتأكد من إجراء التركيب بشكل صحيح.
تأكد أن الوحدة تعمل بشكل صحيح خلال عملية بدء التشغيل بعد الانتهاء من التركيب

- يرجى إرشاد العميل حول كيفية تشغيل الوحدة والمحافظة عليها.
- يتم تصنيف التدابير الموصوفة هنا على أنها تحذير وتنبيه، ويوصى بمراعاة معلومات السلامة الهامة التالية إلى درجة كبيرة.
- يندرج مكيف الهواء هذا تحت مصطلح "الأجهزة التي لا يمكن لعامة الناس الوصول إليها".
- معنى إشعارات التحذير والتنبيه.

تحذير	قد ينتج عن التعامل غير المناسب حوادث خطيرة مثل الموت و التعرض للإصابة خطيرة
تنبيه	قد يتسبب التعامل غير المناسب بحدوث إصابة أو تلف في الممتلكات، أو يؤدي إلى نتيجة خطيرة تحت بعض الظروف.

- قم بإجراء تشغيل اختباري بعد الانتهاء من التركيب للتحقق من التشغيل العادي واشرح للعميل كيفية تشغيل مكيف الهواء وصيانته. اطلب من العميل، بالإضافة إلى ذلك، الاحتفاظ بدليل التركيب هذا مع دليل التشغيل للرجوع إليه في المستقبل.
- قم بإبلاغ العملاء أيضاً، بأنه يتوجب عليهم تخزين دليل التركيب هذا مع دليل التشغيل للرجوع إليه في المستقبل

تحذير

اطلب من الوكيل أو الموظفين المتخصصين تنفيذ أعمال التركيب.
لا تقم بتركيب الجهاز بنفسك. فقد يؤدي ذلك إلى حدوث تسرب في المياه أو حدوث صدمات كهربائية أو مخاطر نشوب حريق.

قم بإجراء أعمال التركيب باتباع الإرشادات الواردة في هذا الدليل. قد يؤدي التركيب غير الصحيح إلى حدوث تسرب في المياه أو حدوث صدمات كهربائية أو مخاطر نشوب حريق.

عند تركيب الوحدات في غرفة صغيرة ، اتخذ التدابير المناسبة عند تركيب الوحدات في غرف صغيرة لضمان أن تسرب أي كمية من غاز التبريد هي تحت الحد المسموح في حال حدوث تسرب لغاز التبريد. اتصل بالموزع في منطقتك لاتخاذ الإجراءات المناسبة. قد يؤدي زيادة تركيز عاز التبريد في مكان مغلق إلى نقص الأكسجين.

تأكد من استخدام الملحقات والأجزاء المحددة للتركيب.
قد يؤدي عدم استخدام الأجزاء المحددة إلى حدوث تسرب للمياه أو الصدمات الكهربائية أو مخاطر الحريق أو عدم عمل الوحدة بشكل طبيعي.

قم بتركيب الوحدة على قاعدة متينة يمكنها تحمل وزن الوحدة.
قد يؤدي التركيب على قاعدة غير قوية لدرجة كافية إلى سقوط الوحدة والتسبب في إصابات.

تركيب الوحدة في الأماكن المخصصة مع مراعاة الرياح القوية مثل الأعاصير والزلازل. قد يؤدي التركيب غير الصحيح إلى سقوط الوحدة والتسبب في وقوع حوادث.

تأكد من تنفيذ جميع الأعمال الكهربائية من قبل فنيين متخصصين وفقاً للقوانين واللوائح المعمول بها محليا وهذا الدليل ، كما يتم توفير دارة تغذية كهربائية خاصة للوحدة.
قد يؤدي عدم كفاية سعة دارة التغذية الكهربائية أو التشغيل الكهربائي غير الصحيح، إلى حدوث صدمات كهربائية أو مخاطر نشوب حريق.

استخدم الأسلاك المحددة وقم بتوصيلها بإحكام، مع عدم وجود قوى خارجية تؤثر على التوصيلات أو الأسلاك النهائية. قد تؤدي التوصيلات غير الصحيحة أو عدم عزل الأسلاك بشكل صحيح إلى حدوث ارتفاع غير طبيعي في الحرارة أو مخاطر نشوب حريق.

عند توصيل الوحدات الداخلية والخارجية وتمديد أسلاك التغذية الكهربائية ، قم بمد الأسلاك بطريقة سوية ومنتظمة لتوصيل لوحة الهيكل بالشكل الصحيح لتجنب بروز غطاء الخدمة وتشوهه.
سوف يؤدي عكس ذلك إلى توليد النهايات الطرفية للحرارة وبالتالي التعرض إلى خطر الصدمات الكهربائية ومخاطر نشوب حريق.

في حال حدوث تسرب لغاز التبريد أثناء التركيب، قم بفتح النوافذ والأبواب على الفور من أجل التهوية.
ينتج عن مادة التبريد الغازية غاز سام إذا لامس النار.

تحقق من عدم وجود تسرب في غاز التبريد، بعد الانتهاء من عملية التركيب كلياً.
إذا حدث تسرب لغاز التبريد داخل الغرفة، ربما يتولد غاز ضار في حالة ملامسته شعلة سخان الهواء أو الموقد أو الطباخ أو غير ذلك.

لا تلمس الأجزاء الكهربائية عندما تكون الوحدة قيد التشغيل.

بعد الانتهاء من التركيب، تأكد من عدم وجود جهد متبقي على الأجزاء النشطة (مثل أطراف قواطع دارات التسرب الأرضي وكتل التوصيلات النهائية) قبل تشغيل القواطع مثل تغيير وضعية القاطع.

قم باستشارة الوكيل في منطقتك بشأن ما يجب فعله في حال حدوث تسرب لغاز التبريد.
عندما يتم تركيب مكيف الهواء في غرفة صغيرة، من الضروري اتخاذ التدابير المناسبة حتى لا تتجاوز كمية غاز التبريد المتسربة حد التركيز المسموح في حال حدوث تسرب. قد يؤدي خلاف ذلك، إلى وقوع حوادث بسبب نفاد الأكسجين.

لا تلمس غاز التبريد المتسرب من الأنابيب أو مناطق أخرى بشكل مباشر، حيث يوجد خطر الإصابة بسفح الصقيع.

لا تسمح للأطفال بالصعود على الوحدة الخارجية وتجنب وضع أشياء عليها.
فقد يتعرض الأطفال للإصابة إذا أصبحت الوحدة رخوة وسقطت.

تنبيه

تأكد من تأريض الوحدة.
لا تقم بتوصيل السلك الأرضي بأنابيب الغاز أو أنابيب المياه أو قضبان الصواعق أو الأسلاك الأرضية للهاتف.
• التوصيل بأنابيب الغاز - يمكن أن يتسبب تسرب الغاز في حدوث انفجار أو نشوب حريق.

١ المقدمة

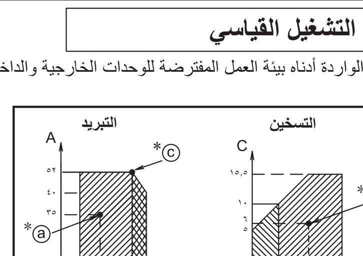
مجموعة غاز التبريد يمكن توصيل الوحدات الداخلية في المجال التالي.

- **تأكد من تركيب الوحدات الداخلية المخصصة.**
  راجع دليل المنتج لمعرفة أسماء طرازات الوحدات الداخلية التي يمكن توصيلها بهذه الوحدة.
- نسبة سعة المجموعة المركبة وعدد الوحدات الداخلية.

الوحدة الخارجية	مجموعة غاز التبريد	نسبة سعة المجموعة المركبة ٪	الحد الأقصى لعدد الوحدات الداخلية
RXYMQ4AYFK RXYMQ5AYFK RXYMQ6AYFK	نظام حجم غاز التبريد المتغير فقط	١٣٠~٥٠	RXYMQ4: 6 RXYMQ5: 8 RXYMQ6: 9

مجال التشغيل القياسي

تمثل القيم الواردة أدناه بيئة العمل المفترضة للوحدات الخارجية والداخلية:



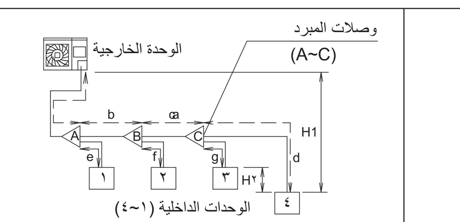
المواصفات الفنية

من أجل ظروف التشغيل ⓐ* ⓑ* في الجدول أدناه ، راجع مجال التشغيل (الشكل أعلاه).

النموذج		RXYMQ4AYFK	RXYMQ5AYFK	RXYMQ6AYFK	ملاحظة
غاز التبريد		R410A			
سعة التبريد	كيلو واط	١١,٣	١٤,١	١٦,٠	ⓐ*

٦ توصيل مواسير التبريد

مثال عن التوصيل



الطول الاعظمي المسموح	بين الوحدات الداخلية والوحدات الخارجية	الطول الفعلي للمواسير	
		الطول المكافئ	طول المواسير المكافئ بين الوحدة الخارجية والوحدة الداخلية ≥١٥٠ م (افترض أن طول الماسورة المكافئة لوصلة غاز التبريد هو ٠,٥ متر من رأس غاز التبريد ليكون ١ متر).
		الطول الكلي للمواسير	طول المواسير الكلي من الوحدة الخارجية إلى جميع الوحدات الداخلية ≥ ٣٠٠ متر
فرق الارتفاع المسموح به	بين الوحدات الداخلية والوحدات الخارجية	الفرق في الارتفاع	فرق الارتفاع بين الوحدة الخارجية والوحدة الداخلية (H1) ≥٥٠ مترا (بحد أقصى ٤٠ مترًا إذا كانت الوحدة الخارجية في الجزء السفلي)
	بين الوحدات الداخلية	الفرق في الارتفاع	فرق الارتفاع بين الوحدات الداخلية (H2) ≥١٠ م.
الطول المسموح به بعد الفرع		الطول الفعلي للمواسير	طول المواسير من مجموعة تفريع غاز التبريد الأول (وصلة أو رأس غاز التبريد) إلى الوحدة الداخلية ≥٤٠ م (مثال) ٤: ب + ج + د ≥٤٠ م
اختيار مجموعات فروع غاز التبريد			

اختيار حجم المواسير

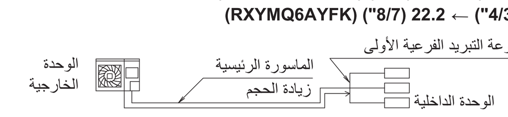
[توصيات اختيار مواسير التوصيل]

- **إذا كان طول المواسير المكافئة بين الوحدات الخارجية والداخلية يزيد عن ٩٠ مترًا، فيجب زيادة حجم الماسورة الرئيسية على طرف الغاز.**

بالإضافة إلى ذلك، اعتمادًا على مسافة مواسير غاز التبريد، يمكن أيضًا زيادة حجم المواسير الرئيسية إذا انخفضت القدرة.

[جهة الغاز] بقطر 15.9("5/8) ← 19.1("3/4) (RXYMQ4.5AYFK)

بقطر 19.1("3/4) ← 22.2 ("7/8) (RXYMQ6AYFK)



ملاحظة

لزيادة حجم وصلة المواسير، قم بتوصيلها باستخدام وصلات ذات فتحات مختلفة (توريد ميداني).

جزء التوصيل بجانب الوحدة الخارجية (خلف الانحناء الأول خارج الوحدة)

المواسير بين الوحدة الخارجية ومجموعات تفريع غاز التبريد

- يجب أن يتوافق مع حجم مواسير التوصيل للوحدة الخارجية

حجم المواسير المتصلة بالوحدة الخارجية. (وحدة القياس: مم)

نوع سعة الوحدة الخارجية (قوة حصان)	قياس الأنابيب (القطر الخارجي) أنابيب جهة الغاز	أنابيب جهة السائل
٤	١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)
٥	١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)
٦	١٩,١ (٣/٤ انش)	٩,٥ (٣/٨ انش)

المواسير بين مجموعات تفريع غاز التبريد

- حدد حجم المواسير بناءً على الجدول التالي.

(وحدة القياس: مم)

مؤشر السعة الإجمالية للوحدات الداخلية المتصلة	قطر أنبوب الغاز	قطر أنبوب السائل
X>١٥٠	١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)
١٥٠≤X>٢٠٠	١٩,١ (٣/٤ انش)	
X≤٢٠٠	٢٢,٢ (٧/٨ انش)	

المواسير بين مجموعات تفريع غاز التبريد والوحدة الداخلية

- يجب أن يتوافق مع حجم مواسير التوصيل للوحدة الداخلية.

حجم المواسير المتصلة بالوحدة الداخلية. (وحدة القياس: مم)

نوع سعة الوحدة الداخلية	قياس الأنابيب (القطر الخارجي) أنابيب جهة الغاز	أنابيب جهة السائل
≥٥٠	١٢,٧ (١/٢ انش)	٦,٤ (١/٤ انش)
≤٦٠	١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)

كيفية حساب غاز التبريد الإضافي المراد شحنه:

غاز التبريد الإضافي المراد شحنه. غاز التبريد (كغ)

يجب تقريب غاز التبريد في وحدات من ٠,١ كغ.

ر = (الطول الإجمالي للمواسير جهة السائل عند قطر ٩,٥) ×٠,٠٥٩ + (الطول الإجمالي للمواسير جهة السائل عند قطر ٦,٤) ×٠,٠٢٢

من أجل مواسير تفريع غاز التبريد مع وصلة ريفنت RefNet

مثال: ر = ٠,٠٥٤×٢٥ + ٢٢٠,٠×١٥ = ١,٦٨ ← ١,٧

أ+ب+ج+و | د+هـ+ز

أ: قطر ٩,٥ ×١٠ م	د: ٦,٤×٥ م	ز: ٦,٤×٥ م
ب: ٩,٥×٥ م	هـ: ٦,٤×٥ م	
ج: ٩,٥×٥ م	و: ٩,٥×٥ م	

اختيار حجم المواسير

اختر من الجدول التالي وفقًا لنوع السعة الإجمالية للوحدة الخارجية، المتصلة بالمصب. (وحدة القياس: مم)

الرمز		قياس الماسورة (القطر الخارجي) أنبوب الغاز	أنبوب السائل
RXYMQ4AYFK RXYMQ5AYFK		١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)
RXYMQ6AYFK		١٩,١ (٣/٤ انش)	

مؤشر السعة الإجمالية للوحدات الداخلية المتصلة	أنبوب الغاز	أنبوب السائل
X>١٥٠	١٥,٩ (٥/٨ انش)	٩,٥ (٣/٨ انش)
١٥٠≤X>٢٠٠	١٩,١ (٣/٤ انش)	
X≤٢٠٠	٢٢,٢ (٧/٨ انش)	

(أ) يمكن انتقال صوت غاز التبريد من الوحدة الخارجية.

(ب) يلزم زيادة حجم السائل / الغاز لجميع المواسير بين مجموعة الفروع والوحدة التي تعمل بنظام VRV. إذا كان قطر المواسير للمواسير ذات الحجم الأكبر يتجاوز قطر المواسير قبل أول مجموعة تفريع لغاز التبريد، فإن الأخير يتطلب أيضا زيادة حجم السائل / الغاز.

(ج) يختلف حجم المواسير في بعض الوحدات الداخلية. اختر من حجم كل وحدة داخلية

٦-٧ اختبار ضيق للهواء وتجفيف للفراغات

تحقق مما يلي بعد الانتهاء من توصيل الأنابيب

تحذير — للذين يقومون بأعمال تمديد المواسير

- **تأكد من فتح صمامات القطع بعد إتمام توصيل الأسلاك.**
(سيؤدي التشغيل مع إغلاق صمام القطع إلى حدوث خلل في الضاغط.)

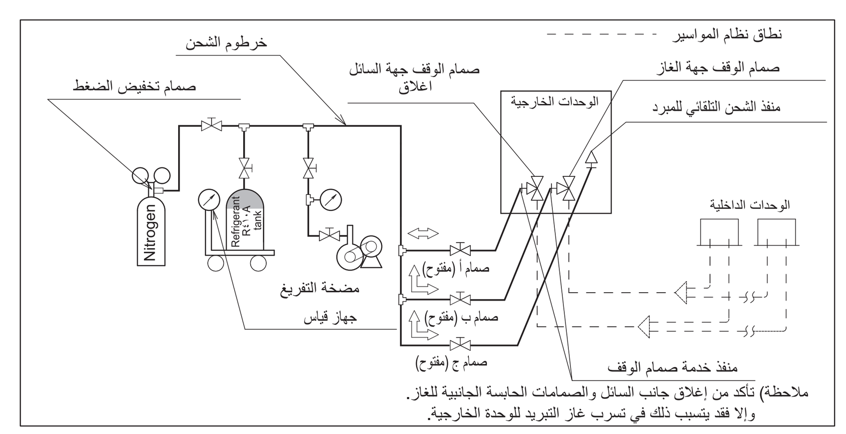
- **اختبار احكام الهواء:** - استخدم النيتروجين دائما. (راجع إجراء تشغيل صمام القطع لمعرفة موضع منفذ الخدمة)

[الإجراءات] : اضغط على المواسير الجانبية للسائل والمواسير الجانبية للغاز إلى ٤,٠ ميجا بار (لا تتجاوز ٤,٠ ميجا بار). إذا لم ينخفض الضغط في غضون ٢٤ ساعة، يجتاز النظام الاختبار، وإذا حدث انخفاض في الضغط، فتحقق من عدم وجود تسرب. (قم بتفريغ النيتروجين بعد التأكد من عدم وجود تسرب.)

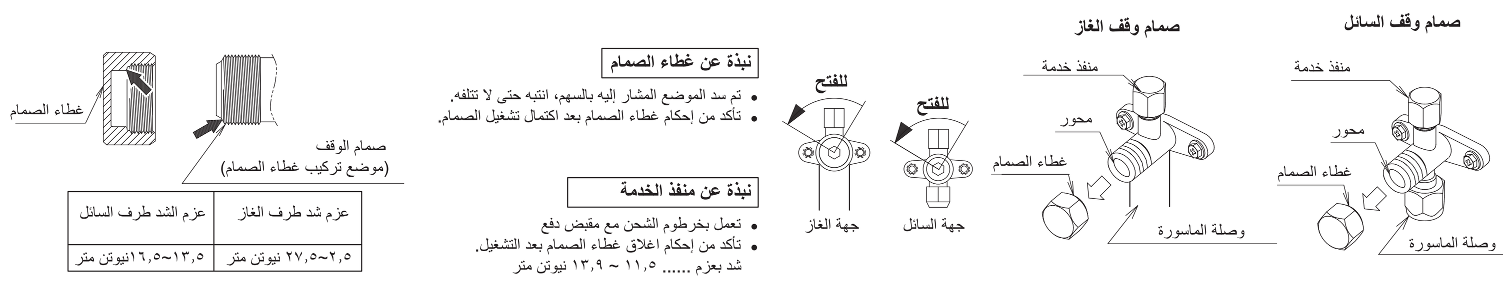
- **التجفيف الهوائي:** استخدم مضخة تفريغ قادرة على تفريغ النظام إلى -١٠٠,٧ كيلو باسكال (٥ تور ، -٧٥٥ ملم زئبق) أو أقل

[الإجراءات] : قم بتفريغ النظام من المواسير المحيطة للسائل والمواسير المحيطة للغاز باستخدام مضخة تفريغ لأكثر من ساعتين حتى -١٠٠,٧ كيلو باسكال أو أقل. حافظ على النظام في هذه الشروط لأكثر من ساعة، وتحقق مما إذا كان مؤشر مقياس التفريغ يرتفع أم لا. (إذا ارتفع، فقد يحتوي النظام إما على رطوبة بالداخل أو به تسرب غاز.)

إذا دخلت الرطوبة الأنابيب: (على سبيل المثال، في حالة القيام بعمل أثناء موسم الأمطار، إذا كان العمل الفعلي يستغرق وقتًا طويلاً بما فيه الكفاية بحيث يمكن أن يتشكل التكثيف داخل المواسير، وإذا كان المطر يدخل المواسير أثناء العمل، وما إلى ذلك) بعد إجراء التجفيف الهوائي لمدة ساعتين، اضغط إلى ٠,٠٥ ميجا باسكال (إيقاف التفريغ) بغاز النيتروجين، ثم أزل الضغط إلى -١٠٠,٧ كيلو باسكال أو أقل واحتفظ به لمدة ساعة باستخدام مضخة التفريغ (التجفيف الهوائي). إذا لم يصل الضغط إلى -١٠٠,٧ كيلو باسكال حتى بعد إزالة الضغط لمدة ساعتين على الأقل، كرر عملية التجفيف بالتفريغ الهوائي.) بعد التجفيف بالتفريغ الهوائي، حافظ على التجفيف لمدة ساعة وتأكد من عدم ارتفاع الضغط عن طريق المراقبة باستخدام جهاز مقياس التفريغ.



إجراء تشغيل صمام القطع



٧ شحن غاز التبريد

تحذير

- تأكد من إبلاغ عمال التركيب الآخرين أو ربط اللوحة الأمامية جيدًا قبل المغادرة مع تشغيل مصدر إمدادات الطاقة الكهربائية للوحدة الخارجية.

٧-١ قبل شحن غاز التبريد

٧-٢ نبذة عن خزان التبريد

٧-٣ مواضع الصمامات

٧-٤ شحن غاز التبريد

٨ بعد اكتمال التركيب

٩ نبذة عن اختبار التشغيل

٩-١ التشغيل — اختبار التشغيل:

٩-٢ للتشغيل العادي

[اضبط الوحدة الرئيسية (الوحدة الداخلية مع خيار التبريد والتدفئة الصحيح)]

بالنسبة لوحدة التحكم عن بعد السلكية

- بعد اكتمال التشغيل التجريبي، يومض الرمز "" على جميع وحدات التحكم عن بُعد المتصلة هنا.
- قم بضبط الوحدة الرئيسية حسب طلب العميل. (يوصى بضبط الوحدة الداخلية بأعلى تردد للاستخدام كوحدة رئيسية.)
- اضغط على زر تبديل وضع التشغيل في وحدة التحكم عن بُعد الخاصة بالوحدة الرئيسية.
- قم بإجراء تبديل ساخن / بارد باستخدام وحدة التحكم عن بُعد هذه ويختفي الرمز "".
- يضيء الرمز "" بالنسبة لوحدات التحكم عن بعد الأخرى باستثناء ما ورد أعلاه.

بالنسبة لوحدة التحكم عن بعد اللاسلكية

- بعد اكتمال التشغيل التجريبي، تومض مصابيح المؤقت على جميع الوحدات الداخلية المتصلة هنا
- قم بضبط الوحدة الرئيسية حسب طلب الزبون. (يوصى بضبط الوحدة الداخلية بأعلى تردد للاستخدام كوحدة رئيسية.)
- اضغط على زر تبديل وضع التشغيل في وحدة التحكم عن بُعد الخاصة بالوحدة الرئيسية. ثم يمكن سماع صوت صفير على انطفاء مصابيح المؤقت في جميع الوحدات الداخلية.
- تتمتع الوحدة الداخلية بخيار التغيير إلى عملية التبريد / التدفئة

للحصول على التفاصيل، راجع دليل التركيب المرفق مع الوحدة الداخلية

u9	٠١	• عدم تطابق النظام. نوع خاطئ من تركيب الوحدات الداخلية (R410A ، R407C ، RA) • عطل في الوحدة الداخلية	تحقق مما إذا كانت الوحدات الداخلية الأخرى بها عطل وتأكد من السماح بمزج الوحدات الداخلية.
ua	٠٣	عطل في الاتصال بالوحدات الداخلية أو عدم تطابق النوع (R410A ، R407C ، RA)	تحقق مما إذا كانت الوحدات الداخلية الأخرى بها عطل وتأكد من السماح بمزج الوحدات الداخلية.
	١٨	نوع غاز التبريد غير متطابق (خطأ في ضبط النطاق).	تحقق مما إذا كانت الوحدات الداخلية الأخرى بها عطل وتأكد من السماح بمزج الوحدات الداخلية.
uf	٠١	عطل العنوان التلقائي (عدم تناسق).	تحقق مما إذا كان حجم الوحدة السلكية للإرسال يتطابق مع كمية الوحدة التي تعمل بالطاقة (حسب وضع الشاشة) أو انتظر حتى انتهاء التهيئة.
	٠٥	صمام الأمان مغلق أو عاطل (أثناء التشغيل التجريبي للنظام).	افتح الصمامات
uh	٠١	عطل العنوان التلقائي (عدم تناسق)	تحقق مما إذا كان مقدار الوحدة السلكية للإرسال يتطابق مع كمية الوحدة التي تعمل بالطاقة (حسب وضع الشاشة) أو انتظر حتى انتهاء التهيئة.

بالنسبة للحالة التي تُستخدم فيها وحدة التحكم المركزية، يرجى الرجوع إلى دليل التركيب المرفق معها ضمن دليل الخدمة.

لا يوجد عرض على جهاز التحكم عن بعد

- حدث خطأ في الوصل والاتصال بين الوحدة الداخلية ووحدة التحكم عن بُعد. تحقق من توصيل الأسلاك بحثًا عن أي انقطاع أو انفكاك.

ملاحظة

- في حالة وجود أي تعارض في تفسير هذا الدليل وأي ترجمة له بأي لغة، يتم اعتماد النسخة الإنجليزية من هذا الدليل.
- تحتفظ الشركة المصنعة بالحق في مراجعة أي من المواصفات والتصاميم الواردة هنا في أي وقت دون إشعار مسبق.

تحذير — لأولئك الذين يقومون بأعمال تمديد المواسير / لأولئك الذين يقومون بالأعمال الكهربائية

- **بعد اكتمال التشغيل التجريبي، تحقق مما إذا كان غطاء الوحدات قد تم ربطه وما إذا كانت البراغي مشدودة قبل نقل مكيف الهواء إلى عميلك.**

يمثل الرمز ثنائي الأبعاد رمز المصنع

1P660664-1

DAIKIN 2P660918-1

Installation Manual (2)

Be sure to read this manual before installation and follow the instructions contained in it

The two-dimensional bar code is a manufacturing code.

Installation location

<Precautions to side-by-side installation>

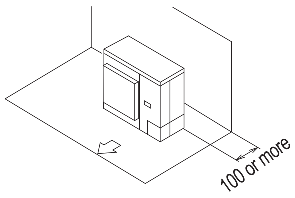
- In the figure below, the connection piping is lead out from the front, the bottom, or the side.
  An interspace of over 100mm should be kept when installing side-by-side.
  To lead out the piping from the back, the interspace of over 250mm should be kept on the right side of the outdoor unit.
  (unit : mm)

(A) Where there is an obstacle on the suction side:

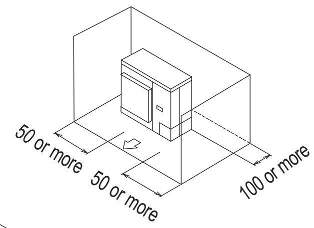
• No obstacle above

① **Stand-alone installation**

- Obstacle on the suction side only

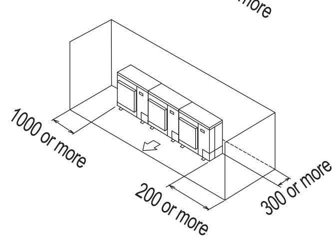


- Obstacle on both sides



② **Series installation (2 or more)**

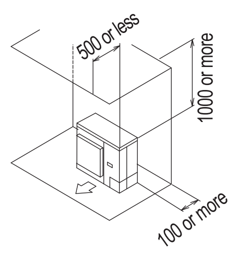
- Obstacle on both sides



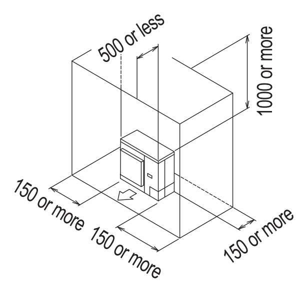
• Obstacle above,too

① **Stand-alone installation**

- Obstacle on the suction side,too

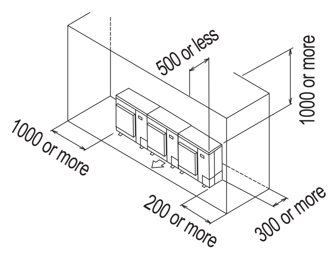


- Obstacle on the suction side and both sides



② **Series installation (2 or more)**

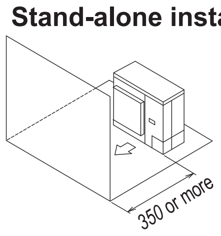
- Obstacle on the suction side and both sides



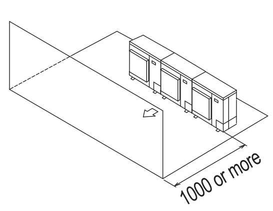
(B) Where there is an obstacle on the discharge side:

• No obstacle above

① **Stand-alone installation**

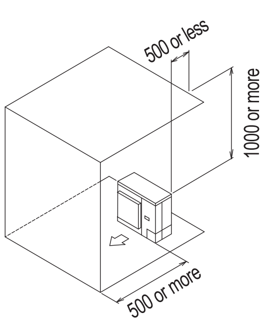


② **Series installation (2 or more)**

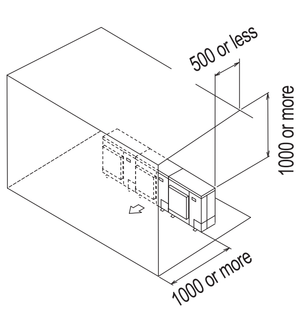


• Obstacle above,too

① **Stand-alone installation**



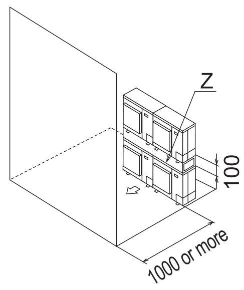
② **Series installation (2 or more)**



(D) Double-decker installation

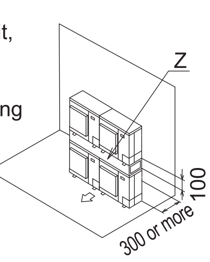
① **Obstacle on the discharge side**

(Note 1) Up to 2 layers can be overlapped.
(Note 2) For the drain pipe installation of the upper outdoor unit, the interspace of 100mm around is needed.
(Note 3) Seal Z part (interspace between the upper and lower outdoor units) to prevent the exhaust bypass from being formed.



② **Obstacle on the suction side**

(Note 1) Up to 2 layers can be overlapped.
(Note 2) For the drain pipe installation of the upper outdoor unit, the interspace of 100mm around is needed.
(Note 3) Seal Z part (interspace between the upper and lower outdoor units) to prevent the exhaust bypass from being formed.

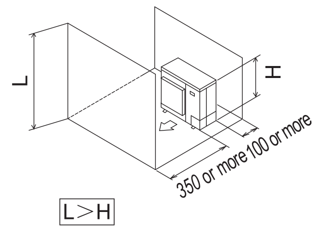


(C) Where there are obstacles on both suction and discharge sides:

Pattern 1 Where the obstacles on the discharge side is higher than the unit:
(There is no height limit for obstructions on the intake side.)

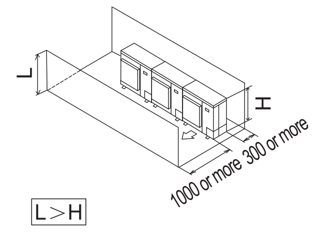
• No obstacle above

① **Stand-alone installation**



L>H

② **Series installation (2 or more)**



L>H

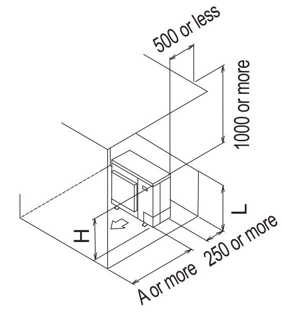
• Obstacle above,too

① **Stand-alone installation**

The relations between H, A and L are as follows:

	L	A
L≤H	0<L≤1/2H	750
	1/2H<L≤H	1000
H<L	Set the stand as: L≤H.	

(Note) Close the bottom of the installation frame to prevent the discharged air from being bypassed.

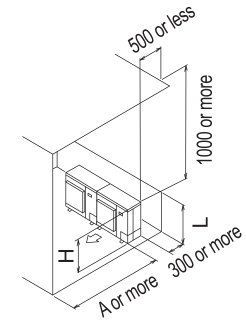


② **Series installation (2 or more)**

The relations between H, A and L are as follows:

	L	A
L≤H	0<L≤1/2H	1000
	1/2H<L≤H	1250
H<L	Set the stand as: L≤H.	

(Note1) Close the bottom of the installation frame to prevent the discharged air from being bypassed.
(Note2) Only two units can be installed for this series.

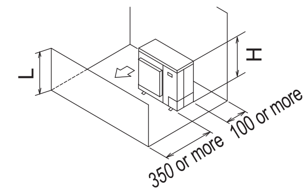


Pattern 2 Where the obstacles on the discharge side is lower than the unit:
(There is no height limit for obstructions on the intake side.)

• No obstacle above

① **Stand-alone installation**

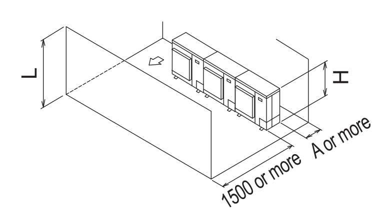
L≤H



② **Series installation (2 or more)**

The relations between H, A and L are as follows:

L	A
0<L≤1/2H	250
1/2H<L≤H	300



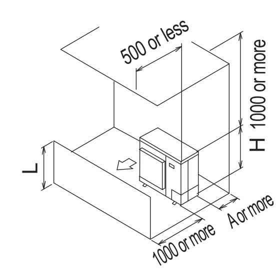
• Obstacle above,too

① **Stand-alone installation**

The relations between H, A and L are as follows:

	L	A
L≤H	0<L≤1/2H	100
	1/2H<L≤H	200
H<L	Set the stand as: L≤H.	

(Note) Close the bottom of the installation frame to prevent the discharged air from being bypassed.

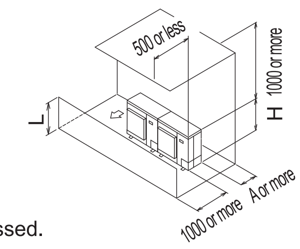


② **Series installation (2 or more)**

The relations between H, A and L are as follows:

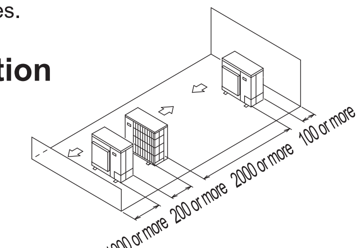
	L	A
L≤H	0<L≤1/2H	250
	1/2H<L≤H	300
H<L	Set the stand as: L≤H.	

(Note1) Close the bottom of the installation frame to prevent the discharged air from being bypassed.
(Note2) Only two units can be installed for this series.



(E) Multiple rows of series installation (on the rooftop, etc.)

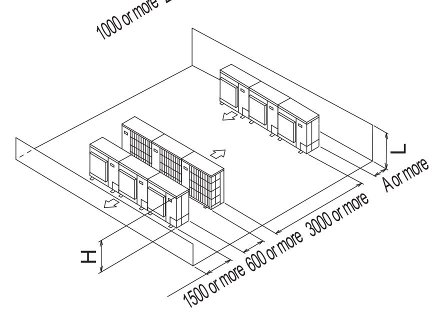
① **One row of stand-alone installation**



② **Rows of series installation (2 or more)**

The relations between H, A and L are as follows:

	L	A
L≤H	0<L≤1/2H	250
	1/2H<L≤H	300
H<L	Cannot be installed.	



NOTE

- In the event that there is any conflict in the interpretation of this manual and any translation of the same in any language, the English version of this manual shall prevail.
- The manufacturer reserves the right to revise any of the specification and design contain herein at any time without prior notification.

دليل التركيب (٢)

تأكد قبل التركيب من قراءة هذا الدليل
واتبع التعليمات الواردة فيه

مكان التركيب

< تدابير وقائية للتركيب الوحدات جنباً إلى جنب >

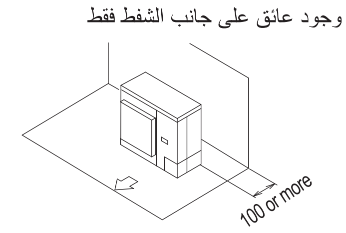
• في الشكل أدناه، يتم إخراج أنابيب التوصيل من الأمام أو الأسفل أو الجانب.
يجب الاحتفاظ بمسافة بين الوحدات تزيد عن ١٠٠ مم عند التركيب جنباً إلى جنب.
يجب الاحتفاظ بالمسافة البينية التي تزيد عن ٢٥٠ مم على الجانب الأيمن من الوحدة الخارجية لإخراج الأنابيب من الجهة الخلفية.
(الوحدة: مم)

(أ) في حالة وجود عائق على جانب الشفط:

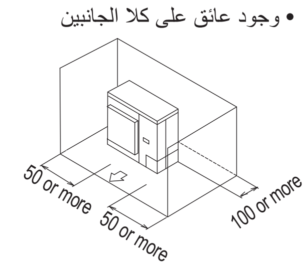
• لا يوجد عائق من الأعلى

① **التركيب المنفرد**

• وجود عائق على جانب الشفط فقط

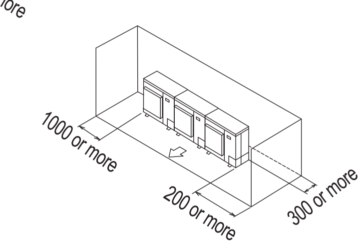


• وجود عائق على كلا الجانبين



② **تركيب متسلسل (وحدتين أو أكثر)**

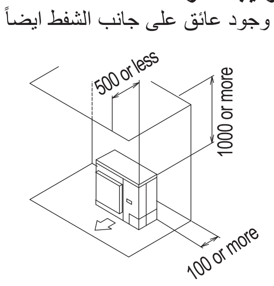
• وجود عائق على كلا الجانبين



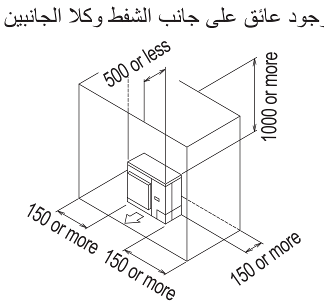
• يوجد عائق من الأعلى أيضاً

① **تركيب منفرد**

• وجود عائق على جانب الشفط ايضاً

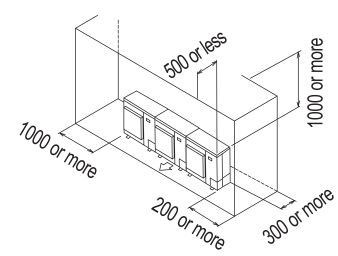


• وجود عائق على جانب الشفط وكلا الجانبين



② **تركيب متسلسل (وحدتين أو أكثر)**

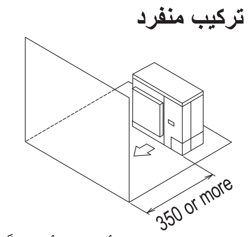
• وجود عائق على جانب الشفط وعلى كلا الجانبين



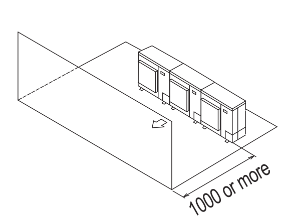
(ب) عند وجود عائق على جانب تصريف الهواء

• لا يوجد عائق من الأعلى

① **تركيب منفرد**

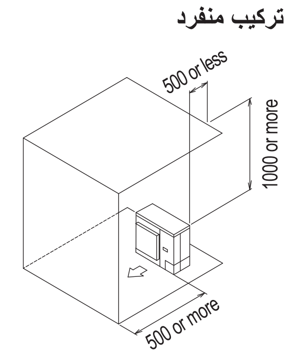


② **تركيب متسلسل (وحدتين أو أكثر)**

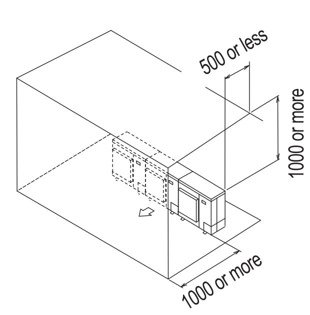


• يوجد عائق من الأعلى أيضاً

① **تركيب منفرد**



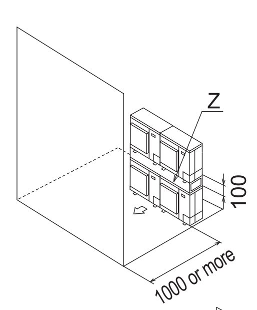
② **تركيب متسلسل (وحدتين أو اكثر)**



(د) التركيب على شكل طابقين

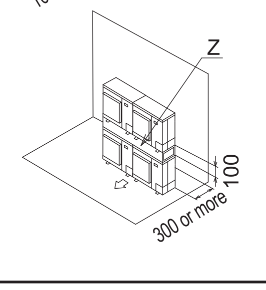
① **وجود عائق على جانب تصريف الهواء**

(ملاحظة ١) يمكن مراكبة لغاية طبقتين من الوحدات
(ملاحظة ٢) لتركيب أنبوب التصريف للوحدة الخارجية العلوي، نحتاج إلى مسافة ١٠٠ مم حولها.
(ملاحظة ٣) سد الجزء Z (المسافة البينية بين الوحدات الخارجية العلوية والسفلية) لمنع تكوين مجرى جانبي لخروج الهواء.



② **وجود عائق على جهة الشفط**

(ملاحظة ١) يمكن مراكبة لغاية طبقتين من الوحدات
(ملاحظة ٢) لتركيب أنبوب التصريف للوحدة الخارجية العلوي، نحتاج إلى مسافة ١٠٠ مم حولها.
(ملاحظة ٣) سد الجزء Z (المسافة البينية بين الوحدات الخارجية العلوية والسفلية) لمنع تكوين مجرى جانبي لخروج الهواء.

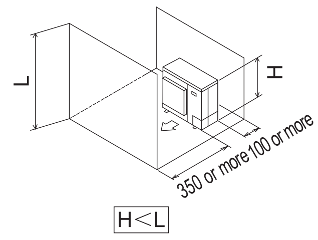


(ج) في حالة وجود عوائق على جانبي الشفط وتصريف الهواء:

النموذج ١ عندما تكون العوائق على جانب تصريف الهواء أعلى من الوحدة:
(لا يوجد حد لارتفاع العوائق على جانب السحب.)

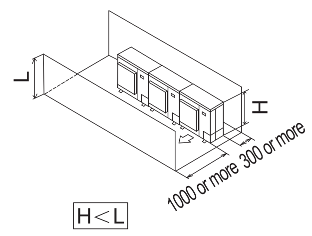
• لا يوجد عائق من الأعلى

① **التركيب المنفرد**



H<L

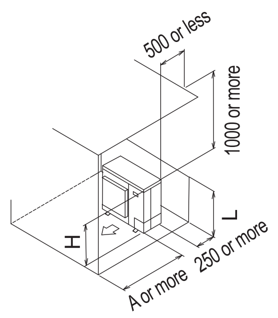
② **تركيب متسلسل (وحدتين أو أكثر)**



H<L

• يوجد عائق من الأعلى ايضاً

① **تركيب منفرد**

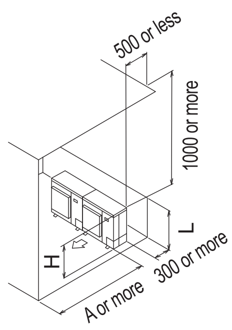


العلاقة بين H وA و L كما يلي:

	L	A
L≤H	0<L≤1/2H	٧٥٠
	1/2H<L≤H	١٠٠٠
H<L	ضع المنصة بحيث: L≤H.	

(ملاحظة) أغلق الجزء السفلي من إطار التركيب لمنع الهواء المنبعث من أن يتجاوز المجرى الأساسي.

② **تركيب متسلسل (وحدتين أو أكثر)**



العلاقة بين H وA و L كما يلي:

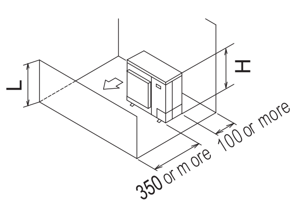
	L	A
L≤H	0<L≤1/2H	١٠٠٠
	1/2H<L≤H	١٢٥٠
H<L	ضع المنصة بحيث: L≤H.	

(ملاحظة١) أغلق الجزء السفلي من إطار التركيب لمنع الهواء المنبعث من أن يتجاوز المجرى الأساسي.
(ملاحظة٢) يمكن تركيب وحدتين فقط من أجل هذا التسلسل

النموذج ٢ عندما تكون العوائق على جهة التصريف أقل من ارتفاع الوحدة:
(لا يوجد حد لارتفاع العوائق على جهة السحب.)

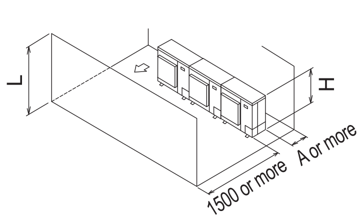
• لا يوجد عائق من الأعلى

① **تركيب منفرد**



L≤H

② **تركيب متسلسل (وحدتين أو أكثر)**

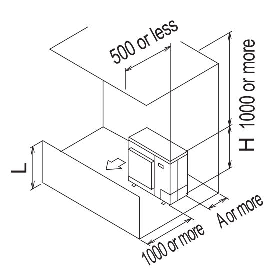


العلاقة بين H وA و L على الشكل التالي:

L	A
0<L≤1/2H	٢٥٠
1/2H<L≤H	٣٠٠

• يوجد عائق من الأعلى ايضاً

① **تركيب منفرد**

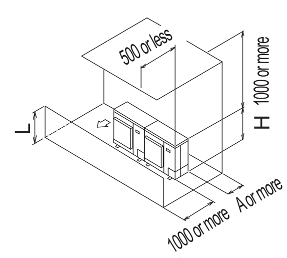


العلاقة بين H وA و L كما يلي:

	L	A
L≤H	0<L≤1/2H	١٠٠
	1/2H<L≤H	٢٠٠
H<L	ضع المنصة بحيث: L≤H.	

(ملاحظة) أغلق الجزء السفلي من إطار التركيب لمنع الهواء المنبعث من أن يتجاوز المجرى الأساسي.

② **تركيب متسلسل (وحدتين أو أكثر)**

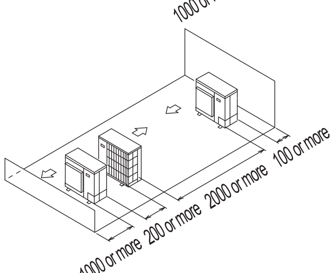


العلاقة بين H وA و L كما يلي:

	L	A
L≤H	0<L≤1/2H	٢٥٠
	1/2H<L≤H	٣٠٠
H<L	ضع المنصة بحيث: L≤H.	

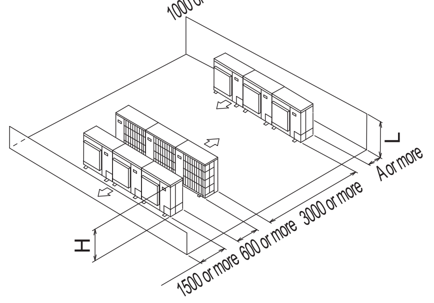
(ملاحظة) أغلق الجزء السفلي من إطار التركيب لمنع الهواء المنبعث من أن يتجاوز المجرى الأساسي.
(ملاحظة) يمكن تركيب وحدتين فقط من أجل هذا التسلسل

(هـ) صفوف متعددة من التركيب المتسلسل (على السطح، وغير ذلك)



① **صف واحد من التركيب المنفرد**

② **صفوف من التركيب المتسلسل (وحدتين أو أكثر)**



العلاقة بين H وA و L كما يلي:

	L	A
L≤H	0<L≤1/2H	٢٥٠
	1/2H<L≤H	٣٠٠
H<L	لا يمكن تركيبها	

ملاحظة

• في حالة وجود أي تعارض في تفسير هذا الدليل وأي ترجمة له بأي لغة، يتم اعتماد النسخة الإنجليزية من هذا الدليل.
• تحتفظ الشركة المصنعة بالحق في مراجعة أي من المواصفات والتصاميم الواردة هنا في أي وقت دون إشعار مسبق.