

(2) Models SCM50ZM-S, 60ZM-S

RPC012A916D

MULTI TYPE AIR-CONDITIONER  
R410A REFRIGERANT USED

- This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 107.
- When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces.

**SAFETY PRECAUTIONS**

- Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, **⚠ WARNING** and **⚡ CAUTION**.
  - ⚠ **WARNING**: Wrong installation would cause serious consequences such as injuries or death.
  - ⚡ **CAUTION**: Wrong installation might cause serious consequences depending on circumstances.
- Both mentions the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

 Never do it under any circumstances.	  Always do it according to the instruction.
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<b>⚠ WARNING</b>		
<p><b>!</b></p> <ul style="list-style-type: none"> <li>• <b>Installation must be carried out by the qualified installer.</b> If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.</li> <li>• <b>Install the system in full accordance with the installation manual.</b> Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.</li> <li>• <b>Be sure to use only for household and residence.</b> If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.</li> <li>• <b>When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).</b> If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.</li> <li>• <b>Use the original accessories and the specified components for installation.</b> If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury.</li> <li>• <b>Install the unit in a location with good support.</b> Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.</li> <li>• <b>Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds.</b> Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.</li> <li>• <b>Ventilate the working area well in the event of refrigerant leakage during installation.</b> If the refrigerant comes into contact with naked flames, poisonous gas is produced.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Use the prescribed pipes, flare nuts and tools for R410A.</b> Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.</li> <li>• <b>Tighten the flare nut by torque wrench with specified method.</b> If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.</li> <li>• <b>Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation.</b> If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalous high pressure in the refrigerant.</li> <li>• <b>The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.</b> Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.</li> <li>• <b>Be sure to shut off the power before starting electrical work.</b> Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.</li> <li>• <b>Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.</b> Unconformable cables can cause electric leak, anomalous heat production or fire.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>This appliance must be connected to main power source by means of a circuit breaker or switch (fuse:25A) with a contact separation of at least 3mm.</b></li> <li>• <b>Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.</b> Incorrect installation may result in overheating and fire.</li> <li>• <b>Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.</b> Loose connections or cable mountings can cause anomalous heat production or fire.</li> <li>• <b>Be sure to fix up the service panels.</b> Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.</li> <li>• <b>Be sure to switch off the power source in the event of installation, inspection or servicing.</b> If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.</li> <li>• <b>Stop the compressor before removing the pipe after shutting the service valve on pump down work.</b> If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.</li> <li>• <b>Only use prescribed option parts. The installation must be carried out by the qualified installer.</b> If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.</li> <li>• <b>Be sure to wear protective goggles and gloves while at work.</b></li> <li>• <b>Earth leakage breaker must be installed.</b> If the earth leakage breaker is not installed, it can cause electric shocks.</li> </ul>
<p><b>⊘</b></p> <ul style="list-style-type: none"> <li>• <b>Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.</b> If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.</li> <li>• <b>Do not processing, splice the power cord, or share a socket with other power plugs.</b> This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.</b> This may cause fire or heating.</li> <li>• <b>Do not run the unit with removed panels or protections.</b> Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Do not perform any change of protective device itself or its setup condition.</b> The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.</li> </ul>

<b>⚡ CAUTION</b>		
<p><b>⚡</b></p> <ul style="list-style-type: none"> <li>• <b>Carry out the electrical work for ground lead with care.</b> Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.</b> Using the incorrect one could cause the system failure and fire.</li> <li>• <b>Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.</b> The isolator should be locked in OFF state in accordance with EN60204-1.</li> <li>• <b>After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.</b></li> <li>• <b>Secure a space for installation, inspection and maintenance specified in the manual.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>When perform the air-conditioner operation (cooling or drying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example; Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.</b></li> </ul>
<p><b>⊘</b></p> <ul style="list-style-type: none"> <li>• <b>Do not install the unit in the locations listed below.</b> <ul style="list-style-type: none"> <li>• Locations where carbon fiber, metal powder or any powder is floating.</li> <li>• Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.</li> <li>• Vehicles and ships.</li> <li>• Locations where cosmetic or special sprays are often used.</li> <li>• Locations with direct exposure of oil mist and steam such as kitchen and machine plant.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Locations where any machines which generate high frequency harmonics are used.</li> <li>• Locations with salty atmospheres such as coastlines.</li> <li>• Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).</li> <li>• Locations where the unit is exposed to chimney smoke.</li> <li>• Locations at high altitude (more than 1000m high).</li> <li>• Locations with ammoniac atmospheres (e.g. organic fertilizer).</li> <li>• Locations with calcium chloride (e.g. snow melting agent).</li> <li>• Locations where heat radiation from other heat source can affect the unit.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations without good air circulation.</li> <li>• Locations with any obstacles which can prevent inlet and outlet air of the unit.</li> <li>• Locations where short circuit of air can occur (in case of multiple units installation).</li> <li>• Locations where strong air blows against the air outlet of outdoor unit.</li> <li>• Locations where something located above the unit could fall.</li> </ul> <p>It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.</p>

**CAUTION**

- Do not install the outdoor unit in the locations listed below.
  - Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood.
  - Locations where outlet air of the outdoor unit blows directly to plants. The outlet air can affect adversely to the plant etc.
  - Locations where vibration can be amplified and transmitted due to insufficient strength of structure.
  - Locations where vibration and operation sound generated by the outdoor unit can affect seriously (on the wall or at the place near bed room).
  - Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).
  - Locations where drainage cannot run off safely. It can affect surrounding environment and cause a claim.
- Do not install the unit near the location where leakage of combustible gases can occur. If leaked gases accumulate around the unit, it can cause fire.
- Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled. Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- Do not install the outdoor unit in a location where insects and small animals can inhabit. Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean.
- Do not use the base frame for outdoor unit which is corroded or damaged due to long periods of operation. Using an old and damage base frame can cause the unit falling down and cause personal injury.
- Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- Do not touch any buttons with wet hands. It can cause electric shocks.
- Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.
- Do not touch the suction or aluminum fin on the outdoor unit. This may cause injury.
- Do not put anything on the outdoor unit and operating unit. This may cause damage the objects or injury due to falling to the object.
- Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.
- Do not clean up the unit with water.

**Check before installation work**

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

Accessories for outdoor unit		Q'ty
① Grommet (Heat pump type only)		1
② Drain elbow (Heat pump type only)		1
③ Variable diameter joint	SCM50	1
	SCM60	2

Note: Provide flare nuts when using the variable diameter joint (for φ12.7).

Option parts	Q'ty
ⓐ Sealing plate	1
ⓑ Sleeve	1
ⓒ Inclination plate	1
ⓓ Putty	1
ⓔ Drain hose (extension hose)	1
ⓕ Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work	
1 Plus headed driver	9 Wrench key (Hexagon) [4m/m]
2 Knife	10 Vacuum pump
3 Saw	11 Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R410A)
4 Tape measure	12 Gauge manifold (Designed specifically for R410A)
5 Hammer	13 Charge hose (Designed specifically for R410A)
6 Spanner wrench	14 Flaring tool set (Designed specifically for R410A)
7 Torque wrench [14.0~62.0N·m (1.4~6.2kgf·m)]	15 Gas leak detector (Designed specifically for R410A)
8 Hole core drill (65mm in diameter)	16 Gauge for projection adjustment (Used when flare is made by using conventional flare tool)

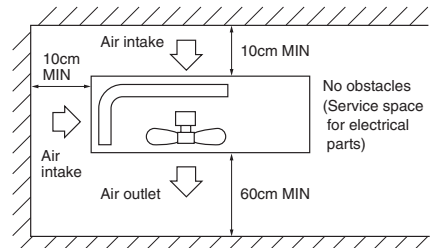
**CAUTION** • This model requires a minimum of 2 indoor units.

**1 SELECTION OF INSTALLATION LOCATION**

Install at location that meets the following conditions after getting approval from the customer.

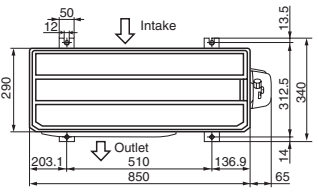
- Be careful of the following conditions and choose an installation place.
  - Where air is not trapped.
  - Where the installation fittings can be firmly installed.
  - Where wind does not hinder the intake and outlet pipes.
  - Out of the heat range of other heat sources.
  - A place where stringent regulation of electric noises is not applicable.
  - Where it is safe for the drain water to be discharged.
  - Where noise and hot air will not bother neighboring residents.
  - Where snow will not accumulate.
  - Where strong winds will not blow against the outlet pipe.
  - A place where no TV set or radio receiver is placed within 1m. (If electrical interference is caused, seek a place less likely to cause the problem)
  - If a operation is conducted when the outdoor air temperature is -5°C lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.
  - Where it is likely that the unit is subjected to strong winds, provide wind guards according to the following guidelines. Strong winds can cause performance degradation, an accidental stop due to a rise of high pressure and a broken fan.
- Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

- Installation Space (on a flat surface)
  - Blowing out port and suction port on the back side of the unit can be installed at a distance of 10cm from walls.
    - (In case the barrier is 1.2m or above in height, or is overhead, the sufficient space between the unit and wall shall be secured.)
  - When the unit is installed, the space of the following dimension and above shall be secured.

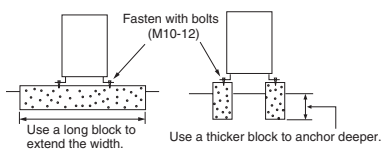


**Installation**

① Anchor bolt fixed position



② Notabilia for installation



- In installing the unit, fix the unit's legs with bolts specified on the above.
  - The protrusion of an anchor bolt on the front side must be kept within 15 mm.
  - Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
  - Refer to the above illustrations for information regarding concrete foundations.
  - Install the unit in a level area. (With a gradient of 5 mm or less.)
- Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

## 2 INSTALLATION OF OUTDOOR UNIT

### Drainage

- Execute drain piping by using a drain elbow and drain grommets, where water drained from the outdoor unit is a problem.
- There are 2 drain holes provided on the bottom plate of an outdoor unit to discharge condensed water.
- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an option part) or concrete blocks.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)

Connection of the power source cable and the connecting cables for indoor and outdoor units.

- This multi-type room air-conditioner receives its power from outside.
- To ensure correct connections, mark each ends of the cables with number, A to C. It is important to use the same number the corresponding cables and pipes.
- An earth leakage breaker and a circuit breaker must be installed. Their capacities are 25A.

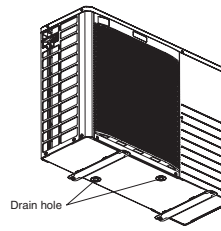
- ① Remove the service panel. (Remove the screw of the service panel.)
- ② Remove the terminal cover. (Remove the screw of the terminal cover.)
- ③ Connect the power source cable and the connection wire securely to the terminal block.

[POWER SOURCE CODE]  
CENELEC code for cables requiring fields cables. H05RNR3G4.0  
[INTERCONNECTING WIRING CODE]  
CENELEC code for cables requiring fields cables. H05RNR4G1.5

- 1) In wiring, make sure that the wire terminal numbers of outdoor unit terminal block are match to the wire terminal numbers of indoor unit terminal block.
- 2) Terminal number A of the outdoor unit is used for A indoor unit and terminal number B for B indoor unit respectively.

- ④ After connecting the wire, use wiring clamps to secure the wiring.
- ⑤ Fit the terminal cover and the service panel.

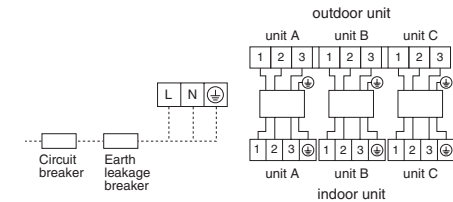
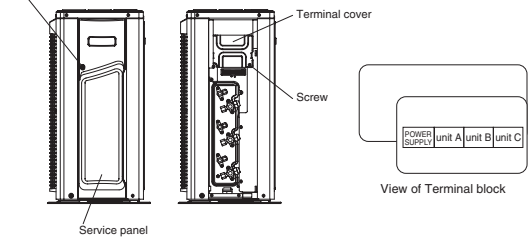
- Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.



### Main fuse specification

Model	Specification	Part No.
SCM50	250V 15A	SSA564A136
SCM60	250V 20A	SSA564A136A

The screw of the service panel is tightened securely.



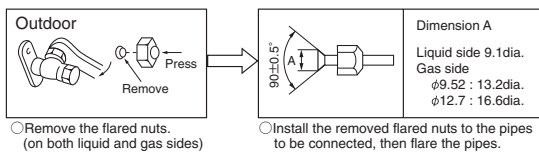
## 3 CONNECTION OF REFRIGERANT PIPINGS

- Regarding the change in the sizes of gas side pipes (usage of the variable joints); If a 5.0, 6.0 kw class indoor unit (gas side pipe 12.7) is going to be connected to the service valves (9.52), variable joints available as accessories must be applied to the gas side service valves.
- Securely fit the copper packing between the service valve and the variable diameter joint to prevent shifting.

[Connection of pipes]

### NOTE

- Cover the pipes with tape so that dust and sand do not enter the pipe until they are connected.
- When connecting the pipes to the outdoor unit, be careful about the discharge of fluorocarbon gas or oil.
- Make sure to match the pipes between the indoor unit and the outdoor unit with the correct service valves.



- Remove the flared nuts. (on both liquid and gas sides)
- Install the removed flared nuts to the pipes to be connected, then flare the pipes.

### CAUTION

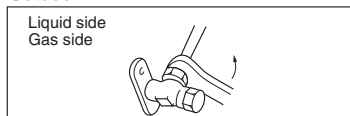
Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack depending on the conditions and refrigerant leak may occur.

### CAUTION

Do not apply refrigerating machine oil to the flared surface.

## Connection

### Outdoor



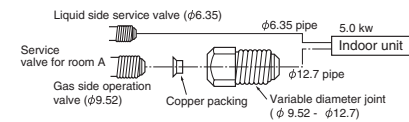
- Connect the pipes on both liquid and gas sides.
- Tighten the nuts to the following torque.  
Liquid side : 14.0~18.0N·m (1.4~1.8kgf·m)  
Gas side (φ9.52): 34.0~42.0N·m (3.4~4.2kgf·m)  
Gas side (φ12.7): 49.0~61.0N·m (4.9~6.1kgf·m)

### Gas Leakage Test

- Ensure that there are no gas leaks from the pipe joints by using a leak detector or soap water.

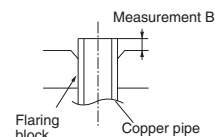
### [Examples of use of variable diameter joints]

- Connection of indoor unit of Class 5.0 to A unit.



Copper pipe diameter	Measurement B (mm)	
	Clutch type flare tool for R410A	Conventional (R22) flare tool
φ6.35	0.0~0.5	Clutch type: 1.0~1.5 Wing nut type: 1.5~2.0
φ9.52	0.0~0.5	1.0~1.5 1.5~2.0
φ12.7	0.0~0.5	1.0~1.5 2.0~2.5

Use a flare tool designed for R410A or a conventional flare tool. Please note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use. If a conventional flare tool is used, please use copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.



### [Limit]

pipng length	one indoor unit all indoor unit	MAX 25m MAX 40m
height difference		MAX 15m MAX 25m MAX 15m
length of chargeless refrigerant pipe		40m

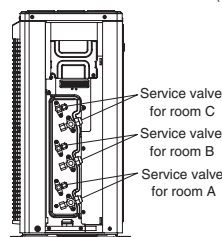
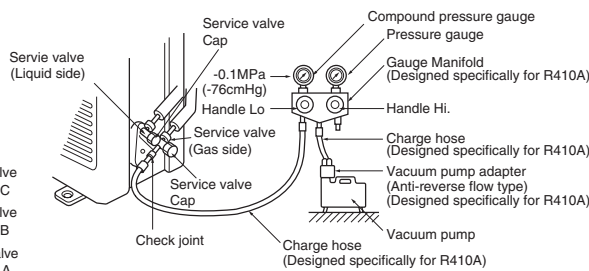
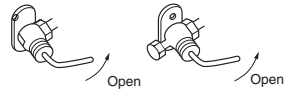
### 4 AIR PURGING

**NOTE :** Fully open the service valves (on both liquid and gas sides) after completing air purging.

- Since the system uses service ports differing in diameter from those found on the conventional models, a charge hose (for R22) presently in use is not applicable. Please use one designed specifically for R410A.
- Remove the cap on both gas and liquid sides before starting operation.
- After completing the operation, do not forget to tighten the cap (gas may leak).

**Procedure**

- (1) Secure all flare nuts on both indoor and outdoor sides to prevent leaks from the pipes.
- (2) Connect the service valves, charge hose, manifold valve and vacuum pump as shown in the right figure.
- (3) Fully open the handle Lo for the manifold valve, and pump a vacuum for 15 minutes. Ensure that the meter is indicating -0.1MPa (-76cmHg).
- (4) After vacuuming, fully open the service valve (both liquid and gas sides) with a hexagon wrench.

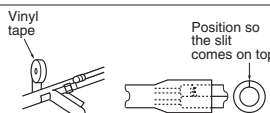
- (5) Remove the charge hose from service port.
- (6) Repeat the above steps (1) ~ (5) for all connected indoor units.
- (7) Ensure that there are no gas leaks from the joints in the indoor and outdoor units.

Securely tighten the service valve cap and the check joint blind nut after adjustment.

Service valve size (mm)	Service valve cap tightening torque (N·m)	Check joint blind nut tightening torque (N·m)
φ 6.35 (1/4")	20~30	10~12
φ 9.52 (3/8")		
φ 12.7 (1/2")	25~35	

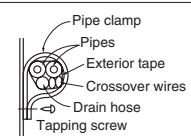
### 5 HEAT INSULATION FOR JOINTS

**Heat insulation for joints**



Cover the joint with insulation material for the indoor unit and tape it.

**Finish and fixing**



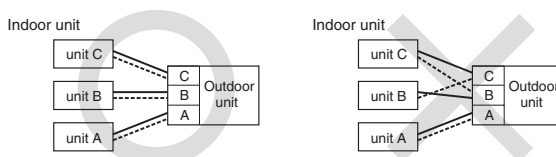
Apply exterior tape and shape along the place where the pipes will be routed. Secure to the wall with a pipe clamp. Be careful not to damage the pipes and the wires.

### 7 BEWARE OF WRONG CONNECTIONS IN REFRIGERANT PIPING AND WIRING

- Make sure to match the piping and wiring from each unit to the outdoor unit.
- Be careful because if connections are wrong, normal operation cannot be achieved and may damage the compressor.

[Correct connections]      [Example of wrong connections]

— Piping  
- - - - - Wiring



### EARTHING WORK

- Earth work shall be carried out without fail in order to prevent electric shock and noise generation.
- The connection of the earth cable to the following substances causes dangerous failures, therefore it shall never be done. (City water pipe, Town gas pipe, TV antenna, lightning conductor, telephonenumber, etc.)

### 6 TEST RUN AND HANDLING INSTRUCTIONS

#### Installation test check points

Check the following points again after completion of the installation, and before turning on the power.  
Conduct a test run again and ensure that the unit operates properly.  
At the same time, explain to the customer how to use the unit and how to take care of the unit following the installation manual.  
If the compressor does not operate after the operation has started, wait for 5-10 minutes. (This may be due to delayed start.)  
(Three-minutes restart preventive timer)  
When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3minutes. This is to protect the unit and it is not a malfunction.

**After installation**

- The power source voltage is correct as the rating.
- No gas leaks from the joints of the service valve.
- Power cables and crossover wires are securely fixed to the terminal board.
- Each indoor and outdoor unit is properly connected (no wrong wiring or piping).
- Service valve is fully open.
- Refrigerant has been additionally charged (when the total pipe length exceeds the refrigerant charged pipe length).
- The pipe joints for indoor and outdoor pipes have been insulated.
- Earthing work has been conducted properly.
- The screw of the service panel is tightened securely.

**Test run**

- Air-conditioning and heating are normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.
- Operation of the unit has been explained to the customer.
- The remote control is normal.

**Operation of indicator lamps**

INDICATION LAMP	COLOR	FUNCTION
LED E (1)	RED	WARNING LAMP
SELF DIAGNOSIS FUNCTION BY LED E		
1 TIME FLASH	CURRENT CUT	
2 TIME FLASH	TROUBLE OF OUTDOOR UNIT	
3 TIME FLASH	OVER CURRENT	
4 TIME FLASH	TRANSMISSION ERROR IN OUTDOOR UNIT PCB	
5 TIME FLASH	OVER HEAT OF COMPRESSOR	
6 TIME FLASH	ERROR OF SIGNAL TRANSMISSION	
7 TIME FLASH	LOCK OF COMPRESSOR	
8 TIME FLASH	SENSOR ERROR	
LIGHT ON	OUTDOOR FAN MOTOR ERROR	
4 SEC LIGHT AND 4 SEC OFF	DISCHARGE PIPE SENSOR COMING OFF	



(3) Models SCM71ZM-S, 80ZM-S

RPC012A913C

MULTI TYPE AIR-CONDITIONER  
R410A REFRIGERANT USED

- This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 107.
- When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces.

**SAFETY PRECAUTIONS**

- Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels. **⚠ WARNING** and **⚡ CAUTION**.
- **⚠ WARNING**: Wrong installation would cause serious consequences such as injuries or death.
- **⚡ CAUTION**: Wrong installation might cause serious consequences depending on circumstances.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- For installing qualified personnel, take precautions in respect to themselves by using suitable protective clothing, groves, etc., and then perform the installation works.
- Please pay attention not to fall down the tools, etc. when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.
- The meanings of "Marks" used here are shown as follows:

	Never do it under any circumstances.			Always do it according to the instruction.
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Both mentions the important items to protect your health and safety so strictly follow them by any means.

• Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

**⚠ WARNING**

<p><b>!</b></p> <ul style="list-style-type: none"> <li>• <b>Installation must be carried out by the qualified installer.</b> If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.</li> <li>• <b>Install the system in full accordance with the installation manual.</b> Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.</li> <li>• <b>Be sure to use only for household and residence.</b> If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.</li> <li>• <b>When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).</b> If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.</li> <li>• <b>Use the original accessories and the specified components for installation.</b> If parts other than those prescribed by us are used, it may cause water leaks, electric shocks and fire.</li> <li>• <b>Install the unit in a location with good support.</b> Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.</li> <li>• <b>Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds.</b> Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.</li> <li>• <b>Ventilate the working area well in the event of refrigerant leakage during installation.</b> If the refrigerant comes into contact with naked flames, poisonous gas is produced.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Use the prescribed pipes, flare nuts and tools for R410A.</b> Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.</li> <li>• <b>Tighten the flare nut by torque wrench with specified method.</b> If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.</li> <li>• <b>Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation.</b> If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant.</li> <li>• <b>The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.</b> Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.</li> <li>• <b>Be sure to shut off the power before starting electrical work.</b> Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.</li> <li>• <b>Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.</b> Unconformable cables can cause electric leak, anomalous heat production or fire.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>This appliance must be connected to main power source by means of a circuit breaker or switch (fuse:25A) with a contact separation of at least 3mm.</b></li> <li>• <b>Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.</b> Incorrect installation may result in overheating and fire.</li> <li>• <b>Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.</b> Loose connections or cable mountings can cause anomalous heat production or fire.</li> <li>• <b>Be sure to fix up the service panels.</b> Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.</li> <li>• <b>Be sure to switch off the power source in the event of installation, inspection or servicing.</b> If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.</li> <li>• <b>Stop the compressor before removing the pipe after shutting the service valve on pump down work.</b> If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.</li> <li>• <b>Only use prescribed optional parts. The installation must be carried out by the qualified installer.</b> If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.</li> <li>• <b>Be sure to wear protective goggles and gloves while at work.</b></li> <li>• <b>Earth leakage breaker must be installed.</b> If the earth leakage breaker is not installed, it can cause electric shocks.</li> </ul>
<p><b>⊘</b></p> <ul style="list-style-type: none"> <li>• <b>Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.</b> If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.</li> <li>• <b>Do not processing, splice the power cord, or share a socket with other power plugs.</b> This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.</b> This may cause fire or heating.</li> <li>• <b>Do not run the unit with removed panels or protections.</b> Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Do not perform any change of protective device itself or its setup condition.</b> The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.</li> </ul>

**⚡ CAUTION**

<p><b>⚡</b></p> <ul style="list-style-type: none"> <li>• <b>Carry out the electrical work for ground lead with care.</b> Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.</b> Using the incorrect one could cause the system failure and fire.</li> <li>• <b>Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.</b> The isolator should be locked in OFF state in accordance with EN60204-1.</li> <li>• <b>After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.</b></li> <li>• <b>Secure a space for installation, inspection and maintenance specified in the manual.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>When perform the air-conditioner operation (cooling or drying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example; Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.</b></li> </ul>
<p><b>⊘</b></p> <ul style="list-style-type: none"> <li>• <b>Do not install the unit in the locations listed below.</b> <ul style="list-style-type: none"> <li>• Locations where carbon fiber, metal powder or any powder is floating.</li> <li>• Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.</li> <li>• Vehicles and ships.</li> <li>• Locations where cosmetic or special sprays are often used.</li> <li>• Locations with direct exposure of oil mist and steam such as kitchen and machine plant.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Locations where any machines which generate high frequency harmonics are used.</li> <li>• Locations with salty atmospheres such as coastlines.</li> <li>• Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).</li> <li>• Locations where the unit is exposed to chimney smoke.</li> <li>• Locations at high altitude (more than 1000m high).</li> <li>• Locations with ammoniac atmospheres (e.g. organic fertilizer).</li> <li>• Locations with calcium chloride (e.g. snow melting agent).</li> <li>• Locations where heat radiation from other heat source can affect the unit.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations without good air circulation.</li> <li>• Locations with any obstacles which can prevent inlet and outlet air of the unit.</li> <li>• Locations where short circuit of air can occur (in case of multiple units installation).</li> <li>• Locations where strong air blows against the air outlet of outdoor unit.</li> <li>• Locations where something located above the unit could fall.</li> </ul> <p>It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.</p>

**⚠ CAUTION**

- Do not install the outdoor unit in the locations listed below.**

  - Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood.
  - Locations where outlet air of the outdoor unit blows directly to plants. The outlet air can affect adversely to the plant etc.
  - Locations where vibration can be amplified and transmitted due to insufficient strength of structure.
  - Locations where vibration and operation sound generated by the outdoor unit can affect seriously (on the wall or at the place near bed room).
  - Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).
  - Locations where drainage cannot run off safely. It can affect surrounding environment and cause a claim.
- Do not install the unit near the location where leakage of combustible gases can occur.**

If leaked gases accumulate around the unit, it can cause fire.
- Do not install the unit where corrosive gas (such as sulfuric acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**

Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**

Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- Do not install the outdoor unit in a location where insects and small animals can inhabit.**

Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean.
- Do not use the base flange for outdoor unit which is corroded or damaged due to long periods of operation.**

Using an old and damaged base flange can cause the unit falling down and cause personal injury.
- Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**

Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- Do not touch any buttons with wet hands.**

It can cause electric shocks.
- Do not touch any refrigerant pipes with your hands when the system is in operation.**

During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.
- Do not touch the suction or aluminum fin on the outdoor unit.**

This may cause injury.
- Do not put anything on the outdoor unit and operating unit.**

This may cause damage the objects or injury due to falling to the object.
- Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
- Do not clean up the unit with water.**

**Check before installation work**

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

Accessories for outdoor unit	Q'ty
① Grommet (Heat pump type only)	2
② Drain elbow (Heat pump type only)	1
③ Variable diameter joint $\phi 9.52 \Rightarrow \phi 12.7$	2

Note: Provide flare nuts when using the variable diameter joint (for  $\phi 12.7$ ).

Option parts	Q'ty
Ⓐ Sealing plate	1
Ⓑ Sleeve	1
Ⓒ Inclination plate	1
Ⓓ Putty	1
Ⓔ Drain hose (extension hose)	1
Ⓕ Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work	Q'ty
1 Plus headed driver	1
2 Knife	2
3 Saw	3
4 Tape measure	4
5 Hammer	5
6 Spanner wrench	6
7 Torque wrench [14.0~62.0N·m (1.4~6.2kgf·m)]	7
8 Hole core drill (65mm in diameter)	8

9 Wrench key (Hexagon) [4m/m]
10 Vacuum pump
11 Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R410A)
12 Gauge manifold (Designed specifically for R410A)
13 Charge hose (Designed specifically for R410A)
14 Flaring tool set (Designed specifically for R410A)
15 Gas leak detector (Designed specifically for R410A)
16 Gauge for projection adjustment (Used when flare is made by using conventional flare tool)

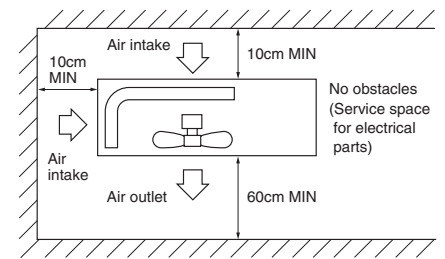
**CAUTION** • This model requires a minimum of 2 indoor units.

**1 SELECTION OF INSTALLATION LOCATION**

Install at location that meets the following conditions after getting approval from the customer.

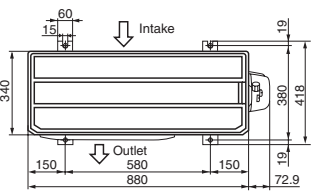
- Be careful of the following conditions and choose an installation place.
- Where air is not trapped.
  - Where the installation fittings can be firmly installed.
  - Where wind does not hinder the intake and outlet pipes.
  - Out of the heat range of other heat sources.
  - A place where stringent regulation of electric noises is not applicable.
  - Where it is safe for the drain water to be discharged.
  - Where noise and hot air will not bother neighboring residents.
  - Where snow will not accumulate.
  - Where strong winds will not blow against the outlet pipe.
  - A place where no TV set or radio receiver is placed within 1m.
- (If electrical interference is caused, seek a place less likely to cause the problem)
- If a operation is conducted when the outdoor air temperature is  $-5^{\circ}\text{C}$  lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.
  - Where it is likely that the unit is subjected to strong winds, provide wind guards according to the following guidelines. Strong winds can cause performance degradation, an accidental stop due to a rise of high pressure and a broken fan.
- Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

- ① Installation Space (on a flat surface)
- Ⓒ Blowing out port and suction port on the back side of the unit can be installed at a distance of 10cm from walls.
- ( In case the barrier is 1.2m or above in height, )  
( or is overhead, the sufficient space between )  
the unit and wall shall be secured.
- Ⓓ When the unit is installed, the space of the following dimension and above shall be secured.

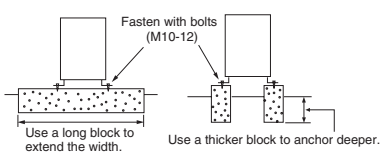


**Installation**

① Anchor bolt fixed position



② Notabilia for installation



- In installing the unit, fix the unit's legs with bolts specified on the above.
  - The protrusion of an anchor bolt on the front side must be kept within 15 mm.
  - Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
  - Refer to the above illustrations for information regarding concrete foundations.
  - Install the unit in a level area. (With a gradient of 5 mm or less.)
- Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

## 2 INSTALLATION OF OUTDOOR UNIT

### Drainage

- Execute drain piping by using a drain elbow and drain grommets, where water drained from the outdoor unit is a problem.
- There are 3 drain holes provided on the bottom plate of an outdoor unit to discharge condensed water.
- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an option part) or concrete blocks.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)

### Connection of the power source cable and the connecting cables for indoor and outdoor units.

- This multi-type room air-conditioner receives its power from outside.
- To ensure correct connections, mark each ends of the cables with number, A to D. It is important to use the same number the corresponding cables and pipes.
- An earth leakage breaker and a circuit breaker must be installed. Their capacities are 25A.

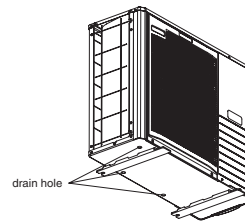
- ① Remove the service panel. (Remove the 2 sets screws of the service panel.)
- ② Remove the terminal cover. (Remove the 2 sets screws of the terminal cover.)
- ③ Connect the power source cable and the connection wire securely to the terminal block.

[POWER SOURCE CODE]  
CENELEC code for cables requiring fields cables. H05RNR3G4.0  
[INTERCONNECTING WIRING CODE]  
CENELEC code for cables requiring fields cables. H05RNR4G1.5

- 1) In wiring, make sure that the wire terminal numbers of outdoor unit terminal block are match to the wire terminal numbers of indoor unit terminal block.
- 2) Terminal number A of the outdoor unit is used for A indoor unit and terminal number B for B indoor unit respectively.

- ④ After connecting the wire, use wiring clamps to secure the wiring.
- ⑤ Fit the terminal cover and the service panel.

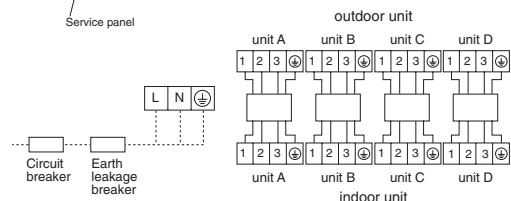
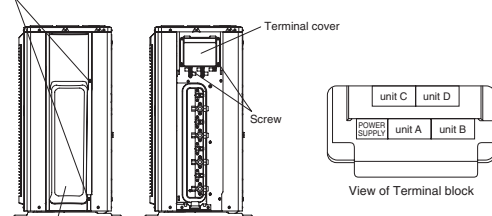
- Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.



### Main fuse specification

Specification	Part No.
250V 20A	SSA564A136A

The screw of the service panel is tightened securely.



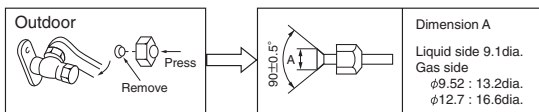
## 3 CONNECTION OF REFRIGERANT PIPINGS

- Regarding the change in the sizes of gas side pipes (usage of the variable joints); If a 5.0, 6.0 kw class indoor unit (gas side pipe 12.7) is going to be connected to the service valves (9.52), variable joints available as accessories must be applied to the gas side service valves.
- Securely fit the copper packing between the service valve and the variable diameter joint to prevent shifting.

### [Connection of pipes]

#### NOTE

- Cover the pipes with tape so that dust and sand do not enter the pipe until they are connected.
- When connecting the pipes to the outdoor unit, be careful about the discharge of fluorocarbon gas or oil.
- Make sure to match the pipes between the indoor unit and the outdoor unit with the correct service valves.



- Remove the flared nuts. (on both liquid and gas sides)

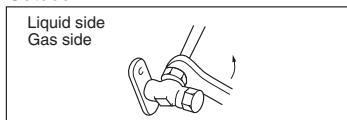
- Install the removed flared nuts to the pipes to be connected, then flare the pipes.

**CAUTION**  
Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack depending on the conditions and refrigerant leak may occur.

**CAUTION**  
Do not apply refrigerating machine oil to the flared surface.

### Connection

#### Outdoor



- Connect the pipes on both liquid and gas sides.
- Tighten the nuts to the following torque.  
Liquid side : 14.0~18.0N·m (1.4~1.8kgf·m)  
Gas side (φ9.52): 34.0~42.0N·m (3.4~4.2kgf·m)  
(φ12.7): 49.0~61.0N·m (4.9~6.1kgf·m)

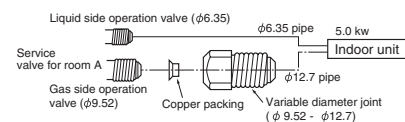
- When the total refrigerant pipe length for all the rooms exceeds the length of the uncharged pipe (40m), additional refrigerant is required. (If 40m or less, additional charge is not required.)  
Additional charge amount per meter = 20g/m

#### Gas Leakage Test

- Ensure that there are no gas leaks from the pipe joints by using a leak detector or soap water.

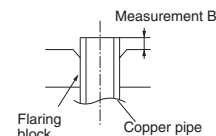
### [Examples of use of variable diameter joints]

- Connection of indoor unit of Class 5.0 to A unit.



Copper pipe diameter	Measurement B (mm)		
	Clutch type flare tool for R410A	Conventional (R22) flare tool	
		Clutch type	Wing nut type
φ6.35	0.0~0.5	1.0~1.5	1.5~2.0
φ9.52	0.0~0.5	1.0~1.5	1.5~2.0
φ12.7	0.0~0.5	1.0~1.5	2.0~2.5

Use a flare tool designed for R410A or a conventional flare tool. Please note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use. If a conventional flare tool is used, please use copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.



### [Limit]

piping length	one indoor unit	MAX 25m
	all indoor unit	MAX 70m
height difference	MAX 20m	MAX 20m
	MAX 25m	MAX 20m
length of chargeless refrigerant pipe	40m	

#### 4 AIR PURGING

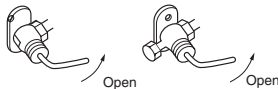
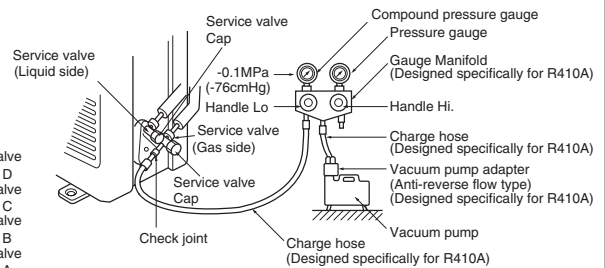
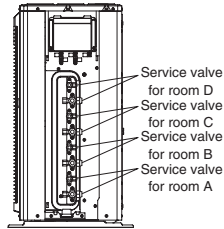
NOTE : Fully open the service valves (on both liquid and gas sides) after completing air purging.

- Since the system uses service ports differing in diameter from those found on the conventional models, a charge hose (for R22) presently in use is not applicable. Please use one designed specifically for R410A.
- Remove the cap on both gas and liquid sides before starting operation.
- After completing the operation, do not forget to tighten the cap (gas may leak).

- Please use an anti-reverse flow type vacuum pump adapter so as to prevent vacuum pump oil from running back into the system. Oil running back into an air-conditioning system may cause the refrigerant cycle to break down.
- Conduct air purging for all connected indoor units.

#### Procedure

- (1) Secure all flare nuts on both indoor and outdoor sides to prevent leaks from the pipes.
- (2) Connect the service valves, charge hose, manifold valve and vacuum pump as shown in the right figure.
- (3) Fully open the handle Lo for the manifold valve, and pump a vacuum for 15 minutes. Ensure that the meter is indicating -0.1MPa (-76cmHg).
- (4) After vacuuming, fully open the service valve (both liquid and gas sides) with a hexagon wrench.



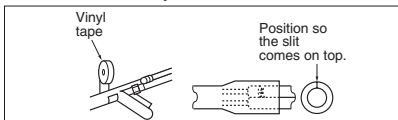
- (5) Remove the charge hose from service port.
- (6) Repeat the above steps (1) ~ (5) for all connected indoor units.
- (7) Ensure that there are no gas leaks from the joints in the indoor and outdoor units.

Securely tighten the service valve cap and the check joint blind nut after adjustment.

Service valve size (mm)	Service valve cap tightening torque (N·m)	Check joint blind nut tightening torque (N·m)
φ 6.35 (1/4")	20~30	10~12
φ 9.52 (3/8")		
φ 12.7 (1/2")	25~35	

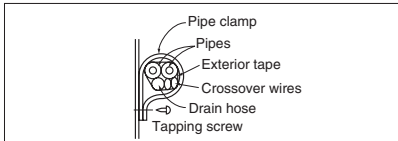
#### 5 HEAT INSULATION FOR JOINTS

Heat insulation for joints



Cover the joint with insulation material for the indoor unit and tape it.

Finish and fixing



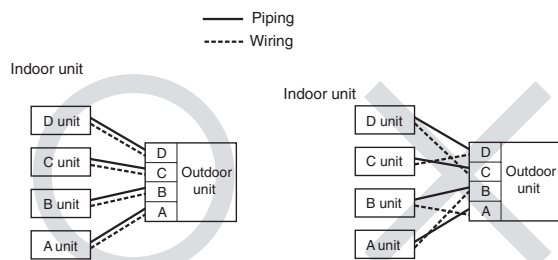
Apply exterior tape and shape along the place where the pipes will be routed. Secure to the wall with a pipe clamp. Be careful not to damage the pipes and the wires.

#### 7 BEWARE OF WRONG CONNECTIONS IN REFRIGERANT PIPING AND WIRING

- Make sure to match the piping and wiring from each unit to the outdoor unit.
- Be careful because if connections are wrong, normal operation cannot be achieved and may damage the compressor.

[Correct connections]

[Example of wrong connections]



#### EARTHING WORK

- Earth work shall be carried out without fail in order to prevent electric shock and noise generation.
- The connection of the earth cable to the following substances causes dangerous failures, therefore it shall never be done. (City water pipe, Town gas pipe, TV antenna, lightning conductor, telephoneline, etc.)

#### 6 TEST RUN AND HANDLING INSTRUCTIONS

##### Installation test check points

Check the following points again after completion of the installation, and before turning on the power.

Conduct a test run again and ensure that the unit operates properly. At the same time, explain to the customer how to use the unit and how to take care of the unit following the installation manual.

If the compressor does not operate after the operation has started, wait for 5-10 minutes. (This may be due to delayed start.)

(Three-minutes restart preventive timer)

When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3minutes. This is to protect the unit and it is not a malfunction.

##### After installation

- The power source voltage is correct as the rating.
- No gas leaks from the joints of the service valve.
- Power cables and crossover wires are securely fixed to the terminal board.
- Each indoor and outdoor unit is properly connected (no wrong wiring or piping).
- Service valve is fully open.
- Refrigerant has been additionally charged (when the total pipe length exceeds the refrigerant charged pipe length).
- The pipe joints for indoor and outdoor pipes have been insulated.
- Earthing work has been conducted properly.
- The screw of the service panel is tightened securely.

##### Test run

- Air-conditioning and heating are normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.
- Operation of the unit has been explained to the customer.
- The remote control is normal.

##### Operation of indicator lamps

INDICATION LAMP	COLOR	FUNCTION
LED E (1)	RED	WARNING LAMP
SELF DIAGNOSIS FUNCTION BY LED E		
1 TIME FLASH		CURRENT CUT
2 TIME FLASH		TROUBLE OF OUTDOOR UNIT
3 TIME FLASH		OVER CURRENT
4 TIME FLASH		TRANSMISSION ERROR IN OUTDOOR UNIT PCB
5 TIME FLASH		OVER HEAT OF COMPRESSOR
6 TIME FLASH		ERROR OF SIGNAL TRANSMISSION
7 TIME FLASH		LOCK OF COMPRESSOR
8 TIME FLASH		SENSOR ERROR
LIGHT ON		OUTDOOR FAN MOTOR ERROR
4 SEC LIGHT AND 4 SEC OFF		DISCHARGE PIPE SENSOR COMING OFF