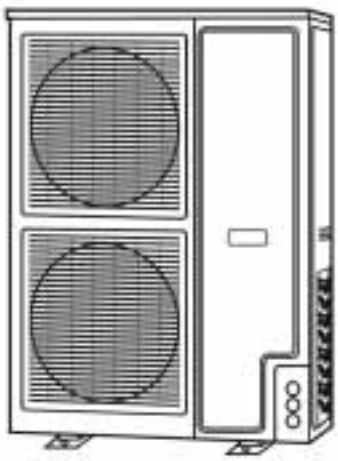
Multi-Split Room Air Conditioner

OUTDOOR UNIT
INSTALLATION INSTRUCTIONS

AU282XHEAA



AU422XIEAA

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No.0010577250 A

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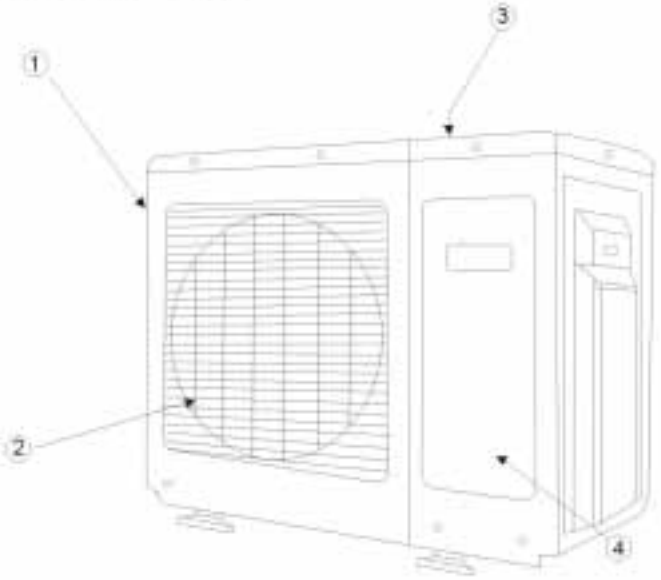
- Before using the air conditioner, please read this manual carefully
- Please keep this manual properly for future use

Name of parts

AU282XHEAA



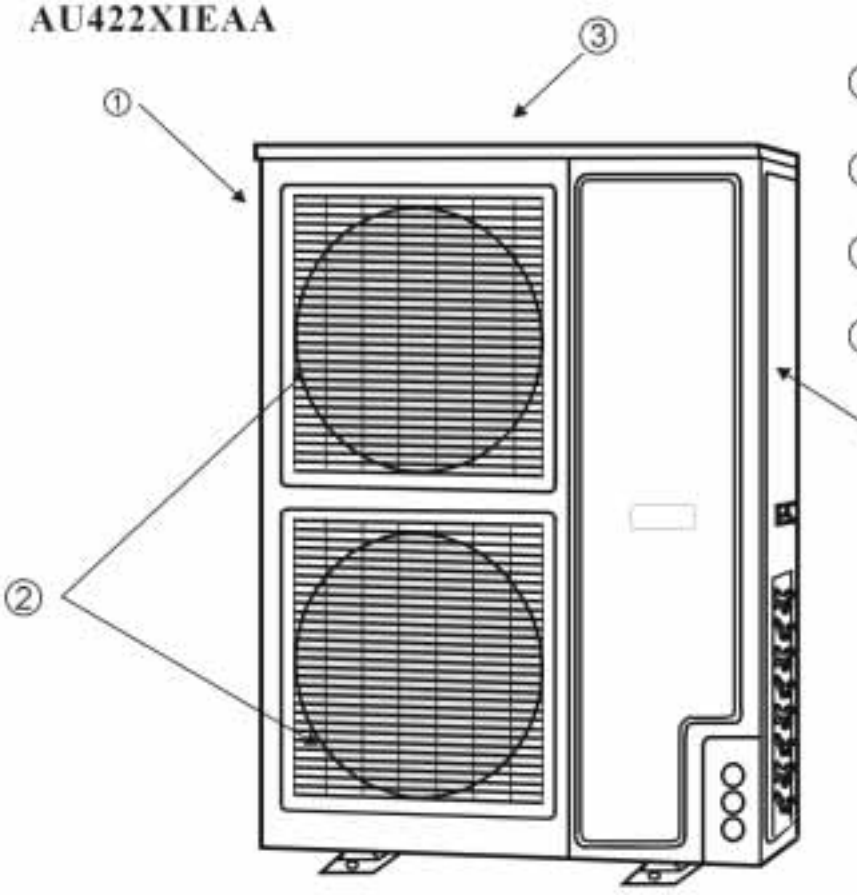
① Air inlet

②Air outlet

③Air inlet

④Service panel

AU422XIEAA



① Air inlet

② Air outlet

③ Air inlet

④ Service panel

Safety precautions

Please read the following safety precautions, and use the air conditioner correctly.

The following lists four kinds of safety precautions and recommendations:
⚠Warning: Improper use may cause death or serious injury, or other serious consequences.
⚠Notice: Improper use may cause body injury or unit damage; in some cases, it may cause serious consequences.
⊘ : Any contents marked with this "prohibition" symbol are the actions must be prohibited. Otherwise, it may cause unit damage or endanger the body safety of user.
Instruction: These contents are to confirm proper use of the unit.

The following safety precautions must be observed.
These safety precautions should be kept in hand to consult it when needs.
If the air conditioner is resold to a new customer, this manual also should be given to him.

⚠ Warning

- If finding abnormal phenomenon(e.g. smell of fire), please cut the power immediately and contact our after-sale service staffs for the solvent.

  In this case, if you still use the unit, it will be damaged and electric shock or fire accident may be caused.

- When needing repairing, please contact our after-sale service staffs to do it.

  Improper repair may cause water leakage, electric shock and fire accident.

- During operation, do not put fingers or any other objects into the air inlet/outlet and swing plate.

  Because the high-speed fan motor is very dangerous, it may cause body injury.

- Please contact after-sale service staffs for the preventive measures for refrigerant leakage

  If the leaked refrigerant exceeds a certain density, it will cause anoxia. If the room equipped with air conditioner is very small, adequate measures must be taken to avoid anoxia accident even if refrigerant leaks.

- When the air conditioner must be dismantled and reinstalled, please let the after-sale service staffs do the job.

  Improper installation may cause water leakage, electric shock and fire accident.

- Do not remove the air outlet of the outdoor unit. Exposure of the fan is very dangerous, it may cause body injury.

- After the air conditioner has been used for a long time, it is necessary to check if the base of it damaged.

  If the damaged base is not repaired, the unit may fall down to cause hurt.

Safety precautions

⚠ Warning

- Do not step on or put articles on the outdoor unit assembly.

The overturn of person or articles from the unit may cause hurt.

- Do not operate the unit with wet hands.

Otherwise, electric shock may occur.

- Only the fuse of proper specification.

Do not use electric wire or any other material instead of fuse, otherwise, it may cause trouble or fire accident.

- Do not put or use any flammable spray liquid near the air conditioner, otherwise, it may cause fire accident.

- Only after turning off the air conditioner and cutting off the power can it be cleaned to avoid electric shock or body injury.

- Do not use water to clean the air conditioner.

Otherwise, it may cause electric shock.

- Connection of grounding wire.

The grounding wire should not connect with gas pipe, tap water pipe, lightning rod or telephone line. Improper grounding may cause electric shock accident.

- Use the correct drain hose to ensure smooth drainage.

Improper drain hose may cause water leakage.

- The air conditioner should not be installed in a place where have flammable gas.

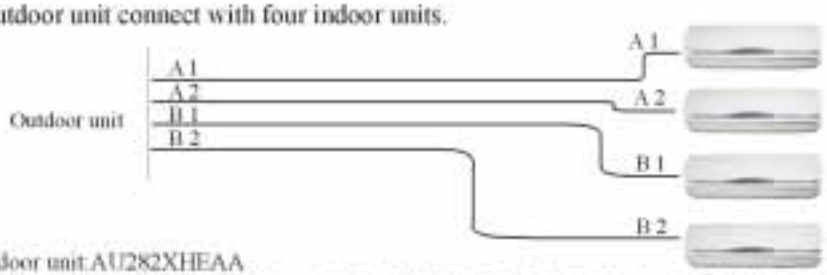
The flammable gas near the air conditioner may cause fire accident.

- A air breaker should be equipped.

If do not equip the air breaker, electric shock easily happen.

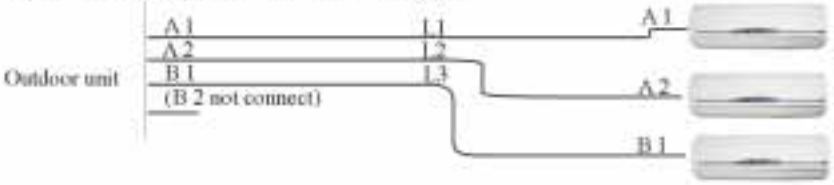
Installation diagram of indoor & outdoor unit

1) One outdoor unit connect with four indoor units.

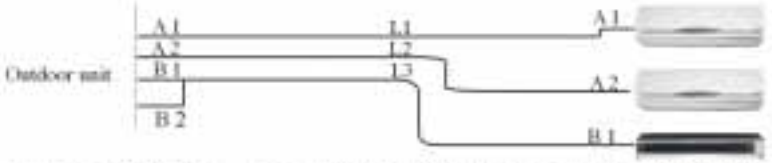


Outdoor unit:AU282XHEAA
Indoor unit A1~A2=7000BTU/h or 9000BTU/h, B1~B2=7000BTU/h or 9000BTU/h
Outdoor unit:AU422XIEAA
Indoor unit A1~A2=12000BTU/h , B1~B2=12000BTU/h

2) One outdoor unit connect with three indoor units.



Outdoor unit:AU282XHEAA Indoor unit B1=14000BTU/h, A1=A2=7000BTU/h or 9000BTU/h



Outdoor unit:AU422XIEAA Indoor unit B1=21000BTU/h, A1=A2=12000BTU/h

3) One outdoor unit connect with two indoor units.

Outdoor unit: AU282XHEAA Indoor unit A1=B1=14000BTU/h

Outdoor unit:AU422XIEAA Indoor unit A1=B1=21000BTU/h

Piping data.

Gas pipe		mm	Φ 9.52	
Liquid pipe		mm	Φ 6.35	
Pipe length of one way	L1 ①	m	Suggest ≤ 10m	Max. :25m ③
	L2 ②	m	Suggest ≤ 10m	Max. :25m ③
	L3 ②	m	Suggest ≤ 10m	Max. :25m ③
Drop between indoor and outdoor unit	Indoor unit up	m	Suggest ≤ 5m	Max. :15m ③
	Indoor unit down	m	Suggest ≤ 5m	Max. :10m ③
No need to recharge: when piping length of one way is less than 5 meters.				

① L1 means the piping length when the system only connects with one indoor unit.

② L2, L3 means the piping length when the system connects with 2 indoor units.

③ Long piping length and large drop between indoor unit and outdoor unit will reduce the performance capacity obviously.

Installation tools

Installation tools

1. Screw
2. Steel saw
3. Drill (70mm dia.)
4. Spanner [17, 27mm dia.]
5. Spanner [14, 17, 19, 27mm]
6. Pipe cutter
7. Flarer
8. Knife
9. Pliers
10. Leakage detector or soap water
11. Tape measure
12. Scraping knife
13. Refrigerant oil
14. Vacuum pump
15. Nitrogen tank

Standard accessories

The following parts mentioned in this instruction is optional.

Mark	A	B	C	D	E	F
Parts' name	Adhesive tape	Pipe supporting plate	Connection pipe	Drain hose	Insulation material	Powder

Installation instruction

- Before installing, do read this "Safety precautions" carefully to guarantee the proper installation.
- The below attentive matters are divided into "⚠ Warning" and "⚠ Note" two parts. When the wrong installation occur, it is very possible death and severe injury and other serious accidents will happen. For those items are listed in "⚠ Warning" part. But even the items listed in "⚠ Note" part can also cause serious accidents. Above all, both the two parts are very important contents related to safety, so they must be obeyed.
- After finishing the installation work, do test run to verify everything is normal. After that please explain the using and maintenance methods to the user. Additionally, give this installation manual and operation manual to the user and ask them to keep it properly.

⚠ Warning

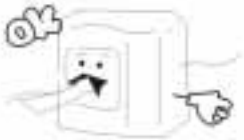
- The distributing shop, where you bought the air conditioner, or the specified shops shall do the installation work. If you do the installation work by yourself, the improper installation will cause water leakage, electric shock fire and other accidents.
- The installation work shall be in line with what the installation manual specified. If installation is not proper, water leakage, electric shock, fire and other accidents will occur.
- Install the air conditioner to a place where can definitely stand its weight. Places not firm enough will cause drop down of unit resulting in body hurt.
- The installation work shall be preventive to typhoon and earthquake. If the installation work is not met with the requirements, overturn of the unit will occur resulting in accidents.
- The wiring work shall be done by a qualified person and referred to the "technical standard of electric equipment", "indoor wiring regulation" and what the manual specified. Do use special circuit. If the capacity of the circuit is not enough or bad work, electric shock, fire and other accidents will happen.
- Using the specified cable to do wiring work and connecting firmly and properly. Fix the connecting part of the terminals to prevent it from the external force.Improper connection and fixing will cause heating and fire etc. accidents.
- Wiring shall be kept in correct shape avoiding extrusion. After installation, the electric box cover and the external panel shall not nip the wire. Improper installation will cause heating and fire etc. accidents.
- When setting or moving the air conditioner do not let the air and things alike get into the refrigeration system except the specified refrigerant (R410A). If air and other things enter abnormal high pressure will occur, which easily cause break and body injuries etc. accidents.
- When installing, do use the accessories or specified parts. If not using the parts specified by our company, water leakage, electric shock, fire and refrigerant leakage will occur.
- Do not lead the drainpipe to drain where the sulfur gas may be involved. Otherwise, the poisonous gas will enter into the indoor.
- During installation, if refrigerant leakage occurs, do the ventilation work immediately. As soon as the refrigerant gas meets fire, poisonous gas will be produce. If the refrigerant gas enters into room and meet the air blowing heater, heater or stove etc. fire source, the poisonous gas may be produced. After installation, confirm there is no leakage of refrigerant.
- Do not install the unit in a place where the combustible gas may be leaked. In any case the combustible gas leaks and accumulated around the unit, fire accident will occur.
- Do heat insulation work to the refrigerant gas pipes and liquid pipes to reach the purpose of heat preservation. If the heat insulation measure is not sufficient, water generated by condensing dew will drip leading to wet the floor and indoor articles.

⚠ Note

- Do grounding work.Do not connect the grounding wire to gas pipe,tap,lighting rod or telephone line.Improper grounding will cause electric shock.
- After electric installation,power on them to do electric leakage test.
- In some places the creepage breaker shall be installed.If do not install the breaker, electric shock may occur.

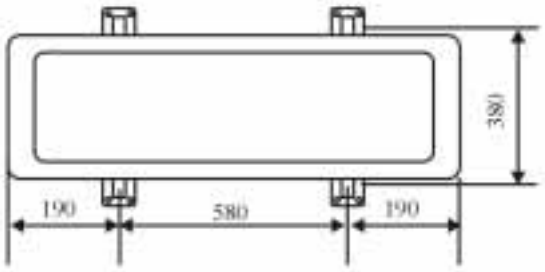
Installation of outdoor unit

Choosing of installation position

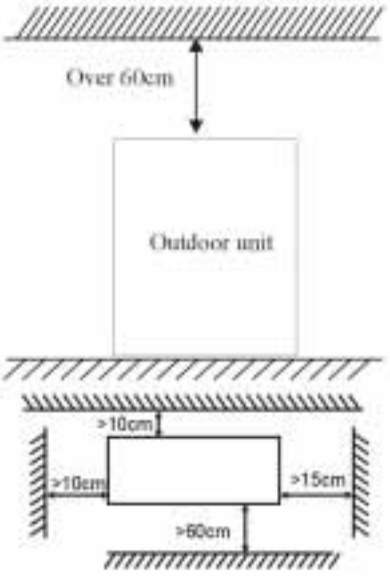
Installation position		
Do not install the air conditioner near to a place where flammable gas may leak.  Explosion may be caused (fire)	Install the air conditioner in a place where good ventilation can be guaranteed.  If there are some obstacles, it may lower the working power of the unit or increase noise.	Install the air conditioner on base that can definitely support the weight of the unit.  Otherwise, vibration or noise may be caused.
Choose a place where the cold/heat air or noise may not disturb the neighbors. 	It is deadly necessary to prevent from accumulation of snow near the outdoor unit to keep it away from being blocked by accumulated snow.	The following special places are not suitable to install air conditioner, otherwise, trouble may be caused. When you install the air conditioner in these places, please consult with the distributor. • Places generate corrosive gas (hotspring area, etc.) • Places blow salt air (seaside, etc.) • Places have heavy soot. • Places have very high humidity. • Places near an electromagnetic wave generator. • Places with large voltage fluctuation.

Installation fixation

1. According to dimonsion shown in the following figure, fix the installation bracket tightly in the chosen installation area.
2. Then use screws to fix the outdoor unit on the installation bracket.



Installation dimension of outdoor unit (mm)



⚠ Warning

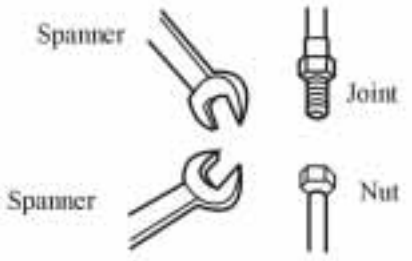
● During installation, if refrigerant leakage occurs, take ventilation measurement immediately. ● As soon as the leaked refrigerant gas meets fire, poisonous gas will generate.	● After finishing installation, confirm the refrigerant gas does not leak. ● If the refrigerant gas leaks in the room, once it meets heater, burner and gas stove or other fire source, the poisonous gas will generate.

I. Connection of pipes

1 Method of pipe connection

- ○ The pipe shall be as short as possible to guarantee efficiency.
- ○ Daub the refrigerant oil on the connection and flare nut.
- ○ When bending the pipes, give the roundness as large as possible, to avoid crashing the pipes.
- ○ To connect the pipe, fit the center and screw the nut with hand, then use spanner or torque wrench to tighten it. The fastening torque as shown in below table. As shown in figure.
- ○ Be careful alien matters, such as sands, water etc.shall not enter the pipes.

Forced fastening without careful centring may damage the threads and cause gas leakage.



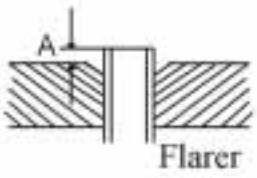
Using the specified fastening torque to fasten nuts.

Pipe diameter(mm)	Fastening torque(N.m)
Φ6.35	14.2-17.2N.m
Φ9.52	32.7-39.9N.m

2.Method of cutting and flaring pipe

Cut and flare pipe

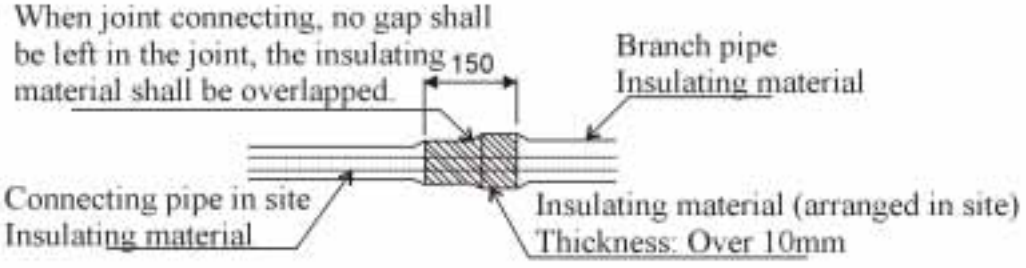
- Use pipe cutter to cut the pipe, the burrs must be removed.
- After inserting the flarer, perform flared nut.
- Flaring pipes.



Diameter of pipe	Dimension A(mm)
Ø 6.35mm(1/4")	0.8~1.5
Ø 12.7mm(1/2")	1.0~2.0
Ø 9.52mm(3/8")	1.0~1.5

Correct	Uncorrect				
	 Slant	 Break	 Crack	 Partial	 Too outside

- When joint connecting, no gap shall be left in the joint, the insulating material shall be overlapped.



4.Pipe connection of the outdoor unit.

Referring to the installation diagram in page 4, connect the indoor unit, outdoor unit, together by using the pipe connection method.

II Test of airtight quality

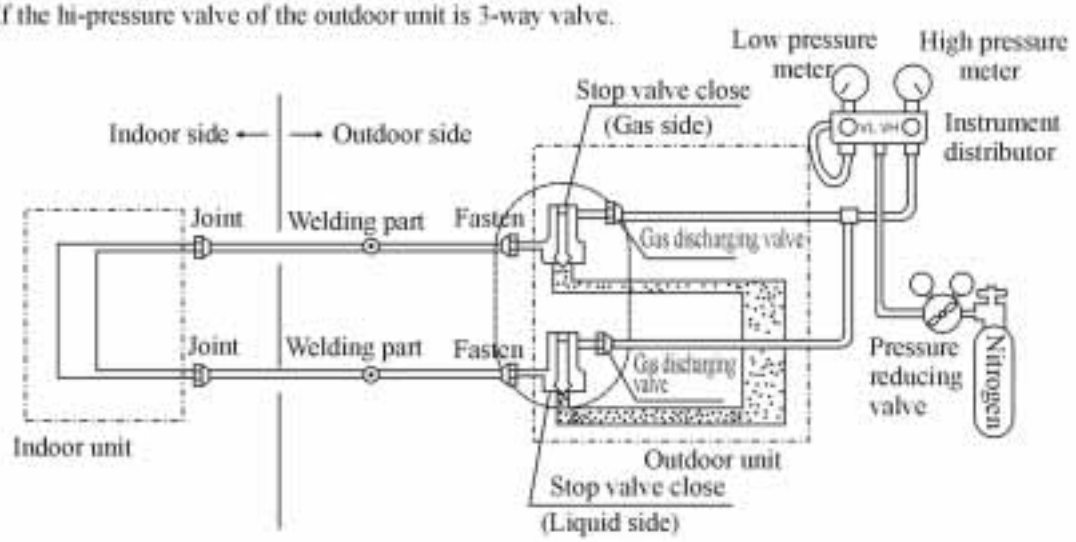
After connection of the refrigerant pipes, carry out airtight quality test. In this test, pressurize to the pipes as shown in the below figure by using nitrogen tank.

- Close the valves of the gas side and liquid side totally.
  The nitrogen may enter the cycle system of the outdoor unit, so that, before pressurizing, the valve rods must be fastened.(Both the gas side and liquid side)

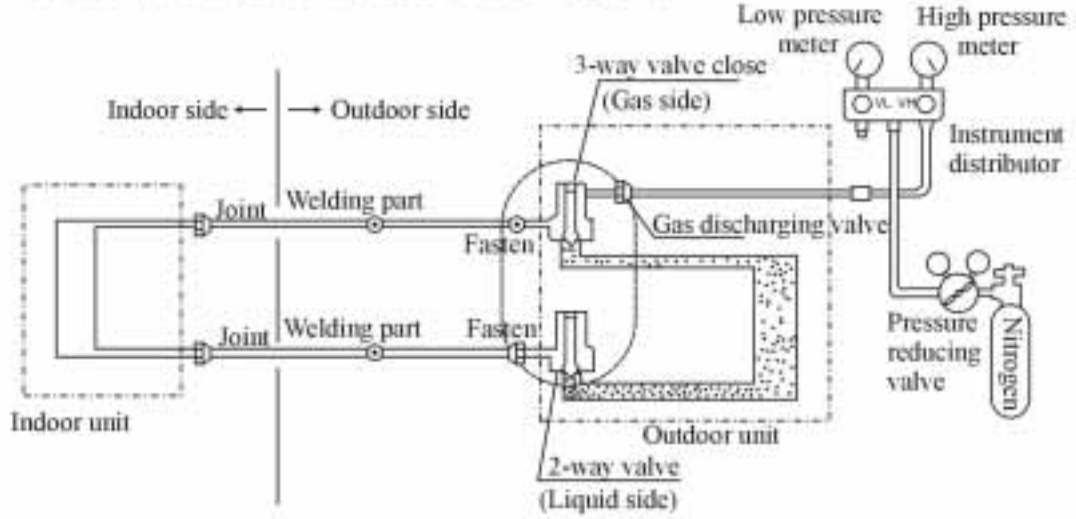
- For each of the refrigerant system, pressurize from the discharge valve of gas side in procedure.

- When doing airtight quality test, it is absolutely forbidden to use oxygen, flammable gas and poisonous gas.

- If the hi-pressure valve of the outdoor unit is 3-way valve.

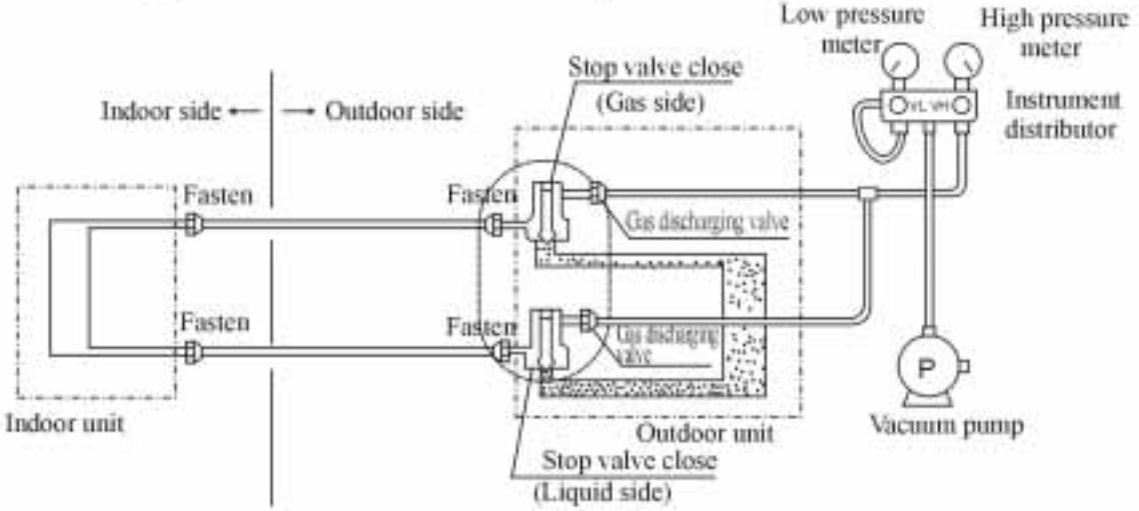


- When the hi-pressure valve of the outdoor unit is 2-way valve.

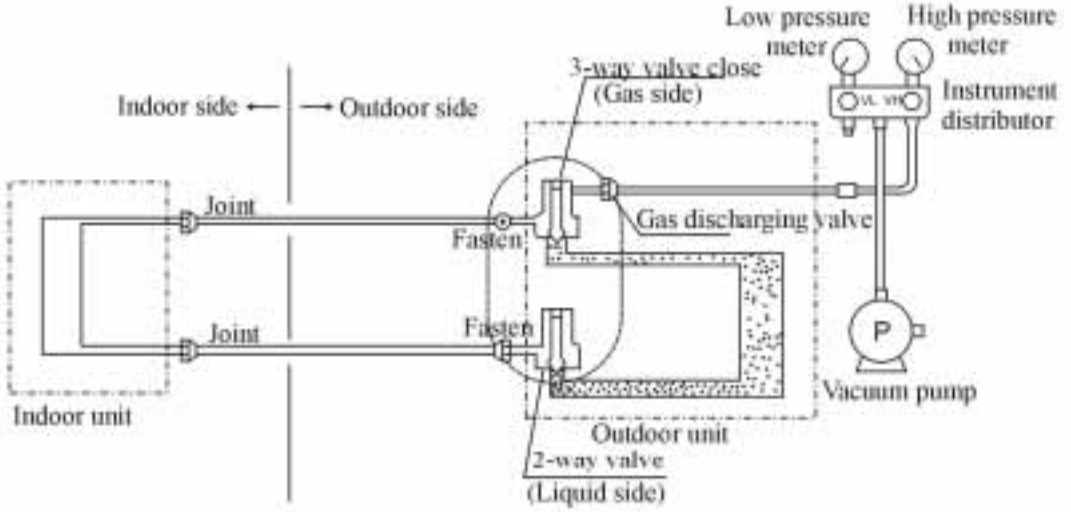


III Vacuumizing of the pipes and indoor unit (using vacuum pump to vacuumize, it is strictly forbidden to use refrigerant purging)

- Choose of vacuum pump: it shall choose those that can reach a good vacuity (Lower 200Pa) and have a large air discharge amount (over 40L/min).
- After finishing the airtight quality test and discharging the nitrogen, connect the instrumental diverter to the 3-way discharge valve, then connect the vacuum pump according to the below figure.
- If the hi-pressure valve of the outdoor unit is 3-way valve.



- When the hi-pressure valve of the outdoor unit is 2-way valve .



- When the hi-pressure valve of the outdoor unit is 2-way valve:
  (1) Firstly connect indoor, outdoor power supplies, and communication lines, then set addresses of indoor units and check their correctness.
  (2) Determine running mode according to indoor temperature: Set to cooling mode when indoor temperature Ta≥ 23℃; set to heating mode when Ta<23℃.
  (3) Keep stop valve of outdoor unit close , and start the indoor unit according to running mode determined by indoor temperature.

(4) Watch the status of outdoor unit compressor, disconnect the general power supply for the air conditioner assembly after the compressor unit starts.

- If the hi-pressure valve of the outdoor unit is 3-way valve:
  Without starting the machine, simply exhaust to vacuum (vacuum degree<200Pa) directly from hi-presser and low-pressure valves(strictly in compliance with operation steps defined in instruction manual for outdoor unit) after machine connecting pipe is well done.

- Vacuumize 2~3 hours according to the length of the pipe. When vacuumizing, confirm the gas side and liquid side of the 2-way valve and 3-way valve shall be in full close state.
- When it is not lower than 200Pa after 2 hours or more vacuumizing, vacuumize for another 1 hour. If after more than 3 hours vacuumizing it is still not lower than 200Pa, the leak part shall be found.
- When it is lower than 200Pa after more than 2 hours vacuumizing, close both the valve VL and VH of the diverter, then close the vacuum pump. Place it there to observe if the vacuity changes. If it changes, it indicates leakage exists, so the leak part shall be found.
- After finishing the above vacuumizing work, replace the vacuum pump with refrigerant tank and turn to the refrigerant charging procedure.

V Charging of refrigerant

1.Calculation of additional charging amount of refrigerant

After finishing vacuumizing work, replace the vacuum pump with refrigerant tank and turn to the refrigerant additional charging procedure.

Calculation of additional charging amount of refrigerant

Quantity of filled refrigerant before the machine leaving factory does not consider supplement for extension tubes while spot installation. After practical installation is finished, it is necessary to fill supplement refrigerant into extension tubes provided that the length of spot liquid tube>0m. Filling method is as the following.

Calculation method:

Quantity of supplement refrigerant is determined by specification and actual length of the spot liquid tube.

Calculation formula:

Quantity of spot supplement refrigerant = actual length × necessary supplement refrigerant quantity per meter of the tube.

E.g.: When the system connects with one indoor unit, the quantity of spot supplement refrigerant(R410A)=(L1-5)×0.020kg/m)

L1: Actual total length of Φ6.35 liquid tube in one system

When the system connects with two indoor unit, the quantity of spot supplement refrigerant(R410A)=[(L2-5)+(L3-5)]×0.020kg/m)

L2, L3: Actual total length of different ways those in one system

2.Charging of refrigerant

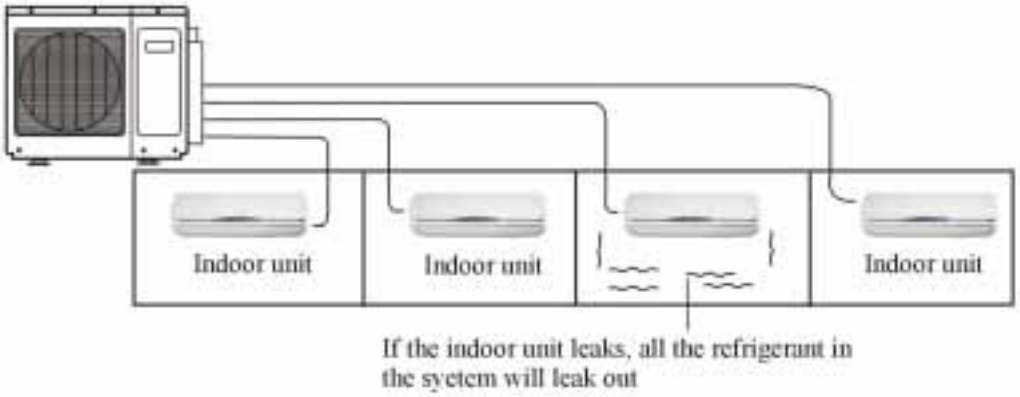
- Close all valves of outdoor unit, and charge refrigerant from air discharge valve of gas side.
- When can not charge the specified amount, firstly, open all the valves, both liquid side and gas side, of outdoor unit,then switch the valve of gas side to close state a little.Under this condition, do cooling operation and charge refrigerant from the discharge valve of gas side. At this time, adjust the valve of the refrigerant tank to make the refrigerant in Gas State when it is absorbed by system.
- When refrigerant leakage making refrigerant lack in system occurs, all of the system shall be recovered and recharge it according to specified amount.

3.Opening of the refrigerant pipe

- Open all the valves of outdoor unit

The systems use regrigerangt R410A. This refrigerant itselt is innocuous, noncombustible safety refrigerant. But then, when arranging the air conditioner equipment, it is necessary to take some steps to take precautions against in case of the indoors refrigerant leakage. Such as, the room size shall be taken into account to avoid making the concentration of the refrigerant not exceed the concentration limit and other relevant steps. The concentration limit is the concentration that is not harmful to human body and can take emergency steps to treat the concentration of Freon.

Concentration limit of R410A:0.3kg/m^3



1.Sequence of refrigerant concentration affirmance

Calculate the refrigerant concentration according to the following sequence.

(1) Calculate the total refrigerant-charging amount of each of the refrigerating system(kg).

※ Refrigerant charging amount of outdoor system + Additional refrigerant charging amount =Total refrigerant charging amount of the refrigerating equipment(kg).

Refrigerant charging amount of outdoor system: Refrigerant charging amount when air conditioner leaves factory.

Additional refrigerant charging amount: Additional refrigerant charging amount according to the site pipe length and pipe diameter.

(2) Calculate the minimum size of the room suitable for the indoor unit assembly(m^3).

(3) Calculate the concentration of refrigerant:

Total refrigerant charging amount of refrigerating equipment/the minimum room size suitable for indoor unit assembly(m^3)≤Refrigerant concentration limit:0.3kg/m^3

2.Countermeasure when exceeding the concentration limit

(1) Set an effective opening for ventilation and fresh air.

- Cut an intake respectively on the upper and lower part of the door which areas are equivalent to 0.15% grounding area, or cut an intake in other part of the room.

(2) Reduce the total refrigerant charging amount of the refrigerating equipment

- Shorten the refrigerant pipe length. Reduce the installation place distance between the outdoor unit and the indoor unit to shorten the refrigerant pipe length, so that reduce the total refrigerant charging amount of the refrigerating equipment.

(3) Establish ventilation and fresh air system

- Establish a mechanical equipment for fresh air to keep the refrigerant concentration below the concentration limit (normal ventilation).
- When can not ventilate the normally, please set an alarm apparatus linked with the mechanical ventilation equipment.

Electric wiring

Note:

- The air conditioner must use special circuit, and wiring by the qualified electrician according to the wiring rules specified in national standard.
- The grounding wire and the neutral wire shall be strictly separated. Connect the neutral wire with grounding wire is incorrect.
- The electric leakage breaker must be installed.
- All the electric wire must be copper wire. Power cords should not be lighter than polychoroprene sheathed flexible cord. The connection signal wire should be suitable for outdoor use. When wiring, there shall keep a proper distance between the power line and communication wire to avoid twist together. Otherwise, signaldisturbance will occur, and the air conditioner can not operate normally.

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- Power supply: 1PH, 220-230V~, 50Hz.
- Specification of wire and short circuit protector in site wiring:

Contents \ Type	Power line	Short circuit protector	Connection signal wire (shielded wire)
Parameter	3G3.0mm² (AU282XHEAA)	40A	2×(0.75~1.25mm²)
	3G4.0mm² (AU422XIEAA)	50A	

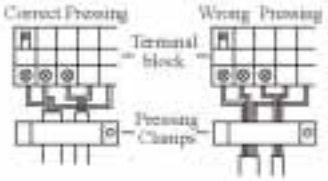
Note: The connection signal wire must be shielded .

Wiring method

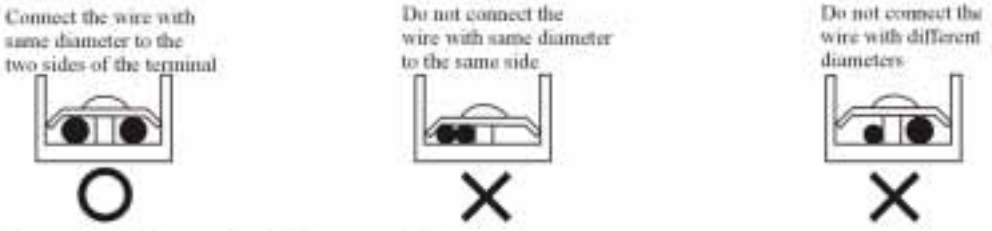
1. Wiring method of orbicular terminals
   For the connection wire with orbicular terminals, its wiring method is as shown in the right figure: remove the connecting screw, put the screw through the ring on the end of the wire, then connect to the terminal block and fasten screw.


Wiring Method for Ring Terminal Block

2. Wiring method of straight terminals
   For the connection wire without orbicular terminals, its wiring method is: loosen the connection screw, and insert the end of the connection wire completely into the Termina l block, then fasten the screw. Slightly pull the wire outwards to confirm it is firmly held



3. Crimp connection method for wires without terminals



Crimp connection method for connection wire
After connection, the wire must be fastened by wire cover. The wire cover shall press on the protection coat of the connection wire, as shown in right top figure.
Note: When connecting the wiring, confirm the terminal number of indoor and outdoor units carefully. Incorrect wiring will damage the controller of air conditioner or the unit can not operate.

Wiring method of outdoor unit:

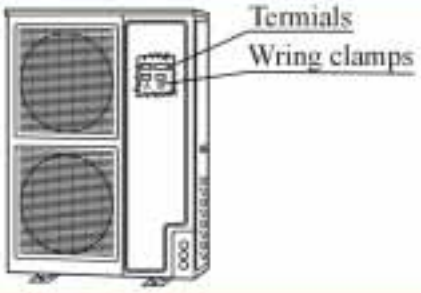
- Power line

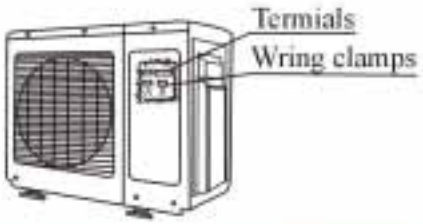
  Remove the repair board of the outdoor unit and loosen the wire cover A,then put the live wire, neutral wire and grounding wire through the wire cover A,and connect them to terminal block correspondingly. After connection, fasten wire cover A to its previous state.

- Communication wire of indoor unit

  Loosen wire cover B ,put the communication wire through the wire cover B, and connect them to terminal block correspondingly. After connection, fasten wire cover B to its previous state.

  Note: Power line and communication wire are provided by consumers themselves.





Wiring method of indoor unit

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Power line and communication wire of indoor unit

※ Loosen wire cover and connect the power line and communication wire of indoor unit to the terminal correspondingly.

- Please use the clip to bound the wirings of power Communication before connecting to the indoor units.

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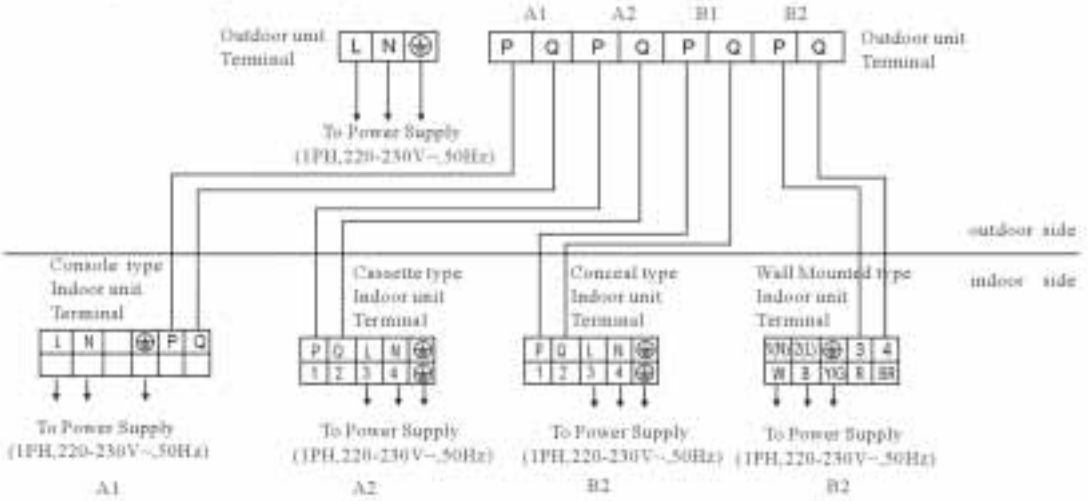
Note:
When connecting power line to power supply terminal, please pay attention to the following items:

1. Do not connect the power line with different dimensions to the same connection wire end. Improper contact will cause heat generation.
2. Do not connect the power line with different dimensions to the same grounding wire end. Improper contact will affect protection.
3. Keep a proper distance between the communication wire and the power line. Otherwise, abnormal communication will occur because of disturbance.
4. Do not connect the power line to the connecting end of communication wire. Incorrect connection will cause damage of connected unit.
   Wiring example diagram:

Wiring example diagram:



Explanation on the communication wire connections:
1.If the communication wires are properly connected, when the indoor units and outdoor unit power on, the communication indication LED (Red) on the outdoor PCB will flash in sequence; also the LED (Red) on indoor PCB will flash too.
2.If the communication indication LEDs don t flash, that shows the communication wires are not properly connected. Please check the P and Q connection and check the wires to see whether they have been destroyed.
3.Indoor wiring please refer to the indoor actual terminal block and the corresponding indoor operation manual.

Note:
1.The power supply of indoor units can be connected together to the same power source, and also they can be connected to different or separated power sources.
2.If the system only connect one indoor unit, please connect the indoor unit to A2 or B2 terminals according to the pipe systems.
3.The terminals of different type of indoor units are different.