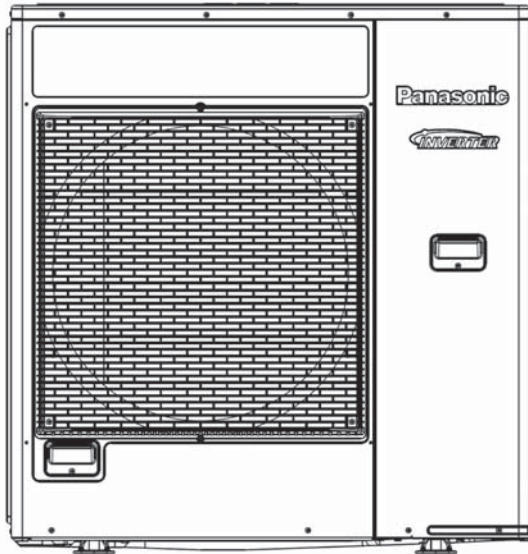


Installation Manual

Air Conditioner

**Outdoor Unit
CU-5E36QBU**

**Destination
U.S.A.
Canada**



Please file and use this manual together with the service manual for Model No. CS-E9NKUAW CS-E12NKUAW CS-E18NKUA, CS-E24NKUA, CS-ME7QKUA, Order No. PHAAM1111087C1 PAPAMY1204088CE PAPAMY1312045CE

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by **⚠** in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

⚠ PRECAUTION OF LOW TEMPERATURE

In order to avoid frostbite, be assured of no refrigerant leakage during the installation or repairing of refrigerant circuit.

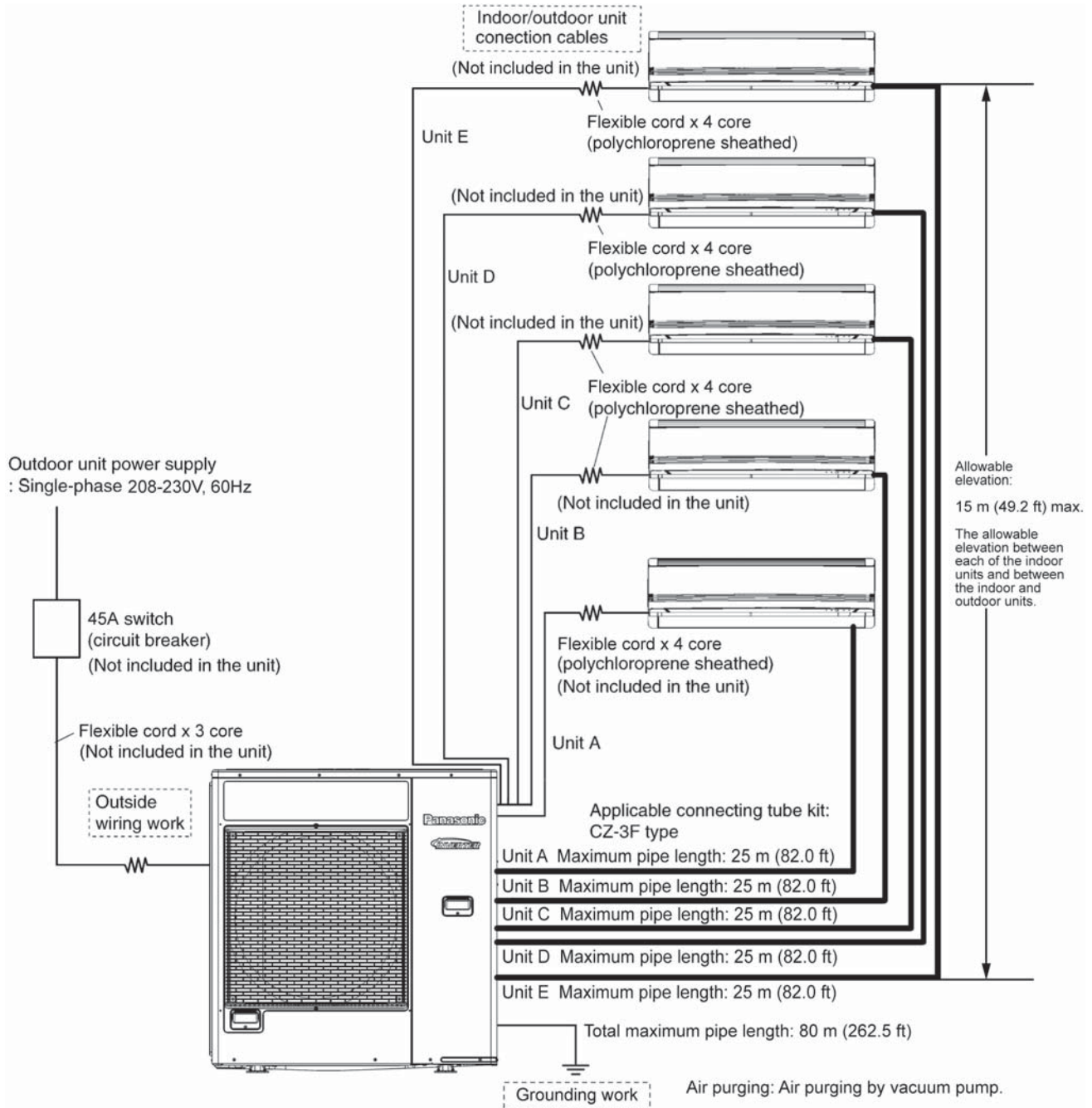
Panasonic[®]

- **Multi Split Combination Possibility:**
 - A single outdoor unit enables air conditioning of up to five separate rooms.

CONNECTABLE INDOOR UNIT			OUTDOOR UNIT				
			CU-5E36QBU				
Type	ROOM		A	B	C	D	E
Wall	2.0kW	CS-ME7QKUA	●	●	●	●	●
	2.5kW	CS-E9NKUAW	●	●	●	●	●
	3.2kW	CS-E12NKUAW	●	●	●	●	●
	5.0kW	CS-E18NKUA	●	●	●	●	●
	7.0kW	CS-E24NKUA	●	●	●	●	●
Capacity range of connectable indoor units			From 4.5kW to 17.5kW				
Pipe length	1-room maximum pipe length (m (ft))		25 (82.0)				
	Allowable elevation (m (ft))		15 (49.2)				
	Total allowable pipe length (m (ft))		80 (262.4)				
	Total pipe length for maximum chargeless length (m (ft))		45 (147.6)				
	Additional gas amount over chargeless length (g/m (oz/ft))		20 (0.2)				
Note: "●" : Available							
Remarks for CU-5E36QBU 1. At least two indoor units must be connected. 2. The total nominal cooling capacity of indoor units that will be connected to outdoor unit must be within connectable capacity range of indoor unit. (as shown in the table above) Example: The indoor units' combination below is possible to connect to CU-5E36QBU. (Total nominal capacity of indoor units is between 4.5kW to 17.5kW) 1) Two CS-E9NKUAW only (Total nominal cooling capacity is 5.0kW) 2) Three CS-E12NKUAW. (Total nominal cooling capacity is 9.6kW)							

9. Installation Information

9.1 Check Points



10. Installation Instruction

10.1 Select The Best Location

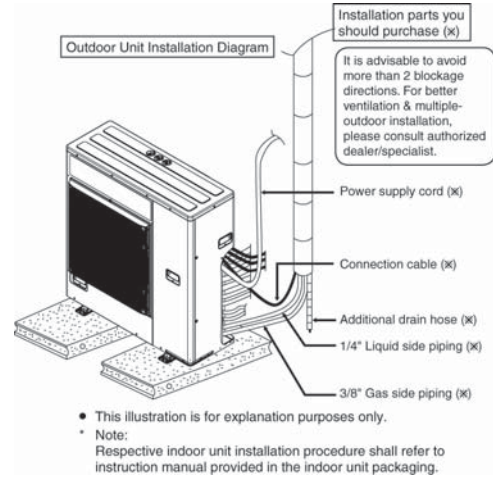
- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be affected by hot air discharged.
- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.

Refrigerant piping size	
Outdoor Unit	CU-5E36***
Liquid - side	ø1/4" (ø6.35 mm) thickness 1/32" (t0.8 mm)
Gas - side	ø3/8" (ø9.52 mm) thickness 1/32" (t0.8 mm) *(ø1/2" (ø12.7 mm) thickness 1/32" (t0.8 mm))

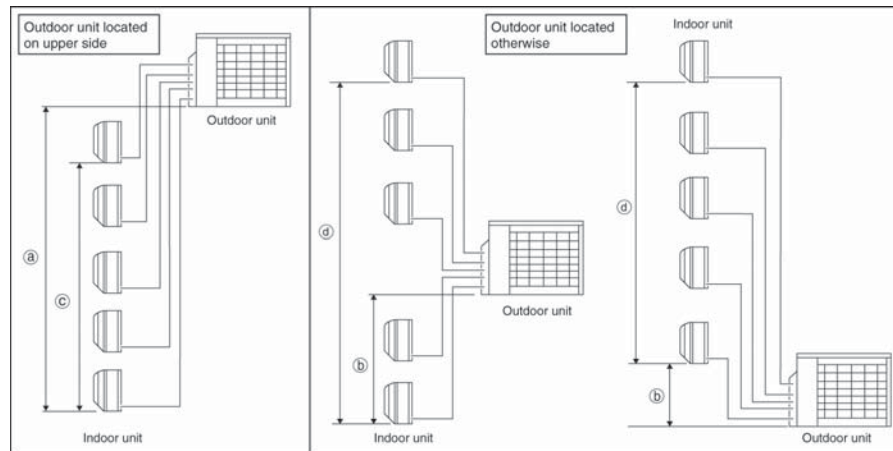
* In case of indoor is CS-E24***, then ø1/2" (ø12.7 mm) thickness 1/32" (t0.8 mm) gas-pipe size must be used together with CZ-MA2P (pipe size expander)

Outdoor Unit	CU-5E36***
Min. total piping length for additional gas	147.6 ft (45 m)

- If total piping length of all indoor units exceeds the minimum length listed above, additionally charge with 0.2 oz (20g) of refrigerant (R410A) for each additional feet (meter) of piping.

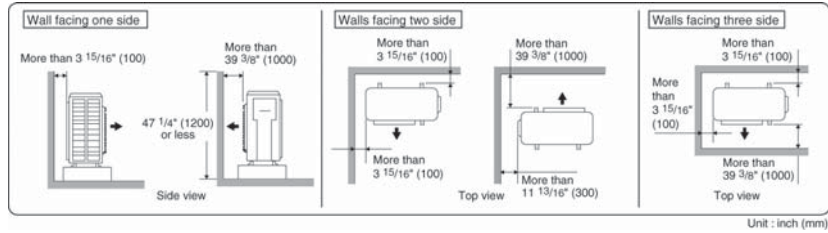


Allowable piping length			
Outdoor Unit	CU-5E36***		
Allowable piping length of each indoor unit (min. ~ max.)	9.8 ft ~ 82.0 ft (3 m ~ 25 m)		
Allowable total piping length of all indoor unit	262.4 ft (80 m) or less		
Height difference between indoor and outdoor unit	Outdoor unit located on upper side	a	49.2 ft (15 m) or less
	Outdoor unit located otherwise	b	24.6 ft (7.5 m) or less
Height difference between indoor unit	Outdoor unit located on upper side	c	24.6 ft (7.5 m) or less
	Outdoor unit located otherwise	d	49.2 ft (15 m) or less



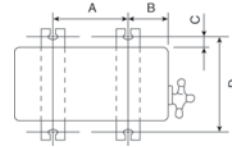
Outdoor Unit Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 47-1/4" (1200 mm) or less.



10.2 Install The Outdoor Unit

- After selecting the best location, start installation to Indoor/Outdoor Unit Installation Diagram.
 1. Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut ($\varnothing 13/32"$ ($\varnothing 10$ mm)).
 2. When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt or nails.



Model	A	B	C	D
CU-5E36***	24-13/32" (620 mm)	6-11/16" (170 mm)	25/32" (20 mm)	14-31/32" (380.5 mm)

10.3 Connect The Piping

- Remove the cabinet side plate (metal) from the unit by loosening six screws.

Connecting The Piping To Outdoor Unit

Decide piping length and then cut by using pipe cutter.

Remove burrs from cut edge. Make flare after inserting the flare nut (locate at valve) onto the copper pipe.

Align center of piping to valves and then tighten with torque wrench to the specified torque as stated in the table.

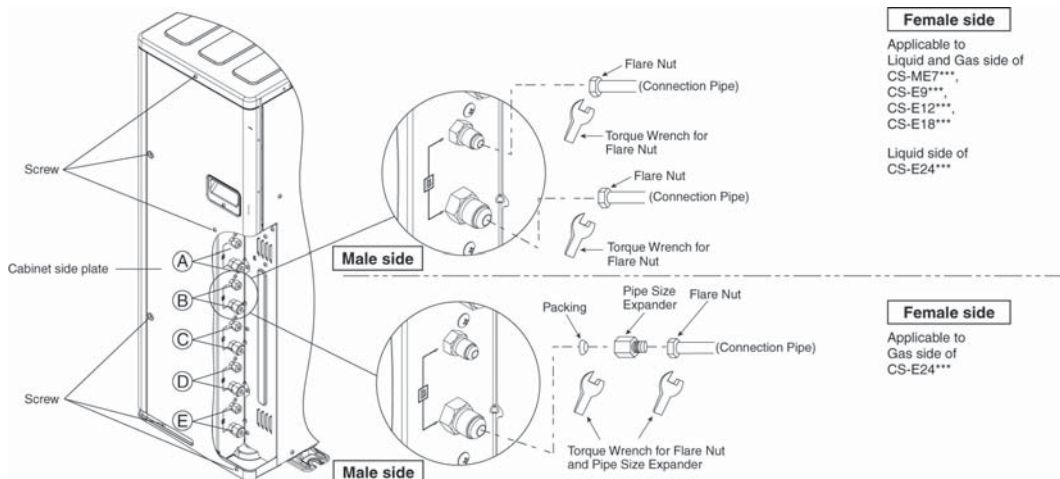
Do not over tighten, over tightening may cause gas leakage	
Piping size	Torque
1/4" [6.35 mm]	[18 N•m (1.8 kgf.m)]
3/8" [9.52 mm]	[42 N•m (4.3 kgf.m)]
1/2" [12.7 mm]	[55 N•m (5.6 kgf.m)]
5/8" [15.88 mm]	[65 N•m (6.6 kgf.m)]
3/4" [19.05 mm]	[100 N•m (10.2 kgf.m)]

Gas Leak Checking

Pressure test to system to 400 PSIG with dry nitrogen, in stages.

Thoroughly leak check the system.

If the pressure holds, release the nitrogen and proceed to section 10.4.

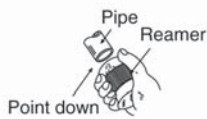


CUTTING AND FLARING THE PIPING

1. Please cut using pipe cutter and then remove the burrs.
2. Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused.
Turn the piping end down to avoid the metal powder entering the pipe.
3. Please make flare after inserting the flare nut onto the copper pipes.



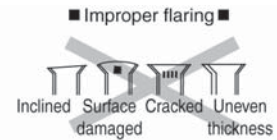
1. To cut



2. To remove burrs



3. To flare

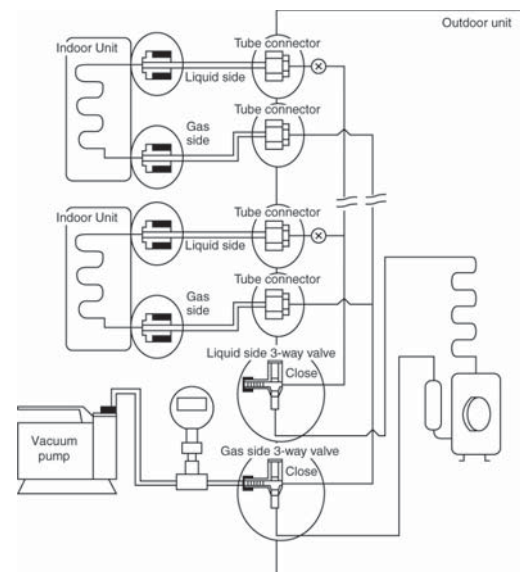


When properly flared, the internal surface of the flare will evenly shine and be of even thickness. Since the flare part comes into contact with the connections, carefully check the flare finish.

10.4 Evacuation Of The Equipment

WHEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDOOR UNIT AND PIPES in the following procedure.

1. Connect a charging hose with a push pin to the Low side of a charging set and the service port of the gas side 3-way valve.
2. Connect the micron gauge between vacuum pump and service port of outdoor units.
3. Turn on the power switch of the vacuum pump and make sure that connect digital micron gauge and to pull down to a value of 500 microns.
4. To make sure micron gauge a value 500 microns and close the low side valve of the charging set and turn off the vacuum pump.
5. Disconnect the vacuum pump house from the service port of the 3-way valve.
6. Tighten the service port caps of gas side 3-way valve at a torque of 13.3 lbf.ft (18 N•m) with a torque wrench.
7. Remove the valve caps of both of the 2-way valve and 3-way valve. Position both of the valves to "Open" using a hexagonal wrench (5/32" (4 mm)).
8. Mount valve caps onto the 2-way valve and 3-way valve.
 - o Be sure to check for gas leakage.

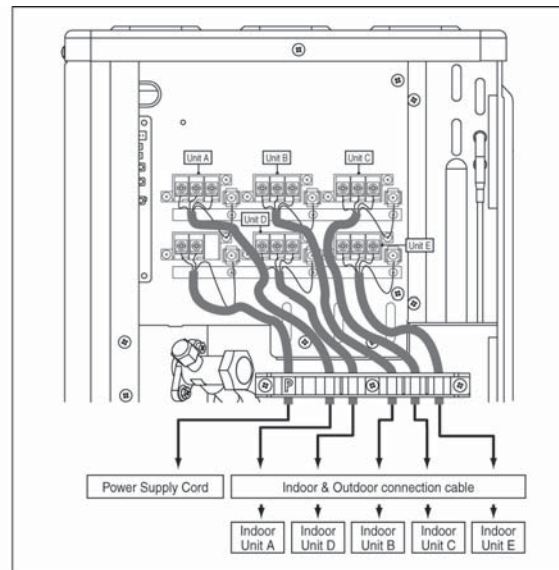
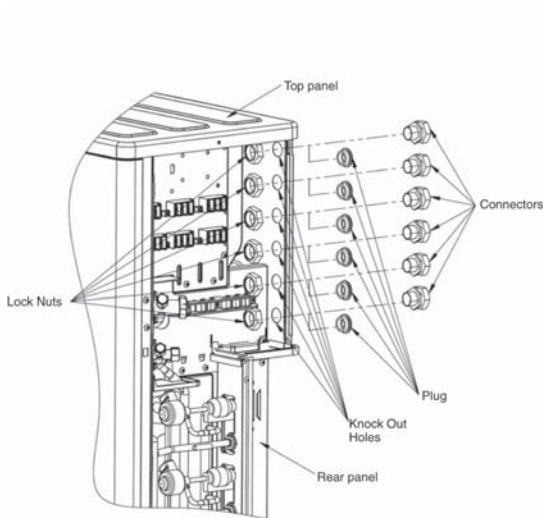
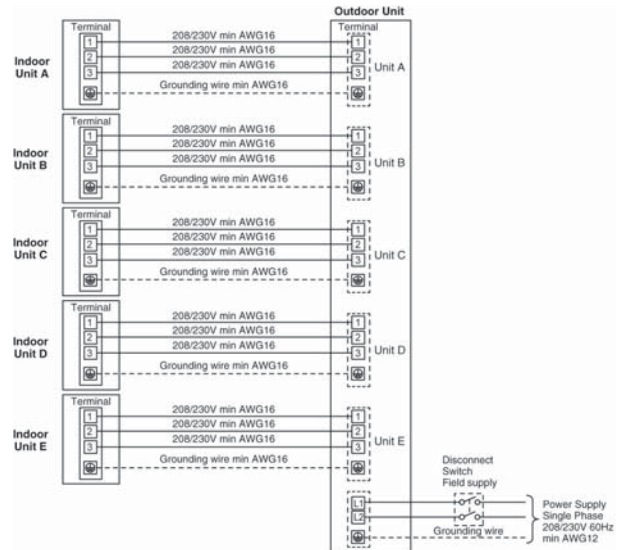


CAUTION

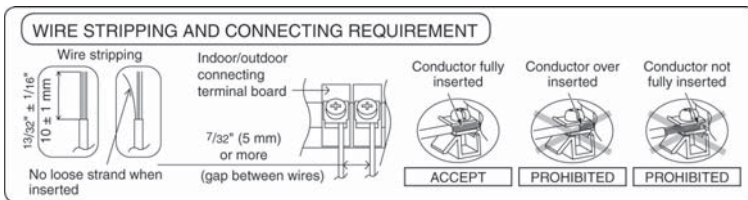
- If micron gauge value does not descend 500 microns, take the following measures:
 - If the leak stops when the piping connections are tightened further, continue working from step ③.
 - If the leak does not stop when the connections are retightened, repair location of leak.
 - Do not release refrigerant during piping work for installation and reinstallation.
 - Take care of the liquid refrigerant, it may cause frostbite.

10.5 Connect The Cable To The Outdoor Unit

1. Remove Plugs.
2. Fix the conduit connectors to the knock out holes with lock-nuts, then secure them.
3. Connecting wire between indoor unit and outdoor unit should be UL listed or CSA approved 4 conductor wires minimum AWG16 in accordance with local electric codes.
4. Wire Connection to the power supply (208/230V 60Hz) through circuit breaker.
 - o Connect the UL listed or CSA approved wires minimum AWG12 to the terminal board, and connect to other end of the wires to circuit breaker.
5. Connect the power supply cord and connecting wires between indoor unit and outdoor unit according to the diagram as shown.



6. For wire stripping and connection requirement, refer to the diagram below.
7. Secure the power supply cord and connection cables onto the control board with the holder.
8. Fix the cabinet side plate (metal) back to the original position with screws.



- ⚡ This equipment must be properly earthed.
- Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reason.

10.6 Heat Insulation

CAUTION	Use a material with good heat-resistant properties as the heat insulation for the pipes. Be sure to insulate both the gas-side and liquid-side pipes. If the pipes are not adequately insulated, condensation or water leakages may occur.
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Liquid-side pipes	Material shall withstand 248°F (120°C) or higher
Gas-side pipes	

10.7 Disposal Of Outdoor Unit Drain Water

- If a drain elbow is used, the unit should be placed on a stand which is taller than 1-31/32" (50 mm).
- If the unit is used in an area where temperature falls below 32°F (0°C) for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the drain water freezes and the fan will not rotate.

