

Please read this manual carefully before installation and keep it for future reference.
If used as MULTI unit, please refer to the Installation & operation manuals packed with outdoor unit.

Installation Manual



MRCOOL®

COMFORT MADE SIMPLE

Olympus Series Cassette Air Handlers

Please keep this manual where the operator can easily find it. Inside, you will find helpful hints on how to use and maintain your unit properly.

For more info visit www.mrcool.com

| | | |
|-----------|--|----|
| ! | Safety Precautions | |
| | Warnings | 2 |
| | Cautions | 3 |
| 1 | Installation Summary | 4 |
| 2 | Accessories | 5 |
| 3 | Indoor Unit Installation | 7 |
| 4 | Outdoor Unit Installation | 10 |
| 5 | Refrigerant Piping Installation | 12 |
| 6 | Connecting the Drain Pipe | 16 |
| 7 | Electrical Wiring Work | 18 |
| 8 | Decorative Panel Installation | 20 |
| 9 | Test Operation | 21 |
| 10 | EU Disposal Guidelines | 22 |

Safety Precautions



Read Before Using

Incorrect usage may cause serious damage or injury.

The seriousness of potential damage or injuries is classified as either a **WARNING** or **CAUTION**.



WARNING

This symbol indicates that ignoring instructions may cause death or serious injury.



CAUTION

This symbol indicates that ignoring instructions may cause moderate injury to your person, damage to your unit, or other property.



This symbol indicates that you should ***NEVER*** perform the indicated action.



WARNING

- Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.
- Be sure only trained and qualified service personnel install, repair or service the equipment.
- Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, personal injury, loss of life, fire or other damage to the equipment.
- Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock and fire.
- When installing the unit in a small room, take measures against to keep refrigerant concentration from exceeding allowable safety limits in the event of refrigerant leakage. Contact the place of purchase for more information. Excessive refrigerant in a closed ambient can lead to oxygen deficiency.
- Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, leak water, cause electrical shock, or produce fire.
- Install at a strong and firm location which is able to withstand the set' s weight. If the strength is not enough or installation is not properly done, the set will drop causing injury.
- The appliance must be installed 8.2 ft/2.5m above floor.
- The appliance shall not be installed in the laundry room.
- Before obtaining access to terminals, all supply circuits must be disconnected.
- The appliance must be positioned so that the plug is accessible.
- The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.
- Read this manual attentively before starting up the units.
- For electrical work, follow the local national wiring standard, regulation and these installation instructions. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock or fire.
- Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.



WARNING

- Wiring routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.
- If the supply cord is damaged, it must be replaced by the manufacture or its service agent or a similarly qualified person in order to avoid a hazard.
- An all-pole disconnection switch having a contact separation of at least 0.12in in all poles should be connected in fixed wiring.
- When carrying out piping connection, take care to not let air substances go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormally high pressure in the refrigeration cycle, explosion and injury.
- Do not modify the length of the power supply cord or use an extension cord, and do not share the single outlet with other electrical appliances. Otherwise, it will cause fire or electrical shock.
- If the refrigerant leaks during installation, ventilate the area immediately. Toxic gas may be produced if the refrigerant comes in contact with fire.
- The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
- After completing the installation work, check that the refrigerant does not leak. Toxic gas may be produced if the refrigerant leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained. Also, inform customers that they should store this installation manual along with the owner's manual for future reference.



CAUTION


- Ground the air conditioner.
- Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks.
- Connect the outdoor unit wires, then connect the indoor unit wires.
- ⊘ **DO NOT** connect the ground wire to gas or water pipes, lightning rod or a telephone ground wire. Inappropriate grounding may result in electric shocks.
- ⊘ **DO NOT** connect the air conditioner with the power supply until the wiring and piping is done.
- ⊘ **DO NOT** operate your air conditioner in a wet room such as a bathroom or laundry room.
- ⊘ **DO NOT** install the air conditioner in the following circumstance:
 - There is petrolatum existing.
 - There is salty air surrounding (near the coast).
 - There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
 - The Volt vibrates violently (in the factories).
 - In buses or cabinets.
 - In kitchen where it is full of oil gas.
 - There is strong electromagnetic waves existing.
 - There are inflammable materials or gas.
 - There is acid or alkaline liquid evaporating.
 - Other special conditions.

INSTALLATION INFORMATION






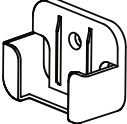
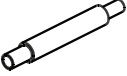
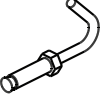

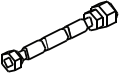

- To install properly, please read this "installation manual" at first.
- The air conditioner must be installed by qualified persons.
- When installing the indoor unit or its tubing, please follow this manual as strictly as possible.
- If the air conditioner is installed on a metal part of the building, it must be electrically insulated according to the relevant standards to electrical appliances.
- When all the installation work is finished, please turn on the power only after a thorough check.
- Regret for no further announcement if there is any change of this manual caused by product improvement.

INSTALLATION ORDER





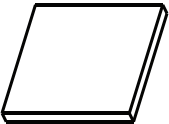
1. Indoor unit installation
2. Outdoor unit installation
3. Install the refrigerant pipe
4. Connect the drain pipe
5. Electric wiring work
6. Installation of the decoration panel
7. Test operation

|  CHECK OFF WHEN COMPLETED | |
|--|--|
| <input type="checkbox"/> | Is the indoor unit fixed firmly? The unit may drop, vibrate or make noise. |
| <input type="checkbox"/> | Is the gas leak test finished? It may result in insufficient cooling or heating. |
| <input type="checkbox"/> | Is the unit fully insulated? Condensate water may drip. |
| <input type="checkbox"/> | Does drainage flow smoothly? Condensate water may drip. |
| <input type="checkbox"/> | Does the power supply voltage correspond to that shown on the name plate? The unit may malfunction or components may burn out. |
| <input type="checkbox"/> | Are wiring and piping correct? The unit may malfunction or components may burn out. |
| <input type="checkbox"/> | Is the unit safely grounded? Dangerous at electric leakage. |
| <input type="checkbox"/> | Is the wiring size in accordance with specifications? The unit may malfunction or components may burn out. |
| <input type="checkbox"/> | Is anything blocking the air outlet or inlet of either the indoor or outdoor units? It may result in insufficient cooling or heating. |
| <input type="checkbox"/> | Are refrigerant piping length and additional refrigerant charge noted down? The refrigerant charge in the system might not be clear. |

The air conditioning system includes the following accessories. Use all of the installation parts and accessories to install the air conditioner. Improper installation may result in water leakage, electrical shock, fire, or equipment failure.

| PART | LOOKS LIKE... | QUANTITY | |
|--|---|----------|----------------|
| Remote control |  | 1 | |
| Batteries |  | 2 | |
| Tapping screws (M3X10mm) (on some models) |  | 2 | |
| Metal champ (on some models) |  | 1 | |
| Fixing screw for remote control holder ST2.9 x 10 |  | 2 | Optional Parts |
| Remote control holder |  | 1 | |
| Drain hose (on some models) |  | 1 | |
| Expansive hooks (on some models) |  | 4 | |
| Installation hooks (on some models) |  | 4 | |
| Throttle (on some models) |  | 1 | |
| Anti-shock rubber (on some models) |  | 1 | |

Accessories

| PART | LOOKS LIKE... | QUANTITY |
|---|---|----------|
| Drain plug (only heat pump models) (with the outdoor unit) |  | 1 |
| Seal ring (only heat pump models) (with the outdoor unit) |  | 1 |
| Owner's Manual |  | 1 |
| Installation Manual |  | 1 |
| Paper pattern for installation (on some models) |  | 1 |

This indoor unit requires installation of an optional decoration panel.

NOTE

All the pictures in this manual are for explanation purpose only. There may be slightly different from the air conditioner you purchased (depend on model). The actual shape may vary.

Selecting Installation Site

When the conditions in the ceiling are exceeding 30°C / 86°F and a relative humidity of 80%, or when fresh air is inducted into the ceiling, an additional insulation is required (minimum 0.4in / 10mm thickness, polyethylene foam).

1. Select an installation site where the following conditions are fulfilled and that meets your customer's approval.

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate water can be properly drained.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where there is no risk of flammable gas leaking.
- The equipment is not intended for use in a potentially explosive atmosphere.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)
- Keep indoor unit, outdoor unit, inter unit wiring and remote control wiring at least 3.3 feet (1 Meter) away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if proper distance is kept.)
- When installing the wireless remote control kit, the distance between wireless remote control and indoor unit might be shorter if there are fluorescent lights that are electrically started in the room. The indoor unit must be installed as far away as possible from fluorescent lights.

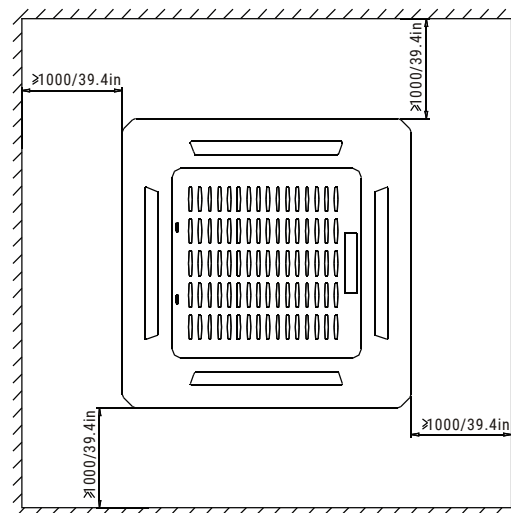
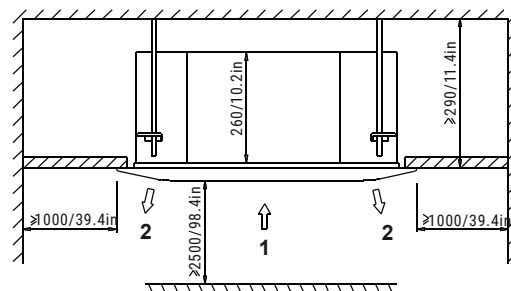
2. Ceiling height

Install this unit where the height of bottom panel is more than 8.2 ft / 2.5m so that the user cannot easily touch.

! WARNING

Do not install the unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.

If the basis underneath the unit is not strong enough to support the weight of the unit, the unit could be fall out of place and cause serious injury.



- 1 Air inlet
- 2 Air outlet

Unit: mm

Fig. 3.1

3. Use installation hooks

Use installation hooks for installation. Check whether the ceiling is strong enough to support the weight of the indoor unit. If there is a risk, reinforce the ceiling before installing the unit. Space required for installation. See **Fig. 3.4** on the next page for details.

Preparations before installation

1. Relation of ceiling opening to unit and suspension bolt position.

1. Installation hook pitch dimensions
2. Indoor unit dimensions
3. Decoration panel dimensions
4. Refrigerant piping
5. Installation hook
6. Ceiling opening dimensions
7. Hanger bracket
8. False ceiling

Adjust the position to ensure the gaps between the indoor unit and the four sides of false ceiling are even. The indoor unit's lower part should sink into the false ceiling for 24mm / 0.9in. See **Fig. 3.3**.

2. Create the ceiling opening needed for indoor installation where applicable. (For existing ceilings.)

- Create the ceiling opening required for installation. From the side of the opening to the casing outlet, implement the refrigerant and drain piping and wiring for remote control (unnecessary for wireless type). Refer to each piping or wiring section.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

3. Install the installation hooks. (Use either a M8 or M10 size bolt.)

- Use expansible hooks, sunken anchors or other field supplied parts to reinforce the ceiling in order to bear the weight of the unit.
- Adjust clearance from the ceiling before proceeding further. See **Fig. 3.4** for Installation example.

NOTE

Installation is possible with a ceiling dimension of 23.6in / 600mm (marked with*). However, to achieve a ceiling-panel overlapping dimension of 0.6in / 15mm, the spacing between the ceiling and the unit should be 0.8in / 20mm or less. If the spacing between ceiling and the unit is over 0.8in / 20mm, attach sealing material in the part or recover the ceiling.

For other installation other than standard installation, contact your dealer for details.

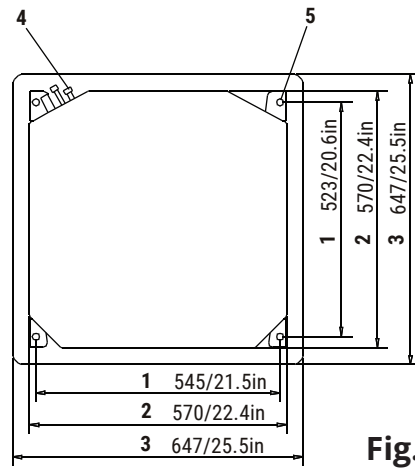
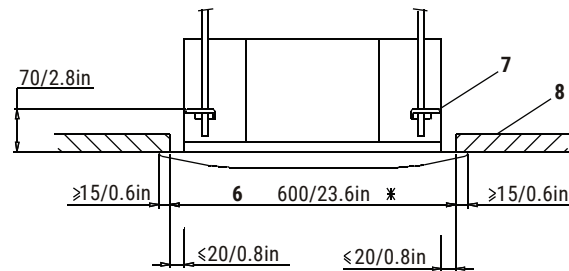


Fig. 3.2



Unit: mm

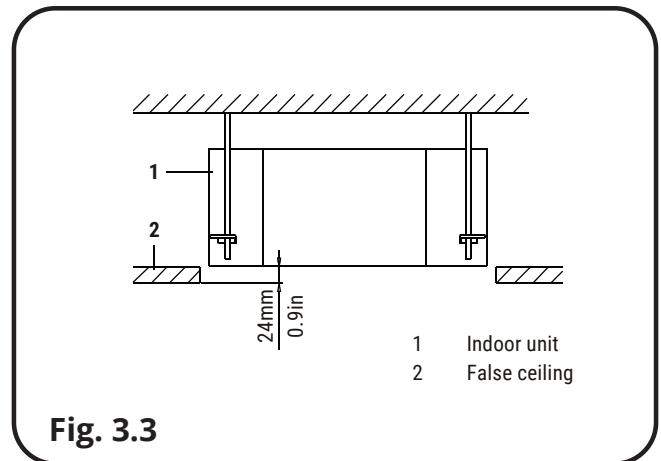


Fig. 3.3

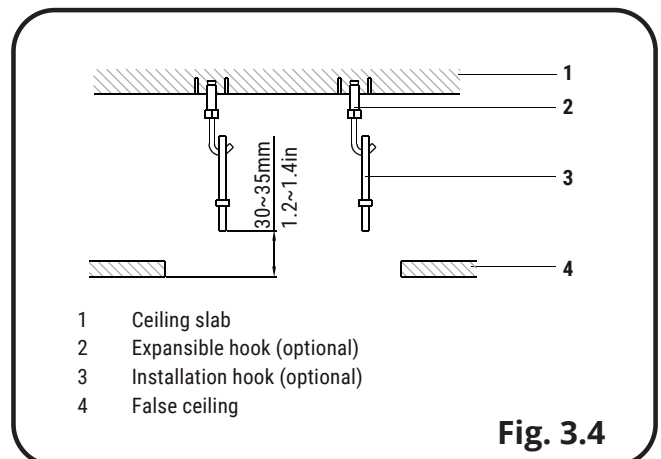


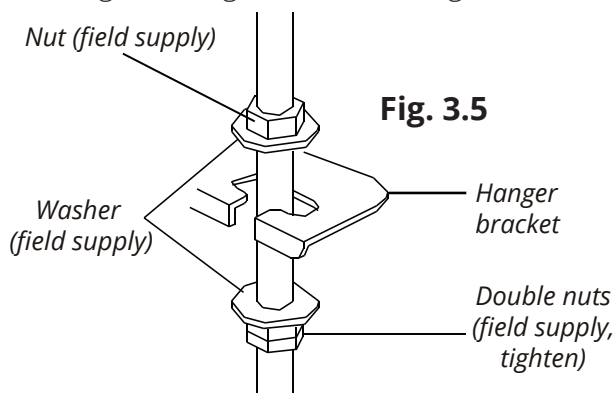
Fig. 3.4

Install the indoor unit

When installing optional accessories, read also the installation manual of the optional accessories. Depending on the field conditions, it may be easier to install optional accessories before the indoor unit is installed (except for the decoration panel). However, for existing ceiling, install fresh air inlet component kit and branch duct before installing the unit.

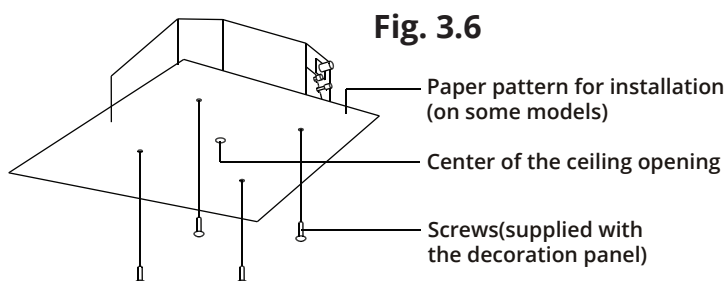
1. Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.
- Securing the hanger bracket see figure below.



2. Fix the paper pattern for installation. (For new ceilings only)

- The paper pattern for installation corresponds with the measurements of the ceiling opening. Consult the builder for details.
- The center of the ceiling opening is indicated on the paper pattern for installation.
- After removing the packaging material from the paper pattern for installation, attach the paper pattern for installation to the unit with the attached screws as shown in figure below.

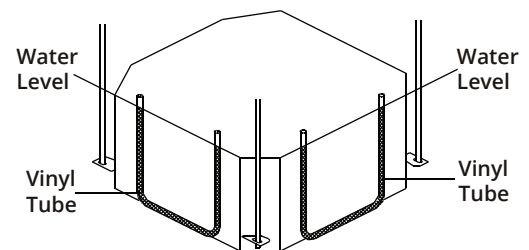


3. Adjust the unit to the right position for installation.

(Refer to the chapter "Preparations before installation").

4. Check if the unit is horizontally leveled.

- Do not install the unit tilted. The indoor unit is equipped with a built-in drain pump and float switch. (If the unit is tilted against the direction of the condensate flow (the drain piping side is raised), the float switch may malfunction and cause water to drip.)
- Check if the unit is leveled at all four corners with a water level or a water-filled vinyl tube as shown in figure below.



5. Remove the paper pattern for installation. (For new ceilings only)

4.1 Precautions for selecting the location

1. Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
2. Choose a location where the hot air discharged from the unit or the operation noise will not cause a nuisance to the neighbors of the user.
3. Avoid places near a bedroom and the like, so that the operation noise will cause no trouble.
4. There must be sufficient space for carrying the unit into and out of the site.
5. There must be sufficient space for air passage and no obstructions around the air inlet and the air outlet.
6. The site must be free from the possibility of flammable gas leakage in a nearby place.
7. Install units, power cords and inter-unit wire at least 9.8ft. away from television and radio sets. This prevents interference to images and sounds. (Noises may be heard even if they are more than 9.8 ft. away depending on radio wave conditions.)
8. In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the air conditioner.
9. Since drain flows out of the outdoor unit, do not place anything under the unit that must be kept away from moisture.

NOTE

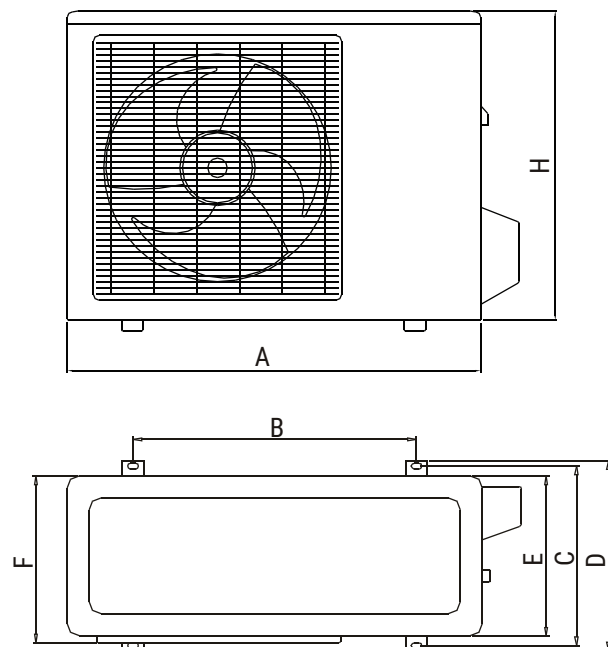
Cannot be installed hanging from ceiling or stacked.

CAUTION

When operating the air conditioner in a low outdoor ambient temperature, be sure to follow the instructions described below.

- To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
- Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
- To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
- In heavy snowfall areas, select an installation site where the snow will not affect the unit.

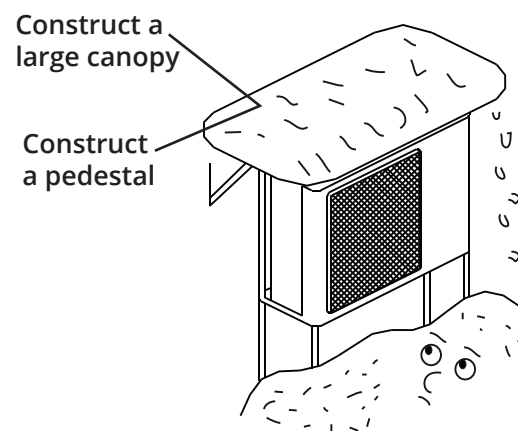
Fig. 4.1



Unit:mm

| MODEL | A | B | C | D | E | F | H |
|--------|-----|-----|-----|-----|-----|-----|-----|
| 9K~18K | 780 | 548 | 266 | 300 | 241 | 250 | 540 |
| | 760 | 530 | 290 | 315 | 270 | 285 | 590 |
| | 810 | 549 | 325 | 350 | 305 | 310 | 558 |
| | 845 | 560 | 335 | 360 | 312 | 320 | 700 |

(in=mm/25.4)



Install the unit high enough off the ground to prevent burying in snow

Fig. 4.2

4.2 Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit's inlet or outlet airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the outlet side should be 1200mm or less.

Wall facing one side

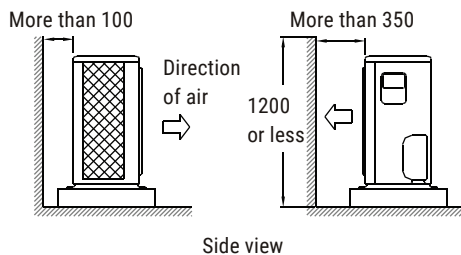


Fig. 4.3

Walls facing two sides

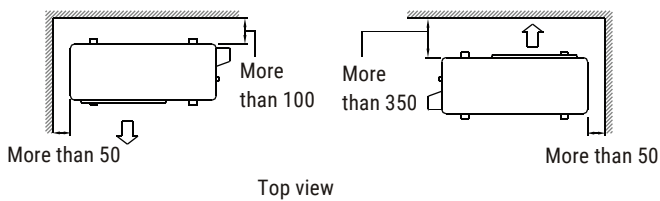


Fig. 4.4

Walls facing three sides

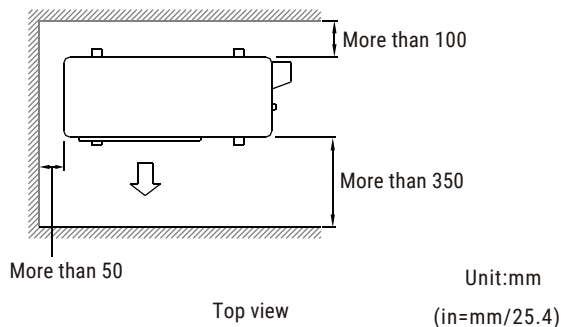


Fig. 4.5

Unit:mm
(in=mm/25.4)

4.3 Installing Outdoor Unit

- When installing the outdoor unit, refer to "Precautions for selecting the location".
- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installed.
- Fix the unit securely by means of the foundation bolts. (Prepare 4 sets of M8 or M10 foundation bolts, nuts and washers each which are available on the market.)

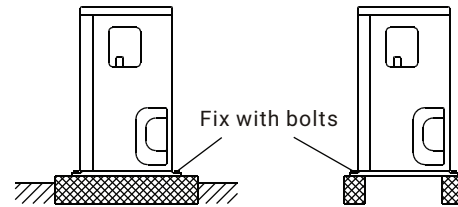


Fig. 4.6

4.4 Installing Outdoor Unit

- If drain work is necessary, follow the procedures below.
- Use drain plug for drainage.
- If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 1.2in-.30mm in height under the outdoor unit's feet.
- In cold areas, do not use a drain hose with the outdoor unit. (Otherwise, drain water may freeze, impairing heating performance.)

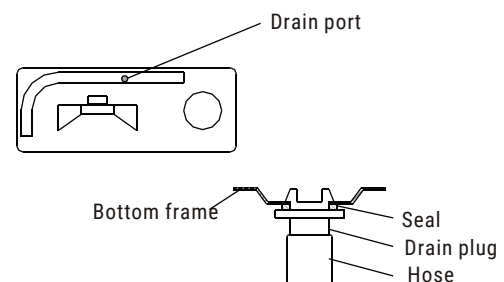


Fig. 4.7

⚠ WARNING

All field piping must be provided by a licensed refrigeration technician and must comply with the relevant local and national codes.

⚠ CAUTION

⊘ **DO NOT** mix anything other than the specified refrigerant, such as air, etc., inside the refrigerant circuit.

- Execute heat insulation work completely on both sides of the gas piping and liquid piping. Otherwise, this can sometimes result in water leakage. (When using a heat pump, the temperature of the gas piping can reach up to approximately 120°C /248° F. Use insulation which is sufficiently resistant.)
- Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 30°C /86° F or Rh80%, reinforce the refrigerant insulation (20mm/0.8in or thicker). Condensation may form on the surface of the insulating material.
- Before rigging tubes, check which type of refrigerant is used.
- Use a pipe cutter and flare suitable for used refrigerant.
- Only use annealed material for flare connections.
- If the refrigerant gas leaks during the work, ventilate the area. A toxic gas is emitted by the refrigerant gas being exposed to a fire.
- Make sure there is no refrigerant gas leak. A toxic gas may be released by the refrigerant gas leaking indoor and being exposed to flames from an area heater, cooking stove, etc.
- Refer to the **Fig 5.1** for the dimensions of flare nuts spaces and the appropriate tightening torque. (Over-tightening may damage the flare and cause leaks.)
- Check whether the height drop between the indoor unit and outdoor unit, and the length of refrigerant pipe meet the following requirements in **Fig 5.2**:

| Pipe gauge (mm) | Tightening torque | Flare dimension A (mm) | Flare shape |
|-----------------|--------------------------------|----------------------------|-------------|
| ∅6.35(1/4 in) | 15~16 N. m (153~163 kgf.cm) | 8.3~8.7 0.327~0.343in | |
| ∅9.52(3/8 in) | 25~26 N. m (255~265 kgf.cm) | 12.0~12.4 0.472~0.488in | |
| ∅12.7(1/2 in) | 35~36 N. m (357~367 kgf.cm) | 15.4~15.8 0.606~0.622in | |
| ∅15.9(5/8 in) | 45~47 N. m (459~480 kgf.cm) | 18.6~19.0 0.732~0.748in | |

Fig 5.1

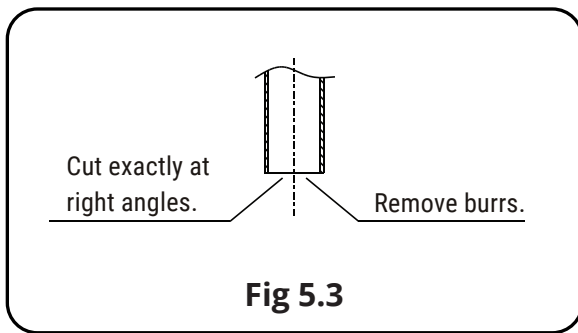
| The type of models | Capacity (Btu/h) | Max. allowable piping length | Max. allowable piping height |
|--|------------------|------------------------------|------------------------------|
| T1 condition Split type air conditioner | 9K ~12K | 15m/49.2ft | 8m/26.2ft |
| | 18K | 25m/82ft | 15m/49.2ft |
| R410A inverter Split type air conditioner | 9K ~12K | 25m/82ft | 10m/32.8ft |
| | 18K | 30m/98.4ft | 20m/65.6ft |
| T3 condition (outdoor unit down) | 9K ~12K | 25m/82ft | 10m/32.8ft |
| | 18K | 30m/98.4ft | 15m/49.2ft |
| T3 condition (outdoor unit up) | 9K ~12K | 25m/82ft | 15m/49.2ft |
| | 18K | 30m/98.4ft | 20m/65.6ft |

Fig 5.2

Refrigerant Piping Installation

5.1 Flaring the pipe end

1. Cut the pipe end with a pipe cutter.
2. Remove burrs with the cut surface facing downward so that the chips do not enter the pipe. See **Fig 5.3**.
3. Put the flare nut on the pipe.
4. Flare the pipe. Set exactly at the position shown in **Fig 5.5**.
5. Check that the flaring is properly made.



(in=mm/25.4)

| Outer diam. (mm) | A(mm) | |
|---------------------|-------|------|
| | Max. | Min. |
| Ø6.35(1/4 in) | 1.3 | 0.7 |
| Ø9.52(3/8 in) | 1.6 | 1.0 |
| Ø12.7(1/2 in) | 1.8 | 1.0 |
| Ø15.9(5/8 in) | 2.2 | 2.0 |

Set exactly at the position shown below.

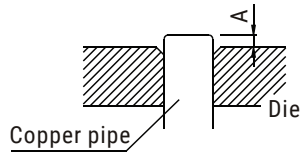


Fig 5.4

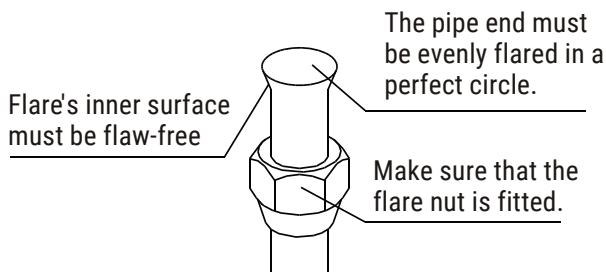
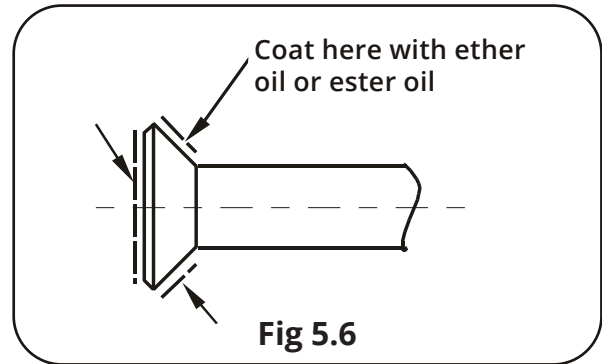


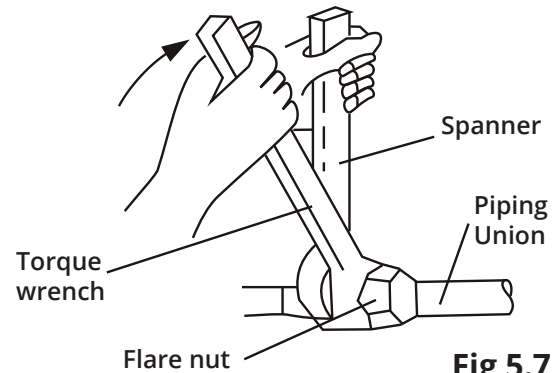
Fig 5.5

5.2 Refrigerant Piping

1. Coat the flare both inside and outside with ether oil or ester oil .



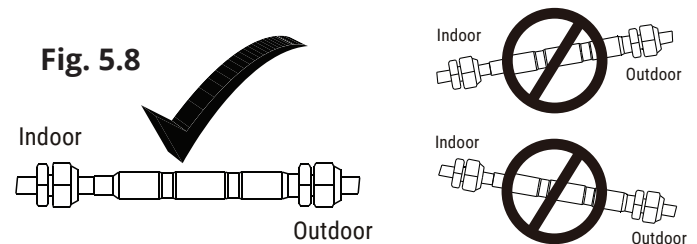
2. Align the centers of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.



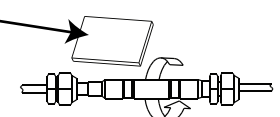
5.3 Installation of the throttle. (For some models)

⚠ CAUTION

For ensuring throttled efficiency, please mount the throttle as horizontally as possible. See **Fig. 5.8** below and **Fig. 5.9** on the next page.



Wrap the supplied anti-shock rubber around the throttle to reduce noise.



5.4 Purging air and checking gas leakage

When piping work is completed, it is necessary to purge the air and check for gas leakage.

! WARNING

DO NOT mix any substance other than the specified refrigerant into the refrigeration cycle.

- When refrigerant gas leaks occur, ventilate the room as soon as possible.
- The specified refrigerant should always be recovered and never be released directly into the environment.
- Use a vacuum pump for the specified refrigerant. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.
- If using additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (0.2in / 4mm) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench at the specified tightening torque.

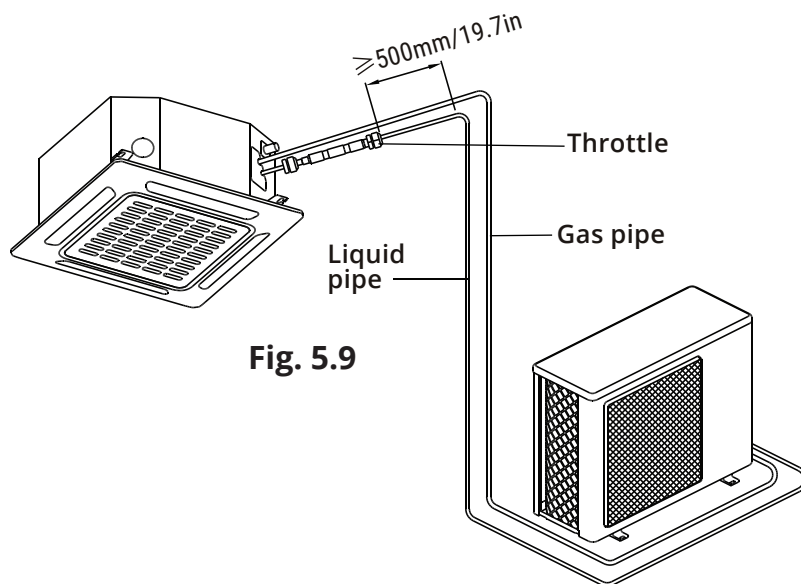


Fig. 5.9

1. Connect projection side of charging hose (which comes from gauge manifold) to gas stop valve's service port.
2. Full open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi) (High-pressure valve subsequently requires no operation.)
3. Do vacuum pumping and make sure that the compound pressure gauge reads -0.1MPa (-76cmHg).*1
4. Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump. (Keep this state for a few minutes to make sure that the compound pressure gauge pointer does not swing back.)*2
5. Remove caps from liquid stop valve and gas stop valve.
6. Turn the liquid stop valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve. Close it after 5 seconds, and check for gas leakage. Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off.
7. Disconnect charging hose from gas stop valve's service port then fully open liquid and gas stop valves. (Do not attempt to turn valve rod beyond its stop.)
8. Tighten valve caps and service port caps for the liquid and gas stop valves with a torque wrench at the specified torques.

*1 Pipe length vs. Vacuum pump run time

*2 If the compound pressure gauge pointer swings back, refrigerant may have water content or a loose pipe joint may exist. Check all pipe joints and re-tighten nuts as needed, then repeat steps 2) through 4).

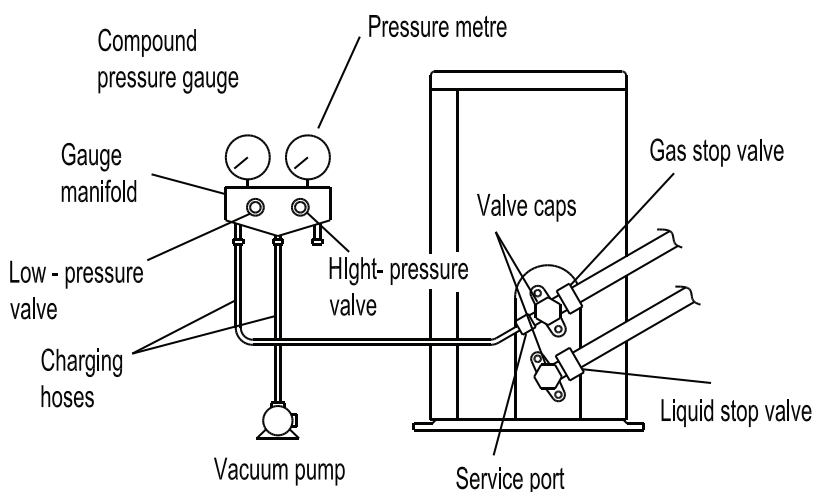


Fig. 5.10

| | | |
|-------------|----------------------|------------------------|
| Pipe length | Up to 49.2ft / 15m | More than 49.2ft / 15m |
| Run time | Not less than 10 min | Not less than 15min |

Refrigerant Piping Installation

5.5 Additional Refrigerant Charge

CAUTION

- Refrigerant may only be charged after performing the leak test and the vacuum pumping.
- Check the type of refrigerant to be used on the machine nameplate. Charging with an unsuitable refrigerant may cause explosions and accidents, so always ensure that the appropriate refrigerant is charged.
- Refrigerant containers shall be opened slowly.
- Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

The outdoor unit is factory charged with refrigerant. Calculate the added refrigerant according to the diameter and the length of the liquid pipe of the outdoor unit/indoor unit connection.

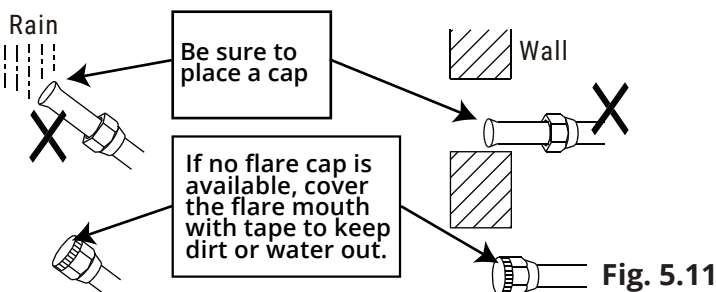
Pipe length and refrigerant amount:

| Connective pipe length | Air purging method | Additional amount of refrigerant to be charged |
|------------------------|--------------------|---|
| Less than 24.6ft | Use vacuum pump. | _____ |
| More than 24.6ft | Use vacuum pump. | Liquid side: ϕ 1/4in / 6.35mm R410A: (Pipe length-7.5(25))x15g/m(0.16oz/ft) |
| | | Liquid side: ϕ 3/8in / 9.52mm R410A: (Pipe length-7.5(25))x30g/m(0.32oz/ft) |

5.6 Refrigerant Piping Work

1. Caution on the pipe handling

- Protect the open end of the pipe against dust and moisture.
- All pipe bends should be as gentle as possible. Use a pipe bender for bending.



2. Be sure to insulate both the gas and liquid piping. Use separate thermal insulation pipes for gas and liquid refrigerant pipes. See the figure below.

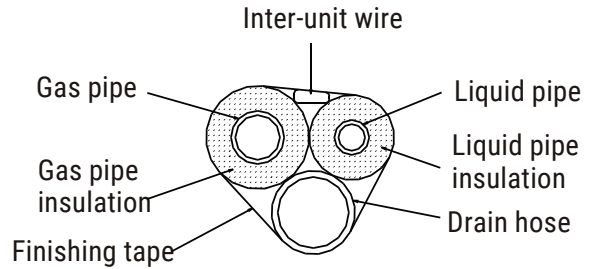


Fig. 5.12

3. Finally, insulate as shown in the figure below.

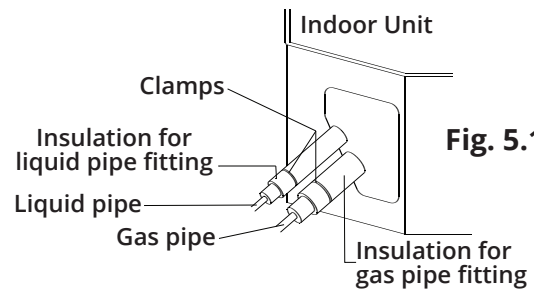
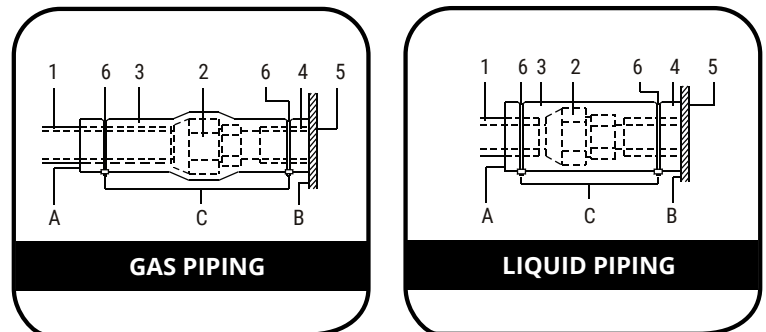


Fig. 5.13

Piping Insulation Procedures



- 1- Piping insulation material (field supply)
 - 2- Flare nut connection
 - 3- Insulation for fitting (field supply)
 - 4- Piping insulation material (main unit)
 - 5- Indoor unit
 - 6- Clamp (field supply)
- A - Turn seams up
B - Attach to base
C - Tighten the part other than the piping insulation material

Fig. 5.14

CAUTION

- For local insulation, be sure to insulate local piping all the way into the pipe connections inside the unit. Exposed piping may cause condensation or may cause burns when touched.
- Make sure that no oil remains on plastic parts of the decoration panel (optional equipment). Oil may cause degradation and damage to plastic parts.

Additional Refrigerant Charge

6.1 Installation of drain piping

Install the drain piping as shown in figure below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

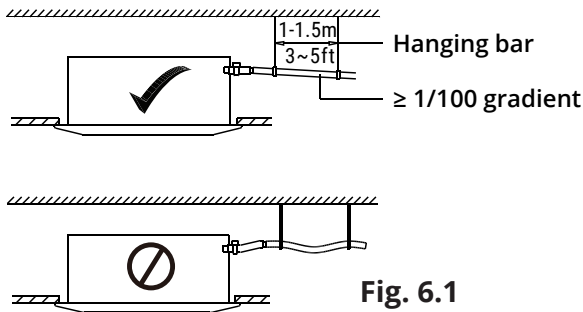
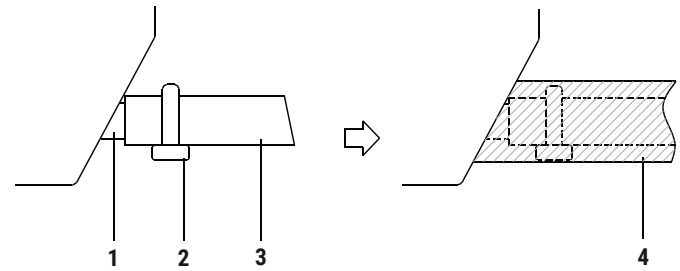


Fig. 6.1

6.2 Install the drain pipes

- Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
- Keep pipe size equal to or greater than that of the connecting pipe (PVC pipe, nominal diameter 20mm in, outside diameter 25mm).
- Push the drain hose as far as possible over the drain socket, and tighten the metal clamp securely.
- Insulate the drain hose inside the building.
- If the drain hose cannot be sufficiently set on a slope, fit the hose with drain raising piping (field supply).
- Make sure that heat insulation work is executed on the Indoor drain pipe and the drain socket to prevent any possible water leakage due to dew condensation.



- 1 - Drain socket (attached to the unit)
- 2 - Metal clamp
- 3 - Drain hose
- 4 - Insulation (field supply)

Fig. 6.2

6.3 How to perform piping

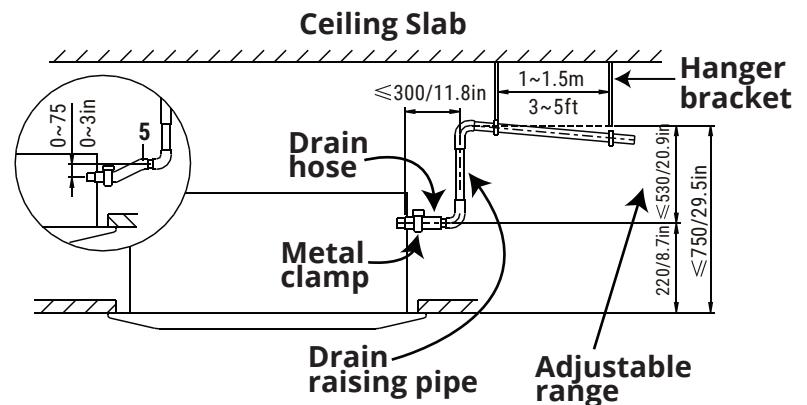


Fig. 6.3

- Connect the drain hose to the drain raising pipes, and insulate them.
- Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the clamp.

Connecting the Drain Pipe

CAUTION

- Install the drain raising pipes at a height of less than 20.9in / 530mm.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 11.8in / 300mm from the unit.
- To prevent air bubbles, install the drain hose level slightly tilted up (<3in / 75mm).
- The incline of drain hose should be 3in / 75 mm or less so that the drain socket does not have to withstand additional force.
- To ensure a downward slope of 1:100, install hanging bars every 3.3ft / 1m to 4.9ft / 1.5m.
- When unifying multiple drain pipes, install the pipes as shown in figure below. Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.
- Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

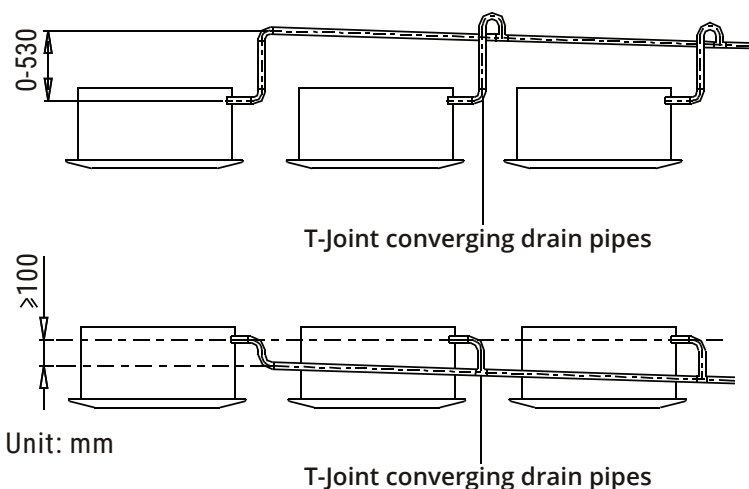


Fig. 6.4

6.4 Testing of drain piping

After the piping work is finished, check if drainage flows smoothly.

Add approximately 1L of water gradually through the air discharge outlet. Method of adding water (see the figure below).

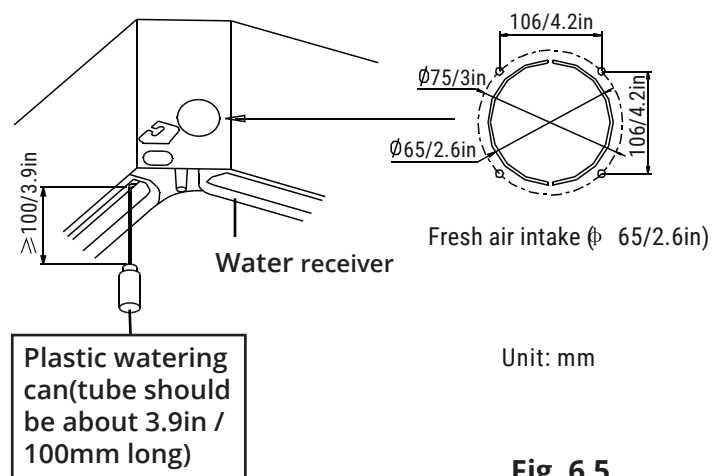


Fig. 6.5

When electric wiring work is finished, check drainage flow during **COOL** running, explained in "Test operation".

⚠ CAUTION

- All field wiring and components must be installed by a licensed electrician and must comply with relevant European and national regulations.
- Use copper wire only.
- Follow the 'Wiring diagram' attached to the unit body to wire the outdoor unit, indoor units and the remote controller.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Note that the operation will restart automatically if the main power supply is turned off and then turned back on again.
- Be sure to ground the air conditioner.

⊘ **DO NOT** connect the ground wire to gas pipes, water pipes, lightning rods, or telephone ground wires.

- Gas pipes: might cause explosions or fire if gas leaks.
- Water pipes: no grounding effect if hard vinyl piping is used.
- Telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lightning storms .

How to connect wiring

- Remove the control box lid of the indoor unit.
- Remove the cover of the outdoor unit.
- Follow the "Wiring diagram label" attached to the indoor unit's control box lid to wire the outdoor unit, indoor unit and the remote control. Securely fix the wires with a field supplied clamp.
- Attach the cover of the outdoor unit.

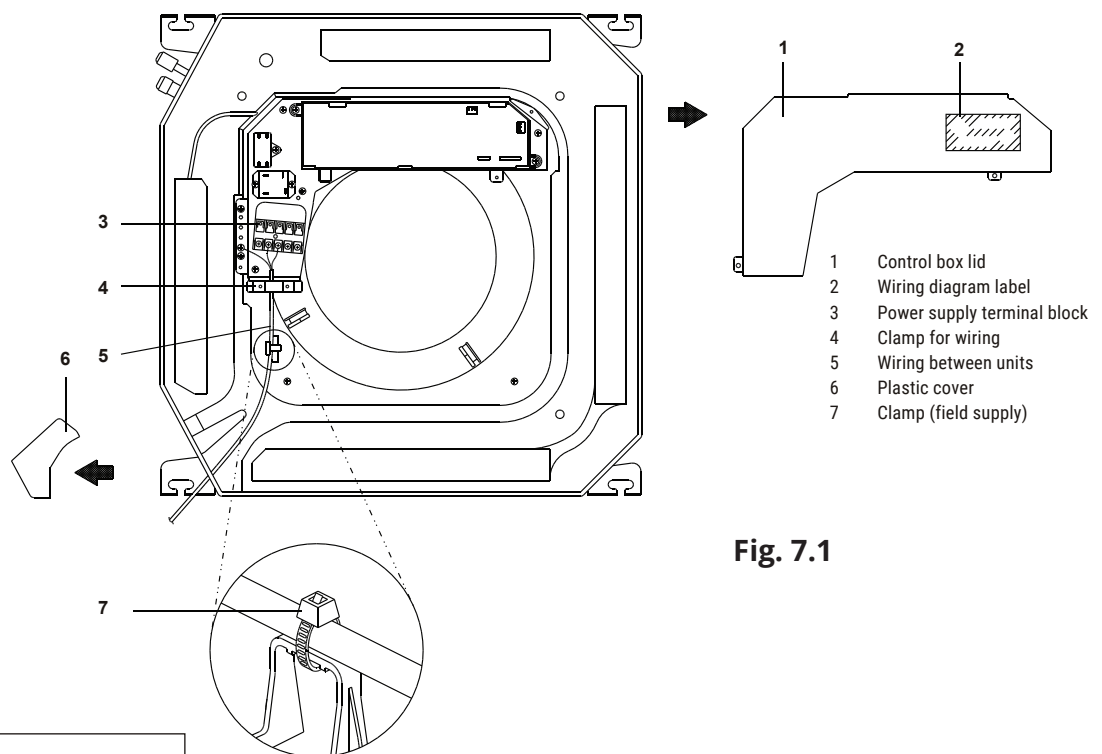


Fig. 7.1

The specification of power

| Power | | | |
|--------|--------|--------------------|-------------------------|
| Model | Phase | Frequency and volt | Circuit breaker/Fuse(A) |
| 9K~18K | 1Phase | 208-240V | 20/16 |

Electrical Wiring Work

1. Observe the notes mentioned below when wiring to the power supply terminal board.
 - When connecting wires of the same gauge, connect them according to **Fig 7.2** below.
 - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 1.31N.m 10%).
 - When attaching the control box lid, make sure not to pinch any wires.
 - After all wiring connections are done, fill in any gaps in the casing wiring holes with putty or insulation material (field supply) thus to prevent small animals or dirt from entering the unit from outside and causing short circuits in the control box.
2. **DO NOT** connect wires of different gauge to the same grounding terminal. Looseness in the connection may deteriorate the protection.
3. Use only specified wires and tightly connect wires to the terminals. Be careful that wires do not place external stress on the terminals. Keep wiring in neat order so that they do not obstruct other equipment such as popping open the service cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in the worst case, electric shock or fire.

Fig. 7.2

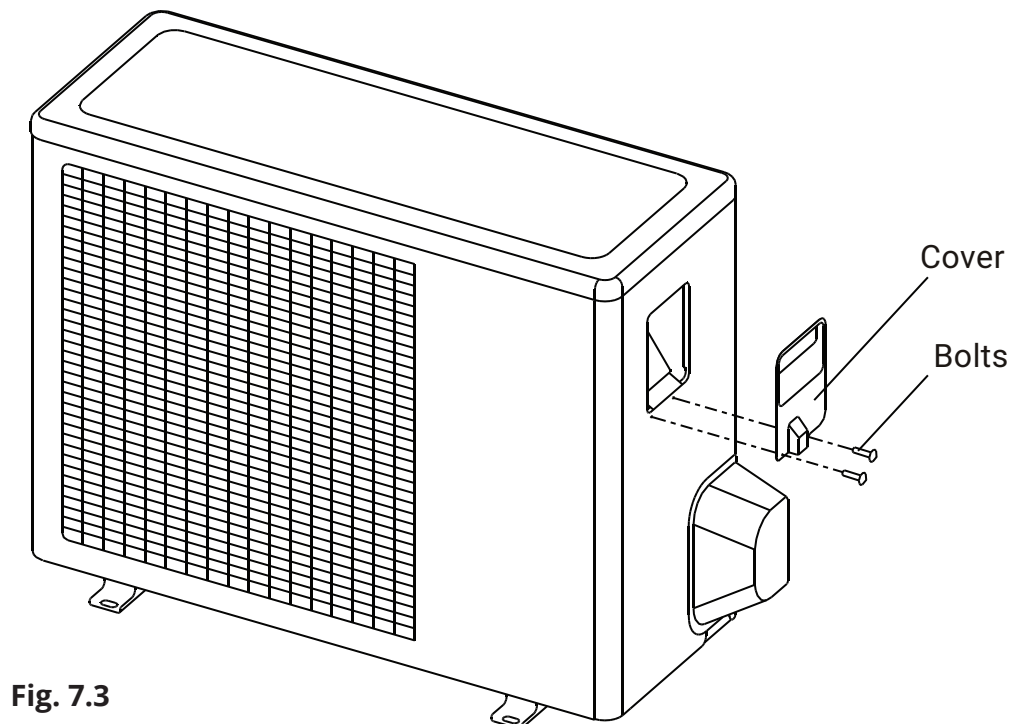
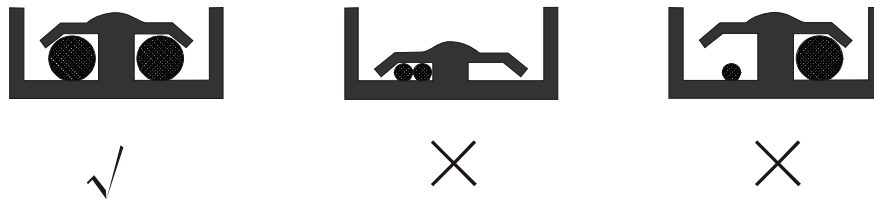


Fig. 7.3

Detach the intake grille

Slide the 2 grille hooks toward the middle of the decoration panel.

- 1 - Intake grille
- 2 - Grille hook

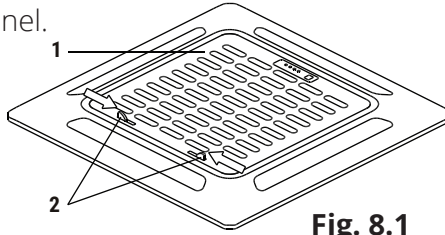


Fig. 8.1

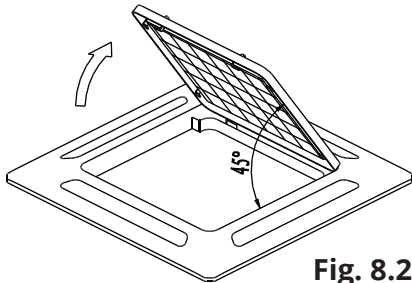


Fig. 8.2

Open the intake grille and remove

Install the decoration panel

- Align the indicate "△" on the decoration panel to the indicate "△" on the unit .
- Attach the decoration panel to the unit with the supplied screws as shown in figure below.

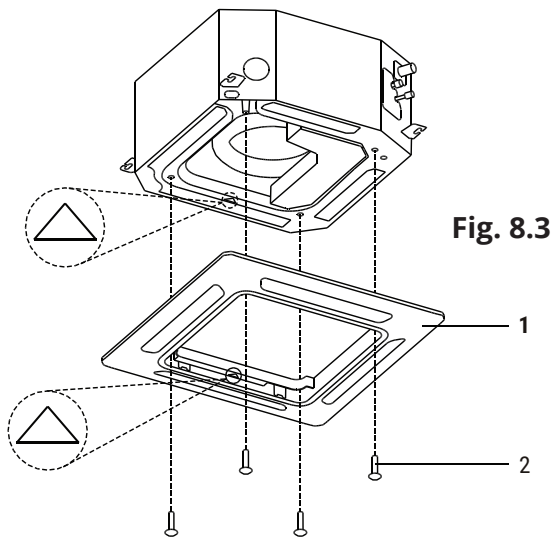


Fig. 8.3

- 1 - Decoration panel
- 2 - Screws (M5) (supplied with the panel)

After installing the decoration panel, ensure that there is no space between the unit body and decoration panel. Otherwise air may leak through the gap and cause dewdrop. See figure below.

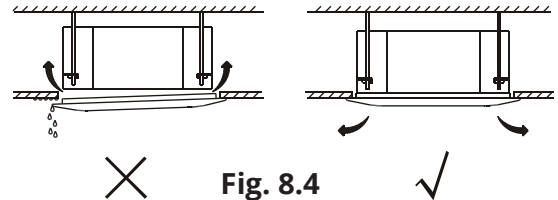


Fig. 8.4

Mount the intake grille.

Ensure that the buckles at the back of the grille are properly seated in the groove of the panel.

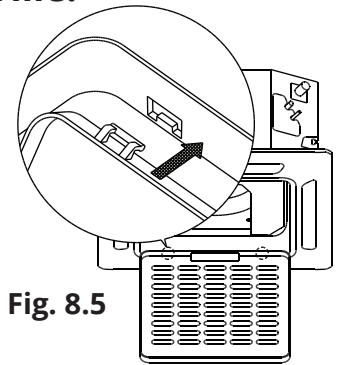


Fig. 8.5

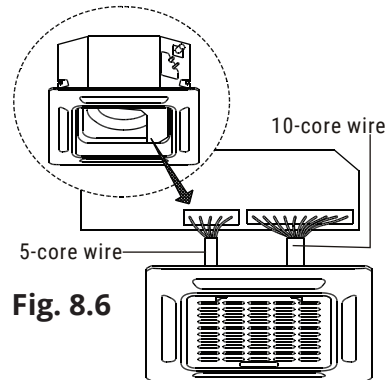


Fig. 8.6

Connect the 2 wires of the decoration panel to the main board of the unit.

Fasten the control box lid with 2 screws .

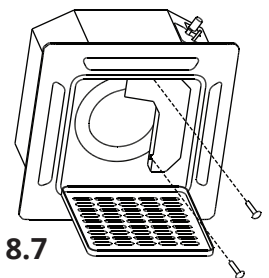
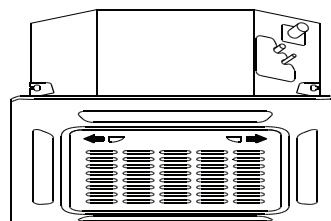


Fig. 8.7



Close the intake grille, and close the 2 grille hooks.

Fig. 8.8

Test operation after installing decoration panel

1. Open the gas side stop valve.
2. Open the liquid side stop valve.
3. Electrify crank case heater for 6 hours.
4. Set to cooling operation with the remote control and start operation by pushing ON/OFF button.
5. Check the following points listed for the indoor and outdoor units listed below. If there is any malfunction, please resolve it according to the chapter "Troubleshooting" in the "Owner's Manual".
6. After testing the indoor and outdoor units (see below), turn off the main power supply after operation.

CAUTION

A protection feature prevents the air conditioner from being activated for approximately 3 minutes when it is restarted immediately after shut off.

The indoor unit

Check the following points :

- Whether the switch on the remote control works well.
- Whether the buttons on the remote control works well.
- Whether the air flow louver moves normally.
- Whether the room temperature is adjusted well.
- Whether the indicator lights normally.
- Whether the temporary buttons works well.

The outdoor Unit

Check the following points :

- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.

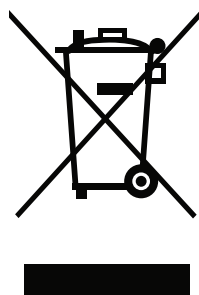
This appliance contains refrigerant and other potentially hazardous materials. When disposing of this appliance, the law requires special collection and treatment. DO NOT dispose of this product as household waste or unsorted municipal waste.

When disposing of this appliance, you have the following options:

- Dispose of the appliance at a designated municipal electronic waste collection facility.
- When buying a new appliance, the retailer will receive the old appliance free of charge.
- The manufacturer will receive the old appliance free of charge.
- Sell the appliance to certified scrap metal dealers.

Special notice

Disposing of this appliance in the forest or other natural surroundings endangers your health and is bad for the environment. Hazardous substances may leak into the ground water and enter the food chain.





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Olympus Series Cassette Air Handlers

The design and specifications of this product and/or manual are subject to change without prior notice. Consult with the sales agency or manufacturer for details.