QUESTIONS OR COMMENTS?

COUNTRY	CALL	OR VISIT US ONLINE AT
CANADA	1-800-SAMSUNG(726-7864)	www.samsung.com
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Duct Type Series
BIG duct : ND✳✳✳HH✳✳✳

Air Conditioner
user & installation manual

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SAMSUNG

Features of your new air conditioner

Cool Summer Offer

On those hot sweltering summer days and long restless nights, there is no better escape from the heat than the cool comforts of home. Your new air conditioner brings an end to exhausting hot summer days and lets you rest. This summer, beat the heat with your own air conditioner.

Cost Efficient System

Your new air conditioner not only provides maximum cooling power in the summer, but can also be an efficient heating method in the winter with the advanced "Heat pump" system. This technology is up to 300% more efficient than electrical heating, so you can further reduce its running cost. Now, meet year-round needs with one air conditioner.

Flexible installation

Duct type air conditioner is designed to be slimmer and offers different solutions for any shape room allowing for specific air flow requirements. Also, the air intake can be set up on either the bottom or rear of the unit, so there is more flexibility in installation.

Contents

USING PARTS

INSTALLATION PARTS

Safety precautions

Before using your new air conditioner, please read this manual thoroughly to ensure that you know how to safely and efficiently operate the extensive features and functions of your new appliance.

Because the following operating instructions cover various models, the characteristics of your air conditioner may differ slightly from those described in this manual. If you have any questions, call your nearest contact center or find help and information online at www.samsung.com.

Important safety symbols and precautions :

WARNING	Hazards or unsafe practices that may result in **severe personal injury or death**.
CAUTION	Hazards or unsafe practices that may result in **minor personal injury or property damage**.
	Follow directions.
	Do NOT attempt.
	Make sure the machine is grounded to prevent electric shock.
	Unplug the power plug from the wall socket.
	Do NOT disassemble.

FOR INSTALLATION

WARNING

Use the power line with the power specifications of the product or higher and use the power line for this appliance only. In addition, do not use an extension line.

- ▶ Extending the power line may result in electric shock or fire.
- ▶ Do not use an electric transformer. It may result in electric shock or fire.
- ▶ If the voltage/frequency/rated current condition is different, it may cause fire.

The installation of this appliance must be performed by a qualified technician or service company.

- ▶ Failing to do so may result in electric shock, fire, explosion, problems with the product, or injury.

Install a switch and circuit breaker dedicated to the air conditioner.

- ▶ Failing to do so may result in electric shock or fire.

Fix the outdoor unit firmly so that the electric part of the outdoor unit is not exposed.

- ▶ Failing to do so may result in electric shock or fire.

Do not install this appliance near a heater, inflammable material. Do not install this appliance in a humid, oily or dusty location, in a location exposed to direct sunlight and water (rain drops). Do not install this appliance in a location where gas may leak.

- ▶ This may result in electric shock or fire.

Never install the outdoor unit in a location such as on a high external wall where it could fall.

- ▶ If the outdoor unit falls, it may result in injury, death or property damage.

This appliance must be properly grounded. Do not ground the appliance to a gas pipe, plastic water pipe, or telephone line.

- ▶ Failure to do so may result in electric shock, fire, an explosion, or other problems with the product.
- ▶ Never plug the power cord into a socket that is not grounded correctly and make sure that it is in accordance with local and national codes.

FOR INSTALLATION | ⚠ CAUTION

Install your appliance on a level and hard floor that can support its weight.

▶ Failing to do so may result in abnormal vibrations, noise, or problems with the product.

Install the draining hose properly so that water is drained correctly.

▶ Failing to do so may result in water overflowing and property damage.

When installing the outdoor unit, make sure to connect the draining hose so that draining is performed correctly.

▶ The water generated during the heating operation by the outdoor unit may overflow and result in property damage. In particular, in winter, if a block of ice falls, it may result in injury, death or property damage.

FOR POWER SUPPLY | ⚠ WARNING

When the circuit breaker is damaged, contact your nearest service center.

Do not pull or excessively bend the power line. Do not twist or tie the power line. Do not hook the power line over a metal object, place a heavy object on the power line, insert the power line between objects, or push the power line into the space behind the appliance.

▶ This may result in electric shock or fire.

FOR POWER SUPPLY | ⚠ CAUTION

When not using the air conditioner for a long period of time or during a thunder/lightning storm, cut the power at the circuit breaker.

▶ Failing to do so may result in electric shock or fire.

FOR USING | ⚠ WARNING

If the appliance is flooded, please contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

If the appliance generates a strange noise, a burning smell or smoke, unplug the power plug immediately and contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

In the event of a gas leak (such as propane gas, LP gas, etc.), ventilate immediately without touching the power line.

Do not touch the appliance or power line.

▶ Do not use a ventilating fan.

▶ A spark may result in an explosion or fire.

To reinstall the air conditioner, please contact your nearest service center.

▶ Failing to do so may result in problems with the product, water leakage, electric shock, or fire.

▶ A delivery service for the product is not provided. If you reinstall the product in another location, additional construction expenses and an installation fee will be charged.

▶ Especially, when you wish to install the product in an unusual location such as in an industrial area or near the seaside where it is exposed to the salt in the air, please contact your nearest service center.

Safety precautions

FOR USING | ⚠ WARNING

Do not touch the circuit breaker with wet hands.

▶ This may result in electric shock.

Do not strike or pull the air conditioner with excessive force.

▶ This may result in fire, injury, or problems with the product.

Do not place an object near the outdoor unit that allows children to climb onto the machine.

▶ This may result in children seriously injuring themselves.

Do not turn the air conditioner off with the circuit breaker while it is operating.

▶ Turning the air conditioner off and then on again with the circuit breaker may cause a spark and result in electric shock or fire.

After unpacking the air conditioner, keep all packaging materials well out of the reach of children, as packaging materials can be dangerous to children.

▶ If a child places a bag over its head, it may result in suffocation.

Do not insert your fingers or foreign substances into the outlet when the air conditioner is operating or the front panel is closing.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not touch the front panel with your hands or fingers during the heating operation.

▶ This may result in electric shock or burns.

Do not insert your fingers or foreign substances into the air inlet/outlet of the air conditioner.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not use this air conditioner for long periods of time in badly ventilated locations or near infirm people.

▶ Since this may be dangerous due to a lack of oxygen, open a window at least once an hour.

If any foreign substance such as water has entered the appliance, cut the power by unplugging the power plug and turning the circuit breaker off and then contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

Do not attempt to repair, disassemble, or modify the appliance yourself.

▶ Do not use any fuse (such as copper, steel wire, etc.)other than the standard fuse.

▶ Failing to do so may result in electric shock, fire, problems with the product, or injury.

FOR USING | ⚠ CAUTION

Do not place objects or devices under the indoor unit.

▶ Water dripping from the indoor unit may result in fire or property damage.

Check that the installation frame of the outdoor unit is not broken at least once a year.

▶ Failing to do so may result in injury, death or property damage.

Max current is measured according to IEC standard for safety and current is measured according to ISO standard for energy efficiency.

Do not stand on top of the appliance or place objects (such as laundry, lighted candles, lighted cigarettes, dishes, chemicals, metal objects, etc.) on the appliance.

▶ This may result in electric shock, fire, problems with the product, or injury.

Do not operate the appliance with wet hands.

▶ This may result in electric shock.

Do not spray volatile material such as insecticide onto the surface of the appliance.

▶ As well as being harmful to humans, it may also result in electric shock, fire or problems with the product.

Do not drink the water from the air conditioner.

▶ The water may be harmful to humans.

Do not apply a strong impact to the remote controller and do not disassemble the remote controller.

Do not touch the pipes connected with the product.

▶ This may result in burns or injury.

Do not use this air conditioner to preserve precision equipment, food, animals, plants or cosmetics, or for any other unusual purposes.

▶ This may result in property damage.

Avoid directly exposing humans, animals or plants from the air flow from the air conditioner for long periods of time.

▶ This may result in harm to humans, animals or plants.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

FOR CLEANING | ⚠ WARNING

Do not clean the appliance by spraying water directly onto it. Do not use benzene, thinner or alcohol to clean the appliance.

▶ This may result in discoloration, deformation, damage, electric shock or fire.

Before cleaning or performing maintenance, unplug the air conditioner from the wall socket and wait until the fan stops.

▶ Failing to do so may result in electric shock or fire.

FOR CLEANING | ⚠ CAUTION

Take care when cleaning the surface of the heat exchanger of the outdoor unit since it has sharp edges.

▶ To avoid cutting your fingers, wear thick cotton gloves when cleaning it.

Do not clean the inside of the air conditioner by yourself.

▶ For cleaning inside the appliance, contact your nearest service center.

▶ When cleaning the internal filter, refer to the descriptions in the 'Cleaning and maintaining the air conditioner' section.

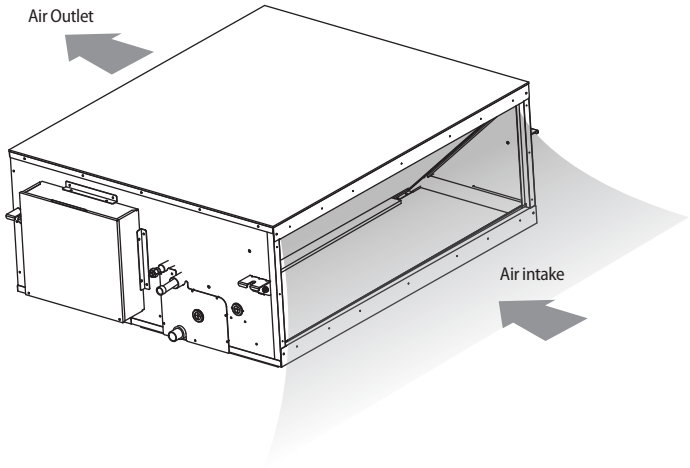
▶ Failure to do may result in damage, electric shock or fire.

Viewing your air conditioner

Congratulations on the purchase of the air conditioner. We hope you enjoy the features of your air conditioner and stay cool or warm with optimal efficiency.

Please read the user manual to get started and to make the best use of the air conditioner.

BIG duct type



NOTE

- Your air conditioner may look slightly different from the illustration shown above depending on your model.

Using your air conditioner

Tips on using your air conditioner

Here are some tips that you would follow when using your air conditioner.

TOPIC	RECOMMENDATION
Cooling	• If current outside temperatures are much higher than the selected indoor temperature, it may take time to bring the inner temperature to the desired coolness. • Avoid drastically turning down the temperature. Energy is wasted and the room does not cool faster.
Heating	• Since the air conditioner heats the room by taking heat energy from outdoor air, the heating capacity may decrease when outdoor temperatures are extremely low. If you feel the air conditioner insufficiently heats, using an additional heating appliance in combination with the air conditioner is recommended.
Frost & De-ice	• When the air conditioner runs in Heat mode, due to temperature difference between the unit and the outside air, frost will form. • If this happens: - The air conditioner stops heating. - The air conditioner will operate automatically in De-ice mode for 10 minutes. - The steam produced on the outdoor unit in De-ice mode is safe. • No intervention is required; after about 10 minutes, the air conditioner operates again normally. NOTE • The unit will not operate when it starts to de-ice.
Fan	• Fan may not operate for about 3~5 minutes at the beginning to prevent any cold blasts while the air conditioner is warming up.
High indoor/outdoor temperatures	• If both indoor and outdoor temperatures are high and the air conditioner is running in Heat mode, the outdoor unit's fan and compressor may stop at times. This is normal; wait until the air conditioner turns on again.
Power failure	• If a power failure occurs during the operation of the air conditioner, the operating immediately stops and unit will be off. When power returns, the air conditioner will run automatically.
Protection mechanism	• If the air conditioner has just been turned on after operation stops or being plugged in, cool/warm air does not come out for 3 minutes to protect the compressor of the outdoor unit.

Cleaning and maintaining the air conditioner

Maintaining your air conditioner

If the air conditioner will not be used for an extended period of time, dry the air conditioner to maintain it in best condition.

1. Dry the air conditioner thoroughly by operating in Fan mode for 3 to 4 hours and disconnect the power plug. There may be internal damage if moisture is left in components.
2. Before using the air conditioner again, dry the inner components of the air conditioner again by running in Fan mode for 3 to 4 hours. This helps remove odors which may have generated from dampness.

Periodical checks

Refer to the following chart to maintain the air conditioner properly.

Type	Description	Monthly	Every 4 months	Once a year
Indoor unit	Clean the air filter (1)	●		
	Clean the condensate drain pan (2)			●
	Thoroughly clean the heat exchanger (2)			●
	Clean the condensate drain pipe (2)		●	
	Replace the remote control batteries (1)			●
Outdoor unit	Clean the heat exchanger on the outside of the unit (2)		●	
	Clean the heat exchanger on the inside of the unit (2)			●
	Clean the electric components with jets of air (2)			●
	Verify that all the electric components are firmly tightened (2)			●
	Clean the fan (2)			●
	Verify that all the fan assembly is firmly tightened (2)			●
	Clean the condensate drain pan (2)			●

NOTE

- The checks and maintenance operations described are essential to guarantee the efficiency of the air conditioner. The frequency of these operations varies according to the characteristics of the area, the amount of dust, etc.
  1) The described operations should be performed more frequently if the area of installation is very dusty.
  2) These operations must always be performed by qualified personnel. For more detailed information, see the Installation Manual.

Internal protections via the unit control system

This internal protection operates if an internal fault occurs in the air conditioner.

Type	Description
Against cold air	The internal fan will be off to against cold air when the heat pump is heating.
De-ice cycle	The internal fan will be off to against cold air when the heat pump is heating.
Anti-protection of internal battery	The compressor will be off to protect internal battery when the air conditioner operates in Cool mode.
Protect compressor	The air conditioner does not start operating immediately to protect the compressor of the outdoor unit after it has been started.

NOTE

- If the heat pump is operating in Heat mode, De-ice cycle is actuated to remove frost from an outdoor unit that may have deposited at low temperatures.
- The internal fan is switched off automatically and restarted only after the de-ice cycle is completed.

Appendix

Troubleshooting

Refer to the following chart if the air conditioner operates abnormally. This may save time and unnecessary expenses.

PROBLEM	SOLUTION
The air conditioner does not operate immediately after it has been restarted.	• Because of the protective mechanism, the appliance does not start operating immediately to keep the unit from overloading. The air conditioner will start in 3 minutes.
The air conditioner does not work at all.	• Check that the power plug is properly connected. Insert the power plug into the wall socket correctly. • Check if the circuit breaker is switched off. • Check if there is a power failure. • Check your fuse. Make sure it is not blown out.
The temperature does not change.	• Check if you selected Fan mode. Press the **Mode** button on the remote control to select another mode.
The cool (warm) air does not come out of the air conditioner.	• Check if the set temperature is higher (lower) than the current temperature. Press the **Temperature** button on the remote control to change the set temperature. Press the **Temperature** button to decrease or increase the temperature. • Check if the air filter is blocked by dirt. Clean the air filter every two weeks. • Check if the air conditioner has just been turned on. If so, wait 3 minutes. Cool air does not come out to protect the compressor of the outdoor unit. • Check if the air conditioner is installed in a place with a direct exposure to sunlight. Hang curtains on windows to boost cooling efficiency. • Check if the cover or any obstacle is not near the outdoor unit. • Check if the refrigerant pipe is too long. • Check if the air conditioner is only available in Cool mode. • Check if the remote control is only available for cooling model.
The fan speed does not change.	• Check if you selected Auto or Dry mode. The air conditioner automatically adjusts the fan speed to Auto in Auto/Dry mode.
Timer function does not set.	• Check if you press the **Power** button on the remote control after you have set the time.
Odors permeate in the room during operation.	• Check if the appliance is running in a smoky area or if there is a smell entering from outside. Operate the air conditioner in Fan mode or open the windows to air out the room.
The air conditioner makes a bubbling sound.	• A bubbling sound may be heard when the refrigerant is circulating through the compressor. Let the air conditioner operate in a selected mode. • When you press the **Power** button on the remote control, noise may be heard from the drain pump inside the air conditioner.
Water is dripping from the air flow blades.	• Check if the air conditioner has been cooling for an extended period of time with the air flow blades pointed downwards. Condensation may generate due to the difference in temperature.

PROBLEM	SOLUTION
Remote controller is not working.	• Check if your batteries are depleted. • Make sure batteries are correctly installed. • Make sure nothing is blocking your remote control sensor. • Check that there are strong lighting apparatus near the air conditioner. Strong light which comes from fluorescent bulbs or neon signs may interrupt the electric waves.
The air conditioner does not turn on or off with the wired remote control.	• Check if you set the wired remote control for group control.
The wired remote control does not operate.	• Check if TEST indicator is displayed on the wired remote control. If so, turn off the unit and switch off the circuit breaker. Call your nearest contact center.
The indicators of the digital display flashes.	• Press the **Power** button on the remote control to turn the unit off and switch the circuit breaker off. Then, switch it on again.

Operation ranges

The table below indicates the temperature and humidity ranges the air conditioner can be operated within. Refer to the table for efficient use.

MODE	OPERATIONAL TEMPERATURE		INDOOR HUMIDITY	IF OUT OF CONDITIONS
	INDOOR	OUTDOOR		
COOLING	64˚F to 90˚F (18˚C to 32˚C)	23˚F to 109˚F (-5˚C to 43˚C)	80% or less	Condensation may occur on the indoor unit with risk to have either water blow off or drops on the floor.
HEATING	81˚F(27˚C) or less	-40˚F to 75˚F (-20˚C to 24˚C)	-	Internal protection triggers and the air conditioner will stop.
DRYING	64˚F to 90˚F (18˚C to 32˚C)	23˚F to 109˚F (-5˚C to 43˚C)	-	Condensation may occur on the indoor unit with risk to have either water blow off or drops on the floor.

NOTE

• The standardized temperature for heating is 45˚F(7˚C). If the outdoor temperature drops to 32˚F(0˚C) or below, the heating capacity can be reduced depending on the temperature condition. If the cooling operation is used at over 90˚F(32˚C)(indoor temperature), it does not cool at its full capacity.

Safety precautions

Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.

WARNING

- Always disconnect the air conditioner from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- Verify that the air conditioner is not installed in an easily accessible area.

General information

- Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as reference after installation.
- For maximum safety, installers should always carefully read the following warnings.
- Store the operation and installation manual in a safe location and remember to hand it over to the new owner if the air conditioner is sold or transferred.
- This manual explains how to install an indoor unit with a split system with two SAMSUNG units. The use of other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non compliant units.
- The air conditioner is compliant with the requirements of the Low Voltage Directive (72/23/EEC), the EMC Directive (89/336/EEC) and the Directive on pressurized equipment (97/23/EEC).
- The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electric and requirements set forth in the "Operating limits" table, included in the manual. Making such changes or improper connections may damage the units and invalidate the warranty.
- The air conditioner should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact SAMSUNG's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- Always remember to inspect the unit, electric connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- The unit contains moving parts, which should always be kept out of the reach of children.
- Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.
- Do not place containers with liquids or other objects on the unit.
- All the materials used for the manufacture and packaging of the air conditioner are recyclable.
- The packing material and exhaust batteries of the remote controller(optional) must be disposed of in accordance with current laws.
- The air conditioner contains a refrigerant that has to be disposed of as special waste. At the end of its life cycle, the air conditioner must be disposed of in authorized centers or returned to the retailer so that it can be disposed of correctly and safely.

Installing the unit

IMPORTANT: When installing the unit, always remember to connect first the refrigerant tubes, then the electrical lines. Always disassemble the electric lines before the refrigerant tubes.

- Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)
- After completing the installation, always carry out a functional test and provide the instructions on how to operate the air conditioner to the user.
- Do not use the air conditioner in environments with hazardous substances or close to equipment that release free flames to avoid the occurrence of fires, explosions or injuries.

- Our units should be installed in compliance with the spaces shown in the installation manual, to ensure accessibility from both sides and allow repairs or maintenance operations to be carried out. The unit's components should be accessible and easy to disassemble without endangering people and objects.
- For this reason, when provisions of the installation manual are not complied with, the cost required to access and repair the units (in SAFETY CONDITIONS, as set out in prevailing regulations) with harnesses, ladders, scaffolding or any other elevation system will NOT be considered part of the warranty and will be charged to the end customer.

Power supply line, fuse or circuit breaker

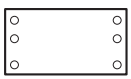
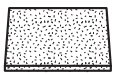
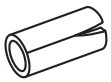
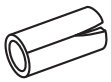
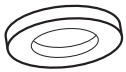
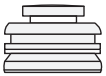
- Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner in compliance with current local safety standards.
- Always verify that a suitable grounding connection is available.
- Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- Always verify that the cut-off and protection switches are suitably dimensioned.
- Verify that the air conditioner is connected to the power supply in accordance with the instructions provided in the wiring diagram included in the manual.
- Always verify that electric connections (cable entry, section of leads, protections…) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of air conditioners.
- Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.

⚠ CAUTION

- Make sure that you earth the cables.
  - Do not connect the earth wire to the gas pipe, water pipe, lighting rod or telephone wire. If earthing is not complete, electric shock or fire may occur.
- Install the circuit breaker.
  - If the circuit breaker is not installed, electric shock or fire may occur.
- Make sure that the condensed water dripping from the drain hose runs out properly and safely.
- Install the power cable and communication cable of the indoor and outdoor unit at least 1m away from the electric appliance.
- Install the indoor unit away from lighting apparatus using the ballast.
  - If you use the wireless remote control, reception error may occur due to the ballast of the lighting apparatus.
- Do not install the air conditioner in following places.
  - Place where there is mineral oil or arsenic acid. Resin parts flame and the accessories may drop or water may leak. The capacity of the heat exchanger may reduce or the air conditioner may be out of order.
  - The place where corrosive gas such as sulfurous acid gas generates from the vent pipe or air outlet.
  - The copper pipe or connection pipe may corrode and refrigerant may leak.
  - The place where there is a machine that generates electromagnetic waves. The air conditioner may not operate normally due to control system.
  - The place where there is a danger of existing combustible gas, carbon fiber or flammable dust.
  - The place where thinner or gasoline is handled. Gas may leak and it may cause fire.

Accessories

The following accessories are supplied with the indoor unit.
The type and quantity may differ depending on the specifications.

User & Installation manual 	Pattern sheet 	Insulation cover pipe in 	Insulation cover pipe out 
Insulation pipe(A) 	Insulation pipe(B) 	Cable tie 	Flexible hose 
Clamp hose 	Washer 	Rubber 	Sleeve 

Selecting the installation location

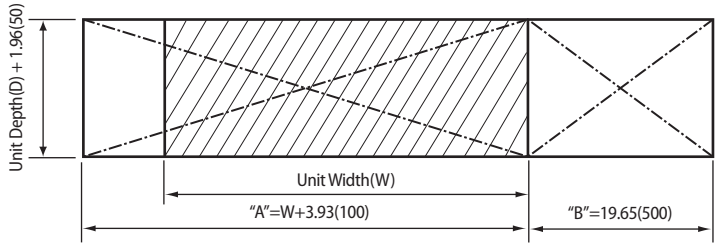
Indoor unit

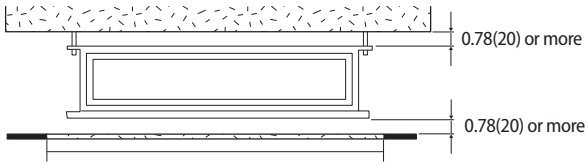
- There must be no obstacles near the air inlet and outlet.
- Install the indoor unit on a ceiling that can support its weight.
- Maintain sufficient clearance around the indoor unit.
- Make sure that the water dripping from the drain hose runs away correctly and safely.
- The indoor unit must be installed in this way, that they are out of public access. (Not touchable by the users.)
- After connecting a chamber, insulate the connection part between the indoor unit and the chamber with t10 or thicker insulation. Otherwise, there can be air leak or dew from the connection part.
- Rigid wall without vibration.
- Where it is not exposed to direct sunshine.
- Where the air filter can be removed and cleaned easily.

Space requirements for installation & service

- Construction standard for inspection hole.
  1) In case, the ceiling is textile, inspection hole dose not need.
  2) In case, the ceiling is plaster board, inspection hole depends on inside height of the ceiling.
     a. Height is more than 3.28ft(1m) : Only "B" [Inspection for PBA] is applied.
     b. Height is less than 3.28ft(1m) : Both "A" & "B" are applied.
     c. "A" & "B" are inspection holes.

Unit : inch(mm)

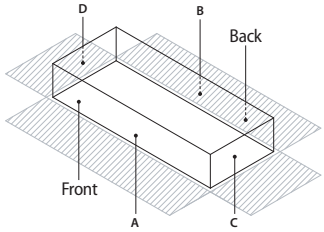




- You must have 0.78inch(20mm) or more space between the ceiling and the bottom of indoor unit. Otherwise, the noise from the vibration of indoor unit may bother the user. When the ceiling is under construction, the hole for check-up must be made to take service, clean and repair the unit.
- It is possible to install the unit at an height of between 7.54ft~8.20ft(2.2~2.5m) from the ground, if the unit has a duct with a well defined lenght [11.81inch(300mm)], to avoid fan motor blower contact.

Insulation guide

If the humidity is over 80%, it is required to add 0.4(10mm) polyethylene foam or other similar insulation to the indoor unit when installing belt or pipe type indoor unit on the ceiling.



Unit : inch(mm)

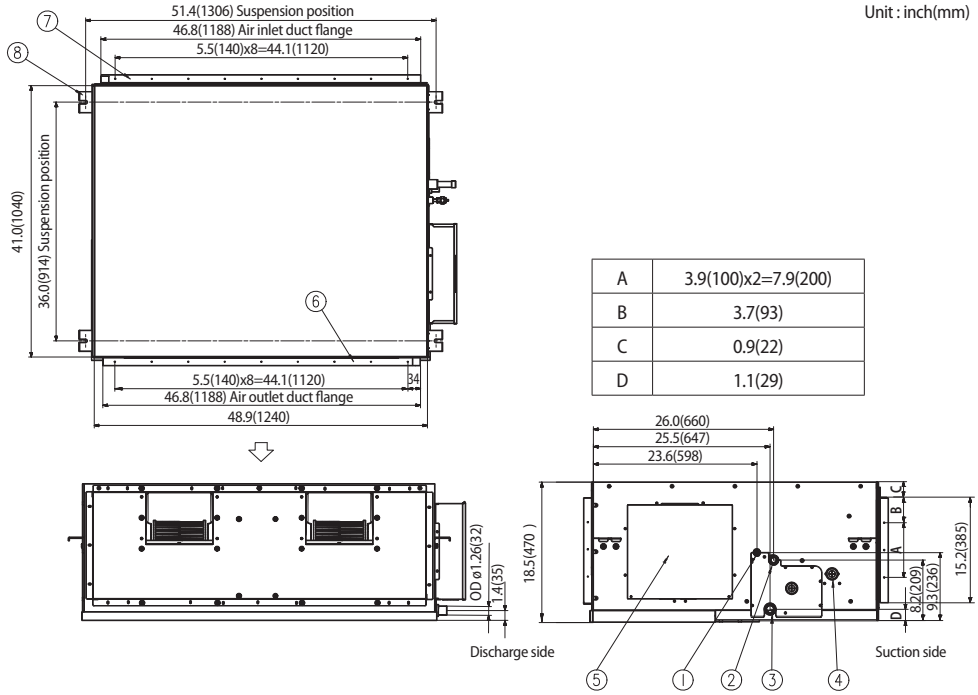
Indoor unit	A	B	C	D	Front / Back
22.0~28.0kW [48.8x18.5x41.0(1240x470x1040)]	48.8x41.0 (1240x1040)	48.8x41.0 (1240x1040)	18.5x41.0 (470x1040)	18.5x41.0 (470x1040)	Insulate the front and back side in proper size at the same time when insulating the suction duct and discharge duct.

- ▶ Thickness: more than 0.4inch(10mm)
- ▶ Insulate the end of the pipe and some curved area by using separate insulator.
- ▶ Insulate the discharge and suction part at the same time when you insulate connection duct.

Selecting the installation location

Drawing of the indoor unit

Unit : inch(mm)



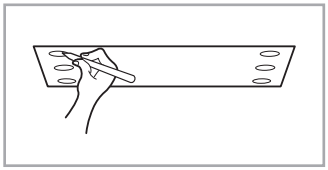
A	3.9(100)x2=7.9(200)
B	3.7(93)
C	0.9(22)
D	1.1(29)

No.	Name	Description
1	Liquid pipe connection	ø3/8"(9.52)
2	Gas pipe connection	ND220✳✳✳ : ø3/4"(19.05) ND280✳✳✳ : ø7/8"(22.22)
3	Drain pipe connection	VP25 [OD ø1.26(32), ID ø0.98(25)]
4	Drain pipe connection (Option drain pump)	VP25 [OD ø1.26(32), ID ø0.98(25)]
5	Power supply/Communication connection	
6	Air discharge grille flange	
7	Suction flange	
8	Hook	3/8" or M10

Indoor unit installation

It is recommended to install theY-joint before installing the indoor unit.

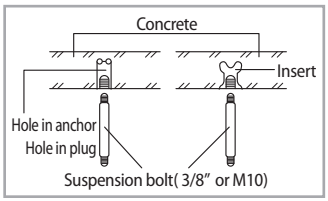
1. Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.



NOTE

- Since the diagram is made of paper, it may shrink or stretch slightly due to temperature or humidity. For this reason, before drilling the holes, maintain the correct dimensions between the markings.

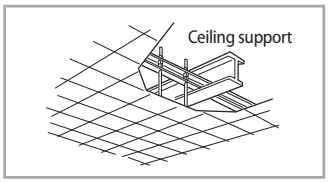
2. Insert bolt anchors, use existing ceiling supports or construct a suitable support as shown in figure.
3. Install the suspension bolts depending on the ceiling type.



CAUTION

- Ensure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
- If the length of suspension bolt is more than 4.92ft(1.5m), it is required to prevent vibration.
- If this is not possible, create an opening on the false ceiling in order to be able to use it to perform the required operations on the indoor unit.

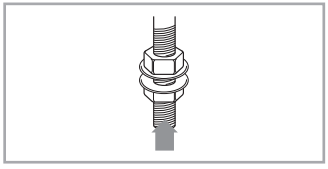
4. Screw eight nuts to the suspension bolts making space for hanging the indoor unit.



CAUTION

- You must install the suspension bolts more than four when installing the indoor unit.

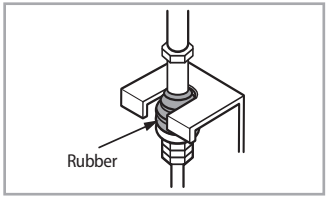
5. Hang the indoor unit to the suspension bolts between two nuts.



NOTE

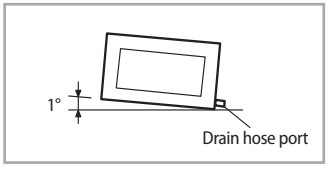
- Piping must be laid and connected inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the piping into position for connection to the unit before placing the unit inside the ceiling.

6. Screw the nuts to suspend the unit.
7. Adjust level of the unit by using measurement plate for all 4 sides.



NOTE

- For proper drainage of condensate, give a 1° slant to the left or right side of the unit which will be connected with the drain hose, as shown in the figure. Make a tilt when you wish to install the drain pump, too.



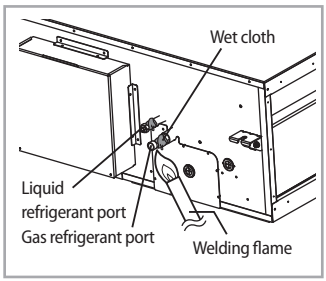
Purging the unit

On delivery, the indoor unit is loaded with inert gas.
All this gas must be purged before connecting the assembly piping. To purge the inert gas, proceed as follows.

Unscrew the pinch pipe at the end of each refrigerant pipe.

Result : All inert gas escapes from the indoor unit.

NOTE
- To prevent dirt or foreign objects from getting into the pipes during installation, do NOT remove the pinch pipe completely until you are ready to connect the piping.



Connecting the refrigerant pipe

There are two refrigerant pipes of differing diameters :

- A smaller one for the liquid refrigerant
- A larger one for the gas refrigerant
- The inside of copper pipe must be clean & has no dust.

The connection procedure for the refrigerant pipes varies according to the exit position of the pipes from the indoor unit, as seen when facing the indoor in the "A" side.

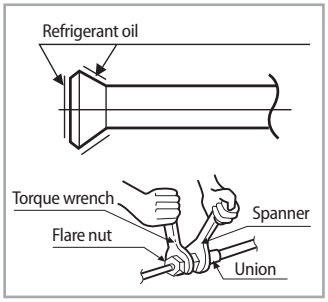
- Liquid refrigerant port
- Gas refrigerant port
- Drain hose port

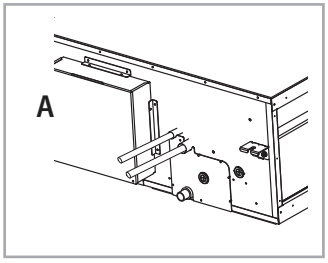
1. Remove the pinch pipe on the pipes and connect the assembly pipes to each pipe, tightening the nuts, first manually and then with a torque wrench, a spanner applying the following torque.

Outer Diameter	Torque
1/4inch(6.35 mm)	10.46~12.63 ft•lb(145~175 kgf•cm)
3/8inch(9.52 mm)	24.02~29.36 ft•lb(333~407 kgf•cm)
1/2inch(12.70 mm)	36.43~44.37 ft•lb(505~615 kgf•cm)
5/8inch(15.88 mm)	45.45~55.48 ft•lb(630~769 kgf•cm)

NOTE
- Must apply refrigerant oil on the flaring area to prevent a leak.

2. Be sure that there must be no crack or kink on the bended area.

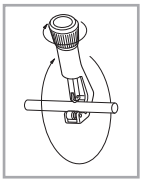
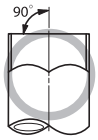


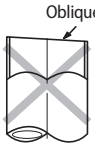


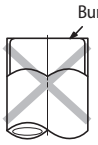
✻ The designs and shape are subject to change according to the model.

Cutting/Flaring the pipes

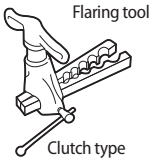
1. Make sure that you prepared the required tools. (pipe cutter, reamer, flaring tool and pipe holder)
2. If you want to shorten the pipe, cut it using a pipe cutter ensuring that the cut edge remains at 90° with the side of the pipe. There are some examples of correctly and incorrectly cut edges below.

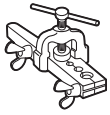



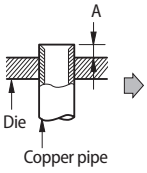


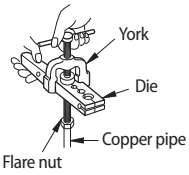


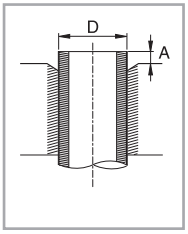
3. To prevent a gas leak, remove all burrs at the cut edge of the pipe using a reamer.
4. Carry out flaring work using flaring tool as shown below.











Outer diameter D [inch(mm)]	A [inch(mm)]		
	Flare tool for R410A clutch type	Conventional flare tool	
		Clutch type	Wing nut type
1/4(6.35)	0~0.020(0~0.5)	0.039~0.059(1.0~1.5)	0.059~0.079(1.5~2.0)
3/8(9.52)	0~0.020(0~0.5)	0.039~0.059(1.0~1.5)	0.059~0.079(1.5~2.0)
1/2(12.70)	0~0.020(0~0.5)	0.039~0.059(1.0~1.5)	0.059~0.079(1.5~2.0)
5/8(15.88)	0~0.020(0~0.5)	0.039~0.059(1.0~1.5)	0.059~0.079(1.5~2.0)

5. Check if you flared the pipe correctly. There are some examples of incorrectly flared pipes below.


Correct

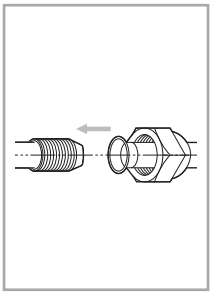
Inclined

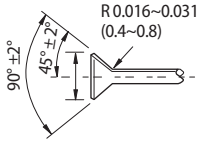
Damaged Surface

Cracked

Uneven Thickness

6. Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.



Outer diameter [inch(mm)]	Connection Torque [ft•lb(kgf•cm)]	Flare dimension [inch(mm)]	Flare shape [inch(mm)]
1/4(6.35)	10.46~12.63 (145~175)	0.34~0.36 (8.70~9.10)	
3/8(9.52)	24.02~29.36 (333~407)	0.50~0.52 (12.80~13.20)	
1/2(12.70)	36.43~44.37 (505~615)	0.64~0.65 (16.20~16.60)	
5/8(15.88)	45.45~55.48 (630~769)	0.76~0.78 (19.30~19.70)	

CAUTION

- In case of needing brazing, you must work with Nitrogen gas blowing.

Performing leak test & insulation

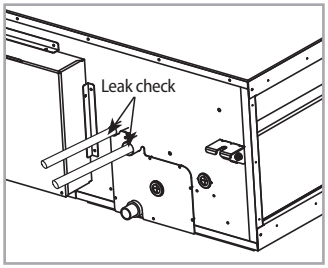
Leak test

LEAK TEST WITH NITROGEN (before opening valves)

In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R410A, it's responsible of installer to pressurize the whole system with nitrogen (using a pressure regulator) at a pressure above 4.1MPa (gauge).

LEAK TEST WITH R410A (after opening valves)

Before opening valves, discharge all the nitrogen into the system and create vacuum. After opening valves check leaks using a leak detector for refrigerant R410A.



CAUTION
- Discharge all the nitrogen to create a vacuum and charge the system.

Insulation

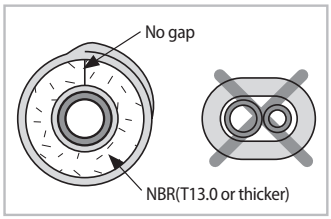
Once you have checked that there are no leaks in the system, you can insulate the piping and hose.

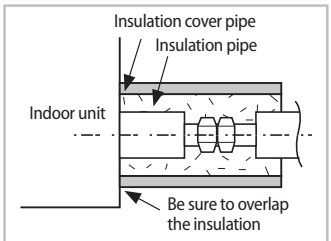
1. To avoid condensation problems, place T13.0 or thicker Acrylonitrile Butadien Rubber separately around each refrigerant pipe.

NOTE
- Always make the seam of pipes face upwards.

2. Wind insulating tape around the pipes and drain hose avoiding to compress the insulation too much.
3. Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.
4. The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.

CAUTION
- All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.





CAUTION
- Must fit tightly against body without any gap.

5. Select the insulation of the refrigerant pipe.

► Insulate the gas side and liquid side pipe referring to the thickness according to the pipe size.

► Indoor temperature of 86°F(30°C) and humidity of 85% is the stan dard condition.
If installing in a high humidity condition, use one grade thicker insulator by referring to the table below.
If installing in an unfavorable conditions, use thicker one.

► Insulator's heat-resistance temperature should be more than 248°F(120°C).

Unit : inch(mm)

Pipe	Pipe size	Insulation type (Heating/Cooling)		Remarks
		Standard [83°F(30°C), 85%]	High humidity [83°F(30°C), over 85%]	
		EPDM, NBR		
Liquid pipe	Ø1/4"(6.35)~Ø3/8"(9.52)	3/8"(9)t	←	Internal temperature is higher than 248°F(120°C)
	Ø1/2"(12.70)~Ø2"(50.80)	1/2"(13)t	←	
Gas pipe	Ø1/4"(6.35)	1/2"(13)t	3/4"(19)t	
	Ø3/8"(9.52)~Ø1"(25.40)	3/4"(19)t	1.0"(25)t	
	Ø1"1/8(28.58)~Ø1"3/4(44.45)		1" 1/4 (32)t	
	Ø2"(50.80)	1.0"(25)t	1"1/2 (38)t	

ENGLISH

- When installing insulation in places and conditions below, use the same insulation that is used for high humidity conditions.

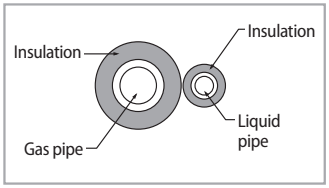
  <Geological condition>
  - High humidity places such as shoreline, hot spring, near lake or river, and ridge (when the part of the building is covered by earth and sand.)

  <Operation purpose condition>
  - Restaurant ceiling, sauna, swimming pool etc.

  <Building construction condition>
  - The ceiling frequently exposed to moisture and cooling is not covered.
    e.g. The pipe installed at a corridor of a dormitory and studio or near an exit that opens and closes frequently.
  - The place where the pipe is installed is highly humid due to the lack of ventilation system.

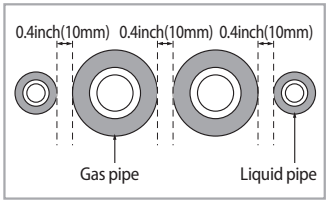
Refrigerant pipe before EEV kit and MCU or without EEV kit and MCU

- You can contact the gas side and liquid side pipes but the pipes should not be pressed.
- When contacting the gas side and liquid side pipe, use 1 grade thicker insulation.



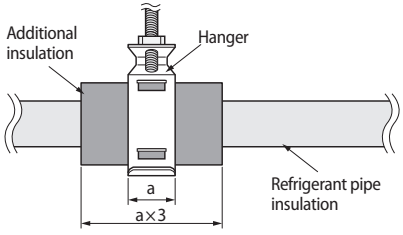
Refrigerant pipe after EEV kit and MCU

- Install the gas side and liquid side pipes, leave 0.4inch(10mm) of space.
- When contacting the gas side and liquid side pipe, use 1 grade thicker insulation.



CAUTION

- Install the insulation not to get wider and use the adhesives on the connection part of it to prevent moisture from entering.
- Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight.
- Install the refrigerant pipe respecting that the insulation does not get thinner on the bent part or hanger of pipe.
- Add the additional insulation if the insulation plate gets thinner.



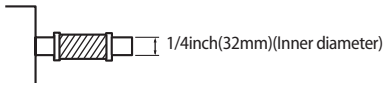
Drain pipe and drain hose installation

Care must be taken when installing the drain hose for the indoor unit to ensure that any condensate water is correctly drained outside. The drain hose can be installed to the right or left side of the base pan.

1. Unscrew the 4 tapped screws to remove the cover of the drain hose connection port.
2. Insert the flexible hose to the drain hose port.

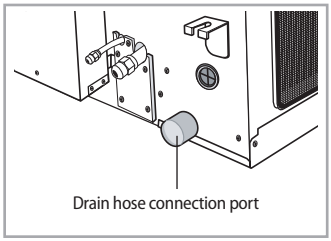
NOTE
- Fix the flexible hose to the indoor unit with the supplied cable clamp securely. (Use the screwdriver to fix the flexible hose securely.)

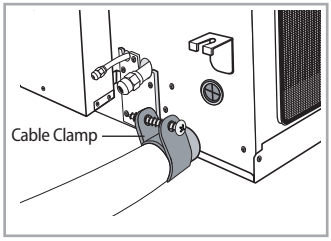
3. Install the drain hose so that its length can be as short as possible. Internal diameter of the drain hose should be the same or slightly bigger than the external diameter of the drain hose port.
   - Inner diameter of the drain hose

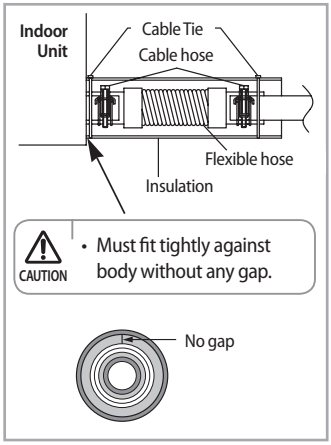


NOTE
- Give a slightly slant to the drain hose for proper drainage of condensate.
- Fix the flexible hose to the PVC with the supplied cable tie securely.

4. Wrap the drain hose with the insulation drain as shown in figure and secure it.



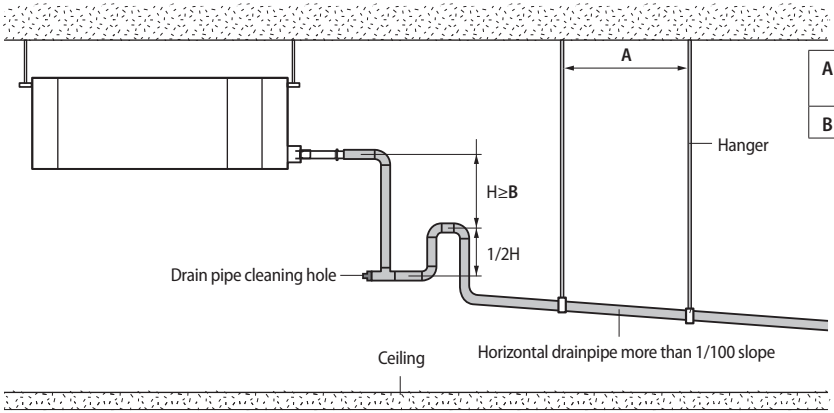




Drainpipe connection

Without the drain pump

1. Install horizontal drainpipe with a slope of 1/100 or more and fix it by hanger space of 39.37~59.05inch(1,000~1,500mm).
2. Install U-trap at the end of the drainpipe to prevent a nasty smell to reach the indoor unit.
3. Do not install the drainpipe to upward position. It may cause water flow back to the unit.



Unit : inch(mm)

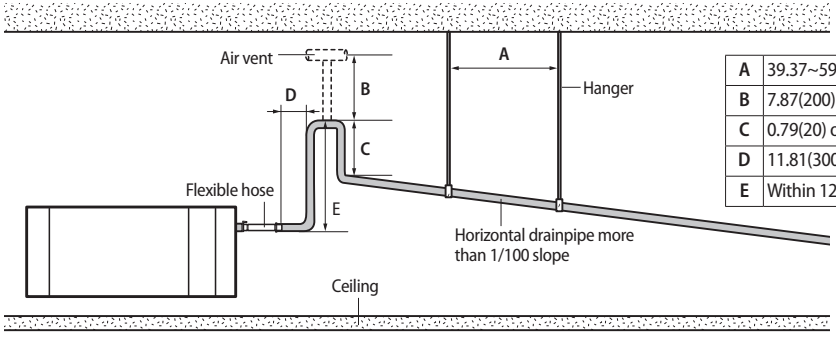
A	39.37~59.05 (1,000~1,500)
B	1.96 (50)

With the drain pump

1. The drain pipe should be installed within 12.99inch(330mm) from the flexible hose and then lift down 0.79inch(20mm) or more.
2. Install horizontal drainpipe with a slope of 1/100 or more and fix it by hanger space of 39.37~59.05inch(1,000~1,500mm).
3. Install the air vent in the horizontal drainpipe to prevent water flow back to the indoor unit.

NOTE
- You may not need to install it if there were proper slope in the horizontal drain pipe.

4. The flexible hose should not be installed upward position, it may cause water flow back to the indoor unit.



Unit : inch(mm)

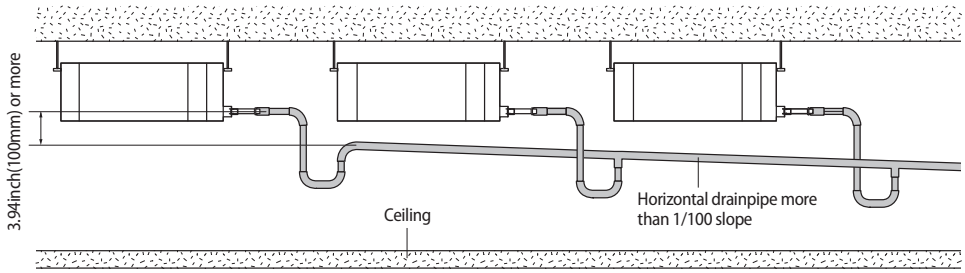
A	39.37~59.0 (1,000~1,500)
B	7.87(200) or more
C	0.79(20) or more
D	11.81(300) or more less
E	Within 12.99(330)

Drain pipe and drain hose installation

Centralized drainage

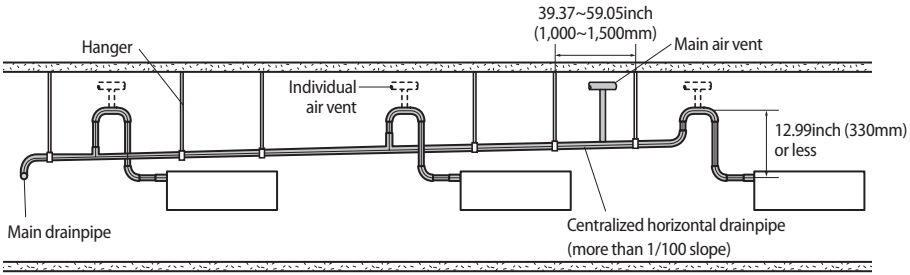
Without the drain pump

1. Install horizontal drainpipe with a slope of 1/100 or more and fix it by hanger space of 39.37~59.05inch(1,000~1,500mm).
2. Install U-trap at the end of the drainpipe to prevent a nasty smell to reach the indoor unit.



With the drain pump

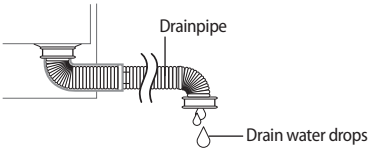
1. Install main air vent at the front of the farthest indoor unit from the main drain when installed indoor units are more than 3.
2. You may need to install individual air vent to prevent water flow back at the top of each indoor unit drainpipe.



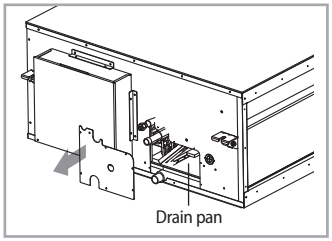
Testing the drainage

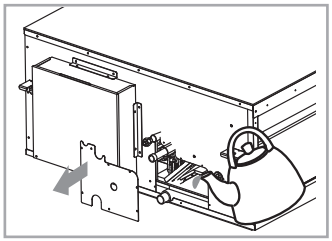
Prepare a little water about 2 liters.

1. Pour water into the base pan in the indoor unit as shown in figure.
2. Confirm that the water flows out through the drain hose.
3. When the drain pump is installed, operate the unit as cooling mode and check a drain pump pumping.
4. Check drain water drops at the end of the drain pipe.



5. Make sure there is no water leak at the drainage.
6. Reassemble the cover of water supply intake.

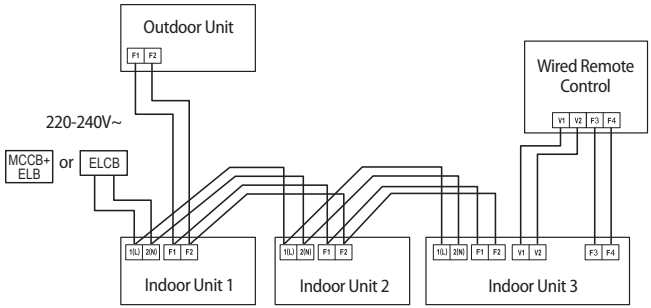




Wiring work

Power and communication cable connection

1. Before wiring work, you must turn off all power source.
2. Indoor unit power should be supplied through the breaker (ELCB or MCCB+ELB) separated by the outdoor power.
   ELCB: Earth Leakage Circuit Breaker
   MCCB:Molded Case Circuit Breaker
   ELB:Earth Leakage Breaker
3. The power cable should be used only copper wires.
4. Connect the power cable{1(L), 2(N)} among the units within maximum length and communication cable(F1, F2) each.
5. Connect V1, V2(for DC12V) and F3, F4(for communication) when installing the wired remote control.



✻ ELCB : Essential Installation

WARNING :

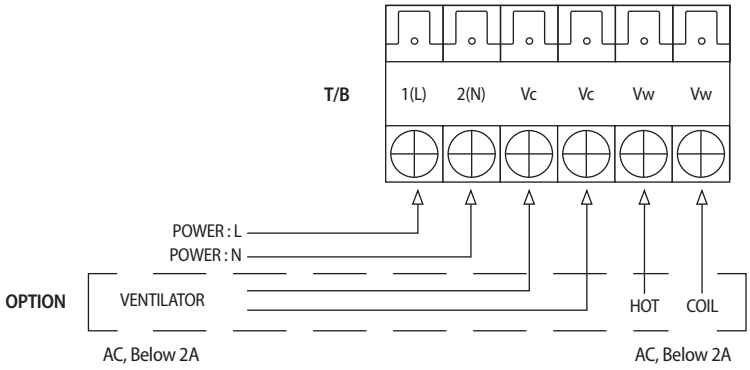
Power off before connecting any wires;

Indoor PBA will be damaged while V1,V2,F3,F4 short each other.

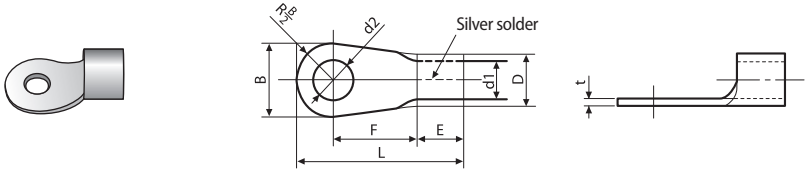
Connecting power for optional product

► When installing optional product, make sure to follow below current capacity.

✻ Optional product is not supplied by manufacturer.



Selecting compressed ring terminal



Unit : inch(mm)

Nominal dimensions for cable [inch²(mm²)]	Nominal dimensions for screw [inch²(mm²)]	B		D		d1		E	F	L	d2		t
		Standard dimension	Allowance	Standard dimension	Allowance	Standard dimension	Allowance	Min.	Min.	Max.	Standard dimension	Allowance	Min.
0.0023 (1.5)	0.16 (4)	0.26 (6.6)	±0.0079 (±0.2)	0.13 (3.4)	+0.012 (+0.3) -0.0079 (-0.2)	0.067(1.7)	±0.0079 (±0.2)	0.16 (4.1)	0.24 (6)	0.63 (16)	0.17 (4.3)	+0.0079 (+0.2) 0	0.028 (0.7)
	0.16 (4)	0.31 (8)											
0.0039 (2.5)	0.16 (4)	0.26 (6.6)	±0.0079 (±0.2)	0.17 (4.2)	+0.012 (+0.3) -0.0079 (-0.2)	0.091(2.3)	±0.0079 (±0.2)	0.24 (6)	0.24 (6)	0.69 (17.5)	0.17 (4.3)	+0.0079 (+0.2) 0	0.031 (0.8)
	0.16 (4)	0.33 (8.5)											
0.0062 (4)	0.16 (4)	0.37 (9.5)	±0.0079 (±0.2)	0.22 (5.6)	+0.012 (+0.3) -0.0079 (-0.2)	0.134(3.4)	±0.0079 (±0.2)	0.24 (6)	0.20 (5)	0.79 (20)	0.17 (4.3)	+0.0079 (+0.2) 0	0.035 (0.9)

Specification of electronic wire

Power supply	MCCB	ELB	Power cable	Earth cable	Communication cable
Max : 242V Min : 198V	XA	XA, 30 mA 0.1 sec	0.0039inch² (2.5mm²)	0.0039inch² (2.5mm²)	0.0012~0.0023inch² (0.75~1.5mm²)

✻ Run transmission wiring between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.

✻ Rating current

Unit	Model	Rating current
ND✻✻✻HH✻✻✻	✻✻220✻✻	3.8A
	✻✻280✻✻	5.9A

▶ Decide the capacity of ELCB(or MCCB+ELB) by below formula.

The capacity of ELCB(or MCCB+ELB) X[A] = 1.25 X 1.1 X ∑Ai

✻ X : The capacity of ELCB(or MCCB+ELB).

✻ ∑Ai : Sum of Rating currents of each indoor unit.

✻ Refer to each installation manual about the rating current of indoor unit.

▶ Decide the power cable specification and maximum length within 10% power drop among indoor units.

$$\sum_{k=1}^{n}\left(\frac{Coef\times 35.6\times Lk\times ik}{1000\times Ak}\right) < 10\%\ \text{of input voltage[V]}$$

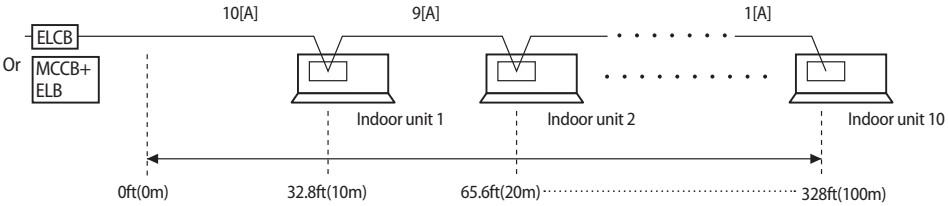
- coef : 1.55
- Lk : Distance among each indoor unit[ft(m)], Ak : Power cable specification[inch²(mm²)]
  ik : Running current of each unit[A]

ENGLISH

Wiring work

Example of Installation

- ▶ Total power cable length L = 328ft(100m), Running current of each units 1[A]
- ▶ Total 10 indoor units were installed

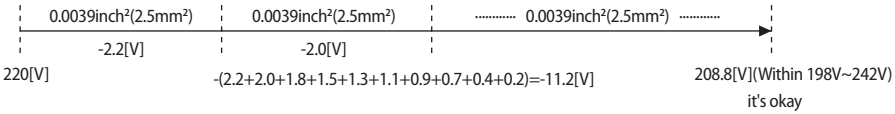


- ▶ Apply following equation

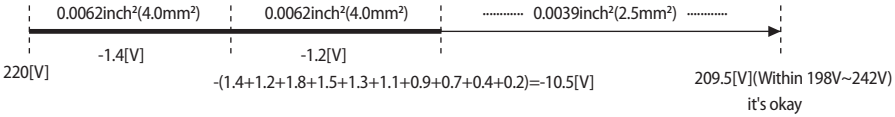
$$\sum_{k=1}^{n}\left(\frac{Coef \times 35.6 \times Lk \times ik}{1000 \times Ak}\right) < \text{10\% of input voltage[V]}$$

✻ Calculation

- Installing with 1 sort wire.



- Installing with 2 different sort wire.



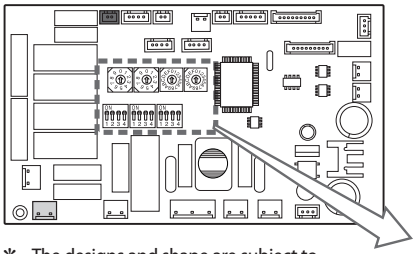
CAUTION

- Select the power cable in accordance with relevant local and national regulations.
- Wire size must comply with local and national code.
- For the power cable, use the grade of H07RN-F or H05RN-F materials.
- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 10% of supply rating among whole indoor units.
- If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 10% of supply rating, the indoor unit is protected, stopped and the error mode indicates.
- To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units in the iron pipe.
- Connect the power cable to the auxiliary circuit breaker.An all pole disconnection from the power supply must be incorporated in the fixed wiring[≥(1/8"(3mm)].
- You must keep the cable in a protection tube.
- Keep distances of 2"(50mm) or more between power cable and communication cable.
- Maximum length of power cables are decided within 10% of power drop. If it exceeds, you must consider another power supplying method.
- The circuit breaker(ELCB or MCCB+ELB) should be considered more capacity if many indoor units are connected from one breaker.
- Use round pressure terminal for connections to the power terminal block.
- For wiring, use the designated power cable and connect it firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

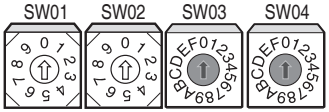
Tightening torque [ft•lb(kgf•cm)]	
M4	0.87~1.07 (12.0~14.7)

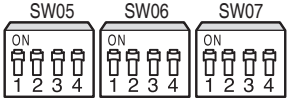
Indoor unit setting

1. Before installing the indoor unit, assign an address to the indoor unit according to the air conditioning system plan.
2. The address of the indoor unit is assigned by adjusting MAIN(SW01, SW02) and RMC(SW03, SW04) rotary switches.



✻ The designs and shape are subject to change according to the model.



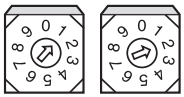


Setting Main Address

- The MAIN address is for communication between the indoor unit and the outdoor unit. Therefore, you must set it to operate the air conditioner properly.
- You can set the MAIN address from '00' to '99' by mixing SW01 and SW02. The MAIN address from '00' to '99' should differ from each other.
- Check the indoor unit address on the plan that you are to install and set the address according to the plan.

NOTE
- You may not need to set main address if you selected Auto Address Setting from the outdoor unit: see details on the outdoor unit installation manual.

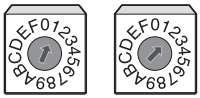
ex) When MAIN address is set as "12".



Setting RMC Address

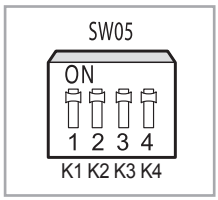
- **The SW03 and SW04 RMC switch is the address setting switch for controlling the indoor unit with the centralized controller.**
- **You must set the SW03, SW04 and K2 switch when using the centralized controller.**
- **You don't have to set the SW03 and SW04 RMC switch when not using the centralized controller.**

ex) When MAIN address is set as "12".



Additional functions

No.		Function	ON	OFF
SW05	K1	External room sensor	Not use	Use
	K2	Centralized controller	Not use	Use
	K3	-	-	-
	K4	Drain Pump	Not use	Use

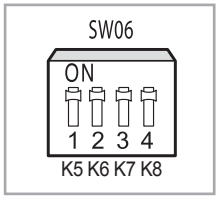


❋ K1 OFF

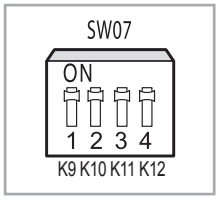
Heating mode : Setting temperature compensation value = 0°F(0°C)

Thermo OFF → Fan OFF

No.		Function	ON	OFF
SW06	K5	Heating Current Temperature Compensation	+3.6°F(+2°C)	+9°F(+5°C)
	K6	Filter Time	1,000 hours	2,000 hours
	K7	Hot Water Heater	Not Use	Use
	K8	-	-	-



No.		Function	ON	OFF
SW07	K9	Indoor Expansion Valve For Heating Stop	Fix 160 step	0 or 160 step
	K10	Wired Remocon Group Master	Not Use	Use
	K11	External control	Not Use	Use
	K12	Operation output	Thermal ON	Operation ON



Final checks and user tips

To complete the installation, perform the following checks and tests to ensure that the air conditioner operates correctly.

1. Check the followings.

- ▶ Strength of the installation site
- ▶ Tightness of pipe connection to detect a gas leak
- ▶ Electric wiring connections
- ▶ Heat-resistant insulation of the pipe
- ▶ Drainage
- ▶ Earth conductor connection
- ▶ Correct operation (follow the steps below)

After finishing the installation of the air conditioner, you should explain the following to the user. Refer to appropriate pages in the User's Manual.

1. How to start and stop the air conditioner
2. How to select the modes and functions
3. How to adjust the temperature and fan speed
4. How to adjust the airflow direction
5. How to set the timers
6. How to clean and replace the filters

NOTE

- When you complete the installation successfully, hand over the User & Installation Manual to the user for storage in a handy and safe place.

Troubleshooting

Detection of errors

- If an error occurs during the operation, an LED flickers and the operation is stopped except the LED.
- If you re-operate the air conditioner, it operates normally at first, then detect an error again.

LED Display

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Green	Red				
	Standard Type					
Power reset	◑	×	×	×	×	
Error of temperature sensor in indoor unit (OPEN/SHORT)	×	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of heat exchanger sensor in indoor unit Error of heat exchanger OUT sensor in indoor unit Error of outlet temperature sensor in indoor unit (OPEN/SHORT): For heat pump models only	◑	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of outdoor temperature sensor Error of COND sensor Error of DISCHARGE sensor	◑	×	×	◑	×	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
1. No communication for 2 minutes between indoor unit and outdoor unit (communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minute error 4. When sending the communication error from outdoor unit the mismatching of the communication numbers and installed numbers after completion of tracking. (communication error for more than 2 minutes)	×	×	◑	◑	×	1. Error of indoor unit : Displayed on the indoor unit regardless of operation 2. Error of outdoor unit : Displayed on the indoor unit which is operating

● On ◑ Flickering × Off

- If you turn off the air conditioner when the LED is flickering, the LED is also turned off.
- If you re-operate the air conditioner, it operates normally at first, then detect an error again.

Troubleshooting

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Green	Red				
	Standard Type					
Self-diagnostic error (including the indoor unit not detected) 1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. Breakaway of EVA OUT sensor 4. Breakaway of EVA IN sensor	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
5. Breakaway of COND MID sensor 6. 2nd detection of refrigerant completely leak 7. 2nd detection of high temperature COND 8. 2nd detection of high temperature DISCHARGE 9. COMP DOWN due to 2nd detection of low pressure switch 10. Error of reverse phase 11. Compressor down due to 6th detection of freezing 12. Self-diagnosis of condensation sensor (G8, G9) 13. Compressor down due to condensation ratio control	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Error of float switch	×	×	×	◑	◑	
Error of setting option switches for optional accessories	×	×	◑	◑	◑	
EEPROM error	◑	×	◑	◑	×	
EEPROM option error	◑	◑	◑	◑	◑	

● On ◑ Flickering × Off

▶ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

▶ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

Option table

E.S.P(External Static Pressure)setting for phase control motor

With its phase control motor, you can adjust the indoor unit fan speed depending on the installation condition. If the external static pressure is high so that the duct becomes longer or if the external static pressure is low so that the duct becomes shorter, adjust the fan speed by referring the following table.

Model	Step	Static Pressure(mmAq)					
		5	10	15	20	25	28
		Option code for indoor unit					
ND220HHXCE	HI	015A17160097 -200001300000	015A171600C7 -200001300000	015A171600E8 -200001300000	015A1716024D -200001300000	015A1716029F -200001300000	-
	MID						
	LOW						
ND280HHXCE	HI	015A17170207 -200001300000	015A17170229 -200001300000	015A1717025B -200001300000	015A1717029E -200001300000	015A171703D1 -200001300000	015A171703F3 -200001300000
	MID						
	LOW						

NOTE

- represents E.S.P(External Static Pressure)range of factory setting. You don't have to adjust the fan speed separately if the external static pressure of the installation place is in . When it is out of , input the appropriate option code.
- If you input the inappropriate option code, error may occur or the air conditioner is out of order. The option code must be inputted correctly by the installation specialist or service agent.