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.

ENERGY STAR qualified model only

- Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps (excluding ductless systems) must be matched with appropriate coil components to meet ENERGY STAR criteria. Ask your contractor for details or visit www.energystar.gov.

Qualified model list (Indoor/Outdoor):

AC009KNLDCH/AC009KXADCH

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Safety precautions

California Proposition 65 Warning (US)

⚠ WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

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.

FOR INSTALLATION ⚠ WARNING

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.

Safety precautions

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.

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.

Safety precautions

FOR USING | ⚠ WARNING

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 cooper, 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.

FOR USING

⚠ **CAUTION**

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.

Checking before use

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	Indoor temperature	Outdoor temperature	Indoor humidity	IF OUT OF CONDITIONS
Cooling	18°C to 32°C (64°F to 90°F)	-18 °C to 46 °C (-0.4 °F to 114.8 °F)	80% or less	Condensation may occur on the indoor unit with risk to have either water blow off or drops on the floor.
Drying	18°C to 32°C (64°F to 90°F)	-18 °C to 46 °C (-0.4 °F to 114.8 °F)	-	Internal protection triggers and the air conditioner will stop.
Heating	30°C(86°F) or less	-20 °C to 24 °C (-4 °F to 75.2 °F)	-	Internal protection triggers and the air conditioner will stop.

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

CAUTION
- The use of the air conditioner at a relative humidity above the expected one (80%) may cause the formation of condensate and the leakage of water drops on the floor.

CAUTION
- Be sure to install the unit under circumstances within the allowable range of temperature.(Extended operation range down to -25°C/-13°F in heating)

Maintaining your air conditioner

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	Blower fan will be off until indoor unit's coil temperature reaches 98°F to prevent cold air from blowing in Heating mode.
De-ice cycle	Blower fan will be off during defrost cycle to prevent cold air from blowing.
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.

Tips on using air conditioner

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

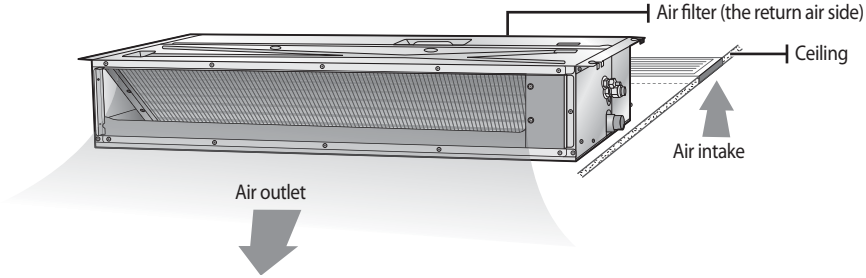
TOPIC	RECOMMENDATION
Cooling	• If current outside temperatures are much higher than the selected indoor temperature, it may take time to bring the room temperature to the desired temperature. • Avoid drastically turning down the temperature. Energy is wasted and the room does not cool faster.
Heating	• 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.
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. ❊ 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.

Checking before use

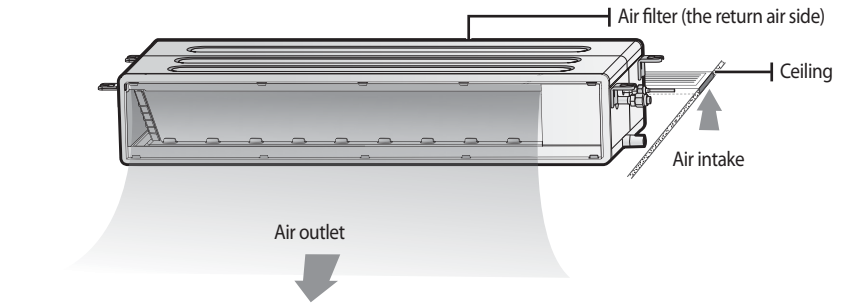
TOPIC	RECOMMENDATION
Power failure	• If a power failure occurs during the operation of the air conditioner, the operating immediately stops and unit will be off. When power returns, the air conditioner will run automatically.
Protection mechanism	• If the air conditioner has just been turned on after operation stops or being plugged in, cool/warm air does not come out for 3 minutes to protect the compressor of the outdoor unit.

Viewing the parts

SLIM DUCT TYPE



GLOBAL DUCT TYPE



NOTE

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

Cleaning and maintaining the air conditioner

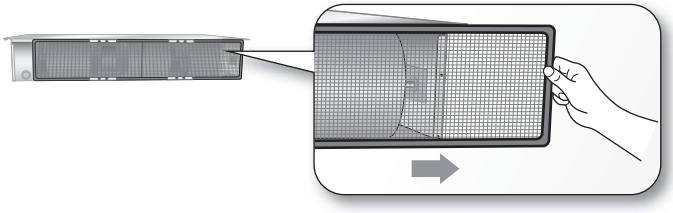
Cleaning the filter

For the best performance from your air conditioner, clean it periodically. When cleaning, make sure to unplug from the unit for user's safety.

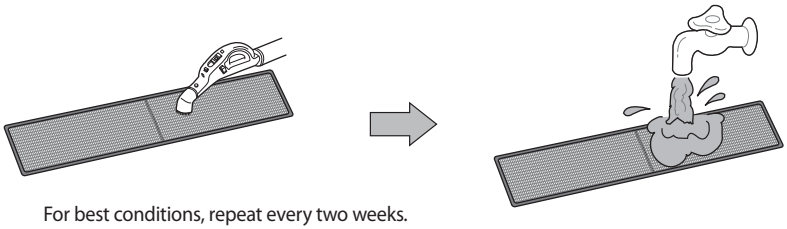
When cleaning the filter, make sure to unplug the power from the unit. Washable foam based Air filter captures large particles from the air. The filter is cleaned with a vacuum or by hand washing.

Slim duct type

1. Slide out the Air filter on the rear side panel to the right side.

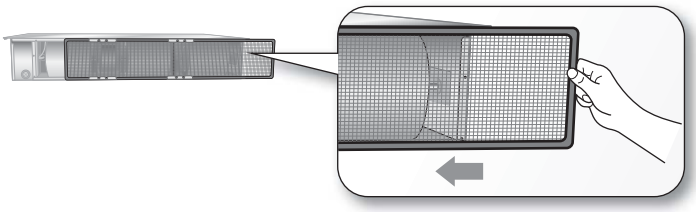


2. Clean the Air filter with a vacuum cleaner or soft brush. If dust is too heavy, then rinse it with running water and dry it in a ventilated area.



- For best conditions, repeat every two weeks.
- If the Air filter dries in a confined (or humid) area, odors may generate. If it occurs,re-clean and dry it in a ventilated area.

3. Insert the Air filter back in its original position.

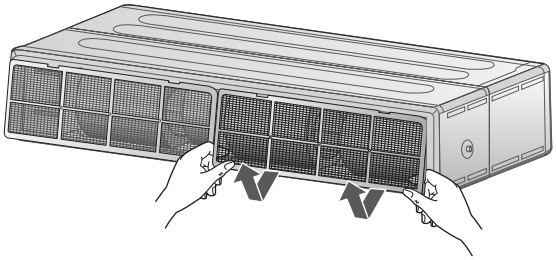


NOTE
- The illustration shown above may differ from yours depending on your model.
- After cleaning the filter, press the **Filter Reset** button on the remote control for 2 seconds to reset the filter schedule. Filter sign indicator will be on for cleaning time.

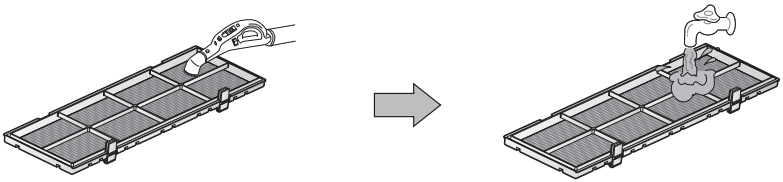
Cleaning and maintaining the air conditioner

GLOBAL DUCT

1. Take the filter downward.

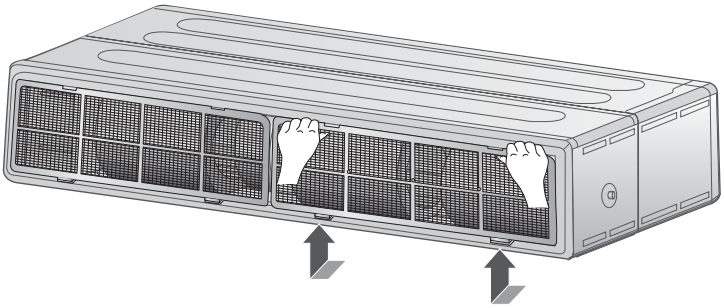


2. Clean the Air filter with a vacuum cleaner or soft brush. If dust is too heavy, then rinse it with running water and dry it in a ventilated area.



- For best conditions, repeat every two weeks.
- If the Air filter dries in a confined (or humid) area, odors may generate. If it occurs, re-clean and dry it in a ventilated area.

3. Insert the Air filter back in its original position.



NOTE
- The illustration shown above may differ from yours depending on your model.
- After cleaning the filter, press the **Filter Reset** button on the remote control for 2 seconds to reset the filter schedule. Filter sign indicator will be on for cleaning time.

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

- ▶ 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.
- ▶ 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)			●

●: This check mark requires checking the indoor/outdoor unit periodically, following to the description to maintain the air conditioner properly.

NOTE
- The described operations should be performed more frequently if the area of installation is very dusty.

CAUTION
- These operations must always be performed by qualified personnel. For more detailed information, see the installation part in the manual.

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 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. Direct exposure to direct sunlight will decrease performance and efficiency. • Check if the cover or any obstacle is not near the outdoor unit. • Check if refrigerant pipe length is within installation recommendation. • Check if the air conditioner is only available in Cool mode. • Check if the remote control is only available for cooling model. • Check if the air conditioner is operating in defrost mode. When the ice formed in winter or the outdoor temperature is too low, the air conditioner operates in defrost mode automatically. In defrost mode, indoor fan stops and warm air does not come out.
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.

PROBLEM	SOLUTION
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.
Remote control 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. • Check if wired controller is properly installed. Inspect connecting wires for "short" or "ground".
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.

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 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, shall immediately 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.
- This air handling unit is intended for free-air discharge or for connection to a duct supplying only one room. Improper installation could contribute to the spread of smoke or flame in the event of a fire.

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.
- Be sure not to perform power cable modification, extension wiring, and multiple wire connection.
  - It may cause electric shock or fire due to poor connection, poor insulation, or current limit override.
  - When extension wiring is required due to power line damage, refer to "Extending the power cable" in the installation manual.

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.

Preparation for installation

When deciding on the location of the air conditioner with the owner, the following restrictions must be taken into account.

General

Do NOT install the air conditioner in a location where it will come into contact with the following elements :

- Combustible gases
- Saline air
- Machine oil
- Sulphide gas
- Special environmental conditions

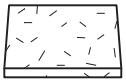
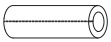
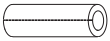
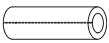
If you must install the unit in such conditions, first consult your dealer.

Avoid installing the air conditioner :

- In areas where it is exposed to direct sunlight. Close to heat sources.
- In damp areas or locations where it could come into contact with water. (for example rooms used for laundry)
- In areas where curtains and furniture could affect the supply and discharge of air.
- Without leaving the required minimum space around the unit. (as shown in the drawing)
- In scarcely ventilated areas.
- On surfaces that are unable to support the weight of the unit without deforming, breaking or causing vibrations during the use of the air conditioner.
- In a position that does not enable the condensate drainage pipe to be correctly installed. (at the end of the installation. It is always essential to check the efficiency of the drainage system)

Accessories

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

User & installation manual(1) 	Flexible hose (1) 	Insulation drain (1) 	Thermal insulation sponge A (1) 	Thermal insulation sponge B (1) 
Thermal insulation sponge C (1) 	Clamp hose (1) 	Rubber (8) 	Cable-tie (8) 	Reducer (1) 

Deciding on where to install the indoor unit

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.
- Indoor unit must be installed in an area where not accessible by the public or end user.
- 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.

Space requirements for installation & service

■ Construction Standard for Inspection Hole

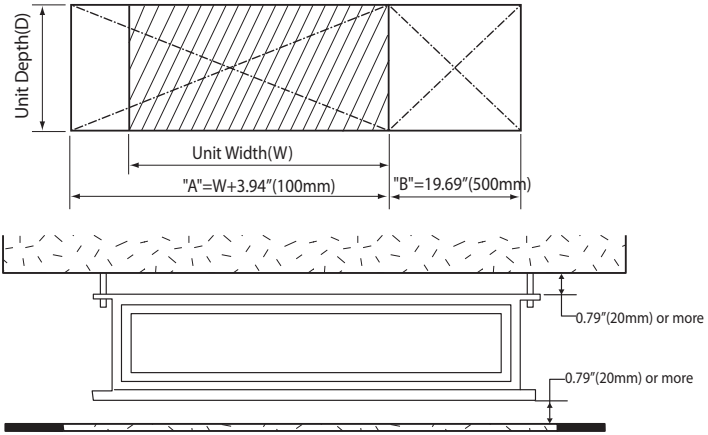
1) In case, the ceiling is tex tile, Inspection access is not required.

2) In case, the ceiling is plaster board, Inspection hole depends on Inside height of the ceiing.

a. Height is more than 1.64ft(0.5m) : Only "B" [Inspection for PBA] is applied.

b. Height is less than 1.64ft(0.5m) : Both "A"&"B" are applied.

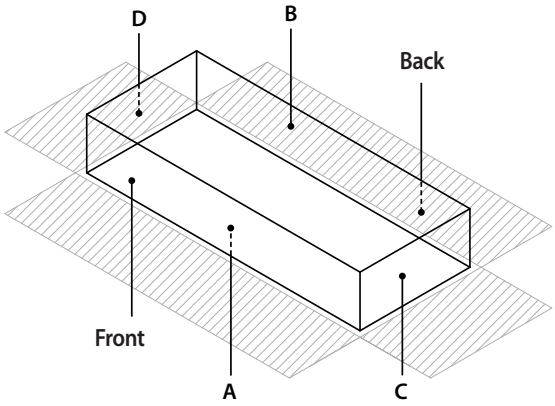
c. "A"&"B" are inspection holes .



- You must have 0.79"(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 7.2~8.2ft(2.2~2.5m) from the ground, if the unit has a duct with a well defined lenght [11.81"(300mm) or more], to avoid fan motor blower contact.
- If you install the cassette or duct type indoor unit on the ceiling with humidity over 80%, you must apply extra 10mm of polyethylene foam or other insulation with similar material on the body of the indoor unit.

Deciding on where to install the indoor unit

Insulation Guide



Thickness: more than 0.39 inch(10 mm)

unit: inch (mm)

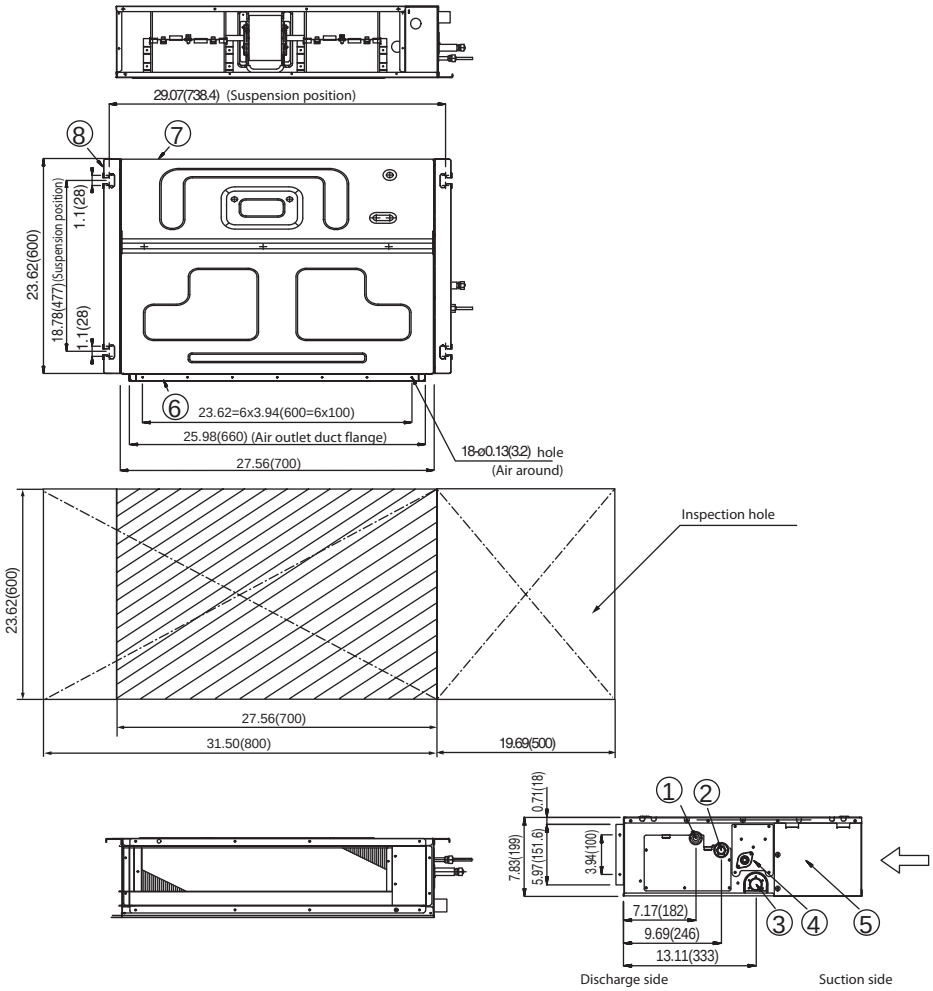
Indoor Unit		A	B	C	D	Front/Back
AC009KNLDCH AC012KNLDCH	27.56x23.62x7.83 (700x600x199)	27.56x23.62 (700x600)	27.56x23.62 (700x600)	23.62x7.83 (600x199)	23.62x7.83 (600x199)	Insulate the front and back side in proper size at the same time when insulating the suction duct and discharge duct.
AC018KNLDCH	35.43x23.62x7.83 (900x600x199)	35.43x23.62 (900x600)	35.43x23.62 (900x600)	23.62x7.83 (600x199)	23.62x7.83 (600x199)	
AC018MNHDCH	33.46x27.56x9.84 (850x700x250)	33.46x27.56 (850x700)	33.46x27.56 (850x700)	27.56x9.84 (700x250)	27.56x9.84 (700x250)	
AC024MNHDCH AC030MNHDCH	47.24x27.56x9.84 (1200x700x250)	47.24x27.56 (1200x700)	47.24x27.56 (1200x700)	27.56x9.84 (700x250)	27.56x9.84 (700x250)	
AC036MNHDCH AC042MNHDCH AC048MNHDCH	51.18x27.56x11.81 (1300x700x300)	51.18x27.56 (1300x700)	51.18x27.56 (1300x700)	27.56x11.81 (700x300)	27.56x11.81 (700x300)	

- **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.**

Drawing of the indoor unit

AC009KNLDCH / AC012KNLDCH

Unit : inch(mm)

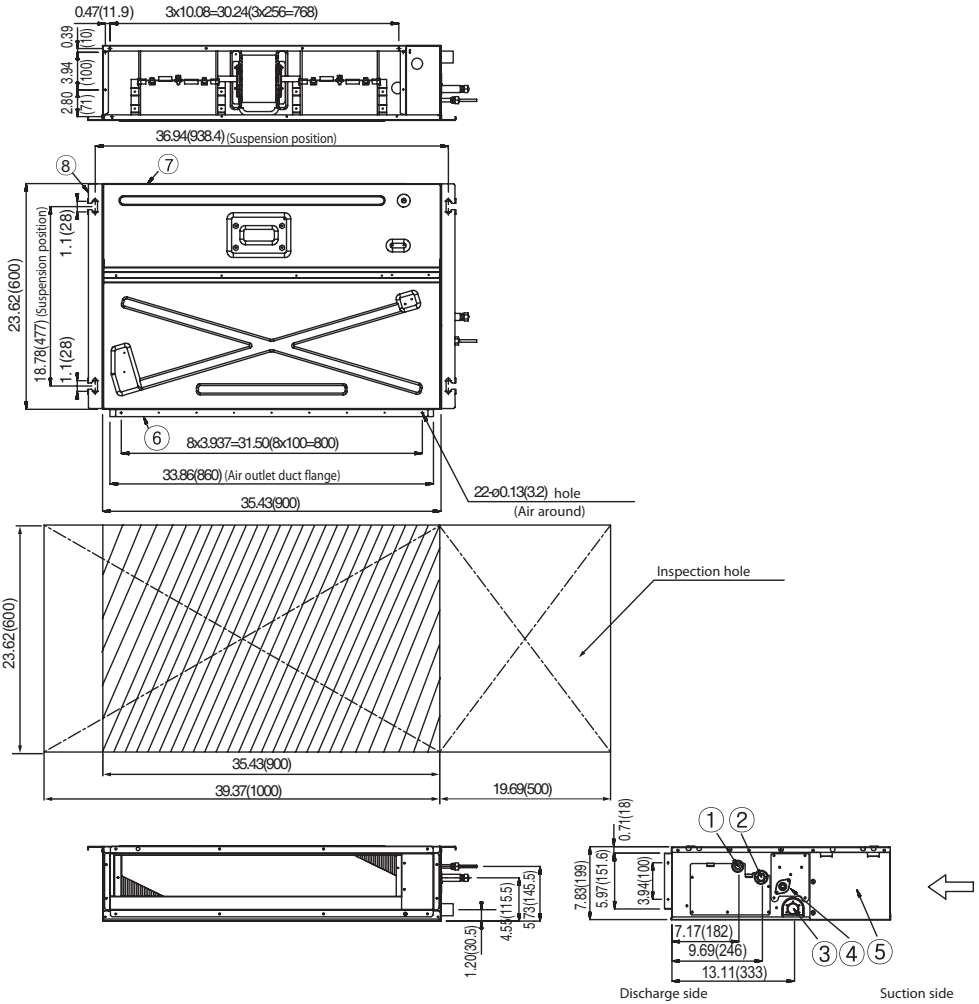


No.	Name	Description
1	Liquid pipe connection	ø1/4"(6.35)
2	Gas pipe connection	ø3/8"(9.52)
3	Drain pipe connection	ODø0.98"(25) IDø0.79"(20)(without drain pump)
4	Drain pipe connection	ODø0.98"(25) IDø0.79"(20)(Using drain pump)
5	Power supply connection	
6	Air discharge flange	
7	Air filter	
8	Hook	M8~M10

Deciding on where to install the indoor unit

AC018KNLDCH

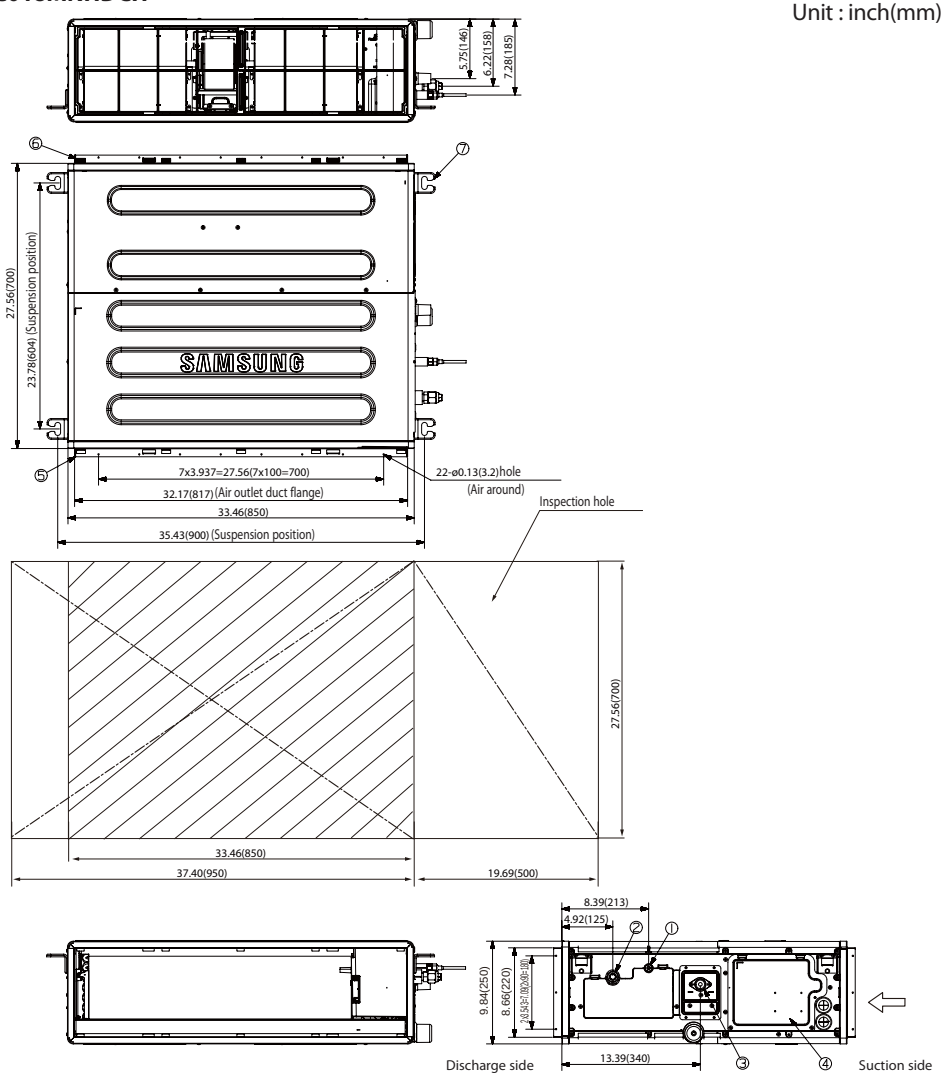
Unit : inch(mm)



No.	Name	Description
1	Liquid pipe connection	ø1/4"(6.35)
2	Gas pipe connection	ø1/2"(12.70)
3	Drain pipe connection	ODø0.98″(25) IDø0.79″(20)(without drain pump)
4	Drain pipe connection	ODø0.98″(25) IDø0.79″(20)(Using drain pump)
5	Power supply connection	
6	Air discharge flange	
7	Air filter	
8	Hook	M8~M10

AC018MNHDCH

Unit : inch(mm)

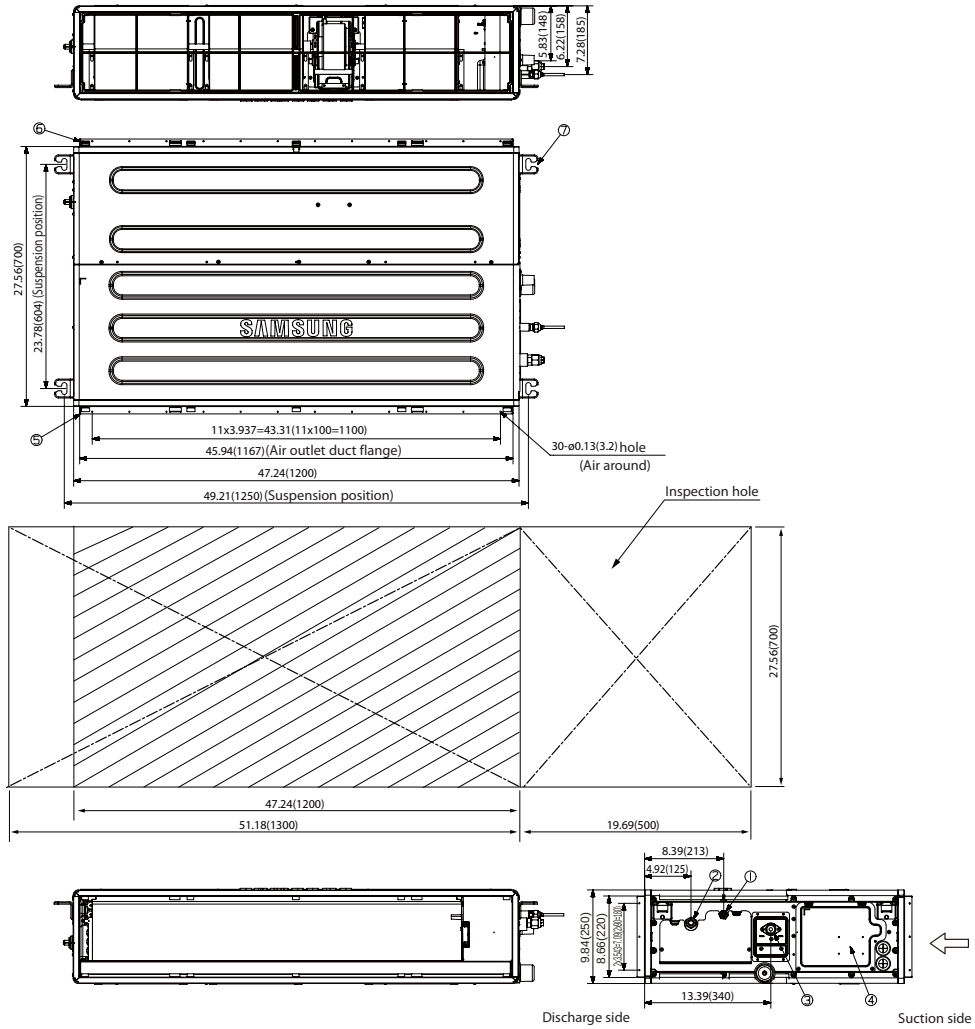


No.	Name	Description
1	Liquid pipe connection	ø1/4"(6.35)
2	Gas pipe connection	ø1/2"(12.70)
3	Drain pipe connection	3/4"(OD 1.05"(26.67))
4	Power supply connection	
5	Air discharge flange	
6	Air filter	
7	Hook	M8~M10

Deciding on where to install the indoor unit

AC024MNHDCH / AC030MNHDCH

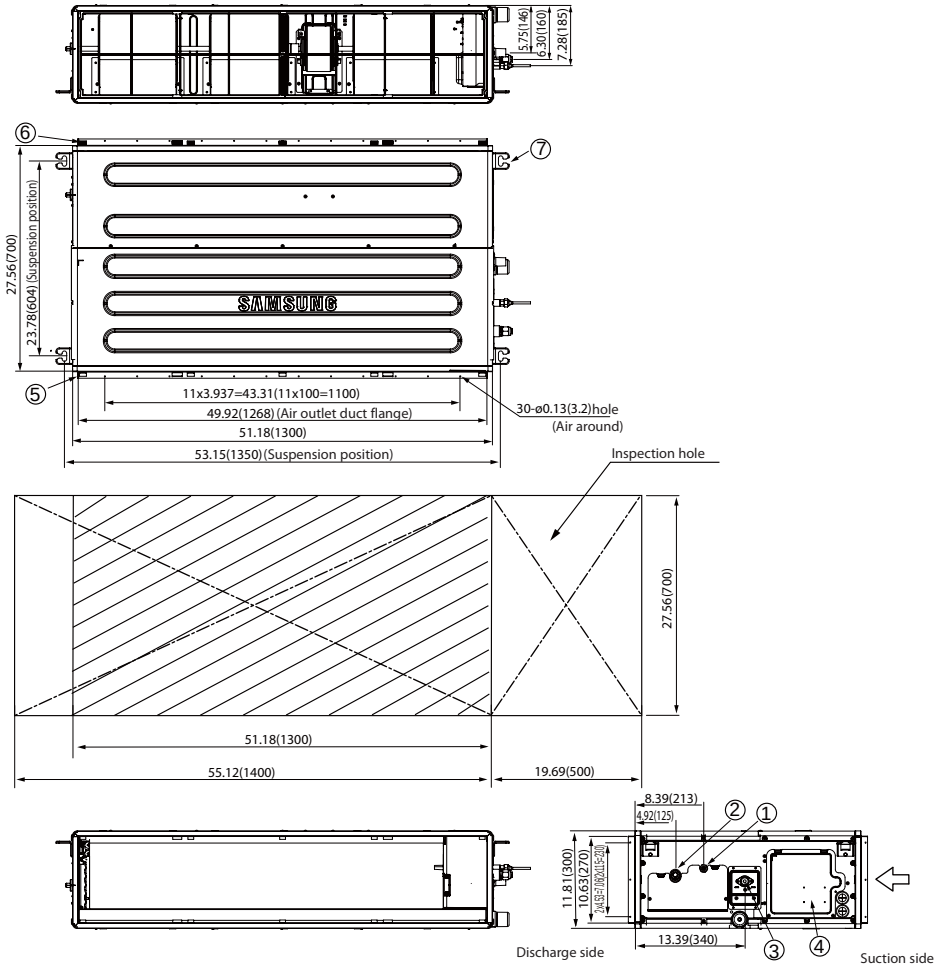
Unit : inch(mm)



No.	Name	Description
1	Liquid pipe connection	✳024✳ : ø1/4"(6.35) ; ✳030✳ : ø3/8"(9.52)
2	Gas pipe connection	ø5/8"(15.88)
3	Drain pipe connection	3/4"(OD 1.05"(26.67))
4	Power supply connection	
5	Air discharge flange	
6	Air filter	
7	Hook	M8~M10

AC036MNHDCH / AC042MNHDCH / AC048MNHDCH

Unit : inch(mm)

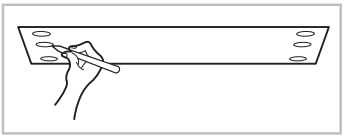


No.	Name	Description
1	Liquid pipe connection	ø3/8"(9.52)
2	Gas pipe connection	ø5/8"(15.88)
3	Drain pipe connection	3/4"(OD 1.05"(26.67))
4	Power supply connection	
5	Air discharge flange	
6	Air filter	
7	Hook	M8~M10

Indoor unit installation

When deciding on the location of the air conditioner with the owner, the following restrictions must be taken into account.

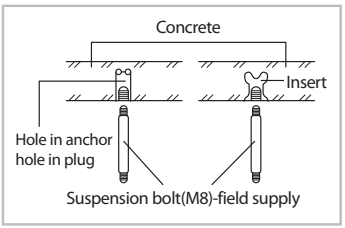
1 Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.



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.

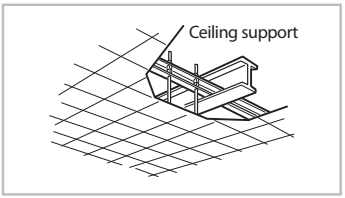
2 Insert bolt anchors. Use existing ceiling supports or construct a suitable support as shown in figure.



3 Install the suspension bolts depending on the ceiling type.

CAUTION

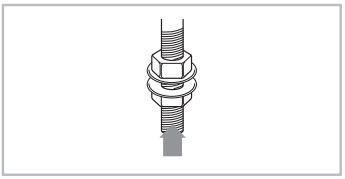
- Ensure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
- If the length of suspension bolt is more than 4.92ft(1.5m), it is required to prevent vibration.
- If this is not possible, create an opening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

NOTE

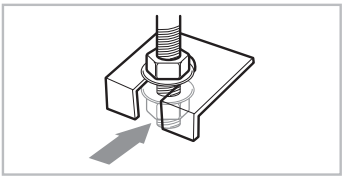
- You must install all the suspension rods.



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

CAUTION

- 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.

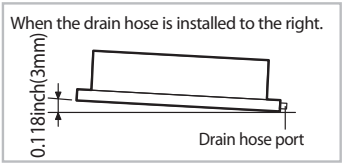


6 Screw the nuts to suspend the unit.

7 Adjust level of the unit by using measurement plate for all 4 sides.

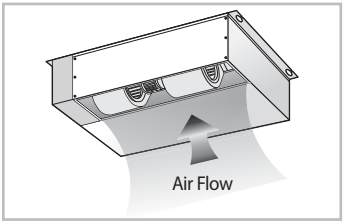
CAUTION

- For proper drainage of condensate, give a 0.118inch(3mm) 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.



CAUTION

•Noise will increase 3~6 dB(A) when the air flow enters from the bottom side (Only for Slim Duct Type product).



Purging the unit

From factory the unit is supplied and set with a pre-charge of nitrogen gas. (insert gas) Therefore, all insert gas must be purged before connecting the assembly piping.

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

RESULT : All inert gas escapes from the indoor unit.

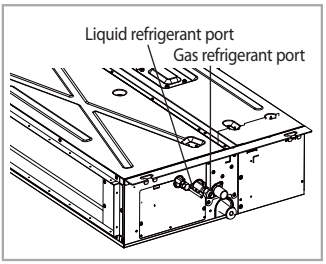
NOTE

- 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.

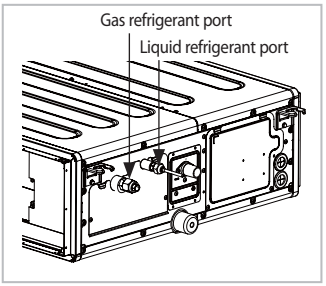
CAUTION

- Connect the indoor and outdoor units using pipes with flared connections(not supplied). For the lines, use insulated, unwelded, degreased and deoxidized copper pipe (Cu DHP type to ISO 1337 or UNI EN 12735-1), suitable for operating pressures of at least 4200kPa and for a burst pressure of at least 20700kPa. Copper pipe for hydro-sanitary applications is completely unsuitable.
- For sizing and limits (height difference, line length, max. bends, refrigerant charge, etc.) see the outdoor unit installation manual.
- All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.

Slim Duct Type



Global Duct Type



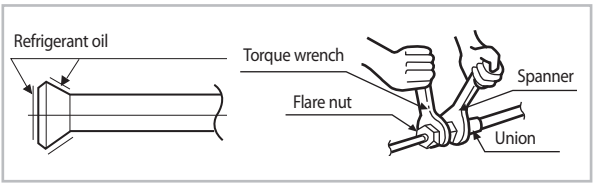
✳The designs and shape are subject to change according to the model.

Connecting the refrigerant pipe

There are two refrigerant pipes of different 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

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.**



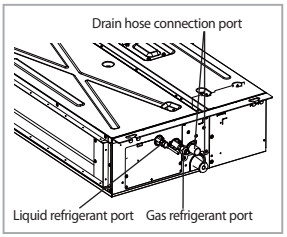
Outer Diameter(D)	Torque [N·m(lbf·ft)]
ø6.35 mm(1/4″)	14~18(10.3~13.3)
ø9.52 mm(3/8″)	34~42(25.1~31.0)
ø12.70 mm(1/2″)	49~61(36.1~45.0)
ø15.88 mm(5/8″)	68~82(50.2~60.5)
ø19.05 mm(3/4″)	100~120(73.8~88.5)

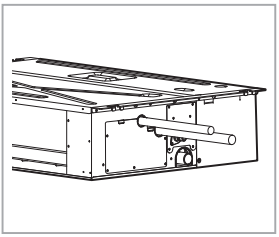
NOTE

- If the pipes must be shortened refer to page 31.

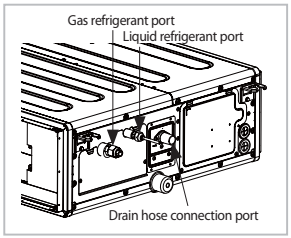
2. **Must use insulator which is thick enough to cover the refrigerant tube to protect the condensate water on the outside of pipe falling onto the floor and the efficiency of the unit will be better.**
3. **Cut off any excess foam insulation.**
4. **Be sure that there must be no crack or wave on the bended area.**
5. **It would be necessary to double the insulation thickness[0.4inch(10mm) or more] to prevent condensation even on the insulator when if the installed area is warm and humid.**
6. **Do not use joints or extensions for the pipes that connect the indoor and outdoor unit. The only permitted connections are those for which the units are designed.**

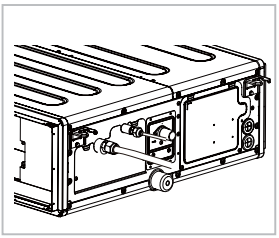
Slim Duct Type





Global Duct Type



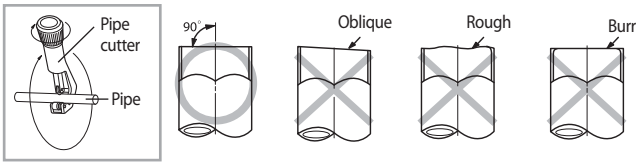


※ The designs and shape are subject to change according to the model.

Cutting/Flaring the pipes

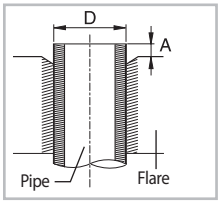
1. **Make sure that you have the required tools available. (pipe cutter, reamer, flaring tool and pipe holder)**

2. **If you wish to shorten the pipes, cut it with a pipe cutter, make sure that the cut edge remains at a 90° angle with the side of the pipe. Refer to the illustrations below for examples of edges cut correctly and incorrectly.**



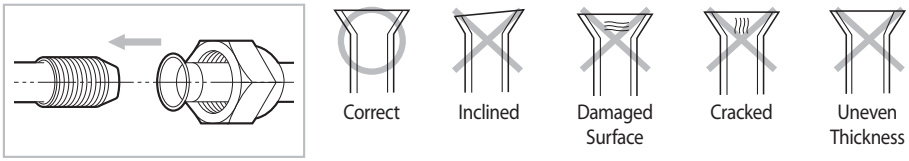
3. **To prevent any gas from leaking out, remove all burrs at the cut edge of the pipe, using a reamer.**

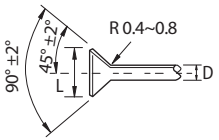
4. **Slide a flare nut on to the pipe and modify the flare.**



Outer Diameter(D)	Depth(A)
ø1/4″(6.35 mm)	0.051inch(1.3 mm)
ø3/8″(9.52 mm)	0.071inch(1.8 mm)
ø1/2″(12.70 mm)	0.079inch(2.0 mm)
ø5/8″(15.88 mm)	0.087inch(2.2 mm)
ø3/4″(19.05 mm)	0.087inch(2.2 mm)

5. **Check that the flaring is correct, referring to the illustrations below for examples of incorrect flaring.**



Outer diameter [D,mm(inch)]	Connection torque [N·m(lbf·ft)]	Flare dimension [L,mm(inch)]	Flare shape (mm)
Ø 6.35(1/4″)	14~18(10.3~13.3)	8.7~9.1(0.34~0.36)	
Ø 9.52(3/8″)	34~42(25.1~31.0)	12.8~13.2(0.50~0.52)	
Ø 12.70(1/2″)	49~61(36.1~45.0)	16.2~16.6(0.64~0.65)	
Ø 15.88(5/8″)	68~82(50.1~60.5)	19.3~19.7(0.76~0.78)	
Ø 19.05(3/4″)	100~120(73.8~88.5)	23.6~24.0(0.93~0.94)	

CAUTION

- If the pipes require brazing ensure that OFN (Oxygen Free Nitrogen) is flowing through the system.
- Nitrogen blowing pressure range is 0.02 ~ 0.05MPa.

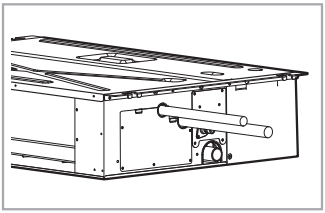
Performing leak test & insulation

Leak test

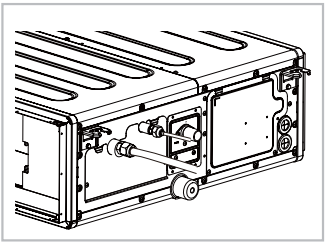
◆ ***LEAK TEST WITH NITROGEN (before opening valves)***
In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R-410A, Licensed and authorized installer shall pressurize the whole system with nitrogen (using a cylinder with pressure reducer) at a pressure above 40 bar (gauge).
◆ ***LEAK TEST WITH R-410A (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 R-410A.

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

Slim Duct Type



Global Duct Type



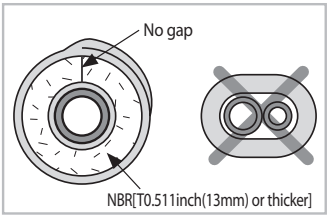
✳ The designs and shape are subject to change according to the model.

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.

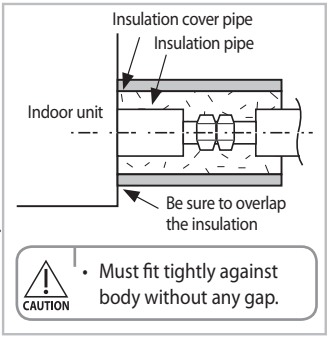


2 **Wind insulating tape around the pipes and drain hose avoiding to compress the insulation too much.**

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 standard 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).

Pipe	Pipe size		Insulation Type (Heating/Cooling)				Remarks
			General [30 °C(86 °F), 85 %]		High humidity [30 °C(86 °F), over 85 %]		
			EPDM, NBR				
	mm	inch	mm	inch	mm	inch	
Liquid pipe	6.35 ~ 9.52	1/4~3/8	9	3/8	9	3/8	Heating resisting temperature over 120°C(248°F)
	12.70 ~ 19.05	1/2~3/4	13	1/2	13	1/2	
Gas pipe	6.35	1/4	13	1/2	19	3/4	
	9.52	3/8	19	3/4	25	1	
	12.70	1/2					
	15.88	5/8					
	19.05	3/4					

◆ 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.

Drainpipe 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 of the base pan.

1 Installing the drain hose should be the shorter, the better.

◆ In order to discharge condensation water, the drain hose should have slope.

◆ Fix the drain hose with Cable-Tie, so that it will not separate from the machine.

◆ While using draining pump, connect the end with draining pump.

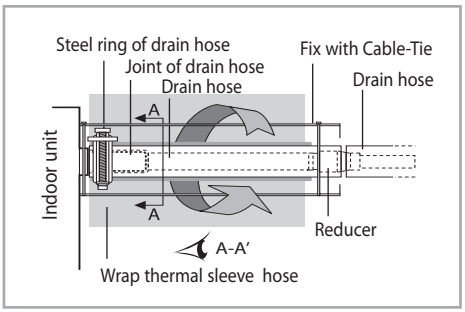
2 Insulate and fix the drain hose according to the figure.

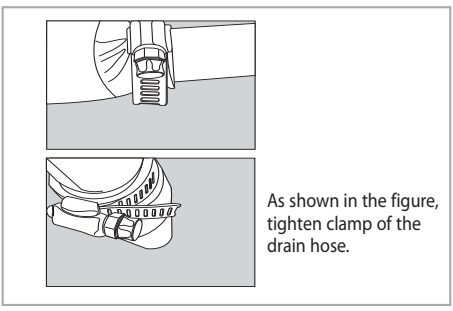
◆ Insert the drain hose to bottom of the outfall of water basin.

◆ Lock steel ring of the drain hose according to the figure.

◆ Wind and wrap clamp and drain hose fully with thermal insulation sponge; fix both ends of external layer with ribbon for thermal insulation.

◆ After being installed, drain hose must be insulated fully by heat insulating material. (To be provided at site.)



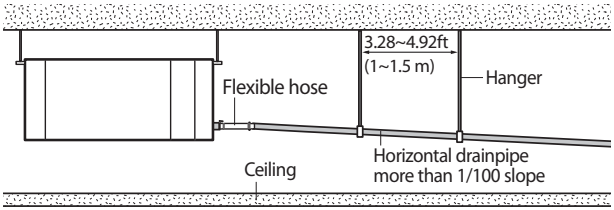


Drainpipe and drain hose installation

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 3.28~4.92ft (1.0~1.5m).
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.

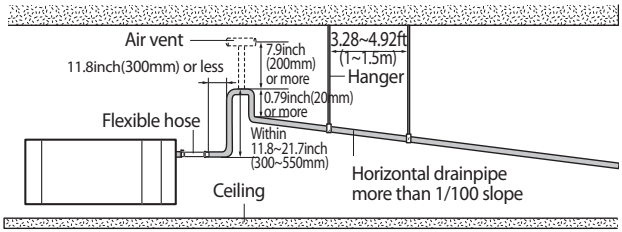


With the drain pump

1. The drain pipe should be installed within 11.8inch(300mm) to 21.7inch(550mm) 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 3.28~4.92ft(1.0~1.5m).
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 drainpipe.

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

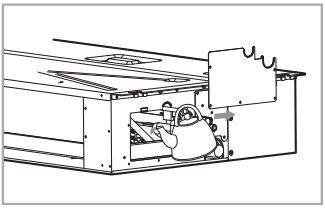


Testing the drainage

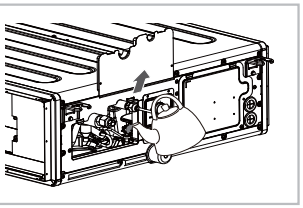
Prepare a little water about 5 liter.

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.

Slim Duct Type



Global Duct Type



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

Connecting the connection cord

CAUTION

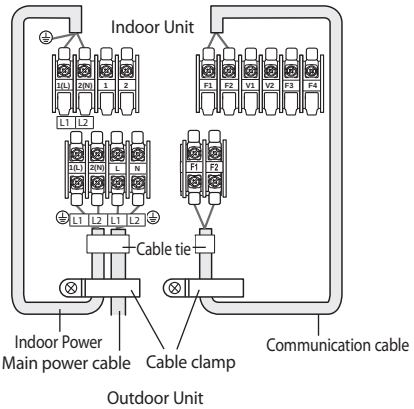
- Always remember to connect the refrigerant pipes before performing the electric connections. When disconnecting the system, always disconnect the electric cables before disconnecting the refrigerant pipes.
- Always remember to connect the air conditioner to the grounding system before performing the electric connections.

The indoor unit is powered by the outdoor unit by means of a H07 RN-F connection cable (or a more power model), with insulation in synthetic rubber and jacket in polychloroprene(neoprene), in accordance with the requirements of standard EN 60335-2-40.

1. **Remove the screw on the electrical component box and remove the cover plate.**
2. **Route the connection cord through the side of the indoor unit and connect the cable to terminals; refer to the figure below.**
3. **Route the other end of the cable to the outdoor unit through the ceiling & the hole on the wall.**
4. **Reassemble the electrical component box cover, carefully tightening the screw.**

Wiring diagram

1 phase



Between Indoor and Outdoor Connection cable Specifications(Common in use)

Indoor Power supply			Communication Cable
Power Supply	Max/Min(V)	Indoor Power cable	
208~230V/60Hz	±10%	0.0039in^2↑,3wires	0.0011~0.0023in^2,2wires

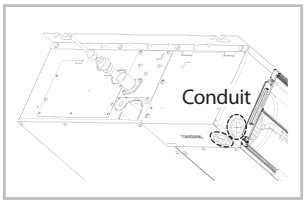
✳ Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F or IEC:60245 IEC 66 / CENELEC: H07RN-F)

✳ Screws on terminal block must not be unscrewed with the torque less than 12 kgf•cm.

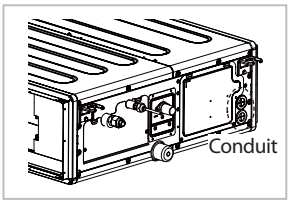
✳ Since it has the external power supply, refer to the outdoor unit installation manual for MAIN POWER.

✳ Be sure to run the power supply cable and the communication cable through electrical conduit as seen in the picture.

Slim Duct Type



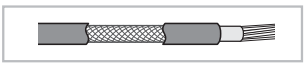
Global Duct Type



CAUTION

- Be sure not to put your finger into the conduit.

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

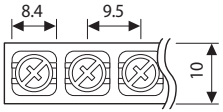


When installing the indoor unit in a computer room, use the double shielded(Tape aluminum / polyester braid + copper)cable of FROHH2R type.

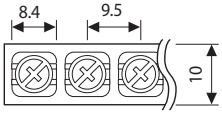
Connecting the connection cord

Terminal Block SPEC (Indoor)

AC POWER : M4 SCREW



COMMUNICATION : M4 SCREW



Tightening Torque		
M4	12.0~18.0 (kgf·cm)	0.86~1.30 (lbf·ft)

Adjusting air flow

Automatic Air-Volume (Only for AC✳✳✳MNHDCH)

When DPM is installed, Automatic Air-Volume function cannot be performed simultaneously for all indoor units. Automatic Air-Volume function must be performed for each indoor unit with the wired remote control attached. With its BLDC motor, you can use smart 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, Using the Automatic Air-Volume function,the volume of exhaust air has been adjusted to the rated volume flow rate automatically.

Performing the Automatic Air-Volume function.

- Check the air conditioning unit stop.

Press the Power button to stop the air conditioner

- Go to Service setting mode with remote controller.

1).Press the Set and ESC buttons at the same time for more than 3 seconds and then a Main menu will be displayed.

2).Press the ∧ / ∨ button to select 8 and then press › button to enter a Sub-menu setting screen.

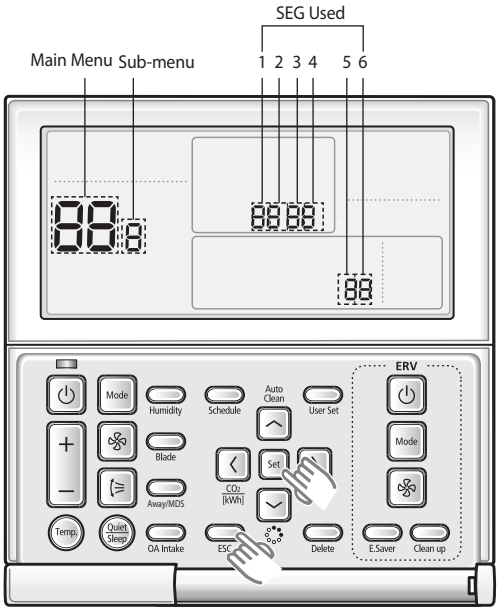
3).Press the ∧ / ∨ button to select 2 and then press › button to enter a automatic air-volume setting screen.

4).Press the ∧ / ∨ button to select 1 to enable automatic air-volume operation.

5). Select mode No. 8.2 , and set to "1".

6). Press the Set button, then the air conditioning unit will start the fan operation for Automatic Air-Volume adjustment.

✻ Do not adjust the dampers during fan operation for Automatic Air-Volume adjustment.



7). Press ESC button to escape setting mode.

(During the automatic air-volume adjustment,[Main Menu] will be displayed → → → repetitively)

8). After 1 to 8 minutes, the air conditioning unit stops operating automatically when Automatic Air-Volume adjustment has been carried out (fan operation icon will be off.)

9). When the air conditioning unit has stopped, check the Mode No. 8.1 is "1" for completion of Automatic Air-Volume.

If the Mode No. 8.1 is "0", Automatic Air-Volume adjustment is fail. Then adjust the fan speed by referring the E. S. P(External Static Pressure) setting table.

Main menu	Sub menu	Functions	SEG used	Default	Range
8	1	Automatic Air-Volume State Return	1	0	0 - OFF (Fail or Disable) 1 - Completion. 2 - Running Automatic Air-Volume.
	2	Automatic Air-Volume Operation	1	0	0 - Disable 1 - Enable

NOTE

- If the coil is not dry, run the unit for 2 hours with fan only to dry the coil.
- The air filter is properly attached into the air passage on the air suction side of the air conditioning unit.
- Adjust the dampers so that each air inlet and outlet exhusts the designed airflow rate.
- If using booster fans(an outdoor air processing unit or ERV via duct), do not use Automatic Air-Volume function.
- If the duct configurations have been changed, automatic air-volume function perform again.

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	AC009KNLDCH	AC012KNLDCH	AC018KNLDCH
Static Pressure (InH2O)	Option code for indoor unit		
0 ≤ SP ≤ 0.01	01C06C-1C6933-271A21-370000	01C06C-1C7968-272328-370000	01C06C-1C7944-27343C-370000
0.01< SP ≤ 0.16	01C06C-1C59CC-251A21-370000	01C06C-1C5AF1-272328-370000	01C06C-1C5978-27343C-370000
0.16 < SP ≤ 0.20	01C06C-1C5AF0-251A21-370000	01C06C-1C5E24-272328-370000	01C06C-1C59AB-27343C-370000
0.20 < SP ≤ 0.24	01C06C-1C5E24-251A21-370000	01C06C-1C5E47-272328-370000	01C06C-1C59DF-27343C-370000

Model	AC018MNHDCH
Static Pressure (InH2O)	Option code for indoor unit
SP = 0.01	01B0EC-1E5411-27343B-374000
0.01 < SP ≤ 0.24	01B0EC-1E54AA-27343B-374000
0.24 < SP ≤ 0.36	01B0EC-1E5933-27343B-374000
0.36 < SP ≤ 0.48	01B0EC-1E59CC-27343B-374000
0.48 < SP ≤ 0.60	01B0EC-1E5E44-27343B-374000

Adjusting air flow

Model	AC024MNHDCH
Static Pressure (InH2O)	Option code for indoor unit
SP = 0.10	01B0EC-1E5407-274750-374020
0.10 < SP ≤ 0.24	01B0EC-1E547B-274750-374020
0.24 < SP ≤ 0.36	01B0EC-1E55D1-274750-374020
0.36 < SP ≤ 0.48	01B0EC-1E5937-274750-374020
0.48 < SP ≤ 0.60	01B0EC-1E599D-274750-374020
0.60 < SP ≤ 0.70	01B0EC-1E5AF3-274750-374020
0.70 < SP ≤ 0.80	01B0EC-1E5E59-274750-374020

Model	AC030MNHDCH	AC036MNHDCH	AC042MNHDCH
Static Pressure (InH2O)	Option code for indoor unit		
0.12 ≤ SP ≤ 0.16	01B0EC-1E54B8-275A64-376020	01B0EC-1E5403-276470-376045	01B0EC-1E5424-277D8C-377045
0.16 < SP ≤ 0.32	01B0EC-1E5920-275A64-376020	01B0EC-1E546A-276470-376045	01B0EC-1E547B-277D8C-377045
0.32 < SP ≤ 0.48	01B0EC-1E5997-275A64-376020	01B0EC-1E55D1-276470-376045	01B0EC-1E55E2-277D8C-377045
0.48 < SP ≤ 0.60	01B0EC-1E5D0E-275A64-376020	01B0EC-1E5926-276470-376045	01B0EC-1E5937-277D8C-377045
0.60 < SP ≤ 0.70	01B0EC-1E5E64-275A64-376020	01B0EC-1E5959-276470-376045	01B0EC-1E596A-277D8C-377045
0.69 < SP ≤ 0.80	01B0EC-1E5ECA-275A64-376020	01B0EC-1E597B-276470-376045	01B0EC-1E598C-277D8C-377045

Model	AC048MNHDCH
Static Pressure (InH2O)	Option code for indoor unit
0.16 ≤ SP ≤ 0.20	01B0EC-1E5468-278CA0-377045
0.20 < SP ≤ 0.32	01B0EC-1E54AC-278CA0-377045
0.32 < SP ≤ 0.48	01B0EC-1E5913-278CA0-377045
0.48 < SP ≤ 0.60	01B0EC-1E5948-278CA0-377045
0.60 < SP ≤ 0.70	01B0EC-1E597B-278CA0-377045
0.70 < SP ≤ 0.80	01B0EC-1E59AE-278CA0-377045

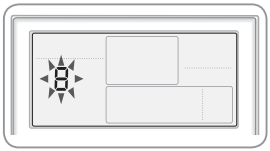
NOTE

- 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.

Easy Tuning

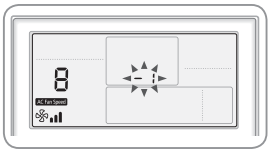
EASY Tuning

If the more cooling and heating airflow rate which set up when installing is wanted, or if the more Silent operation which sets up when installing is wanted, air conditioner is tuned for comfort.
Indoor unit airflow rate for high, mid, low mode increases or decreases for +2 ~ -2 Steps with wired remocon.



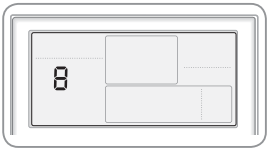
1. Press the User Set button.

▶ (Main Menu) will be displayed, and you can press the **[Λ]/[V]** buttons to select No. 8, which will set the Easy Tuning.



2. Press the [>] button to select airflow step.

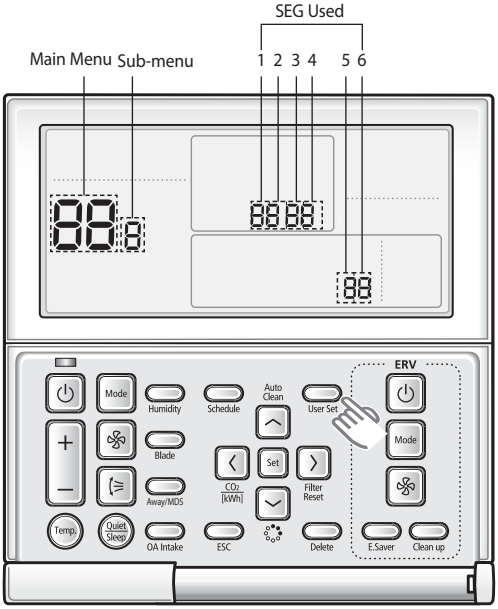
▶ Press the **[Λ]/[V]** buttons to select airflow step(-2,-1,0,1,2) tuning (During the Easy Tuning setting, AC Fan Speed icon will be displayed)



3) Press the Set button to complete the Easy Tuning.

(When the Easy Tuning setting complete, AC Fan Speed icon will be off)

4) Press the ESC button to to exit to normal mode.



Main menu	Sub menu	Functions	SEG used	Default	Range
8	-	Easy Tuning	1,2	0	-2 : -2 Step -1 : -1 Step 0 : No Use 1 : +1 Step 2 : +2 Step

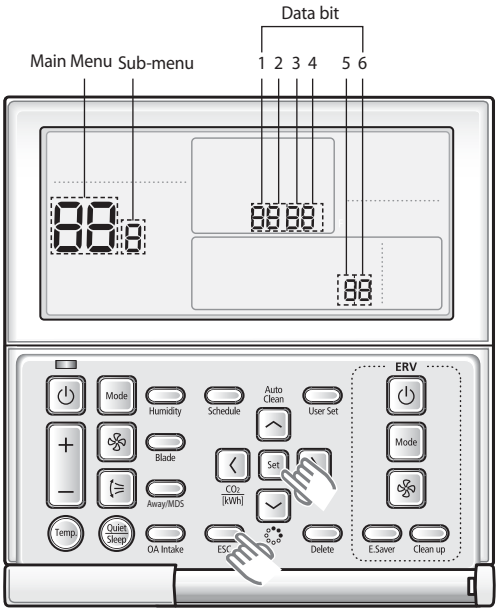
NOTE

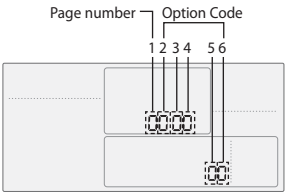
- **Press the ESC button anytime during setup to exit without setting.**
- **According to airflow changed from the Easy Tuning,Air conditioning performance reducing is possible.**

Setting the indoor unit option code

► Setting the option code with wireless remocon is availble if receiver kit is installed. Please use the proper wireless remocon such as MR-EH00U which set 24 digit option code. Following is the instruction of setting option code with wired remocon(MWR-WE10N).

In order to set the indoor unit option code use the wired remote controller and follow the directions below.





SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	✳	✳	✳	✳	✳

Page number

SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	✳	✳	✳	✳	✳

Page number

SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	✳	✳	✳	✳	✳

Page number

SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	✳	✳	✳	✳	✳

Page number

1) **Press the [Set] and [ESC] buttons at the same time for more than 3 seconds and then a Main menu will be displayed.**
2) **Press the [∧] / [∨] button to select 4 and then press [›] button to enter a Sub-menu setting screen.**
3) **Press the [∧] / [∨] button to select 2 and then press [›] button to enter a Indoor unit option code setting screen.**

NOTE
- **The first digit represents the page number and the remaining five digits are option codes.**
- **The option code which is currently setting will flicker.**

4) **Press the [∧] / [∨] button to set the option code in order. Press [›] button to go to the next page.**
5) **Press the [Set] button to save and complete the option setting.**
6) **Press the [ESC] button to exit to normal mode.**

NOTE
- **Press the [ESC] button anytime during setup to exit without setting.**

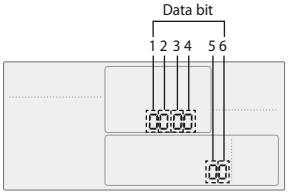
CAUTION
- **Option code will not be applied if you don't press the [Set]**
- **Setting indoor unit option code is only possible in Master wired remote controller. You can only check the indoor unit option code in Slave wired remote controller.**
- **Setting indoor unit option code is possible when one indoor unit is connected. If more than 2 indoor units are connected, you can only check the Master indoor unit option code.**

Setting an indoor unit address and installation option

Set the indoor unit address and installation option with remote controller option. Set the each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time. You need to set twice when setting indoor unit address and installation option.

Setting an indoor unit address

1) Press the Set and ESC buttons at the same time for more than 3 seconds and then a Main menu will be displayed.
2) Press the ∧ / ∨ button to select 4 and then press › button to enter a Sub-menu setting screen.
3) Press the ∧ / ∨ button to select 1 and then press › button to enter a Indoor Address setting screen.



NOTE
- The Main/RMC Address which is currently setting will flicker.
- Data bit 1 and 2 present Indoor unit main address checking
- Data bit 3 and 4 present Indoor unit main address setting(outdoor unit reset is needed to set).
- Data bit 5 and 6 present Indoor unit RMC address setting/checking.

4) Press the ∧ / ∨ button to set the Indoor unit Main/RMC Address.
5) Press the Set button to save and complete the option setting.
6) Press the ESC button to exit to normal mode.

NOTE
- Press the ESC button anytime during setup to exit without setting.
- Address will not be applied if you don't press Set button.
- Setting Main/RMC Address of an Indoor unit is available only with a master wired remote controller.

Setting an indoor unit address and installation option

Setting an indoor unit installation option

In order to check and set the indoor unit installation option code use the wired remote controller and follow the directions below.

1) **Press the Set and ESC buttons at the same time for more than 3 seconds and then a Main menu will be displayed.**
2) **Press the ∧ / ∨ button to select 4 and then press > button to enter a Sub-menu setting screen.**
3) **Press the ∧ / ∨ button to select 3 and then press > button to enter a Indoor unit installation option code setting screen.**

NOTE
- **The first digit represents the page number and the remaining five digits are installation option.**
- **The total option codes are 24 digits. You can set six digits at a time and it is distinguished by page number (0, 1, 2, 3).**

4) **Press the ∧ / ∨ button to set the installation option code in order. Press > button to go to the next page.**

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	RESERVED	Exterior temperature sensor	Central control	RESERVED
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	Drain pump	Use of Hot Coil	Use of Heater	Controller variables for auxiliary heater	RESERVED
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	External control	External control output	S-Plasma ion	Buzzer	Number of hours using filter
SEG19	SEG20	SEG21	SEG22	SEG23	-
3	Individual control of a remote controller	Heating setting compensation	RESERVED	Away Set OFF Timer	-

CAUTION
SEG8 of the installation option code should be "2" when PCB is changed.
(Since the indoor unit is drained by a drain pump,installation option code setting is needed.)

Option No. : 02XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3	SEG4		SEG5		SEG6
Explanation	PAGE		MODE			Use of external temperature sensor		Use of central control		
Indication and Details	Indication	Details	Indication	Details	RESERVED	Indication	Details	Indication	Details	RESERVED
	0		2			0	Disuse	0	Disuse	
						1	Use	1	Use	

Option	SEG7		SEG8		SEG9		SEG10		SEG11			SEG12
Explanation	PAGE		Use of drain pump		Use of Hot Coil		Use of Electric Heater		Controller variables for auxiliary heater			
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details		RESERVED
	1		0	Disuse	0	Disuse	0	Disuse	0	No temperature offset	No delay	
									1	No temperature offset	10 minutes	
									2	No temperature offset	20 minutes	
			1	Use	1	Use	1	Use	3	1.5°C (2.7°F)	No delay	
									4	1.5°C (2.7°F)	10 minutes	
									5	1.5°C (2.7°F)	20 minutes	
									6	3°C (5.4°F)	No delay	
									7	3°C (5.4°F)	10 minutes	
									8	3°C (5.4°F)	20 minutes	
			2	Use + 3minute delay	-	-	2	Use (Heater time delay)	9	4.5°C (8.1°F)	No delay	
									A	4.5°C (8.1°F)	10 minutes	
									B	4.5°C (8.1°F)	20 minutes	
									C	6°C (10.8°F)	No delay	
									D	6°C (10.8°F)	10 minutes	
									E	6°C (10.8°F)	20 minutes	

Option	SEG13		SEG14			SEG15		SEG16		SEG17		SEG18	
Explanation	PAGE		Use of external control			Setting the output of external control		S-Plasma ion		Buzzer control		Number of hours using filter	
Indication and Details	Indication	Details	Indication	Details		Indication	Details	Indication	Details	Indication	Details	Indication	Details
	2		0	Disuse	Slave (disable Level control*)	0	Thermo on	0	Disuse	0	Use of buzzer	2	1000 Hour
			1	On/Off control									2000 Hour
			2	Off control									
			3	Window on/ off control									
			4	Disuse	Master (enable Level control*)	1	Operation on	1	Use	1	Non use of buzzer	6	2000 Hour
			5	On/Off control									
			6	Off control									
			7	Window on/ off control									

Option	SEG19		SEG20		SEG21		SEG22	SEG23		-
Explanation	PAGE		control of a remote controller		Heating setting compensation			Away Set OFF Timer		-
Indication and Details	Indication	Details	Indication	Details	Indication	Details	RESERVED	Indication	Details	-
	3		0 or 1	Indoor 1	0	Disuse		0 or 1	Auto Set OFF 30Min.	-
			2	Indoor 2	1	2°C (3.6°F)		2	Auto Set OFF 60Min.	
			3	Indoor 3	2	5°C (9°F)		3	Auto Set OFF 120Min.	
			4	Indoor 4				4	Auto Set OFF 180Min.	

5. Press the Set button to save and complete the option setting.
6. Press the ESC button to exit to normal mode.

NOTE

- Press ESC button anytime during setup to exit without setting.
- Option code will not be applied if you don't press Set button.
- Setting Installation option code is available only with a master wired remote controller.
- Setting Installation option code is available when there is one on one connection between a wired remote controller and an indoor unit.

Troubleshooting

- If an error occurs during the operation, one or more 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 on the receiver & display unit

Abnormal conditions	Indicators					Remarks
	Concealed Type					
	Green	Red				
	Standard Type					
Power reset	◑	X	X	X	X	
Error of temperature sensor in the indoor unit (Open/Short)	X	X	◑	X	X	
Error of heat exchanger sensor in the indoor unit	◑	X	◑	X	X	
Error of the outdoor temperature sensor Error of the condensor temperature sensor Error of the discharge temperature sensor	◑	X	X	◑	X	
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking. (Communication error for more than 2 minutes)	X	X	◑	◑	X	1. Indoor unit error (Display is unrelated with operation) 2. Outdoor unit error (Display is unrelated with operation)

Abnormal conditions	Indicators					Remarks
	Concealed Type					
	Green	Red				
	Standard Type					
Communication error between indoor units	◑	X	X	X	◑	
1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. 2'nd detection of high temperature cond 4. 2'nd detection of high temperature discharge 5. Error of reverse phase 6. Compressor down due to 6th detection of freezing	X	X	◑	◑	◑	
Clogging of outdoor's service valve	◑	X	X	◑	◑	
Detection of the float switch	X	X	X	◑	◑	
Error of setting option switches for optional accessories	X	X	◑	X	◑	
Error of EEPROM or OPTION SETTING	◑	◑	◑	◑	◑	

● On ◑ Flickering X Off

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

Troubleshooting

Wired remote control

◆ If an error occurs, TEST is displayed on the wired remote control.
If you would like to see an error code, press the Test button.

Display	Explanation
A01	Indoor unit Communication Error
A02	Indoor/Outdoor unit Communication Time Out Error
	60 Packet Over data
203	Communication Error between Outdoor Main and Inverter Micom (Occurred after 1 minute detection in Main and Inverter)
A28	Indoor Unit Eva in Sensor Separation
A53	Indoor Float S/W 2nd Detection
460	Outdoor unit - indoor unit communication wire miss connection (Connected to Power terminal)
554	Outdoor unit refrigerant Full leakage (Gas leak)
458	Outdoor Fan 1 Error
475	Outdoor Fan 2 Error
461	[Inverter] Compressor starting error
462	Primary Current Over Trip error
464	[Inverter] DC PEAK error(O.C)
467	[Inverter] Compressor Rotation error
468	[Inverter] Current Sensor error
469	[Inverter] DC LINK Sensor error
471	[Inverter] EEPROM Read/Write Error
474	[Inverter] Heatsink temperature over Error
556	Outdoor unit Capacity Setup option error
601	Communication error between Indoor unit and wired remote control
602	Communication error between Master and Slave wired remote control
606	COM1/COM2 Cross-installed error
ER	Error of setting option for wired remote control COM2
A23	Error on EVA OUT sensor of indoor unit (Short or Open)
A24	Error on Discharge sensor of indoor unit (Short or Open)
A54	Indoor unit Fan Error
A51	Open error of EEV in indoor unit(2nd)
A52	Close error of EEV in indoor unit(2nd)
A28	Close error of electoronic expansion valve in indoor unit(2nd)
A29	Breakaway of Indoor unit Evaporator_out Sensor
241	COND_MID or COND OUT Sensor of Outdoor Unit breakaway Error

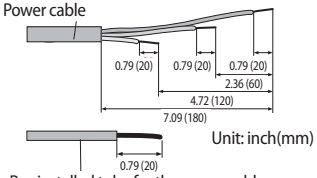
Display	Explanation
554	Gas leak detected
559	Indoor Unit operating stop due to detect unknown error in Outdoor Unit
403	Compressor down due to freeze protection control
301	High Pressure SENSOR breakaway ERROR
306	Low Pressure SENSOR breakaway ERROR
428	COMP down by Compression Ratio control Error 1
413	Outdoor SUMP DOWN_1 Protection Control
410	COMP down due to Low PressureSensor Protection Control 1
180	MCU SOL Valve cooling/heating opening 1st at the same time
181	MCU SOL Valve cooling/heating opening 1st at the same time
101	Outdoor Unit Communication Error
102	Outdoor Unit -> communication error to Indoor Unit
202	System Down (All Indoor unit Short) due to Communication Error
108	Error due to repeated communication address
153	Error on float switch (2nd detection)
162	Outdoor unit EEPROM error
163	EEPROM OPTION SETTING ERROR
198	Error on thermal fuse of indoor unit (Open)

Extending the power cable

1. Prepare the following tools.

Tools	Crimping pliers	Connection sleeve	Insulation tape	Contraction tube
Spec	MH-14	20xØ0.26 inch(6.5 mm) (HxOD)	Width 0.75 inch(19 mm)	70xØ0.31 inch(8.0 mm) (LxOD)
Shape				

2. As shown in the figure, peel off the shields from the rubber and wire of the power cable.
   - Peel off 0.79 inch(20 mm) of cable shields from the pre-installed tube.



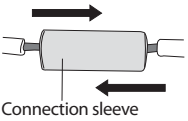
CAUTION

- For information about the power cable specifications for indoor and outdoor units, refer to the installation manual.
- After peeling off cable wires from the pre-installed tube, insert a contraction tube.

3. Insert both sides of core wire of the power cable into the connection sleeve.

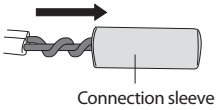
► **Method 1**

Push the core wire into the sleeve from both sides.

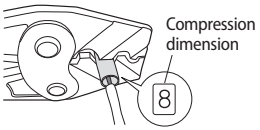


► **Method 2**

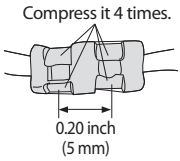
Twist the wire cores together and push it into the sleeve.



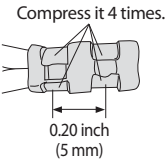
4. Using a crimping tool, compress the two points and flip it over and compress another two points in the same location.
   - The compression dimension should be 0.31 inch (8.0 mm).
   - After compressing it, pull both sides of the wire to make sure it is firmly pressed.



► **Method 1**

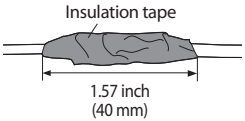


► **Method 2**

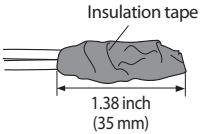


5. Wrap it with the insulation tape twice or more and position your contraction tube in the middle of the insulation tape. Three or more layers of insulation are required.

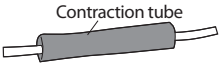
▶ **Method 1**



▶ **Method 2**



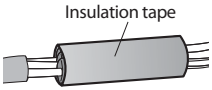
6. Apply heat to the contraction tube to contract it.



7. After tube contraction work is completed, wrap it with the insulation tape to finish.

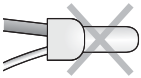
CAUTION

- Make sure that the connection parts are not exposed to outside.
- Be sure to use insulation tape and a contraction tube made of approved reinforced insulating materials that have the same level of withstand voltage with the power cable. (Comply with the local regulations on extensions.)



WARNING

- In case of extending the electric wire, please DO NOT use a round-shaped Pressing socket.
  - Incomplete wire connections can cause electric shock or a fire.



Memo

IMPORTANT

- This product has been designed and manufactured to meet ENERGY STAR criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow the manufacturer's refrigerant charging and air flow instructions. **Failure to confirm proper charge and airflow may reduce energy efficiency and shorten equipment life.**

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