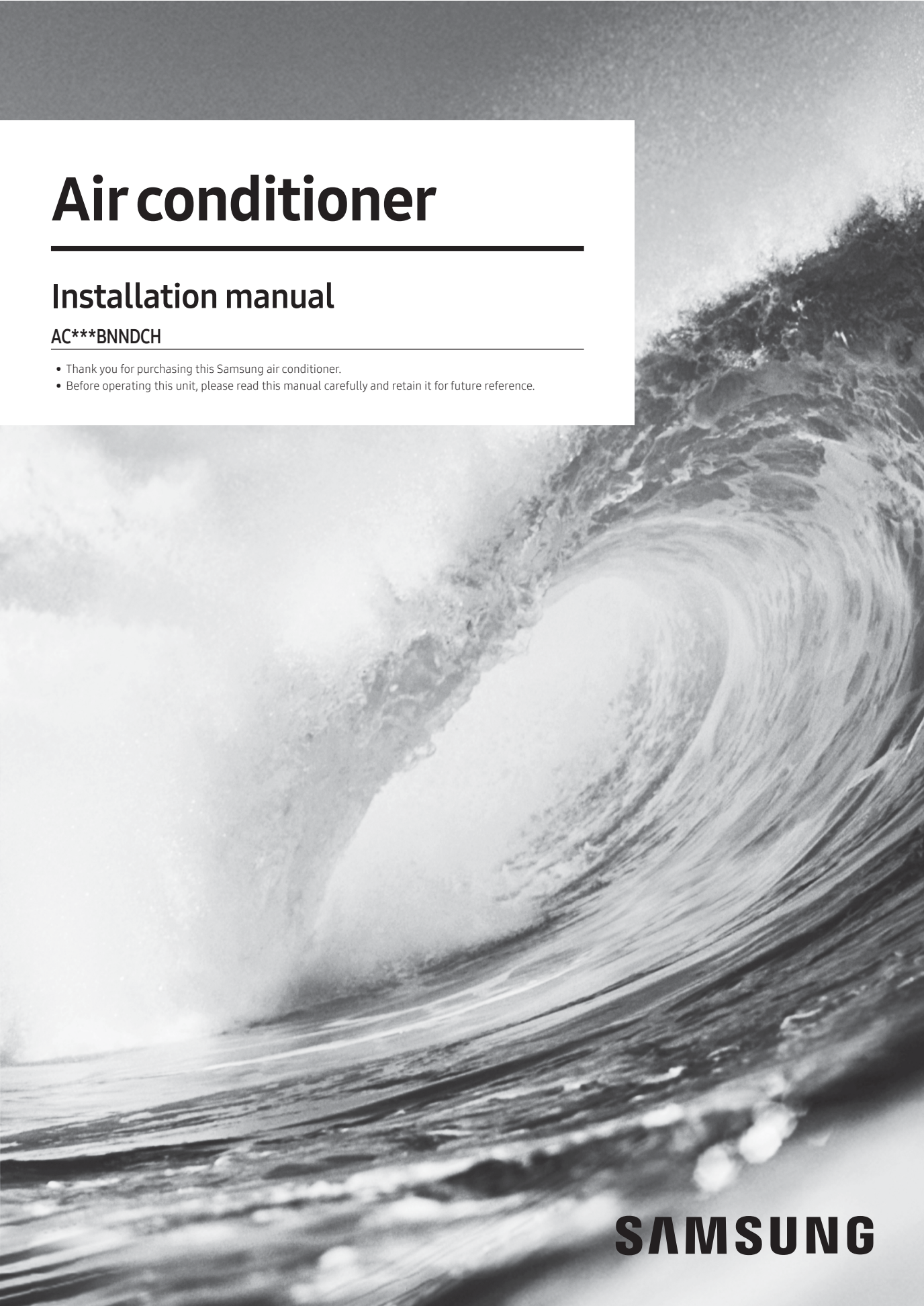
Air conditioner

Installation manual

AC***BNNDCH

- Thank you for purchasing this Samsung air conditioner.
- Before operating this unit, please read this manual carefully and retain it for future reference.



SAMSUNG

Contents

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.

Safety Information

California Proposition 65 Warning (US)

⚠ WARNING

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

⚠ 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.
- 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

⚠ WARNING

- 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.

Safety Information

- 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 centres or returned to the retailer so that it can be disposed of correctly and safely.
- Wear protective equipment (such as safety gloves, goggles, and headgear) during installation and maintenance works. Installation/repair technicians may be injured if protective equipment is not properly equipped.
- This unit is a partial unit air conditioner, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.
- 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.

Installing the unit

⚠ WARNING

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 must be installed in compliance with the space specifications presented in the installation manual in order to ensure accessibility from both sides and allow repairs or maintenance operations to be carried out.
  The unit's components must be accessible and easy to disassemble without endangering people and objects.
  For this reason, where it is not observed as indicated into the Installation Manual, the cost necessary to reach and repair the unit (in safety, as required by current regulations in force) with slings, trucks, scaffolding or any other means of elevation won't be considered in-warranty and charged to end user.
- If any gas or impurities, except R-410A refrigerant, come into the refrigerant pipe, serious problem may occur and it may cause injury.
  Use the supplied accessories, specified components and tools for the installation.
  - Do not use the pipe and the installation product used for the R-22 refrigerant.
  - Failure to use the specified components can cause product fall down, water leakage, electrical shock, and fire. (The pipe and flare components used for R-22 refrigerant must not be used)

Power supply line, fuse or circuit breaker

⚠ WARNING

- 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 Step 13 Optional: 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 (3.28 ft) 1 m away from the electric appliance.

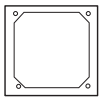
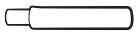
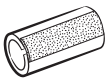
Install the indoor unit away from lighting apparatus using the ballast.

- If you use the wireless remote control, reception error may occur due to the ballast of the lighting apparatus.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Installation Procedure

Step 1 Checking and preparing accessories

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

Pattern sheet (1)	Drain hose (1)
	
Insulation pipe (Liquid side1, gas side1)	Insulation drain hose (1)
	
User's manual (1)	Installation manual (1)
	
Conduit bracket (1)	Reducer (1)
	
Clamp (1)	Cable-tie (6)
	

Step 2 Choosing the installation location

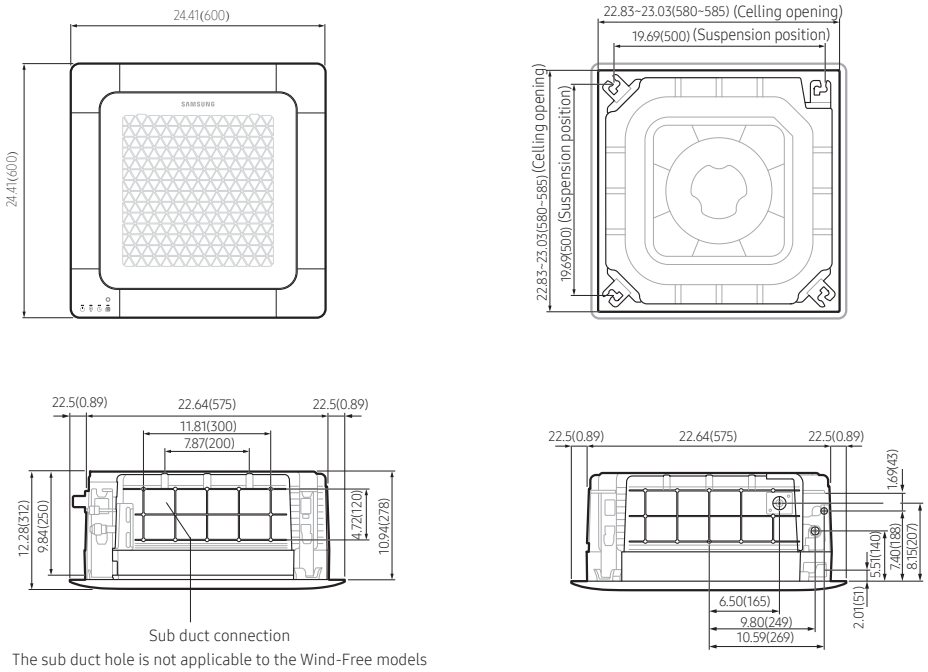
Installation location requirements

- 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.
- Before installing the indoor unit, be sure to check whether the chosen location is well-drained.
- The indoor unit must be installed such that it is beyond public access and is not touchable by users.

Do not install the air conditioner in following places.

- A location where there is mineral oil or arsenic acid. Resin, flame, or accessories may drop or water may leak. The heat exchanger capacity may decrease or the air conditioner may be out of order.
- A place where corrosive gas such as sulphuric acid gas generates from vent pipes or air outlets.
- The copper pipe or connection pipe may corrode and refrigerant may leak.
- A place where machines may generate electromagnetic waves. The air conditioner's control system may not operate normally.
- The place where there is a danger of existing combustible gas, carbon fibre or flammable dust.
- The place where thinner or gasoline is handled. Gas may leak and it may cause fire.

Unit:inch(mm)

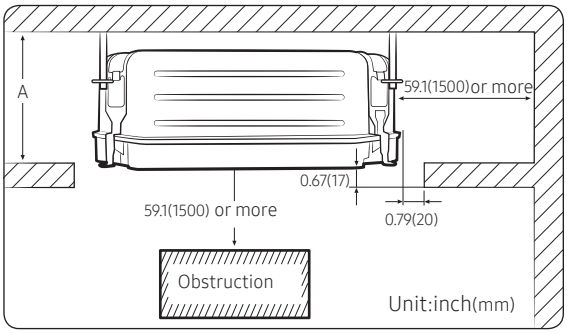


The sub duct hole is not applicable to the Wind-Free models

Model		AC009BNNDCH	AC012BNNDCH	AC018BNNDCH
Net dimension (W × D × H)	inch(mm)	22.64X22.64X9.84 (575X575X250)		
Liquid pipe connection	inch(mm)	Ø1/4(6.35)		
Gas pipe connection	inch(mm)	Ø3/8(9.52)		Ø1/2(12.70)
Drain hose connection	inch(mm)	3/4 inch [OD 1.05 inch (26.67 mm)]		

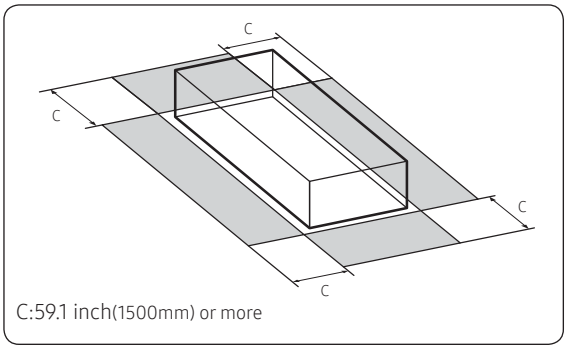
Installation Procedure

Spacing requirements



Model	AC009BNNDCH AC012BNNDCH AC018BNNDCH
A	11.69(297)
Net dimension	22.64X9.84X22.64 (575X250X575)

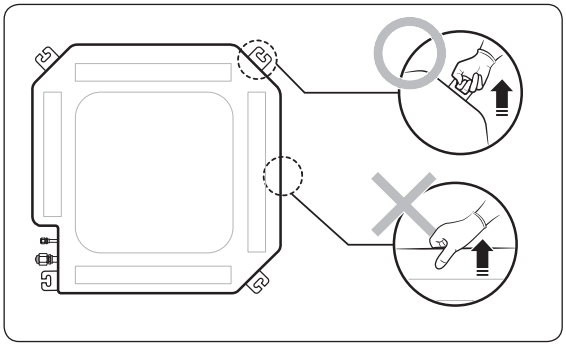
Unit:inch(mm)



C:59.1 inch(1500mm) or more

⚠ CAUTION

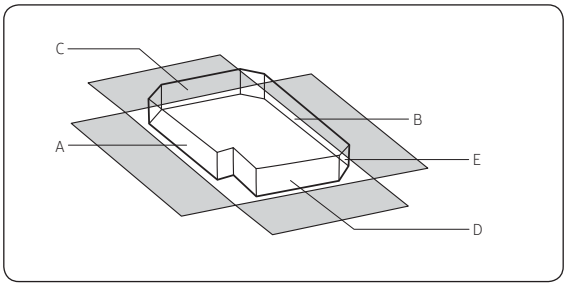
- The indoor unit must be installed according to the specified distances in order to permit accessibility from each side, to guarantee correct operation, maintenance, and repair of the unit. The components of the indoor unit must be reachable and removable under safe conditions for people and the unit.
- Do not hold the discharge air outlets, drain connection, or refrigerant pipes while carrying the indoor unit to avoid possible unit damage. Carry the unit by holding the corner hanger plates.



Step 3 Optional: Insulating the body of the indoor unit

If you install a cassette type indoor unit on the ceiling when temperature is over 80.6 °F(27 °C) and humidity is over 80%, you must apply an extra 0.39 inch(10 mm) thick polyethylene insulation or a similar type of insulation to the body of the indoor unit.

Cut away the part where pipes are pulled out for the insulating work.



Insulate the end of the pipe and some curved area by using separate insulator.

NOTE

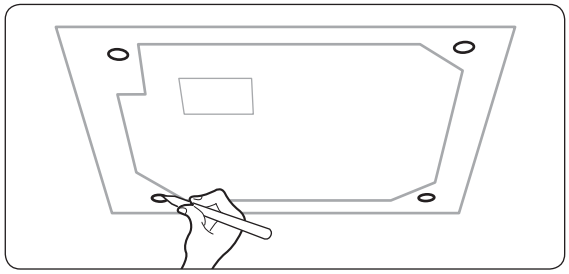
- A: Reference for the outer circumference of the unit (When insulating the body of the indoor unit, use A as the reference for its outer circumference.)

A	B	C	D	E
15.75X7.48 (400X190)	15.75X7.48 (400X190)	15.75X7.48 (400X190)	15.75X7.48 (400X190)	21.65X21.65 (550X550)

Unit:inch (mm)

Step 4 Installing the indoor unit

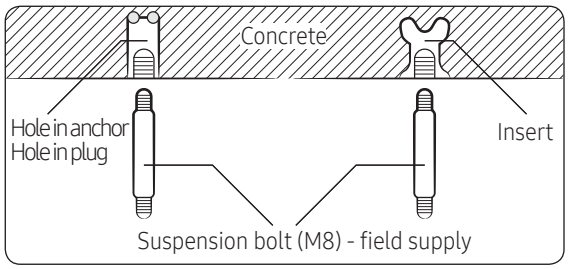
1 Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.



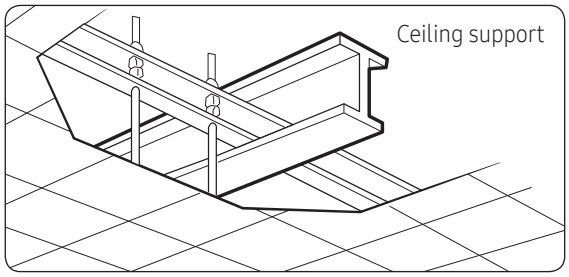
NOTE

- 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, be sure to 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

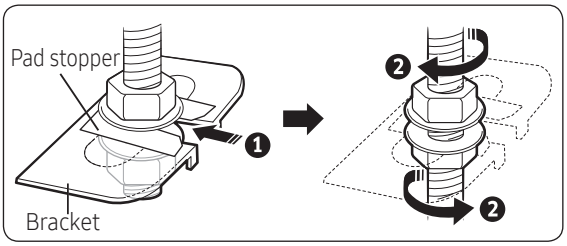
- Make sure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
- If the length of the suspension bolt is more than 4.9 ft (1.5 m), you are required to prevent vibration.

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

⚠ CAUTION

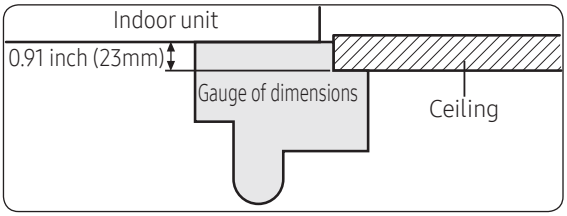
- You must install all of the suspension rods.
- It is important to leave sufficient space in the false ceiling to allow access for maintenance or repairs to the drainage pipe connection, the refrigerant pipe connection, or to remove the unit if necessary.

5 Hang the indoor unit to the suspension bolts between two nuts. Cut a pad stopper and place it on the suspension bolts to hold the washer. Remove the stopper and screw the nuts to fix the unit.



6 Adjust the unit to the appropriate position, taking into account the installation area for the front panel.

- Place the pattern sheet on the indoor unit.
- Adjust the space between the ceiling and the indoor unit by using the included dimension gauge.
- Fix the indoor unit securely after adjusting the level of the unit by using a leveller.
- Remove the pattern sheet, connect the other cables. and install the front panel.

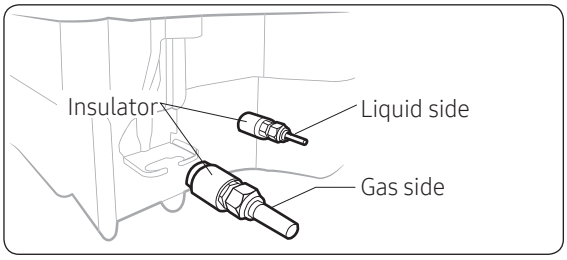


Installation Procedure

Step 5 Purging inert gas from the indoor unit

The indoor unit comes with nitrogen gas (inert gas) charged at the factory. Therefore, all inert gas must be purged before connecting the assembly piping.

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



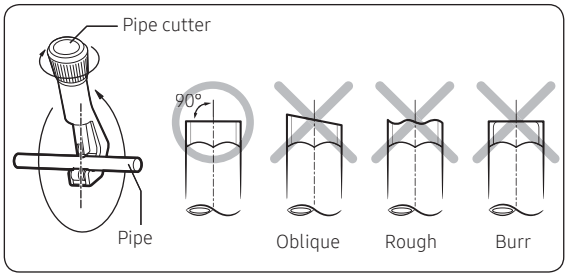
NOTE

- 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.

Step 6 Cutting and flaring the pipes

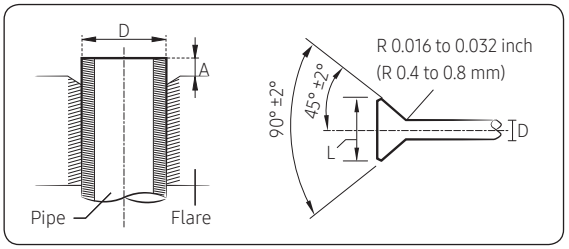
1 Make sure that you have the required tools available: pipe cutter, reamer, flaring tool, and pipe holder.

2 If you wish to shorten the pipes, cut them with a pipe cutter, ensuring that the cut edge remains at a 90° angle to 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.

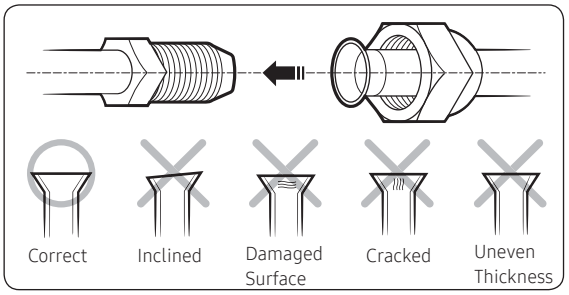
4 Slide a flare nut on to the pipe and flare the pipe.



Outer Diameter (D)	Depth (A)	Flare dimension (L)
Ø1/4 (6.35)	0.051 (1.3)	0.34~0.36 (8.7~9.1)
Ø3/8 (9.52)	0.071 (1.8)	0.50~0.52 (12.8~13.2)
Ø1/2 (12.70)	0.079 (2.0)	0.64~0.65 (16.2~16.6)
Ø5/8 (15.88)	0.087 (2.2)	0.76~0.78 (19.3~19.7)

Unit:inch(mm)

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

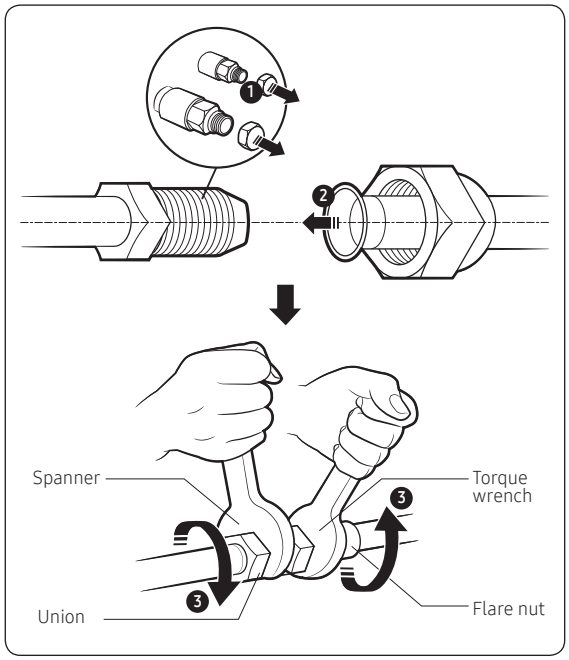


Step 7 Connecting the assembly pipes to the refrigerant pipes

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 and has no dust.

1 Remove the pinch pipes and connect the assembly pipes. First tighten the flare nuts manually and then with a torque wrench and a spanner applying the following torque.



Outer Diameter		Torque	
mm	inch	N•m	lbf.ft
Ø6.35	1/4	14 to 18	10.3 to 13.3
Ø9.52	3/8	34 to 42	25.1 to 31.0
Ø12.70	1/2	49 to 61	36.1 to 45.0
Ø15.88	5/8	68 to 82	50.2 to 60.5

(1 N•m=10 kgf•cm)

NOTE

- If the pipes must be shortened, see **Step 6 Cutting and flaring the pipes** on page **10**.

2 Use insulation that is thick enough to cover the refrigerant pipe to prevent condensate water on the outside of pipe and to ensure system efficiency. Condensation can drip onto the floor causing property damage or a slip hazard.

3 Cut off any excess foam insulation.

4 Make sure that the bent sections of pipe are not kinked or cracked.

5 It is necessary to double the insulation thickness (0.39 inch or more,10 mm or more) to prevent condensation even on the insulator when if the installed area is warm and humid.

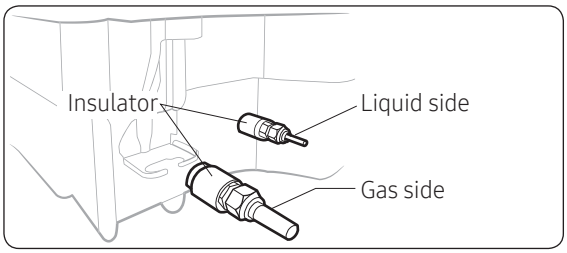
⚠ CAUTION

- 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 4.2 MPa and for a burst pressure of at least 20.7 MPa. 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.
- If the pipes require brazing, make sure that oxygen free nitrogen (OFN) is flowing through the system.
- Nitrogen blowing pressure range is 0.02 to 0.05 MPa.

Installation Procedure

Step 8 Performing the gas leak test

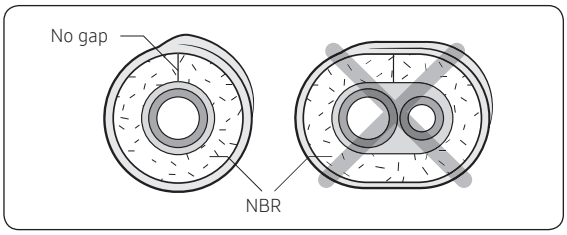
Pressure check the refrigerant system using high pressure nitrogen in order to detect basic refrigerant leaks. Before performing the vacuum process and releasing the factory R-410A charge into the refrigerant pipes, it is the responsibility of the installer to pressurize the whole system with nitrogen (using a cylinder with pressure reducer) at a pressure above 580.2 psi(4 Mpa) (gauge).



Step 9 Insulating the refrigerant pipes

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

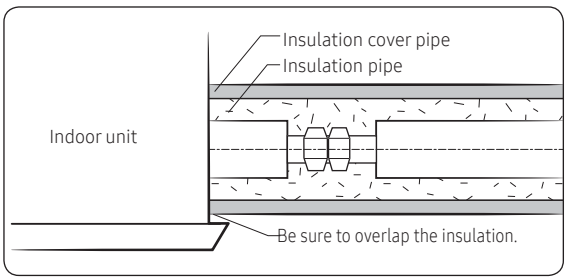
1 To avoid condensation problems, place Acrylonitrile Butadien Rubber separately around each refrigerant pipe.



NOTE

- Always make the seam of pipes face upwards.

2 Wind insulating tape around the pipes and drain hose avoiding compressing the insulation too much.



⚠ CAUTION

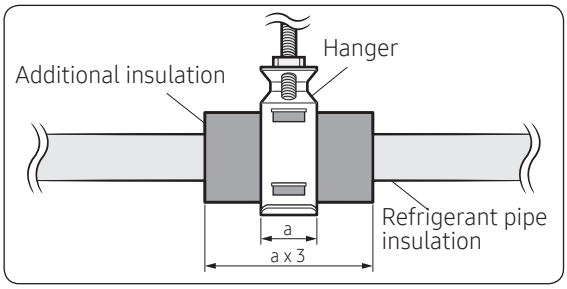
- Be sure to wrap insulation tightly without any gaps.

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

- Make sure that all refrigerant connection must be accessible for easy maintenance and detachment.
- 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.



5 Select the insulation of the refrigerant pipe.

- Insulate the gas side and liquid side pipe, noting the insulation thickness that must differ according to the pipe size.
- Standard: Less than an indoor temperature of 86°F(30°C), with humidity at 85%. If installing in a high humidity environment, use one grade thicker insulator by referring to the table below. If installing in an unfavourable environment, use thicker one.
- The heat-resistance temperature of the insulator must be more than 248°F(120°C).

Pipe	Pipe size inch(mm)	Insulation type (heating/cooling)		Remarks
		Standard [Less than 86°F(30°C), 85%]	High humidity [Over 86°F(30°C), 85%]	
		EPDM, NBR		
Liquid pipe	Ø1/4(6.35) to Ø3/8(9.52)	9 t	9 t	The internal temperature is higher than 248°F(120°C).
	Ø1/2(12.70) to Ø3/4(19.05)	13 t	13 t	
Gas pipe	Ø1/4(6.35)	13 t	19 t	
	Ø3/8(9.52)	19 t	25 t	
	Ø1/2(12.70)			
	Ø5/8(15.88)			

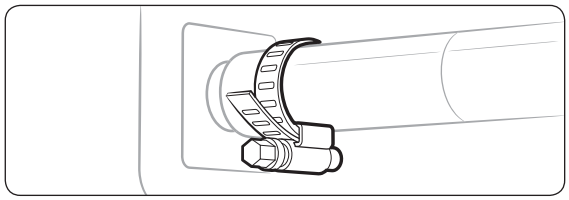
- When installing insulation in the conditions below, use the same insulation that is used for high humidity conditions.

<Geological condition>
High humidity locations such as shorelines, hot springs, lake or riversides, and ridges (when part of the building is covered by earth and sand)
<Operation purpose condition>
Restaurant ceiling, sauna, swimming pool etc.
<Building construction condition>
Ceilings frequently exposed to moisture and cooling are not covered. For example, pipes installed at a corridor of a dormitory and studio or near an exit that opens and closes frequently. Places (where the pipes are installed) that are highly humid due to a lack of ventilation.

Step 10 Installing the drain hose and drain pipe

1 Push the supplied drain hose as far as possible over the drain socket.

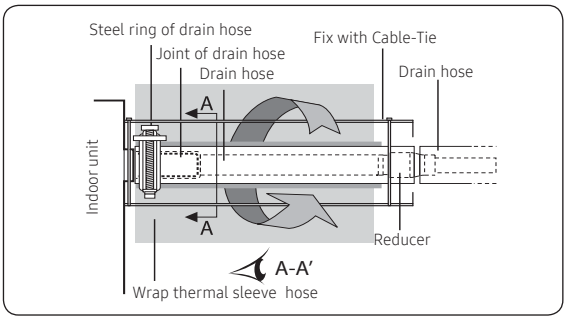
2 Tighten the metal clamp as shown in the picture.



3 Wrap the supplied large sealing pad over the metal clamp and drain hose to insulate and fix it with clamps.

4 Insulate the complete drain piping inside the building (field supply).
If the drain hose cannot be sufficiently set on a slope, fit the hose with drain raising piping (field supply).

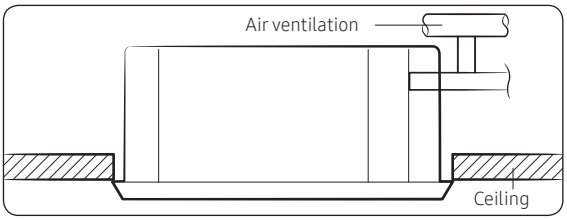
5 Push the drain hose up to insulation when connecting the drain hose to drain socket.



⚠ CAUTION

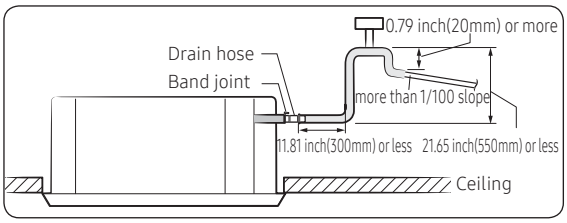
Check that the indoor unit is level with the ceiling by using the leveller.

- Install air ventilation to drain condensation smoothly.

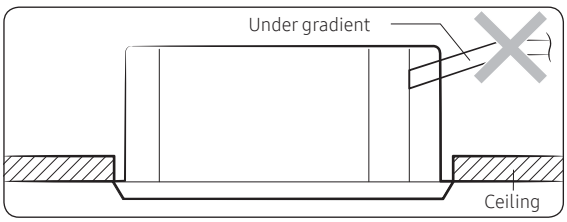


Installation Procedure

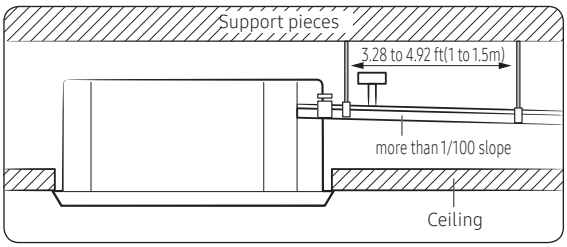
- If it is necessary to increase the height of the drain pipe, install the drain pipe straight within 11.81 inch(300mm) from the drain hose port. If it is raised higher than 21.65 inch(550mm), there may be water leaks.



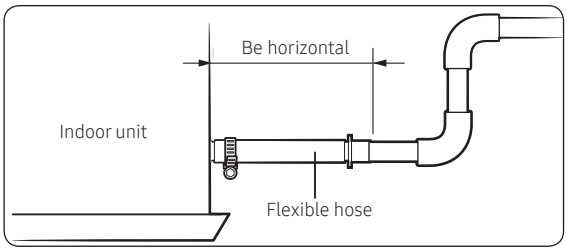
- Do not give the hose an upward gradient beyond the connection port. This will cause water to flow backwards when the unit is stopped, resulting in water leaks.



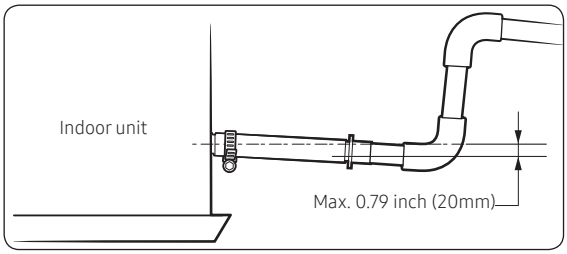
- Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



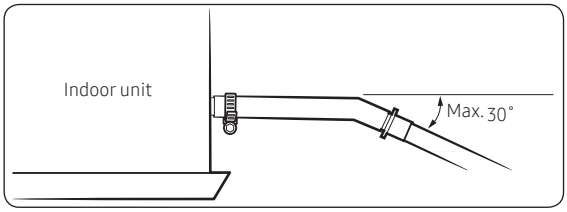
- Install horizontally.



- Max. allowable axis gap.

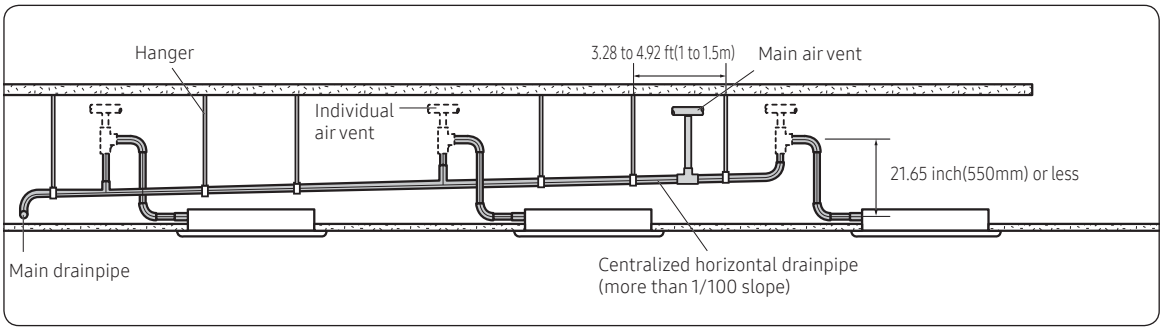


- Max. allowable bending angle.



NOTE

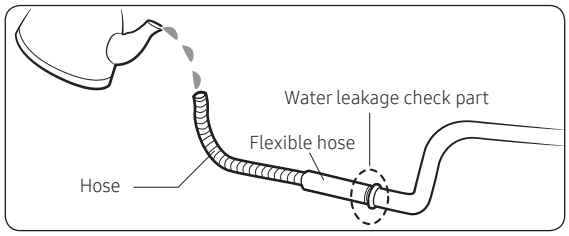
- If a concentrated drain pipe is installed, refer to the figure below.



Step 11 Performing the drainage test

1 Do a leak test at the connection part of the flexible hose and the drian pipe:

a Connect a general hose to the connection part of the flexible hose of the indoor unit, and pour in some water.



b After pouring some water, reassemble the rubber cap on the connection part of a flexible hose of the indoor unit and firmly tighten it with a band to prevent leakage.

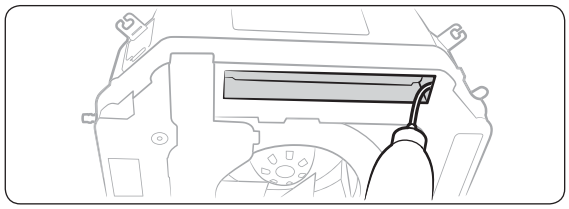
c Check the leak test at the part where the adhesive for the flexible hose and the drian pipe is used.

⚠ CAUTION

- The leak test must be performed for at least 24 hours.

2 Check the condensed water drainage:

a Pour about 0.53 gallons(2 liters) of water into the indoor unit drain pan as shown in the picture.



b When the electric cable connection is completed

- Turn on the indoor unit and outdoor unit.
- Operate in the Cool mode.

⚠ CAUTION

- Only in the Cool mode, you can check the correct operation of the drain pump.

When the electric cable connection has not been completed

- Remove the control box cover of the indoor unit.
- Connect the power supply (208~230V, 60 Hz) to the L and N terminals.
- Reassemble the control box cover and turn on the indoor unit.

⚠ CAUTION

- When the float switch is not detected due to insufficient water on the drain pan, the drain pump will not work.
- If the power supply is directly connected to the L and N terminals, communication error message might appear.
- After completing the drainage check, turn the unit off and disconnect the power supply.
- Reassemble the control box cover.

c Check whether the drain pump works correctly.

d Check whether the drainage is performing correctly at the end of the drain pipe.

e Check for leakage at the drain pipe and drain pipe connection part.

f When leakage occurs, check whether the indoor unit is level and check the drain hose connection part, drainpipe connection part and drain pump connection.

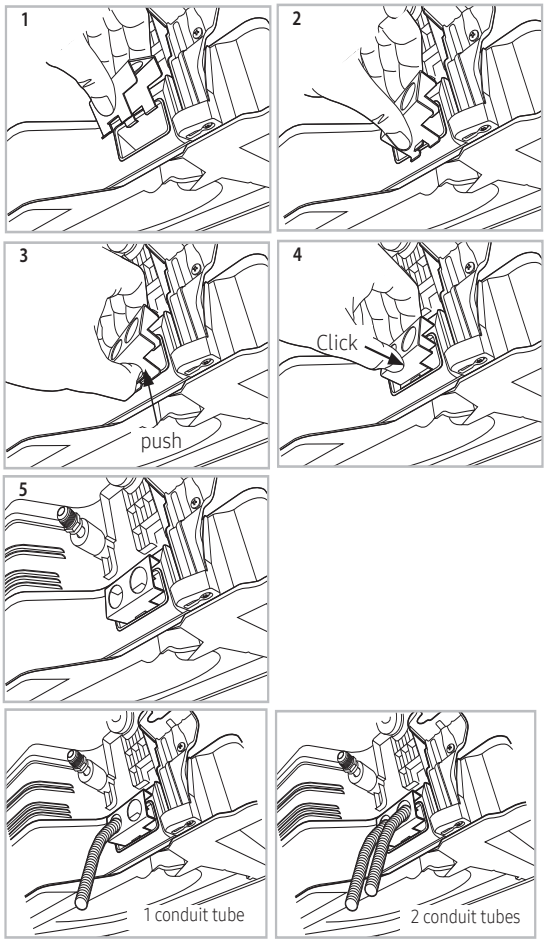
g When the drainage check is completed and the condensed water remains on the drain pan, remove the water.

Installation Procedure

Step 12 Connecting the power and communication cables

Bushing bracket installation

When using conduit, the bushing bracket must be installed as shown in the picture to attach the conduit.



⚠ CAUTION

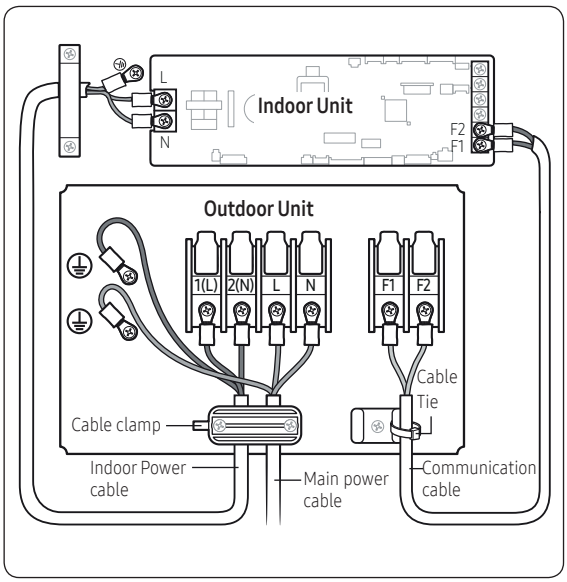
- Always remember to connect the refrigerant pipes before performing the electric connections. When disconnecting the system, always disconnect the electric cables before disconnecting the refrigerant pipes.

⚠ CAUTION

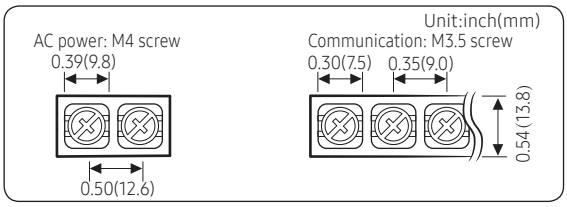
- Always remember to connect the air conditioner to the grounding system before performing the electric connections. Use a crimp ring terminal at the end of each wire.

The indoor unit is powered through the outdoor unit by means of a H05RN-F connection cable (or a more power model), with insulation in synthetic rubber and a jacket in polychloroprene (neoprene), in accordance with the requirements specified in the 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 the terminals refer to the figure below.
3. Route the other end of the cable to the outdoor unit.
4. Reassemble the electrical component box cover, carefully tightening the screw.

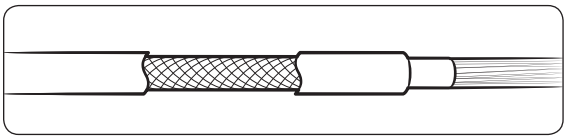


Indoor power supply		
Power supply	Max/ Min(V)	Indoor power cable
208 to 230V, 60 Hz	±10%	0.0012 inch²↑ (0.75mm² ↑), 3 wires
Communication cable		
0.0012 inch²↑ (0.75mm² ↑), 2 wires		



Tightening torque lbf·ft (kgf • cm)	
M3.5	0.58 to 0.87 (8.0 to 12.0)
M4	0.87 to 1.30 (12.0 to 18.0)

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

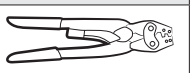
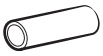


⚠ CAUTION

- When installing the indoor unit in a computer room or network room, use the double shielded communication cable (tape aluminum / polyester braid + copper) of FROHH2R type.
- Select the power cable in accordance with relevant local and national.
- Wire size must comply with local and national code.
- 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 by more than 10% of supply rating, the indoor unit will protect itself by stopping and displaying an error code.
- Connect the power cable to the auxiliary circuit breaker. An all pole disconnection from the power supply must be incorporated in the fixed wiring [≥0.12inch (3mm)].
- You must keep the cable in a protection tube.
- 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 (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.

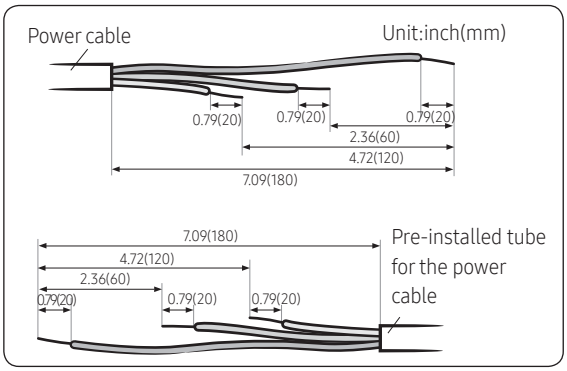
Step 13 Optional: Extending the power cable

1 Prepare the following tools.

Tools	Spec	Shape
Crimping pliers	MH-14	
Connection sleeve	0.79xØ0.26inch (20xØ6.5mm) (HxOD)	
Insulation tape	Width 0.75inch(19mm)	
Contraction tube	2.76xØ0.31 inch (70xØ8.0mm) (LxOD)	

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.



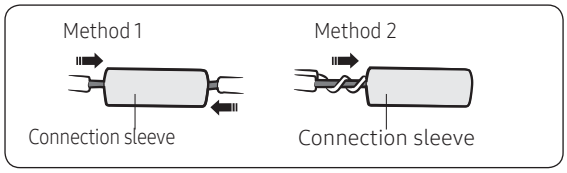
⚠ CAUTION

- 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.

Installation Procedure

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.

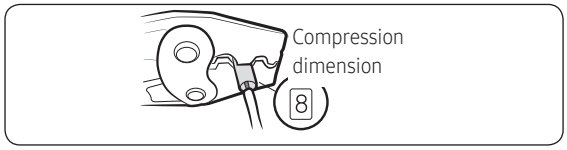


⚠ CAUTION

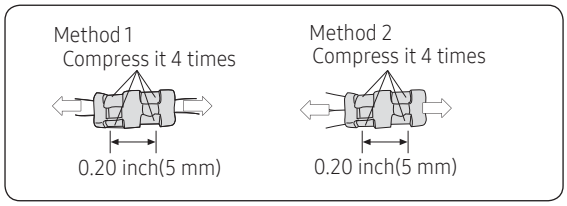
- If cable wires are connected without using connecting sleeves, their contact area becomes reduced, or corrosion develops on the outer surfaces of the wires (copper wires) over a long time. This may cause an increase of resistance (reduction of passing current) and consequently may result in a fire.

4 Using a crimping tool, compress the two points and flip it over and compress another two points in the same location.

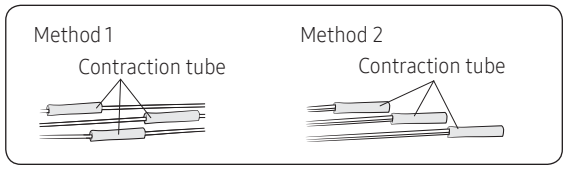
- The compression dimension should be 0.31 inch (8.0 mm).



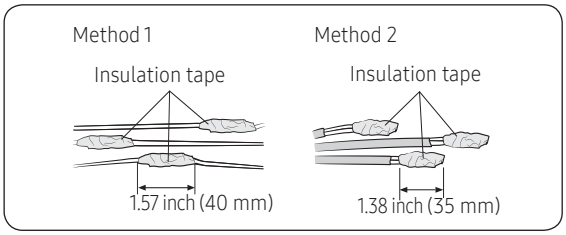
- After compressing it, pull both sides of the wire to make sure it is firmly pressed.



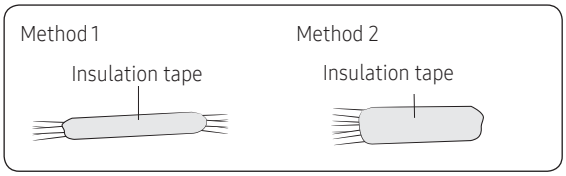
5 Apply heat to the contraction tube to contract it.



6 Wrap it with the insulation tape twice or more and position your contraction tube in the middle of the insulation tape.



7 After tube contraction work is completed, wrap it with the insulation tape to finish.
Three or more layers of insulation are required.

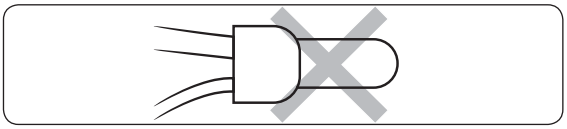


⚠ CAUTION

- 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.



Step 14 optional : Setting the Emergency Temperature Output (ETO) function

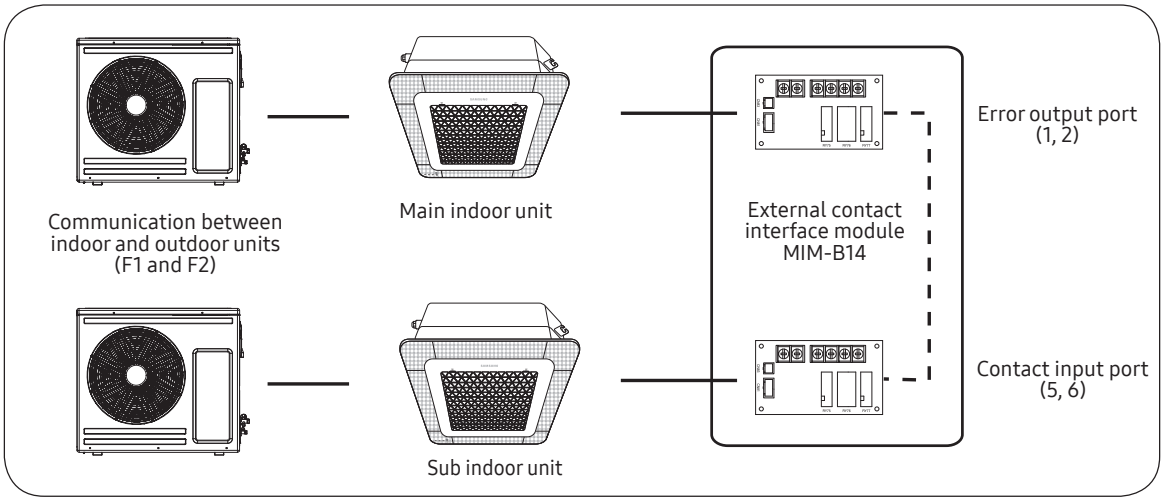
Emergency Temperature Output (ETO) function (for the multi system, this function is not supported.)

⚠ CAUTION

- In order to deploy the ETO function, the MIM-B14, an external contact interface module, must be installed in each indoor unit.

- The ETO is a concept of emergency operation of indoor units. If the indoor unit 1 (main indoor unit) stops because of an error, the indoor unit 2 (sub indoor unit) starts to operate.
- Basically, the indoor unit 2 operates in the previous mode. [For the first time operation, it starts in 75 °F (24 °C) Auto mode.]
- To set more detailed operation conditions for the indoor unit 2, use the S-net Pro.

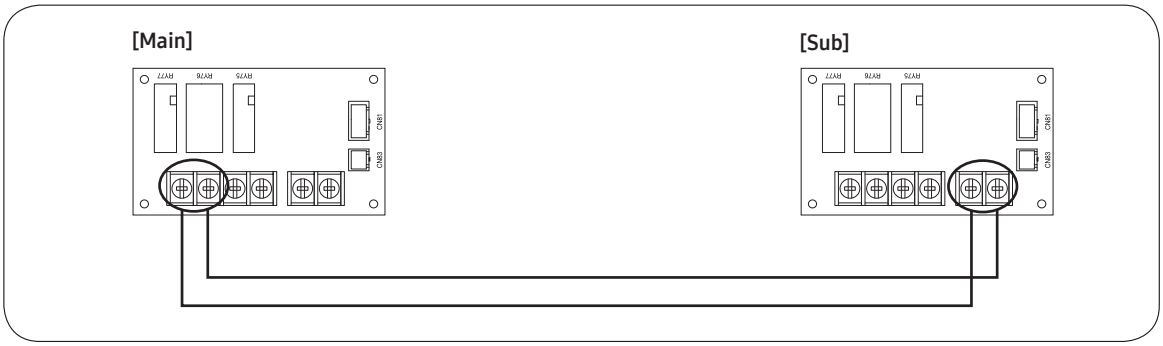
Setting up the ETO



1 Main indoor unit
- Disable the external contact control (Default).
- Connect the S-net pro2 to F1 and F2.
- Enable the ETO function and set the temperature and time.

2 Sub indoor unit
- (Required) Enable the external contact control (with the installation option SEG14 - Reverse Control).
- Connect the S-net pro2 to F1 and F2.
- Enable the entrance control and set the mode, set temperature, and fan speed.

Installation Procedure



ETO operation specifications

1 Main indoor unit

- Based on the external contact control settings, the main indoor unit decides whether to generate output when an error (indoor unit stop) occurs.
- Based on the ETO settings, the main indoor unit decides whether to generate output according to the temperature and time conditions.

2 Sub indoor unit

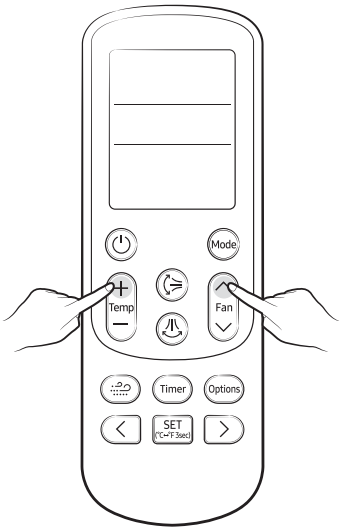
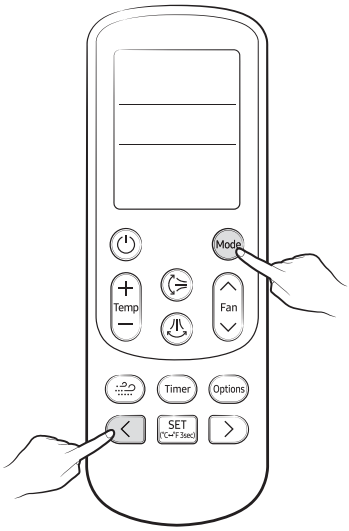
- Based on the entrance control settings, the sub indoor unit decides the mode, set temperature, and fan speed when contact inputs are given.

	Enable of ETO	Enable of external contact	Error port output
Main indoor unit	X	X	N/A
	X	O	Output due to an error
	O	X	Output by ETO entrance conditions (temperature / time / error occurrence)
	O	O	Output by ETO entrance conditions (temperature / time / error occurrence) ❇ Ready to control the main contact input

	Enable of entrance control	Enable of external contact	Operation when outputting Main
Sub indoor unit	X	X	N/A
	X	O	On with the previous operation conditions
	O	O	On with the entrance control enabled

Step 15. Optional : LED Display indicator specifications when checking Wi-Fi Easy Setup and Wi-Fi status (This feature can be used when installing single Wi-fi kit)

The AR-EH04U wireless remote controller can be used for Easy Setup, checking internet connection status and connecting or disconnecting Wi-Fi.

Easy Setup	Check internet connection status	Connect/Disconnect to Wi-Fi
		
Press the [**Timer**] button for 5 seconds	Press the [+] and [∧] button simultaneously for 5 seconds	Press the [**Mode**] and [<] button simultaneously for 5 seconds

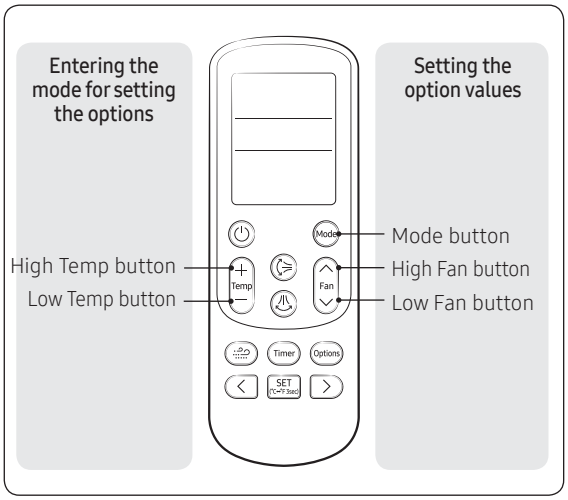
Installation Procedure

4way Cassette		LED Display				Remarks	Measure
		Power/ Stop	Defrost	Timed on/off	Clean filter		
		⏻	❄	🕒	▦		
Easy Setup	AP entry	●	●	●	●	All LED lights are on	-
	Check device	◑	◑	◑	◑	All LED lights flash	-
	Registering devices	◑	◑	◑	◑	All LED lights flash one after another	-
	Connected	◑	◑	◑	◑	All LED lights flash for 3 seconds	-
	Connection failed	X	X	X	X	All LED lights turn off, and the system operates in the previous mode	AP settings, change Wi-Fi module
Check internet connection status	If AP/internet is connected successfully	●	●	●	●	All LED lights turns on for 5 seconds	Normal operation
	If no AP connection	X	X	X	X	All LED turns off for 5 seconds	AP settings, change Wi-Fi module
Wi-Fi	If connected	◑	◑	◑	◑	All LED lights flashes once	-
	If not connected						-
If AP is set up using the wired remote controller		◑	◑	◑	◑	All LED lights flashes simultaneously (max. 5 mins)	-

Step 16 Setting the indoor unit addresses and the installation options

You cannot set both the indoor unit addresses and the installation options at the same time.

Common steps for setting the addresses and options



NOTE

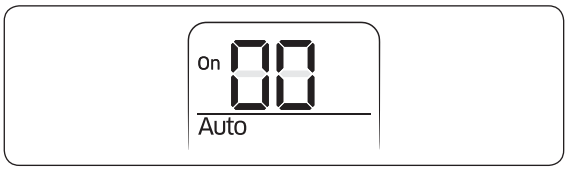
- The remote control display and buttons may vary depending on the model.

1 Enter the mode for setting the options:

   a Remove the batteries from the remote control, and then insert them again.

   b While holding down the (High Temp) and (Low Temp) buttons simultaneously, insert the batteries into the remote control.

   c Make sure that you are entered to the mode for setting the options:



2 Set the option values.

CAUTION

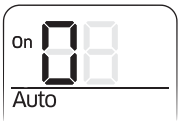
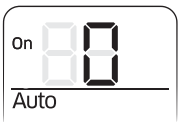
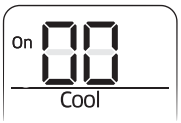
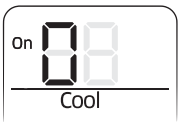
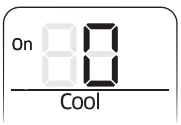
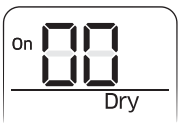
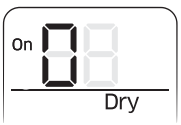
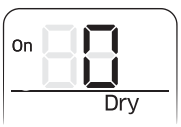
- The total number of available options are 24: SEG1 to SEG24.
- Because SEG1, SEG7, SEG13, and SEG19 are the page options used by the previous remote control models, the modes to set values for these options are skipped automatically.
- Set a 2-digit value for each option pair in the following order: SEG2 and SEG3 → SEG4 and SEG5 → SEG6 and SEG8 → SEG9 and SEG10 → SEG11 and SEG12 → SEG14 and SEG15 → SEG16 and SEG17 → SEG18 and SEG20 → SEG21 and SEG22 → SEG23 and SEG24

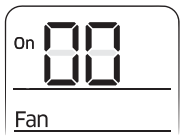
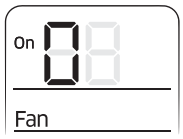
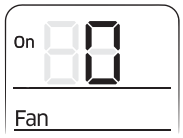
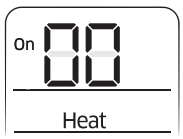
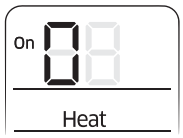
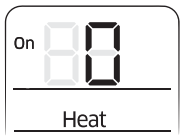
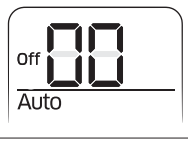
SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	X	X	X	X	X
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	X	X	X	X	X
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	X	X	X	X	X
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	X	X	X	X	X

On (SEG1 to SEG12)	Off (SEG13 to SEG24)
	

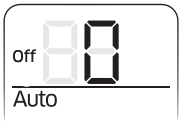
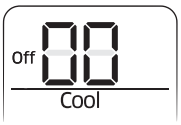
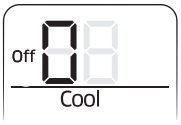
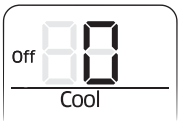
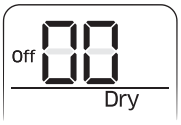
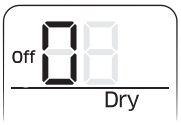
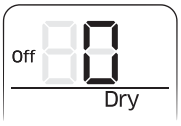
Installation Procedure

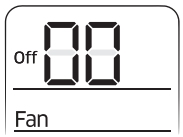
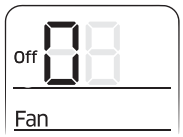
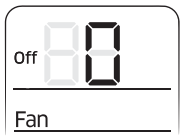
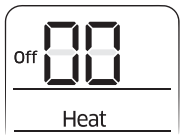
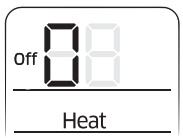
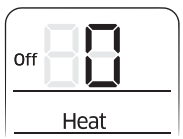
Take the steps presented in the following table:

Steps	Remote control display
1 Set the SEG2 and SEG3 values: **a** Set the SEG2 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG2
b Set the SEG3 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG3
2 Press the (Mode) button. **Cool** and **On** appear on the remote control display.	
3 Set the SEG4 and SEG5 values: **a** Set the SEG4 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG4
b Set the SEG5 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG5
4 Press the (Mode) button. **Dry** and **On** appear on the remote control display.	
5 Set the SEG6 and SEG8 values: **a** Set the SEG6 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG6
b Set the SEG8 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG8

Steps	Remote control display
6 Press the (Mode) button. **Fan** and **On** appear on the remote control display.	
7 Set the SEG9 and SEG10 values: **a** Set the SEG9 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display. **b** Set the SEG10 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG9  SEG10
8 Press the (Mode) button. **Heat** and **On** appear on the remote control display.	
9 Set the SEG11 and SEG12 values: **a** Set the SEG11 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display. **b** Set the SEG12 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG11  SEG12
10 Press the (Mode) button. **Auto** and **Off** appear on the remote control display.	

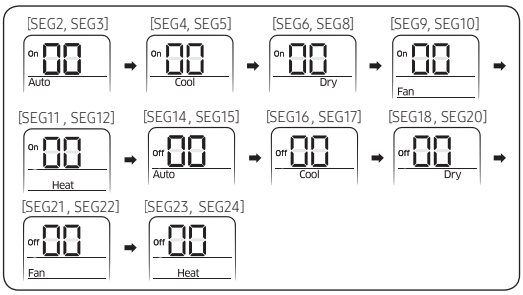
Installation Procedure

Steps	Remote control display
11 Set the SEG14 and SEG15 values: **a** Set the SEG14 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG14
b Set the SEG15 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG15
12 Press the (Mode) button. **Cool** and **Off** appear on the remote control display.	
13 Set the SEG16 and SEG17 values: **a** Set the SEG16 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG16
b Set the SEG17 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG17
14 Press the (Mode) button. **Dry** and **Off** appear on the remote control display.	
15 Set the SEG18 and SEG20 values: **a** Set the SEG18 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display.	 SEG18
b Set the SEG20 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG20

Steps	Remote control display
16 Press the (Mode) button. **Fan** and **Off** appear on the remote control display.	
17 Set the SEG21 and SEG22 values: **a** Set the SEG21 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display. **b** Set the SEG22 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG21  SEG22
18 Press the (Mode) button. **Heat** and **Off** appear on the remote control display.	
19 Set the SEG23 and SEG24 values: **a** Set the SEG23 value by pressing the (Low Fan) button repeatedly until the value you want to set appears on the remote control display. **b** Set the SEG24 value by pressing the (High Fan) button repeatedly until the value you want to set appears on the remote control display. When you press the (Low Fan) or (High Fan) button, values appear in the following order: 0 → 1 → ··· E → F	 SEG23  SEG24

Installation Procedure

3 Check whether the option values that you have set are correct by pressing the (Mode) button repeatedly



4 Save the option values into the indoor unit:
Point the remote control to the remote control sensor on the indoor unit and then press the (Power) button on the remote control twice. Make sure that this command is received by the indoor unit. When it is successfully received, you can hear a short sound from the indoor unit. If the command is not received, press the (Power) button again.

5 Check whether the air conditioner operates in accordance with the option values you have set:

a Reset the indoor or outdoor unit.

- Indoor unit : Press the SET (°C↔°F 3sec) (Set) and Fan (Low Fan) buttons on the remote control simultaneously for 4 seconds.
- Outdoor unit : Press the K3 button.

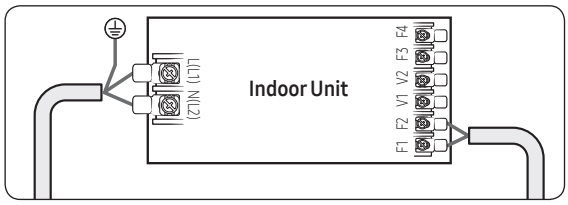
b Remove the batteries from the remote control, insert them again, and then press the (Power) button on the remote control.

Setting the indoor unit addresses

Option No. for an indoor unit address: 0AXXXX-1XXXXX-2XXXXX-3XXXXX

Before installing an indoor unit, be sure to set an address for the indoor unit by taking the following steps:

1 Make sure that the power is supplied to the indoor unit. If the indoor unit is not plugged in, it must include a power supply.



2 Set an address for each indoor unit using the remote control, according to your air conditioning system plan, by referring to the following table and by following the steps in **Common steps for setting the addresses and options** on page **23**.

- The indoor unit addresses (main and RMC addresses) are set to 0A0000-100000-200000-300000 by default.
- If indoor units and outdoor units match 1:1, you don't need to set the main address because it is automatically set by the outdoor unit.
- If you are using on or off controller, set RMC address.

Option	SEG1		SEG2		SEG3		SEG4	SEG5		SEG6	
Function	Page		Mode		Setting main address		Reserved	Indoor unit number		Indoor unit number	
Indication and details	Indication	Details	Indication	Details	Indication	Details		Indication	Details	Indication	Details
	0		A		0	No main address		0 to 1	Tens digit	0 to 9	Units digit
					1	Main address setting mode					
Option	**SEG7**		**SEG8**		**SEG9**		**SEG10**	**SEG11**		**SEG12**	
Function	Page		Reserved		Setting RMC address		Reserved	Group channel (x16)		Group address	
Indication and details	Indication	Details			Indication	Details		Indication	Details	Indication	Details
	1				0	No RMC address		RMC1	0 to 2	RMC2	0 to F
					1	RMC address setting mode					

⚠ CAUTION

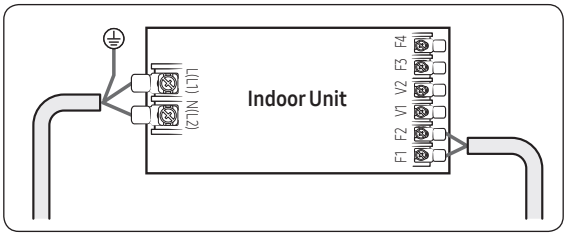
- The main address must be set to a value in the range 0 to 15. If you set other values, communication error will occur.
- If any of SEG5 and SEG6 is set to a value in the range A to F, the main address of the indoor unit does not change.
- If SEG3 is set to 0, the indoor unit maintains the existing main address even if SEG6 is set to a new value.
- If SEG9 is set 0, the indoor unit maintains the existing RMC address even if SEG11 and SET12 are set to new values.

Installation Procedure

Setting the installation options in a batch

Installation option No. for an indoor unit address: 02XXXX-1XXXXX-2XXXXX-3XXXXX

1 Make sure that the power is supplied to the indoor unit. If the indoor unit is not plugged in, it must include a power supply.



2 Set the installation options of indoor units, by referring to the following table and by following the steps in **Common steps for setting the addresses and options** on page **23**.

- The installation options of indoor units are set to 020010-100001-200000-300000 by default.
- The SEG20 option, Individual control with remote control, allows you to control multiple indoor units individually by using the remote control.

Option	SEG1		SEG2		SEG3	SEG4			SEG5		SEG6	
Function	Page		Mode			Use of external room temperature sensor / Minimizing fan operation when thermostat is off			Central control		Compensation of the fan RPM	
Indication and details	Indication	Details	Indication	Details	Reserved	Indication	Details		Indication	Details	Indication	Details
							Use of external room temperature sensor	Minimizing fan operation when thermostat is off [1]				
	0		2			0	Disuse	Disuse	0	Disuse	0	Disuse
						1	Use	Disuse				
						2	Disuse	Use(Heating)				
						3	Use	Use(Heating)				
						4	Disuse	Use(Cooling)				
						5	Use	Use(Cooling)	1	Use	1	High ceiling mode
						6	Disuse	Use (Cooling/Heating)				
						7	Use	Use (Cooling/Heating)				
						8	Disuse	Use (Cooling Ultra low speed)				
						9	Use	Use (Cooling Ultra low speed)				
						A	Disuse	Use (Heating/Cooling Ultra low speed)				
						B	Use	Use (Heating/Cooling Ultra low speed)				

Option	SEG7		SEG8		SEG9	SEG10	SEG11		SEG12			
Function	Page		Use of drain pump [2]				Wind-free fan speed [3]		Dew removal operation in Wind-Free mode/Wind-Free mode in Auto cleaning/Smart Comfort in Auto mode			
Indication and details	Indication	Details	Indication	Details			Indication	Details	Indication	Details		
										Dew removal operation in Wind-Free mode	Wind-Free mode in Auto cleaning	Smart Comfort in Auto mode
	1		0	Disuse	Reserved	Reserved	0	Default	0	Maintain blade	Wind-Free disuse	Smart Comfort use
									1	Open blade		
			1	Use			1	1Step↓	2	Maintain blade	Wind-Free use	
									3	Open blade		
			2	Use with 3 minute delay			2	2Step↓	4	Maintain blade	Wind-Free disuse	Smart Comfort disuse
									5	Open blade		
							3	3Step↓	6	Maintain blade	Wind-Free use	
									7	Open blade		
							4	4Step↓	-			

Option	SEG13		SEG14			SEG15		SEG16	SEG17		SEG18	
Function	Page		Use of external control			Setting the output of extermal control			Buzzer control		Maximum filter usage time [4]	
Indication and details	Indication	Details	Indication	Details		Indication	Details		Indication	Details	Indication	Details
	2		0	Disuse	Sub, Existing control	0	Thermo on	Reserved	0	Use of buzzer	2	1000 hours
			1	On/Off								
			2	Off								
			3	Window On/Off								
			4	Disuse	Main, Existing control							
			5	On/Off								
			6	Off								
			7	Window On/Off								
			8	Disuse	Sub, Reverse control	1	Operation On		1	Disuse of buzzer	6	2000 hours
			9	On/Off								
			A	Off								
			B	Window On/Off								
			C	Disuse	Main, Reverse control							
			D	On/Off								
			E	Off								
			F	Window On/Off								

Installation Procedure

<table>
<tr><th>Option</th><th colspan="2">SEG19</th><th colspan="2">SEG20</th><th colspan="2">SEG21</th><th>SEG22</th></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Individual control with remote control[5]</td><td colspan="2">Heating setting compensation[6]</td><td rowspan="6">Reserved</td></tr>
<tr><td rowspan="6">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="5">3</td><td>0 or 1</td><td>Indoor 1</td><td>0</td><td>Disuse</td></tr>
<tr><td>2</td><td>Indoor 2</td><td>1</td><td>3.6˚F (2˚C)</td></tr>
<tr><td>3</td><td>Indoor 3</td><td rowspan="2">2</td><td rowspan="2">9˚F (5˚C)</td></tr>
<tr><td>4</td><td>Indoor 4</td></tr>
<tr><td colspan="3"></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><th>Option</th><th colspan="6">SEG23</th><th>SEG24</th></tr>
<tr><td>Function</td><td colspan="6">Setting the MDS Kit installation option[7]</td><td rowspan="14">Reserved</td></tr>
<tr><td rowspan="14">Indication and details</td><td colspan="2">Indication</td><td colspan="3">Details</td></tr>
<tr><td colspan="2">0</td><td colspan="3">Disuse (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Standard</td><td>1</td><td colspan="3">Off after 20 min. (Soft Off+Hard off)</td></tr>
<tr><td>2</td><td colspan="3">Off after 40 min. (Soft Off+Hard off)</td></tr>
<tr><td>3</td><td colspan="3">Off after 80 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Premium</td><td>4</td><td colspan="3">Off after 20 min. (Soft Off+Hard off)</td></tr>
<tr><td>5</td><td colspan="3">Off after 40 min. (Soft Off+Hard off)</td></tr>
<tr><td>6</td><td colspan="3">Off after 80 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Standard</td><td>7</td><td colspan="3">Off after 20 min. (Soft Off only)</td></tr>
<tr><td>8</td><td colspan="3">Off after 40 min. (Soft Off only)</td></tr>
<tr><td>9</td><td colspan="3">Off after 80 min. (Soft Off only)</td></tr>
<tr><td rowspan="3">Premium</td><td>A</td><td colspan="3">Off after 20 min. (Soft Off only)</td></tr>
<tr><td>B</td><td colspan="3">Off after 40 min. (Soft Off only)</td></tr>
<tr><td>C</td><td colspan="3">Off after 80 min. (Soft Off only)</td></tr>
</table>

- 1) SEG4
  By SEG4 setting, Minimizing fan operation when thermostat is off.
  - Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
  - Fan stops or operates Ultra low in Cooling when thermostat is off.
- 2) SEG8
  Even if you set the Use of drain pump option to 0, it is utomatically set to 2 (the drain pump is used with 3 minute delay).
- 3) SEG11
  Compensation of the wind-free fan RPM option adjusts 20 rpm per 1 step.
- 4) SEG18
  If you set the Maximum filter usage time option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).

- 5) SEG20

  If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor 1)
- 6) SEG21

  Default value of Heating setting compensation is 9°F(5°C).
- 7) SEG23

  Soft Off: The indoor unit turns off its operation at the indicated time in the table for Installation Option after its final motion detection. But, it turns on again if the MDS detects motion.

  Hard Off: Designated time after SOFT OFF, it cannot turn on automatically when it detects motion. Users should control to turn on the indoor unit with remote control, etc.

Changing the addresses and options individually

When you want to change the value of a specific option, refer to the following table and follow the steps in **Common steps for setting the addresses and options** on page **23**.

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Function	Page		Mode		Option mode to change		Tens position of the option number		Units position of the option number		New value	
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		D		Option type	0 to F	Tens position value	0 to 9	Units position value	0 to 9	New value	0 to F

Example: Changing the Buzzer control (SEG17) option of the installation options to 1 disuse.

Option	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Function	Page	Mode	Option mode to change	Tens position of the option number	Units position of the option number	New value
Indication	0	D	2	1	7	1

⚠ CAUTION

- If your indoor units support both cooling and heating, the mixed operation (two or more indoor units operate in different modes simultaneously) is not available when the indoor units are connected to the same outdoor unit. If you set an indoor unit as the main indoor unit by using the remote control, the outdoor unit automatically operated in the current mode of the main indoor unit.

Troubleshooting

Abnormal conditions	LED lamp display				Remarks
	Operation	Defrost	Timer	Filter	
					
Power reset	◑	X	X	X	
Error of temperature sensor in the indoor unit (Open/ Short)	X	◑	X	X	
Error of heat exchanger sensor in the indoor unit (Open/Short)	◑	◑	X	X	
Error of fan motor 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	
No communication for 2 minutes between indoor and outdoor unit (communication error for more than 2 minutes)	X	◑	◑	X	
Error of outdoor unit Error of the terminal block thermal fuse (Open)	X	◑	◑	◑	
Detection of the float switch	X	X	◑	◑	
EEPROM ERROR EEPROM option error	◑	◑	◑	◑	
Outdoor valve clogging error	◑	X	◑	◑	
Miss matching error between indoor unit and outdoor unit	◑	◑	X	◑	

● : On, ◑ : Flickering, X : Off

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

Memo

SAMSUNG