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Cassette Type Series

1 Way cassette : AVXCS✳✳(Slim)
ND✳✳✳1✳✳✳✳(Slim)

2 Way cassette : AVXC2✳✳
ND✳✳✳2✳✳✳✳

4 Way cassette : AVXC4✳✳
AVXCM✳✳(mini)

Air Conditioner
installation manual

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ⒺⓈⓅⒶ DB98-34340A(1)

SAMSUNG

Contents

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 hydraulic lines. Failure to comply with these instructions or to comply with the 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 control(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.

Safety precautions

- 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.
- 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.
- Our units must be installed in compliance with the spaces indicated in the installation manual to ensure either accessibility from both sides or ability to perform routine maintenance and repairs. The units' components must be accessible and that can be disassembled in conditions of complete safety either for people or things. 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.

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.

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.

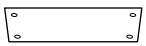
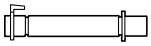
Preparation for installation

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

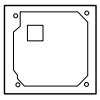
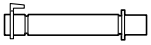
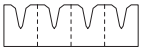
Accessories

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

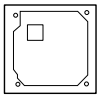
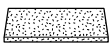
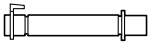
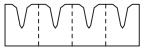
AVXCS✳✳/AVXC2✳✳/ND✳✳✳1✳✳✳✳/ND✳✳✳2✳✳✳✳

Pattern sheet	Insulation pipe	Flexible hose	Rubber	Insulation cover band	Installation manual
					

AVXC4✳✳

Pattern sheet	Insulation cover band	Insulation drain hose	Insulation pipe	Cable-tie	Flexible hose
					
M4x12 tapped Screw	**Insulation drain sub**	**Pad stopper**	**Installation manual**	**Safety net**	**M4x12 tapped Screw**
					

AVXCM✳✳

Pattern sheet	Insulation cover band	Insulation drain hose	Insulation pipe	Cable-tie	Flexible hose
					
M4x12 tapped Screw	**Pad stopper**	**Installation manual**	**Safety net**	**M4x12 tapped Screw**	
					

ENGLISH

Deciding on where to install the indoor unit

Indoor unit

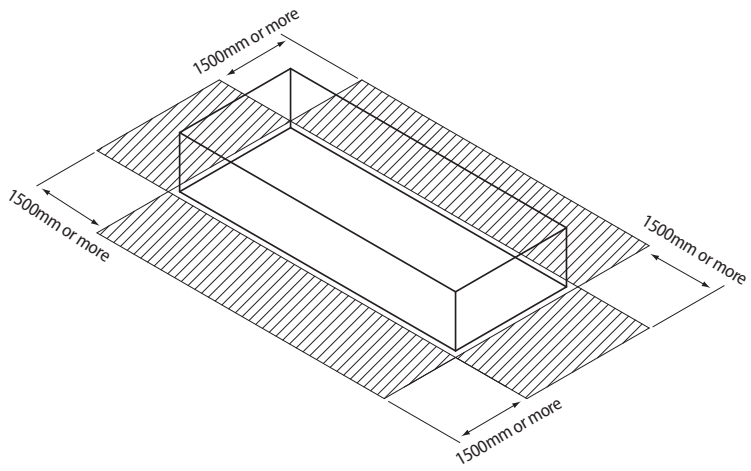
- There must be no obstacles near the air inlet and outlet.
- Install the indoor unit on a ceiling that can support its weight.
- Maintain sufficient clearance around the indoor unit.
- Make sure that the water dripping from the drain hose runs away correctly and safely.
- The indoor unit must be installed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

CAUTION

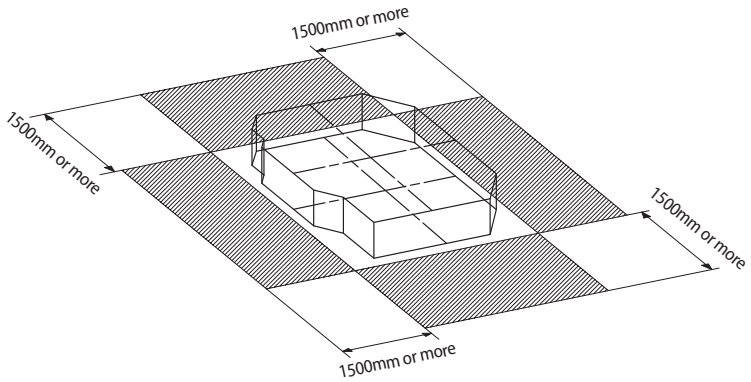
- As a rule, the unit cannot be installed at a height of less than 2.5 m.
- It is possible to install the unit at a height of between 2.2~2.5m from the ground, if the unit has a duct with a well defined length (300mm or more) to avoid fan motor blower contact.
- If you install the cassette or duct type 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.

Space requirements for indoor unit

AVXCS✳✳/AVXC2✳✳/ND✳✳✳1✳✳✳✳/ND✳✳✳2✳✳✳✳



AVXC4✳✳/AVXCM✳✳

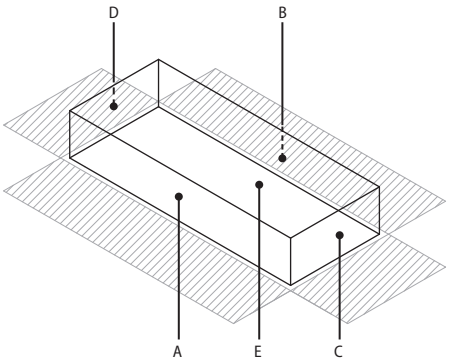


Deciding on where to install the indoor unit

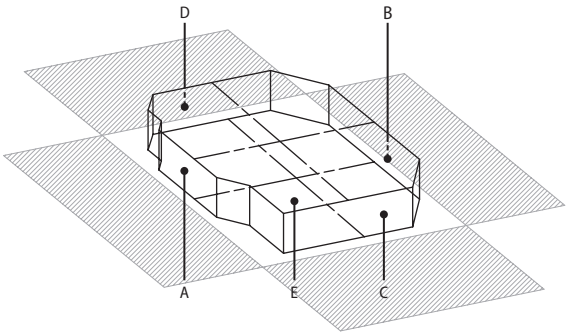
Insulation Guide

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.

2 Way cassette



4 Way/mini 4 way cassette



Thickness: more than 10mm

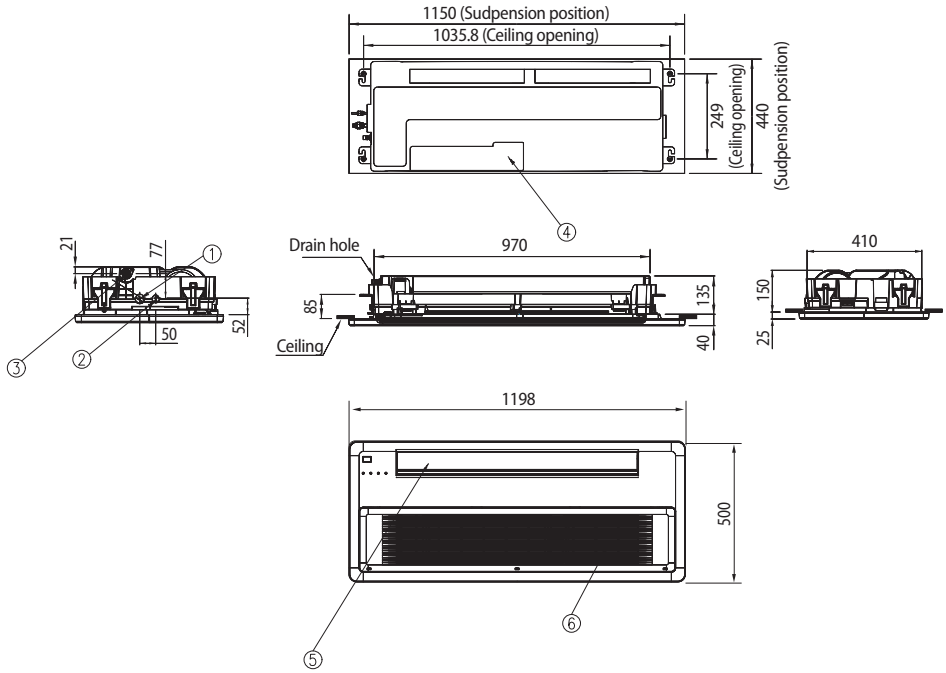
Indoor unit		A	B	C	D	E
2Way Cassette	5.2~7.2kw (890x230x575)	880x185	880x185	570x185	570x185	880x570
4Way Cassette S	5.2~8.3kw (840x218x840)	980x160	980x160	550x160	550x160	870x870
4Way Cassette L	9.0~14.5kw (840x288x840)	980x230	980x230	550x230	550x230	870x870
Mini 4Way Cassette	2.0~6.0kw (575x260x575)	670x250	670x250	370x250	370x250	580x580

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

Drawing of the indoor unit

AVXCS✳✳/ND0221/0231/0281/0321/0361/0401✳✳✳✳

(Unit : mm)

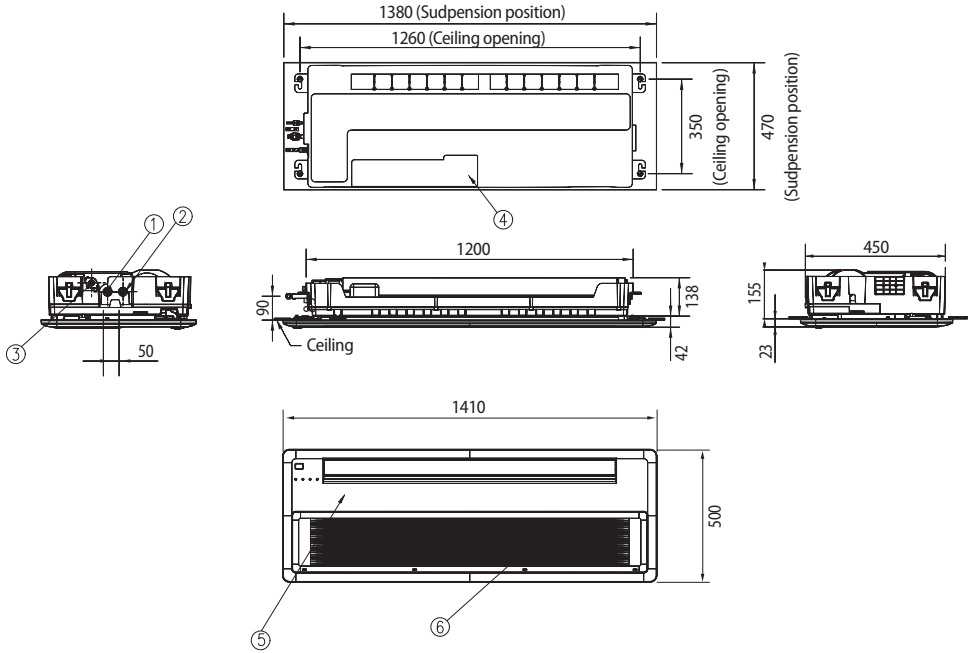


No.	Name	Description
①	Liquid pipe connection	ø6.35 (1/4″)
②	Gas pipe connection	ø12.70 (1/2″)
③	Drain pipe connection	OD ø29, ID ø25
④	Power supply connection	-
⑤	Air discharge grille	-
⑥	Air suction grille	-

Deciding on where to install the indoor unit

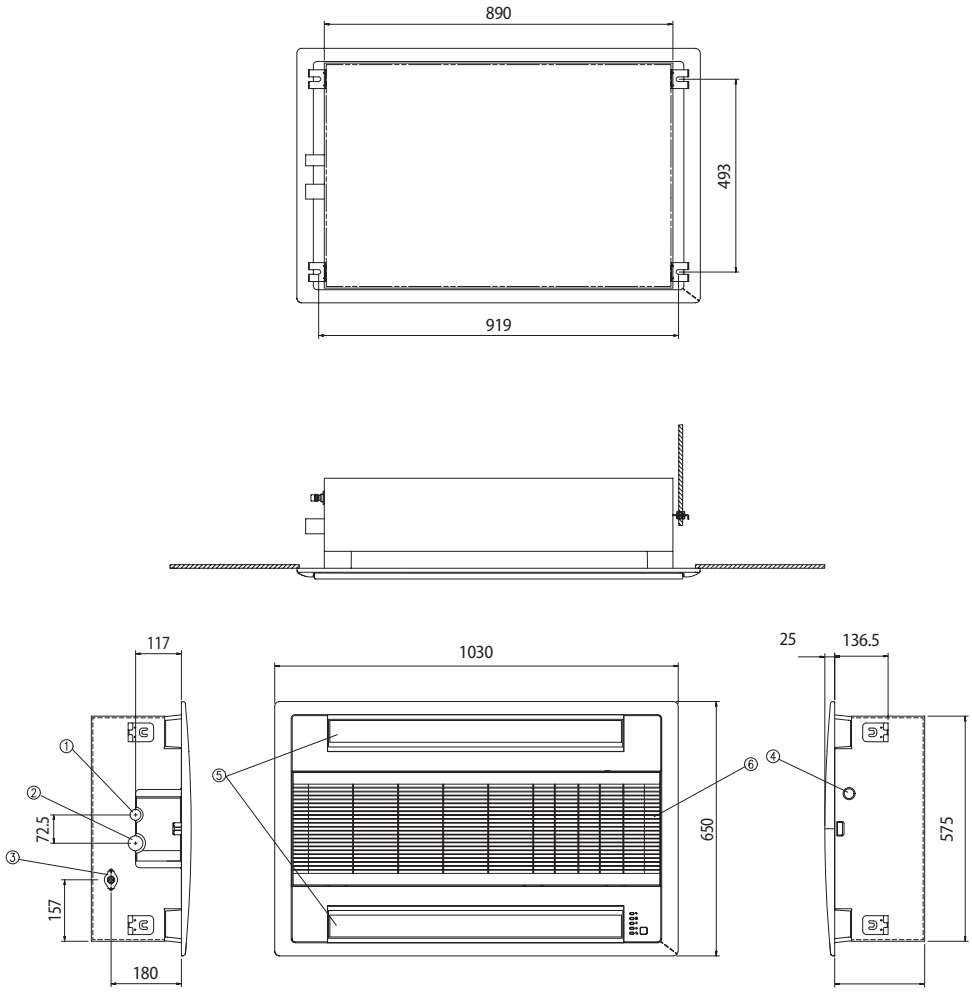
ND0561/0711✳✳✳✳

(Unit : mm)



No.	Name	Description
①	Liquid pipe connection	ND0561✳✳✳✳ : ø6.35 (1/4″) ND0711✳✳✳✳ : ø9.52 (3/8″)
②	Gas pipe connection	ND0561✳✳✳✳ : ø12.70 (1/2″) ND0711✳✳✳✳ : ø15.88 (5/8″)
③	Drain pipe connection	OD ø29, ID ø25
④	Power supply connection	-
⑤	Air discharge grille	-
⑥	Air suction grille	-

(Unit : mm)

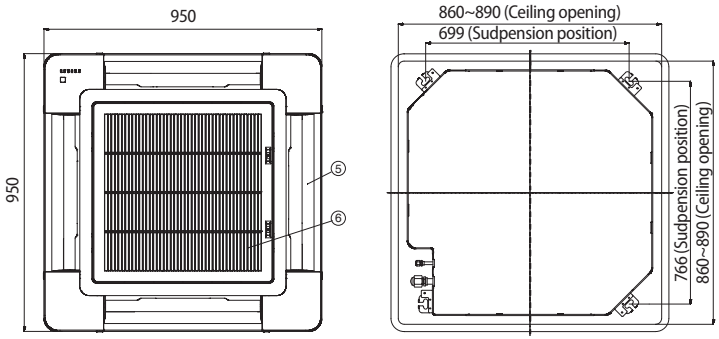


No.	Name	Description
①	Liquid pipe connection	✳✳052/056/060✳✳ : ø6.35 (1/4″) ✳✳071/072✳✳ : ø9.52 (3/8″)
②	Gas pipe connection	✳✳052/056/060✳✳ : ø12.70 (1/2″) ✳✳071/072✳✳ : ø15.88 (5/8″)
③	Drain pipe connection	VP25 (OD ø32, ID ø25)
④	Power supply connection	-
⑤	Air discharge grille	-
⑥	Air suction grille	-

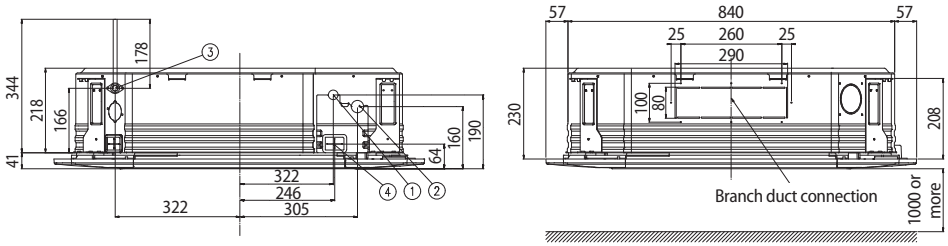
Deciding on where to install the indoor unit

AVXC4✳✳✳✳

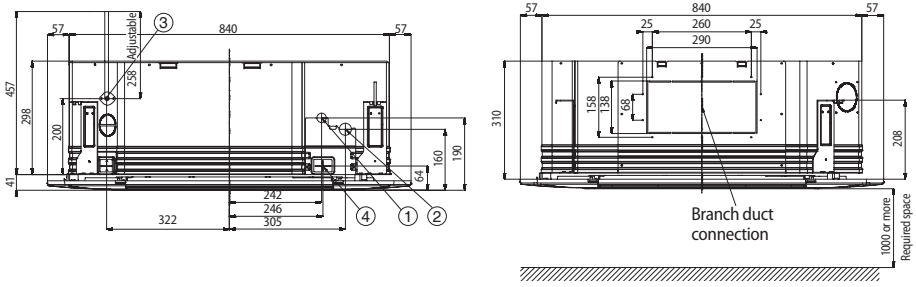
(Unit : mm)



✳✳045/056/071/090✳✳

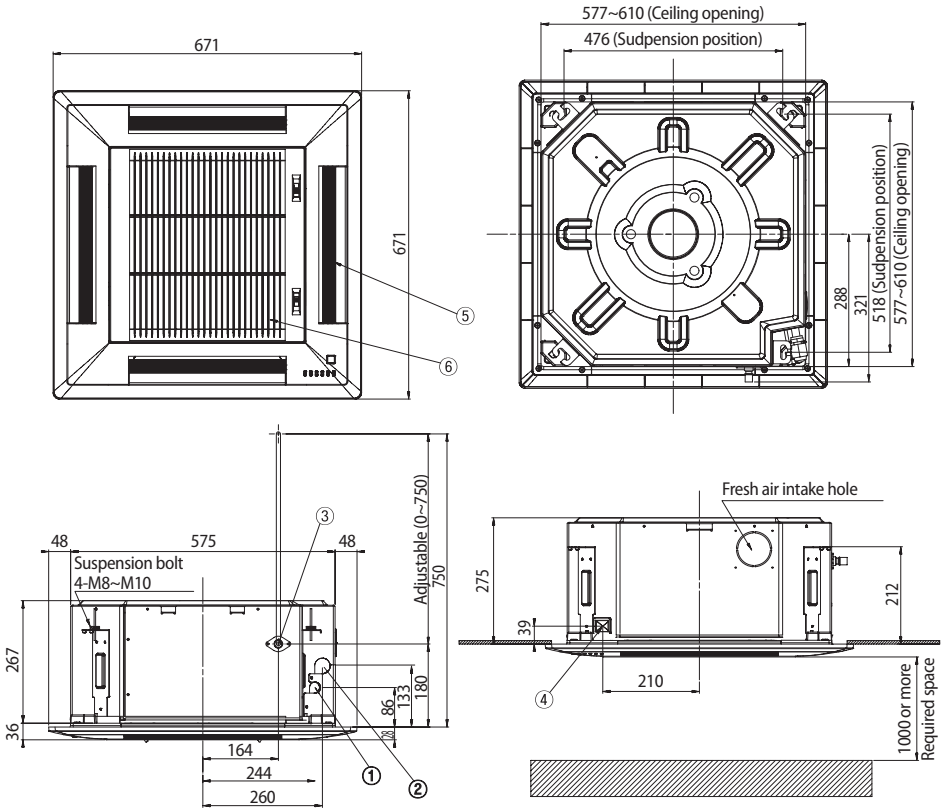


✳✳112/128/140✳✳



No.	Name	Description
①	Liquid pipe connection	✳✳045/056✳✳ : ø6.35 (1/4″) ✳✳071/090/112/128/140✳✳ : ø9.52 (3/8″)
②	Gas pipe connection	✳✳045/056✳✳ : ø12.70 (1/2″) ✳✳071/090/112/128/140✳✳ : ø15.88 (5/8″)
③	Drain pipe connection	✳✳045/056/071/090✳✳ : VP20 (OD ø26, ID ø20) ✳✳112/128/140✳✳ : VP25 (OD ø32, ID ø25)
④	Power supply connection	-
⑤	Air discharge grille	-
⑥	Air suction grille	-

(Unit : mm)

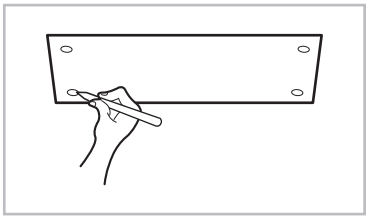


No.	Name	Description
①	Liquid pipe connection	ø6.35 (1/4″)
②	Gas pipe connection	ø12.70 (1/2″)
③	Drain pipe connection	VP25 (OD ø32, ID ø25)
④	Power supply connection	-
⑤	Air discharge grille	-
⑥	Air suction grille	-

Indoor unit installation

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

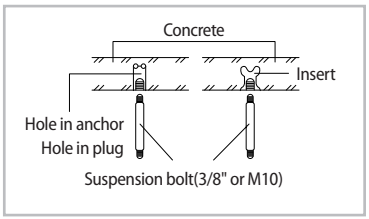
1. Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.



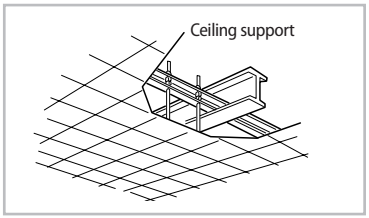
NOTE

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

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



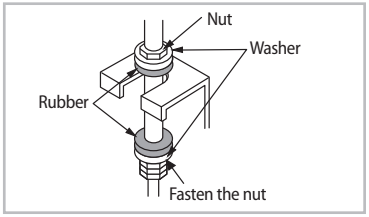
3. Install the suspension bolts depending on the ceiling type.



CAUTION

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

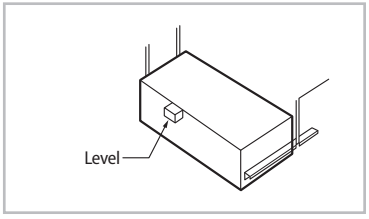
4. Screw eight nuts to the suspension bolts making space for hanging the indoor unit.



CAUTION

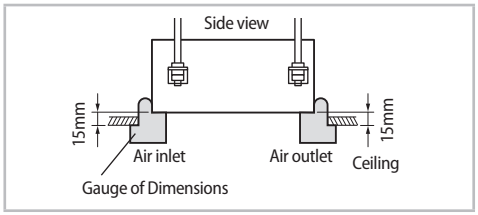
- You must install the suspension bolts more than four when installing the indoor unit.

5. Check the level of the indoor unit by using a leveler.
   - A tilt of the indoor unit may cause malfunction of a built-in float switch and water leaks.

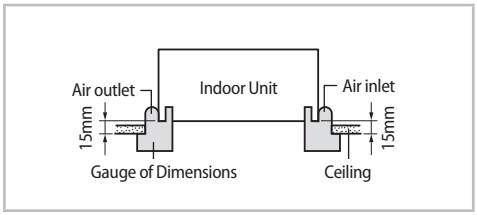


6. Adjust the height of the indoor unit by using the gauge of dimensions.
   - You should adjust the gauge of dimensions and the pattern sheet to fit the cutting dimensions of ceiling.
   - Make sure that the indoor unit is installed at a level if the indoor unit slants too much, there can be water leaks.

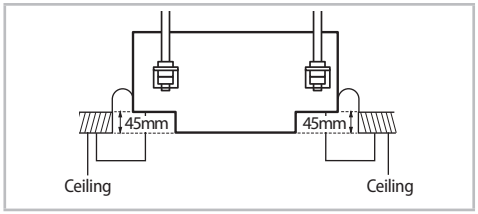
AVXCS✳✳/ND0221/0231/0281/0321/0361/0401✳✳✳✳



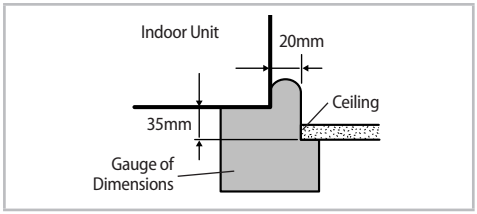
ND0561/0711✳✳✳✳



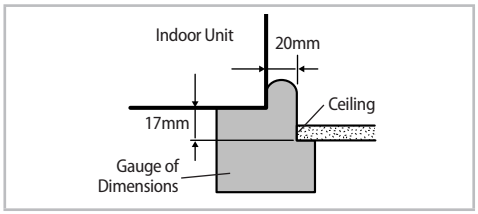
AVXC2✳✳/ND✳✳✳2✳✳✳✳



AVXC4✳✳



AVXCM✳✳



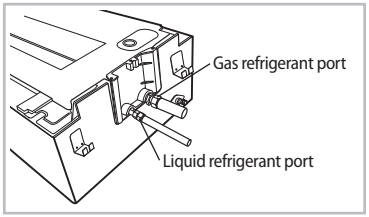
7. Tighten the upper part nuts.
8. Remove the gauge of dimensions after installing the indoor unit.

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.



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

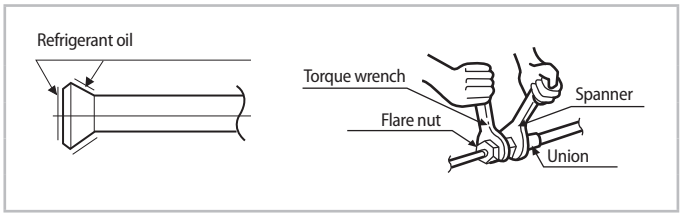
ENGLISH

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. Before connecting the reprigerant pipe, open the cover side.
2. 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.

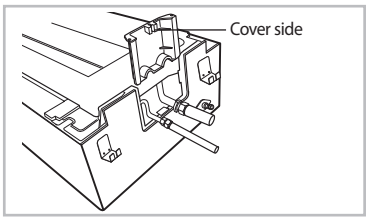


Outer Diameter (D)	Torque (N•m)
ø6.35 mm	18
ø9.52 mm	42
ø12.70 mm	55
ø15.88 mm	65

NOTE

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

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



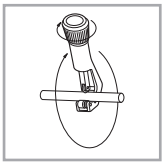
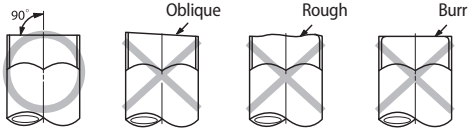
✻ The designs and shape are subject to change according to the model.

CAUTION

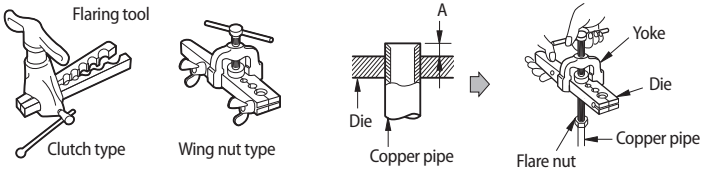
- Connect the indoor and outdoor units using pipes with flared connections(not supplied). For the lines, use insulated, unwelded, degreased and deoxidized copper pipe (Cu DHP type to ISO 1337 or UNI EN 12735-1), suitable for operating pressures of at least 4200kPa and for a burst pressure of at least 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.

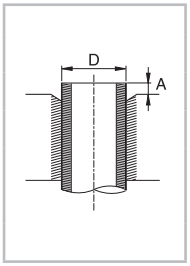
Cutting/flaring the pipes

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

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

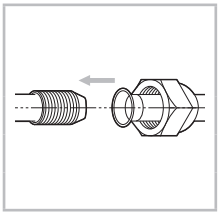


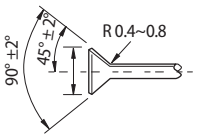


Outer diameter (mm)	A(mm)		
	Flare tool for R410A clutch type	Conventional flare tool	
		Clutch type	Wing nut type
ø6.35	0~0.5	1.0~1.5	1.5~2.0
ø9.52	0~0.5	1.0~1.5	1.5~2.0
ø12.70	0~0.5	1.0~1.5	1.5~2.0
ø15.88	0~0.5	1.0~1.5	1.5~2.0

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

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



Outer diameter (mm)	Connection Torque (kgf•cm)	Flare dimension (mm)	Flare shape (mm)
6.35	145~175	8.70~9.10	
9.52	333~407	12.80~13.20	
12.70	505~615	16.20~16.60	
15.88	630~769	19.30~19.70	

CAUTION

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

Performing leak test & insulation

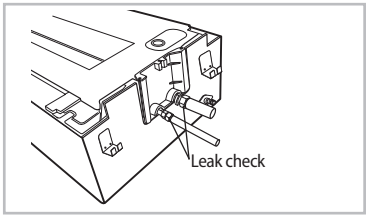
Leak test

LEAK TEST WITH NITROGEN (before opening valves)

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

LEAK TEST WITH R410A (after opening valves)

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



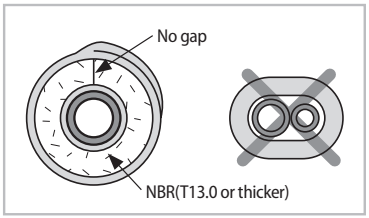
❋ The designs and shape are subject to change according to the model.

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

Insulation

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

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

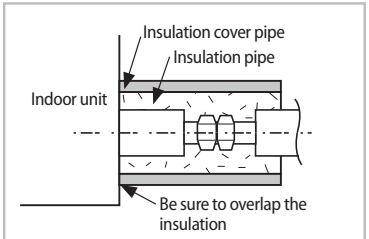


NOTE
- Always make the seam of pipes face upwards.

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

3. Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.

4. The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.



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

CAUTION
- Must fit tightly against body without any gap.

5. Select the insulation of the refrigerant pipe.
   - Insulate the gas side and liquid side pipe referring to the thickness according to the pipe size.
   - Indoor temperature of 30°C and humidity of 85% is the stan dard condition.
     If installing in a high humidity condition, use one grade thicker insulator by referring to the table below.
     If installing in an unfavorable conditions, use thicker one.
   - Insulator's heat-resistance temperature should be more than 120°C.

Pipe	Pipe size	Insulation Type (Heating/Cooling)		Remarks
		Standard [30°C, 85%]	High humidity [30°C, over 85%]	
		EPDM, NBR		
Liquid pipe	Ø6.35 ~ Ø9.52	9t	←	Internal temperature is higher than 120°C
	Ø12.7 ~ Ø50.80	13t	←	
Gas pipe	Ø6.35	13t	19t	
	Ø9.52 ~ Ø25.40	19t	25t	
	Ø28.58 ~ Ø44.45		32t	
	Ø50.80	25t	38t	

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

<Geological condition>

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

<Operation purpose condition>

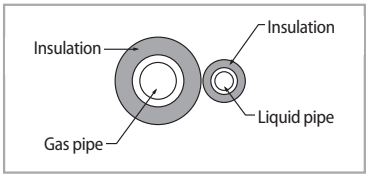
- Restaurant ceiling, sauna, swimming pool etc.

<Building construction condition>

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

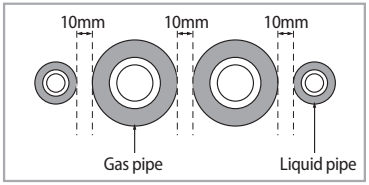
Refrigerant pipe before EEV kit and MCU or without EEV kit and MCU

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



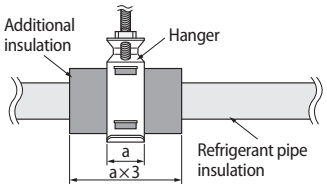
Refrigerant pipe after EEV kit and MCU

- ▶ Install the gas side and liquid side pipes, leave 10mm of space.
- ▶ When contacting the gas side and liquid side pipe, use 1 grade thicker insulator.



CAUTION

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

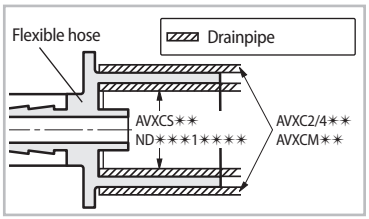


ENGLISH

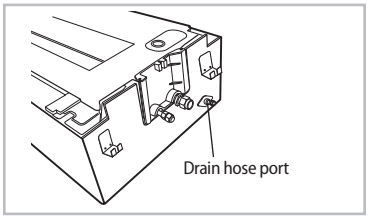
Drainpipe and drain hose installation

Care must be taken when installing the drainpipe and drain hose for the indoor unit so that condensate water is drained correctly outside.

1. Fix the flexible hose to the drainpipe.
   - The connection port of the flexible hose and PVC drainpipe must be fixed with PVC adhesives.
   - Check out that the connected part doesn't leak.
   - Drain pipe type :
     VP20(AVXCS✳✳/ND✳✳✳1✳✳✳✳),
     VP25(AVXC2✳✳/ND✳✳✳2✳✳✳✳/AVXC4✳✳/AVXCM✳✳)

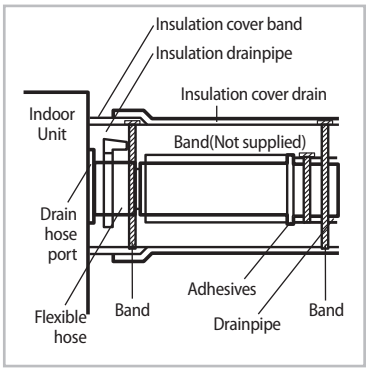


2. Connect the flexible hose to the drain hose port.
   - Make sure that a rubber ring is installed on the drain hose port.
   - Drain hose port location differs depending on the unit types.



3. Install the drain pipe as shortly as possible.
   - Give a slightly slant to the drainpipe for proper drainage of condensate water.
   - There must be no gap on the connected part so that the drainpipe is not separated from the flexible hose.

4. Insulate the drainpipe, and then fix it as indicated.
   - Whole drainpipe should be insulated by 5t(or more) insulation to prevent water condensation.



Drainpipe Connection

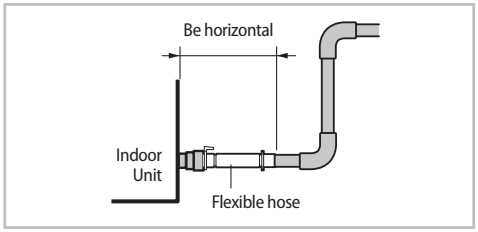
1. The drain pipe should be installed within 100mm from the flexible hose, lift up from 100mm to 550mm and lift down 20mm or more.
2. Install horizontal drainpipe with a slope of 1/100 or more and fix it by hanger space of 1~1.5m.
3. Install the air vent in the horizontal drainpipe to prevent water flow back to the indoor unit.

NOTE

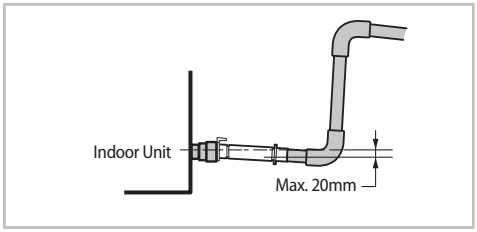
- Must apply refrigerant oil on the flaring area to prevent a leak.

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

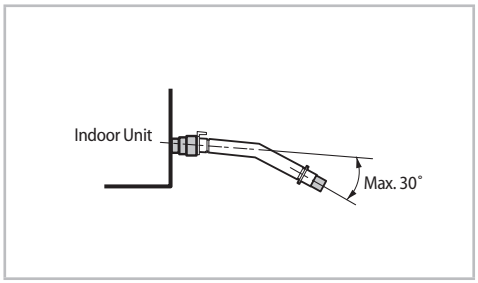
❋ Flexible hose Installation



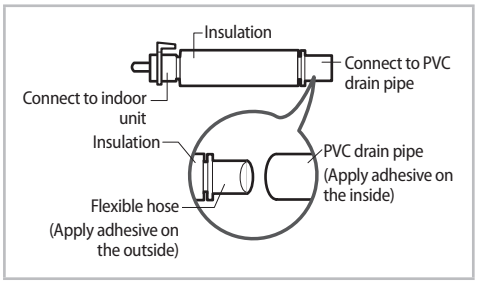
▶ Install horizontally



▶ Max. allowable axis gap



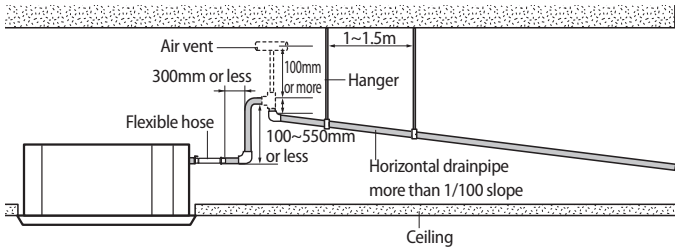
▶ Max. allowable bending angle



▶ Handle with using adhesive not to block the inside of flexible hose

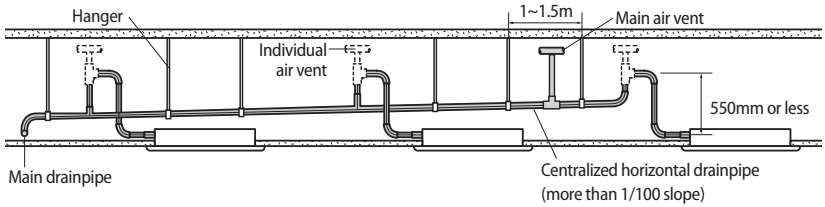
5. Install U-trap at the end of the drainpipe to prevent a nasty smell to reach the indoor unit.

NOTE



Centralized Drainage

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



ENGLISH

Drainpipe and drain hose installation

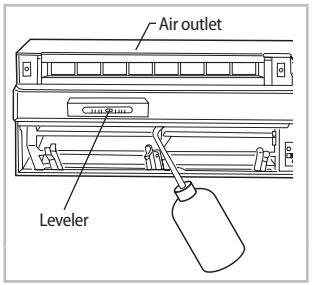
Testing the Drainage

You should test drainage after completing the installation.

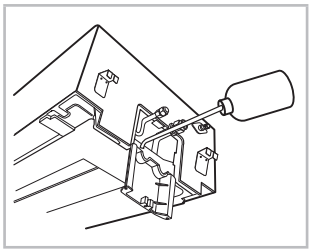
Prepare a little water about 1.0 liter.

1. Open the cover water supply intake.
2. Pour water into the water supply intake.

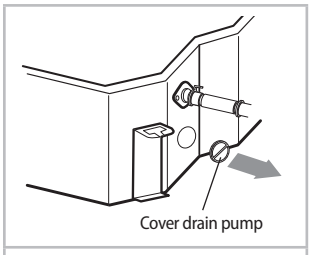
AVXCS✳✳/ND✳✳✳1✳✳✳✳

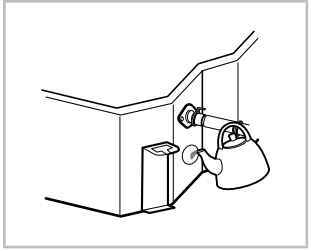


AVXC2✳✳/ND✳✳✳2✳✳✳✳

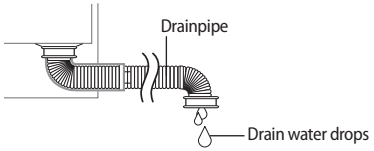


AVXC4✳✳/AVXCM✳✳





3. Operate the unit in the Cool mode and check a drain pump pumping.
4. Check drain water drops at the end of the drainpipe.



5. Make sure there is no water leak at the drainage.
6. When you finished the test, close the coverside.

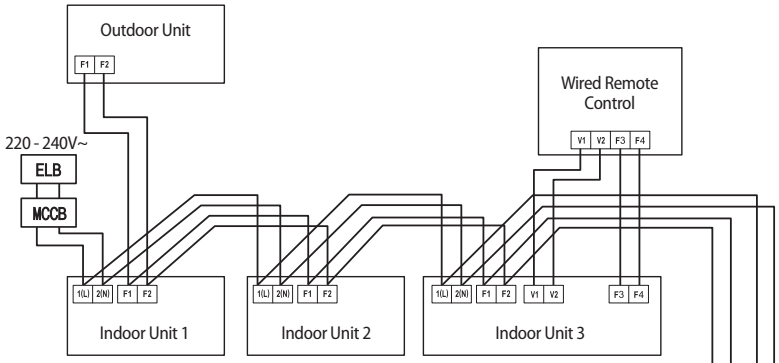
CAUTION

- When maintaining the air conditioner, remove condensate water remained in the drain pan by using a drain port for maintenance.

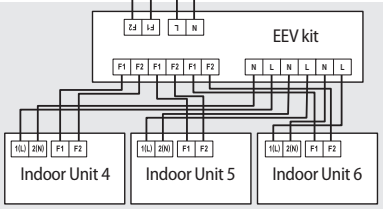
Connecting the connection cord

Power and communication cable connection

1. Before wiring work, you must turn off all power source.
2. Indoor unit power should be supplied through the breaker(MCCB, ELB) separated by the outdoor power.
3. The power cable should be used only copper wires.
4. Connect the power cable [1(L), 2(N)] among the units within maximum length and communication cable (F1, F2) each.
5. Connect V1, V2(for DC12V) and F3, F4(for communication) when installing the wired remote Control.



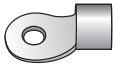
❋ ELB : Essential Installation

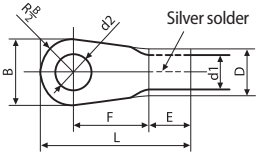


❋ Ceiling, wall-mounted indoor unit.

Connecting the connection cord

Selecting compressed ring terminal





Nominal dimensions for cable (mm²)		1.5		2.5		4
Nominal dimensions for screw (mm)		4	4	4	4	4
B	Standard dimension (mm)	6.6	8	6.6	8.5	9.5
	Allowance (mm)	±0.2		±0.2		±0.2
D	Standard dimension (mm)	3.4		4.2		5.6
	Allowance (mm)	+0.3 -0.2		+0.3 -0.2		+0.3 -0.2
d1	Standard dimension (mm)	1.7		2.3		3.4
	Allowance (mm)	±0.2		±0.2		±0.2
E	Min.	4.1		6		6
F	Min.	6		6		5
L	Max.	16		17.5		20
d2	Standard dimension (mm)	4.3		4.3		4.3
	Allowance (mm)	+ 0.2 0		+ 0.2 0		+ 0.2 0
t	Min.	0.7		0.8		0.9

Specification of electronic wire

Power supply	MCCB	ELB	Power cable	Earth cable	Communication cable
Max : 242V Min : 198V	XA	XA, 30 mmA 0.1 sec	2.5 mm^2	2.5 mm^2	0.75~1.5 mm^2

▶ Decide the capacity of ELB and MCCB by below formula.

The capacity of ELB, MCCB X[A] = 1.25 X 1.1 X ∑Ai

❋ X : The capacity of ELB, MCCB

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

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

NOTE

❋ Rating current

Unit	Model	Rating current
AVXCS✳✳/ND✳✳✳1✳✳✳✳	✳✳022✳✳	0.20A
	✳✳028✳✳	0.23A
	✳✳036✳✳	0.25A
ND✳✳✳1✳✳✳✳	✳✳023✳✳	0.20A
	✳✳032✳✳	0.23A
	✳✳040✳✳	0.25A
	✳✳056✳✳	0.28A
	✳✳071✳✳	0.40A
AVXC2✳✳/ND✳✳✳2✳✳✳✳	✳✳052✳✳	0.38A
	✳✳056✳✳	0.38A
	✳✳060✳✳	0.40A
	✳✳071✳✳	0.40A
	✳✳072✳✳	0.40A
AVXC4✳✳	✳✳056✳✳	0.50A
	✳✳071✳✳	0.50A
	✳✳112✳✳	0.71A
	✳✳128✳✳	0.78A
	✳✳140✳✳	0.78A
AVXCM✳✳	✳✳028✳✳	0.50A
	✳✳036✳✳	0.50A
	✳✳056✳✳	0.52A
	✳✳071✳✳	0.55A

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

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

❋ Coef : 1.55

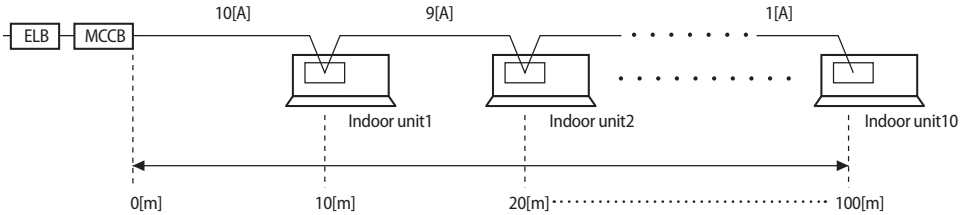
❋ Lk : Distance among each indoor unit[m], Ak: Power cable specification[mm^2]
ik : Running current of each unit[A]

ENGLISH

Connecting the connection cord

Example of Installation

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

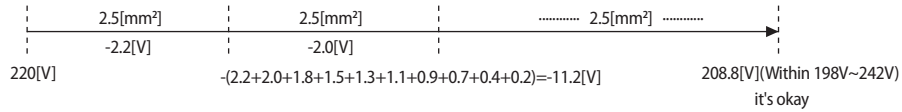


- ▶ Apply following equation.

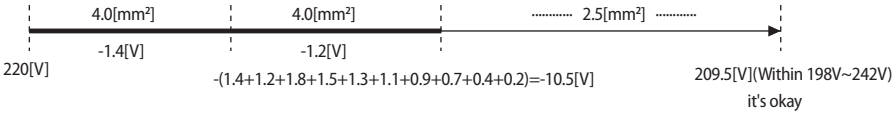
$$\sum_{k=1}^{n}\left(\frac{Coef\times 35.6\times Lk\times ik}{1000\times Ak}\right) < 10\%\ \text{of input voltage[V]}$$

✻ Calculation

- Installing with 1 sort wire.



- Installing with 2 different sort wire.



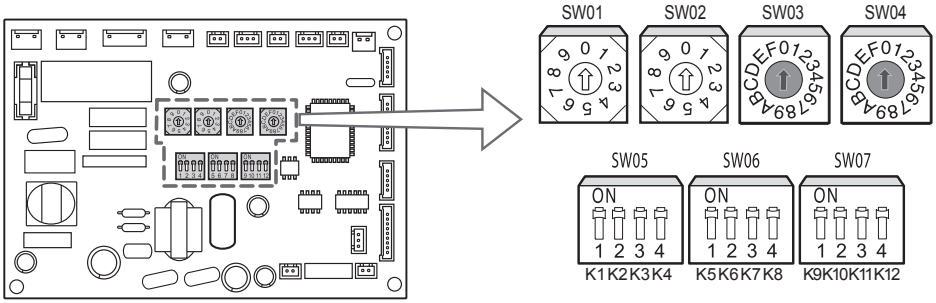
CAUTION

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

Tightening torque (kgf•cm)	
M4	12.0~14.7

Indoor unit setting

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



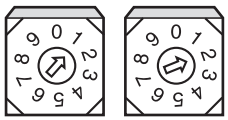
✻ The designs and shape are subject to change according to the model.

Setting MAIN Address

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

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

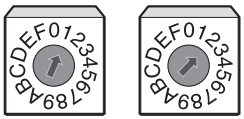
ex) When MAIN address is set as "12".



Setting RMC Address

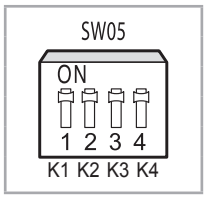
- ▶ You must set the SW03, SW04 and K2 switch when using the centralized controller.

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



Additional functions

No.		Function		ON	OFF
SW05	K1	External room sensor		Not use	Use
	K2	Centralized controller		Not use	Use
	K3	RPM up	1way/Slim 1way/2way/mini 4way	N/A	N/A
			4way	Normal	Up
	K4	Option drain pump		N/A	N/A

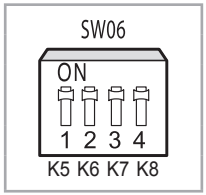


❋ N/A : Not Available

❋ K1 OFF

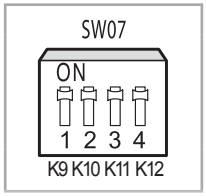
Heating mode : Setting temperature compensation value = 0℃
Thermo OFF → Fan OFF

No.		Function		ON	OFF
SW06	K5	Heating thermo-off	1way/Slim 1way/2way	+2℃	+5℃
			4way/mini 4way	+5℃	+2℃
	K6	Filter signal display		1000 hours	2000 hours
	K7	Hot water coil		N/A	N/A
	K8	Electrical heater		N/A	N/A



❋ N/A : Not Available

No.		Function	ON	OFF
SW07	K9	Min. EEV step at heating	Fix 80 step	0 or 80 step
	K10	Priority of indoor unit display on wired remote controller	Slave	Master
	K11	External control	Not Use	Use
	K12	Operation output	Thermal ON	Operation ON



❋ N/A : Not Available

Final checks and user tips

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

1. Check the followings.

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

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

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

NOTE

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

Troubleshooting

Detection of errors

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

LED Display

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

● On ◑ Flickering × Off

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

Troubleshooting

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

● On ◑ Flickering × Off

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

Memo