

Duct Type Series

BIG duct : ND***HH***

Air Conditioner installation manual

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Safety Precautions

The following safety precautions must be taken when using your air conditioner.



WARNING

- **Risk of electric shock can cause injury or death. • Disconnect all remote electric power supplies before servicing, installing or cleaning.**
- **Installation must be done by the manufacturer or service agent or a similar qualified person in order to avoid a hazard.**

INSTALLING THE UNIT

- ◆ The unit should not be installed by the user. Ask the dealer or authorized company to install the units.
- ◆ If the unit is installed improperly, water leakage, electric shock or fire may result.
- ◆ Mount with the lowest moving parts at least 2.5 m above the floor or grade level. (If applicable)
- ◆ The manufacturer does not assume responsibility for accidents or injury caused by an incorrectly installed air conditioner. If you are unsure about installation, contact an installation specialist.
- ◆ When installing the built-in type air conditioner, keep all electrical cables such as the power cable and the connection cord in pipe, ducts, cable channels e.t.c to protect them against liquids, outside impacts and so on.
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.
- ◆ This appliance is not accessible to the general public. This appliance should be installed according to the provided installation instruction.
- ◆ When installing the air conditioner in a small room, the measure not to exceed the dangerous density is needed.
 - When refrigerant leaks and exceeds the dangerous density, suffocation may occur.
- ◆ If any gas or impurities except R410A refrigerant come into the refrigerant pipe, serious problem may occur and it may cause injury.
- ◆ Use only rated accessories and install the air conditioner with rated equipments.
 - If you don't use the rated accessories, the air conditioner may drop from its place, water may leak or electric shock or fire may occur.
- ◆ Ventilate your room when refrigerant gas leaks during installation.
 - Toxic gas may generate when refrigerant gas contacts with heat.
- ◆ 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.

Safety Precautions (Continued)

POWER SUPPLY LINE OR CIRCUIT BREAKER

- ◆ If the power cable of this air conditioner is damaged, it must be replaced by service agent or similarly qualified persons in order to avoid a hazard.
- ◆ The unit must be plugged into an independent circuit if applicable or connect the power cable to the auxiliary circuit breaker. An all pole disconnection from the power supply must be incorporated in the fixed wiring with a contact opening of >3mm.
- ◆ The air conditioner must be installed in accordance with national wiring regulations and safety regulations wherever applicable.
- ◆ The electric work must be done by service agent or similarly qualified persons according to national wiring regulations and use only rated cable.
 - If the capacity of the power cable is insufficient or electric work is not properly completed, electric shock or fire may occur.
- ◆ Install the cables with supplied cables firmly. Fix them securely so that external force is not exerted to the terminal board.
 - If the connection or fixing is incomplete, heat generation, electric shock or fire may occur.
- ◆ Connect the power cable between the indoor and outdoor unit properly so that the electrical component box cover is not get loosen and attach the cover securely.
 - If the the cover is attached incompletely, heat generation, electric shock or fire of the terminal board may occur.





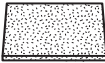






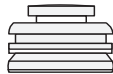



CAUTION

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

Accessories

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

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

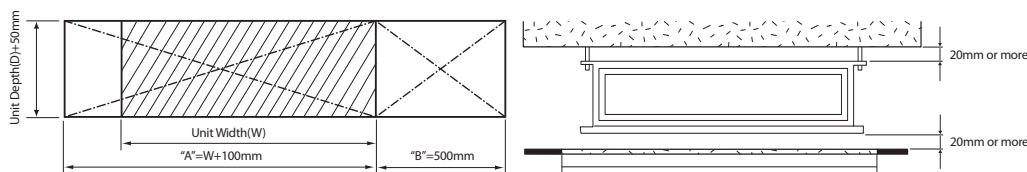
Selecting the Installation Location

Indoor Unit

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

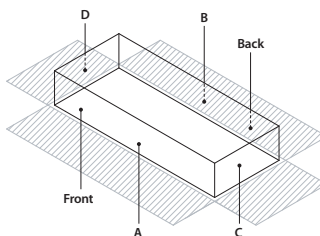
Space requirements for installation & service

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



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

Insulation Guide



Thickness: more than 10mm

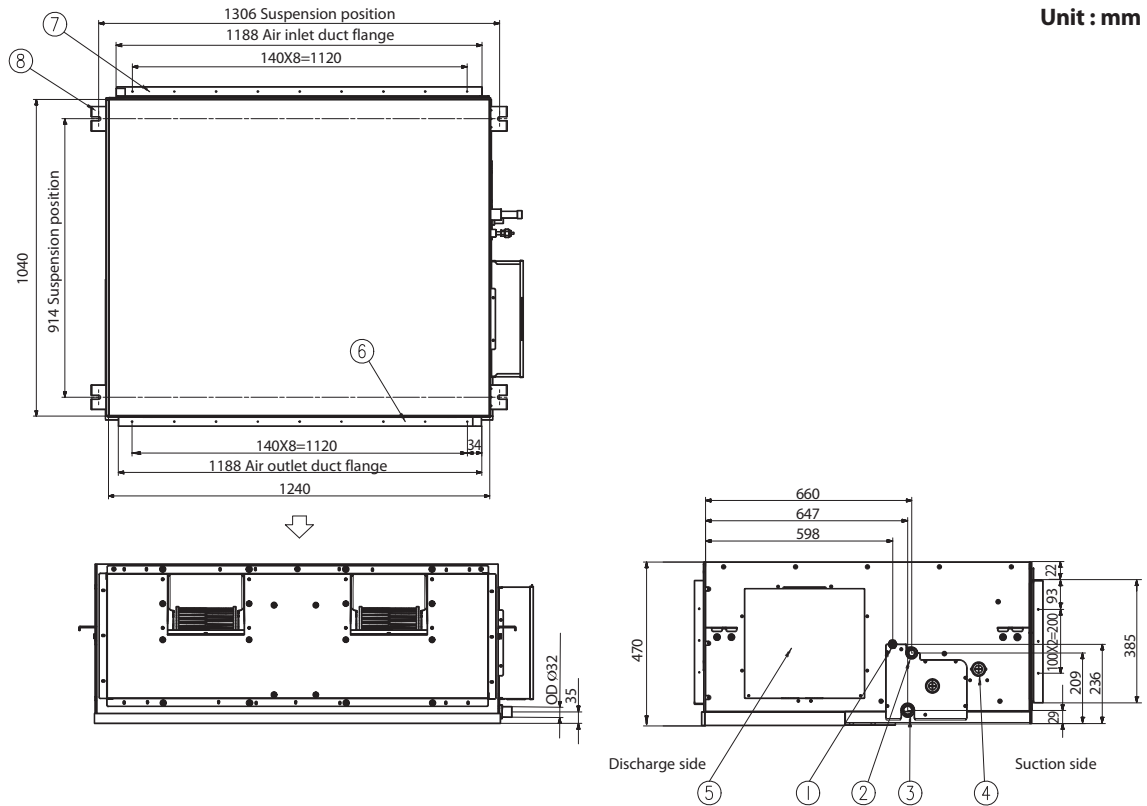
Indoor unit	A	B	C	D	Front/Back
20.0~28.0kW (1240x470x1040)	1240x1040	1240x1040	470x1040	470x1040	Insulate the front and back side in proper size at the same time when insulating the suction duct and discharge duct.

- ◆ Insulate the end of the pipe and some curved area by using separate insulator.
- ◆ Insulate the discharge and suction part at the same time when you insulate connection duct.

Selecting the Installation Location (Continued)

Drawing of the indoor unit

Unit : mm



No.	Name	Description
①	Liquid pipe connection	ø9.52 (3/8")
②	Gas pipe connection	ND200/220*** : ø19.05(3/4") ND280*** : ø22.22(7/8")
③	Drain pipe connection	VP25 (OD ø32, ID ø25)
④	Drain pipe connection (Option drain pump)	VP25 (OD ø32, ID ø25)
⑤	Power supply/Communication connection	
⑥	Air discharge grille flange	
⑦	Air suction flange	
⑧	Hook	3/8" or M10

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.



- ◆ 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.



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

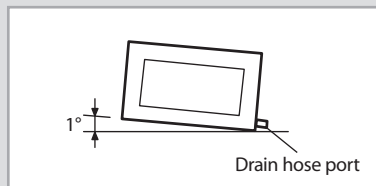
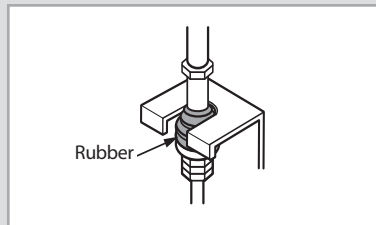
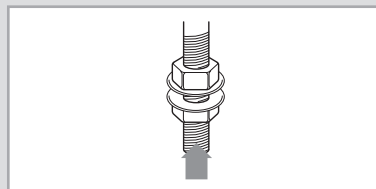
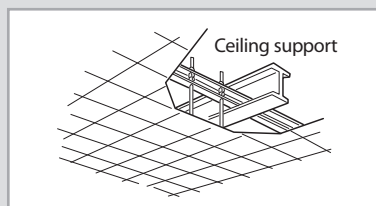
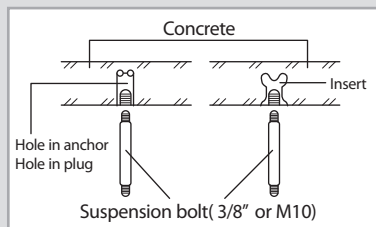
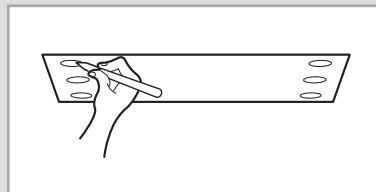
- 5 Hang the indoor unit to the suspension bolts between two nuts.

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

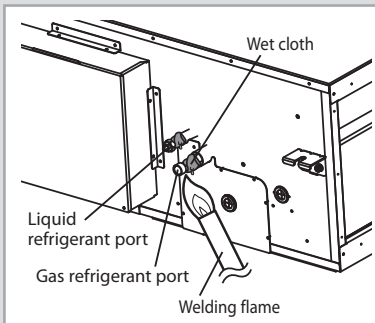
- 6 Screw the nuts to suspend the unit.

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

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



Purging the Unit



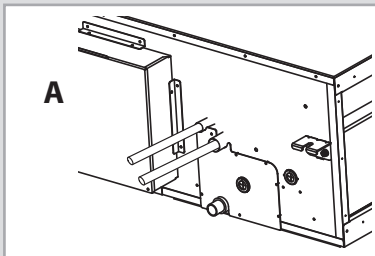
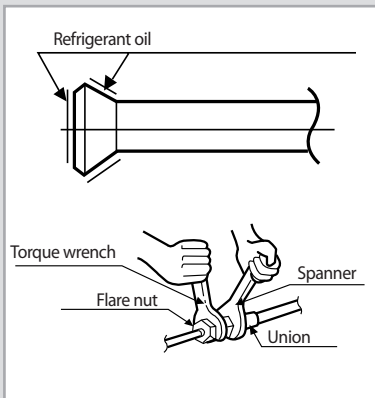
On delivery, the indoor unit is loaded with inert gas. All this gas must therefore be purged before connecting the assembly piping. To purge the inert gas, proceed as follows.

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

Result: All inert gas escapes from the indoor unit.

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

Connecting the Refrigerant Pipe



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

There are two refrigerant pipes of differing diameters:

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

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

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

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

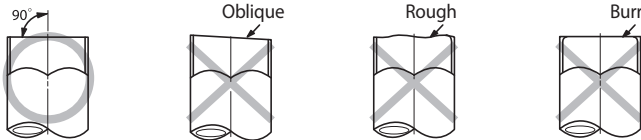
Outer Diameter	Torque (kgf·cm)
6.35 mm (1/4")	145~175
9.52 mm (3/8")	333~407
12.70 mm (1/2")	505~615
15.88 mm (5/8")	630~769

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

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

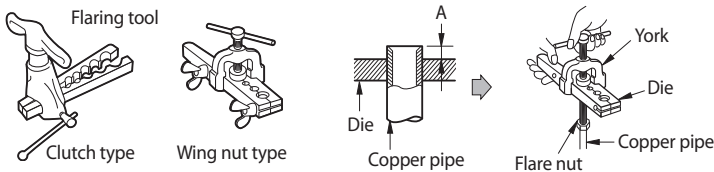
Cutting/Flaring the Pipes

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



- 3 To prevent a gas leak, remove all burrs at the cut edge of the pipe using a reamer.

- 4 Carry out flaring work using flaring tool as shown below.



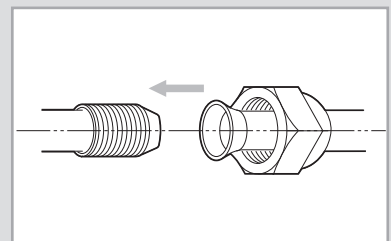
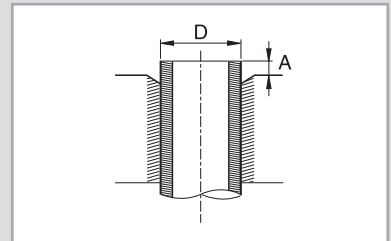
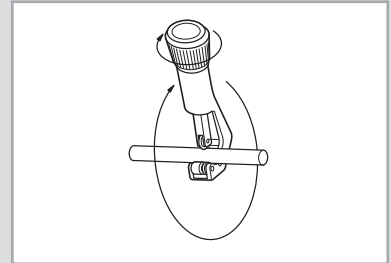
Outer diameter D(mm)	A(mm)		
	Flare tool for R410A clutch type	Conventional flare tool	
		Clutch type	Wing nut type
6.35	0~0.5	1.0~1.5	1.5~2.0
9.52	0~0.5	1.0~1.5	1.5~2.0
12.70	0~0.5	1.0~1.5	1.5~2.0
15.88	0~0.5	1.0~1.5	1.5~2.0

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



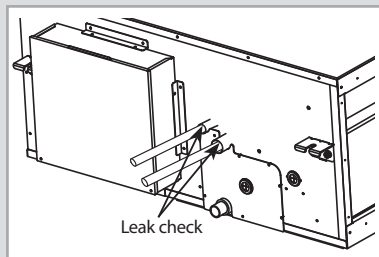
- 6 Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.

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	



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)

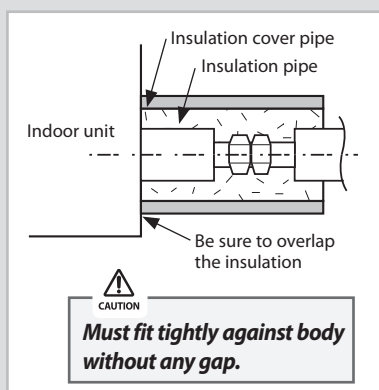
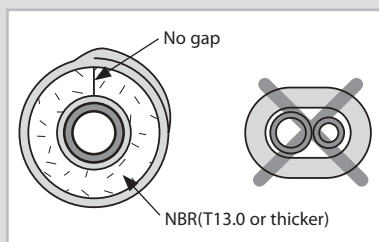
Before opening valves, discharge all the nitrogen into the system and create vacuum. After opening valves check leaks using a leak detector for refrigerant R410A.



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.



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

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 standard condition. If install 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.
- ◆ Insulation's heat-resistance temperature should be more than 120°C.

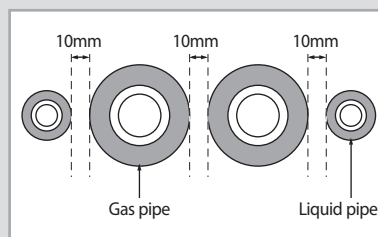
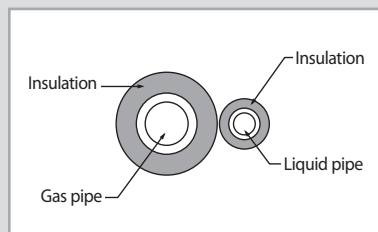
Pipe	Pipe size	Insulation Type(Heating/Cooling)		Remarks
		Standard [30°C, 85%]	High humidity [30°C, over85%]	
		EPDM, NBR		
Liquid pipe	ø6.35~ø9.52	9t	9t	Internal temperature is higher than 120°C
	ø12.70~ø50.80	13t	13t	
Gas Pipe	ø6.35	13t	19t	
	ø9.52	19t	25t	
	ø12.70			
	ø15.88			
	ø19.05			
	ø22.23			
	ø25.40			
	ø28.58		32t	
	ø31.75			
	ø38.10			
	ø44.45			
	ø50.80	25t	38t	

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

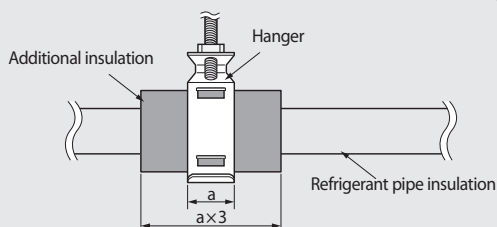
- ◆ You can contact the gas side and liquid side pipes but the pipes should not be pressed.
- ◆ When contacting the gas side and gas side pipe, use 1 grade thicker insulation.

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 insulation.

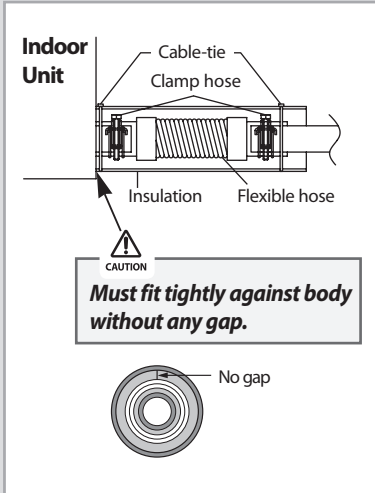
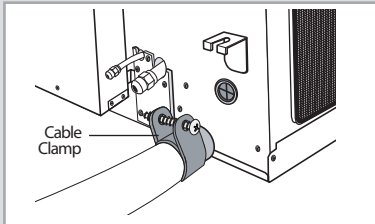
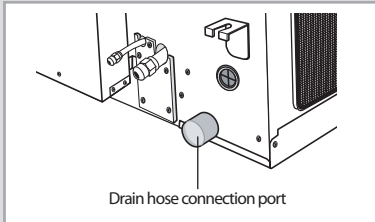


- ◆ **Install the insulation not to get wider and use the adhesives on the connection part of it to prevent moisture from entering.**
- ◆ **Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight.**
- ◆ **Install the refrigerant pipe respecting that the insulation does not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



Drain pipe and Drain hose Installation

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



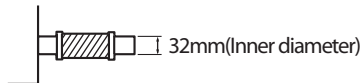
- 1 Unscrew the 4 tapped screws to remove the cover of the drain hose connection port.

- 2 Insert the flexible hose to the drain hose port.

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

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

- ◆ Inner diameter of the drain hose



Note

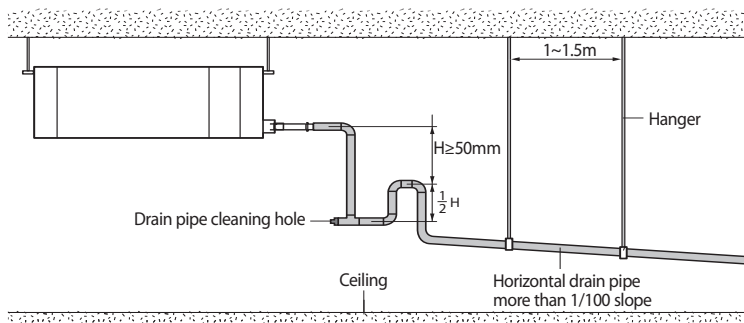
- ◆ Give a slightly slant to the drain hose for proper drainage of condensate.
- ◆ Fix the flexible hose to the PVC with the supplied cable tie securely.

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

■ Drain pipe Connection

Without the drain pump

- 1 Install horizontal drain pipe with a slope of 1/100 or more and fix it by hanger space of 1.0~1.5m.
- 2 Install U-trap at the end of the drain pipe to prevent a nasty smell to reach the indoor unit.
- 3 Do not install the drain pipe to upward position. It may cause water flow back to the unit.

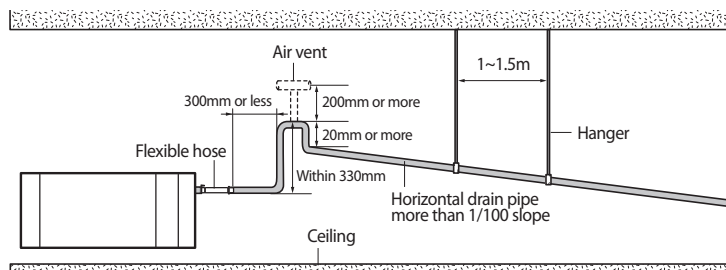


With the drain pump

- 1 The drain pipe should be installed within 330mm from the flexible hose and then lift down 20mm or more.
- 2 Install horizontal drain pipe with a slope of 1/100 or more and fix it by hanger space of 1.0~1.5m.
- 3 Install the air vent in the horizontal drain pipe to prevent water flow back to the indoor unit.

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

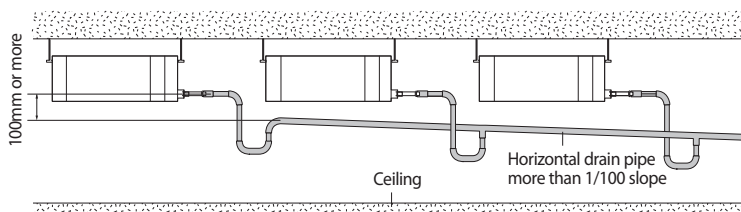
- 4 The flexible hose should not be installed upward position, it may cause water flow back to the indoor unit.



Centralized Drainage

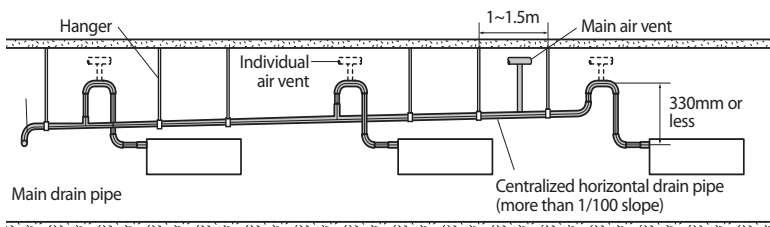
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- 2 Install U-trap at the end of the drain pipe to prevent a nasty smell to reach the indoor unit.



With the drain pump

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

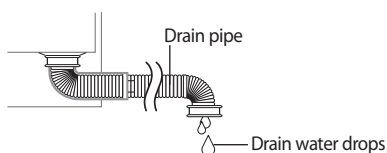


■ Testing the drainage

Prepare a little water about 2 liters.

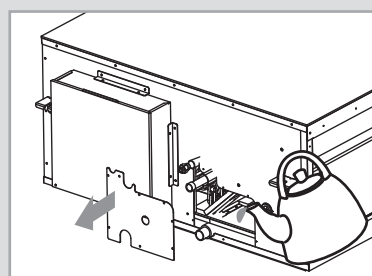
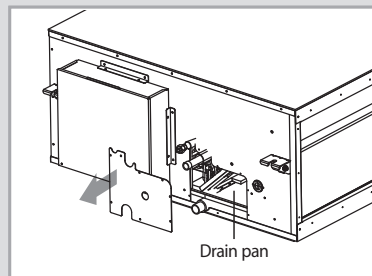
- 1 Pour water into the drain pan in the indoor unit as shown in figure.
- 2 Confirm that the water flows out through the drain hose.
- 3 When the drain pump is installed, operate the unit as cooling mode and check a drain pump pumping.

- 4 Check drain water drops at the end of the drain pipe.



- 5 Make sure there is no water leak at the drainage.

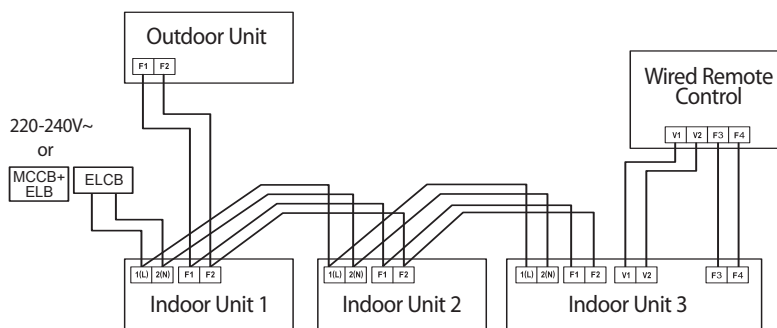
- 6 Reassemble the cover of water supply intake.



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

Power and communication cable connection

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



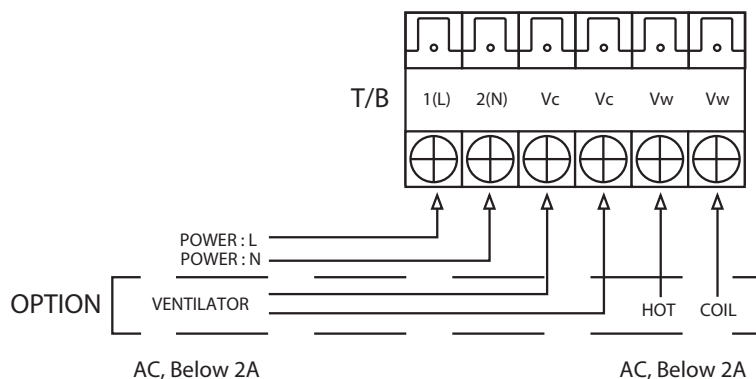
※ ELCB : Essential Installation

WARNING :

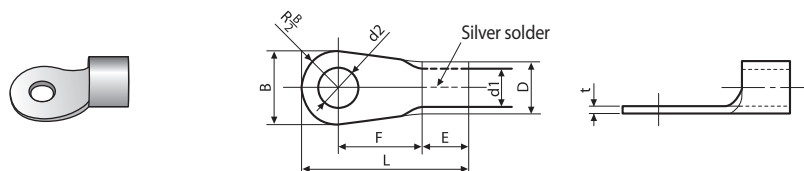
Power off before connecting any wires;
Indoor PBA will be damaged while V1,V2,F3,F4 short each other.

Connecting power for optional product

- ◆ When installing optional product, make sure to follow below current capacity.
- ※ Optional product is not supplied by manufacturer.



Selecting compressed ring terminal



Normal dimensions for cable (mm ²)	Normal dimensions for screw (mm)	B		D		d1		E	F	L	d2		t
		Standard dimension (mm)	Allowance (mm)	Standard dimension (mm)	Allowance (mm)	Standard dimension (mm)	Allowance (mm)	Min.	Min.	Max.	Standard dimension (mm)	Allowance (mm)	Min.
1.5	4	6.6	±0.2	3.4	+0.3 -0.2	1.7	±0.2	4.1	6	16	4.3	+0.2 0	0.7
	4	8											
2.5	4	6.6	±0.2	4.2	+0.3 -0.2	2.3	±0.2	6	6	17.5	4.3	+0.2 0	0.8
	4	8.5											
4	4	9.5	±0.2	5.6	+0.3 -0.2	3.4	±0.2	6	5	20	4.3	+0.2 0	0.9

Specification of electronic wire

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

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

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

$$\text{The capacity of ELCB(or MCCB+ELB) } X[A] = 1.25 \times 1.1 \times \sum A_i$$

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

* $\sum A_i$: Sum of Rating currents of each indoor unit.

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

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

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

* coef: 1.55

* L_k : Distance among each indoor unit[m]

A_k : Power cable specification[mm²]

i_k : Running current of each unit[A]

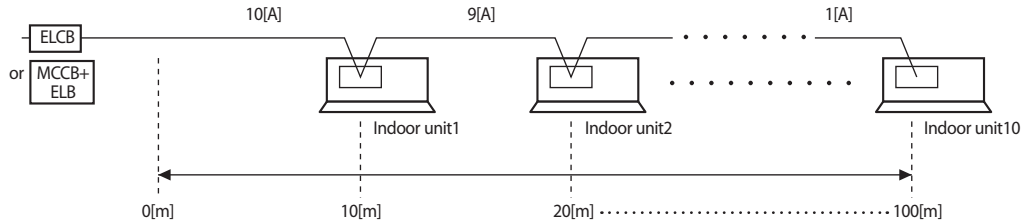
※ Rating current

Unit	Model	Rating current
ND***HH***	**200**	3.3A
	220	3.8A
	280	5.9A

Wiring Work (Continued)

Example of Installation

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

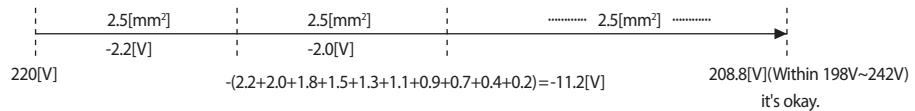


- ◆ Apply following equation.

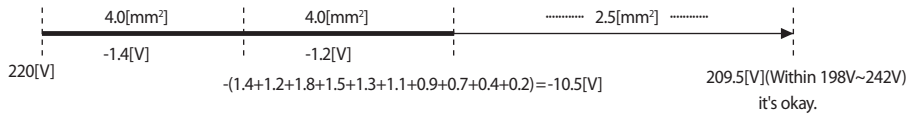
$$\sum_{k=1}^n \left(\frac{\text{Coef} \times 35.6 \times L_k \times i_k}{1000 \times A_k} \right) < 10\% \text{ of input voltage [V]}$$

- ✧ Calculation

- Installing with 1 sort wire



- Installing with 2 different sort wire





CAUTION

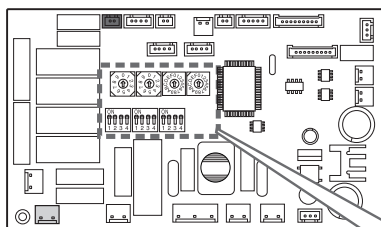
- ◆ **Select the power cable in accordance with relevant local and national regulations.**
- ◆ **Wire size must comply with local and national code.**
- ◆ **For the power cable, use the grade of H07RN-F or H05RN-F materials.**
- ◆ **You should connect the power cable into the power cable terminal and 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($\geq 3\text{mm}$).
- ◆ **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)

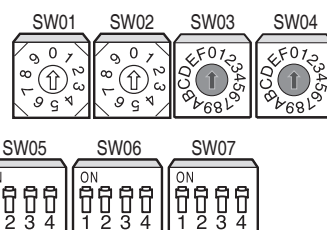
M4	12.0~14.7
----	-----------

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.

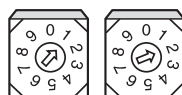


Setting Main Address

- ◆ 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.

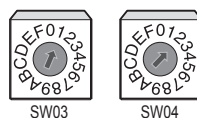
For Example When MAIN address is set as "12".



Setting RMC Address

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

For Example 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	-	-	-
	K4	Drain Pump	Not use	Use

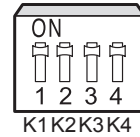
※ K1 OFF

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

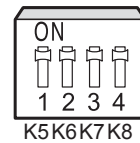
No.		Function	ON	OFF
SW06	K5	Heating Current Temperature Compensation	+2°C	+5°C
	K6	Filter Time	1,000 hours	2,000 hours
	K7	Hot Water Heater	Not Use	Use
	K8	-	-	-

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

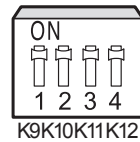
SW05



SW06



SW07



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's Manual and this 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 on the receiver & display unit

LED Display


























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

● On ● Flickering × Off

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

Troubleshooting (Continued)

LED Display

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

● On ● Flickering × Off




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

Option table

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

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

Static Pressure(mmAq)		5	10	15	20	25	28
Model	Step	Option code for indoor unit					
ND200HHXEA	HIGH	015A17-150071	015A17-1500B4	015A17-1500D7	015A17-15023A	015A17-15028D	-
	MID						
	LOW						
ND220HHXEA	HIGH	015A17-160097	015A17-1600C7	015A17-1600E8	015A17-16024D	015A17-16029F	-
	MID						
	LOW						
ND280HHXEA	HIGH	015A17-170207	015A17-170229	015A17-17025B	015A17-17029E	015A17-1703D1	015A17-1703F3
	MID						
	LOW						

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



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