

ORIGINAL  
MANUAL



# OWNER'S & INSTALLATION MANUAL

## VRF Floor Standing

KSEF-22 DN4.1

KSEF-36 DN4.1

KSEF-56 DN4.1



**IMPORTANT NOTE:**

Read this manual carefully before installing or operating your new air conditioning unit.  
Make sure to save this manual for future reference.



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# 1. PRECAUTIONS

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- Be sure to be in conformity with the local, national and international laws and regulations.
  - Read "PRECAUTIONS" carefully before installation.
  - The following precautions include important safety items. Observe them and never forget.
  - Keep this manual with the owner's manual in a handy place for future reference.
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The safety precautions listed here are divided into two categories. In either case, important safety information is listed which must be read carefully.

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## WARNING

Failure to observe a warning may result in injury.

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## CAUTION

Failure to observe a caution may result in injury or damage to the equipment.

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After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained. Also, inform customers that they should store this installation manual along with the owner's manual for future reference.

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## WARNING

**Be sure only trained and qualified service personnel to install, repair or service the equipment.**

Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, fire or other damage to the equipment.

**Install according to this installation instructions strictly.** If installation is defective, it will cause water leakage, electrical shock and fire.

**Disconnect the power supply before cleaning and maintenance.**

**When installing the unit in a small room, take measures against to keep refrigerant concentration from exceeding allowable safety limits in the event of refrigerant leakage.** Contact the place of purchase for more information. Excessive refrigerant in a closed ambient can lead to oxygen deficiency.

**Use the attached accessories parts and specified parts for installation.** otherwise, it will cause the set to fall, water leakage, electrical shock and fire.

**Install at a strong and firm location which is able to withstand the set's weight.** If the strength is not enough or installation is not properly done, the set will drop to cause injury.

**The appliance shall not be installed in the laundry.**

**Before obtaining access to terminals, all supply circuits must be disconnected.**

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**The appliance must be positioned so that the plug is accessible, for European products.**

**The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.**

**For electrical work, follow the local national wiring standard, regulation and this installation instructions. An independent circuit and single outlet must be used.** If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock fire.

**Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal.** If connection or fixing is not perfect, it will cause heat-up or fire at the connection.

**Wiring routing must be properly arranged so that control board cover is fixed properly.** If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.

**If the supply cord is damaged, it must be replaced by the manufacture or its service agent or a similarly qualified person in order to avoid a hazard, for European products.**

**An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring, for European products.**

**When carrying out piping connection, take care not to let air substances go into refrigeration cycle.** Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.

**Do not modify the length of the power supply cord or use of extension cord, and do not share the single outlet with other electrical appliances, for European products.** Otherwise, it will cause fire or electrical shock.

**Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.** Improper installation work may result in the equipment falling and causing accidents.

**If the refrigerant leaks during installation, ventilate the area immediately.** Toxic gas may be produced if the refrigerant comes into the place contacting with fire.

**Keep the interconnection cable away from the copper tube.**

**After completing the installation work, check that the refrigerant does not leak.** Toxic gas may be produced if the refrigerant leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.

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

Disconnect the power supply before cleaning and maintenance.



## CAUTION

### Ground the air conditioner.

Do not connect the ground wire to gas or water pipes, lightning rod or a telephone ground wire. Incomplete grounding may result in electric shocks.

### Check the power supply.

Check the power supply before installation. Ensure that the power supply must be reliably grounded following local, state and National Electrical Codes. If not, for example, if the ground wire is detected charged, installation is prohibited before it is rectified. Otherwise, there is a risk of fire and electric shock, causing physical injury.

### Check the layout.

Check the electric wire, water and gas pipeline layout inside the wall, floor and ceiling before installation. Do not implement drilling unless confirm safety with the user, especially for the hidden power wire. An electroprobe can be used to test whether a wire is passing by at the drilling location, to prevent physical injury caused by insulation broken cords.

### Be sure to install an earth leakage breaker.

Failure to install an earth leakage breaker may result in electric shocks.

### Connect the outdoor unit wires , then connect the indoor unit wires.

You are not allow to connect the air conditioner with the power source until wiring and piping the air conditioner is done.

### While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.

Improper drain piping may result in water leakage and property damage.

### Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise.

Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

### The appliance is not intended for use by young children or infirm persons without supervision.

**DISPOSAL:** Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.



### Don't install the air conditioner in the following locations:

- There is petrolatum existing.
- There is salty air surrounding (near the coast).
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- The Volt vibrates violently (in the factories).
- In buses or cabinets.
- In kitchen where it is full of oil gas.
- There is strong electromagnetic wave existing.
- There are inflammable materials or gas.
- There is acid or alkaline liquid evaporating.
- Other special conditions.

## 2. INSTALLATION INFORMATION

- To install properly, please read this "installation manual" at first.
- The air conditioner must be installed by qualified persons.
- When installing the indoor unit or its tubing, please follow this manual as strictly as possible.
- If the air conditioner is installed on a metal part of the building, it must be electrically insulated according to the relevant standards to electrical appliances.
- When all the installation work is finished, please turn on the power only after a thorough check.
- Regret for no further announcement if there is any change of this manual caused by product improvement.

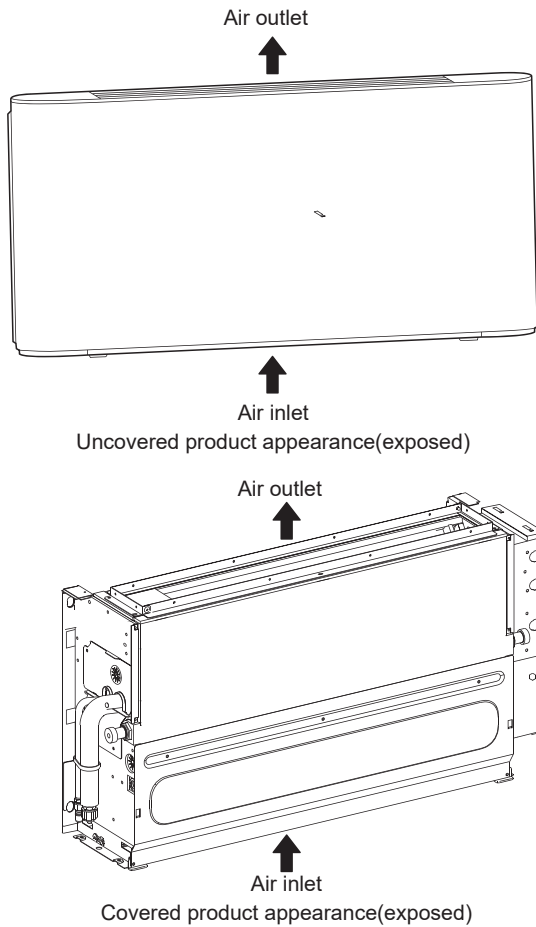
### INSTALLATION ORDER

- Select the location;
- Install the indoor unit;
- Install the outdoor unit;
- Install the connecting pipe;
- Connect the drain pipe;
- Wiring;
- Test operation.



### NOTE

All the illustrations of this manual are for explanatory purpose only. If the appearance, functions and physical objects are inconsistent, refer to the actual product.



(The following contents only applicable for the unit with a remote controller)

Remote controller & Its Frame	
1. Remote controller .....	1
2. Remote controller holder .....	1
3. Mounting screw (ST2.9x10-C-H).....	2
4. Alkaline dry battery(AM4) .....	2
5. Remote controller owner's manual .....	1

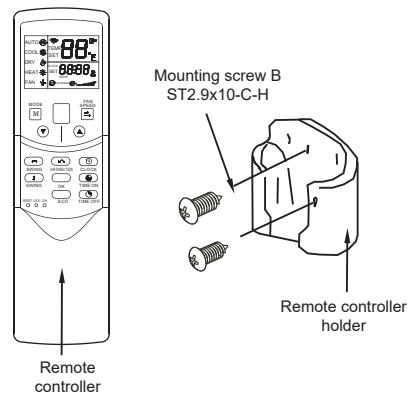


Fig.3-1

(The following contents only applicable for the unit with a wired controller)

The wired controller should be purchased separately from the manufacturer.

You can install the wired controller on the right of the unit or on the wall as required. Make sure the wired controller is close to the electric control box. Please refer to the Wired Controller Operation and Installation Manual for installation methods.

## 3. ATTACHED FITTINGS

Please check whether the following fittings are of full scope. If there are some spare fittings , please restore them carefully.

Name of Accessories	Qty	Outline	Usage
Foot bolt	4		Option
Installation manual	1	(This manual)	———
Pipe insulation material	2		Heat insulation
Signal receiver display board	1		Receive signal
Base (for some units)	2		Option
Copper nut	2		Use for pipe connection of engineering installation
Remote on/off cable	1		Option

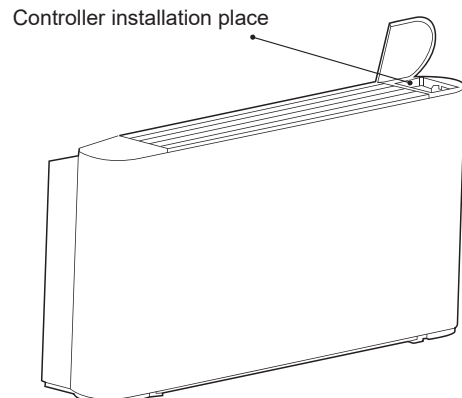


Fig.3-2 Installation position of wired controller

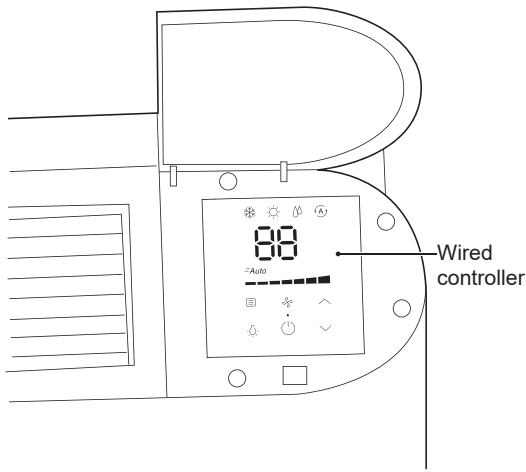


Fig.3-3 After installation of wired controller



## CAUTION

- Never throw or beat the controller.
- Before installation, operate the remote controller to determine its location in a reception range.
- Keep the remote controller at least 1m apart from the nearest TV set or stereo equipment. (it is necessary to prevent image disturbances or noise interferences.)
- Do not install the remote controller in a place exposed to direct sunlight or close to a heating source, such as a stove.
- Note that the positive and negative poles are right positions when loading batteries.



## NOTE

This manual is subject to changes due to technological improvement without further notices.

## 4. INDOOR UNIT INSTALLATION

### 4.1 Before Installation

1. Determine the route to move the unit to the installation site.
2. First unseal and unpack the unit. Then drag the bottom to move the unit. Refrain from exerting force on other parts of the unit, especially the refrigerant piping, water discharge piping, and the plastic parts.

### 4.2 Choosing an Installation Site

1. Choose a site that fully complies with the following conditions and user requirements to install the air conditioning unit.
  - ◆ Well ventilated.
  - ◆ Unobstructed airflow.
  - ◆ Strong enough to bear the weight of the indoor unit.

- ◆ Ceiling has no obvious slant.
- ◆ There is sufficient space for repair and maintenance work to be carried out.
- ◆ No leakage of flammable gas.
- ◆ The length of the piping between the indoor and outdoor units is within the permitted range (refer to the manual on installation of the outdoor unit).

### 2. Space required for installation (unit (mm)):

Incorrect positioning or installation may increase the noises and vibration of the unit during operation.

If not enough space is reserved during installation, the unit may face difficult maintenance and reduced performance.

The unit allows vertical installation, provided that correct positioning is arranged in advance. As shown below, a is greater than 150 mm, b is between 90 and 100 mm, c greater than 50 mm and d greater than 1500 mm.

The footings shown in Fig.4-2 are optional. You can purchase them separately.

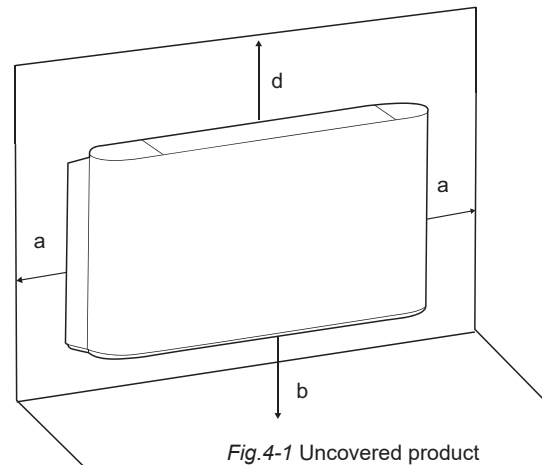


Fig.4-1 Uncovered product

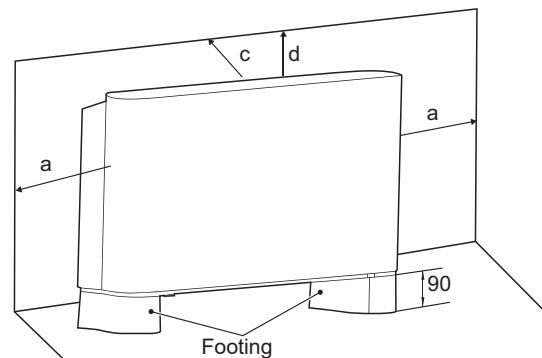


Fig.4-2 Uncovered product

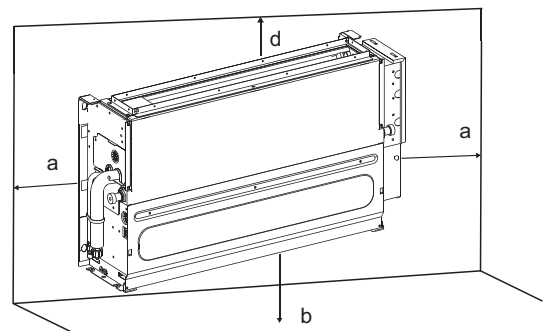


Fig.4-3 Covered product

### 4.3 Indoor Unit Installation

1. Remove the casing(for uncovered product)  
Remove screws ①\*2 and ②\*2 and then the casing.

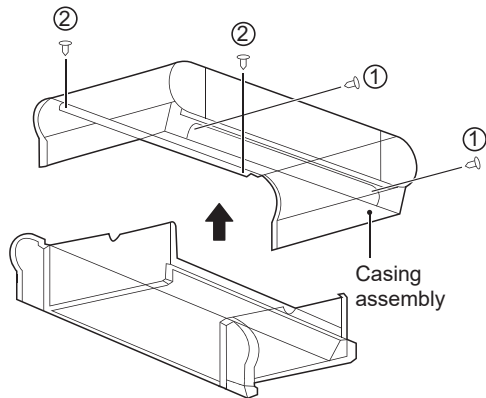


Fig.4-4

#### 2. Version I Installation

Mark the places for screws on the wall according to the unit mounting holes or dimensions specified in Fig.4-11,- Fig.4-12. The drain pipe for condensate water must be smooth enough to allow unobstructed water discharge.

As shown in Fig.4-5, fasten four screws (①) into a proper masonry structure.

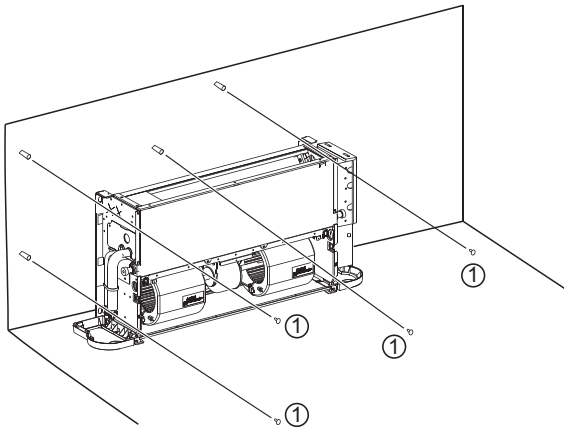


Fig.4-5 Diagram for fixing the unit body

#### 3. Version II Installation

The footings shown in Fig.4-6a, Fig.4-6b are optional. You can purchase them separately and install them as follows:

1. For covered product, should fix the bases according to Fig.4-6a before.
2. Put the footings beside the unit to be installed.
3. Place the mounting holes on the unit base into the corresponding footing locating pin and install screws ①\*2 and ②\*2 to fix the footing according to Fig.4-6b.

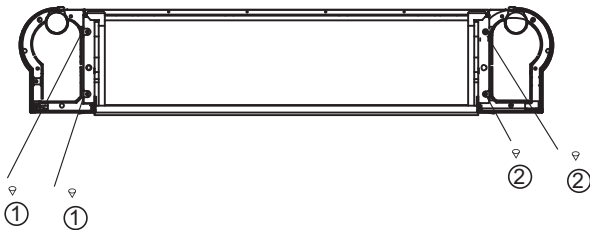
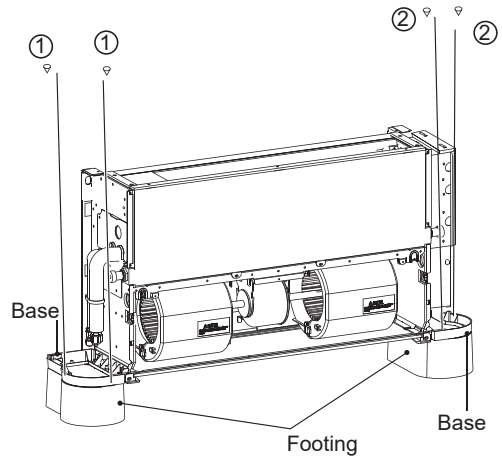


Fig.4-6a, for covered product



#### 4. Installation with lifting bolts

Use different bolts for the installation depending on the installation environment.

### WOODEN CONSTRUCTION

Put the square timber transversely over the roof beam, then install the hanging screw bolts.

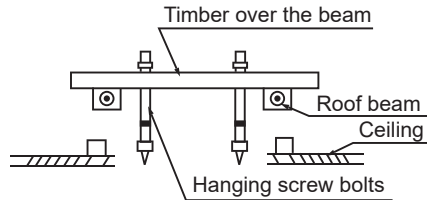


Fig.4-7

### NEW CONCRETE BRICKS

Inlaying or embedding the screw bolts.

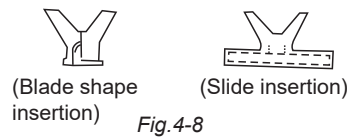


Fig.4-8

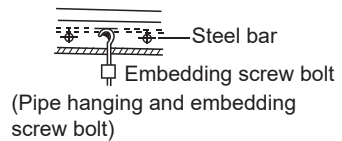


Fig.4-9

### FOR ORIGINAL CONCRETE BRICKS

Install the hanging hook with expansible bolt into the concrete deep to 45~50mm to prevent loose.

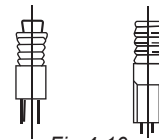


Fig.4-10



5. Dimensions

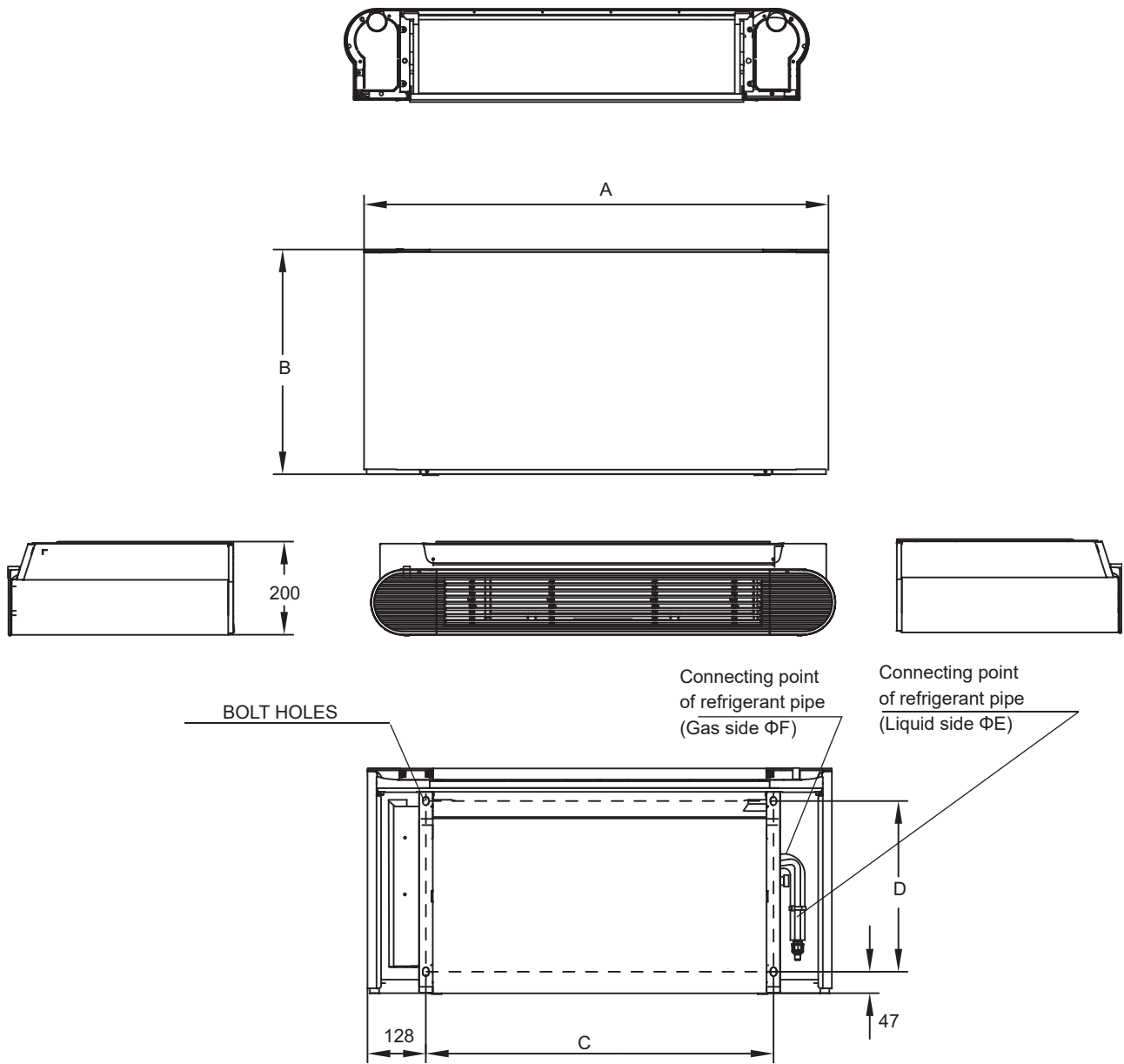


Fig.4-11 Uncovered product

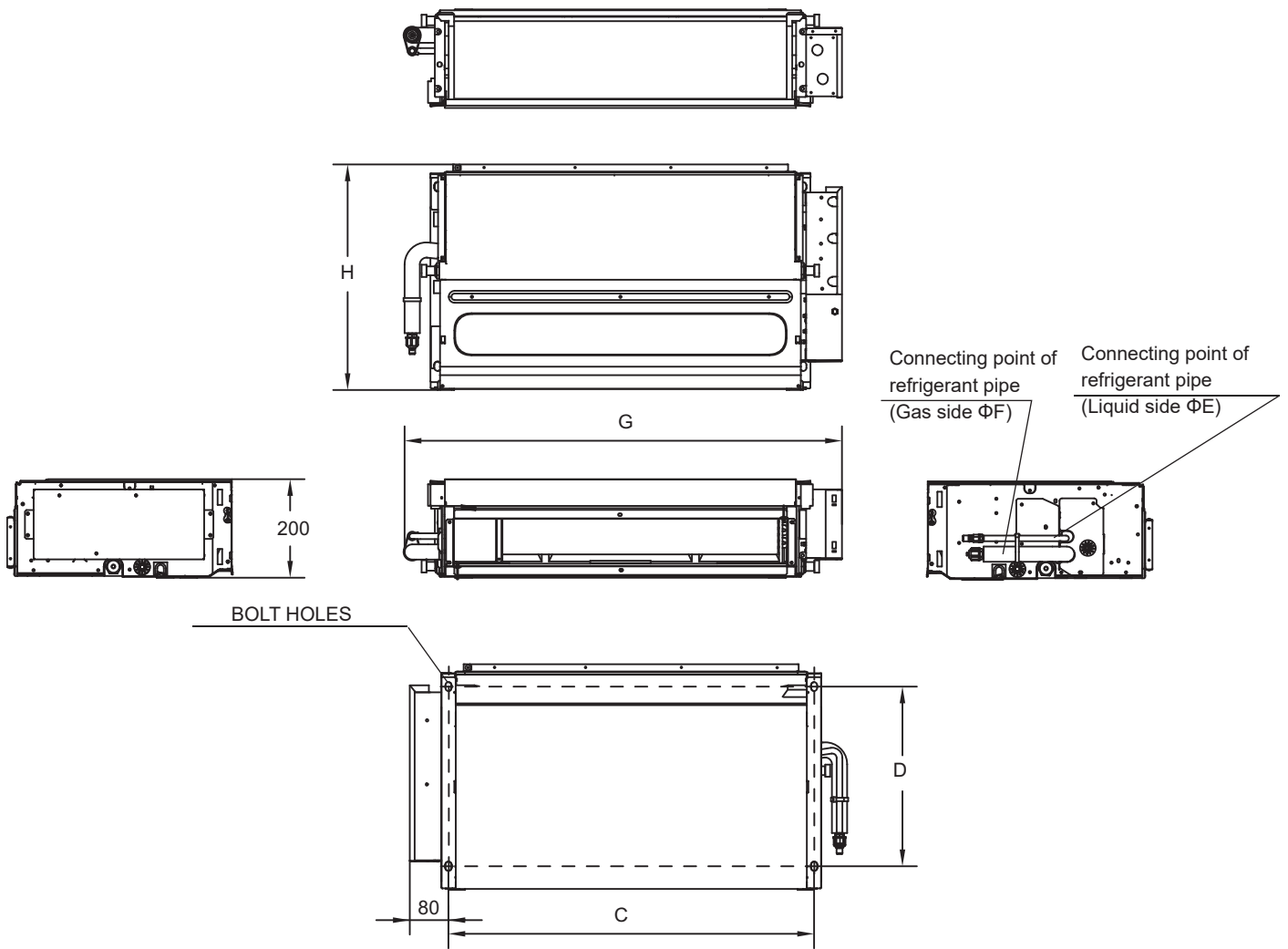


Fig.4-12 Covered product

Table 4-1

Capacity(KW)	2.2	2.8	3.6	4.5	5.6	7.1	8.0
A	1020	1020	1020	1240	1360	1360	1360
B	495	495	495	495	591	591	591
C	764	764	764	984	1104	1104	1104
D	375	375	375	375	391	391	391
E	6.4	6.4	6.4	6.4	6.4	9.5	9.5
F	12.7	12.7	12.7	12.7	12.7	15.9	15.9
G	915	915	915	1133	1253	1253	1253
H	470	470	470	470	566	566	566

#### 4.4 Cleaning the air filter

To ensure proper air return, clean the air filter at least once every month. If used in a dusty environment, the filter must be cleaned on a more frequent basis. Take the air filter out before you can clean it.

The filter is at the bottom of the unit, while the air return outlet is at the bottom or the rear side.

To take the air filter out, do as follows:

- a) Remove the screws ① and ②.
- b) Rotate the filter bracket.
- c) Pull out the filter.

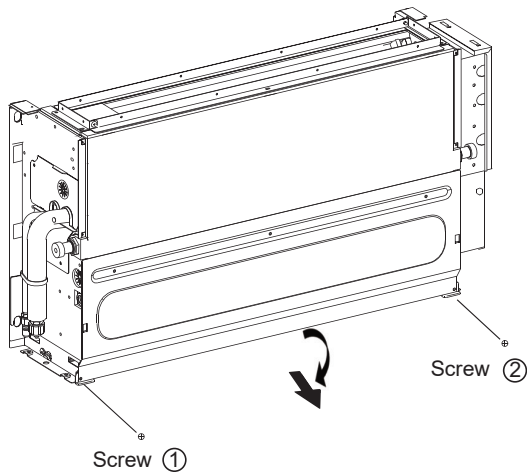
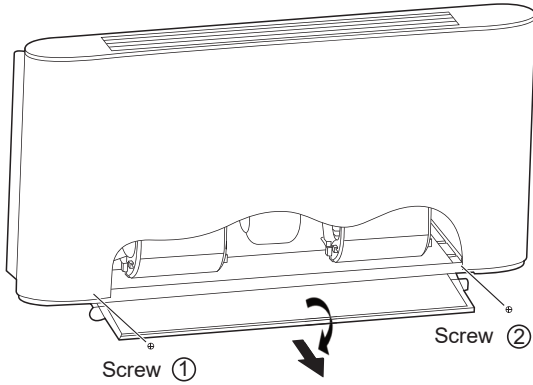


Fig.4-13 Diagram of removing the filter

Blow the air filter with compressed air or clean it in water.

Before putting the filter back, make sure it is clean and dry. If it is damaged, replace it with a new one.

#### 4.5 INSTALL THE CONNECTING PIPE



#### CAUTION

Do not let air, dust, or other impurities fall in the pipe system during the time of installation.  
The connecting pipe should not be installed until the indoor and outdoor units have been fixed already.  
Keep the connecting pipe dry, and do not let moisture in during installation.

#### 4.5.1 The Procedure of Connecting Pipes

5.1.1 Measure the necessary length of the connecting pipe, and make it by the following way.

- 1) Connect the indoor unit at first, then the outdoor unit.
  - a. Bend the tubing in proper way. Don't harm them.



#### CAUTION

1. Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4 rounds with hands before fasten the flare nuts.
2. Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.

2) The stop valve of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop valve, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.

3) Expel the air (refer to the "Expel The Air") after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.

#### ■ Notices For Benable pipe.

- The bending angle should not exceed 90°.
- Bending position is preferably in the bendable pipe. The larger the better it is .
- Do not bend the pipe more than three times.

#### ■ Bend the connecting pipe of small wall thickness.

- Cut out a desired concave at the bending part of the insulating pipe.
- Then expose the pipe(cover it with tapes after bending). To prevent collapsing of deforming, please bend the pipe at its biggest radius.
- Use bender to get a small radius pipes.

#### ■ Use the market brass pipe.

Be sure to use the same insulating materials when you buy the brass pipe. (More than 9mm thick)

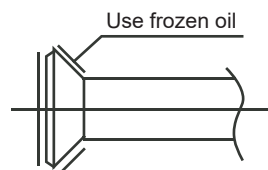


Fig.4-14

## 4.6 Refrigerant Piping Installation

### 4.6.1 Length and Level Difference Requirements for the Piping Connections to the Indoor and Outdoor Units

The length and level difference requirements for the refrigerant piping are different for different indoor and outdoor units. Refer to the installation manual of the outdoor unit.

### 4.6.2 Piping Material and Size

1. Piping material: Copper pipes for air handling.
2. Piping size: Choose and purchase copper pipes that correspond to the length and size calculated for the selected model in the installation manual of the outdoor unit and your actual project requirements.

### 4.6.3 Piping Layout

1. Seal the two ends of the piping properly before you connect the indoor and outdoor piping. Once unsealed, connect the piping of the indoor and outdoor units as quickly as possible to prevent dust or other debris from entering the piping system via the unsealed ends, as this may cause the system to malfunction.
2. If the piping needs to go through walls, drill the opening in the wall, and place accessories like casings and covers for the opening properly.
3. Place the refrigerant connecting piping and the communication wiring for the indoor and outdoor units together, and bundle them tightly to make sure air does not enter and condensate to form water that may leak from the system.
4. Insert the bundled piping and wiring from outside the room through the wall opening into the room. Be careful when you lay out the piping. Do not damage the piping.

### 4.6.4 Piping Installation

- Refer to the installation manual attached with the outdoor unit on installation of the refrigerant piping for the outdoor unit.
- All gas and liquid piping must be properly insulated; otherwise, this may cause water to leak. Use heat insulation materials that can withstand high temperatures above 120°C to insulate the gas pipes. In addition, the insulation of the refrigerant piping should be reinforced (20 mm or thicker) in situations where there is high temperature and/or high humidity (when part of refrigerant piping part is higher than 30°C or when the humidity exceeds RH80%). Otherwise, the surface of the heat insulation material may be exposed.
- Before the works are carried out, verify that the refrigerant is R410A. If the wrong refrigerant is used, the unit may malfunction.
- Other than the specified refrigerant, do not let air or other gases enter the refrigeration circuit.
- If the refrigerant leaks during installation, make sure you fully ventilate the room.
- Use two wrenches when you install or dismantle the piping, a common wrench and a torque wrench. See Figure 4-15.

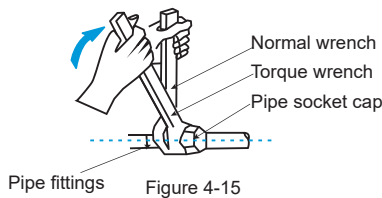


Figure 4-15

- Slot the refrigerant piping into the brass nut (accessory 14), and expand the pipe socket. Refer to the following table for the size of the pipe socket and the appropriate tightening torque.

External diameter (mm)	Tightening torque	Flared opening diameter (A)	Flared opening
Φ6.35	14.2-17.2N•m	8.3-8.7mm	<p>Figure 4-16</p>
Φ9.53	32.7-39.9N•m	12-12.4mm	
Φ12.7	49.5-60.3N•m	15.4-15.8mm	
Φ15.9	61.8-75.4N•m	18.6-19mm	
Φ19.1	97.2-118.6N•m	22.9-23.3mm	

#### ⚠ Caution

- Apply the appropriate tightening torque according to the installation conditions. Excessive torque will damage the socket cap, and the cap will not be tight if you apply insufficient torque, leading to leakages.

- Before the socket cap is installed on the pipe socket, apply some refrigerant oil on the socket (both inside and outside), and then rotate it three or four times before you tighten the cap. See Figure 4-17.

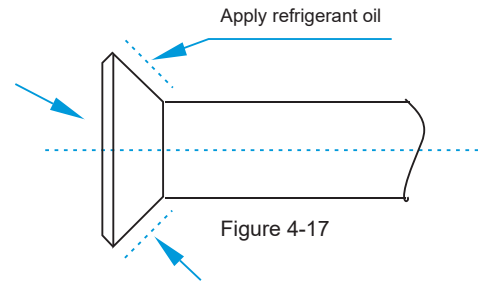


Figure 4-17

#### ⚠ Precautions to take when welding the refrigerant pipes

- Before you weld the refrigerant pipes, fill the pipes with nitrogen first to discharge the air in the pipes. If no nitrogen is filled during welding, a large amount of oxide film will form inside the piping which may cause the air conditioning system to malfunction.
- Welding can be carried out on the refrigerant pipes when the nitrogen gas has been replaced or refilled.
- When the pipe is filled with nitrogen during welding, the nitrogen must be reduced to 0.02 MPa using the pressure release valve. See Figure 4-18.

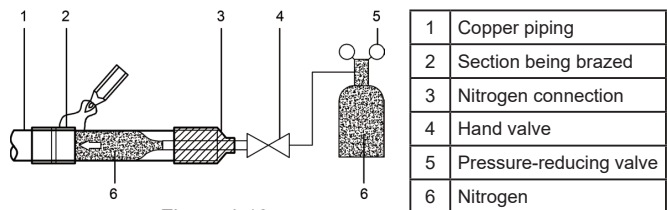


Figure 4-18

### 4.6.5 Air Tightness Test

Carry out the air tightness test on the system according to the instructions in the installation manual of the outdoor unit.

#### ⚠ Caution

- The Air Tightness Test helps to ensure that the air and liquid cut-off valves of the outdoor unit are all closed (maintain the factory defaults).

### 4.6.6 Heat Insulation Treatment for Gas-Liquid Piping Connections for the Indoor Unit

- The heat insulation treatment is carried out on the piping at the gas and liquid sides of the indoor unit respectively.
  - a. The piping on the gas side must use heat insulation material that can withstand temperatures of 120°C and more.
  - b. For the piping connections of the indoor unit, use the insulation casing for copper pipes to carry out the insulation treatment, and close all gaps.

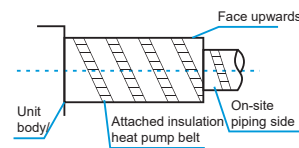


Figure 4-19

### 4.6.7 Vacuum

Create a vacuum in the system according to the instructions in the installation manual of the outdoor unit.

#### ⚠ Caution

- For the vacuum, make sure that the air and liquid cut-off valves of the outdoor unit are all closed (maintain the factory status).

### 4.6.8 Refrigerant

Charge the system with refrigerant according to the instructions in the installation manual of the outdoor unit.

## 5. Water Discharge Piping Installation

### 5.1. Water Discharge Piping Installation for Indoor Unit

1. Use PVC pipes for the water discharge pipes (outer diameter: 37~39 mm, inner diameter: 32 mm). Based on the actual installation circumstance, users can purchase the appropriate piping length from sales agent or local after-sales service centre, or purchase directly from the local market.
2. Insert the water discharge pipe into the end of the water suction connecting pipe of the unit body, and use the ring clamp to clamp the water discharge pipes with the insulation casing for the water outlet piping securely.
3. Use the insulation casing for water discharge piping to bundle the water suction and discharge pipes of the indoor unit (especially the indoor portion), and use the tie for the water discharge piping to bind them firmly to make sure air does not enter and condense.
4. In order to prevent the back-flow of water into the interior of the air conditioner when the operation stops, the water discharge pipe should slope downwards towards the outside (drainage side) at a slope of more than 1/100. Make sure that the water discharge pipe does not swell or store water; otherwise, it will cause strange noises. See Figure 5.1.
5. When connecting the water discharge piping, do not use force to pull the pipes to prevent the water suction pipe connections from coming loose. At the same time, set a supporting point at every 0.8~1 m to prevent the water discharge pipes from bending. See Figure 5.1.

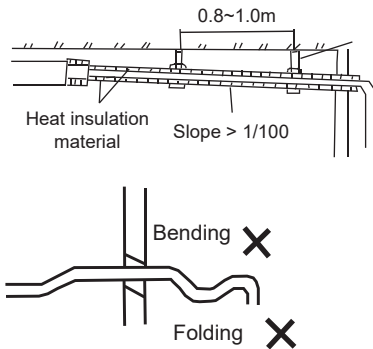


Figure 5.1

6. When connecting to a long water discharge pipe, the connections must be covered with the insulation casing to prevent the long pipe from coming loose.
7. When the outlet of the water discharge pipe is higher than the pipe connection for water suction, try to keep the water discharge pipe as vertical as possible, and the water outlet connecting fittings will bend so that the height of the water discharge pipe should be within 1000 mm away from the base of the drain pan. Otherwise, there will be excessive water flow when the operation stops. See Figure 5.2.

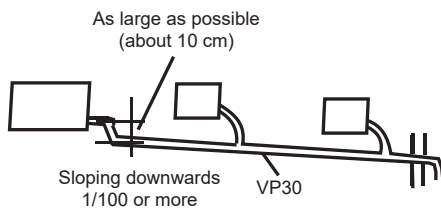


Figure 5.2 Centralised water discharge

8. The end of the water discharge pipe must be more than 50 mm above the ground or from the base of the water discharge slot. Besides, do not put it in the water.

#### ⚠ Caution

- Make sure all the connections in the piping system are properly sealed to prevent water leakages.

## 5.2 Water Discharge Test

- Before the test, make sure that the water discharge pipeline is smooth, and check that each connection is sealed properly. Conduct the water discharge test once the unit is installed.
  1. Use the water injection pipe to inject 500 ~ 1000 ml of water into the water pan.
  2. Verify that the water discharge piping outlet discharges water properly, and check for water leakages at each joint.

## 6. Electrical Wiring

### ⚠ Warning

- All the supplied parts, materials and electrical works must comply with local regulations.
- Use only copper wires.
- Use a dedicated power supply for the air-conditioners. The power voltage must be in line with the rated voltage.
- The electrical wiring works must be carried out by a professional technician, and must comply with the labels stated in the circuit diagram.
- Before the electrical connection works are carried out, turn off the power supply to prevent injuries caused by electric shock.
- The external power supply circuit of the air conditioner must include an earth line, and the earth line of the power cord connecting to the indoor unit must be securely connected to the earth line of the external power supply.
- Leakage protective devices must be configured according to the local technical standards and requirements for electrical and electronic devices.
- The fixed wiring connected must be equipped with an all-pole disconnection device with a minimum 3 mm contact separation.
- The distance between the power cord and signalling line must be at least 300 mm to prevent the occurrences of electrical interference, malfunction or damage to electrical components. At the same time, these line must not come in contact with the piping and valves.
- Choose electrical wiring that conforms to the corresponding electrical requirements.
- Connect to the power supply only after all the wiring and connection works have been completed, and carefully checked to be correct.

### 6.1 Power Cord Connection

- Use a dedicated power supply for the indoor unit that is different from the power supply for the outdoor unit.
- Use the same power supply, circuit breaker and leakage protective device for the indoor units connected to the same outdoor unit.

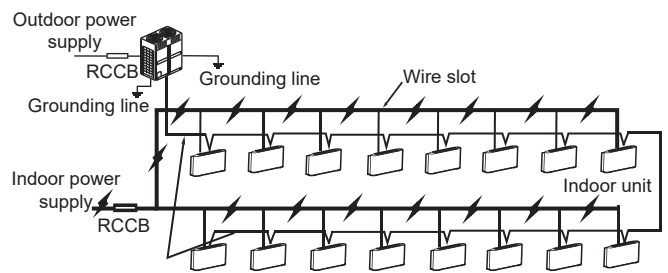


Figure 6.1

Figure 6.2 shows the power supply terminal of the indoor unit.

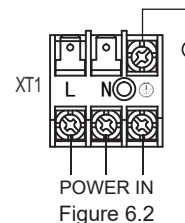


Figure 6.2

When connecting to the power supply terminal, use the circular wiring terminal with the insulation casing (see Figure 6.3).

If circular wiring terminal with the insulation casing cannot be used, please make sure that:

- Do not connect two power cords with different diameters to the same power supply terminal (may cause overheating of wires). See Figure 6.4.
- Use power cord that conforms to the specifications and connect the power cord firmly. To prevent the cord from being pulled out by external force, make sure it is fixed securely.

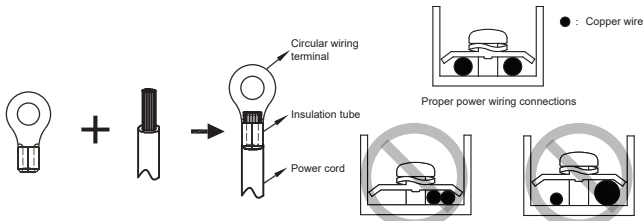


Figure 6.3

Figure 6.4

## 6.2 Electrical Wiring Specifications

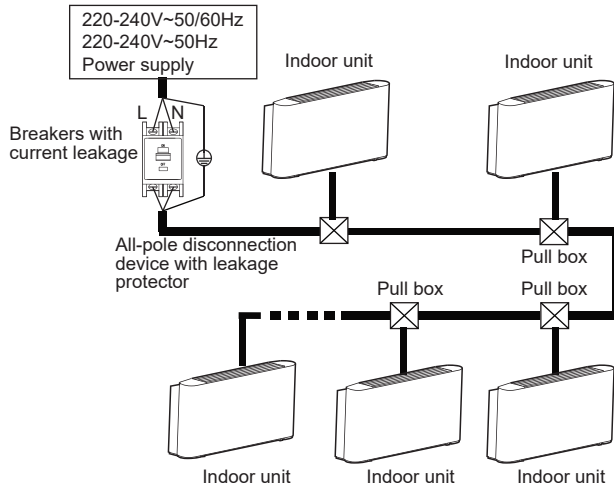


Figure 6.5

Refer to Table 6.1 for the specifications of the power cord and communication wire. A wiring capacity that is too small will cause electrical wiring overheating, and lead to accidents when the unit burns and becomes damaged.

Table 6.1

Model		2.2-8.0kW
Power supply	Phase	1-phase
	Volt and frequency	220-240V~50Hz 220-240V~50/60Hz
Communication wire between indoor and outdoor units		Shielded 3×AWG16-AWG18
Communication wire between indoor unit and wired controller *		Shielded AWG16-AWG20
Field fuses		15A

\* Please refer to the corresponding wired controller manual for the wired controller wiring.

Table 6.2 Indoor units electrical characteristics

Capacity	Power supply				IFM	
	Hz	Volts	MCA	MFA	kW	FLA
2.2kW	50 50/60	220 - 240	0.9	15	0.03	0.7
2.8kW			0.9	15	0.03	0.7
3.6kW			0.9	15	0.03	0.7
4.5kW			0.9	15	0.03	0.7
5.6kW			1.1	15	0.06	0.9
7.1kW			1.1	15	0.06	0.9
8.0kW			1.1	15	0.06	0.9

Abbreviations:

MCA: Minimum Circuit Amps

MFA: Maximum Fuse Amps IFM: Indoor Fan Motor

kW: Rated motor output

FLA: Full Load Amps

1. Select the wire diameters( minimum value) individually for each unit based on the table 6.3.
2. Maximum allowable voltage range variation between phases is 2%.

3. Select circuit breaker that having a contact separation in all poles not less than 3 mm providing full disconnection, where MFA is used to select the current circuit breakers and residual current operation breakers:

Table 6.3

Rated current of appliance(A)	Nominal cross-sectional area (mm <sup>2</sup> )	
	Flexible cords	Cable for fixed wiring
≤3	0.5 and 0.75	1 to 2.5
>3 and ≤6	0.75 and 1	1 to 2.5
>6 and ≤10	1 and 1.5	1 to 2.5
>10 and ≤16	1.5 and 2.5	1.5 to 4
>16 and ≤25	2.5 and 4	2.5 to 6
>25 and ≤32	4 and 6	4 to 10
>32 and ≤50	6 and 10	6 to 16
>50 and ≤63	10 and 16	10 to 25

### Warning

Refer to local laws and regulations when deciding on the dimensions for the power cords and wiring. Get a professional to select and install the wiring.

## 6.3 Communication Wiring

- Use only shielded wires for the communication wiring. Any other type of wires may produce a signal interference that will cause the units to malfunction.
- Do not carry out electrical works like welding with the power on.
- Do not bind the refrigerant piping, power cords and communication wiring together. When the power cord and communication wiring are parallel, the distance between the two lines must be 300 mm or more in order to prevent signal source interference.
- Communication wiring must not form a closed loop.

### 6.3.1 Communication wiring between the indoor and outdoor units

- The indoor and outdoor units communicate via the RS485 serial port.
- The communication wiring between the indoor and outdoor units should connect one unit after another in a daisy chain from the outdoor unit to the final indoor unit, and the shielded layer must be properly grounded, and a build-out resistor must be added to the last indoor unit to enhance the stability of the communication system (see Figure 6.6).
- Incorrect wiring such as a star connection or a closed ring will cause instability of the communication system and system control anomalies.
- Use a three core shielded wire (greater than or equal to 0.75 mm<sup>2</sup>) for the communication wiring between the indoor and outdoor units. Make sure the wiring is connected correctly. The connecting lead for this communication wire must come from the master outdoor unit.
- All shielded wiring in the network are interconnected, and will eventually connect to earth at the same point "⊕".

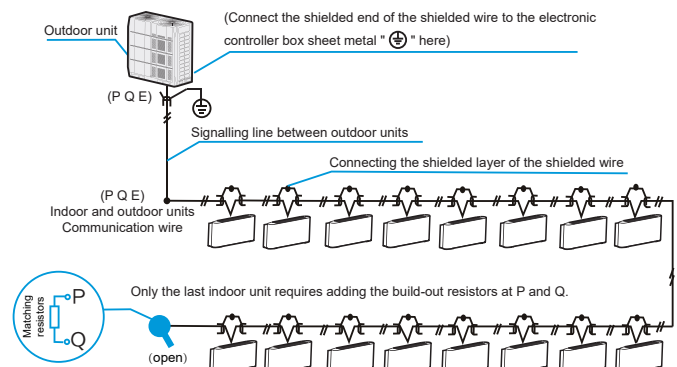


Figure 6.6

### 6.3.2 Communication wiring between the indoor unit and wired controller

The wired controller and the indoor unit can be connected in different manners, depending on the forms of communication.

1) For a bidirectional communication mode:

- Use 1 wired controller to control 1 indoor unit or 2 wired controllers (one master and one slave controller) to control 1 indoor unit (see Figure 6.7);
- Use 1 wired controller to control multiple indoor units or 2 wired controllers (one master and one slave controller) to control multiple indoor units (see Figure 6.8);

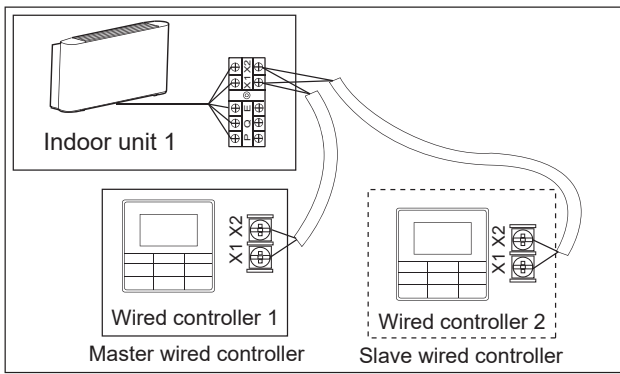


Figure 6.7

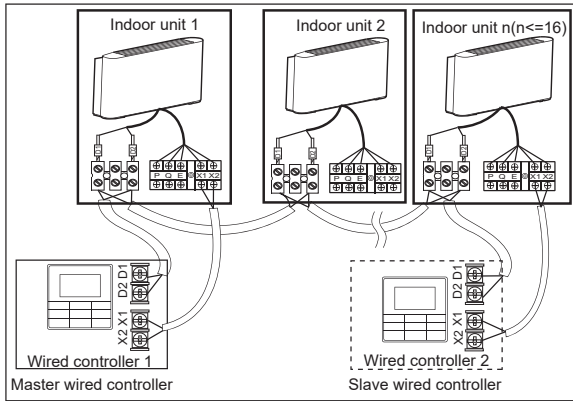


Figure 6.8

2) For a unidirectional communication mode:

- Use 1 wired controller to control 1 indoor unit (see Figure 6.9).

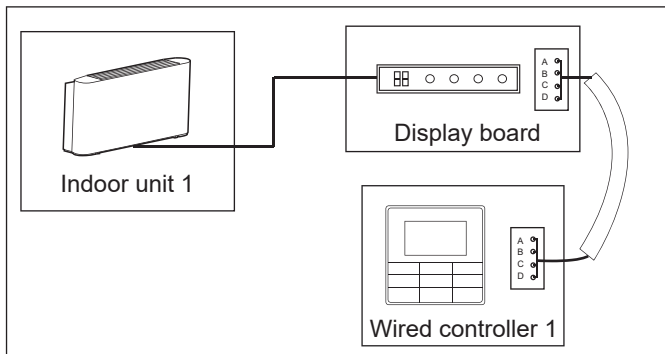


Figure 6.9

- The X1/X2, D1/D2 ports on the sides of the main control board and the unidirectional communication port (display board side) are for different types of wired controllers (see Figure 6.10).
- Use the connecting wires (accessories) to connect the D1/D2 terminals.

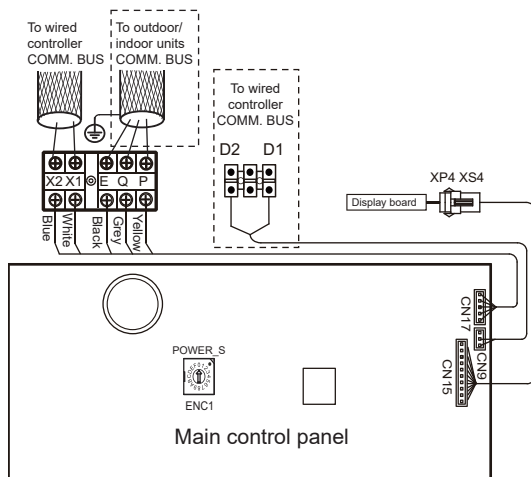


Figure 6.10

### ⚠ Caution

- For the specific connection method, refer to the instructions in the corresponding wired controller manual to carry out the wiring and connections.

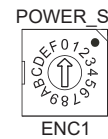
### 6.4 Handling the Electrical Wiring Connection Points

- Once the wiring and connections are done, use tie straps to secure the wiring properly so that the connection joint cannot be pulled apart by external force. The connection wiring must be straight out so that the cover of the electrical box is level and can be closed tightly.
- Use professional insulation and sealing materials to seal and protect the perforated wires. Poor sealing may lead to condensation, and entry of small animals and insects that may cause short circuits in parts of the electrical system, causing the system to fail.

## 7. On-site Configuration

### 7.1 Capacity Settings

Set up the PCB DIP switch on the indoor electric control box to cater to different uses. Once the settings are done, make sure you cut off the main power switch again, and then switch the power on. If the power is not cut off and switched on again, the settings will not be executed.



ENC1 Settings for Capacity DIP Switch:

DIP Switch Code	Capacity
0	1000W/1200W
1	1500W/1700W/1800W
2	2200W
3	2500W/2800W
4	3200W/3600W
5	4000W
6	4500W
7	5000W/5600W
8	6300W/7100W
9	8000W

### ⚠ Caution

- The capacity DIP switches have been configured before delivery. Only a professional maintenance personnel should change these settings.

### 7.2 Address Settings



When this indoor unit is connected to the outdoor unit, the outdoor unit will automatically allocate the address to the indoor unit.

Alternatively, you may use the controller to manually set the address.

- The addresses of any two indoor units in the same system cannot be the same.
- The network address and the indoor unit address are the same, and does not have to be configured separately.
- Once the address settings are completed, mark the address of each indoor unit to facilitate after-sales maintenance.
- The centralized control of the indoor unit is completed on the outdoor unit. For details, refer to the manual on the outdoor unit.

### ⚠ Caution

- Once the centralized control function for the indoor unit has been completed on the outdoor unit, the DIP switch on main control panel of the outdoor unit must be set to auto addressing; otherwise, the indoor unit in the system are not controlled by the centralized controller.
- The system can connect up to 64 indoor units (address 0~63) at the same time. Each indoor unit can only have one address DIP switch in the system. The addresses of any two indoor units in the same system cannot be the same. Units that have the same address may malfunction.

J1	
	Auto restart function enabled
	Auto restart function disabled

### ⚠ Caution

The capacity DIP switch have been configured before delivery. Only a professional maintenance personnel should change these settings.

## 7.3 Error Codes and Definitions

Error code	Content
A0	Emergency stop
A1	Refrigerant leakage error
E0	Mode conflict error
E1	Communication error with outdoor unit
E2	T1 Indoor ambient temperature sensor error
E3	T2 Indoor heat exchanger mid-point temperature sensor error
E4	T2B Indoor heat exchanger outlet temperature sensor error
E6	Fan error
E7	EEPROM error
E9	Communication Error with wired controller
Eb	Indoor EXV coil error
Ed	Outdoor unit error
EE	Water level alarm
F7	Repeated indoor units address
F8	MS-Box error
FA	Capacity(HP number) has not been set
FE	Indoor unit has not been assigned an address
U4	MS-Box self-check error
H4	Communication error between indoor unit and adapter board or panel
H5	EEPROM error(adapter board or panel)
HA	Smart Eye error

## 8 Test Run

### 8.1 Things to Note Before Test Run

- ◆ Indoor and outdoor units are properly installed;
- ◆ Piping and wiring are correct;
- ◆ No leakage from the refrigerant piping system;
- ◆ Water discharge is smooth;
- ◆ Insulation is complete;
- ◆ Grounding line has been properly connected;
- ◆ Piping length, and amount of refrigerant filled have been recorded;
- ◆ The voltage of the power supply is the same as the rated voltage of the air conditioner;
- ◆ No obstacles at the air inlet and outlet of the indoor and outdoor units;
- ◆ Cut-off valves for the gas and liquid ends of the outdoor unit are opened;

### 8.2 Test Run

When the wired/remote controller is used to set the cooling operations of the air conditioner, check the following items one by one. If there is a fault, troubleshoot according to the manual.

- ◆ Function keys of the wired/remote controller are operating normally;
- ◆ Room temperature regulation is normal;
- ◆ LED indicator is on;
- ◆ Water discharge is normal;
- ◆ No vibration and strange sounds during operation;

Note: Once the power is connected, when the unit is turned on or started immediately after the unit is turned off, the air conditioner has a protective function which delays the start of the compressor.

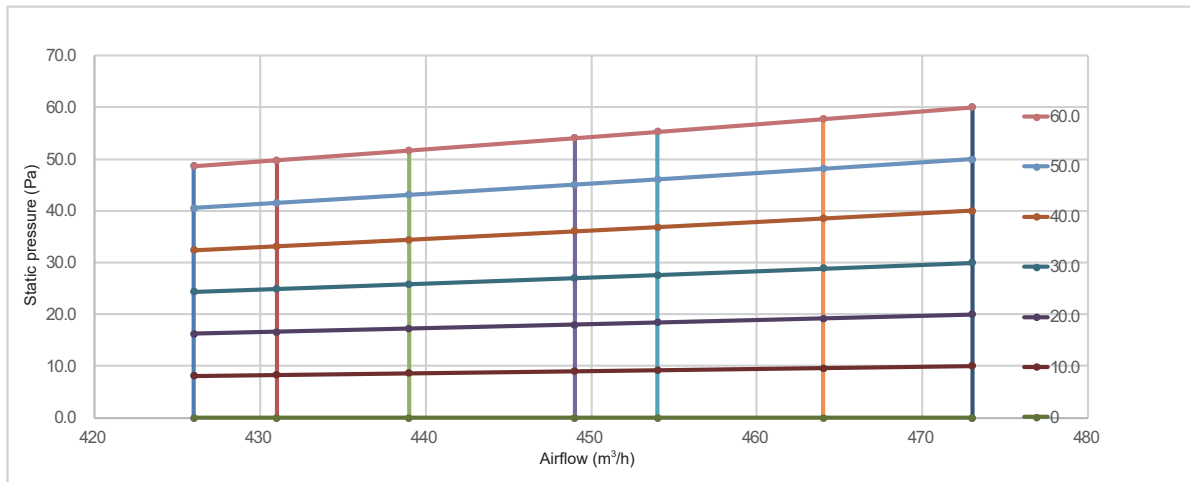
## 9. Fan Performance

- ◆ Set proper external static pressure (ESP) according to the actual installation conditions. Otherwise it may cause some problems.
  - If the connecting duct is long and the ESP setting is small, the airflow will be very small, leading to poor performance.
  - If the connecting duct is short and the ESP setting is large, the airflow will be very large, leading to higher operating noise and even water may be blown out through the air outlet.
- ◆ Ten ESP can be set through the new wired controllers (Covered product)

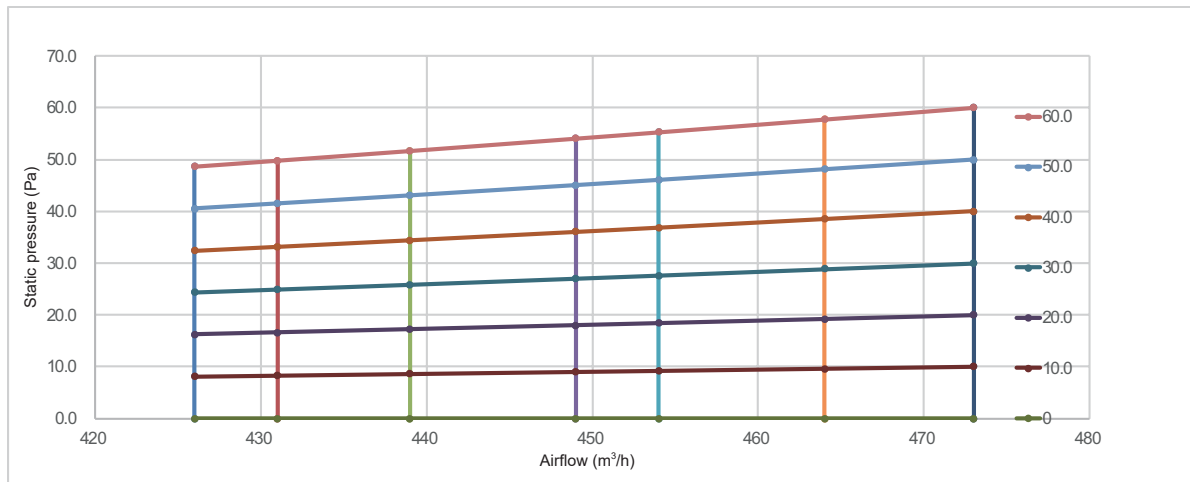
Capacity	00	01	02	03	04	05	06	07	08	09
2.2kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa
2.8kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa
3.6kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa
4.5kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa
5.6kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa
8.0kW	0Pa	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	60Pa	60Pa	60Pa



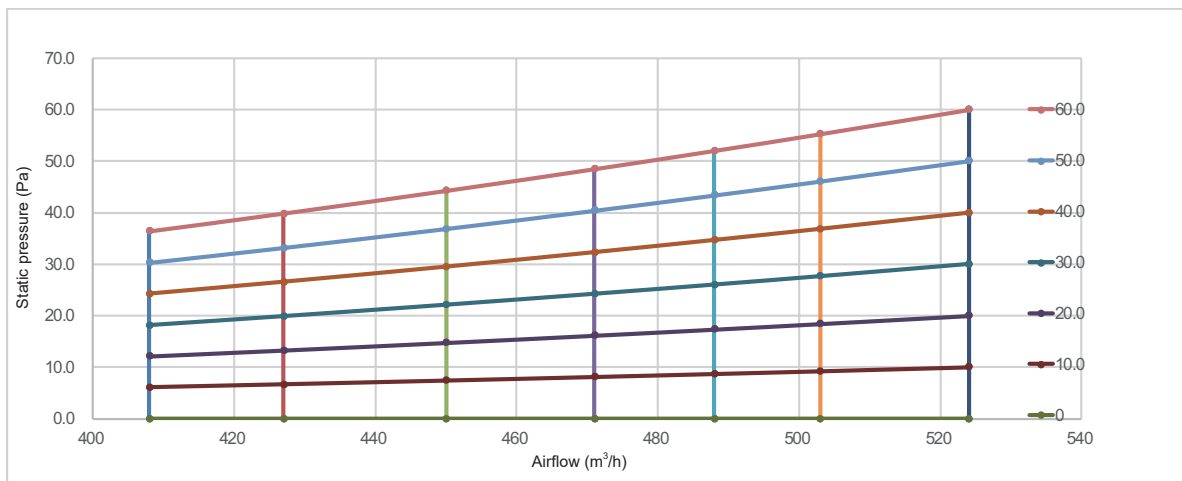
2.2kW



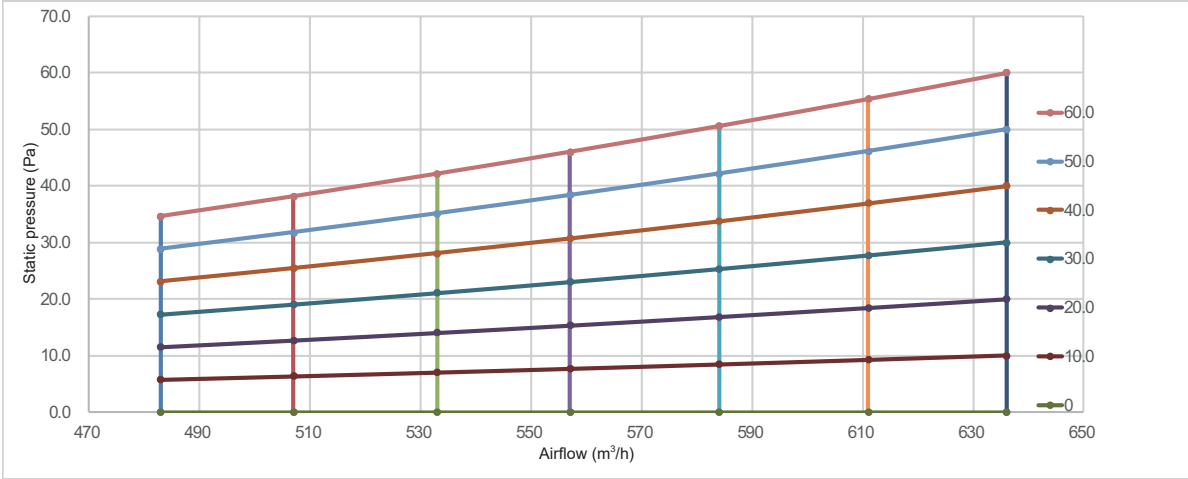
2.8kW



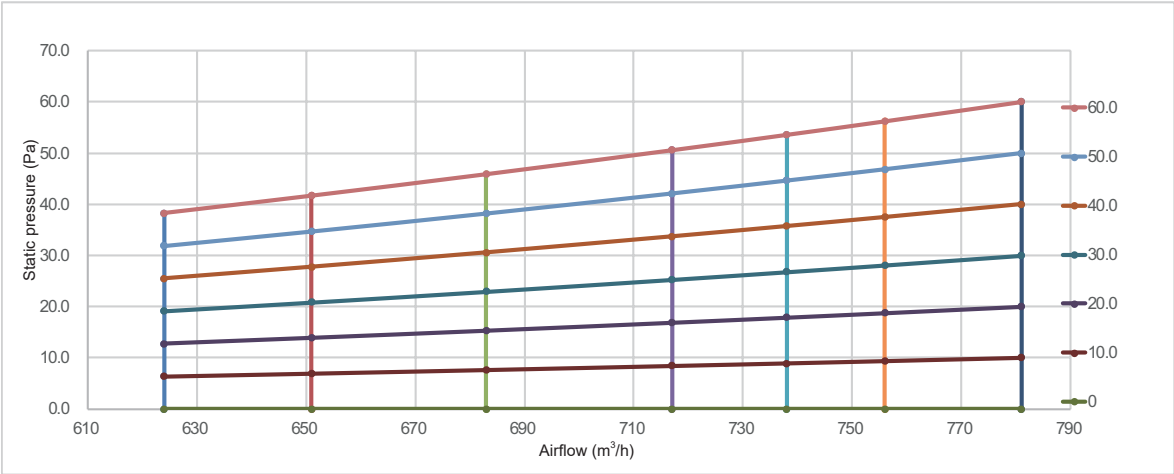
3.6kW



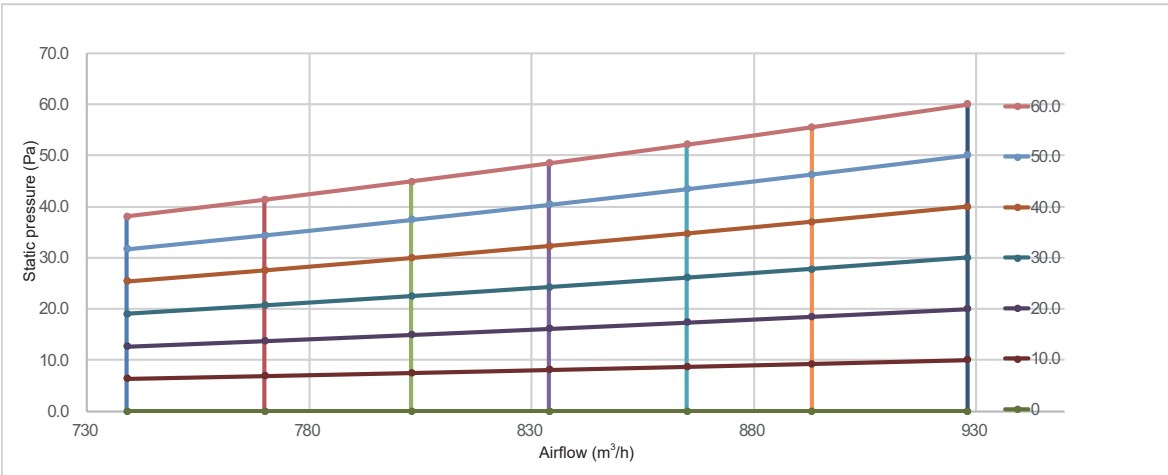
4.5kW



5.6kW



8.0kW



## Operation Manual

There are two types of precautions as described below:

**⚠ Warning:** Failure to comply may lead to or serious injury.

**⚠ Caution:** Failure to comply may lead to injury or damage of the unit.

Depending on the situation, this may also lead to serious injury.

Once the installation is completed, please keep the manual properly for future reference. When this air conditioner is handed over to other users, make sure that the manual is included with the handover.

### **⚠ Warning**

- Do not use this unit in locations where flammable gas may exist. If flammable gas comes into contact with the unit, a fire may occur, which could result in serious injury.
- If this unit exhibits any abnormal behavior (such as emitting smoke) there is a danger of serious injury. Disconnect the power supply and contact your supplier or service engineer immediately.
- The refrigerant in this unit is safe and should not leak if the system is designed and installed properly. However, if a large amount of refrigerant leaks into a room, the oxygen concentration will decrease rapidly, which can cause serious injury. The refrigerant used in this unit is heavier than air, so the danger is greater in basements or other underground spaces. In the event of a refrigerant leak, turn off any devices that produce a naked flame and any heating devices, ventilate the room, and contact your supplier or service engineer immediately.
- Toxic fumes may be produced if the refrigerant in this unit comes into contact with naked flames (such as from a heater, gas stove/burners, or electric appliances).
- If this unit is used in the same room as a cooker, stove, hob, or burner, ventilation for sufficient fresh air must be ensured, otherwise the oxygen concentration will fall, which may cause injury.
- Dispose of this unit's packaging carefully, so children cannot play with it. Packaging, especially plastic packaging, can be dangerous, can cause serious injury. Screws, staples and other metal packaging components can be sharp and should be disposed of carefully to avoid injury.
- Do not attempt to inspect or repair this unit yourself. This unit should only be serviced and maintained by a professional air conditioning service engineer. Incorrect servicing or maintenance can cause electric shocks, fire or water leaks.
- This unit should only be re-positioned or re-installed by a professional technician. Incorrect installation can lead to electric shocks, fire or water leaks. The installation and grounding of electrical appliances should only be carried out by licensed professionals. Ask your supplier or installation engineer for further information.
- Do not allow this unit or its remote controller to come into contact with water, as this can lead to electric shocks or fire.
- Turn off the unit before cleaning it to avoid electric shocks. Otherwise, an electric shock and injury may result.
- To avoid electric shocks and fires, install an earth leakage detector.
- Do not use paint, varnish, hair spray, other flammable sprays or other liquids that may give off flammable fumes/vapor near this unit, as doing so can cause fires.
- When replacing a fuse, ensure that the new fuse to be installed completely complies with requirements.
- Do not open or remove the unit's panel when the unit is powered on. Touching the unit's internal components while the unit is powered on can lead to electric shocks or injuries caused by moving parts such as the unit's fan.
- Ensure that the power supply is disconnected before any servicing or maintenance is carried out.
- Do not touch the unit or its remote controller with wet hands, as doing so can lead to electric shocks.
- Do not allow children to play near this unit, as doing so risks injury.

- Do not insert your fingers or other objects into the unit's air inlet or air outlet to avoid injury or damage to the equipment.
- Do not spray any liquids onto the unit or allow any liquids to drip onto the unit.
- Do not place vases or other liquid containers on the unit or in places where liquid could drip onto it. Water or other liquids that come into contact with the unit can lead to electric shocks or fires.
- Do not remove the remote controller's front or back covers and do not touch the remote controller's internal components, as doing so can cause injury. If the remote controller stops working, contact your supplier or service engineer.
- Ensure that the unit is properly grounded, otherwise electric shocks or a fire may result. Electrical surges (such as those that can be caused by lightning) can damage electrical equipment. Ensure that suitable surge protectors and circuit breakers are properly installed, otherwise electric shocks or a fire may result.
- Dispose of this unit properly and in accordance with regulations. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and thus enter the food chain.
- Do not use the unit until the qualified technician instructs you that it is safe to do so.
- Do not place appliances that produce naked flames in the path of the airflow from the unit. The airflow from the unit may increase the rate of combustion, which may cause a fire and cause serious injury. Alternatively, the airflow may cause incomplete combustion which can lead to reduced oxygen concentration in the room, which can cause serious injury.

### **⚠ Caution**

- Only use the air conditioner for its intended purpose. This unit should not be used to provide refrigeration or cooling for food, plants, animals, machinery, equipment or art.
- Do not insert your fingers or other objects into the unit's air inlet or air outlet to avoid injury or damage to the equipment.
- The fins on the unit's heat exchanger are sharp and can cause injury if touched. To prevent injury, when the unit is being serviced, gloves should be worn or the heat exchanger should be covered.
- Do not place items which might be damaged by moisture under the unit. When the humidity is greater than 80% or if the drain pipe is blocked or the air filter is dirty, water could drip from the unit and damage objects placed under the unit.
- Ensure that the drain pipe functions properly. If the drain pipe is blocked by dirt or dust, water leaks may occur when the unit is running in cooling mode. If this happens, turn the unit off and contact your supplier or service engineer.
- Do not touch the internal parts of the controller. Do not remove the front panel. Some internal parts may cause injury or be damaged.
- Ensure that children, plants and animals are not directly exposed to the airflow from the unit.
- When fumigating a room with insecticide or other chemicals, cover the unit well and do not run it. Failure to observe this caution could lead to chemicals getting deposited inside the unit and later emitted from the unit when it running, endangering the health of any room occupants.
- Do not dispose of this product as unsorted waste. It must be separately collected and processed. Ensure that all applicable legislation regarding the disposal of refrigerant, oil and other materials is adhered to. Contact your local waste disposal authority for information about disposal procedures.

- To avoid damaging the remote controller, exercise caution when using it and replacing its batteries. Do not place objects on top of it.
- Do not place appliances that have naked flames under or near the unit, as heat from the appliance can damage the unit.
- Do not place the unit's remote controller in direct sunlight. Direct sunlight can damage the remote controller's display.
- Do not use strong chemical cleaners to clean the unit, as doing so can damage the unit's display or other surfaces. If the unit is dirty or dusty, use a slightly damp cloth with very diluted and mild detergent to wipe the unit. Then, dry it with a dry cloth.
- Children shall not play with the appliance.
- Do not dispose of this product as unsorted waste. It must be separately collected and processed. Ensure that all applicable legislation regarding the disposal of refrigerant, oil and other materials is adhered to. Contact your local waste disposal authority for information about disposal procedures.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



### • Version II

Vertical unit with casing. The air intake is at the bottom and the air outlet on top for installing on a wall or with feet on the floor.

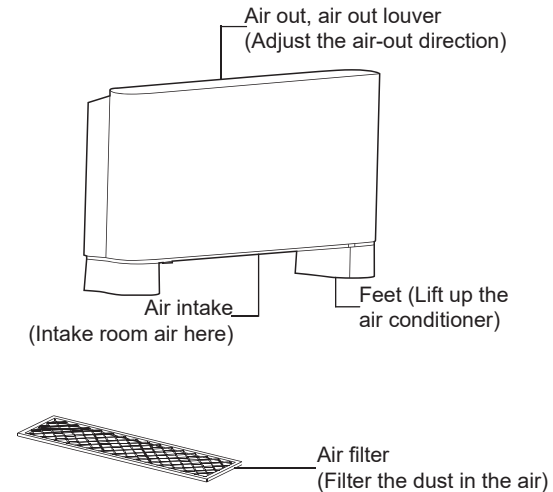


Figure 10.2

### 10. Part Names

The figure shown above is for reference only and may be slightly different from the actual product.

Air Outlet Louver (adjustable)

For in-situ adjustment to three-direction or two-direction, please contact the local dealer.

### • Version I

Vertical unit with casing. The air intake is on the front and the air outlet on top for installing on a wall or with feet on the floor.

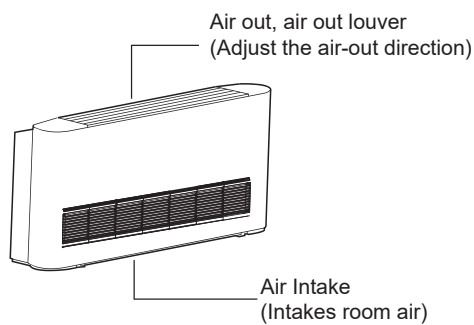


Figure 10.1

### • Version III

The vertical unit is concealed in the wall after installation, with air intake from the bottom and air delivery at the top.

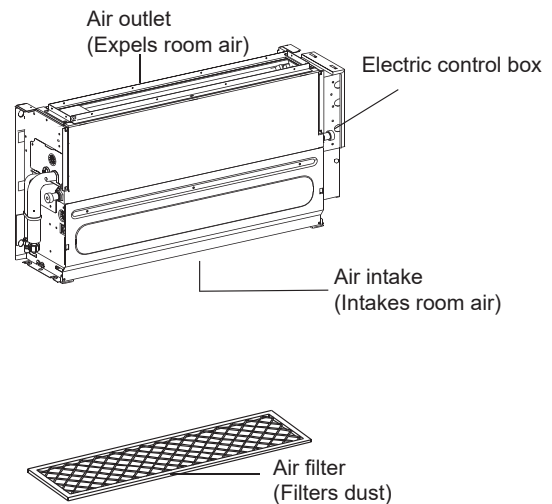


Figure 10.3

### 11. The Explain Of The Display Panel

The display panel has one type and the appearance of the type is shown in Figure 11.1.

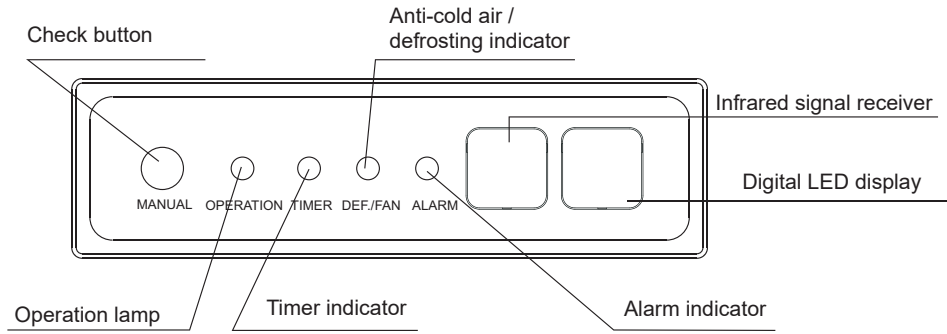


Figure 11.1

Table: Display panel output under normal operating conditions.

Unit state		Display output	
		Digital display panels	
		Unit state	Digital display
Standby		Operation indicator flashes slowly	
Shutting-down		All indicators off	
Operation	Normal operation	Operation indicator on	Cooling and heating modes: set temperature Fan only mode: indoor ambient temperature
	Cold draft prevention or outdoor unit defrosting operation	Operation and Anti-cold / defrosting indicators on	Set temperature
A timer has been set		Timer indicator on	

### 12. Air Conditioner Operations and Performance

The operating temperature range under which the unit runs stably are given in below table.

	Cooling mode	Heating mode
Indoor temperature	17~32°C(DB)	15~27°C(DB)
Indoor humidity	≤80% <sup>(a)</sup>	

(a) Condensation will form on the unit surface and water dripping out of the unit when the indoor humidity is beyond 80%

#### ⚠ Caution

- The unit performs stably in the temperature range given in above table. If the indoor temperature is outside the unit's normal operating range, it may stop running and display an error code.

To ensure the desired temperature is achieved efficiently, ensure that:

- All windows and door are closed.
- The airflow direction is adjusted to work in running mode. The air filter is clean.

Please note how you can best save energy and achieve the best cooling/heating effect.

- Regularly clean air filters inside indoor units.

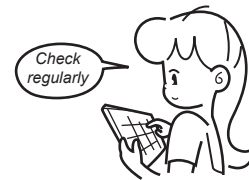


Figure 12.1

- Avoid too much outdoor air coming into air-conditioned spaces.



Figure 12.2

- Note that outlet air is cooler or heater than set room temperature.  
Avoid direct exposure to outlet air as it may be too cool or hot.

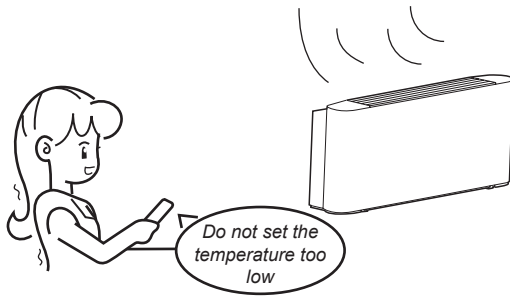


Figure 12.3

- Maintain a proper air distribution. Air outlet louvers should be used to adjust the direction of outlet airflow, as doing so might ensure more efficient operation.

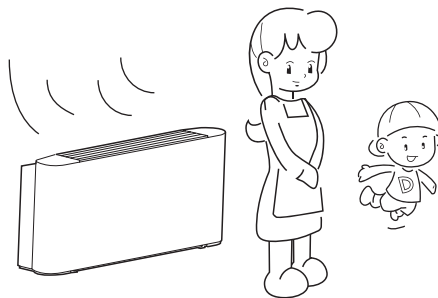


Figure 12.4

### 13. Maintenance

#### ⚠ Caution

- Please release pressure before disassembly.
- Before you clean the air conditioner, ensure it is powered off.
- Check that the wiring is undamaged and connected.
- Use a dry cloth to wipe the indoor unit and remote controller.
- A wet cloth may be used to clean the indoor unit if it is very dirty.
- Never use a damp cloth on the remote controller.
- Do not use a chemically treated duster on the unit or leave this type of material on the unit to avoid damaging the finish.
- Do not use benzene, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or warp.

#### • Method for cleaning the air filter

- The air filter can prevent the dust or other particles from entering the unit. If the filter is blocked, the unit will not work well. Clean the filter every two weeks when you use it regularly.
- If the air conditioner is positioned in a dusty place, clean the filter often.
- Replace the filter if it is too dusty to clean (the replaceable air filter is an optional fitting).

- Take out the air intake grille  
Remove the bolts, push the grille switches simultaneously, as indicated in Figure 13.1. Then pull down the air intake grille (together with the air filter, as shown in Figure 13.2). Pull the air intake grille down to 15°, and lift it up to remove the grille.

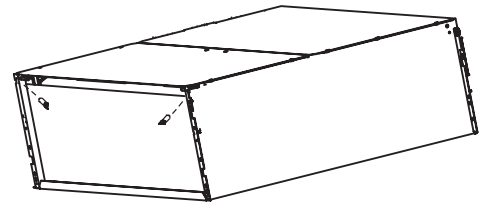


Figure 13.1

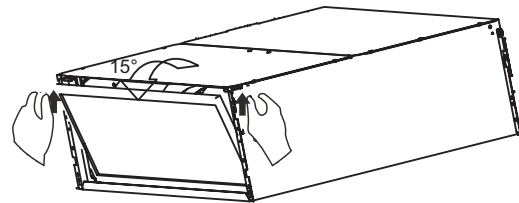


Figure 13.2

#### ⚠ Caution

- The control box cables originally connected to the electrical terminals on the main body must be removed, as indicated above.

- Dismantle the air filter.
- Clean the air filter

Dusts will accumulate on the filter along with the unit operation, and need to be removed from the filter, or the unit would not function effectively.

Clean the filter every two weeks when you use the unit regularly. Clean the air filter with a vacuum cleaner or water.

- The air intake side should face up when using a vacuum cleaner. (Refer to Figure 13.3)
- The air intake side should face down when using clean water. (Refer to Figure 13.4)

For excessive dusts, use a soft brush and natural detergent to clean it and dry in a cool place.

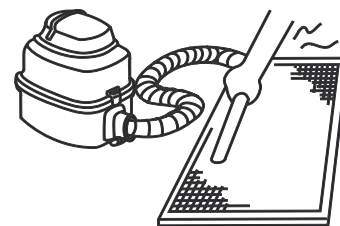


Figure 13.3

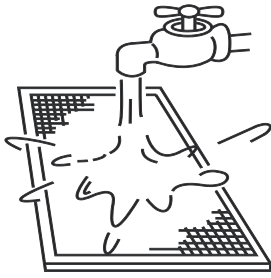


Figure 13.4

**⚠ Caution**

- Do not dry out the air filter under direct sunshine or with fire.
- The air filter should be installed before the unit body installation.

4. Re-install the air filter.
  5. Install and close the air inlet grille by reversing steps 1 and 2, and connect the control box cables to the corresponding terminals in the main body.
- **Maintenance before stopping using the unit for a long time (e.g., at the end of a season)**
    - a. Let the indoor units run in fan only mode for about half a day to dry the interior of the unit.
    - b. Clean the air filter and indoor unit casing.
    - c. Refer to "Cleaning the air filter" for details. Install cleaned air filters back in their original positions.
    - d. Turn off the unit with the ON/OFF button on the remote controller, and then unplug it.

**⚠ Caution**

- When the power switch is connected, some energy will be consumed even if the unit is not running. Disconnect the power to save energy.
- A degree of dirt will accumulate when the unit has been used several times, which will require cleaning.
- Take of the batteries from the remote controller.

- **Maintenance after a long period of non-use**
  - a. Check for and remove anything that might be blocking the inlet and outlet vents of the indoor units and outdoor units.
  - b. Clean the unit casing and clean the filter. Refer to [Cleaning the filter] and "Cleaning the filter" for instructions. Re-install the filter before running the unit.
  - c. Turn on the power at least 12 hours before you want to use the unit to ensure it works properly. As soon as the power is turned on, the remote control display appears.

**14. Symptoms That Are Not Faults**

The following symptoms may be experienced during the normal operation of the unit and are not considered faults. Note: If you are not sure whether a fault has occurred, contact your supplier or service engineer immediately.

**Symptom 1: The unit will not run**

- **Symptom:** When the ON/OFF button on the remote controller is pressed, the unit does not immediately start running.  
**Cause:** to protect certain system components, system start-up or re-start is intentionally delayed for up to 12 minutes under some operating conditions. If the OPERATION LED on the unit's panel is lighting, the system is working normally and the unit will start after the intentional delay is complete.
- Heating mode is running when the following panel lights are on: operation and the "DEF./FAN LED indicator."  
**Cause:** the indoor unit activates protective measures because of the low outlet temperature.

**Symptom 2: The unit emits white mist**

- White mist is generated and emitted when the unit starts to operate in a very humid environment. This phenomenon will stop once the humidity in the room is reduced to normal levels.
- The unit occasionally emits white mist when it runs in heating mode. This occurs when the system finishes periodic defrosting. Moisture that may accumulate on the unit's heat exchanger coil during defrosting becomes mist and is emitted from the unit.

**Symptom 4: Dust is emitted from the unit**

- This can occur when the unit first runs after a long idle period.

**Symptom 5: The unit gives off a strange odor**

- If smells such as those of strong-smelling food or tobacco smoke are present in the room, they can enter the unit, leave trace deposits on the unit's internal components, and later be emitted from the unit.

**15. Troubleshooting**

**15.1 General**

- Sections 15.2 and 15.3 describe some initial troubleshooting steps that can be taken when an error occurs. If these steps do not resolve the issue, arrange for a professional technician to investigate the problem. Do not attempt further investigations or troubleshooting yourself.
- If any of the following errors occur, power the unit off, contact a professional technician immediately and do not attempt troubleshooting yourself:
  - a. A safety device such as a fuse or circuit breaker frequently blows/trips.
  - b. An object or water enters the unit.
  - c. Water is leaking from the unit.

**⚠ Caution**

- Do not attempt to inspect or repair this unit by yourself. Arrange for a qualified technician to carry out all servicing and maintenance.

15.2 Unit Troubleshooting

Symptom	Possible causes	Troubleshooting steps
The unit does not start	A power cut has occurred (the power to the premises has been cut-off).	Wait for the power to come back on.
	The unit is powered off.	Power on the unit. This indoor unit forms part of an air conditioning system that has multiple indoor units that are all connected. The indoor units cannot be powered on individually - they are all connected to one, single power switch. Ask a professional technician for advice regarding how to safely power on the units.
	The power switch fuse may have burned out.	Replace the fuse.
	The remote controller's batteries are dead.	Replace the batteries.
Air flows normally but doesn't cool	The temperature setting is not correct.	Set the desired temperature on the remote controller.
The unit starts or stops frequently	<p>Arrange for a professional technician to check the following:</p> <ul style="list-style-type: none"> <li>♦ Too much or too little refrigerant.</li> <li>♦ No gas in the refrigerant circuit.</li> <li>♦ The outdoor unit compressors have malfunctioned.</li> <li>♦ The power supply voltage is too high or too low.</li> <li>♦ There is a blockage in the piping system.</li> </ul>	
Low cooling effect	Doors or windows are open.	Close the doors and windows.
	Sunlight is shining directly onto the unit.	Close shutters/blinds to shield the unit from direct sunlight.
	The room contains many heat sources such as computers or refrigerators.	Turn off some of the computers during the hottest part of the day.
	The unit's air filter is dirty.	Clean the filter.
	The outside temperature is unusually high.	The cooling capacity of the system reduces as the outdoor temperature rises and the system may not provide sufficient cooling if the local climate conditions are not considered when the system's outdoor units were selected.
	Engage a professional air conditioning engineer to check the following:	<ul style="list-style-type: none"> <li>♦ The unit's heat exchanger is dirty.</li> <li>♦ The unit's air inlet or outlet is blocked.</li> <li>♦ A refrigerant leak has occurred.</li> </ul>
Low heating effect	Doors or windows are not completely closed.	Close doors and windows.
	<p>Arrange for a professional technician to check the following:</p> <p>A refrigerant leak has occurred.</p>	



### 15.3 Remote Controller Troubleshooting

**Warning:**

Certain troubleshooting steps that a professional technician may perform when investigating an error are described in this owner's manual for reference only. Do not attempt to undertake these steps yourself – arrange for a professional technician to investigate the problem.

If any of the following errors occur, power the unit off and contact a professional technician immediately. Do not attempt troubleshooting yourself:

- A safety device such as a fuse or circuit breaker frequently blows/trips.
- An object or water enters the unit.
- Water is leaking from the unit.

Symptom	Possible causes	Troubleshooting steps
The fan speed cannot be adjusted	Check whether the MODE indicated on the display is "AUTO".	In automatic mode, the air conditioner will automatically change the fan's speed.
	Check whether the MODE indicated on the display is "DRY".	When dry mode is selected, the air conditioner automatically adjusts the fan speed. (The fan speed can be selected during "COOL", "FAN ONLY", and "HEAT".)
The remote controller signal is not transmitted even when the ON/OFF button is pushed	A power cut has occurred (the power to the premises has been cut-off).	Wait for the power to come back on.
	The remote controller's batteries are	Replace the batteries.
The indication on the display disappears after a certain time	Check whether the timer operation has come to an end when TIMER OFF is indicated on the display.	The air conditioner operation will stop up to the set time.
The TIMER ON indicator goes off after a certain time	Check whether the timer operation has come to an end when TIMER ON is indicated on the display.	Up to the set time, the air conditioner will automatically start and the appropriate indicator will go off.
No receiving sound from the indoor unit when the ON/OFF button is pressed	Check whether the signal transmitter of the remote controller is properly directed to the infrared signal receiver of the indoor unit when the ON/OFF button is pressed.	Directly transmit the signal transmitter of the remote controller to the infrared signal receiver of the indoor unit, and then press the ON/OFF button twice.

## 15.4 Error Codes

With the exception of a mode conflict error, contact your supplier or service engineer if any of the error codes listed in the following table are displayed on the unit's display panel. If the mode conflict error is displayed and persists, contact your supplier or service engineer. These errors should only be investigated by a professional technician. The descriptions are provided in this manual for reference only.

Content	Digital display output	Possible causes
Mode conflict error	E0	<ul style="list-style-type: none"> <li>The indoor unit's operating mode conflicts with that of the outdoor units.</li> </ul>
Communication error between indoor and outdoor units	E1	<ul style="list-style-type: none"> <li>Communication wires between indoor and outdoor units not connected properly.</li> <li>Interference from high voltage wires or other sources of electromagnetic radiation.</li> <li>Communication wire too long.</li> <li>Damaged main PCB.</li> </ul>
T1 Indoor ambient temperature sensor error	E2	<ul style="list-style-type: none"> <li>Temperature sensor not connected properly or has malfunctioned.</li> <li>Damaged main PCB.</li> </ul>
T2 Indoor heat exchanger mid-point temperature sensor error	E3	
T2B Indoor heat exchanger outlet temperature sensor error	E4	
Fan error	E6	<ul style="list-style-type: none"> <li>Fan stuck or blocked.</li> <li>Fan motor not connected properly or has malfunctioned.</li> <li>Power supply abnormal.</li> <li>Damaged main PCB.</li> </ul>
EEPROM error	E7	<ul style="list-style-type: none"> <li>Damaged main PCB.</li> </ul>
Indoor EEV coil error	Eb	<ul style="list-style-type: none"> <li>Line loosened or broken.</li> <li>The electronic expansion valve is stuck.</li> <li>Damaged main PCB.</li> </ul>
Outdoor unit error	Ed	<ul style="list-style-type: none"> <li>Outdoor unit error.</li> </ul>
Water level error	EE	<ul style="list-style-type: none"> <li>Water level float stuck.</li> <li>Water level switch not connected properly.</li> <li>Damaged main PCB.</li> <li>Drain pump has malfunctioned.</li> </ul>
Indoor unit has not been assigned an address	FE	<ul style="list-style-type: none"> <li>Indoor unit has not been assigned an address.</li> </ul>
Refrigerant leakage failure	A1	<ul style="list-style-type: none"> <li>MS box actually detects that the quantity of connected refrigerant leakage sensors is not match with the quantity of sensors set by ENC1.</li> <li>The refrigerant leakage sensor is open circuit, that is refrigerant leakage occurs.</li> <li>MS box PCB malfunction.</li> </ul>
Emergency stop	A0	<ul style="list-style-type: none"> <li>The indoor unit receives the emergency stop signal sent by the outdoor unit or centralized controller.</li> </ul>
MS self-check failure	U4	<ul style="list-style-type: none"> <li>During the commissioning of the outdoor unit, the Outdoor find the indoor unit PQE connection and real refrigerant pipe connection is mismatch under the MS.</li> </ul>
MS failure	F8	<ul style="list-style-type: none"> <li>The connected MS box have error or protection.</li> </ul>
IDU address repeat. Error code display F7 and repeated address by turns in 1 Hz	F7	<ul style="list-style-type: none"> <li>Multiple virtual addresses will appear in high pressure duct 20-56kw. And it didn't repower after setting the unit capacity.</li> <li>There are other indoor units that repeat the address.</li> </ul>
Failure in communication with the wired controller	E9	<ul style="list-style-type: none"> <li>Line loosened or broken.</li> <li>Damaged main PCB.</li> </ul>
Communication error between indoor unit and adapter board or panel	H4	<ul style="list-style-type: none"> <li>Damaged main PCB.</li> </ul>
EEPROM error(adapter board or panel)	H5	<ul style="list-style-type: none"> <li>Damaged main PCB.</li> </ul>
Smart Eye error	HA	<ul style="list-style-type: none"> <li>Damaged main PCB.</li> </ul>

Notes:

Flashing rapidly means flashing twice per second; flashing slowly means flashing once per second.

16100101006282 V.D





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