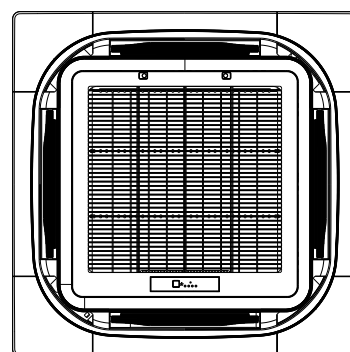


'HIDEN' SERIES MVH CASSETTE TYPE INDOOR UNIT

Installation manual

MVH-H-Q4CDN1

MVH-H-Q4DN1



Installation and owner's manual

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IMPORTANT

Thank you for selecting super quality Air Conditioners. To ensure satisfactory operation for many years to come, this manual should be read carefully before the installation and before using the air conditioner. After reading, store it in a safe place. Please refer to the manual for questions on use or in the event that any irregularities occur.

This Air Conditioner should be used for household use.

This unit must be installed by a professional according to RD 795/2010, RD 1027/2007 and RD 238/2013.

WARNING

The power supply must be SINGLE-PHASE (one phase (L) and one neutral (N)) with its grounded power (GND)) or THREE-PHASE (three phase (L1, L2, L3) and one neutral (N) with its grounded power (GND)) and its manual switch. Any breach of these specifications involves a breach of the warranty conditions provided by the manufacturer.

NOTE

In line with the company's policy of continual product improvement, the aesthetic and dimensional characteristics, technical data and accessories of this appliance may be changed without notice.

ATTENTION

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



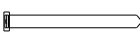


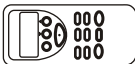

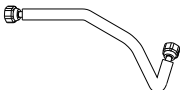
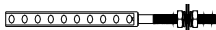


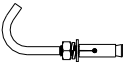

INSTALLATION AND OWNER'S MANUAL

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Accessories and parts purchased locally

Accessories

Name of accessories	Numbers	Shape	Application
Installation instruction for indoor unit	1	The manual	(Please be sure to hand it to user.)
Insulating tube	2		To encase single joints of high and low pressure pipes.
Large-sized heat insulating mattress	1		Heat insulation
Ribbon	10		Bind up cables and connecting pipes.
Dome insulated tip	6		Used to connect wires
X-type insulated tip	3		Used to connect wires
Remote controller	1		Control A/C
Battery	2		Supply power to remote controller
Connecting pipe of electronic expansion valve	1		Connect electronic expansion valve and liquid side of indoor unit (Different models may have different sizes and calibers. Please install according to the real products.)
Screw configuration	4		Used to hang the air conditioner
Hoop	2		Used to fasten drainpipe
Drain pipe	1		Used to drain water
Expandable screw	4		Used to hang the air conditioner
Blank valve bag	4		Used to contain accessories.

Parts Purchased Locally

Cooper pipe	Type	2. 2kW~2. 8kW	3. 2kW~5. 6kW	7. 1kW~8. 0kW	9. 0kW~16. 0kW
	Liquid pipe (mm)	Φ 6.35 × 0.8		Φ 9.52 × 0.8	
	Gas pipe (mm)	φ 9.52 × 0.8	φ 12.7 × 0.8	φ 15.88 × 1.0	
PVC drainpipe	For the indoor unit drainpipe. The length is decided according to the actual need.				
Insulation bushing	Assort inner diameter respectively with relevant copper pipe and hard polyethylene plastic pipe. The thickness is usually 10 mm (above). It should be appropriately thickened in closed and wet areas.				

1. Safety Precautionary Measures

Warning

- The installation work must be done by the installer or a professional worker.
The installation worker must be equipped with all related knowledge as a wrong operation may cause fire risk, electric shock, injury or water leakage, etc.
- Parts purchased locally should be according the national regulations, the violation of which may cause fire, electric shock or water leakage, etc. The installation work of retailed products must be installed by professionals.
- If the unit has to be installed in a small room, suitable measures shall be done to make sure any refrigerant leakage concentration if happened in the room will not exceed the critical level.
- For detailed measures, please consult with the distributor.
- Connection of power supply must be complying with rules specified by the local electrical authority.
- Required by law, must be reliable ground works. If the ground is not perfect, it may result in electric shock.
- If the air conditioner need to be moved or reinstalled, please let the installer or a professional worker operate.
- Incorrect installation will cause fire risk, electric shock, injury or water leakage, etc.
- The user is not permitted to rebuild or repair the unit by themselves.
Incorrect repairing will cause fire risk, electric shock, injury or water leakage, etc, so repairing must be performed by the installer or a professional worker.

Notice

- Make sure the water drainage pipe is useable.
Incorrect installation of water drainage pipe will cause water leakage and furniture wetting, etc.
- Make sure a current leakage protection switch is equipped.
The current leakage protection switch must be equipped or there may be an electric shock.
- It mustn't be installed in any position with potential leakage of inflammable gas.
If any inflammable gas leaks, there may be a fire risk around the indoor unit.
- Make sure the foundation installation or suspending installation is firm and reliable.
If the foundation or suspension is not firm and reliable enough, there may be a fall accident.
- Make sure all electric cables are correctly connected.
If any electric cable is incorrectly connected, any electrical part may be damaged.
- Exposure of this machine to water or other moisture before installation will cause short-circuit of electrical components.
Don't store it in humid basement or expose it to rain or water.
- If the refrigerant leaks during installation, the room must be ventilated at once.
The leaked refrigerant may generate some toxic gas if it contacts any flame.
- After installation, make sure there is no refrigerant leakage.
If the refrigerant gas enters and contacts some flame source such as a heater, a stove or an electric cooker, it may generate some toxic gas.

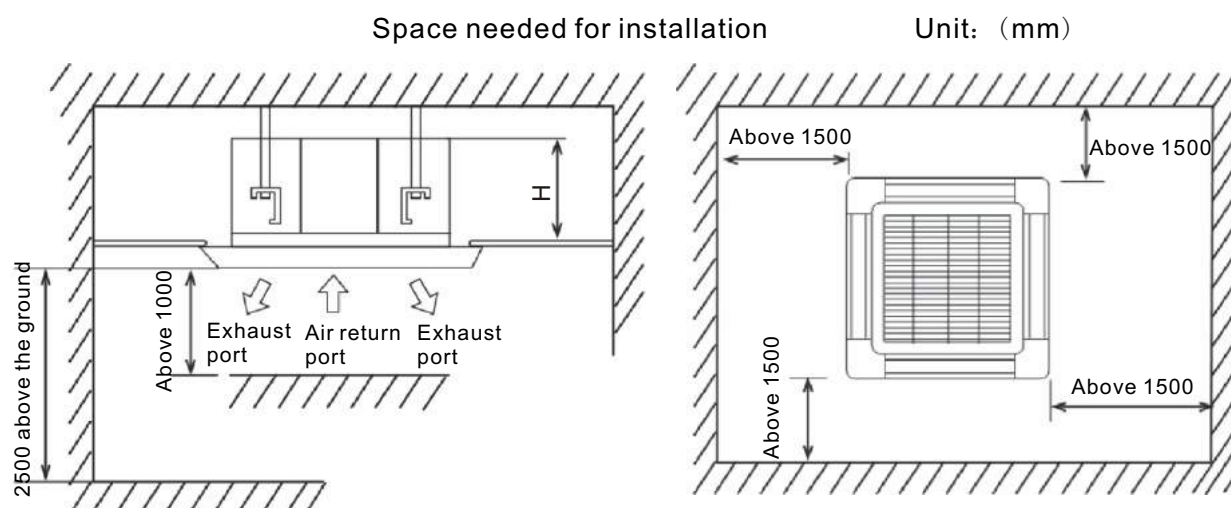
2. Selection of Installation Site

2-1 Selection of Installation Site for Indoor Unit

- 1) Provide enough space for installation and maintenance.
- 2) The ceiling is horizontal and the building construction can support indoor unit.
- 3) Ventilation is accessible and the site suffers from the minimal impact of extraneous air.
- 4) Air stream can spread to everywhere of the room.
- 5) Connecting pipe and drainpipe are easy to be extracted.
- 6) No direct radiation of heat.
- 7) If the temperature and humidity of the ceiling exceeds respectively 30 ℃ and RH80%, please stick insulating material on the body of the air conditioner. Please use glass wool or expanded polyethylene etc., which is more than 10 mm thick. (If it is more than 10 mm, please collect it in the opening of the ceiling.)

2-2 Space Needed for Installation

As to space needed for installation of ceiling-style indoor unit, please refer to the following figure.



Model	Size (H)
2. 2kW~4. 5kW	267
5. 6kW~8. 0kW	232
9. 0kW~16. 0kW	286

Notes: Actual sizes are subject to real products.

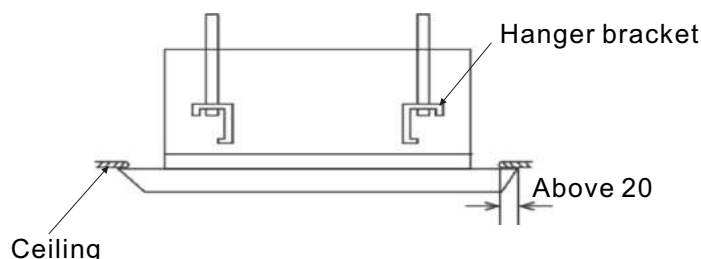
3. Installation of Indoor Unit

⚠ Warning

- The air conditioner must be installed in a place of enough strength to support the machine weight.
- If it lacks of strength, the machine may fall down and cause some personal injury.
- Incorrect installation may cause some accident because of machine falling down.

3-1 Preparation before Installation

3-1-1 For the position relation between ceiling opening and unit as well as hanging screw bolt, please refer to the following figure

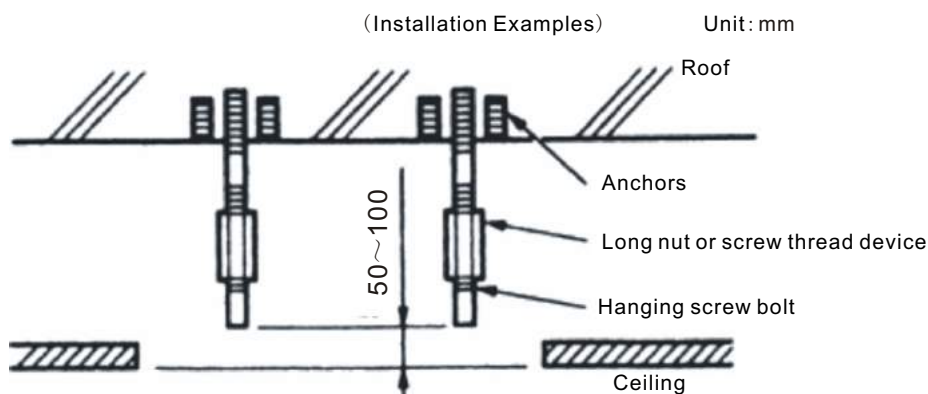


Instruction:

- 1) The overlap section of the ceiling and decorative panels should be over 20 mm. If necessary, strike out openings needed for installation on the ceiling (for existent ceiling).
- 2) As for the size of the opening on the ceiling, please refer to installation drawing.
- 3) Before installation, accomplish all pipes (refrigerator pipe, drain pipe) and wires (indoor and outdoor unit cables) connected with the indoor unit, so that they can be connected immediately with the indoor unit after installation.
- 4) Strike out openings which are possibly needed to reinforce the ceiling frame on the ceiling so as to ensure a level ceiling and prevent the ceiling from vibrating. For details, please consult builders.

3-1-2 Installation of hanging screw rod

To support the unit, if there is a ceiling, use sill anchors; if it is a new ceiling, use buried anchors, embedded anchors or other parts provided on the spot. Before continuing the installation, adjust the distance between it and the ceiling.



3. Installation of Indoor Unit

3-2 Installation of Indoor Unit

A. No installation position on the ceiling

① Attach the hanger bracket on hanging screw bolts. Be sure to respectively use nuts and washers on both ends of the hanger bracket so as to ensure that the hanger bracket is fixed firmly. Strongback 7 may prevent the washer from dropping.

② For the size of the opening on the ceiling, please refer to the following Installation Board 5. For details, please consult builders or carpenters.

③ Adjust the unit to a correct installation position.

④ Check if the unit is horizontal or not.

Indoor unit is furnished with built-in draining and floating switch. Check if the 4 angles of the unit are level with leveling instrument or water-filled polyethylene pipe. (If the opposite direction of water condensation leans, floating switch may not work, which will cause dripping.)

⑤ Remove Strongback 7 which is used to prevent waterproof washer from dropping and screw the nuts on it.

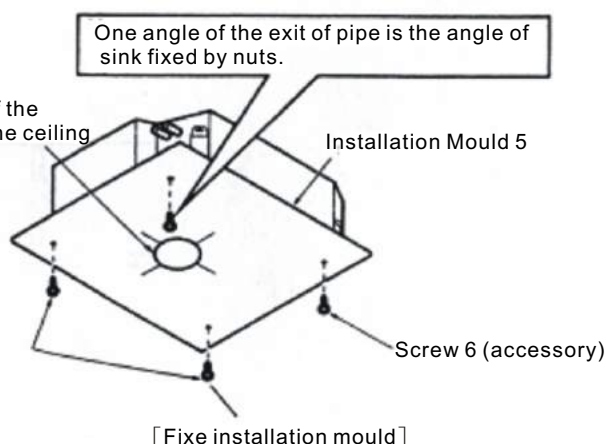
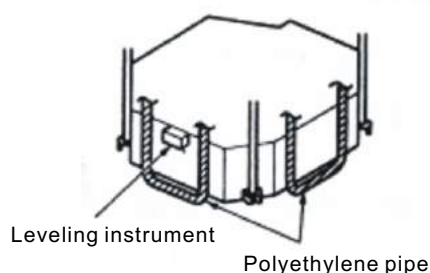
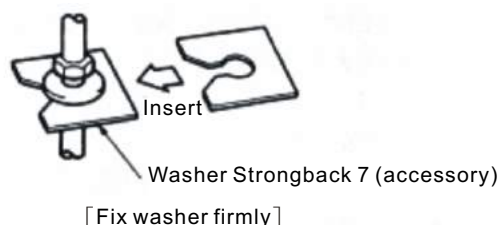
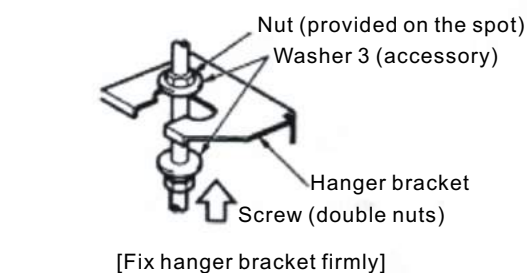
⑥ Remove installation boards.

B. With installation position on the ceiling

① Temporarily install indoor unit and attach the hanger bracket on hanging screw bolt. Be sure to respectively use nuts and washers on both ends of the hanger bracket so that the hanger bracket is fixed firmly. Strongback 7 may prevent the washer from dropping.

② Adjust the height and position of the unit.

③ Carry out procedures ④ and ⑤ of "A. No installation position on the ceiling".



3. Installation of Indoor Unit

3-3 Installation of Panels

3-3-1 Preparation of Decorative Panels

Before installing decorative panels, please prepare in accordance with the following figures.

Arrangement of decorative panels

- 1) Don't turn decorative panels upside down. Don't lean against the wall or protuberant articles.
- 2) Avoid collision and squeezing of swing panels. (Otherwise it will cause fault.)

Take down the wind grill from decorative panels.

- 1) Press down the button of wind grill, and then lift one end of the button. (Refer to Figure 1)
- 2) Lift up the grill to about 45° and take off the wind grill on decorative panels. (Refer to Figure 2)

Take down the close cover of the angle. Extract the cover outward. (Refer to Figure 3)

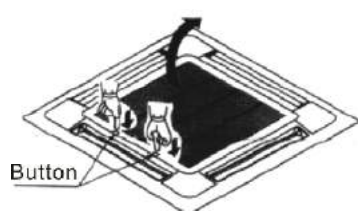


Figure 1

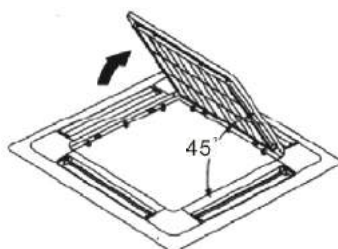


Figure 2

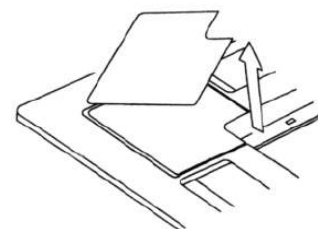


Figure 3

3-3-2 Install Decorative Panels on Indoor Unit

- 1) As shown in the figure, direct the electric motor of swing panel of decorative panels at the pipe of indoor to install the decorative panels on indoor unit.

- 2) Installation of decorative panels.

As for the installation orders of decorative panels, please refer to the following installation diagrams of decorative panels described in details.

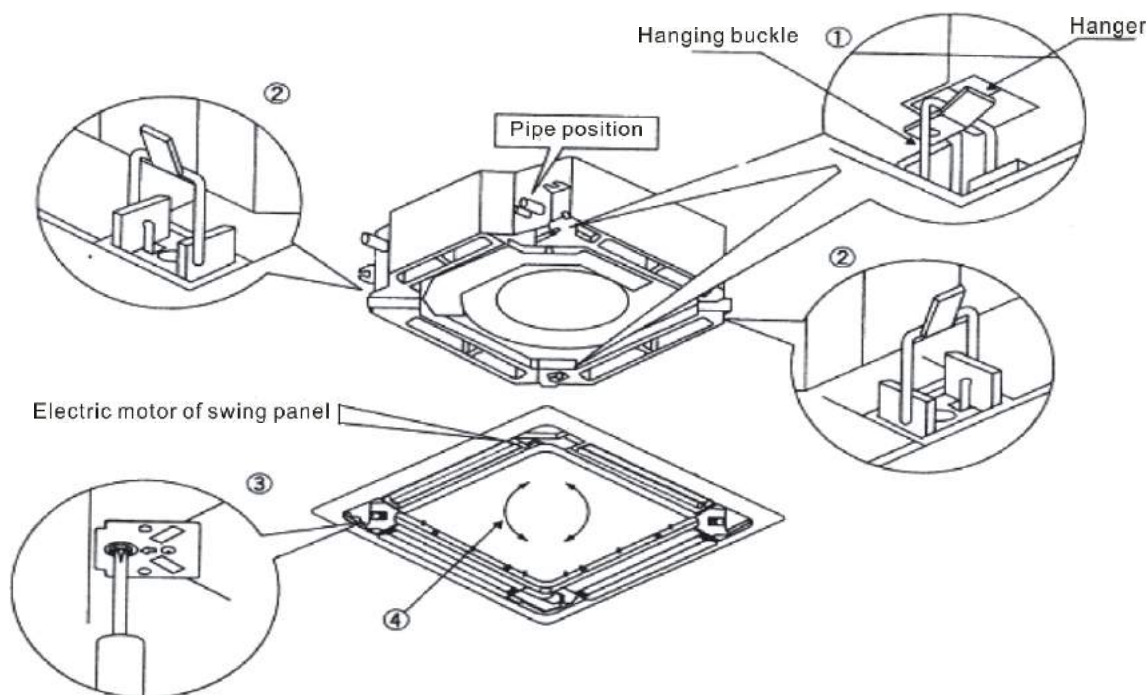


Diagram for Installation Orders of Ceiling-styled Panels

3. Installation of Indoor Unit

1) Temporarily install decorative panels on indoor unit. When installing, hang the hanging buckle of electric motor of swing panel of decorative panels on opposite position over the hanger of indoor unit. (Attention! Don't involve wire of the electric motor of swing panel into sealing material.)

2) Temporarily hang the remaining two hanging buckles over the hangers of indoor unit. (Attention: Don't involve wire of the electric motor of swing panel into sealing material.)

3) Screw 4 hexagon bolts under the hanging buckle in about 5 mm. (Panel will lift.)

4) As shown in the figure, turn decorative panels to the direction of the arrows for adjustment so as to totally cover the opening on the ceiling.

5) Screw bolts so that the thickness of packing material between decorative panels and indoor unit can be reduced to 5 mm to 8 mm as shown in the following figure.

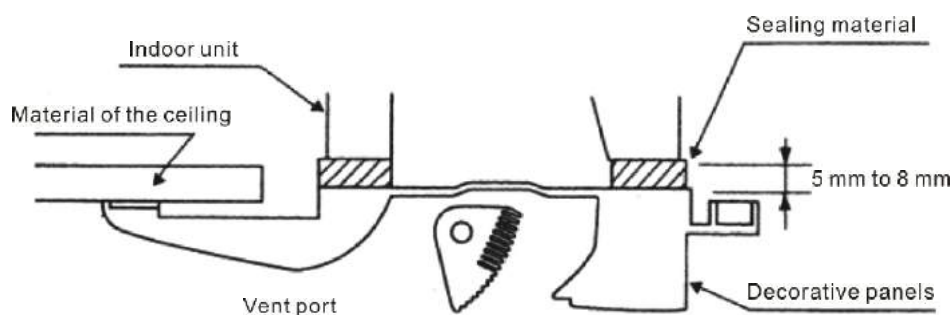
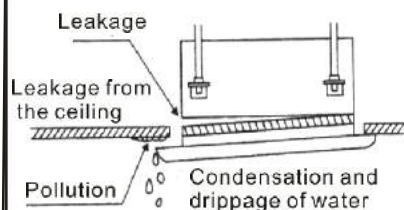


Diagram of Clearance between Ceiling-Style Panel and Real Indoor Unit

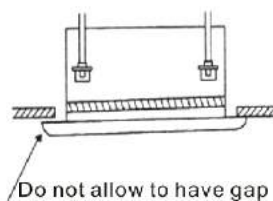
Notice

The cassette unit panels should be correctly installed and level. Otherwise it will cause a series of problems. See the following diagram:

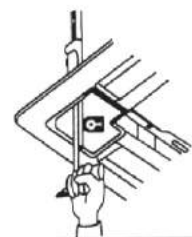
If the bolts are not screwed properly, it will cause the faults as shown in the following figure. Screw the bolts again to meet the requirements.



After screwing the bolts, if there is still gap between the ceiling and decorative panel, please readjust the height of indoor unit. There should be no gap.



If indoor unit is level and drain-pipe does not drain, it will be fine to adjust the height of indoor unit through the holes of decorative panels.



3. Installation of Indoor Unit

3-4 Hanging height of indoor unit

3-4-1 After the installation of indoor unit, please adjust hanging height of indoor unit. See the following figure.

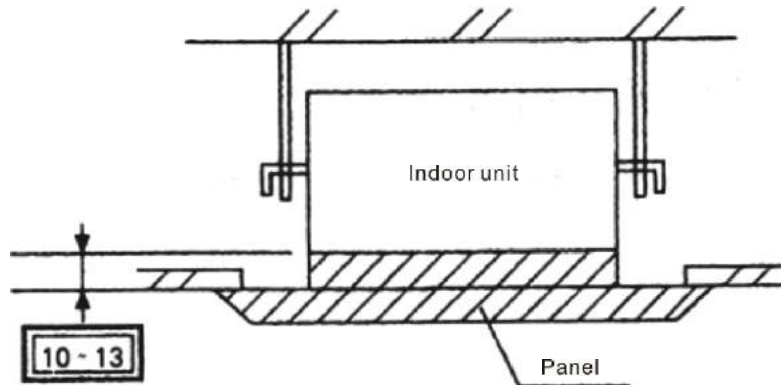
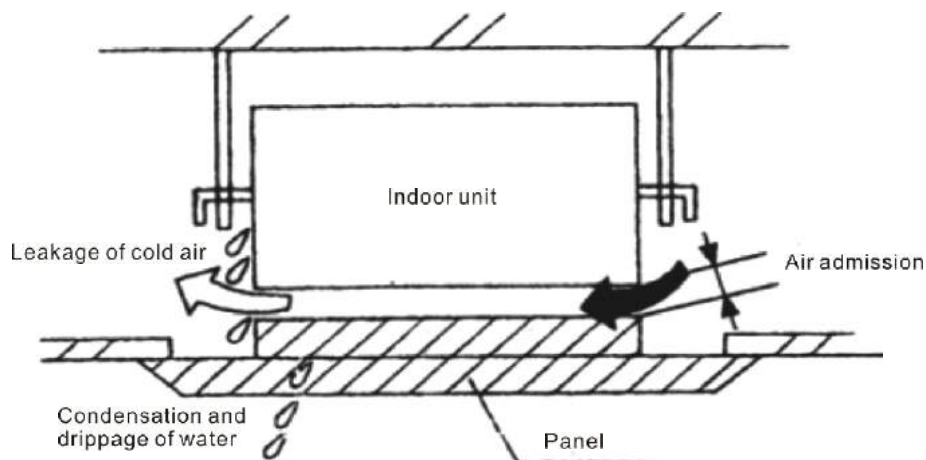


Diagram of Hanging height of the cassette unit

3-4-2 If there is gap between indoor unit and panel, the following unfavorable conditions may occur.



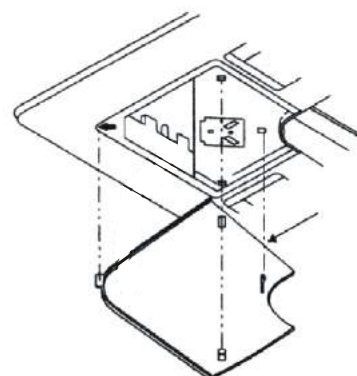
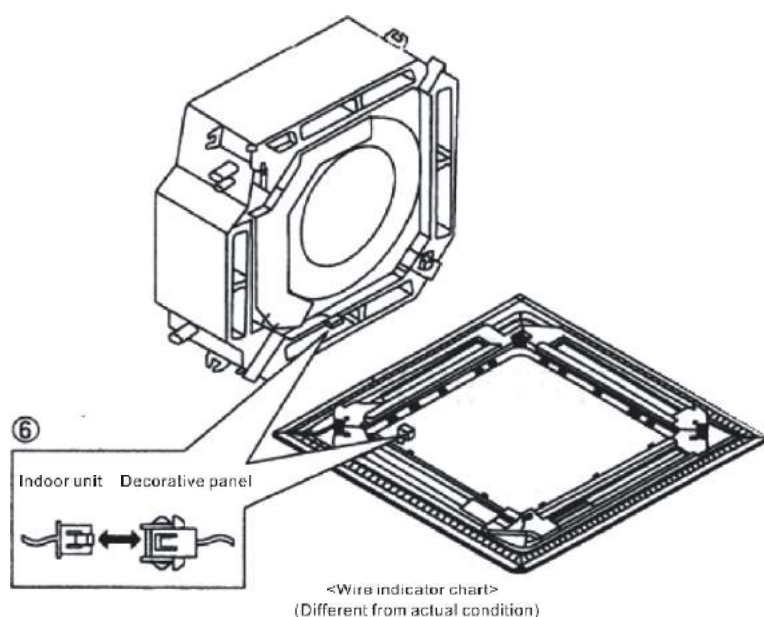
3. Installation of Indoor Unit

3-5 Wire Connection of Indoor Unit Body and Panel

3-5-1 Connect wire joints of electric motor of swing panel. (on decorative panels)

3-5-2 If joints are not connected, swing panel will not work. Be sure to properly connect joints.

3-5-3 Check if wire of electric motor of swing panel is placed between indoor unit and decorative panel.



Correctly insert four bolts on the cover into corresponding holes of the panel before installation.

Diagram for Wire Connection of Indoor Unit Body and Panel

3-6 Installation of Wind Grill and Cover

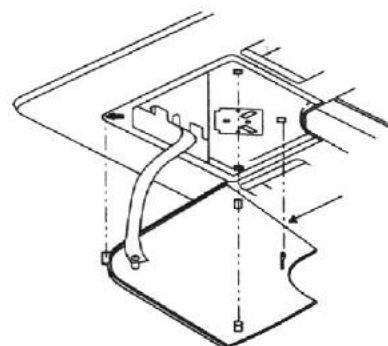
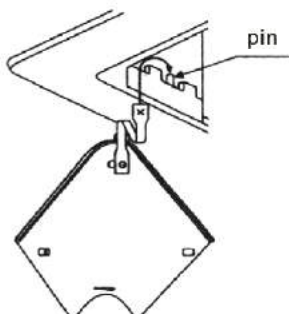
(1) Installation of wind grill

Install according to reverse procedures of "Preparation of Decorative Panel". Turn around the wind grill and install in four directions. If it is necessary to adjust the installation direction of wind grill, or users propose such requirement, change its installation direction.

When installing the wind grill, be sure not to involve wire of electric motor of swing panel.

(2) Fix the cover on the angle

As shown in the following figure, connect the string of cover with the bolt of the decorative panel.

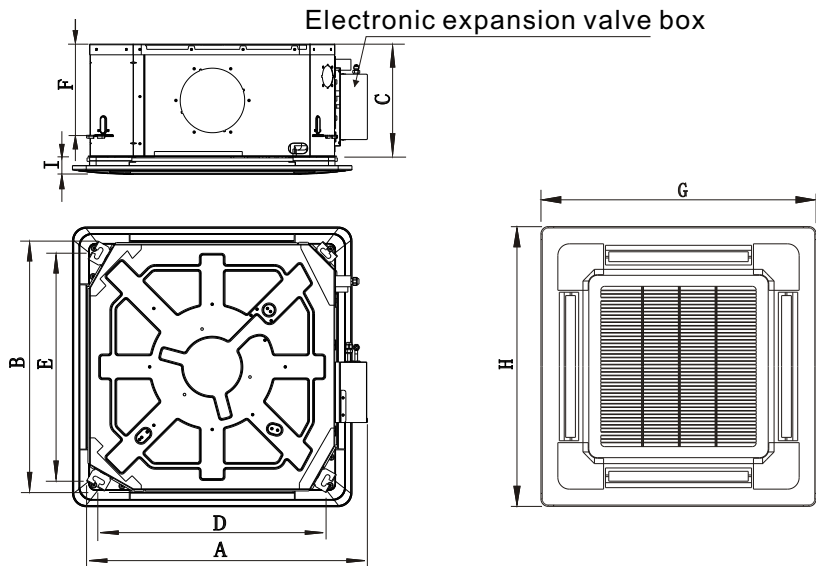


Correctly insert four bolts on the cover into corresponding holes of the panel before installation.

3. Installation of Indoor Unit

3-7 Installing Size of Indoor Unit

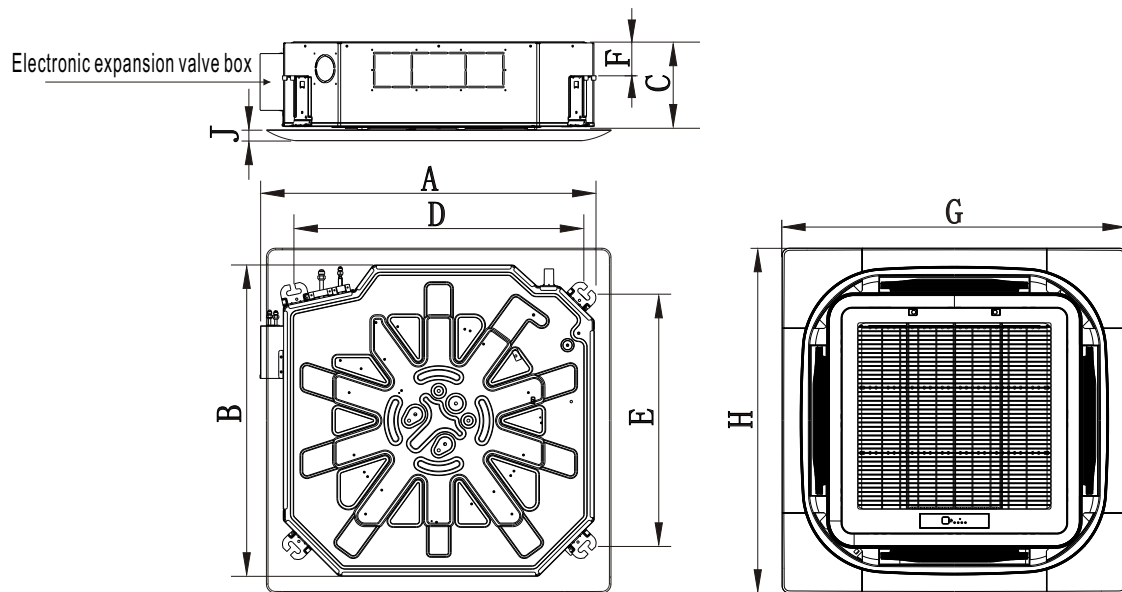
A 、 Appearance Size and Air Outlet Size of Cassette Unit (1) :



Unit: mm

Size code Model of indoor unit	Body size			Installing size			Panel size		
	A	B	C	D	E	F	G	H	I
2. 2kW~4. 5kW	653	585	267	528	528	212	650	650	30

B 、 Appearance Size and Air Outlet Size of Cassette Unit (2) :



Unit: mm

Size code Model of indoor unit	Body size			Installing size			Panel size		
	A	B	C	D	E	F	G	H	I
5. 6kW~8. 0kW	900	833	232	776	684	91	950	950	80
9. 0kW~16. 0kW	900	833	286	776	684	150	950	950	80

4. Drain Pipe Layout

4-1 Installation of Drainpipe of Indoor Unit

1) PVC pipe (external diameter 30~32 mm, inner diameter 25 mm) can be used as drainpipe. Users can purchase drainpipe of appropriate length from distributor, local air conditioning service center or market according to actual installation.

2) Encase the mouth of drainpipe into the root of pumping pipe of main part and fasten together the drainpipe and insulating bushing with hoops (accessory).

⚠ Notice

Don't exert too much strength to avoid destruction of pumping pipe; insulating bushing of pumping pipe and drainpipe should be encased evenly in order to prevent water condensation.

3) Evenly bind up the pumping connecting pipe and drainpipe (especially indoor part) with insulation bushing, and tighten them with tightening belt to avoid air inflow and condensation.

4) In order to prevent water from flowing back into air conditioner when it stops, drainpipe should decline outside(water drain side) the room with an angle of 1/100 or above. Avoid expansion, water storage, etc., or abnormal noise will occur(see figure4.1a) .

5) When connecting drainpipe, don't pull it hard, in case the pumping connecting pipe gets loose and comes off. Set a supporting point in every 0.8 to 1.0 m, in case that drainpipe may flex. (See Figure 4.1b)

6) If it is necessary to arrange winding pipe, please use the connecting pipe part of water exit in electrical connector.

7) When connecting lengthened drainpipe, wrap the indoor part of it so as to prevent lengthened drainpipe from getting loose.

8) If the exit of drainpipe is higher than pumping connecting pipe of main body, drainpipe should be kept vertical upwards as it is possible. The connecting pipe part of water exit has the function of bending vertically and the drainpipe should be set within 600 mm from water tray. Otherwise, when it stops, too much water that flows back will cause overflow. (See Figure 4.2)

9) Set 1-2 exhaust pipe on the highest position of drainpipe so as to avoid the occurrence of gas sealing in drainpipe which may cause poor drainpipe.

⚠ Notice

Seal all connections of drainpipe system so as to prevent leakage.

10) The distance between the end of drainpipe and the bottom of sink must be more than 50 mm, and don't put drainpipe into water. When directly pouring condensed water into drainage ditch, use upward bent drainpipe into a U-shape water seal to prevent bad smell from entering room through drainpipe.

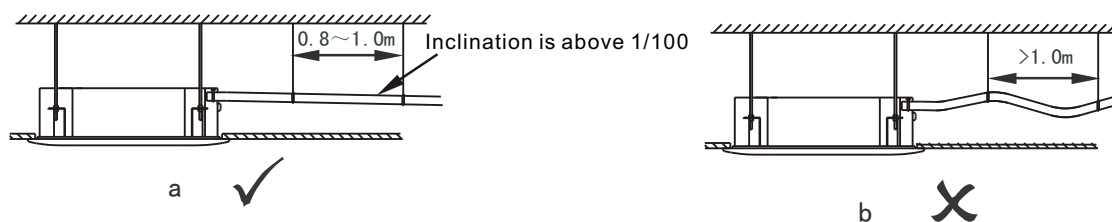


Figure 4.1

4. Drain Pipe Layout

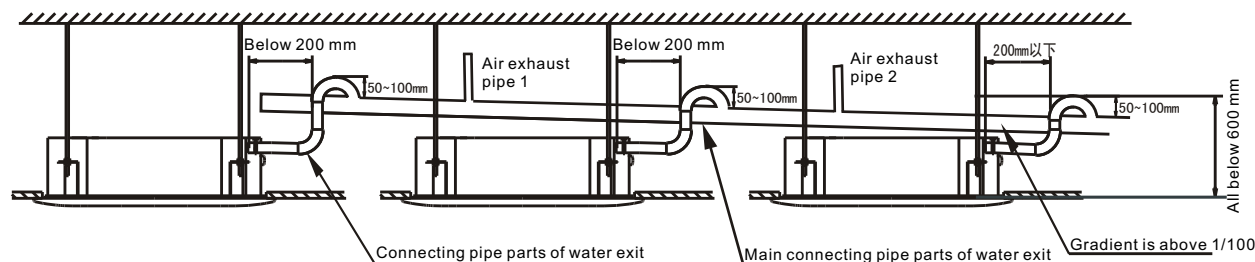


Figure 4.2 Drainpipes of Several Unites Connect with Sewer through Main Drainpipe

4-2 Drainage Test

4-2-1 Drainage test is needed for new room before paving the ceiling.

1) Remove water trying cover, through water trying mouth; inject about 2,000 ml of water into water tray through injection pipe. (See Figure 4.3)

2) Turn on the power. Operate the air condition in cooling mode. Check the operation noise of draining pump and check if the outfall can drain normally (in accordance with the different length of drainpipes, it may need about 1 minutes to drain) and if the interfaces leak.

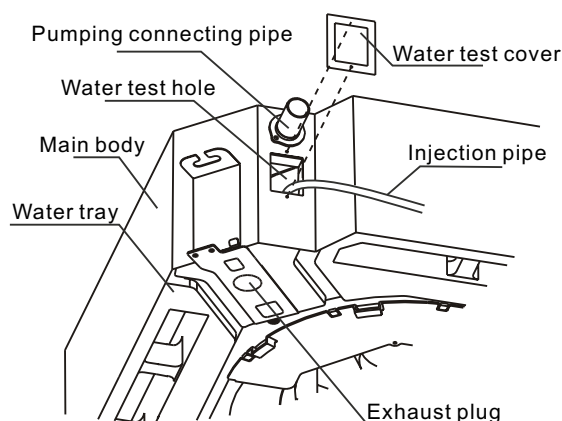


Figure 4.3

▲ Notice

Fault (if any) should be removed immediately.

3) Stop the air conditioner. Check if there are any abnormal conditions after 3 minutes. If drainpipe is arranged unreasonably, too much water will flow back, which will cause alarming of control box, flashing of indicator and even overfall of water tray.

4) Continue to add water and it will alarm due to high water level. Check if draining pump drains water immediately. If water level can't drop down under warning level after 3 minutes, the unit will stop. At this time, turn off the power and drain water before turning it on normally.

5) Turn off the power, drain water and install the water testing cover back to the original place.

▲ Notice

Drain plug under the bottom of main body is used for draining water in water tray when air condition is in fault and maintenance. During using, plug well this drain plug in case of leakage.

5. Install Connecting Pipes and Electronic Throttle

5-1 Requirements for the connecting length and drop height of the tubing of both indoor and outdoor units

- 1) Please refer to the allowed length of tubing in the instruction of outdoor unit.
- 2) Please refer to the allowed drop height of tubing in the instruction of outdoor unit.

⚠ Notice

- During the installation process, keep the air, dust and other impurities from getting into the pipeline system.
- Fix indoor and outdoor units before installing the connecting pipe.
- Keep dry while installing the connecting pipe and keep the water from getting into the pipeline system.
- Connecting pipe must be wrapped by heat insulator. (Usually, the thickness is more than 10 mm, and it is even thicker in closed humid area.)

5-2 Material and Size of Tubing

Table 5.1

Type	2.2kW~2.8kW	3.2kW~5.6kW	7.1kW~8.0kW	9.0kW~16.0kW
Liquid pipes (mm)	$\phi 6.35 \times 0.8$		$\phi 9.52 \times 0.8$	
Gas pipes (mm)	$\phi 9.52 \times 0.8$	$\phi 12.7 \times 0.8$	$\phi 15.88 \times 1.0$	

5-3 Procedures for Connecting Pipes

5-3-1 Measure the needed length of connecting tubing, and make connecting tubing according to the flowing methods. (For details, see the "Tubing Connection" column)

- 1) Connect the indoor unit before connecting the outdoor unit.
 - a. Pay attention to the configuration of winding tubing so as not to damage the tubing and its insulation layer.
 - b. Smear the refrigerator oil (it must be engine oil which is compatible with the cooling medium of this type) on the outside surface of flared joint and the conical surface of connecting nut and screw it 3 or 4 rounds with your hand (Fig. 5.1) before screwing the flared nut up.
 - c. Use two spanners at the same time when connecting or taking the tubing down.
 - d. The interface of indoor unit can't bear all the weight of the connecting tubing, because if the interface is over-burdened, it will affect the cooling or heating effects of indoor unit.
- 2) The stop valve of outdoor unit should be completely shut down (as the default state when leaving the factory). Unscrew the nut from the stop valve and connect the flared tube at once (within 5 minutes).
- 3) After connecting the refrigerant tubing to both indoor and outdoor units, eliminate the air according to the column of "Vacuum Supply", then screw the nut up.
 - a. Notes for flexible coupling:
 - ① The winding angle should be less than 90° (Fig. 5.2).
 - ② Its sinuosity had better be in the centre of the pipe range, its bending radius should be more than 3.5 D (the diameter of pipeline).
 - ③ Don't bend the flexible coupling pipe for more than 3 times.

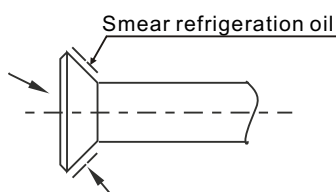


Figure 5.1

Bend pipe with thumbs



Figure 5.2

5. Install Connecting Pipes and Electronic Throttle

b. Bending thin-wall connecting pipe (Fig. 5.3).

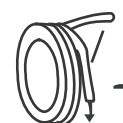
① Cut away a notch of a required size in the insulated tubing at the place of sinuosity when operating with the sinuosity, then expose the pipeline (wrap it up with binder after it gets bent).

② Bend radius as much as possible so as to avoid squash or destruction.

③ Use pipe bender to make close sinuosity.

c. Use copper pipe sold in the market:

When using the copper pipe purchased in the market, you must use the same type insulating material (thickness is often more than 10 mm, and it is even thicker in closed humid area.).



Remove coil methods
make pipe end straight

Figure 5.3

5-3-2 Pipe Arrangement

1) It is necessary to bend pipe or drill holes on the wall. The section surface of bending pipe should not exceed 1/3 of original section surface. When drilling wall or board, ensure to set protection bushings. Welding lines are not allowed to be made within the protection bushings. When drilling external wall for the pipe, ensure to seal it tightly with binder so as to prevent impurities from entering the pipe. The pipe should be insulated by appropriate and suitable insulating tube.

2) The encased connecting pipe should get through the hole on the wall from outside and enter into the room. Arrange pipes carefully. Don't destroy pipes.

5-4 Connection of Pipe

5-4-1 Flaring

1) Cut off pipe with a pipe cutting knife (See Figure 5.4).

2) Insert the pipe into the connected flared nut (Table 5.2).

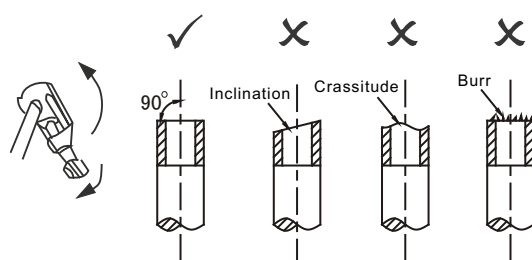
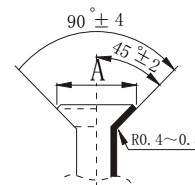


Figure 5.4

Table 5.2

External diameter (mm)	A (mm)	
	Maximum	Minimum
φ 6.35	8.7	8.3
φ 9.52	12.4	12.0
φ 12.7	15.8	15.4
φ 15.88	19.0	18.6
φ 19.05	23.3	22.9



5-4-2 Fasten Nuts

Aim at the connecting pipe and screw up nuts with hand and then screw them up with wrenches as shown in Figure 5.5.

Notice

In accordance with installation conditions, too large torque will break loudspeaker while too small torque will cause leakage of air. Please ensure that the torque has been screwed up according to Table 5.3.

Table: 5.3

pipes size (mm)	Tightening torque (N.m)
φ 6.35	10 ~ 12
φ 9.52	15 ~ 18
φ 12.7	20 ~ 23
φ 15.88	28 ~ 32
φ 19.05	35 ~ 40

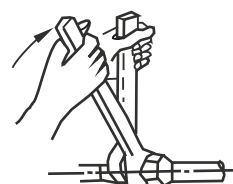


Figure 5.5

5. Install Connecting Pipes and Electronic Throttle

5-5 Installation of Electronic Throttle Component and Connecting Pipe Assembly

5-5-1 Schematic Diagram for Installation of Electronic Throttle Component

Electronic throttle parts have been installed on unit body when leaving the factory. Please refer to Figure 5.6. When installing the entire unit, please joint connecting nuts of electronic throttle parts with liquid pipe of evaporator and screw it up with torque wrench.

5-5-2 Maintenance diagram of electronic throttle parts

Electronic throttle parts have been installed on unit body when leaving the factory. They are connected by four nuts. Refer to Figure 5.6. Please carry out maintenance of electronic throttle parts in accordance with the following steps:

- 1) Collect as much refrigerant air back to outdoor unit as possible.
- 2) Open maintenance opening.
- 3) Open electronic throttle parts, connecting pipe and connecting nuts of the unit.
- 4) Remove set screws of electronic throttle parts and the unit with cross screwdriver.
- 5) Remove the whole electronic throttle parts from the machine, unscrew fixed screws and remove the cover.
- 6) Check and repair electronic throttle parts, etc.

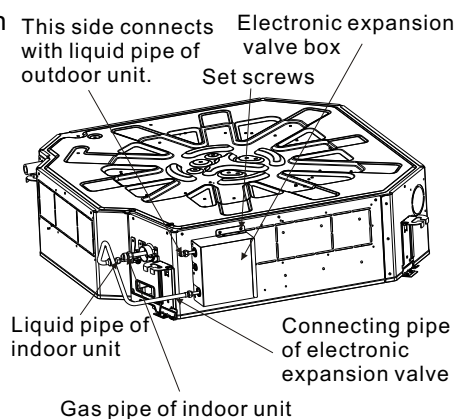


Figure 5.6

5-6 Leakage Test

After having installed refrigerant pipe, connect it before outdoor unit. Inject nitrogen with certain pressure (4.0MPa) from gas pipe side and liquid pipe side at the same time to take leakage test for 24 hours.

5-7 Vacuum Supply

Connect refrigerant pipe with the two sides of gas pipe and liquid pipe of outdoor, use vacuum pump to vacuumize from the two sides of gas pipe and liquid pipe of outdoor at the same time.

⚠ Notice

Never use refrigerant sealed in outdoor unit to vacuumize.

5-8 Valve Switch

Use 5 mm hex socket to open and close the valve of outdoor unit.

5-9 Leak Detection

When detecting leakage, detect leak in the valves at the interface of the pipe joints with soap bubbles.

5-10 Insulated Treatment

Insulate gas pipe side and liquid pipe side. When refrigerating, the temperature of gas pipe side and liquid pipe side should be low. To prevent condensation, please fully insulate (See Figure 5.7).

- 1) Gas pipe must be made from insulated material which can resist more than 120°C.
- 2) Please seamlessly insulate the connecting parts of indoor unit single joints with accessorial insulating tube.

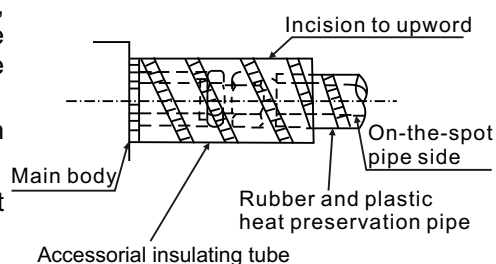


Figure 5.7

6. Connection of Electricity

6-1 Electric Wiring

⚠ Notice

- Air conditioning applies special power supply and power supply voltage should conform to the rated voltage.
- The external power supply circuit of air conditioning must have ground wire. Power supply's ground wire of indoor unit should be connected accurately with external circuit.
- Wiring should be installed by professional technicians according to labeling of circuit diagram.
- The connected fixed circuit must be furnished with an all-pole disconnection equipment with at least 3mm trigger distance.
- Install protective equipment of creepage in accordance with standard of national electrical equipment technology.
- Power and signal lines should be appropriately arranged in good order, and can not interfere with each other.
- Meanwhile, they cannot connect with connecting pipes and valve body. At the same time, two wires cannot be connected, unless they are welded firmly and wrapped with insulating tapes.
- After installation has done, before connecting to power supply, please check carefully and make sure everything is fine.

6-2 Specification of Power Supply

The specification of power supply wires recommends the following Figure 6.1. Wirings may be overheated and the machine will break down if the capacity is too small.

Table 6.1

<div>Project</div> <div>Mode</div>	Power supply of indoor part					Connecting wire		Ground wire
	Power supply	Power switch		Power Cord		Signal wire of indoor and outdoor units		
		Capacity	Fuse	Below 20 m	Below 50 m	Number	Wire diameter	
2. 2~16. 0kW	Single-phase	15A	15A	2.5mm ² ×2	4mm ² ×2	1	3-core shielded cable 0.75mm ²	Single wire 2.5mm ²

⚠ Warning

As you review this manual, along with the wiring instructions presented in this section, keep in mind that: all field-installed wiring must conform to National Electric Code (NEC) guidelines, and any applicable state and local codes. Be sure to satisfy proper equipment grounding requirements per NEC.

6-3 Wiring Suggestion of Signal Wire of Indoor Unit

- 1) Shielded wire should be used as signal wire. Using other wires may cause signal interference and malfunction.
- 2) Wiring shielding layers of shielded wire into one line and then connect it to port E of terminal. (See Figure 6.1)
- 3) It is forbidden to tie the signal wire with refrigerant pipe, power supply wires etc. When power supply wires are paved in parallel with signal wire, they should keep a distance of more than 300mm to avoid interference of signal source.
- 4) Signal wire cannot form a closed circuit.
- 5) Signal wire contains polarity, so be careful when connecting wires. Signal wire of indoor unit should be connected to ports labeled "P, Q, E". And they should conform to ports labeled "P, Q, E" of the main machine of outdoor unit and cannot be connected wrongly.

6. Connection of Electricity

6) Please use 3-core twisted shielded pair cable (not less than 0.75mm^2) as signal wire of indoor and outdoor units. Because it contains polarity, it should be connected properly. Signal wires of indoor and outdoor units can only be led out from the main machine of outdoor unit and connected to all indoor units of a same system.

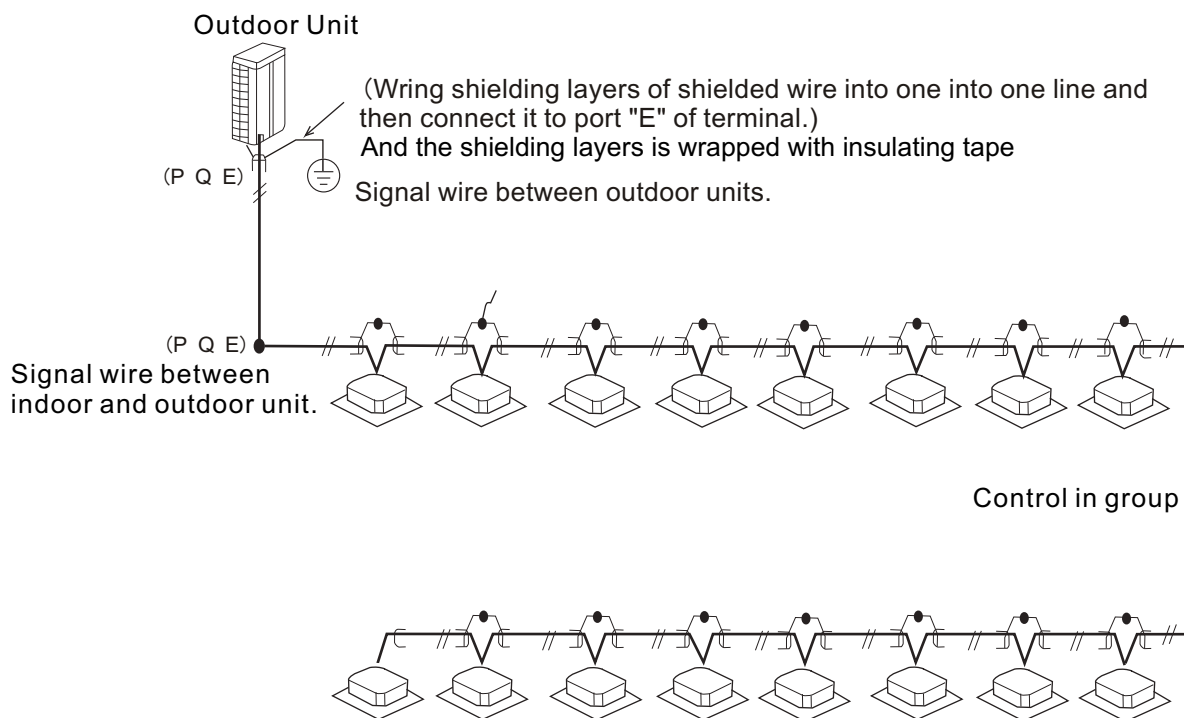
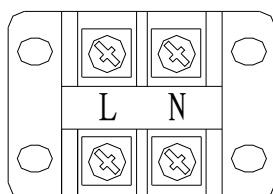


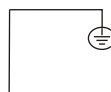
Figure 6.1

6-4 Wiring Suggestion of Power Supply of Indoor Unit

- 1) The indoor unit power supply in the same system must be in the same circuit and switched on or off at the same time, or the system service life may be shortened and the machine may fail in starting up.
- 2) Power supply, current leakage protector and manual switch connected to the same outdoor unit must be with the versatility.
- 3) Power supply wires should be connected to the terminal labeled "L, N", ground wire of power supply should be connected to electricity control box "⊕".



Single-phase power



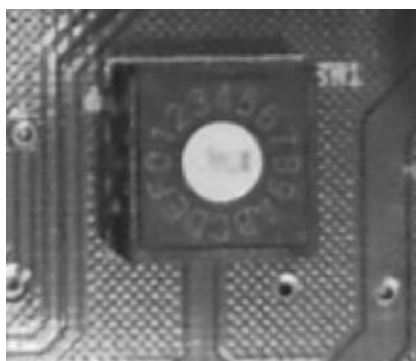
Ground

7. Supplying and Controlling

7-1 Introduction of Functional Dial-up

Note: as the dial-up of different unit may be different, the specific content please refer to the wiring diagram of the unit. The following way of the dial-up can only be for reference.

7-1-1 Dial-up Switch SW1



By using the dial switch SW1 (with 16 numbers in its dialing disk) on the indoor plate can regulate the horse power of indoor unit (set up before leaving factory). The indoor unit includes the following horse power:

power of dials	Capacity factor	HP
0	18/22	0.8
1	25/26/28	1
2	32/35/36	1.2
3	40/45/46	1.7
4	50/51/56	2
5	60/63/66/71	2.5
6	80	3
7	88/90	3.2
8	100/110/112	4
9	120/125/140	5
9	150/160	6

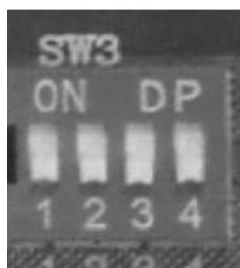
7. Supplying and Controlling

7-1-2 Dial-up SW2



Selector of units with the DC motor		Selector of heating temperature and compensatory temperature choices	
SW2 1th,2th	Unit	SW2 3th,4th	Temperature selection
ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2	Compact Four-way Cassette Unit	ON <input type="checkbox"/> OFF <input type="checkbox"/> 3 4 (Factory Default)	6°C
ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2	Four-way Cassette Unit	ON <input type="checkbox"/> OFF <input type="checkbox"/> 3 4	2°C
ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2	360° Cassette Unit	ON <input type="checkbox"/> OFF <input type="checkbox"/> 3 4	4°C
ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2	Floor-ceiling Unit	ON <input type="checkbox"/> OFF <input type="checkbox"/> 3 4	8°C
Temperature selector of turning off fan motor in anti-cold		Time selector of stopping fan motor in heating model	
SW2 5th,6th	Temperature selection	SW2 7th,8th	Time selection
ON <input type="checkbox"/> OFF <input type="checkbox"/> 5 6 (Factory Default)	15°C	ON <input type="checkbox"/> OFF <input type="checkbox"/> 7 8 (Factory Default)	4min
ON <input type="checkbox"/> OFF <input type="checkbox"/> 5 6	20°C	ON <input type="checkbox"/> OFF <input type="checkbox"/> 7 8	8min
ON <input type="checkbox"/> OFF <input type="checkbox"/> 5 6	24°C	ON <input type="checkbox"/> OFF <input type="checkbox"/> 7 8	12min
ON <input type="checkbox"/> OFF <input type="checkbox"/> 5 6	26°C	ON <input type="checkbox"/> OFF <input type="checkbox"/> 7 8	16min

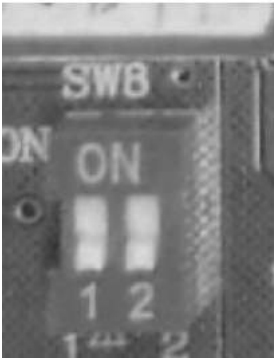
7-1-3 Dial-up SW3



7. Supplying and Controlling

Setting up power-off memory according to agreement			Selector of windshield		
SW3 1th	<div>ON OFF</div> <div><div></div><div>1</div></div>	Power-down memory (Factory default)	SW3 2th	<div>ON OFF</div> <div><div></div><div>2</div></div>	High windshield
	<div>ON OFF</div> <div><div></div><div>1</div></div>	No power-down memory		<div>ON OFF</div> <div><div></div><div>2</div></div>	Ultrahigh windshield (Factory default)
Selector of Lamp plate type			Selector of addressing model		
SW3 3th	<div>ON OFF</div> <div><div></div><div>3</div></div>	With the LED Lamp plate (Factory default)	SW3 4th	<div>ON OFF</div> <div><div></div><div>4</div></div>	Automatic Address-sing mode (Factory default)
	<div>ON OFF</div> <div><div></div><div>3</div></div>	With the digital tube Lamp plate		<div>ON OFF</div> <div><div></div><div>4</div></div>	Test mode (to allow clear address)

7-1-4 Dial-up SW8



Dialing function of SW8 is temporarily retained, so it is not defined temporarily. It was dialed to the digital side before leaving factory.

<div>ON OFF</div> <div><div></div><div>1</div></div>	Means dialing to ON
<div>ON OFF</div> <div><div></div><div>1</div></div>	Means dialing to digital side

Notes: Dialing function of SW8 is used for debugging and it is commonly dialed to digital side.

8. Fault Code Table

8-1 Display with Fault

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	FE
Errors of phase sequence or fault of losing phase	E0
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
Testing fault of zero-crossing signal	E6
EEPROM malfunction	E7
Wind testing fault of PG electric motor	E8
Communication fault of wire controller	E9
Alarming fault of water level switch	EE
Model conflict	EF

8-2 Display of LED

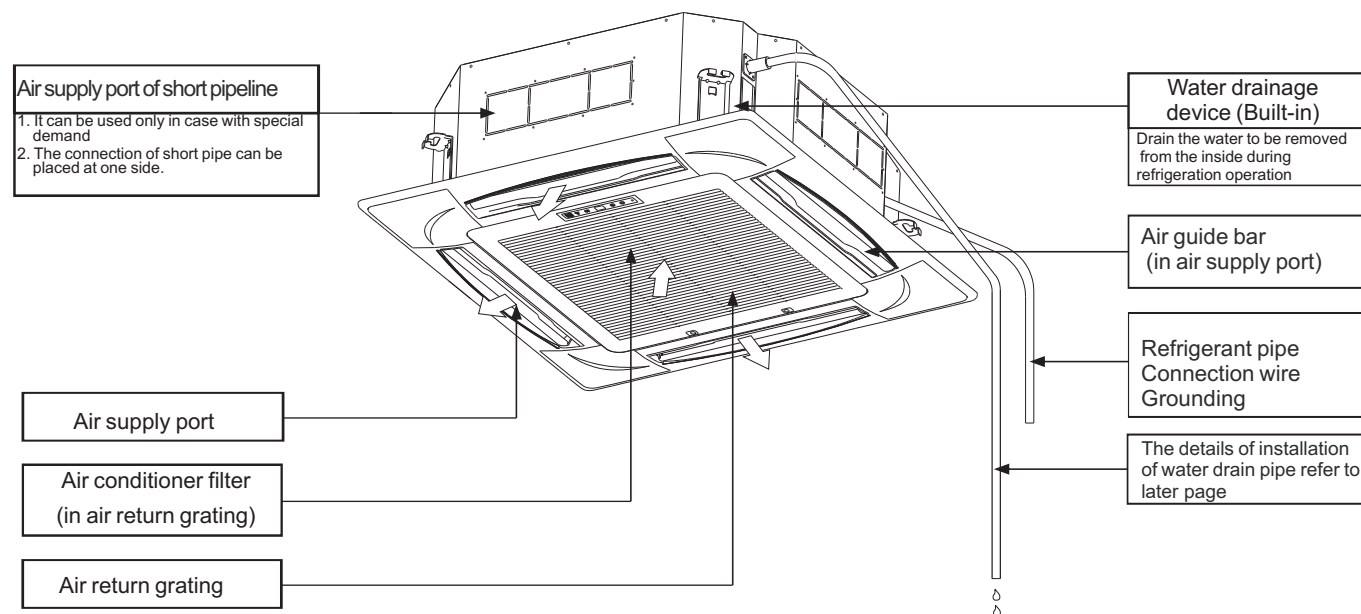
LED running indicators shine slowly when it is electrified and reset. All of them will go out when it is on standby, while starting up, they will light up. When it is anti-cold or defrost, the preheating light /defrost light will turn on. If timing function is turned on, timing light will light up. When it encounters fault, it manifests the following contents:

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	LED timing light and running light shine slowly at the same time.
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

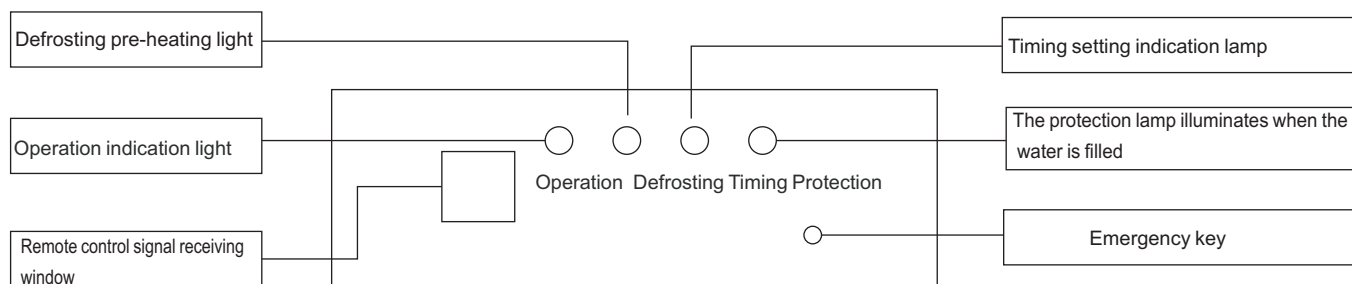
It shines slowly with a cycle of 2 seconds and quickly with a cycle of 0.4 second.

9. Indoor unit information

9-1 Indoor unit



9-2. Indication lamp board

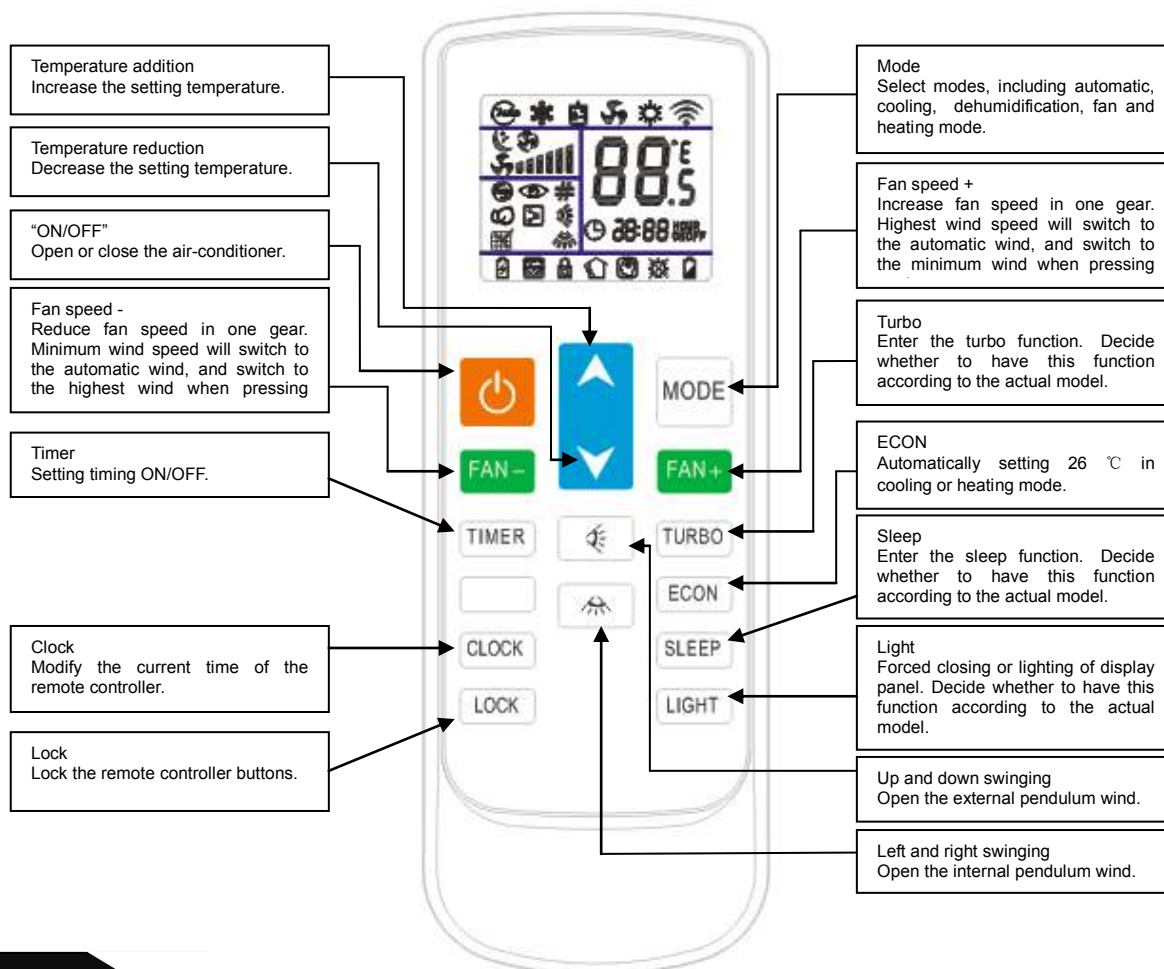


REMOTE CONTROLLER MANUAL

1.1 Instructions of remote controller

! Warning

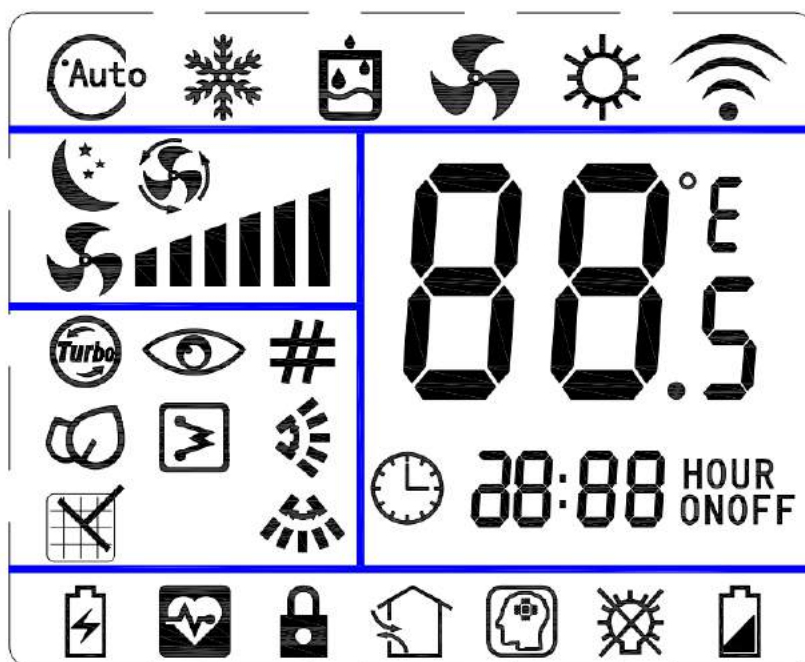
- Do not place remote controller near heat sources such as electric blankets or heating furnaces.
- Do not place remote controller in direct sunlight.
- Be careful not to drop, otherwise it may cause damage.
- No obstacle between the signal receiver and the remote controller, so as not to affect the transmission and reception of the signal.
- Do not splash water or other liquids onto the remote controller.



! Warning

- Point the remote controller to the air conditioner, press the button on the remote controller, and send the command signal to the air conditioner.
- If the signal is received correctly, the air conditioner will issue a "beep" prompt.
- If the remote controller is not available, please replace the new battery and try again. But if the problem persists, please contact the seller or our authorized service center.

1.1.1 The icon meaning of remote controller



1) The remote controller is equipped with 15 buttons, and the LCD is newly made. All the icons are kept in touch with the touch-screen remote controller.

2) At the first power on, the LCD of the remote controller displays all the icons first and then enters the standby state, displaying only the clock 12:00 and the light icon.

3) Introduction of LCD screen icon:

- Mode display: automatic 、cooling 、dehumidification 、fan and heating .
- Temperature display: displays temperature, which range between 16 ~ 32°C or 61 ~ 90°F.
- Wind speed display: means wind speed. means automatic wind speed.
- Swinging display: means external pendulum wind. means internal pendulum wind.
- Timer display: means TIME ON. means TIME OFF.
- Other display: means clock. means sleep. means TURBO. means ECON. means cleaning. means electric heating. means address. means lock. means lack of electricity.
- Reservation function: means Auto Config. means power saving. means healthy. means new wind. means intelligence. means lamp light.

1.1.2 Button function of remote controller

(1) ON/OFF

- ① When pressing this key, the remote controller switches by "on, off, on" circularly.
- ② When the first power on, the working state is set by default: setting temperature 25°C (77°F), automatic mode, automatic fan speed, internal and external pendulum wind, no TURBO, no sleep, no timer, no lock).
- ③ When the power on is not the first time, the state before shutdown is recovered. After shutdown, the sleep, TURBO, ECON and timer functions will be canceled.

(2) Mode

- ① When pressing this key, the remote controller switches by "automatic, cooling, dehumidification, fan, heating, automatic" circularly.
- ② The dehumidification mode is locked at 25°C and the temperature can not be adjusted. The internal pendulum wind stays unchanged according to the state before switching, but the external pendulum wind is forced to close.

(3) Temperature reduction ▼

- ① Temperature setting: when pressing this key, the setting temperature will be reduced by 1. The temperature of centigrade model will be reduced progressively by "32°C, 31°C, ·····, 17°C, 16°C". The temperature of Fahrenheit model will be reduced progressively by "90°F, 89°F, ·····, 62°F, 61°F". When pressing this key in dehumidification and fan mode, the temperature will not change.
- ② In the clock setting state (the clock icon will flicker to show the prompt), this key is used to set the clock time.
- ③ Keep pressing will continuously change the temperature.

(4) Temperature addition ▲

- ① Temperature setting: when pressing this key, the setting temperature will be added by 1. The temperature of centigrade model will be added progressively by "16°C, 17°C, ·····, 31°C, 32°C". The temperature of Fahrenheit model will be added progressively by "61°F, 62°F, ·····, 89°F, 90°F". When pressing this key in dehumidification and fan mode, the temperature will not change.
- ② In the clock setting state (the clock icon will flicker to show the prompt), this key is used to set the clock time.
- ③ Keep pressing will continuously change the temperature.

(5) Up and down swinging (External pendulum wind)

- ① Pressing this key in the dehumidification mode, the external pendulum wind is forced to close.
- ② Pressing this key in the other modes, the external pendulum switches by "swing, fixed wind, swing" circularly.

(6) Left and right swinging (Internal pendulum wind)

- ① Pressing this key in the dehumidification mode, the internal pendulum wind stays unchanged according to the state before switching.
- ② Pressing this key in the other modes, the internal pendulum switches by "swing, stop, swing" circularly.

(7) "FAN -"

- ① When the first power on, the remote controller is set to the automatic wind speed by default. In dehumidification mode, the wind speed is fixed to low wind and is not adjustable. By pressing the wind speed key, there is no response to the remote controller.
- ② Pressing this key in the other modes, the wind speed switches by "automatic wind speed, high speed, middle speed, low speed, automatic wind speed " circularly.

(8) "FAN +"

- ① When the first power on, the remote controller is set to the automatic wind speed by default. In dehumidification mode, the wind speed is fixed to low wind and is not adjustable. By pressing the wind speed key, there is no response to the remote controller.
- ② Pressing this key in the other modes, the wind speed switches by "automatic wind speed, low speed, middle speed, high speed, automatic wind speed " circularly.

(9) Timer

- ① Under the shutdown state, press this key to set the opening time, range from 1 hour to 24 hour.
- ② Under the boot state, press this key to set the shutdown time, range from 1 hour to 24 hour.
- ③ The timing time is according to the cycle of "1h, 2h,, 23h, 24h, cancel, 1h".
- ④ Exit timing adjustment after 3 seconds without key pressing.

(10) TURBO

- ① Extension code remote controller has the effect. The remote controller is no TURBO by default, and the TURBO key will not work in automatic mode, dehumidification mode and fan mode.
- ② Pressing this key in the cooling or heating mode, the TURBO mode switches between opening and closing. When in the TURBO mode, it does not display the wind speed. Switching mode or entering sleep function will close TURBO mode.
- ③ If the air conditioner has four gear wind speeds, the TURBO icon will light up and the fan will run in the fourth gear wind speed by pressing this key.

(11) ECON

- ① The remote controller is no ECON by default, and the ECON key will not work in automatic mode, dehumidification mode and fan mode.
- ② Pressing this key in the cooling or heating mode, the ECON mode switches between opening and closing. When in the ECON mode, the setting temperature is set to 26°C (77°F) and other settings are unchanged. If closing ECON mode, the remote controller will recover to the setting before opening ECON mode. Switching mode will close ECON mode.

(12) Sleep

- ① Pressing this key in the modes except of the fan mode, the sleep function switches between opening and closing. Switching mode will cancel sleep function.
- ② When pressing this key, the wind speed is automatically switched to low wind. However, the wind speed can be adjusted according to the wind speed key (except of the dehumidification mode).

(13) Light

- ① When the first power on, there is lamplight by default. Pressing this key force to turn off or turn on the lamplight. Decide whether to have this function according to the actual model.

(14) Clock

- ① This key is used to set the clock. Pressing enters the hour adjustment state, and the hour digital tube on the LCD is flickering at the same time. The hour can be set by temperature addition or reduction keys, and it ranges from 0 to 23.
- ② When the hour is set, press this key again to enter the minute adjustment state, and the minute digital tube on the LCD is flickering at the same time. The minute can be set by temperature addition or reduction keys, and it ranges from 00 to 59.
- ③ After adjusting, press the clock key again to confirm the setting and the adjustment state exits. If do not press the clock key again to confirm, the time adjustment state will exit after 3 seconds, and recover the clock before the adjustment.

(15) Lock

- ① There is no lock by default. Pressing this key, the lock function switches between opening and closing.
- ② When it is locked, the remote controller does not work except the lock key.

(16) Combinatorial key: "FAN -" + "FAN +"

- ① Extension code remote controller has the effect. Switch 3 gear wind and 6 gear wind. There is 6 gear wind on the LCD. If the 6 gear wind is switched, the first and second gear wind will be "low wind"; the third and fourth gear wind will be "middle wind"; the fifth and sixth gear wind will be "high wind".

(17) Combinatorial key: "Mode" + "Lock"**① Enter address setting**

- 1) On the shutdown interface, press the combinatorial key on the remote controller for 5 seconds to enter the address setting interface.
- 2) The last address (when the first power on, 00 is displayed) and the "#" icon are displayed and flickering.

② The step instructions of setting address

- 1) At the address setting interface, press the temperature addition or reduction to adjust the setting address, and it ranges from 00 to 63.

- 2) When the first time entering the interface or pressing the temperature addition or reduction key, the address display flickers for 3 seconds and then does not flicker.
- 3) Press the ON / OFF key to enter the sending state and send the address setting code.

③ **The step instructions of inquiring address**

- 1) At the address setting interface, press the mode key to send the query code.
- 2) At this time, the "#" icon flickers. 3 seconds later, it normally displays the last setting addresses and the "#" icon does not flicker.

④ **Exit setting**

- 1) Pressing the mode key and lock key at the same time can exit the address setting interface.
- 2) If there is no key pressing associated with address setting for more than 30 minutes, the remote controller will exit the address setting interface.

1.1.3 Battery replacement

- 1) If the air conditioner is unable to receive the signal from the infrared controller, or the LCD of controller is blurred, it means that the battery is depleted and needs to be replaced.
- 2) Take off the back cover and remove the old batteries. When replacing batteries, please pay attention to the "+" and "-" marking on the battery.
- 3) Install the back cover and set the current time.

Warning

- Do not mix old and new batteries together.
- When the infrared controller is idle for a long time, the battery should be removed.
- In general, the service life of a dry battery that meets the JIS or IEC standards can be up to 6-12 months, but if it exceeds the use time or not in conformity with above specifications, the dry battery may leak and may even cause the controller operation to be invalid.
- The recommended service life is marked on the battery, but the actual service life may be shorter.

Notes

MUNDO  CLIMA®



www.mundoclima.com

C/ NÁPOLES 249 P1
08013 BARCELONA
SPAIN
(+34) 93 446 27 80