

Installation and Operation Manual

Fan Coil Of One-way Cassette Type

Original instructions

Thank you very much for purchasing our air conditioner.

Before using your air conditioner, please read this manual carefully and keep it for future reference.

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Installation Manual

Safety Precautions

Read carefully before you install the air conditioner to make sure that the installation is correct.

There are two types of precautions as described below:

-  **Warning:** Failure to comply may lead to death 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, and the unit has been tested and verified to be operating normally, please explain to the customer how to use and maintain the unit according to this manual. In addition, make sure that the manual is kept properly for future reference.

Warning

- Installation, maintenance and cleaning the filter work must be carried out by professional installers. Refrain from doing it yourself. Improper installation may cause water leakage, electric shock, or fire.
- Install the air conditioner according to the steps described in this manual. Improper installation may cause water leakage, electric shock, or fire.
- Make sure the required parts and accessories are installed. Using unspecified parts may cause the air conditioner to malfunction or drop, as well as water leakage, electric shock, and fire.
- Mount the air conditioner in a place that is sturdy enough to bear its weight. If the base is not secured properly, the air conditioner may drop leading to damages and injuries.
- Take in full consideration to the effects of strong winds, typhoons and earthquakes, and reinforce the installation. Improper installation may cause the air conditioner to drop leading to accidents.
- Make sure a standalone circuit is used for the power supply. All electrical parts must comply with the local laws and regulations, and what is stated in this installation manual. The installation works must be carried out by a professional and qualified electrician.
- Insufficient capacity or improper electrical works can lead to electric shock or fire.
- Use only electrical cables that fulfil the specifications. All wiring on site must be carried out in accordance with the connection diagram attached to the product. Make sure that there are no external forces acting on the terminals and wires. Improper wiring and installation may cause a fire.

- Make sure the power cord, communication and controller wiring are straight and level when you are working on the connections, and the cover on the electric box is tight. If the electric box is not closed properly, it may lead to electric shock, fire or overheating of electrical components.
- Switch off the power supply before touching any electrical component. Do not touch the switch with wet hands. This is to prevent electrical shocks.
- The air conditioner must be grounded. Do not connect the earth line (ground) to gas piping, water piping, lightning rods or telephone earth lines. Improper grounding can lead to electric shock or fire, and may cause mechanical failure due to current surges from lightning and so on.
- The earth leakage circuit breaker must be installed. There is a risk of electric shock or fire if the earth leakage circuit breaker is not installed.
- The appliance shall be installed in accordance with national wiring regulations.
- The appliance must be installed 2.3m above floor.
If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- The temperature of water circuit will be high, please keep the interconnection cable away from the copper tube.
- The power cord type designation is H05RN-For above/H07RN-F.
- 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 or death.
- 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 or death caused by insulation broken cords.

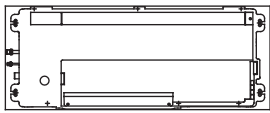












Caution

- Install the water discharge piping according to the steps described in this manual, and make sure that the water discharge is smooth, and the piping is properly insulated to prevent condensation.
- Improper installation of the water discharge piping may lead to water leakage, and damage the indoor furniture.
- When mounting the indoor and outdoor units, make sure the power cord is installed at a distance of at least 1 m away from any TV or radio so as to prevent noise or interference with the images.
- Do not install the air conditioner in the following places:
 - 1) Where there is oil or gas, such as the kitchen. Otherwise, the plastic parts may age, fall off or water may leak.
 - 2) Where there are corrosive gases (such as sulphur dioxide). Corrosion in the copper pipes or welded parts may cause the water to leak.
 - 3) Where there are machines emitting electromagnetic waves. Electromagnetic waves may interfere with the control system, causing the unit to malfunction.
 - 4) Where there is a high salt content in the air. When exposed to air with a high salt content, the mechanical parts will experience accelerated ageing which will severely compromise the service life of the unit.
 - 5) Where there are major voltage fluctuations. Operating the unit using a power supply system that has large voltage fluctuations will reduce the service life of the electronic components, and cause the unit's controller system to malfunction.

- 6) Where there is a risk of leakage of flammable gases. Examples are sites that contain carbon fibres or combustible dust in the air, or where there are volatile combustibles (such as diluent or petrol). The above gases may cause explosion and fire.
- 7) Do not touch the fins of the heat exchanger as this may lead to injury.
- 8) Some products use the PP packing belt. Do not pull or tug on the PP packing belt when you transport the product. It will be dangerous if the packing belt breaks.
- 9) Note the recycling requirements for nails, wood, carton and other packaging materials. Do not discard these materials directly as these may lead to bodily harm.
- 10) Tear up the packaging bag for recycling to prevent children from playing with it, and leading to suffocation.
- 11) The appliance shall not be installed in the laundry. When the product is used for commercial application. This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons, the sound pressure level is below 50 dB(A).

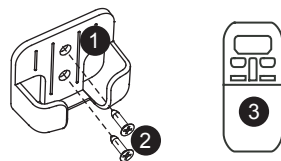
Accessories

Verify that the air conditioner includes the following accessories.

Code	Name	Appearance	Qty	Purpose
1	Installation and Operation Manual for Indoor Unit	This manual	1	Please make sure you hand over to the user
2	Installation paper		1	For installation works on the boom, and to cut drop ceiling
3	Fastening belt		10	For tightening and fixing
4	Water discharge hose		1	Connection between air conditioner and water discharge piping
5	Ring clamp		1	To secure the water discharge hose
6	Large washer		8	To secure the suspended air conditioner
7	Nut		8	To secure the suspended air conditioner
8	Installation screws for panel		7	Used to install the panel on the air conditioner (6 pieces for 300 model, 7 pieces for 400-600 model)
9	Operation manual for remote controller		1	Please hand to the user
10	Remote controller		1	For controlling the remote controller
11	Remote controller support		1	For placing the remote controller
12	Battery		2	Battery for remote controller
13	Cross-recessed countersunk head self tapping screw		2	For fixing the remote controller support
14	Adapter cable group		1	For connecting the valve actuator

NOTE: The accessories shown in the table above are only for the base model of indoor unit, it may be different from the customized model. As for the accessories of the customized model, you should check them according to actual customized demand, some accessories may not be shown in the table above.




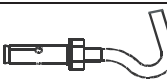

- 1 Remote controller holder
- 2 Mounting screw
- 3 Remote controller



- Don't throw the remote controller or give it big impact.
- The remote controller should be in the reception range, and the transmittal part should point to the orientation of indoor unit receptor.

- 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.

Accessories to purchase locally

Code	Name	Appearance	Dimensions	Qty	Note
1	Flexible metal conduit		Choose and purchase Cs that correspond to the length and size calculated for the selected model or based on your actual project requirements. Recommended size of pipe joint is G 1/2".	To purchase based on actual project requirements.	Used to connect indoor water piping.
2	PVC pipe for water discharge		Outer diameter: 37-39 mm, inner diameter: 32 mm	To purchase based on actual project requirements.	Used to discharge condensed water from the indoor unit.
3	Insulation casing for piping		The inner diameter is based on the diameter of the copper and PVC pipes. The thickness of the pipe casing is 10 mm or more. Increase the thickness of the casing (20 mm or thicker) when the temperature exceeds 30°C or the humidity exceeds RH80%.	To purchase based on actual project requirements.	Protect piping from condensation.
4	Expansion hook anchor		M10	4	For installation of indoor unit
5	Mounting hooks		M10	4	For installation of indoor unit

1. Unit Structure Introduction

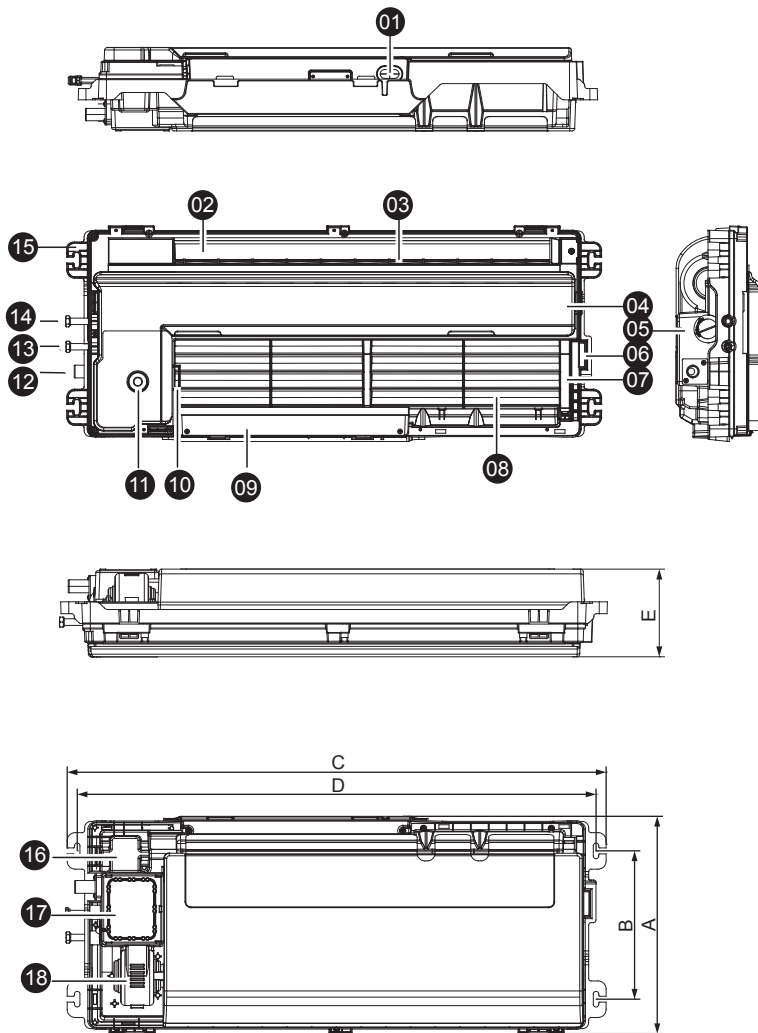


Figure 1.1

The figure of the unit is only for reference, the actual product may be different with this figure, please subject to the actual product !

Table 1.1

Unit: mm

No.	Model	300	400,600
A		425	452
B		290	300
C		1055	1275
D		1015	1235
E		169	206

01	Access port for power and communication wires
02	Air outlet
03	Rotor
04	Main water basin
05	Cover of water level test hole
06	Buckle hole 2 of panel
07	Sub-water basin
08	Air return port
09	Electric control box
10	Buckle hole 1 of panel
11	Water drainage plug
12	Condensate water drainage port Φ 25
13	Inlet Pipe DN15
14	Outlet Pipe DN15
15	Installation lifting lug (4 pcs)
16	Water pump box
17	Water Valve box
18	Motor box

2. Before Installation

1. Determine the route to move the unit to the installation site.
2. First unseal and unpack the unit. Then, hold the seats of the hanger (4 pcs) to move the unit. Refrain from exerting force on other parts of the unit, especially the copper pipe, water discharge pipe, and the plastic parts.

3. 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.

2. Mounting height

- ◆ Mounting height is 2.5 ~ 3.2 metres.

3. Mount using the mounting screws.

4. Space required for installation:

- Please avoid installing in the following places
 - A place with flammable gas or material.
 - A saline place such as a seashore vicinity
 - A place with sulphur gas.
 - A place with oil gas, such as kitchen.
 - A place with high-humidity air.
 - An unbearable place.
 - A place where high-frequency waves are generated.
- The appliance shall not be installed in the laundry.
- Please comply with the related national electric standard to make electric insulation for construction and metal parts of air-conditioner.
- Please choose the place where the ventilation is good.
- Before installing the unit, be sure to confirm with the user whether there are wires, water pipes, air pipes and so on in the wall or ground of the installation site to avoid accidents due to damage.
- Ceiling space requires $\geq 153\text{mm}$;
- The installation height of the unit can not higher than 3.2 m, or it will affect the operation effect.

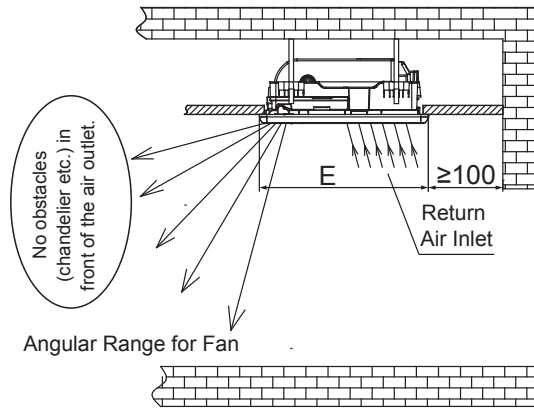


Figure 3.1

Table 3.1

Unit: mm

No.	Model	
	300	400, 600
A	1180	1350
B	1380	1550
C	153	189
D	3200	4000
E	465	505

4. Indoor Unit Installation

Make sure that only specified components are used for the installation works.

4.1 Installation with Lifting Bolts

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

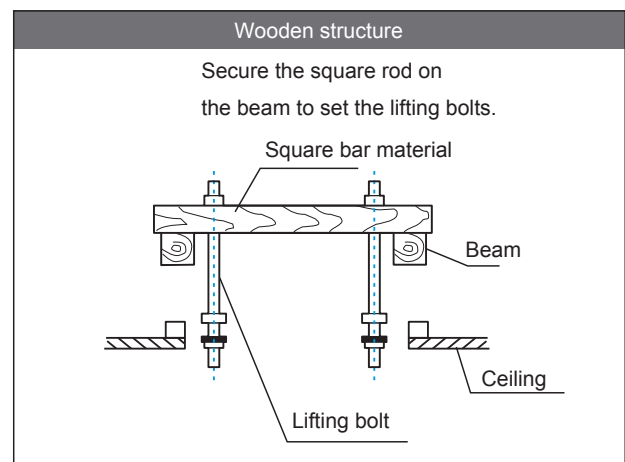
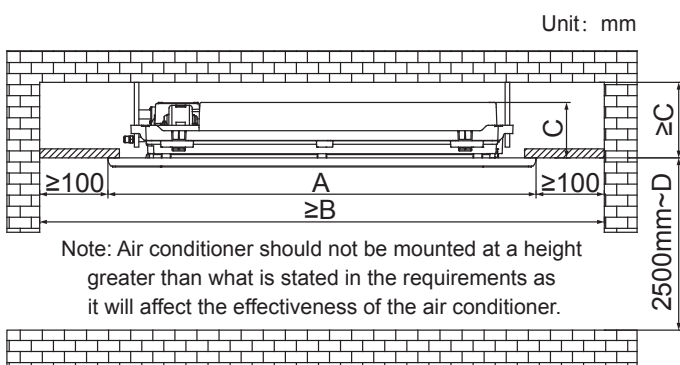


Figure 4.1

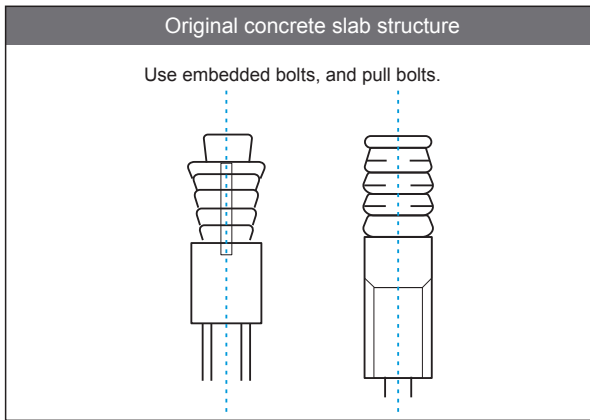


Figure 4.2

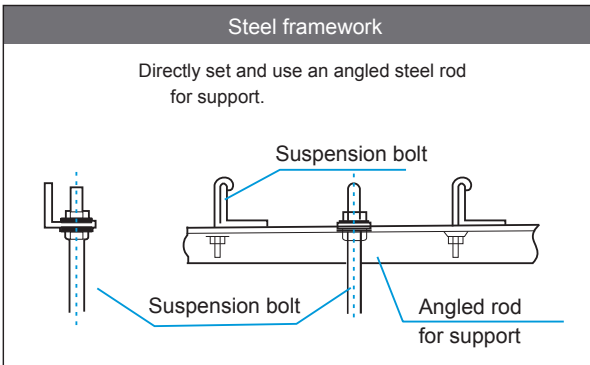


Figure 4.3

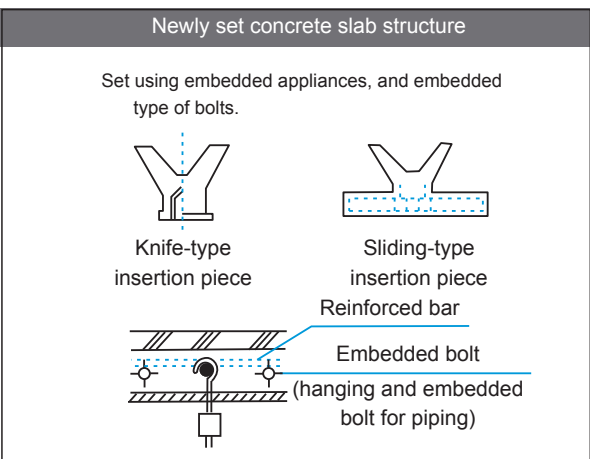


Figure 4.4

⚠ Caution

- All bolts should be made from high quality carbon steel (with galvanized surface or other rust prevention treatment) or stainless steel.
- How the ceiling should be handled will differ with the type of building. For specific measures, please consult the building and renovation engineers.
- How the lifting bolt should be secured depends on the specific situation, and it must be secure and reliable.

4.2. Indoor Unit Installation

4.2.1 Installation sequence for existing ceiling:

- Must maintain the ceiling at a level position.
1. Drill 430 mm x 1100 mm holes (300 models) or 470 mm x 1290 mm holes (400,600 model) into the ceiling based on the layout of the installation board (accessory Installation paper).
 - The centre of the ceiling opening should match the centre of the body of the indoor unit.
 - Determine the length and outlets of the connecting pipes, water discharge piping and the electrical wiring.
 - In order to keep the ceiling level and prevent vibrations, reinforce the strength of the ceiling when necessary.

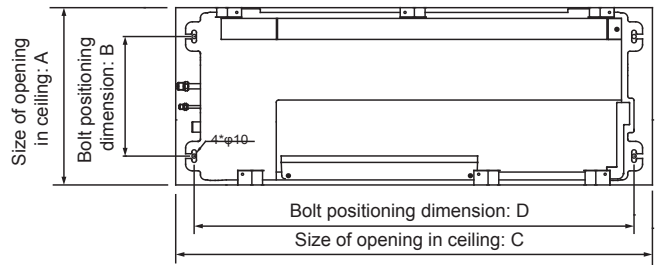


Figure 4.5

Table 4.1

Unit: mm

Model No.	300	400,600
A	430	470
B	290	300
C	1100	1290
D	1015	1235

2. Install the hooks in four corners based on the layout for the hooks outlined in the installation board (accessory Installation paper).
 - Determine the location on the ceiling of the room or building roof for mounting, and drill four $\Phi 12$ mm X 50-55 mm holes. Then embed and set up the expansion hook anchors (purchased accessory Expansion hook anchor) in these holes.
 - During the installation of the hooks (purchased accessory Mounting hooks), make sure that the concave portion of the hanger corresponds to that of the expansion hook anchors. Determine the appropriate hook length for installation based on the ceiling's height. Remove any excess.
 - Use M10 or W3/8" bolts for the screws of the mounting hooks.

Please accord to the follow figure's requirements to design the length of the suspender bolt.

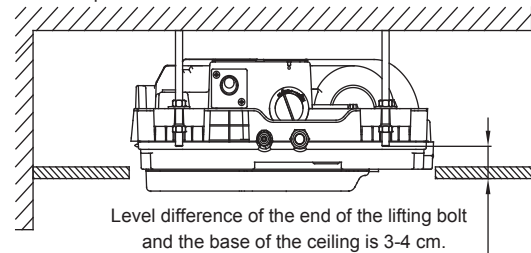


Figure 4.6

3. Use the hex nuts on the four mounting hooks to adjust and make sure that the unit body is level.
 - Adjust the height of Nut 2 so that the difference between the upper surface of Washer 2 and the base of the ceiling is as follows: A = 70 mm for 300 model, A = 75 mm for 400,600 model.
 - Suspend the air conditioner on the lifting bolt as shown in Figure 4.4. Use a spirit level to find the length and width at level. During the process, you need to repeatedly adjust four Nut 2 on the boom. This situation may arise: In making sure that the air conditioner is level, the height difference between Washer 2 of the four lifting bolts and the bottom surface of the ceiling may not be consistent, hence A is not uniform. At this time, the priority should be to ensure that the unit body is level. Level the entire unit up and down until four level differences are as close as possible to A.
 - Once you have adjusted the height and make sure that the unit body is level, use four Nut 1 on the boom to reliably secure the air conditioner.

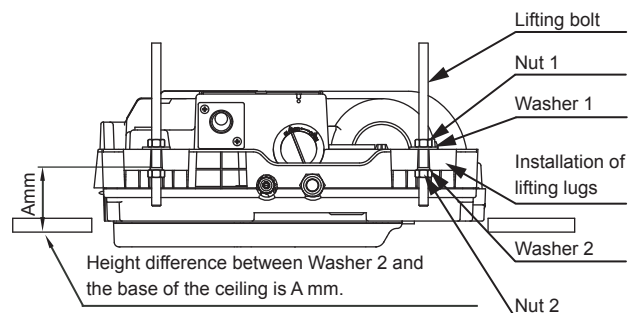


Figure 4.7

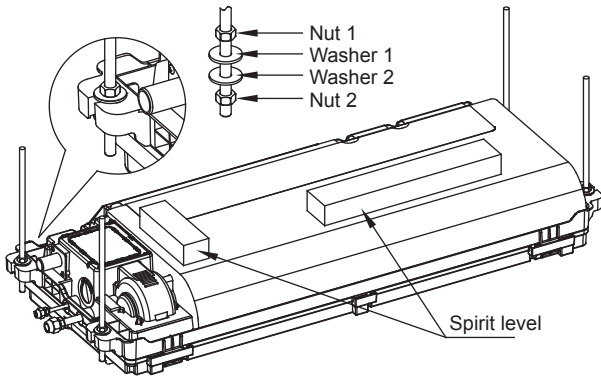


Figure 4.8

⚠ Caution

- If the unit body is not level, this can lead to water leakage, poor water drainage, and cracks in the panel and ceiling.

4.2.2 Installation sequence for new ceiling:

1. Refer to Step 2 of the "Installation sequence for existing ceiling". Pre-bury the hooks in the new ceiling, and make sure that they are strong enough to bear the weight of the indoor unit, and that the unit will not become loose when the concrete shrinks.
2. Once you have lifted and mounted the unit, use M6x12 screws (accessory Installation screws for panel) to secure the installation board (accessory installation paper) on the unit body. Make sure you verify the size and positions of the opening in the ceiling before you do so. See Figure 4.8.
 - Before you mount the unit onto the ceiling, make sure the ceiling is level.
 - The rest of the procedures are the same as Step 2 of the "Installation sequence for existing ceiling".
3. Refer to Step 3 of the "Installation sequence for existing ceiling".
4. Remove the installation board (accessory installation paper).
 - 4.1) Fold the installation paper, making sure that you fold in a direction such that the surface without text is protruding (Figures 4.9 - 4.10);
 - 4.2) Affix the installation paper on the lower side of the indoor unit with the screws used to secure the plate (see Figure 4.11).
 - 4.3) The size of the opening in the ceiling coincides with the size on the outside of the installation paper .
 - 4.4) Verify that the level difference between the lower side of the ceiling and the lower side of the installation paper is about 24 mm (see Figure 4.12). The hoisting height of the air conditioner is not correct if this requirement is not fulfilled.[AD1]

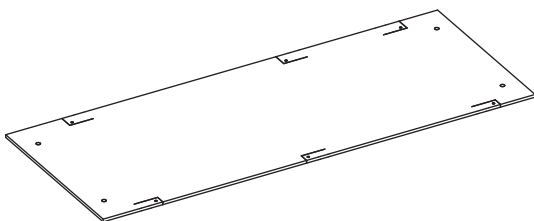


Figure 4.9

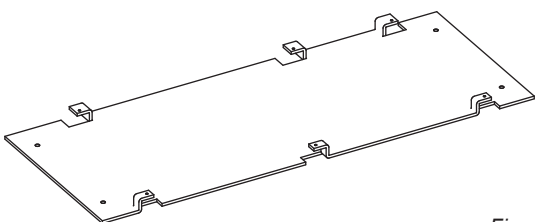


Figure 4.10

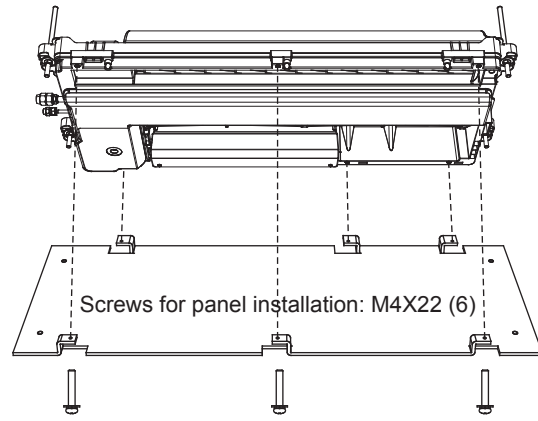


Figure 4.11

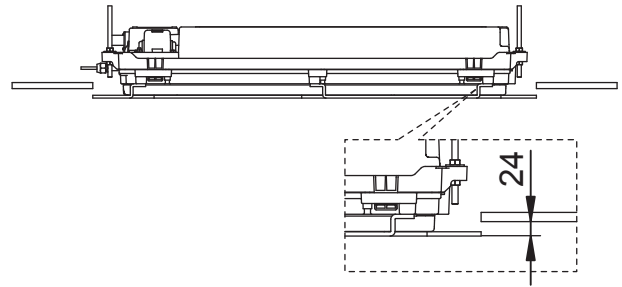


Figure 4.12

⚠ Caution

- Once the ceiling is cut, remove the installation paper. Make sure you keep the screws properly as you need them for the installation board.

4.3 Panel Installation

4.3.1 Remove the air inlet grille

- 1) Pull along the direction indicated by the grille switch arrow to unlock the buckle to remove the return air grille;

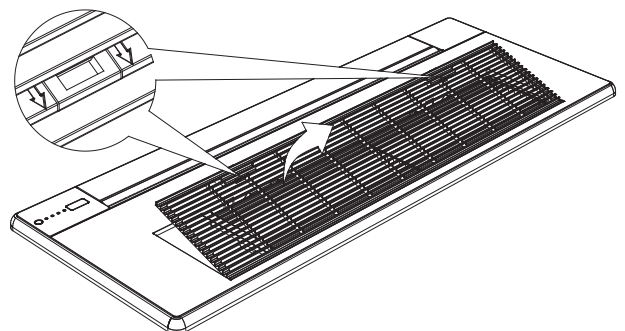


Figure 4.13

2) Toggle the buckle shown in the diagram to remove the filter;

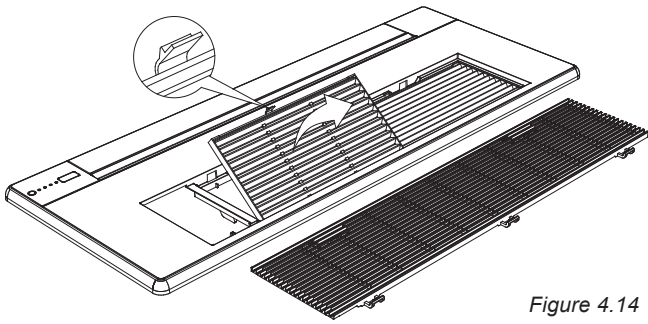


Figure 4.14

3) Open the fan guide vane and remove the three concealed-cap screws;

Open the fan guide vane and remove the three concealed-cap screws as indicated in the diagram. Make sure that the return air grille, filter, and concealed-cap screws are probably stored after removal.

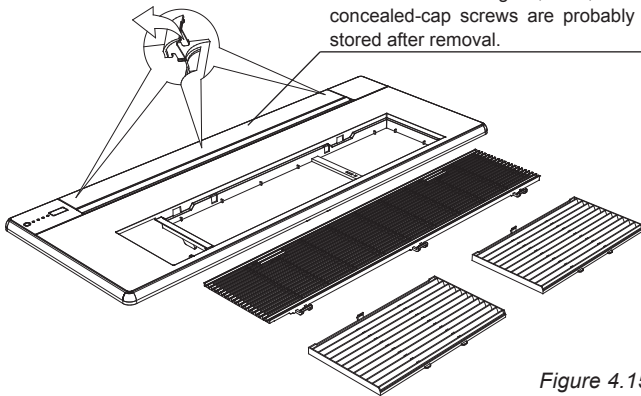


Figure 4.15

⚠ Caution

- Do not place the panel such that it faces downwards or leans against the wall. Do not place it on a protruding object either.
- Do not hit or squeeze the air deflector.

4.3.2 Panel installation

- 1) There are two buckle structures on the panel assembly for the installation of the auxiliary panel, and the assembly method of these buckles is as shown in Figure 4.16.
- 2) Electrical wiring for panel assembly: Open the cover plate of the electric control box of the air conditioner, connect the terminals of the control display of the panel assembly, and the terminals of the motor of the fan guide to the main controller board of the air conditioner as shown in the diagram.

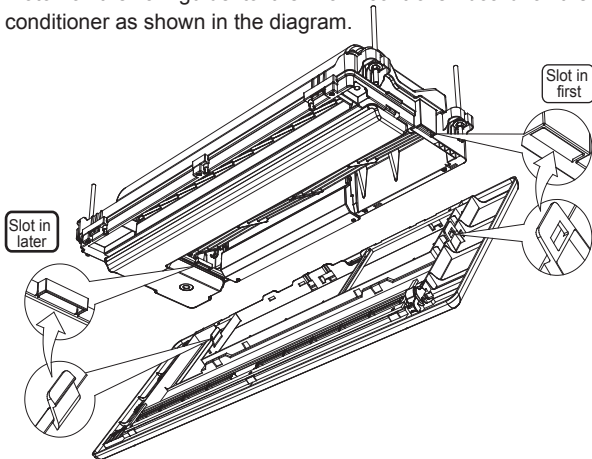


Figure 4.16

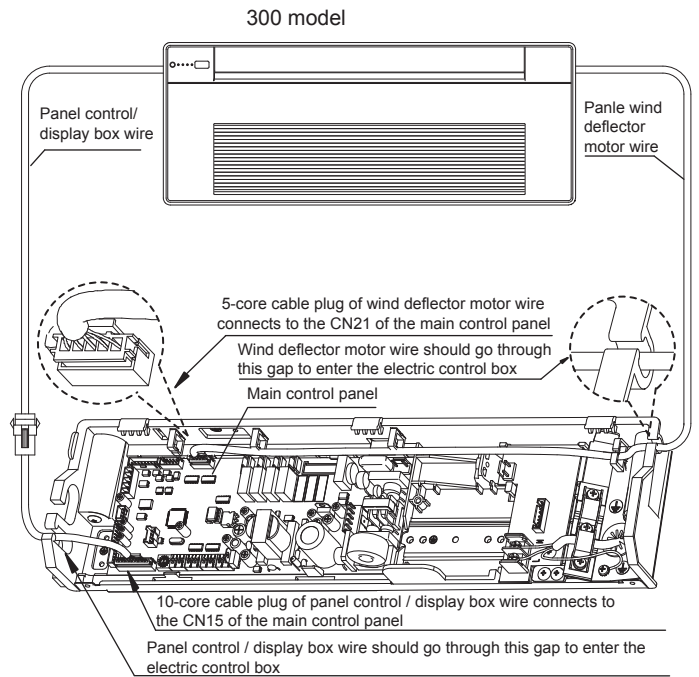


Figure 4.17

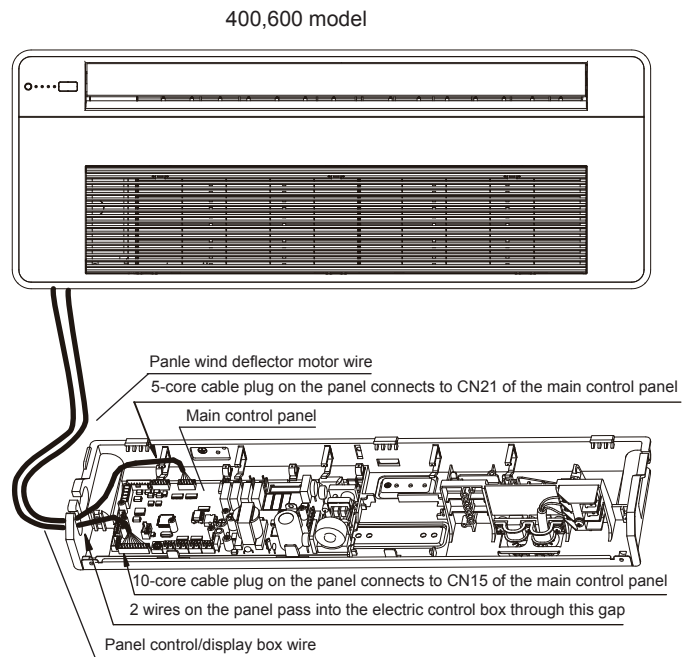
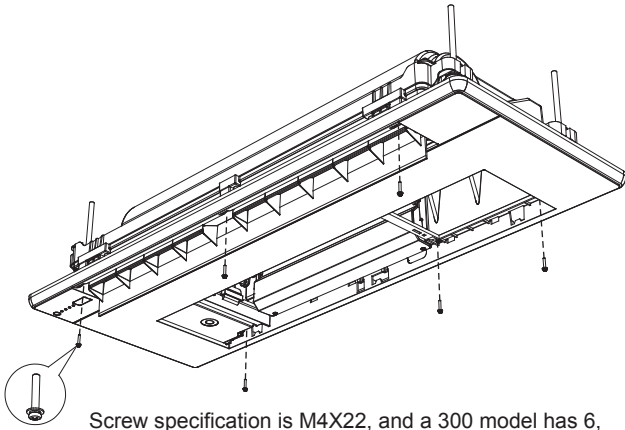


Figure 4.18

⚠ Caution

- Wiring for panel assembly
Follow what is indicated in the diagram strictly. The panel assembly may not work properly if the wiring is wrong. Connect the cables according to what is indicated in the installation schematic.
If the wiring is done properly, the cover of the electric control box can be closed correctly without clamping the wires. If the wires are clamped, this may lead to problems like air leakage and water condensation on the panel assembly.

4.3.3 Installation screws (example shown is a 300 model but method is also applicable to 400,600 model as well)



Screw specification is M4X22, and a 300 model has 6, 400 or 600 model has 7, and these are included in the accessories.

Figure 4.19

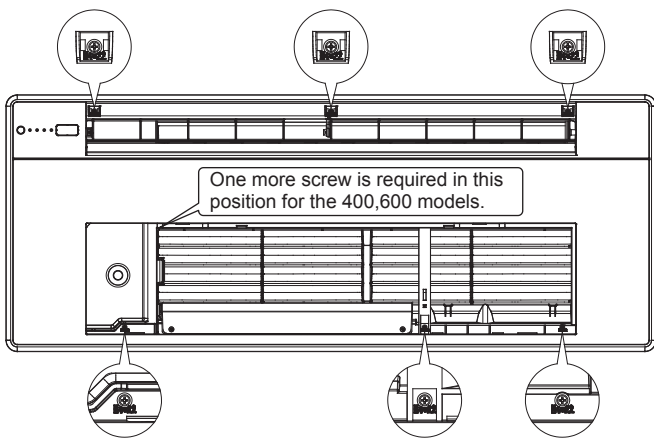
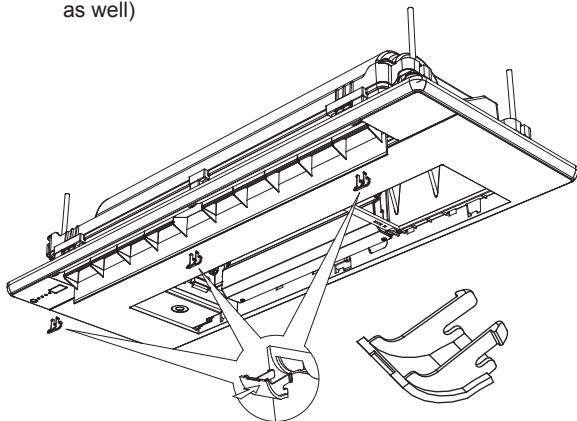


Figure 4.20

⚠ Caution

- Make sure the cables connected to the panel and air conditioner are not clamped before you install the screws. If the cable is clamped by the panel, you may damage the cable when you tighten the screws, and the panel may not work properly after installation.

4.3.4 Install concealed-cap screws on panel (example shown is a 300 model but method is also applicable to 400,600 models as well)



Panel with concealed-cap screws

Figure 4.21

4.3.5 Putting back the filter and return air grille (example shown is a 300 model but method is also applicable to 400,600 models as well)

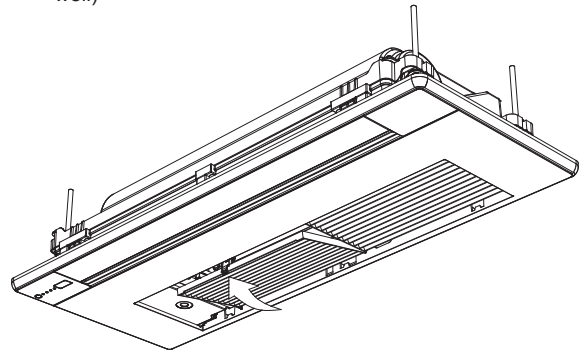


Figure 4.22

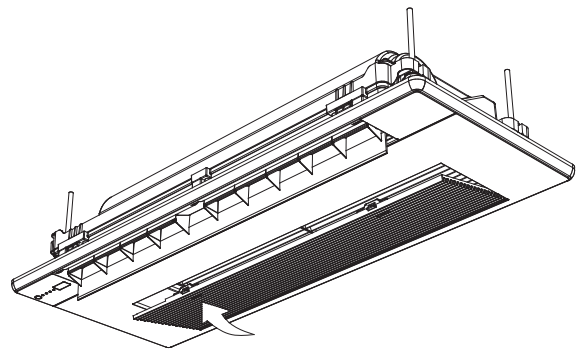


Figure 4.23

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 (accessory 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 (accessory Insulation casing for 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 (accessory Cable tie) 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.

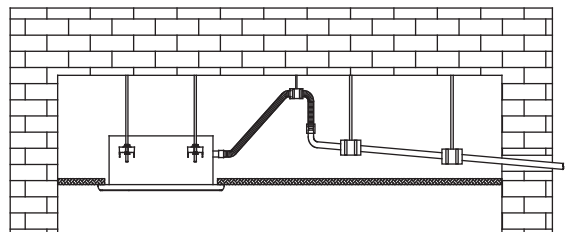


Figure 5.1

- 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.
- 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 water pan. Otherwise there will be excessive water flow when the operation stops.

Water discharge pipes from multiple units are connected to the main water discharge pipe to be discharged through the sewage pipe.

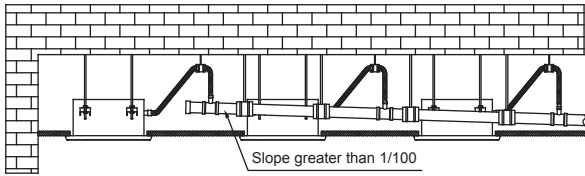


Figure 5.2

- 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.

9. Drainage system design requirements

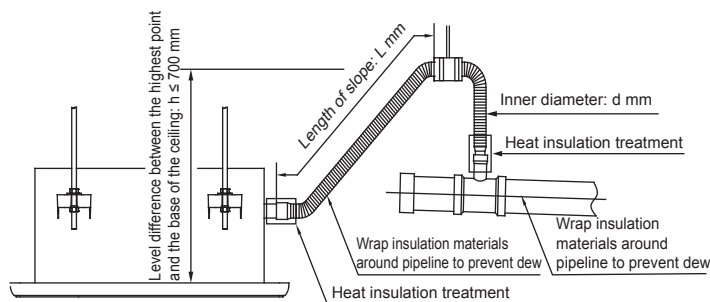


Figure 5.3

Description:

Length of slope, L , and inner diameter of the pipe, d , should satisfy the relation: $L \cdot d \leq 650000$ (L and d are in millimetres). That is, the volume inside the water pipe in the slope section is not more than 500 ml. Excessive accumulated water in the piping on the slope will lead to problems like poor drainage, backflow, and water leakage.

Installation works for the water pipes must be based on the requirements. Recommendation is to use a pipe with an inner diameter of 25 mm, and the length of the slope is not more than 1 m.

- Please according to the tube hardness to choose proper support density, do not appear obvious drooping and deformation situation. Drooping part will save the water and lead to poor drainage and abnormal noise.

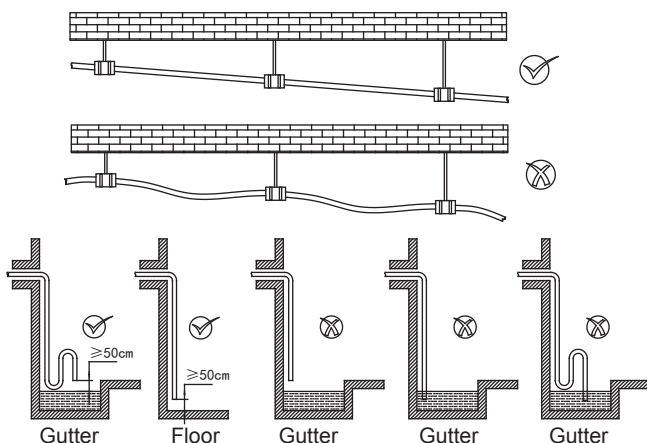


Figure 5-4

■ Drainage system design requirement

- Drainage pipe can use PVC pipe, recommended to use the pipe of 25 mm inner diameter, water pipe should has thermal insulation layer.
- The user can purchase the pipe of suitable length in the dealer place or in a local after-sale service center place, or directly to purchase in the market.
- Insert the drainage pipe port to the condensate water outlet, and use the outlet clamp (accessory) to fasten the drainage pipe and the thermal insulation sleeve.
- The pipes are needed to be packed with insulation heat preservation material. The connection of water pipe and air conditioner should use insulating sheath package, and tighten tightly to prevent water condensation to damage the ceiling decoration.
- To avoid water poured into the air conditioner inside when the unit operation stops, drainage pipe should be down dipped to outdoor side (drainage side), gradient is more than 1/100, drainage pipeline can not occur bending and dropping save water phenomenon, otherwise it will cause abnormal noise.
- During connecting pipe, please do not force pulling the drainage pipe which will cause the nozzle loose, and at the same time shall set up enough strong points, in order to avoid the drainage pipe drops.

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 in the new room before the ceiling is paved.
- Connect the power supply, and set the air conditioner to operate in the cool mode. Check the running sound of the drainage pump.

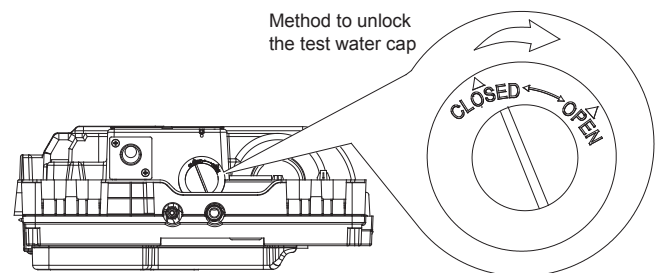


Figure 5.5

- Remove the test water cap to connect to the test water outlet to inject water into the water pan, and at the same time, observe if there is any water discharged from the drainage outlet. Make sure water is discharged normally from the water drainage outlet.
- Stop the air conditioner. Wait for three minutes, and then check if there is anything unusual. If the water discharge piping layout is not correct, the excessive water flow will cause the water level error and "EE" error code will be displayed on the display panel. There may even be water overflowing from the water pan.
- Continue to add water until the alarm for excessive water levels is triggered. Check if the drainage pump drains water immediately. After three minutes, if the water level does not fall below the warning level, the unit will shut down. At this time, you need to turn off the power supply, and drain away the accumulated water before you can turn on the unit normally.
- Turn off the power supply, remove the water manually using the drainage plug, and put the test cap back to the original place.

⚠ Caution

- The drainage plug at the bottom of the unit body is used to discharge accumulated water from the drain pan when the air conditioner malfunctions. When the air conditioner is operating normally, make sure the drainage plug is properly plugged to prevent water from leaking.

6. Install The Connecting Pipe

1) Only professionals can operate the liquid pipes.

Drain pipe must be the different side with the electric control box.

Connect the unit to the water system using inlet and outlet connectors.

■ Connecting the pipes.

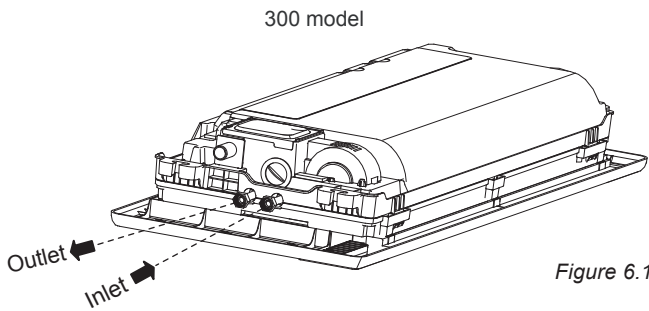


Figure 6.1

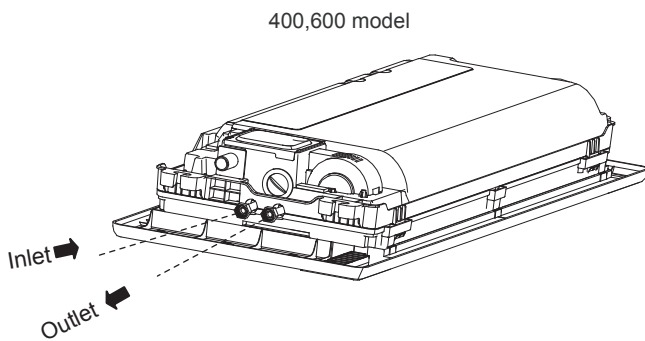


Figure 6.2

- Before connecting the pipes, make sure the seal washers located inside the connecting nut.
- Connect the unit to the water system by means of the fittings which are marked Inlet and Outlet.

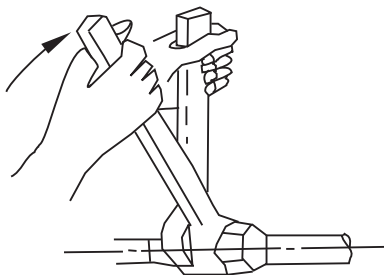


Figure 6.3

- Avoid the damage to screw thread of evaporator, do not overexertion, when screwing. For avoid non-screw up or damage of screw thread, two spanners must be used simultaneously.
- Lag the connection pipes and any valves fitted with anticondensation material 10 mm thick or install the auxiliary.
- Ensure all interfaces not water leakage.

■ Air Exhaust

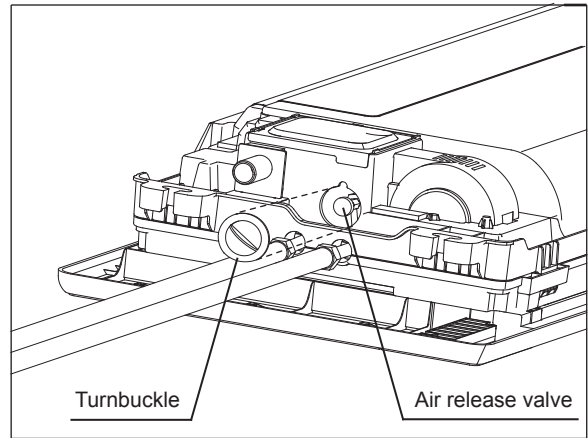


Figure 6.4

- When finished pipes and junctions connection. Turn the turnbuckle down, find the air release valve inside the unit, exhaust the air contained in the circuit.



CAUTION

- When the unit stop operating or be not used after debugging, please drain off the water in the coils or inject antifreeze to the circuit, to prevent the copper pipe cracking caused by low temperature frozen water !

7 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.

7.1 Power Cord Connection

Figure 7.1 shows the power supply terminal of the indoor unit.

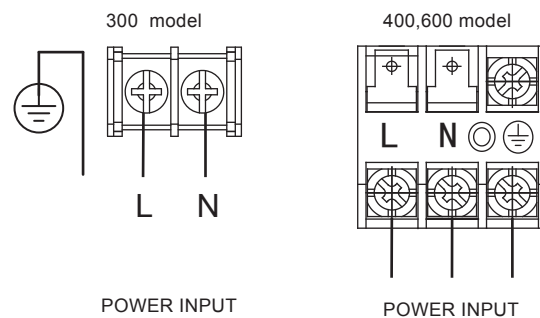


Figure 7.1

When connecting to the power supply terminal, use the circular wiring terminal with the insulation casing (see Figure 7.2). 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. 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 7.3.

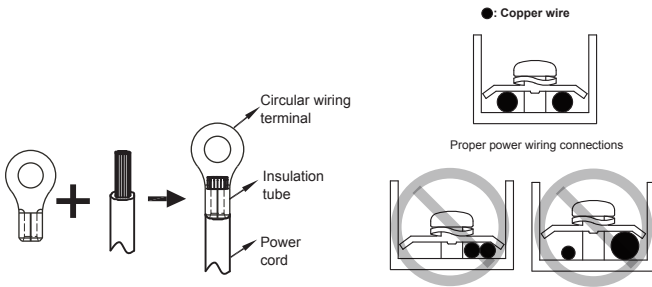


Figure 7.2

Figure 7.3

7.2 Electrical Wiring Specifications

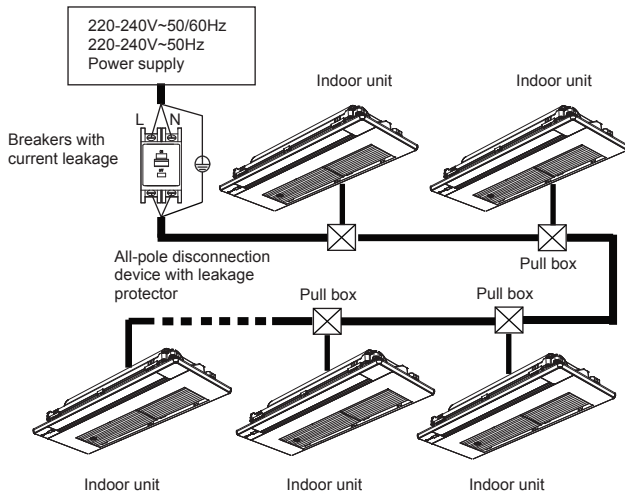


Figure 7.4

Refer to Tables 7.1 for the specifications of the power cord and communication wire. A wiring capacity that is too small will cause the electrical wiring to become too hot, and lead to accidents when the unit burns and becomes damaged.

Table 7.1

Model		300,400,600
Power supply	Phase	1-phase
	Volt and frequency	220-240V~50Hz 220-240V~50/60Hz
Communication wire between indoor unit and centralized controller or upper unit		Shielded wire 3×AWG20 or Shielded wire 3×0.5mm ²
Communication wire between indoor unit and wired controller which connect to control / display box on the panel*		Shielded wire 5×AWG20 or shielded wire 5×0.5mm ²
Field fuse		15A
Indoor unit power wire nominal cross-sectional area (mm ²)	Flexible cords	1 and 1.5
	Cable for fixed wiring	1 and 2.5

The power cord type designation is H05RN-F or above.

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

Table 7.2 Indoor units electrical characteristics

Model (Capacity)	Power supply				IFM	
	Hz	Volts	MCA	MFA	kW	FLA
300 (2.65kW)	50 50/60	220-240	0.39	15	0.02	0.31
400 (3.78kW)	50 50/60	220-240	0.45	15	0.06	0.36
600 (5.20kW)	50 50/60	220-240	0.59	15	0.06	0.47

Abbreviations:

MCA: Minimum Circuit Amps

MFA: Maximum Fuse Amps

IFM: Indoor Fan Motor

kW: Rated motor output

FLA: Full Load Amps

- Select the wire diameters (minimum value) individually for each unit based on the table 7.1.
- Maximum allowable voltage range variation between phases is 2%.
- 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:



CAUTIONS

- An all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device(RCD)with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.
- The appliance shall be installed in accordance with national wiring regulations.



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.

7.3 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.
- All shielded wiring in the network are interconnected, and will eventually connect to earth at the same point "⊕".
- Do not bind the water 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.

2) For a unidirectional communication mode:

- Use 1 wired controller to control 1 indoor unit (see Figure 7.5).

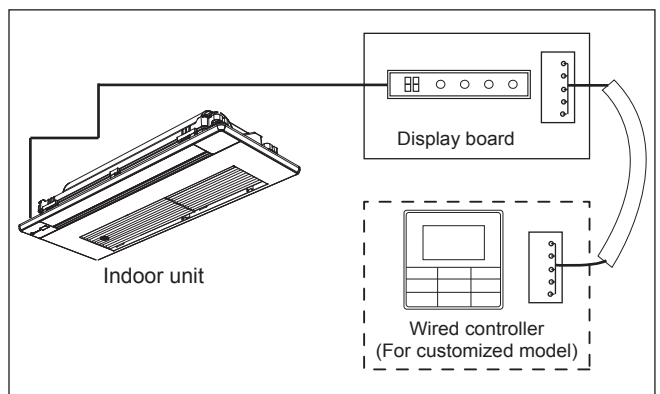


Figure 7.5

⚠ Caution

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

7.4 Handling the Electrical Wiring Connection Points

- Once the wiring and connections are done, use wire clamp 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.

8. On-site Configuration

Set DIP switch (S1,S2,S3,S4,ENC1) on main control panel in the 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.

0/1 definition of each dial code switch:



8.1 Capacity Settings

S3 Setting for model DIP Switch

S3 definition	Model
S3 [0000]	300
S3 [0001]	400
S3 [0010]	600

⚠ Caution

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

8.2 Address Settings

⚠ Caution

- The addresses of any two indoor units in the same system cannot be the same. Units that have the same address may malfunction.
- 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 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.

S4-1/2 & ENC1 Setting for address DIP Switch

ENC1 S4_1/2 definition

ENC1 S4_1/2 [00]	ENC1 dial code 0 (default)
ENC1 S4_1/2 [00]	ENC1 dial code 0-F respectively define address 0-15
ENC1 S4_1/2 [01]	ENC1 dial code 0-F respectively define address 16-31

ENC1 S4_1/2 [10]	ENC1 dial code 0-F respectively define address 32-47
ENC1 S4_1/2 [11]	ENC1 dial code 0-F respectively define address 48-63

⚠ Caution

- All DIP switches (including the model DIP switch) have been configured before delivery. Only a professional maintenance personnel should change these settings.
- Improper DIP switch settings may cause condensation, noise, or unexpected system malfunction.

8.3 Other DIP Switch Settings on Main Board

S1 definition		
S1-1	[0000]	2 pipe model (default)
	[1000]	Reserved
S1-2	[0000]	Without enforcement to turn wind (default)
	[0100]	With enforcement to turn wind
S1-3	[0000]	Normal anti-cold wind (default)
	[0010]	High temperature anti-cold wind
S1-4	[0000]	Turn on E-heater and Heating valve (default)
	[0001]	Turn on E-heater, turn off Heating valve

Note:

Function of S1-4 will be only effective for the model that has E-heater and connects to water valve.

S2 definition		
S2_1/2 [0000]	Close valve in cooling mode, hysteresis temperature is 0 C (default)	
S2_1/2 [0100]	Close valve in cooling mode, hysteresis temperature is 1 C	
S2_1/2 [1000]	Close valve in cooling mode, hysteresis temperature is 2 C	
S2_1/2 [1100]	Close valve in cooling mode, hysteresis temperature is 3 C	
S2_3/4 [0000]	Close valve in heating mode, hysteresis temperature is 3 C (default)	
S2_3/4 [0001]	Close valve in heating mode, hysteresis temperature is 1 C	
S2_3/4 [0010]	Close valve in heating mode, hysteresis temperature is 6 C	
S2_3/4 [0011]	Close valve in heating mode, hysteresis temperature is 8 C	

Note:

Function of S1-4 will be only effective for the model that connects to water valve.

S4_3 definition		
S4_3 [0000]	DC fan motor default speed (default)	
S4_3 [0010]	Strong DC fan speed	

8.4 Error Codes and Definitions

Error code	Content
E2	Room temperature sensor detection port is abnormal
E3	The coil sensor detection port is abnormal
E7	E2PROM communication error
E8	Dc motor stall failure
EE	Water level exceeds warning water level
PF	Model protection is not set
P0	Anti-freezing protection
P1	Water temperature over-range protection

9. Test Run

9.1 Things to Note Before Test Run

- ♦ Piping and wiring are correct;
- ♦ No leakage from the water piping system;
- ♦ Water discharge is smooth;
- ♦ Insulation is complete;
- ♦ Grounding line has been properly connected;
- ♦ 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 units;

9.2. 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;

Operation manual

IMPORTANT SAFETY INFORMATION

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

There are two types of precautions as described below:

-  **Warning:** Failure to comply may lead to death 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 or death.
- 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.
- 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 or death. 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 or death. Alternatively, the airflow may cause incomplete combustion which can lead to reduced oxygen concentration in the room, which can cause serious injury or death.

⚠ Caution

- Only use the air conditioner for its intended purpose. This unit should not be used to provide 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.
- 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.



If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being

- 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.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Never press the button of the remote controller with a hard, pointed object.**
The remote controller may be damaged.
- It is not good for your health to expose your body to the air flow for a long time.**
- Never touch the air outlet or the horizontal blades while the swing flap is in operation.**
Fingers may become caught or the unit may break down.
- To prevent water leak, contact your dealer.**
When the system is installed and runs in a small room, it is required to keep the concentration of the water, if by any chance coming out, below the limit. the cool capacity would be lower.
- Turn off any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.**
Do not use the air conditioner until a service person confirms that the portion where the water leaks is repaired.
- Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.**
Otherwise, an electric shock and injury may result.
- In order to avoid electric shock or fire, make sure that an earth leak detector is installed.**
- After a long use, check the unit stand and fitting for damage.**
If damaged, the unit may fall and result in injury.
- To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.**
- Arrange the drain hose to ensure smooth drainage.**
Incomplete drainage may cause wetting of the building, furniture etc.
- Don't install the air conditioner in salty air surrounding (near the coast).
- This wiring figure only for wiring method reference, the actual product may be different with this figure, please
- subject to the actual product !

10. Part Names

The figure shown as below 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.

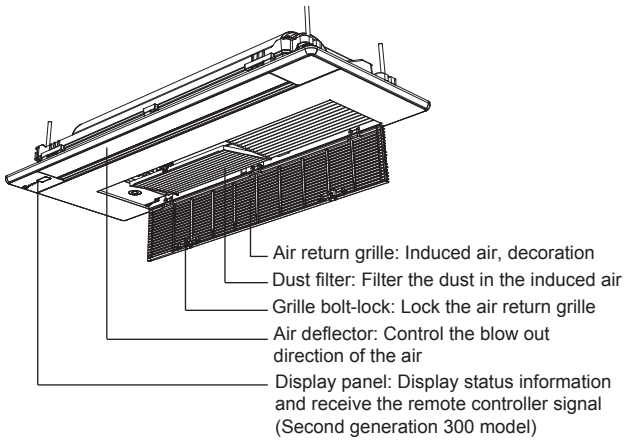


Figure 10.1

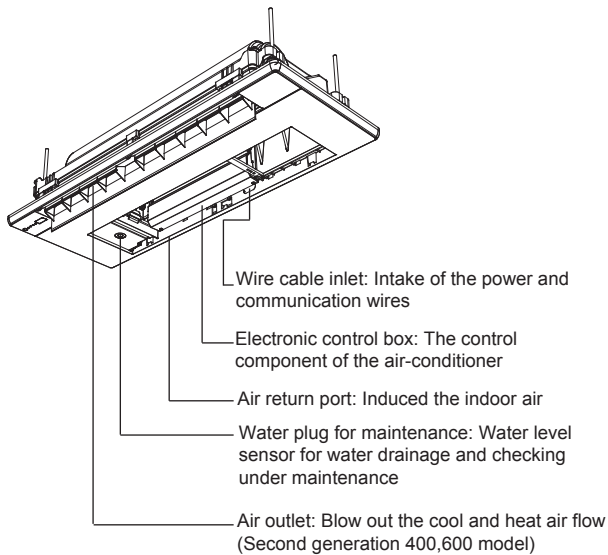


Figure 10.2

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.

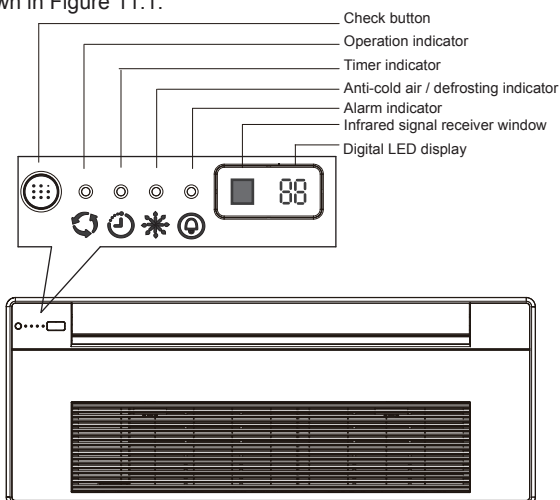


Figure 11.1

Table 11.1: 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 / hot draft prevention	Operation and Anti-cold 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.

Use the system in the following temperature for safe and effective operation.

Temperature Mode	Room temperature	Water inlet temperature
Cooling operation	17°C~30°C	3°C~30°C
Heating operating	17°C~30°C	30°C~60°C
Indoor Humidity Below 80%. Condensation will form on the surface with 80% humidity or above.		



NOTE

- 1 The air conditioner consists of the indoor unit, the outdoor unit, the connecting pipe and the remote controller.
- 2 If air conditioner is used outside the above conditions, it may cause the unit to function abnormally.
- 3 The phenomenon is normal that the surface of air conditioning may condense water when the relative larger humidity in room, please close the door and window.
- 4 Optimum performance will be achieved within these operating temperature range.
- 5 In heating mode, the temperature of the inlet water must be under 60°C.
- 6 Water system operating pressuer: Max: 1.6MPa, Min: 0.15MPa.
- 7 The protection system is activated if abnormal conditions apply.

Hints For Economical Operation

- **Please note the following correct operation for saving energy and achieve the quick and comfortable cooling/heating effect.**
 - **If the air filter is blocked, the cooling/heating effect is diminished.**
 - **Close the door/window**
Do not let hot or cool air leak from the doors and windows.
 - **Do not overcool or overheat.**
Avoid excessive exposure to cold air as it is not healthy. This applies especially to children, the elderly, and those with disabilities.
 - **To maintain a comfortable temperature.**
Adjust the air-out direction using the air-out louver.
- Adjust the air flow louver properly and avoid direct air flow to room inhabitants.
- Adjust the room temperature properly for a comfortable environment. Avoid excessive heating or cooling.
- Prevent direct sunlight during cooling operation by using curtains or blinds.
- Ventilate often. Extended use requires special attention to ventilation.
- Keep doors and windows closed. If the doors and windows remain open, air will flow out of your room causing a decrease in the cooling or heating effect.
- Never place objects near the air inlet or the air outlet of the unit. It may cause deterioration in the effect or stop the operation.
- Set the timer .
- If you don't plan to use the unit for a long time, please take the batteries from the remote controller. When the power is on, some energy will be consumed,even if the air conditioner isn't in operation. So please disconnect the power to save energy.
- Keep the indoor unit and remote controller at least 1 m away from televisions, radios, stereos, and other similar equipment. Failing to do so may cause static or distorted pictures.
- A dirty air filter will reduce cooling or heating efficiency, please clean it once two weeks.

13. Adjusting Air Flow Direction

Because cold air flows down and hot air flows up, so while the unit is in operation, you can adjust the air flow louver to change the flow direction and naturalize the room temperature evenly. Thus you can enjoy it more comfortably.

⚠ Note
The heating operation with horizontal air outlet increases the difference of the room temperature.

The louver direction :
Choose horizontal outlet mode for cooling. Note the downward air flow will cause condensation on the air outlet and louver surface.

Set the air flow direction.

Press the SWING button to adjust the louver to the desired position and press this button again to maintain the louver at this position.

Adjust the Air Flow Direction Up and Down

- **Auto-swing**

Press SWING for the louver will swing up and down automatically.

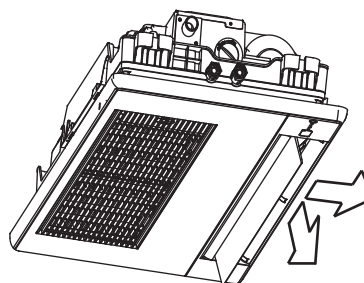


Figure 13.1

- **Manual swing**

Adjust the louver to improve the cooling or heating effect.

- **When cooling**

Adjust the louver horizontally.

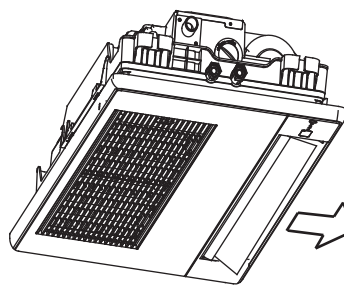


Figure 13.2

- **When heating**

Adjust the louver downwards (vertically).

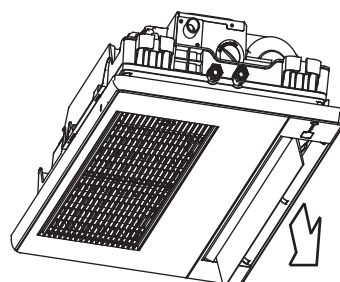


Figure 13.3

⚠ Caution

- 1 Water may drip from the surface of the unit or horizontal louver when cooling if the expel-air direction is vertically down.
- 2 The indoor temperature will not be even in heating mode when the air-out direction is horizontal.
- 3 Do not move the horizontal louver with hands or a malfunction may occur. Adjust it with the swing button on the wire controller.

14. 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

- a. 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.
- b. If the air conditioner is positioned in a dusty place, clean the filter often.
- c. Replace the filter if it is too dusty to clean (the replaceable air filter is an optional fitting).

1 Open the air-in grill

Pull the grill switches down simultaneously as indicated in Figure 14.1. Then pull down the air-in grill.

2 Pull the air-in grill down and dismantle the air filter. (together with the air filter shown in Figure 14.2).

3 Clean the air filter

Vacuum cleaner or pure water may be used to clean the air filter. If the dust accumulation is too heavy, please use soft brush and mild detergent to clean it and dry out in cool place.

- The air-in side should face up when using vacuum cleaner. (See Figure 14.3)
- The air-in side should face down when using water. (See Figure 14.4)

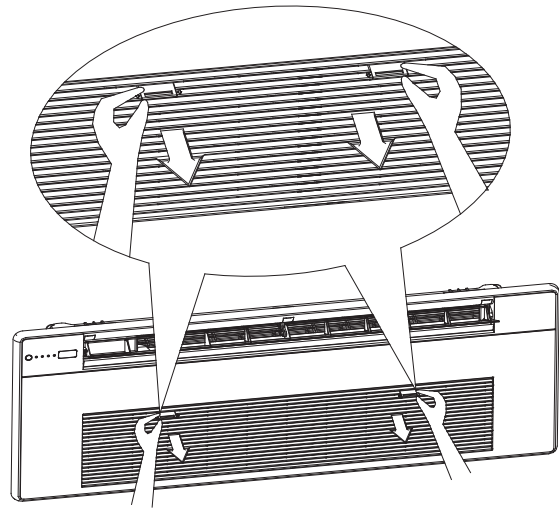


Figure 14.1

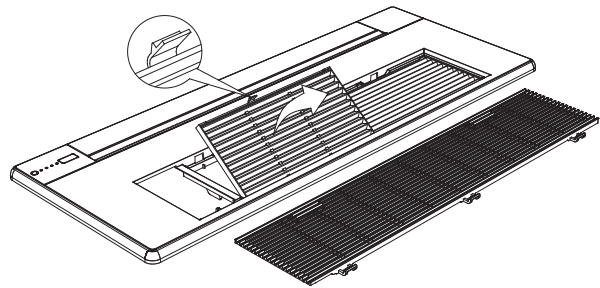


Figure 14.2

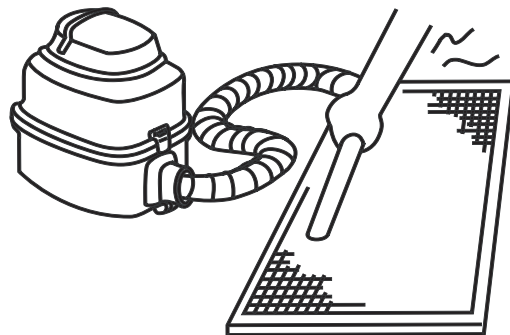


Figure 14.3

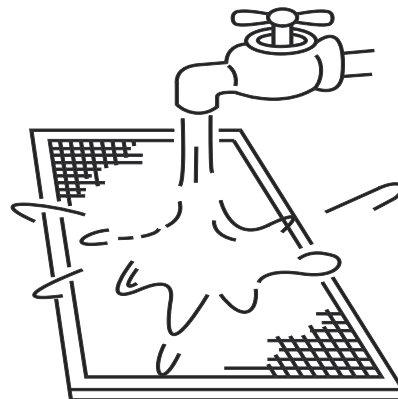


Figure 14.4

⚠ 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.

15. 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: Change into the fan mode during cooling mode**

When the room temperature drops to the set temperature, the indoor unit changes to fan mode; when the temperature rises up, the rotate speed of the fan will rise too, It is same in the heating mode.

- ♦ **Symptom 3: 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.

- ♦ **Symptom 6: Noise of air conditioners cooling**

Symptom 6.1:

- A continuous low "shah" sound is heard when the system is in cooling operation or at a stop.
When the drain pump (optional accessories) is in operation, this noise is heard.
- A "pishi-pishi" squeaking sound is heard when the system stops after heating operation.
Expansion and contraction of plastic parts caused by temperature change make this noise.

Symptom 6.2:

- A continuous low hissing sound is heard when the system is in operation.
This is the sound of water flowing through both indoor and outdoor units.
- A hissing sound which is heard at the start or immediately after stopping operation .
This is the noise of water caused by flow stop or flow change.

16. Troubleshooting

16.1 General

Sections 16.2 and 16.3 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.
- Switch operations are erratic.

⚠ Caution

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

16.2 Unit Troubleshooting

If the system does not properly operate except the above mentioned cases or the above mentioned malfunctions is evident, investigate the system according to the following procedures.

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 exhausted or other problem of controller..	Replace the batteries or check the controller.
Air flows normally but isn't cool	The temperature setting is not correct.	Set the desired temperature on the remote controller properly.
The unit starts or stops frequently	Arrange for a professional technician to check the following: Air or no concreting gas in the watering circuit. water valve is malfunction. Voltage is too high or too low. System circuit is blocked. Temperature is not settled correctly.	discharge the air or gas in the circuit. Maintenance or change water valve. Install manostat. relieve the obstruction in the watering circuit Find reasons and solution. Set the desired temperature on the remote controller properly.
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.
Low heating effect	Engage a professional air conditioning engineer to check the following: ♦ The unit's heat exchanger is dirty. ♦ The unit's air inlet or outlet is blocked. ♦ A water leak has occurred.	Clean the heat exchanger. Eliminate all dirties and make air smooth Relieve the obstruction Check leakage .
	Doors or windows are not completely closed. A water leak has occurred.	Close doors and windows. Use heating device. Close doors and windows. Check leakage.

16.3 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 signals not transmitted even when the ON/OFF button is pushed	A power cut has occurred (the power to the premises has been cut-off). The remote controller's batteries are exhausted.	Wait for the power to come back on. Replace the batteries.
The indication on the display panel 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.
The TEMP. indicator does not come on.	Check whether the MODE indicated on the display is FAN ONLY	The temperature cannot be set during FAN mode.

16.4 Error Codes

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. These errors should only be investigated by a professional technician. The descriptions are provided in this manual for reference only.

Content	Display output	Possible causes
Room temperature sensor detection port is abnormal	E2	<ul style="list-style-type: none"> ◆ Lose connection between temperature sensor and Main control board. ◆ Temperature Sensor is damaged. ◆ Main control board is damaged
The coil sensor detection port is abnormal	E3	
E2PROM communication error	E7	<ul style="list-style-type: none"> ◆ Lose connection between E2PROM chip and Main control board. ◆ E2PROM chip is inserted in wrong direction ◆ E2PROM chip failure ◆ Main control board is damaged
Dc motor stall failure	E8	<ul style="list-style-type: none"> ◆ Motor connection is damaged ◆ Fan is jammed or blocked ◆ Motor has failed ◆ Main control board is damaged
The water level exceeds the warning level	EE	<ul style="list-style-type: none"> ◆ Water level float stuck ◆ Drain pump has malfunctioned ◆ Connection between water level switch and Main control board is lose ◆ Water level switch is broken ◆ Main control board is damaged
Model protection is not set	PF	<ul style="list-style-type: none"> ◆ Check whether the dial code of the motherboard is correct according to the wiring nameplate. ◆ Main control board is damaged
Anti-freezing protection	P0	<ul style="list-style-type: none"> ◆ The water temperature of the water supply is below 3°C. ◆ Coil Temperature Sensor T2C failure. ◆ Main control board is damaged
Water temperature over-range protection	P1	<ul style="list-style-type: none"> ◆ The water supply is higher than 75°C. ◆ Coil Temperature Sensor T2C failure. ◆ Main control board is damaged

Notes:

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

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