Match 1.1 SERIE MH

CIAC

FOUR WAY CASSETTE UNIT

Installation Manual

IMPORTANT NOTE:

Original instructions

Thank you very much for purchasing our air conditioner,
please read this manual carefully and keep it for future reference.

This manual apply for the following models:

CIAC MATCH 1.1 SERIE MH FOUR WAY CASSETTE UNIT	
42KC40363MA-E	IDU FOUR WAY CASSETTE UNIT 3 TR HP 220/1/60 R-410A
42KC40603MA-E	IDU FOUR WAY CASSETTE UNIT 5 TR HP 220/1/60 R-410A

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1. PRECAUTIONS

- **Be sure to be in conformity with the local, national and international laws and regulations.**
- **Read "PRECAUTIONS" carefully before installation.**
- **The following precautions include important safety items. Observe them and never forget.**
- **Keep this manual with the owner's manual in a handy place for future reference.**

The safety precautions listed here are divided into two categories. In either case, important safety information is listed which must be read carefully.

WARNING

Failure to observe a warning may result in death.

CAUTION

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

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

WARNING

Be sure only trained and qualified service personnel to install, repair or service the equipment. Installation must be performed in accordance with the requirements of NEC and CEC by authorized personnel only.
Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, fire or other damage to the equipment.

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

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

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

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

The appliance must be installed 2.3m above floor.

The appliance shall not be installed in the laundry.

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

The appliance must be positioned so that the plug is accessible.

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

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

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

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

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

An all-pole disconnection switch having a contract separation of at least 3mm in a poles should be connected in fixed wiring.

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

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

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

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

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

CAUTION

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

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

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

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

Connect the outdoor unit wires , then connect the indoor unit wires.
You are not allow to connect the air conditioner with the power source until wiring and piping the air conditioner is done.

While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.
Improper drain piping may result in water leakage and property damage.

Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise.
Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

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

Young children should be supervised to ensure that they do not play with the appliance.

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

- There is petrolatum existing.
- There is salty air surrounding (near the coast).
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- The volt vibrates violently (in the factories).
- In buses or cabinets.
- In kitchen where it is full of oil gas.
- The appliance shall not be installed in the laundry.
- There is strong electromagnetic wave existing.
- There are inflammable materials or gas.
- There is acid or alkaline liquid evaporating.
- Other special conditions.

2. INSTALLATION INFORMATION

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

INSTALLATION ORDER

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

3. ATTACHED FITTINGS AND LOCAL PURCHASED COMPONENTS

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

Table: 3-1 《**ATTACHED FITTINGS**》

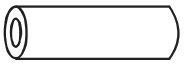
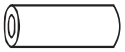
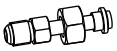
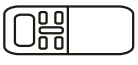
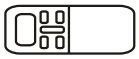
Code	Name	Appearance	Qty
1	Installation Manual		1
2	Nut		8
3	Washer		8
4	Installation board		1
5	M6 screw		4
6	Insulation casing for copper pipe		2
7	Foam (250x250x8)		1
8	Foam (60x100x5)		1
9	Insulation casing for water discharge piping		1
10	Ring clamp for water discharge pipe		1
11	Tightening band		5
12	Soft flexible hose for water discharge		1
13	Brass nut		2
14	Liquid pipe connector		1
15	Outer sealling ring		3
16	Piston hook		1
17	Piston		1
18	Remote controller		1
19	Remote controller holder		1
20	Mounting screw (ST2.9x10-C-H)		2
21	Alkaline dry battery(AM4)		2
22	Signal wire		1

Table: 3-2 《**LOCAL PURCHASED COMPONENTS**》

Code	Name	Appearance	Dimensions	Qty	Note
1	Copper pipe		Choose and purchase copper pipes that correspond to the length and size calculated for the selected model in the installation manual of the outdoor unit and your actual project requirements.	To purchase based on actual project requirements.	Use to connect indoor refrigerant piping.
2	PVC pipe for water discharge		Outer diameter: 37-39 mm, inner diameter: 32 mm	To purchase based on actual project requirements.	Use 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 hook		M10	4	For installation of indoor unit.

Remote controller & Its Frame

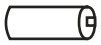
1. Remote controller.....1



2. Remote controller holder.....1

3. Mounting screw (ST2.9x10-C-H).....2

4. Alkaline dry battery(AM4) 2



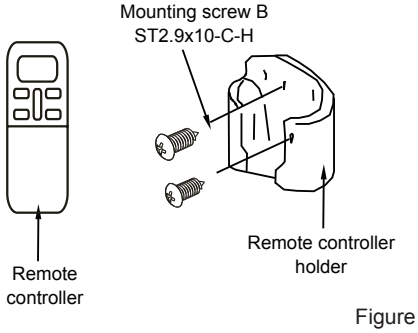


Figure 3.1

CAUTION

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

NOTE

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

4. INSTALLATION

4.1 Installation place

(Refer to Figure 4-1, Figure 4-2, Figure 4-3 and Table: 4-1 for specification.)

The indoor unit should be installed in a location that meets the following reauirements:

- Avoid installing it in a narrow sapce which has a high requirement to noise.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.
- Don't install it in a place whose air contains much salt. If this can't be avoided, choose a anticorrosive model.

CAUTION

Installing the equipment in any of the following places may lead to faults of the equipment (if that is inevitable, consult the supplier):

A. The site contains mineral oils such as cutting lubricant.
B. Seaside where the air contains much salt.
C. Hotpring area where corrosive gases exist, e.g., sulfide gas.
D. Factories where the supply voltage fluctuates seriously.
E. Inside a car or cabin.
F. Place like kitchen where oil permeates.
G. Place where strong electromagnetic waves exist.
H. Place where flammable gases or materials exist.
I. Place where acid or alkali gases evaporate.
J. Other special environments.

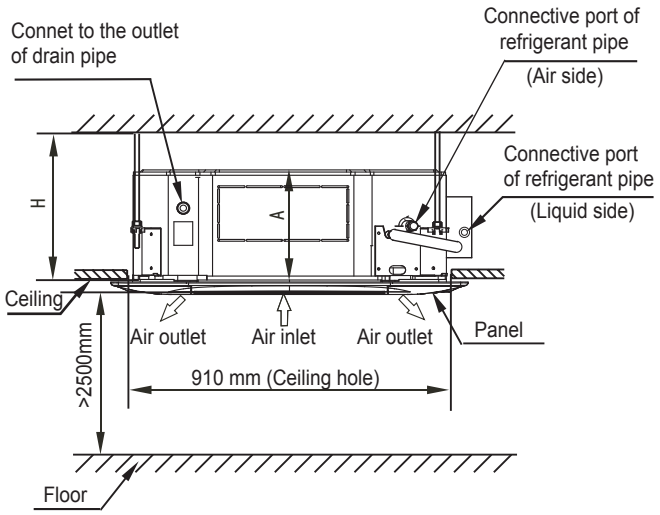


Figure 4-1

Table: 4-1

Indoor unit	A (mm)	H (mm)
36K	300	⩾330
60K	300	⩾330

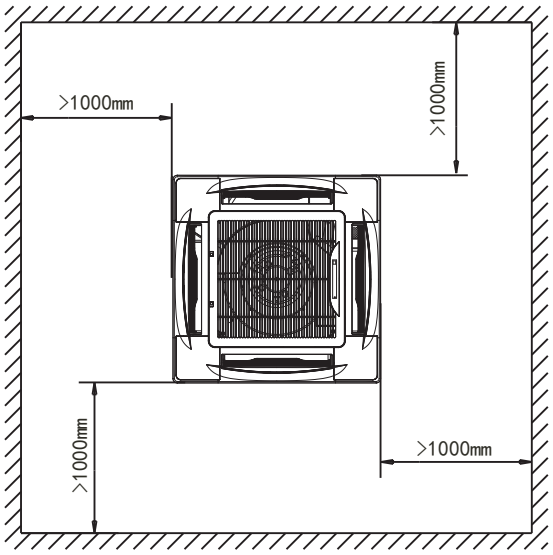


Figure 4-2

4.2 Air supply direction

To select the following air supply directions base on your room sharp and the unit installed site:

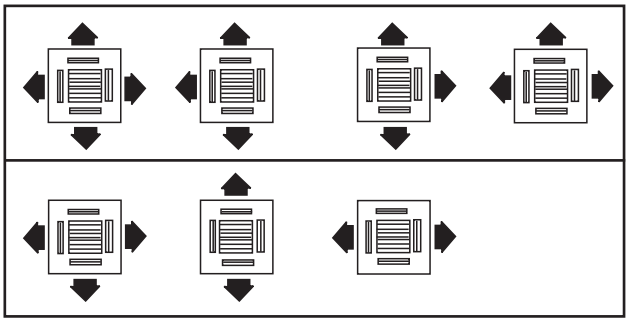


Figure 4-3

1. Once changing the air supply direction, please replace the wind shield materials. For details of wind shield materials please consult our dealer.

2. Such as the above figure of air supply direction, before install wind shield material, please remove the panel firstly, and then insert the wing shield panel into air outlet of main body.

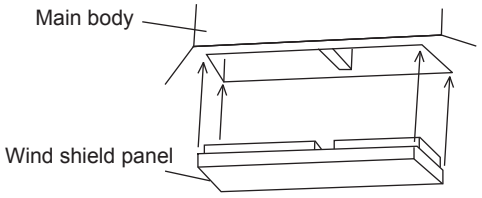


Figure 4-4

3. As for operating the electric heater and additional purchased humidifier at the same time, to be on safe side, don't alter the air supply direction, and shall employ four-way air supply type to operation.

WARNING

- Install the unit at a site with sufficient strength to supporting the weight of the unit.
- Insufficient supporting strength would fall-down the unit and cause human physical injury.
- Special installation to prevent the unit be blown down by strong wind and be shocked by earthquake. Failure installation would cause fall-down accident.

4.3. Indoor Unit Installation

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

4.3.1 Installation with Lifting Bolts

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

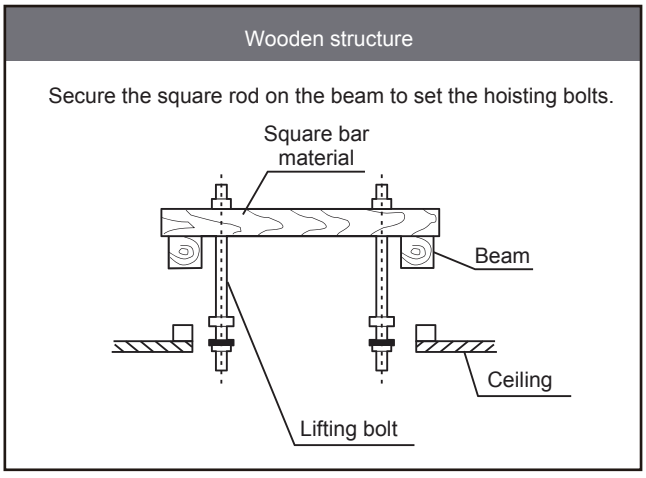


Figure 4.5

Original concrete slab structure

Use embedded bolts, and pull bolts.

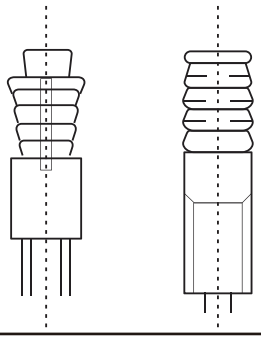


Figure 4.6

Steel framework

Directly set and use an angled steel rod for support.

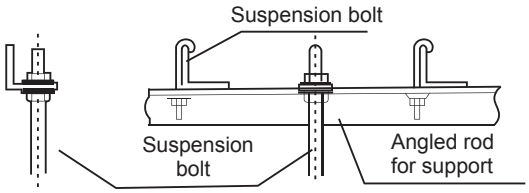


Figure 4.7

Newly set concrete slab structure

Set using embedded appliances, and embedded type of bolts.

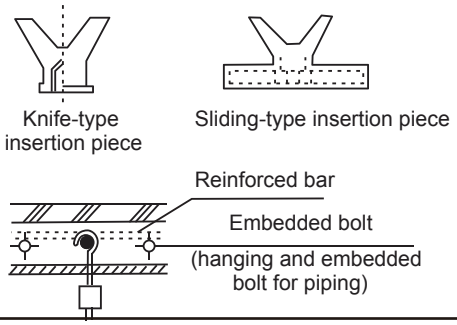


Figure 4.8

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 hoisting bolt should be secured depends on the specific situation, and it must be secure and reliable.

4.4. Indoor Unit Installation

4.4.1 Installation sequence for existing ceiling

- Must maintain the ceiling at a level position.

1. Drill 910x910mm square holes into the ceiling based on the layout of the installation board (accessory 4). See Figure 4.9.

- 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.

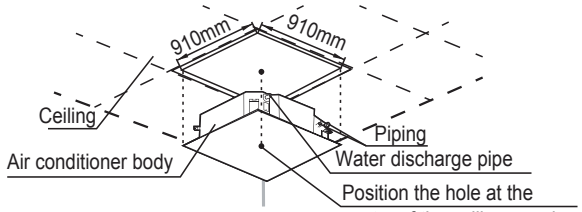


Figure 4.9

2. Install the hooks in four corners based on the layout for the hooks outlined in the installation board (accessory 4).

- Determine the location on the ceiling of the room or building roof for mounting, and drill four Φ12mm X 50-55 mm holes. Then embed and set up the expansion hook anchors (purchased accessory 4) in these holes. See Figure 4.6.
- During the installation of the hooks (purchased accessory 5), 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.
- Take approximately 1/2 of the screw length for the installed hooks as the excess length.

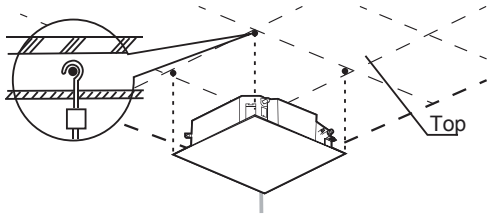


Figure 4.10

3. Use the hex nuts on the four mounting hooks to adjust and make sure that the unit body is level.

- If the water discharge pipe is slanted, it may cause the water level switch to malfunction, and water may leak.
- Adjust the position of the unit body, and make sure that the gap with the ceiling is evenly spaced on all four sides of the ceiling, and the base of the unit body is 10-12 mm into the base of the ceiling.

  Once the position of the unit body is adjusted, use the nuts on the mounting hooks to secure the unit.

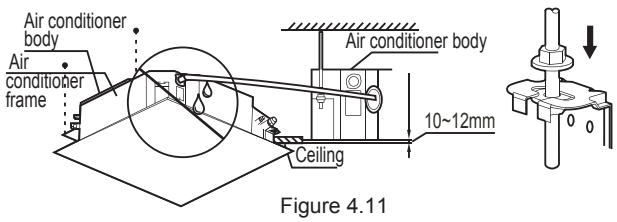


Figure 4.11

4.4.2 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 5) to secure the installation board (accessory 4) on the unit body. Make sure you verify the size and positions of the opening in the ceiling before you do so. See Figure 4.12.

- 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 4).

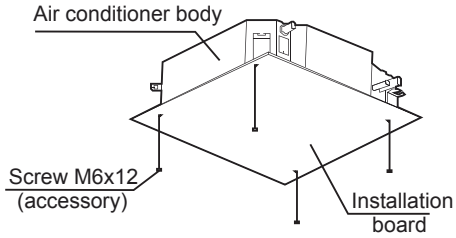


Figure 4.12

CAUTION

- Before you install the indoor unit, make sure that you remove the buffers used for transportation between the fan and the pipe socket (see Figure 4.13). If you run the unit without removing the buffers, you may damage the fan motor.
- Make sure that the unit body is level; otherwise, it may cause water to leak. Calibrate the levelness of the unit using a spirit level or polyethylene tube filled with water.
- The unit is equipped with a built-in water discharge pump and float switch. Do not tilt the unit in the direction of the drain pan; otherwise, the float switch may malfunction and cause water leakages.

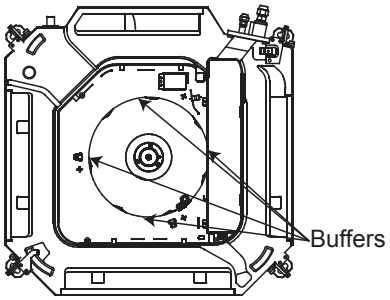
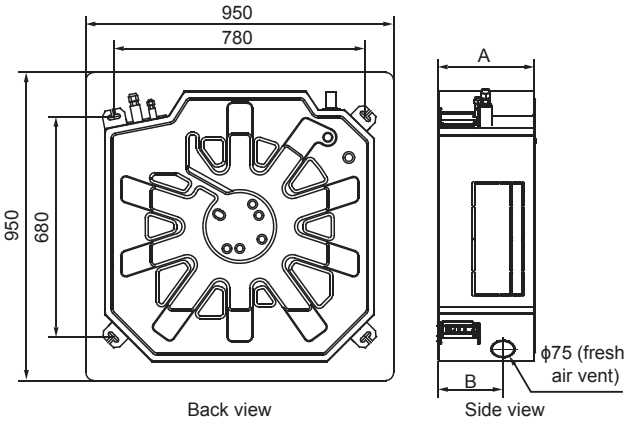
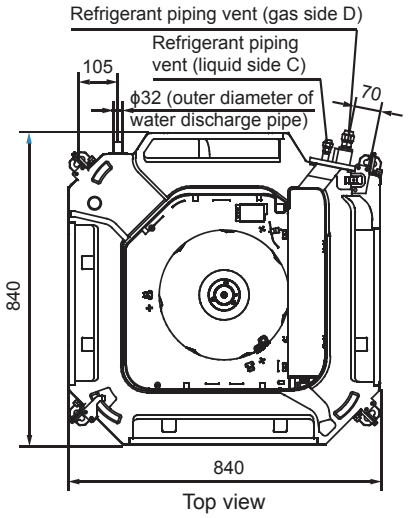


Figure 4.13

Dimensions of unit





Model	A (mm)	B (mm)	C (mm)	D (mm)
36K	300	197	Φ9.53	Φ19.1
60K	300	197	Φ9.53	Φ19.1

Figure 4.14

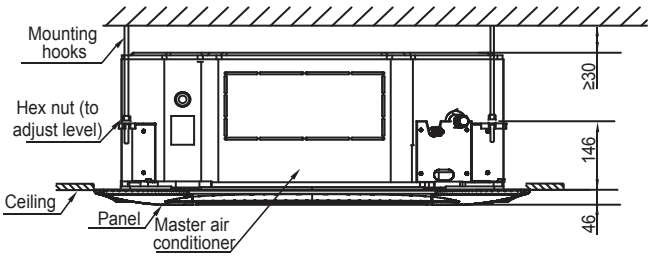


Figure 4.15

CAUTION

- All the figures in this manual are for illustration purposes only. The actual air conditioner you purchased may not have the same appearance and functions as those listed in these figures. Please refer to the actual product model.

4.5 Panel Installation

4.5.1 Remove the air inlet grille

(1) Press the two grille locks at the same time to lift it up.

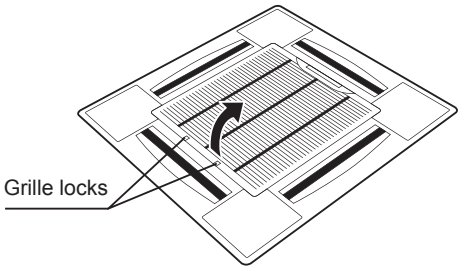


Figure 4.16

(2) Raise the air inlet grille to about 45°, and remove the grille.

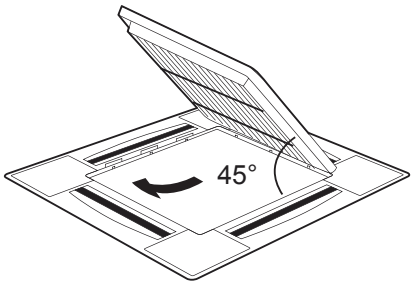


Figure 4.16

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.
- There is an air vent in the panel which is shorter than the other three vents. This air vent must match the shorter air vent of the unit body (see the warning label on the panel). Otherwise, it will cause air to leak, and water condensation.

4.5.2 Remove the installation cover plate

Remove the screws from all four corners of the installation cover plate to release the cover plate rope, and take out the cover plate, facing outwards. See Figure 4.18.

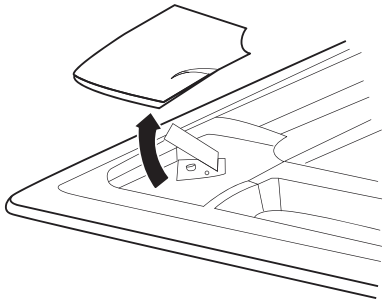


Figure 4.18

4.5.3 Panel installation

(1) Align the "PIPING SIDE" and "DRAIN SIDE" sections marked on the panel with the corresponding copper pipe connection and water discharge connection in the unit body.

(2) During installing, first hang the swing motor side of the panel and hook on opposite of the panel in the unit body to the corresponding drain pan hook (see Figure 4.19, a). Then, hang the two remaining panel hooks on the corresponding suspension bracket of the unit body of the indoor unit (see Figure 4.19, b).

(3) Slot the guide wire of the swing motor to the card slot on the panel, and connect the leads from the swing motor, and display box from the panel to the corresponding connections on the unit body respectively. Take care to use protective casing to wrap the connection terminals, and use a reliable fixture to secure and strengthen the safety isolation of the terminals.

(4) Adjust the four panel hook screws (see Figure 4.19, c) to keep the panel level, and lift it evenly up to the ceiling.

(5) Adjust the panel slightly in the "d" direction (see Figure 4.19, d), so that the centre of the panel aligns with the centre of the opening of the ceiling. Verify that the hooks in all four corners are securely in place.

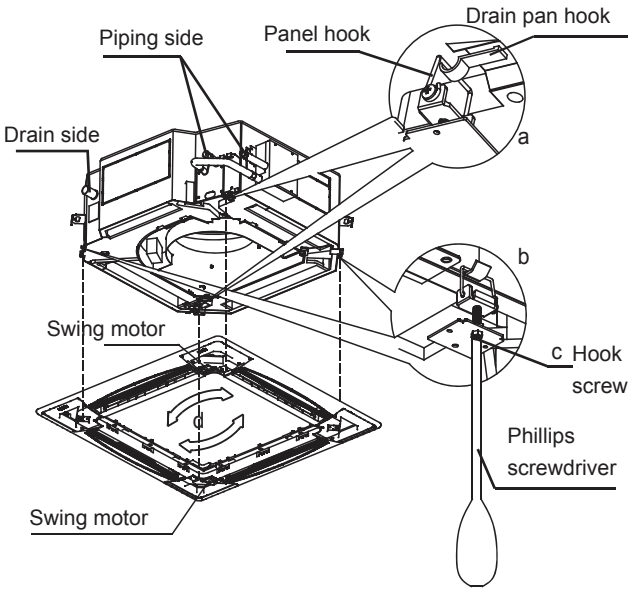


Figure 4.19

(6) Continue to evenly tighten the screws under the hooks of the panel until the foam thickness between the unit body and the air outlet on the panel is reduced to about 4-6 mm, and there is good contact between the panel and ceiling surface.

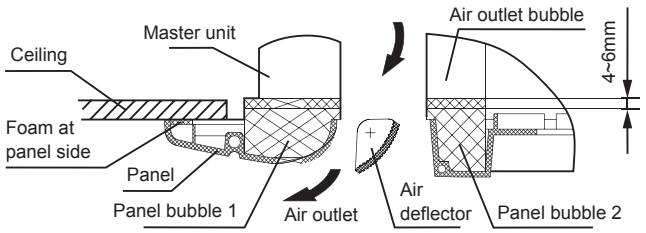
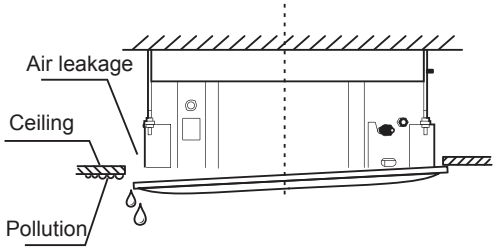


Figure 4.20

CAUTION

- The plastic cover plate protruding from the swing motor must be embedded within the concave area of the sealing plate.
- Make sure the wiring of the swing motor is not caught inside the sealed foam.
- Air and water leakages may result if the screws are too loose. See Figure 4.21
- No gap is allowed between the ceiling and the panel. See Figure 4.22.
- If it does not affect the lifting and lowering of the indoor unit and the water discharge piping, you can use the openings at the four corners of the panel to adjust the height of the indoor unit. See Figure 4.23.



Droplets of condensed water, dripping water.

Figure 4.21

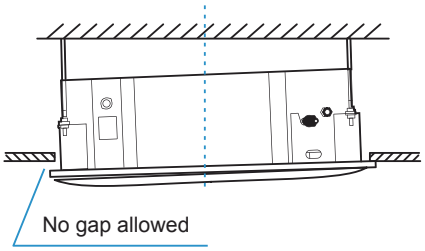


Figure 4.22

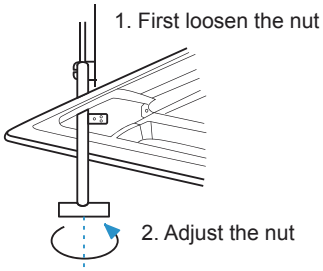


Figure 4.23

4.5.4 First hang the air inlet grille on the panel, and then connect the leads of the swing motor and display box to the corresponding connections on the unit body respectively.

4.5.5 Reinstall the air inlet grille by performing the steps used to remove the air inlet grille in the reverse order.

4.5.6 Reinstall the installation cover.

(1) Secure the installation cover rope onto the bolt on the installation cover with screws. See Figure 4.24

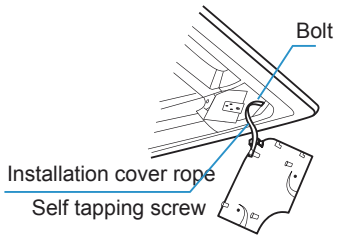


Figure 4.24

(2) Gently press the installation cover into the panel. See Figure 4.25.

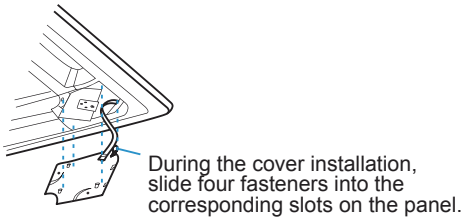


Figure 4.25

4.6. Air Duct Installation

The treated air can be discharged to the adjacent rooms through the air ducts.
See Figure 4.26 for the schematic on the installation dimensions of the air ducts.

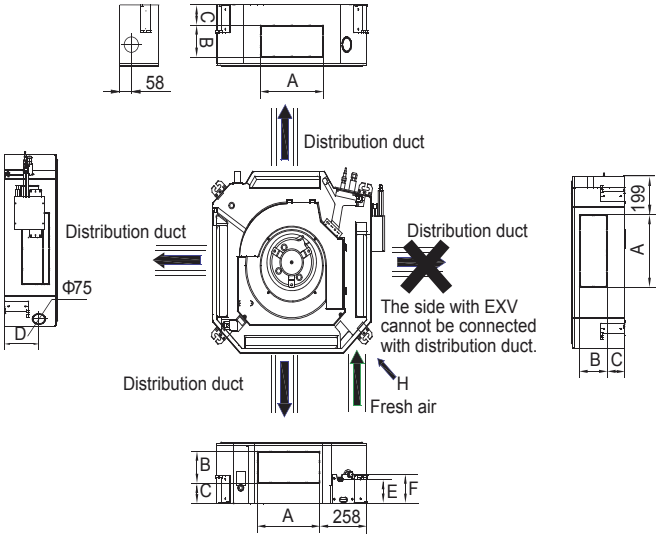


Figure 4.26

Size (mm)	36K	60K
A	350	350
B	155	155
C	107	107
D	197	197
E	121	121
F	145	145

See Figure 4.27 for the schematic on the air duct installation.

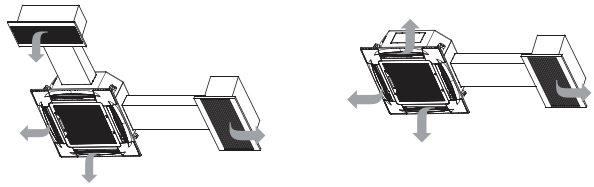


Figure 4.2

- If only one air duct is connected:

  The air volume in the air duct for the 36K/60K models is about 400~640 m^3/h.

  Length of the air duct should not exceed 2 m.
- If two air ducts are connected:

  The air volume in the air duct for the 36K/60K models is about 300~500 m^3/h.

  Length of each air duct should not exceed 1.5 m.

  The air outlet of the panel on the same side of the connecting air duct must be sealed.

CAUTION

- No air duct required if the unit capacity is less than 5.6 kW.
- Refer to the wiring diagram if super high airflow rate is needed.

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 10) 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 9) 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 12) to bind them firmly to make sure air does not enter and condense.
4. In order to prevent the back-flow of water into the interior of the air conditioner when the operation stops, the water discharge pipe should slope downwards towards the outside (drainage side) at a slope of more than 1/100. Make sure that the water discharge pipe does not swell or store water; otherwise, it will cause strange noises. See Figure 5.1.
5. When connecting the water discharge piping, do not use force to pull the pipes to prevent the water suction pipe connections from coming loose. At the same time, set a supporting point at every 0.8~1 m to prevent the water discharge pipes from bending. See Figure 5.1.

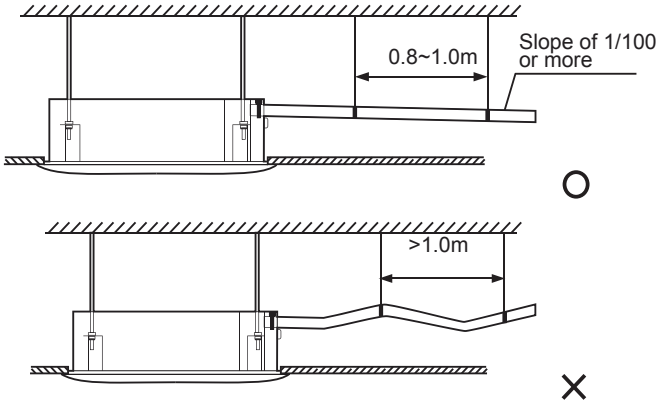


Figure 5.1

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

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

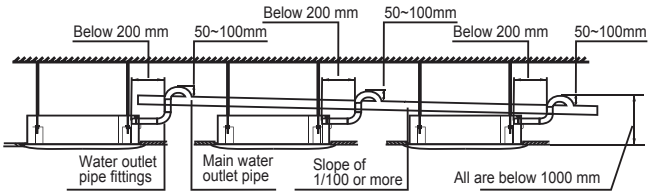


Figure 5.2

8. If the end of the water discharge pipe is more than 50mm above the ground r from the base of the water discharge slot, do not put it in the water.

CAUTION

Make sure all the connections in the piping system are properly sealedto prevent water leakages.

5.2 Water Discharge Test

- Before the test, make sure that the water discharge pipeline is smooth, and check that each connection is sealed properly.
- Conduct the water discharge test in the new room before the ceiling is paved.

1. Remove the test water cap to connect to the test water outlet, and use the water injection pipe to inject 2000 ml of water into the drain pan.

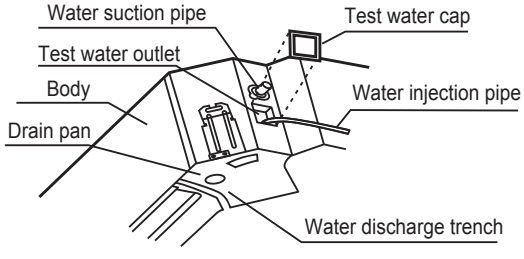


Figure 5.3

2. Connect the power supply, and set the air conditioner to operate in the cool mode. Check the running sound of the drainage pump, as well as whether water is properly drained from the water discharge outlet.
3. 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 drain pan.There may even be water overflowing from the drain pan.
4. 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.
5. 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. REFRIGERANT PIPING INSTALLATION

6.1 Length and Drop Height Requirements for the Piping Connections to the Indoor and Outdoor Units

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

6.2 Piping Material and Size

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

6.3 Piping Layout

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

6.4 Piping Installation

- Refer to the installation manual attached with the outdoor unit on installation of the refrigerant piping for the outdoor unit.
- All gas and liquid piping must be properly insulated; otherwise, this may cause water to leak. Use heat insulation materials that can withstand high temperatures above 120°C to insulate the gas pipes. In addition, the insulation of the refrigerant piping should be reinforced (20 mm or thicker) in situations where there is high temperature and/or high humidity (when part of refrigerant piping part is higher than 30°C or when the humidity exceeds RH80%). Otherwise, the surface of the heat insulation material may be exposed.
- Before the works are carried out, verify that the refrigerant is R410A. If the wrong refrigerant is used, the unit may malfunction.
- Other than the specified refrigerant, do not let air or other gases enter the refrigeration circuit.
- If the refrigerant leaks during installation, make sure you fully ventilate the room.
- Use two wrenches when you install or dismantle the piping, a common wrench and a torque wrench. See Figure 6.1.

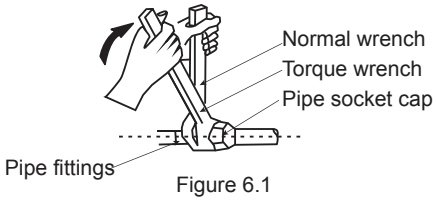


Figure 6.1

- Slot the refrigerant piping into the brass nut (accessory 13), and expand the pipe socket. Refer to the following table for the size of the pipe socket and the appropriate tightening torque.

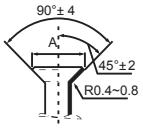
External diameter (mm)	Tightening torque	Flared opening diameter (A)	Flared opening
Φ6.35	14.2-17.2N·m	8.3-8.7mm	
Φ9.53	32.7-39.9N·m	12-12.4mm	
Φ12.7	49.5-60.3N·m	15.4-15.8mm	
Φ15.9	61.8-75.4N·m	18.6-19mm	
Φ19.1	97.2-118.6N·m	22.9-23.3mm	

Figure 6.2

CAUTION

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

- Before the socket cap is installed on the pipe socket, apply some refrigerant oil on the socket (both inside and outside), and then rotate it three or four times before you tighten the cap. See Figure 6.3.

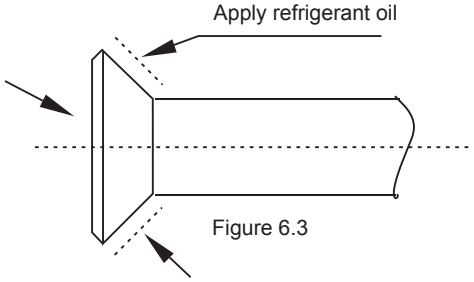


Figure 6.3

⚠ Precautions to take when welding the refrigerant pipes

- Before you weld the refrigerant pipes, fill the pipes with nitrogen first to discharge the air in the pipes. If no nitrogen is filled during welding, a large amount of oxide film will form inside the piping which may cause the air conditioning system to malfunction.
- Welding can be carried out on the refrigerant pipes when the nitrogen gas has been replaced or refilled.
- When the pipe is filled with nitrogen during welding, the nitrogen must be reduced to 0.02 MPa using the pressure release valve. See Figure 6.4.

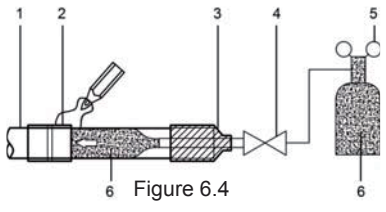


Figure 6.4

1	Copper piping
2	Section being brazed
3	Nitrogen connection
4	Hand valve
5	Pressure-reducing valve
6	Nitrogen

6.5 Air Tightness Test

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

CAUTION

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

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

- The heat insulation treatment is carried out on the piping at the gas and liquid sides of the indoor unit respectively.
  a. The piping on the gas side must use heat insulation material that can withstand temperatures of 120°C and more.
  b. For the piping connections of the indoor unit, use the insulation casing for copper pipes (accessory 6) to carry out the insulation treatment, and close all gaps.

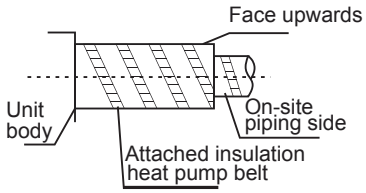


Figure 6.5

6.7 Vacuum

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

CAUTION

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

6.8 Refrigerant

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

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

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

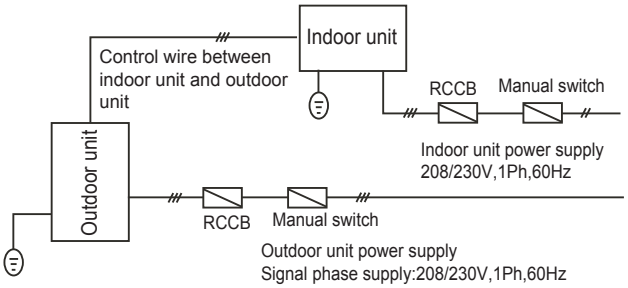
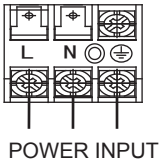


Figure 7.1

Figure 7.2 shows the power supply terminal of the indoor unit.



POWER INPUT

Figure 7.2

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

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 7.4.

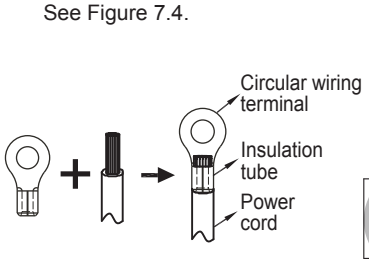


Figure 7.3

●: Copper wire

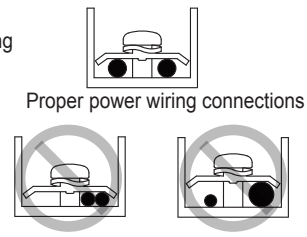
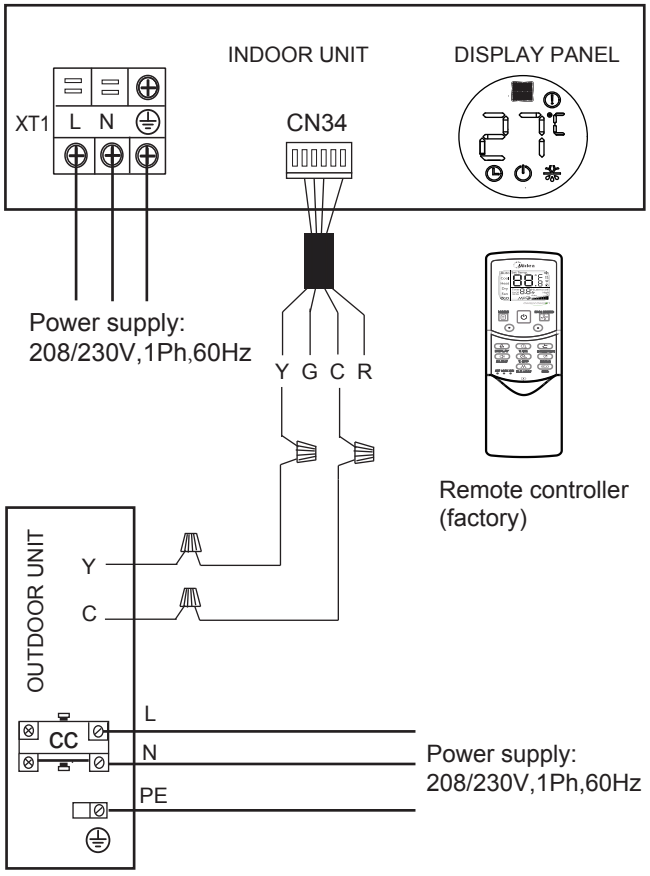


Figure 7.4

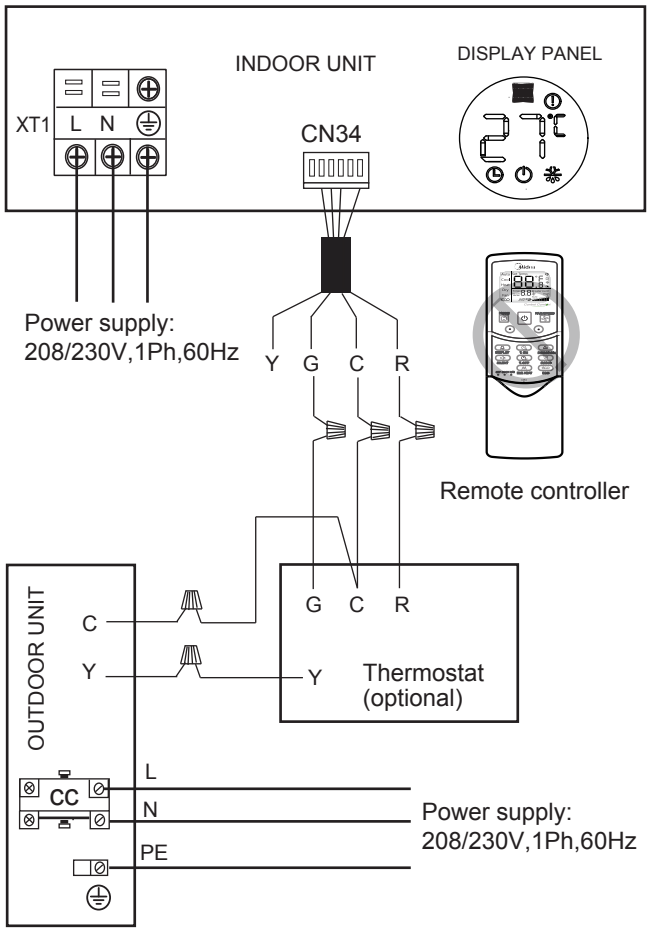
7.2 Electrical Wiring Specifications

- This unit provides two kinds of control model (see figure 7.5 and figure 7.6). Figure 7.5 recommends wiring specification that the unit is controlled by remote controller. Figure 7.6 recommends wiring specification that the unit is controlled by thermostat.
- The “Y” signal wire of indoor unit is designed to connect to outdoor unit only, do not connect to thermostat.
- Do not use the remote controller If the indoor unit connected to the thermostat (see Figure 7.6).
- Please use the wiring cap to connect the signal wires.If you do not have any wiring caps, you can also use the electrical tape to avoid exposing the copper wires.



This wire diagram is applicable to remote controller model (factory)

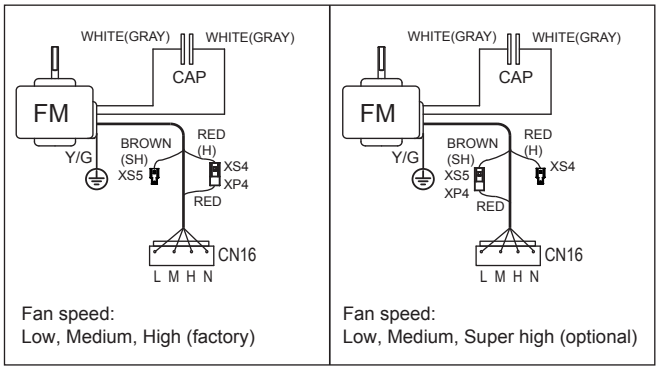
Figure 7.5



This wire diagram is applicable to thermostat model (optional)

Figure 7.6

- The unit provides three fan speeds (low, medium, high) . you can use the remote controller to change the fan speed freely.
- When using thermostat to control the system, instead of remote controller, you can not change the fan speed freely. In this model, the unit has only one fan speed (low, medium or high), you can change the fan speed by SW1 DIP switch (see SW1 definition).
- In some cases, you can change the high fan speed to super high fan speed by wiring layout (see Figure 7.7)



This wire diagram is applicable to change fan speed (optional)

Figure 7.7

Refer to Tables 7.1 and 7.2 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		36K/60K
Power supply	Volt,phase and frequency	208/230V,1Ph,60Hz
Communication wire between indoor and outdoor units		SHIELD 3×AWG16-AWG20
Communication wire between indoor unit and wired controller		SHIELD AWG16-AWG20
Fuse		15A

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

Table 7.2 Indoor units electrical characteristics

Capacity	Power supply				IFM	
	Hz	Volts	MCA	MFA	kW	FLA
36K	60	208/230	0.3	15	0.026	0.2
60K	60	208/230	0.3	15	0.026	0.2

Abbreviations:
MCA: Minimum Circuit Amps kW: Rated motor output
MFA: Maximum Fuse Amps FLA: Full Load Amps
IFM: Indoor Fan Motor

1. Select the wire diameters(minimum value) individually for each unit based on the table 7.3.
2. Maximum allowable voltage range variation between phases is 2%.
3. Select circuit breaker that having a contact separation in all poles not less than 3 mm providing full disconnection, where MFA is used to select the current circuit breakers and residual current operation breakers.

Table 7.3

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

WARNING

- Refer to local laws and regulations when deciding on the dimensions for the power cords and wiring. Get a professional to select and install the wiring.
- Please use the wiring cap to connect the signal wires. If you do not have any wiring caps, you can also use the electrical tape to avoid exposing the copper wires.

8. CONTROL OPERATION

NOTE

- 0 means DIP switch is dialled to “OFF”
- 1 means DIP switch is dialled to “ON”

SW1 Definition (only for thermostat)

SW1-1,2 [00] 	● Indoor fan speed is medium (only for thermostat) (factory default)
SW1-1,2 [01] 	● Indoor fan speed is low (only for thermostat)
SW1-1,2 [10] 	● Indoor fan speed is medium (only for thermostat)
SW1-1,2 [11] 	● Indoor fan speed is high (only for thermostat)
SW1-3 [0] 	● For AC system (factory default)
SW1-3 [1] 	● For HP system

SW3 Definition (optional)

SW3-1,2 [00] 	● Temperature compensation in cooling mode is 0°C and in heating mode is 0°C (factory default)
SW3-1,2 [01] 	● Temperature compensation in cooling mode is -1°C and in heating mode is 0°C
SW3-1,2 [10] 	● Temperature compensation in cooling mode is 0°C and in heating mode is -2°C
SW3-1,2 [11] 	● Temperature compensation in cooling mode is 0°C and in heating mode is -4°C

RF1 Definition

RF1 	● Without RF1 indicates a power off memory function (factory default) ● With RF1 indicates no power off memory function

CAUTION

- Please switch off the power before setting,otherwise the unexpected error will occur.

9. TEST RUN

9.1 Things to Note Before Test Run

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

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;

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

Operation manual

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.
- The refrigerant in this unit is safe and should not leak if the system is designed and installed properly. However, if a large amount of refrigerant leaks into a room, the oxygen concentration will decrease rapidly, which can cause serious injury or death. The refrigerant used in this unit is heavier than air, so the danger is greater in basements or other underground spaces. In the event of a refrigerant leak, turn off any devices that produce a naked flame and any heating devices, ventilate the room, and contact your supplier or service engineer immediately.
- Toxic fumes may be produced if the refrigerant in this unit comes into contact with naked flames (such as from a heater, gas stove/burners, or electric appliances).
- If this unit is used in the same room as a cooker, stove, hob, or burner, ventilation for sufficient fresh air must be ensured, otherwise the oxygen concentration will fall, which may cause injury.
- Dispose of this unit's packaging carefully, so children cannot play with it. Packaging, especially plastic packaging, can be dangerous, can cause serious injury 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 overs 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 refrigeration or cooling for food, plants, animals, machinery, equipment or art.
- Do not insert your fingers or other objects into the unit's air inlet or air outlet to avoid injury or damage to the equipment.
- The fins on the unit's heat exchanger are sharp and can cause injury if touched. To prevent injury, when the unit is being serviced, gloves should be worn or the heat exchanger should be covered.
- Do not place items which might be damaged by moisture under the unit. When the humidity is greater than 80% or if the drain pipe is blocked or the air filter is dirty, water could drip from the unit and damage objects placed under the unit.
- Ensure that the drain pipe functions properly. If the drain pipe is blocked by dirt or dust, water leaks may occur when the unit is running in cooling mode. If this happens, turn the unit off and contact your supplier or service engineer.
- Do not touch the internal parts of the controller. Do not remove the front panel. Some internal parts may cause injury or be damaged.
- Ensure that children, plants and animals are not directly exposed to the airflow from the unit.
- When fumigating a room with insecticide or other chemicals, cover the unit well and do not run it. Failure to observe this caution could lead to chemicals getting deposited inside the unit and later emitted from the unit when it running, endangering the health of any room occupants.
- Do not dispose of this product as unsorted waste. It must be separately collected and processed. Ensure that allapplicable legislation regarding the disposal of refrigerant, oil and other materials is adhered to. Contact your local waste disposal authority forinformation about disposal procedures.
- To avoid damaging the remote controller, exercise caution when using it and replacing its batteries. Do not place objects on top of it.
- Do not place appliances that have naked flames under or near the unit, as heat from the appliance can damage the unit.
- Do not place the unit's remote controller in direct sunlight. Direct sunlight can damage the remote controller's display.
- Do not use strong chemical cleaners to clean the unit, as doing so can damage the unit's display or other surfaces. If the unit is dirty or dusty, use a slightly damp cloth with very diluted and mild detergent to wipe the unit. Then, dry it with a dry cloth.
- Children shall not play with the appliance.
- Do not dispose of this product as unsorted waste It must be separately collected and processed Ensure that all applicable legislation regarding the disposal of refrigerant, oil and other materials is adhered to. Contact your local waste disposal authority for information about disposal procedures.

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

10. TEST OPERATION

1 The test operation must be carried out after the entire installation has been completed.

2 Please confirm the following points before the test operation:

- The indoor unit and outdoor unit are installed properly.
- Tubing and wiring are correctly completed.
- The refrigerant pipe system is leakage-checked.
- The drainage is unimpeded.
- The heating insulation works well.
- The ground wiring is connected correctly.
- The length of the tubing and the added stow capacity of the refrigerant have been recorded.
- The power voltage fits the rated voltage of the air conditioner.
- There is no obstacle at the outlet and inlet of the outdoor and indoor units.
- The gas-side and liquid-side stop valves are both opened.
- The air conditioner is pre-heated by turning on the power.

3 According to the user's requirement, install the remote controller frame where the remote controller's signal can reach the indoor unit smoothly.

4 Test operation

■ Set the air conditioner under the mode of "COOLING" with the remote controller, and check the following points. If there is any malfunction, please resolve it according to the chapter "Troubleshooting" in the "Owner's Manual".

- 1) The indoor unit
  a. Whether the switch on the remote controller works well.
  b. Whether the buttons on the remote controller works well.
  c. Whether the air flow louver moves normally.
  d. Whether the room temperature is adjusted well.
  e. Whether the indicator lights normally.
  f. Whether the temporary buttons works well.
  g. Whether the drainage is normal.
  h. Whether there is vibration or abnormal noise during operation.
  I. Whether the air conditioner heats well in the case of the HEATING/COOLING type.
- 2) The outdoor unit
  a. Whether there is vibration or abnormal noise during operation.
  b. Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
  c. Whether any of the refrigerant is leaked.

CAUTION

- A protection feature prevents the air conditioner from being activated for approximately 3 minutes when it is restarted immediately after shut off.

11. PART NAMES

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

Air Outlet Louver (adjustable)

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

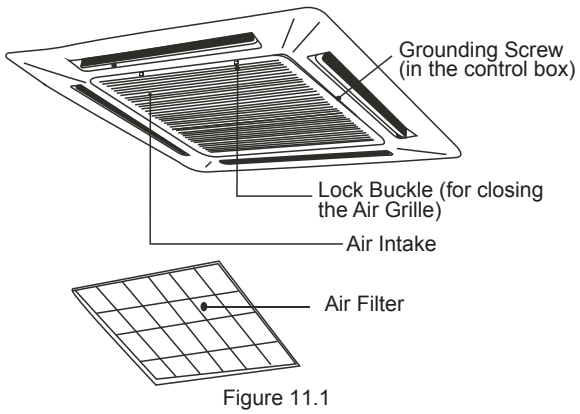


Figure 11.1

12. THE EXPLANATIONS OF THE DISPLAY PANEL

The display panel has two types and the appearance of the two types are shown in Figure 12.1 and Figure 12.2.

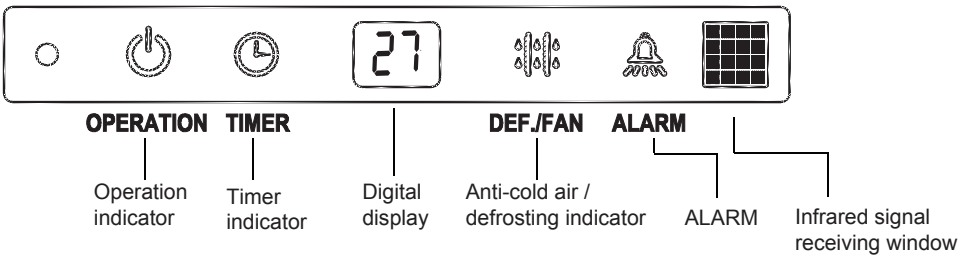


Figure 12.1

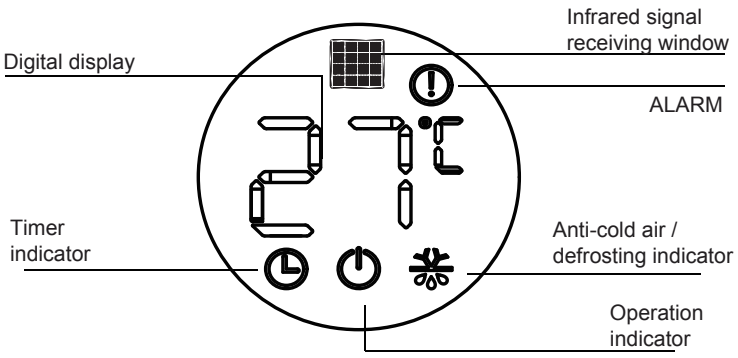


Figure 12.2

Table: Display panel output under normal operating conditions.

Unit state		Display output	
		Digital display panels	
		LED indicator 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
	Anti-cold air mode or outdoor unit defrosting operation	Operation and Anti-cold / defrosting indicators on	Set temperature
Timer function is activated		Timer indicator on	

When the indoor unit connects to the 24V thermostat and G signal is effective, the operation indicator will be on and the display panel output will always be indoor ambient temperature.

13. AIR CONDITIONER OPERATIONS AND PERFORMANCE

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

	Cooling mode	Heating mode
Indoor temperature	17～32°C(DB)	15～27°C(DB)
Indoor humidity	≤80%(a)	
(a) Condensation will form on the unit surface and water dripping out of the unit when the indoor humidity is beyond 80%		

CAUTION

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

To ensure the desired temperature is achieve defficiently, ensure that:

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

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

- Regularly clean air filters inside indoor units.

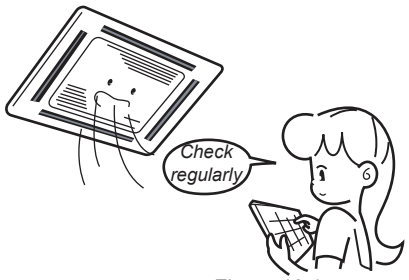


Figure 13.1

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

Figure 13.2

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

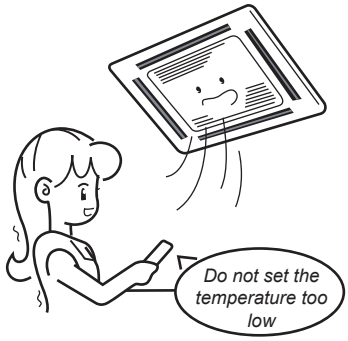


Figure 13.3

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

Figure 13.4

14. ADJUSTING AIR FLOW DIRECTION

Since warmer air rises and cooler air falls, the distribution of warmed/cooled air around a room can be improved by positioning the unit's louvers. The louver angle can be adjusted by pressing the [SWING] button on the remote controller.

CAUTION

- During heating operation, horizontal airflow will aggravate the uneven distribution of room temperature.
- The louver direction: horizontal airflow is recommended during cooling operation. Note the downward air flow will cause condensation on the air outlet and louver surface.

- Adjust the air direction up and down
  a. Auto-swing: Press SWING for the louver to swing up and down.
  b. Manual swing: Adjust the louver to improve the cooling or heating effect.
  c. When cooling adjust the louver horizontally.

Figure 14.1

d. When heating adjust the louver downward.

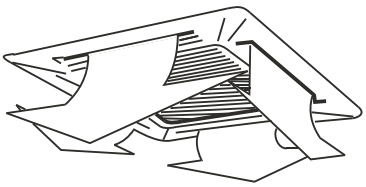


Figure 14.2

15. 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. Take out the air intake grille

- Push the grille switches simultaneously, as indicated in Figure 15.1. Then pull down the air intake grille (together with the air filter, as shown in Figure 15.2). Pull the air intake grille down to 45°, and lift it up to remove the grille.

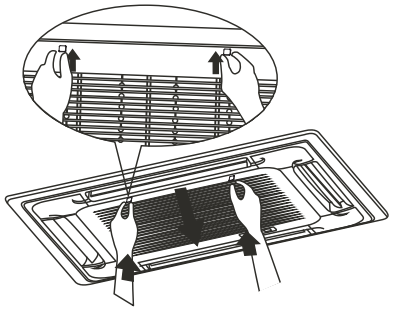


Figure 15.1

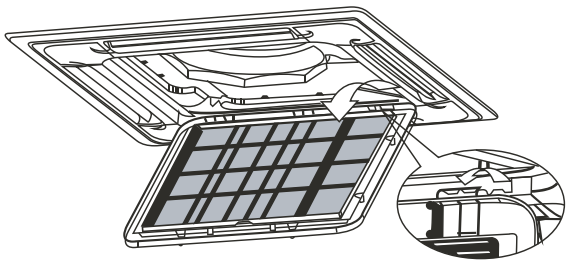


Figure 15.2

CAUTION

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

2. Dismantle the air filter.
3. Clean the air filter

- Dusts will accumulate on the filter along with the unit operation, and need to be removed from the filter,or the unit would not function effectively.
- Clean the filter every two weeks when you use the unit regularly.
- Clean the air filter with a vacuum cleaner or water.

  a. The air intake side should face up when using a vacuum cleaner. (Refer to Figure 15.3)

  b. The air intake side should face down when using clean water. (Refer to Figure 15.4)
- For excessive dusts, use a soft brush and natural detergent to clean it and dry in a cool place.

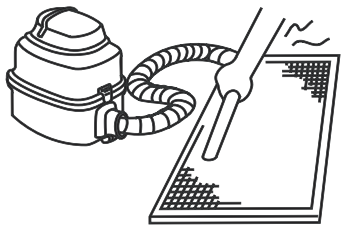


Figure 15.3

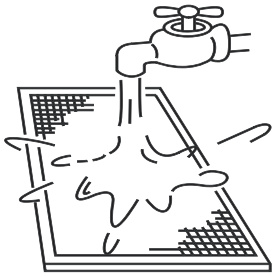


Figure 15.4

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.

16. 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 someoperating conditions. If the OPERATION LED on the unit's panel is lighting, the system is working normally and the unit will start after the intentional delay is complete.

- Heating mode is running when the following panel lights are on:operation and the DEF./FAN LED indicator.

  Cause: the indoor unit activates protective measures because of the low outlet temperature.

Symptom 2: The unit emits white mist

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

Symptom 3: Dust is emitted from the unit

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

Symptom 4: 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.

17. TROUBLESHOOTING

17.1 General

- Sections 17.2 and 17.3 describe some initial troubleshooting steps that can be taken when an error occurs. If these steps do not resolve the issue, arrange for a professional technician to investigate the problem. Do not attempt further investigations or troubleshooting yourself.
- If any of the following errors occur, power the unit off, contact a professional technician immediately and do not attempt troubleshooting yourself:

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

CAUTION

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

17.2 Unit troubleshooting

Symptom	Possible causes	Troubleshooting steps
The unit does not start	A power cut has occurred (the power to the premises has been cut-off).	Wait for the power to come back on.
	The unit is powered off.	Power on the unit. This indoor unit forms part of an air conditioning system that has multiple indoor units that are all connected. The indoor units cannot be powered on individually - they are all connected to one, single power switch. Ask a professional technician for advice regarding how to safely power on the units.
	The power switch fuse may have burned out.	Replace the fuse.
	The remote controller's batteries are dead.	Replace the batteries.
Air flows normally but doesn't cool	The temperature setting is not correct.	Set the desired temperature on the remote controller.
The unit starts or stops frequently	Arrange for a professional technician to check the following: ◆ Too much or too little refrigerant. ◆ No gas in the refrigerant circuit. ◆ The outdoor unit comp ressors have malfunctioned. ◆ The power supply voltage is too high or too low. ◆ There is a blockage in the piping system.	
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 hot test part of the day.
	The unit's air filter is dirty.	Clean the filter.
	The outside temperature is unusually high.	The cooling capacity of the system reduces as the outdoor temperature rises and the system may not provide sufficient cooling if the local climate conditions are not considered when the system's outdoor units were selected.
	Engage a professional air conditioning engineer to check the following: ◆ The unit's heat exchanger is dirty. ◆ The unit's air inlet or outlet is blocked. ◆ A refrigerant leak has occurred.	
Low heating effect	Doors or windows are not completely closed.	Close doors and windows.
	Arrange for a professional technician to check the following: A refrigerant leak has occurred.	

17.3 Remote controller troubleshooting

WARNING

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

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

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

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

17.4 Error codes

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

Content	Display output	Possible causes
T1 temperature sensor error	E2	◆ Temperature sensor not connected properly or has malfunctioned. ◆ Damaged main PCB.
T2 temperature sensor error	E3	
Water level alarm	EE	◆ Water level float stuck. ◆ Water level switch not connected properly. ◆ Damaged main PCB. ◆ Drain pump has malfunctioned.
EEPROM error	E7	◆ Damaged main PCB.

18. PISTON INSTALLATION

Note: The machines will come without expansion devices pre-installed. A piston or TXV will be needed to be installed in the site, according to the matched condenser units.

This indoor unit comes with a piston already for standard combination . See Table 18-1 for piston size. For other combinations, please ask for the correct size from the factory.

Table 18-1. Piston size

Model	50	52	56	58	60	64	68	70	73	75	80	88	90
36K					X*								
60K												X*	

* means that this piston for standard combination

- Installation instruction for the piston

1. Use a wrench to remove the nut and sealing flange.
2. Insert piston with correct orientation.
3. Replace a new outer sealling ring that provided in the unit
4. Re-attach the liquid pipe conection and tight the nut to 18 (±2) N.m.
5. Re-attach and tight the liquid pipe.
6. Follow the steps in the installation guide for vacuum requirements and system start up procedures.
7. Insulate the entire liquid pipe and vapour pipe to prevent condensation.

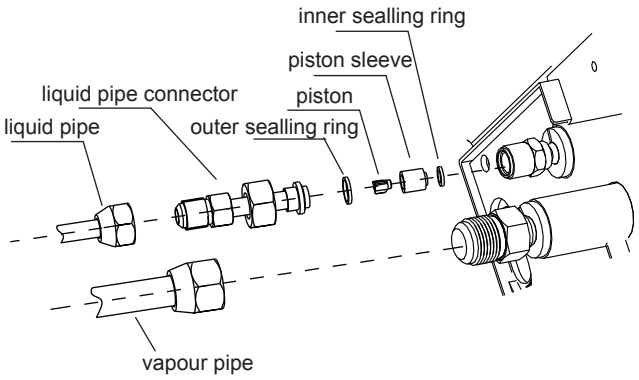


Figure.18-1

- steps to remove the piston (if it is needed)

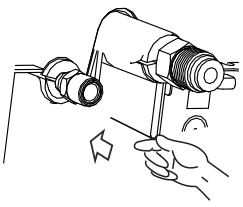


Figure 18-2

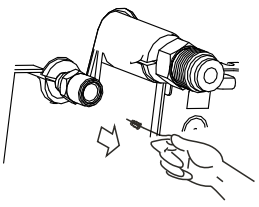


Figure 18-3

19. TXV INSTALLATION

Note: The piston, piston sleeve and inner o-ring must be removed befor installing a TXV.

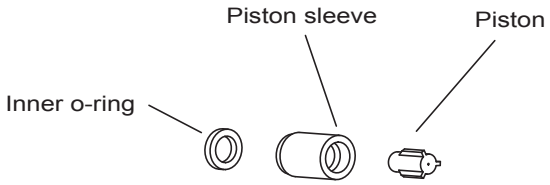


Figure 19-1

Optinal TXV kit installation：

1. Use a wrench to remove the nut and sealing flange.
2. Install the sealing washers, TXV and flange connection tube as shown in Fig.19-2.
3.Use a wrench fasten nut and connecting pipe. (18±2N·m).
4.Connect TXV equalizer pipe to the port on the connecting pipe.
5.Insulate the entire liquid pipe and vapour pipe to prevent condensation..

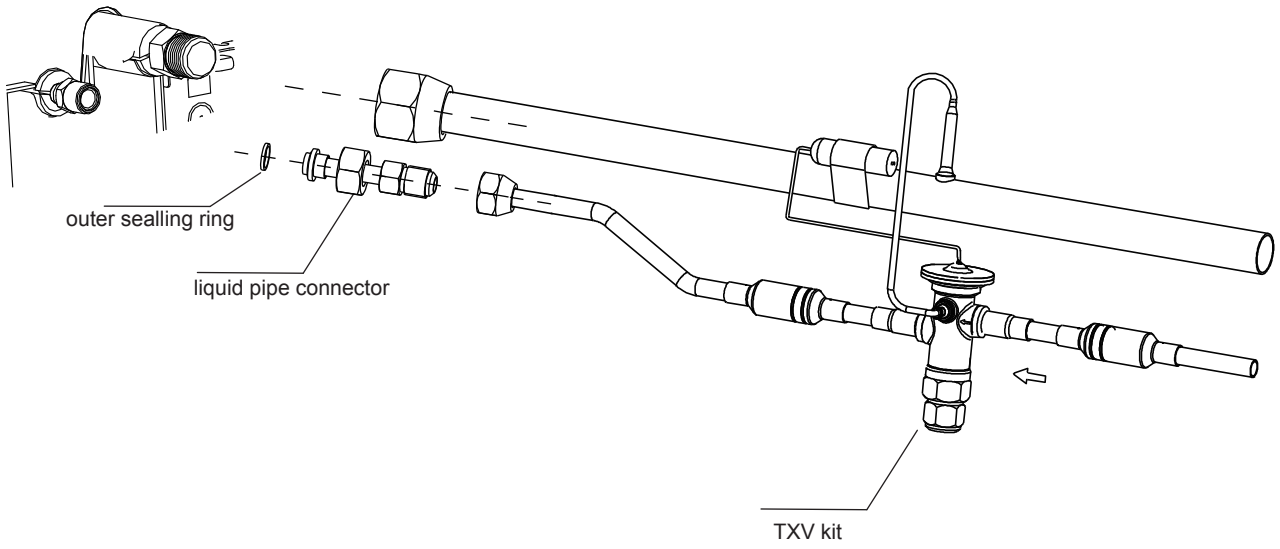


Figure 19-2

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版本更改说明（此页不用做菲林）

印刷技术要求

材质	双胶纸80克
规格	210*297
颜色	黑白印刷
其他	

设计更改记录表

版本升级	更改日期	更改内容	更改页面 （印刷页码）	更改人