

Installation and Operation Manual

Floor Ceiling Air-Conditioning Unit (1.5TON - 5TON)

Unit Model:

Indoor unit

MQS-24018-CFC216A

MQS-24024-CFC216A

MQS-24030-CFC216A

MQS-24036-CFC216A

MQS-24048-CFC216A

MQS-24060-CFC216A

User Notice

- ☆ **Ensure unified power supply for each indoor unit.**
- ☆ **Never install wired controller in wet place or under sunlight directly.**
- ☆ **Shielding twisted pair line must be adopted as signal line or wiring (communication) of wired controller once the unit is installed in the place where there is electromagnetic interference.**
- ☆ **Make sure communication line is connected into correct port to avoid communication malfunction.**
- ☆ **Never knock, throw or frequently disassemble the wired controller.**
- ☆ **Never operate the wired controller with wet hand.**

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1 Names and Functions of Parts



Instruction of LED Board Display

- ① **Indication LED of “POWER”:** The LED will go on when the unit is power on
The LED will go off when the unit is power off
- ② **Indication LED of “COOL” :** The LED is on under “COOL” mode operating
The LED is off when “COOL” mode is not operating
- ③ **Indication LED of “HEAT”:** The LED is on under “HEAT” mode operating
The LED is off when “HEAT” mode is not operating
- ④ **Display of temperature or malfunction code.**

⚠ CAUTIONS:

- Wrong wiring will cause electrical malfunction.
- Do not pull the wire when fixing it with wire clamps.
- Do not make the wire too loose in the outdoor unit.

NOTES:

- If the power cord is damaged, it must be replaced by the manufacturer or its service agent or other qualified person in order to avoid hazard.
- The unit should be installed in accordance with national wiring regulations.
- The gap between all terminals on the breaker must be 3mm at least. All wiring terminals must be installed in its ports. And the wires must be fixed with wire clips.

2 Safety Precaution

To gain full advantage of the air conditioner's functions and to avoid malfunction due to mishandling, we recommend that you read this instruction manual carefully before use.


This air conditioner is classified under "appliances not accessible to the general public".


Please read these "SAFETY PRECAUTIONS" carefully before installing air conditioning equipment and be sure to install it correctly.

After completing installation, conduct a trial operation to check for faults and explain to the user how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the user to store the installation manual along with the operation manual for future reference.

The precautions described herein are classified as WARNING and CAUTION. They both contain important information regarding safety. Be sure to observe all precautions without fail.

Meaning of WARNING and CAUTION notices.

 **WARNING**Failure to follow these instructions properly may result in personal injury or loss of life.

 **CAUTION**Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

After reading, keep this manual in a convenient place so that you can refer to it whenever necessary. If the equipment is transferred to a new user, be sure also to hand over the manual.

WARNING

- Be aware that prolonged, direct exposure to cool or warm air from the air conditioner, or to air that is too cool or too warm can be harmful to your physical condition and health.

- When the air conditioner is malfunctioning (giving off a burning odour, etc.) turn off power supply to the unit and contact our local dealer.

Continued operation under such circumstances may result in a failure, electric shocks or fire hazards.

- Consult our local dealer about installation work.

Doing the work yourself may result in water leakage, electric shocks or fire hazards.

- Consult our local dealer regarding modification, repair and maintenance of the air conditioner.

Improper workmanship may result in water leakage, electric shocks or fire hazards.

- Do not place objects, including rods, your fingers, etc., in the air inlet or outlet.

Injury may result due to contact with the air conditioner's highspeed fan blades.

- Be ware of fire in case of refrigerant leakage.

If the air conditioner is not operating correctly, i.e. not generating cool or warm air, refrigerant leakage could be the cause.

Consult our dealer for assistance.

The refrigerant within the air conditioner is safe and normally does not leak.

However, in the event of a leakage, contact with a naked burner, heater or cooker may result in generation of noxious gas.

Do not use the air conditioner any longer until a qualified service person confirms that the leakage has been

repaired.

- Consult our local dealer regarding what to do in case of refrigerant leakage.

When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.

- Contact professional personnel about attachment of accessories and be sure to use only accessories specified by the manufacturer.

If a defect results from your own workmanship, it may result in water leaks, electric shock or fire.

- Consult our local dealer regarding relocation and reinstallation of the air conditioner.

Improper installation work may result in leakage, electric shocks or fire hazards.

- Be sure to use fuses with the correct ampere reading.

Do not use improper fuses, copper or other wires as a substitute, as this may result in electric shock, fire, injury or damage to the unit.

- Be sure to earth the unit.

Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks or fire.

A high surge current from lightning or other sources may cause damage to the air conditioner.

- Be sure to install an earth leakage breaker.

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

- Consult the dealer if the air conditioner submerges owing to a natural disaster, such as a flood or typhoon.

Do not operate the air conditioner in that case, otherwise a malfunction, electric shock, or fire may result.

- Do not start or stop operating the air conditioner with the power supply breaker turned ON or OFF. Otherwise fire or water leakage may result. Furthermore, the fan will rotate abruptly if power failure compensation is enabled, which may result in injury.

- Do not use the product in the atmosphere contaminated with oil vapor, such as cooking oil or machine oil vapor. Oil vapor may cause crack damage, electric shocks, or fire.

- Do not use the product in places with excessive oily smoke, such as cooking rooms, or in places with flammable gas, corrosive gas, or metal dust.

Using the product in such places may cause fire or product failures.

- Do not use flammable materials (e.g., hairspray or insecticide) near the product.

Do not clean the product with organic solvents such as paint thinner.

The use of organic solvents may cause crack damage to the product, electric shocks, or fire.

- Be sure to use a dedicated power supply for the air conditioner.

The use of any other power supply may cause heat generation, fire, or product failures.

- Ask our dealer or qualified personnel to carry out installation work.

Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.

- Install the air conditioner in accordance with the instructions of this installation manual.

Improper installation may result in water leakage, electric shocks or fire.

- Be sure to use only the specified accessories and parts for installation work.
-

Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.

- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.

A foundation of insufficient strength may result in the equipment falling and causing injury.

- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.

Failure to do so during installation work may result in the unit falling and causing accidents.

- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.

An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.

- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.

Improper connections or securing of wires may result in abnormal heat build-up or fire.

- When wiring the power supply and connecting the wiring between the indoor and outdoor units, position the wires so that the control box lid can be securely fastened.

Improper positioning of the control box lid may result in electric shocks, fire or overheating terminals.

- If refrigerant gas leaks during installation, ventilate the area immediately.

Toxic gas may be produced if the refrigerant comes into contact with fire.

- After completing installation, check for refrigerant gas leakage.

Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker. Be sure to cut off the power supply before touching any electrical parts.

- Be sure to cut off the power supply before touching any electrical parts.

- Do not use the air conditioner for purposes other than those for which it is intended.

Do not use the air conditioner for cooling precision instruments, food, plants, animals or works of art as this may adversely affect the performance, quality and/or longevity of the object concerned.

- Do not remove the outdoor unit's fan guard.

The guard protects against the unit's high speed fan, which may cause injury.

- Do not place objects that are susceptible to moisture directly beneath the indoor or outdoor units.

Under certain conditions, condensation on the main unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping, resulting in fouling or failure of the object concerned.

- To avoid oxygen depletion, ensure that the room is adequately ventilated if equipment such as a burner is used together with the air conditioner.

- After prolonged use, check the unit stand and its mounting situation.

If left in a damaged condition, the unit may fall and cause injury.

- Do not place flammable sprays or operate spray containers near the unit as this may result in fire.

- Before cleaning, be sure to stop unit operation, turn the breaker off or remove the power cord. Otherwise, an electric shock and injury may result.

- To avoid electric shocks, do not operate with wet hands.

- Do not place appliances that produce naked flames in places exposed to the air flow from the unit as this may impair combustion of the burner.

- Do not place heaters directly below the unit, as resulting heat can cause deformation.

- Do not allow a child to mount on the outdoor unit, do not place any object on it.
-

Falling or tumbling may result in injury.

- Do not block air inlets or outlets.

Impaired air flow may result in insufficient performance or trouble.

- Be sure that children, plants or animals are not exposed directly to airflow from the unit, as adverse effects may ensue.

- Do not wash the air conditioner with water, as this may result in electric shocks or fire.

- Do not install the air conditioner at any place where there is a danger of flammable gas leakage.

In the event of a gas leakage, build-up of gas near the air conditioner may result in fire hazards.

- Do not put flammable containers, such as spray cans, within 1m from the air outlet.

The containers may explode because the warm air output of the indoor or outdoor unit will affect them.

- Arrange the drain to ensure complete drainage.

If proper drainage from the outdoor drain pipe does not occur during air conditioner operation, there could be a blockage due to dirt and debris build-up in the pipe.

This may result in a water leakage from the indoor unit.

Under these circumstances, stop air conditioner operation and consult our dealer for assistance.

- The appliance is not intended for use by unattended young children or infirm persons.

Impairment of bodily functions and harm to health may result.

- Children should be supervised to ensure that they do not play with the unit or its remote controller.

Accidental operation by a child may result in impairment of bodily functions and harm health.

- Do not let children play on or around the outdoor unit.

If they touch the unit carelessly, injury may be caused.

- Consult our dealer regarding cleaning the inside of the air conditioner.

Improper cleaning may cause breakage of plastic parts, water leakage and other damage as well as electric shocks.

- To avoid injury, do not touch the air inlet or aluminium fins of the unit.

- Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.

Leaves are a hotbed for small animals which can enter the unit. Once get in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.

- Never touch the internal parts of the controller.

Do not remove the front panel. Touching certain internal parts will cause electric shocks and damage to the unit.

Please consult our dealer about checking and adjustment of internal parts.

- Do not leave the remote controller wherever there is a risk of wetting.

If water gets into the remote controller there is a risk of electrical leakage and damage to electronic components.

- Watch your steps at the time of taking out or put back the air filter for cleaning or inspection.

High-place work is required, to which utmost attention must be paid.

If the scaffold is unstable, you may fall or topple down, thus causing injury.

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

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

- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or
-

radios to prevent picture interference and noise.

(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)

- Remote controller (wireless) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types).

Install the indoor unit as far away from fluorescent lamps as possible.

- Do not install the air conditioner in the following locations:

1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).

Plastic parts will deteriorate, parts may fall off and water leakage could result.

2. Where corrosive gas, such as sulphurous acid gas, is produced.

Corroding of copper pipes or soldered parts may result in refrigerant leakage.

3. Near machinery emitting electromagnetic radiation.

Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.

4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.

Operating the unit in such conditions may result in fire.

3 Defrosting Control (Heat Pump)

The Defrosting Mode:

After the compressor consecutively runs for “t” minutes, it will start defrosting if the sensor detects the temperature $\leq T1$ °C for consecutive 1 minute. Defrosting will stop after running for 10 minutes or the sensor detects the temperature over “T2” °C.

Defrosting Control:

There are 8 defrosting modes corresponding to different DIP ways (refer to Table 3-1, **NOTE: the contents of the table may vary as the technology updates.**)

Firstly the abbreviations are defined as below:

T-----the defrosting temp sensor starts to detect after the compressor has been operating for t minutes accumulatively

T1-----the defrosting circuit on the main board starts to work when the defrosting temp sensor has been in T1 °C or under T1 °C for 1 minute continuously

T2-----The defrosting will stop after it goes on for 10 minutes continuously or the temp sensor detects the ambient temperature over T2 °C

T-----outdoor ambient temperature

Outdoor ambient temp sensor	Outdoor ambient temp sensor does not work					Outdoor ambient temp sensor works						
	DIP	000	001	010	011	100	101		110		111	
T	-	-	-	-	-	-	≥ -3	< -3	≥ -3	< -3	≥ -3	< -3
T	44	44	60	90	30	30	60	44	90	90	120	
T1	-2	-5	0	0	0	-2	-10	-2	-10	-2	-15	
T2	15	20	20	20	20	20	15	20	15	20	15	

In Summary:

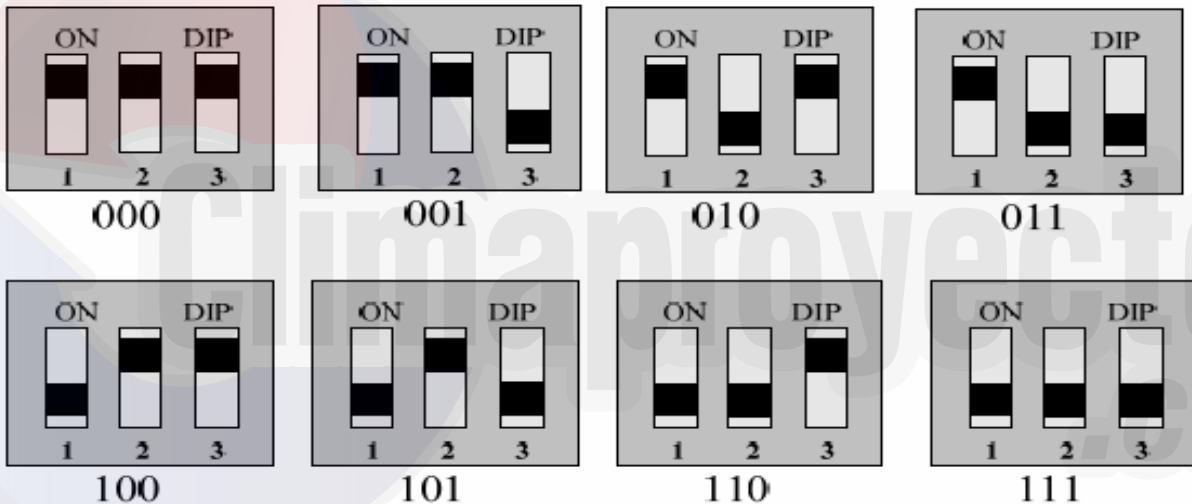
After t mins of operation of the compressor under “heating” mode, defrosting starts when the defrosting thermistor indicates the temperature below T1 for 1 min. Meanwhile, the 4-way valve is energized, the fan motor of outdoor unit stops running and the auxiliary electric heating device is powered. The defrosting will stop after it operates for 10 consecutive minutes or the temp sensor detects the ambient temperature over T2°C. At the same time, the 4-way valve is re-energized, the fan motor of outdoor unit powered and the auxiliary electric heating device runs as per the setting of wired controller.

The defrosting stops as soon as the A/C is diverted to “COOLING” mode while the outdoor unit defrosting.

Forced Defrosting:

By pressing the forced defrosting button, the A/C starts to defrost promptly. At the same time, the 4-way valve is energized, the fan motor of outdoor unit stops running and the auxiliary electric heating device is powered. The defrosting will stop after it goes on for 10 minutes or the temp sensor detects the ambient temperature over T2. Meanwhile, the 4-way valve is re-energized, the fan motor of outdoor unit is electrified and the auxiliary electric heating device runs as per the setting of the wired controller.

DIP Switch (SA1):



⚠ WARNING:

The default setting of DIP switch in the WZ14301 -1 main board of the outdoor unit is 000.

NOTE:



(The number port refers to “1”, the ON port to “0”)

Main Board LED Display Instruction		
	LED1	LED2
Normal Operation	Flashing every 0.5s	Flashing every 0.5s
Defrosting	On	On

High Pressure Protection	Flashing every 0.5s	Off
Low Pressure Protection	Off	Flashing every 0.5s
Outdoor Ambient Temp. Sensor Malfunction	Off	On
Defrosting Temp. Sensor Malfunction	On	Off

Table 3-2: Main Board LED Display Instruction

4 Names and Functions of Remote Controller Buttons


NOTE: This remote controller is applicable to many units. Some buttons unavailable in this unit such as “TURBO”, “BLOW”, “LIGHT”, “TEMP”, “HEALTH|SAVE ” and  would not be described below.

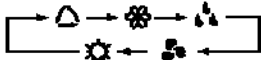


Fig. 4-1

1. “ON/OFF” button

After powering the unit, when the unit is off press the “ON/OFF” button to start the unit. And when the unit is on, press the same button to turn it off.

2. “Mode” button



Press this button, and the unit will switch to the mode you want. Press it once, and the mode will be changed in a regular order as AUTO –COOL –DRY –FAN –HEAT.

 AUTO;  COOL;  DRY;  FAN;  HEAT

3. “+” and “-” button

Press the “+” or “-” button to set your desired temperature. The temperature ranges from 16°C to 30°C. It is not necessary to set temperature at the AUTO mode. And when setting the timing hours, press the “+” or “-” button once, and the timing hours will increase or decrease 0.5 hour.

4. “FAN” button

Press the “FAN” button to set fan speed. The AUTO FAN, LOW, MID or HIGH could be selected.

5. button

Press this button to turn on or turn off the swing function.

6. “SLEEP” button

Press this button to set the sleep mode. Once the SLEEP mode is set, the temperature increases 1°C after 1 hour, and another 1°C increase after 2 hours in the COOL mode. While in HEAT mode, the temperature will decrease 1°C after 1 hour, and another 1°C decrease after 2 hours.


7. “TIMER” button

Press the button to set the timing function. When the timing function is on, press this button to cancel it. When it is off, press this button once to start and “Hour On/Off” will appear and flash in the display. In this case, press the +/- button to adjust time (press the +/- button continuously to change timing value quickly). The setting time ranges from 0.5 to 24 hr. Press this button once again to fix the time, then remote controller sends out signals immediately and “Hour On/Off” will stop flashing. It will quit timer mode in case of flashing for 5 consecutive seconds without pressing. If timing is set, press this button once again to quit it.

About AUTO RUN :

When AUTO RUN mode is selected, the setting temperature would not be displayed on the LCD. The unit automatically selects the suitable running mode and makes ambience comfortable in accordance with room temp.


About LOCK:

Press “+” and “-” simultaneously to lock or unlock the keyboard. If the remote control is locked, the icon  will be displayed on the LCD, in which case, press any button, and the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

About switch between Fahrenheit and Centigrade:

Under the state of unit off, press MODE and – buttons simultaneously to switch °C and °F.

Notices of Batteries Replacement

1. Slightly press the mark  and push the back cover of remote controller towards the arrowheaded direction (as shown in Fig. 4-2).
2. Take out the old batteries and insert two AAA alkaline cells (as shown in Fig. 4-3).
3. Attach the back cover of the remote controller.

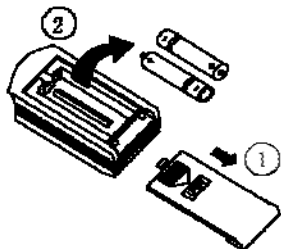


Fig. 4-2

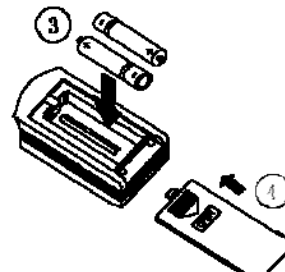



Fig. 4-3

NOTES:

1. When changing the batteries, do not use used or different batteries. Otherwise, it can cause malfunction of the remote controller.
2. If the remote controller will not be used for a long time, please take them out so as to prevent battery leakage and its damage to the remote controller.
3. The operation should be in its receiving range.
4. It should be placed 1m away from the TV set or stereo sound sets.
5. If the remote controller fails to operate normally, please take the batteries out, and then reinsert them 30s later; if it still doesn't work, please replace the batteries.
6. If the main unit needs to be remote controlled, please aim the remote controller at the receiver of main unit in order to enhance the receiving sensitivity of the main unit.
7. When the remote controller sends out signals, a mark  will flicker for about 1s. The alarm rings if the main unit receives effective signals.

Errors Display

Error code meaning:

Error code	Malfunction
E2	Indoor anti-freezing protection
E6	Communication malfunction
E9	Water overflow protection
F0	Indoor unit ambient sensor malfunction at air return opening
F1	Evaporator sensor malfunction

5 Wired Remote Controller

5.1 Displaying Part



Fig.5-1 Outline of wired controller

5.1.1 LCD Display of Wired Controller

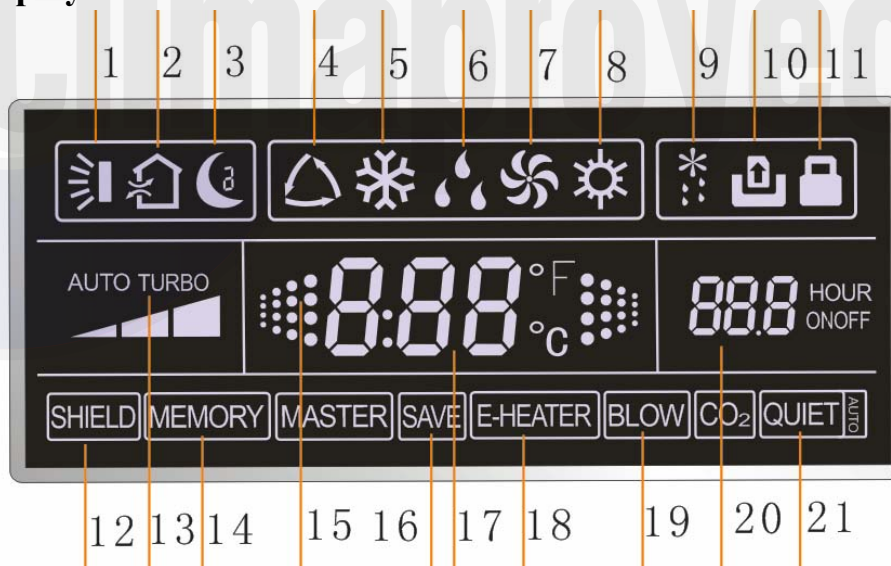


Fig.5-2 LCD display

5.1.2 Instruction to LCD Display

Table 3.1

No.	Description	Instruction to Displaying Contents
1	Swing	Swing function
2	Air *	Air exchange function
3	Sleep	Sleeping states
4	Running mode	Each kind of running mode of indoor unit (auto mode)
5	Cooling	Cooling mode
6	Dry	Dry mode
7	Fan	Fan mode
8	Heating	Heating mode
9	Defrost *	Defrosting state
10	Gate-control card *	Gate control
11	Lock	Lock state
12	Shield	Shielding state (buttons, temperature, on/off, mode or save is shielded by long-distance monitoring)
13	Turbo	Turbo function state
14	Memory	Memory state (Indoor unit resumes original setting state after power failure and then power recovery)
15	Twinkle	Flicking when unit is on without operation of buttons
16	Save	Energy-saving state
17	Temperature	Ambient/setting temperature value
18	E-Heater *	E-HEATER display means electric-heater is available
19	Blow	Blow mark
20	Timer	Timer-displayed location
21	Quiet	Quiet state(two types: quiet and auto quiet)

Notes: The functions with * are reserved for other models and are not applicable for the models listed in this manual.

5.2 Buttons

5.2.1 Silk Screen of Buttons



Fig. 5-3 Silk screen of buttons

5.2.2 Instruction to Function of Buttons

Table 3.2

No.	Description	Function of Button
1	Enter/cancel	(1) Function selection and canceling; (2) Press it for 5s to enquiry the outdoor ambient temperature.
2	▲	(1) Running temperature setting of indoor unit, range :16~30°C (2) Timer setting, range:0.5-24hr
6	▼	(3) Switchover between quiet/auto quiet
3	Fan	Setting of high/middle/low/auto fan speed
4	Mode	Setting of cooling/heating/fan/dry mode of indoor unit
5	Function	Switchover among these functions of air/sleep/turbo/save/e-heater/blow/quite
7	Timer	Timer setting
8	On/off	Turn on/off indoor unit
4 Mode and 2 ▲	Memory function	Press Mode and ▲ for 5s under off state of the unit to Enter/cancel key memory function (If memory is set, indoor unit will resumer original setting state after power failure and then power recovery. If not, indoor unit is defaulted to be off after power recovery. Memory function is set to be before outgoing.)
2 ▲ and 6 ▼	Lock	Upon startup of the unit without malfunction or under off state of the unit, press ▲ ▼ key at the same time for 5s in to lock state. In this case, any other buttons won't respond the press. Repress ▲ ▼ key for 5s to quit lock state.

5.3 Installation of Wired Controller

5.3.1 Installation of Wired Controller

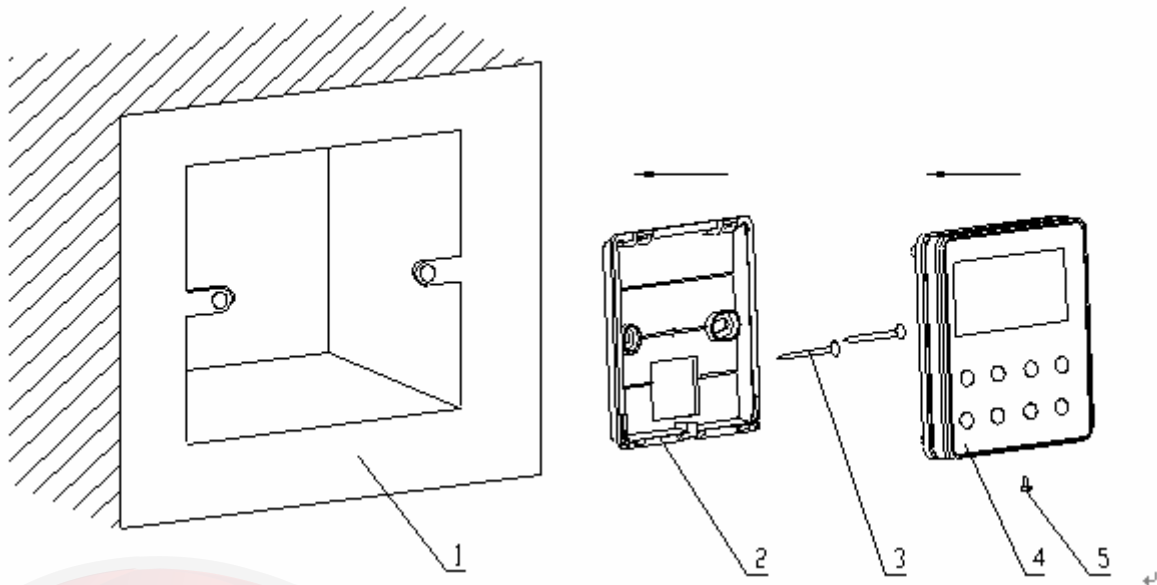


Fig.5-4: Sketch for Installation of Wired Controller

No.	1	2	3	4	5
Description	Socket's base box installed in the wall	Soleplate of controller	Screw M4X25	Front panel of controller	Screw ST2.2X6.5

Fig.5-4: Sketch for Installation of Wired Controller. Pay attention to the following items during installation of wired controller:

1. Cut off power supply of heavy-current wire embedded in mounting hole in the wall before installation. It is prohibited to perform the whole procedure with electricity.
2. Pull out 4-core twisted pair line in mounting hole and then make it through the rectangle hole at the back of controller's soleplate.
3. Joint the controller's soleplate on wall face and then fix it in mounting hole with screws M4X25.
4. Insert the 4-core twisted pair line through rectangle hole into controller's slot and buckle the front panel and soleplate of controller together.
5. At last, fix the controller's front panel and soleplate with screws ST2.2X6.5.

Caution:

During connection of wirings, pay special attention to the following items to avoid interference of electromagnetism to unit and even failure of it.

1. To ensure normal communication of the unit, signal line and wiring (communication) of wired controller should be separate from power cord and indoor/outdoor connection lines. The distance between them should be kept 20cm in min.
2. If the unit is installed at the place where there is interference of electromagnetism, signal line and wiring (communication) of wired controller must be shielded by twisted pair lines.

5.4 Instruction to Operation

5.4.1 On/Off

Press On/Off button to turn on the unit.
Repress this button to turn off the unit.

Note: The state shown in Fig.5-5 indicates off-state of the unit after energization.
The state shown in Fig.5-6 indicates on-state of the unit after energization.



Fig.5-5 Off state of the unit



Fig.5-6 On state of the unit

5.4.2 Mode Setting

Under on-state of the unit, press **Mode** button to switch the operation modes as the following sequence:



5.4.3 Temperature Setting

Press ▲ or ▼ button to increase or decrease of setting temperature under on-state of the unit. If press either of them continuously, temperature will be increased or decreased by 1°C every 0.5s.

In Cooling, Dry, Fan and Heating mode, temperature setting range is 16°C~30°C.

In Auto mode, the setting temperature is un-adjustable.

As shown in Fig.5-7



Fig 5-7

5.4.4 Fan Speed Setting

Press **Fan** button, fan speed of indoor unit will change as below:

As shown in Fig.5-8

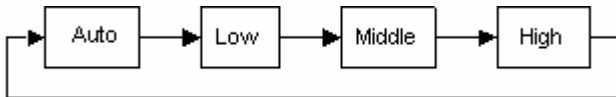


Fig.5-8

5.4.5 Swing Control Function

Under on-state of unit, press **Function** button till the unit enters swing control function and then press “**Enter/cancel**” button to turn on “swing” control function.

During swing function, press **Function** button till the unit enters swing control function and then press **Enter/cancel** button to cancel swing control function.

Swing control function setting is shown in Fig 5-9

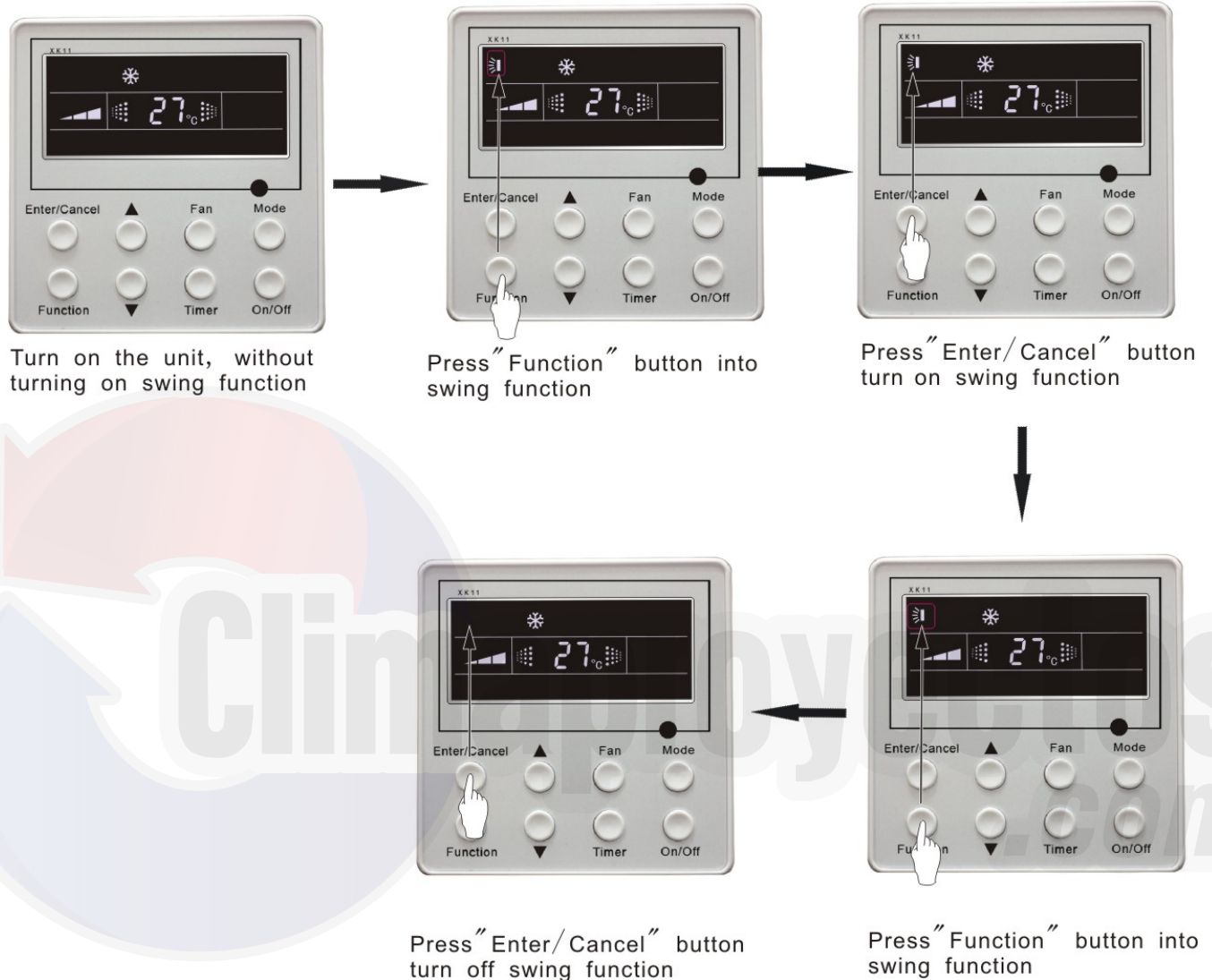


Fig. 5-9

5.4.6. Timer Setting

Press **Timer** button to set timer off of the unit. Under off-state of the unit, press **Timer** button to set timer on of the unit in the same way.

Timer on setting: Under off-state of the unit without timer setting, if **Timer** button is pressed, LCD will display **xx. Hour**, with **ON** blinking. In this case, press **▲** or **▼** button to adjust timer on and then press **Timer** to confirm. If **Mode** button is pressed before pressing **Timer** button to confirm, timer mode will be switched to timer off setting mode. In this case, LCD displays **xx. Hour**, with **OFF** blinking. In this case, press **▲** or **▼** button to adjust timer off and then press **Timer** to confirm. When LCD displays **xx. Hour On Off**, **xx. Hour** means time of timer on, but time of timer off won't be displayed.

Timer off setting: Under **on-state** of the unit without timer setting, if **Timer** button is pressed, LCD will display **xx. Hour**, with **OFF** blinking. In this case, press **▲** or **▼** button to adjust timer on and then press **Timer** to confirm. If **Mode** button is pressed before pressing **Timer** button to confirm, timer mode will be switched to timer on setting mode. In this case, LCD displays **xx. Hour**, with **ON** blinking. In this case, press **▲** or **▼** button to adjust timer on and then press **Timer** button to confirm. When LCD displays **xx. Hour On Off**, **xx. Hour** means time of timer off, but time of timer on won't be displayed.

Cancel timer: After setting of timer, if **Timer** button is pressed, LCD won't display **xx. Hour** so that timer setting

is canceled.

Timer off setting under **on-state** of the unit is shown as Fig.5-10

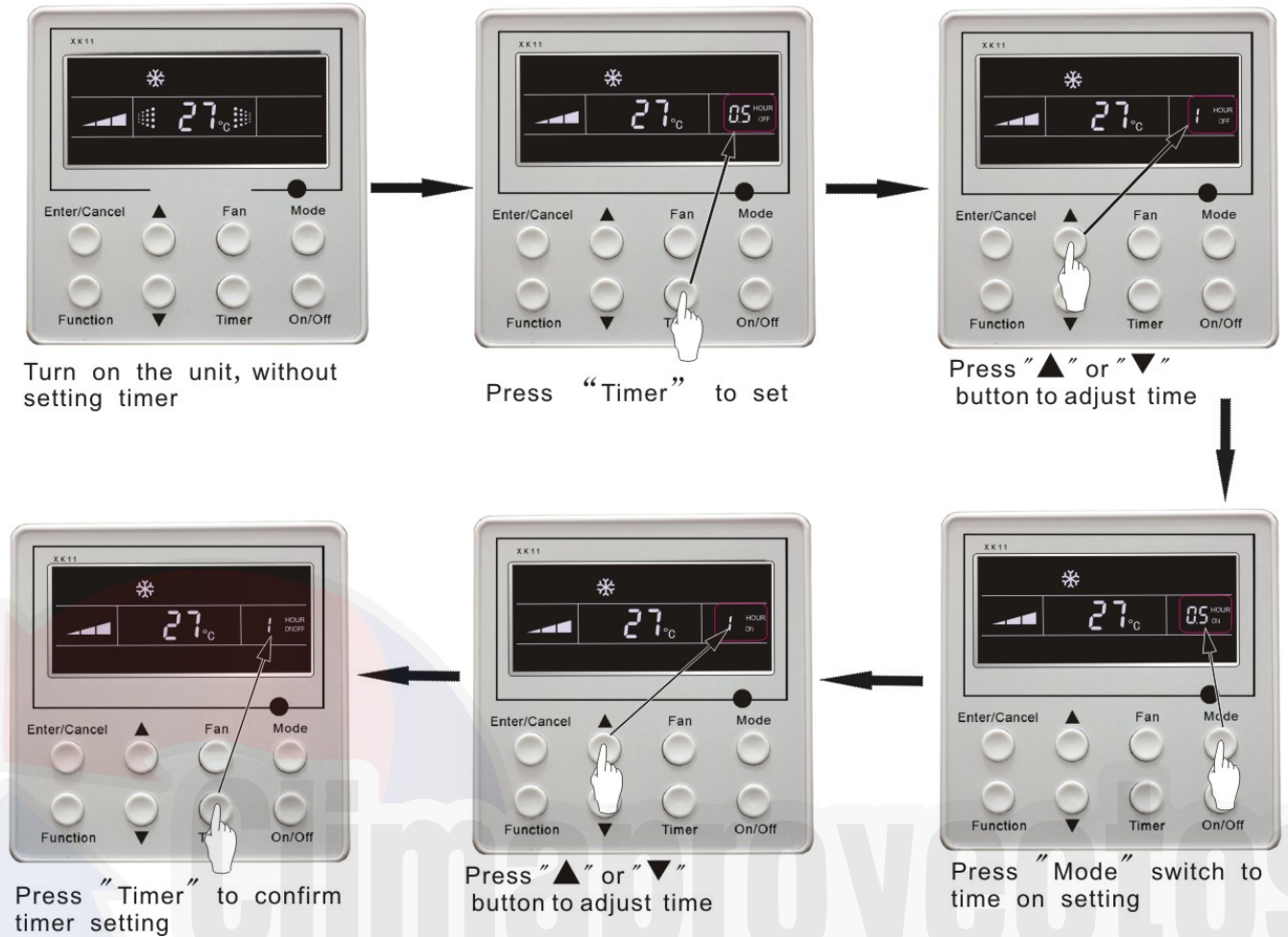


Fig. 5-10 Timer setting under on state of the unit

Timer range: 0.5-24hr. Every press of ▲ or ▼ button will make setting time increased or decreased by 0.5hr. If press either of them continuously, setting time will automatically increase/ decrease by 0.5hr every 0.5s.

Note:

1. If both timer on and timer off are set in unit on interface, the wired controller only display time of time off. If both of them are set in unit off-state, only time of timer on is displayed.
2. Timer on in unit on-state is timed from the time of unit off and timer off in unit off-state is timed from the time of unit on.

5.4.7 Air Exchange Setting *

Turn on air Exchange function:

Under on-state of the unit, press **Function** button to go to the this function setting (**Air** mark blinks).AIR 1 displayed at the ambient temperature-displayed location (888) is defaulted (the last type of **AIR** will be displayed after adjustment).Press **▲** or **▼** button to adjust air type. Press **Enter/Cancel** button to turn on/off air function. After turning on this function, the air mark shows.

There are 10 types of AIR, but only 1-2 types are for remote control. Refer to the following details:

- 1—The unit continuously runs for 60min, and fresh air valve runs for 6 min.
- 2—The unit continuously runs for 60min, and fresh air valve runs for 12 min.
- 3—The unit continuously runs for 60min, and fresh air valve runs for 18 min.
- 4—The unit continuously runs for 60min, and fresh air valve runs for 24 min.
- 5—The unit continuously runs for 60min, and fresh air valve runs for 30 min.
- 6—The unit continuously runs for 60min, and fresh air valve runs for 36 min.
- 7—The unit continuously runs for 60min, and fresh air valve runs for 42 min.
- 8—The unit continuously runs for 60min, and fresh air valve runs for 48 min.
- 9—The unit continuously runs for 60min, and fresh air valve runs for 54 min.
- 10—The unit continuously runs for 60min, and fresh air valve always runs.

Turn off air Exchange function: During Air function, press **Function** button to go to the Air function. In this case, **air** mark is blinking, and then press **Enter/cancel** button to turn off this function. Air mark will subsequently disappear. Air Exchange setting is shown as in fig.5-11:

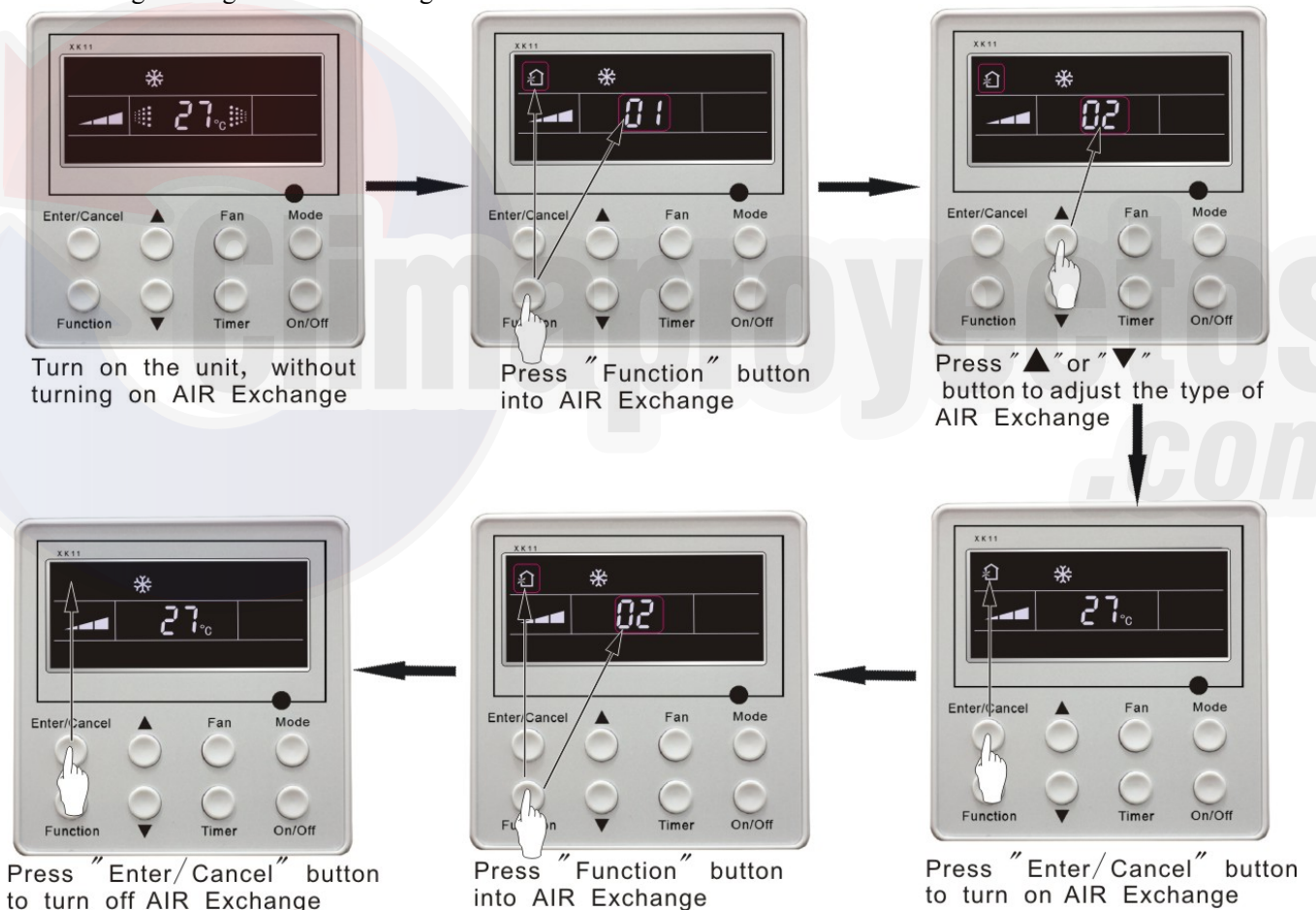


Fig.5-11 Air exchange device

Note: In air exchange mode, press **Function** button or there is not any operation within 5s after the last button operation, the system will be quit from **air exchange** setting and current energy-saving data won't be memorized.

5.4.8 Sleep Setting

Sleep on: Press **Function** button under on-state of the unit into sleep function and then press **Enter/cancel** button to turn on sleeping function.

Sleep off: During sleep on-state, press **Function** button to go to the sleep function and then press **Enter/cancel** button to turn off this function.

Sleep setting is shown as Fig.5-12:

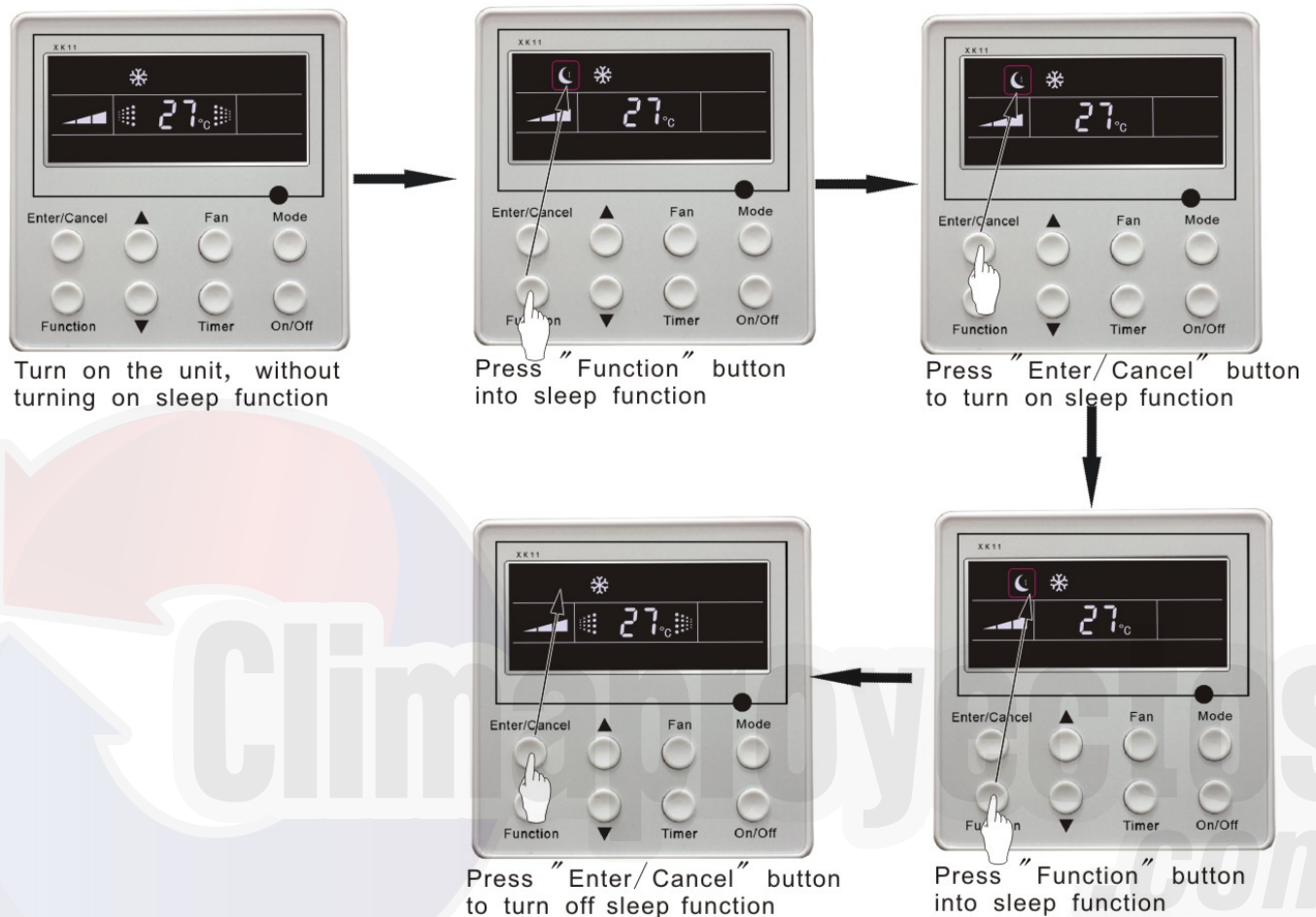


Fig.5-12 Sleep setting

Sleep setting is clear after power failure and then power recovery. There is not sleep function in fan and auto mode.

Note: In cooling and dry mode, if the unit with sleep function has run for 1 hour, the preset temperature will be increased by 1°C and 1°C in another 1 hour. After that, the unit will run at this temperature. In heating mode, if the unit with sleep function has run for 1 hour, the preset temperature will be decreased by 1°C and 1°C in another 1 hour. After that, the unit will run at this temperature.

5.4.9 Turbo Function Setting

TURBO function: The unit at high fan speed can realize quick cooling or heating so that room temperature can quickly approach setting temperature.

In cooling or heating mode, press **Function** button till the unit enters **TURBO** function and then press **Enter/cancel** button to turn on **TURBO** function.

During **TURBO** function, press **Function** button till the unit enters **TURBO** function and then press **Enter/cancel** button to cancel **TURBO** function.

TURBO function setting is shown in Fig.5-13

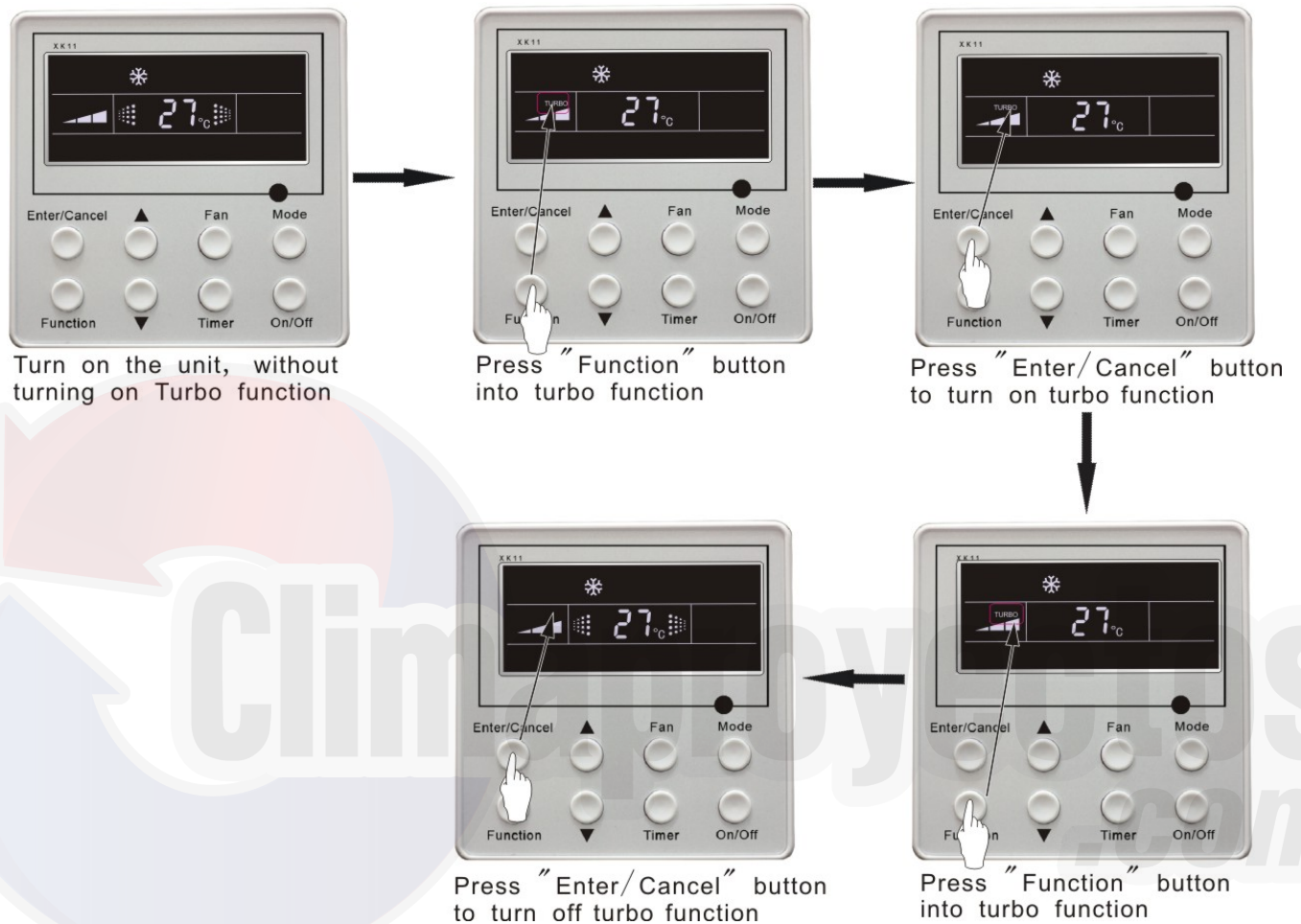


Fig.5-13 Turbo Function Setting

Note:

1. **TURBO** function will be turned off after power failure and then recovery. In dry, fan and auto mode, **TURBO** function can not be set and **TURBO** mark won't be displayed.
2. **TURBO** function will be automatically canceled after setting of quiet function.

5.4.10 SAVE Function Setting

Energy Saving Function: Energy saving can make the air conditioner runs in a smaller temperature range by setting lower limited value of setting temperature in cooling or dry mode and upper limited value in heating mode.

Energy Saving Setting for Cooling

Under on-state and in cooling or dry mode of the unit, press **Function** button into energy saving function, with **SAVE** blinking. Press **▲** or **▼** button to adjust lower limited value of setting temperature in cooling mode. After that press **Enter/Cancel** button to turn on energy saving function for cooling.

Energy Saving Setting for Heating

Under on state and in heating mode of the unit, press **Function** button into energy saving function, with **SAVE** blinking. Press **Mode** button into energy saving function for heating and then press **▲** or **▼** button to adjust upper limited value of setting temperature in heating mode. After that, press **Enter/Cancel** button to turn on energy saving function for heating.

After energy saving function is turned on, press **Function** button into energy saving function and press **Enter/cancel** to cancel this function.

The energy saving setting is shown in the fig.5-14.

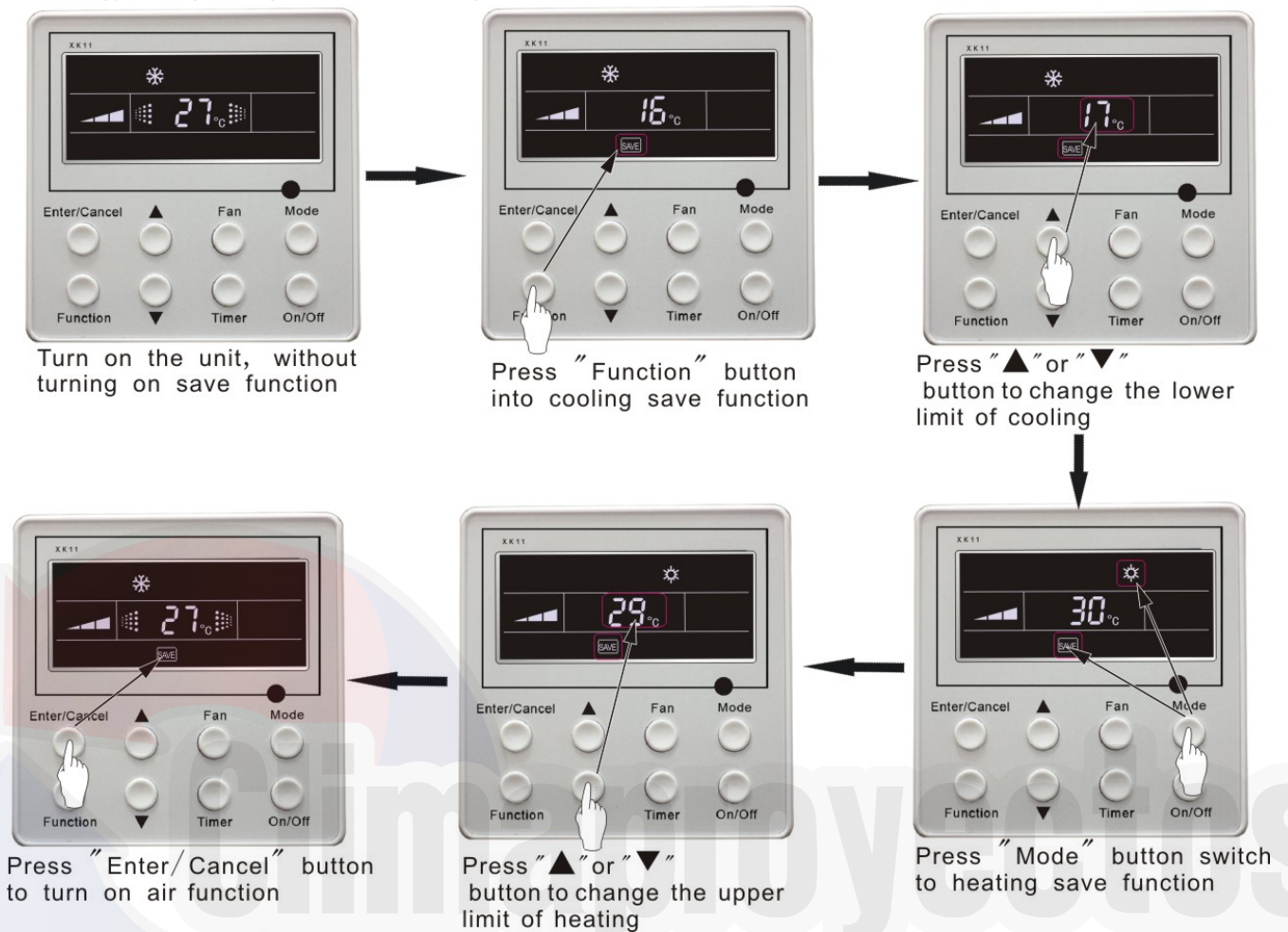


Fig.5-14 Energy Saving Setting

Note:

1. In Auto running mode with save function on, the unit will be forcibly quit Auto running Mode and change to current operation mode, After setting of save, sleep function will be canceled.
2. In save mode, if **Function** button is pressed or there is not any operation within 5s after the last button operation, the system will be quit from save function setting and current data won't be memorized.
3. After power failure and then recovery, save function setting will be memorized.
4. The lower limited value in cooling mode is 16°C and the upper limited value in heating mode is 30°C.
5. After save setting, if the setting temperature is out of the range in the mode, the limited value will prevail.

5.4.11 E-HEATER Setting *

E-HEATER: In the heating mode, E-heater is allowed to be turned on for improvement of efficiency.

If heating mode is turned on by button operation, auxiliary electric heating function will be automatically turned on.

Press **Function** button in heating mode to go to the auxiliary electric heating function, the **E-HEATER** blinking, and press **Enter/cancel** button to turn on this function. In this case, the **E-HEATER** will be displayed, which means E-heater is allowed to be turned on.

If auxiliary electric heating function is on, press **Function** button to confirm or press **Enter/cancel** button to cancel. In this case, **E-HEATER** won't be displayed, which means E-heater is prohibited to be turned on.

The setting of this function is shown as Fig.5-15 below:

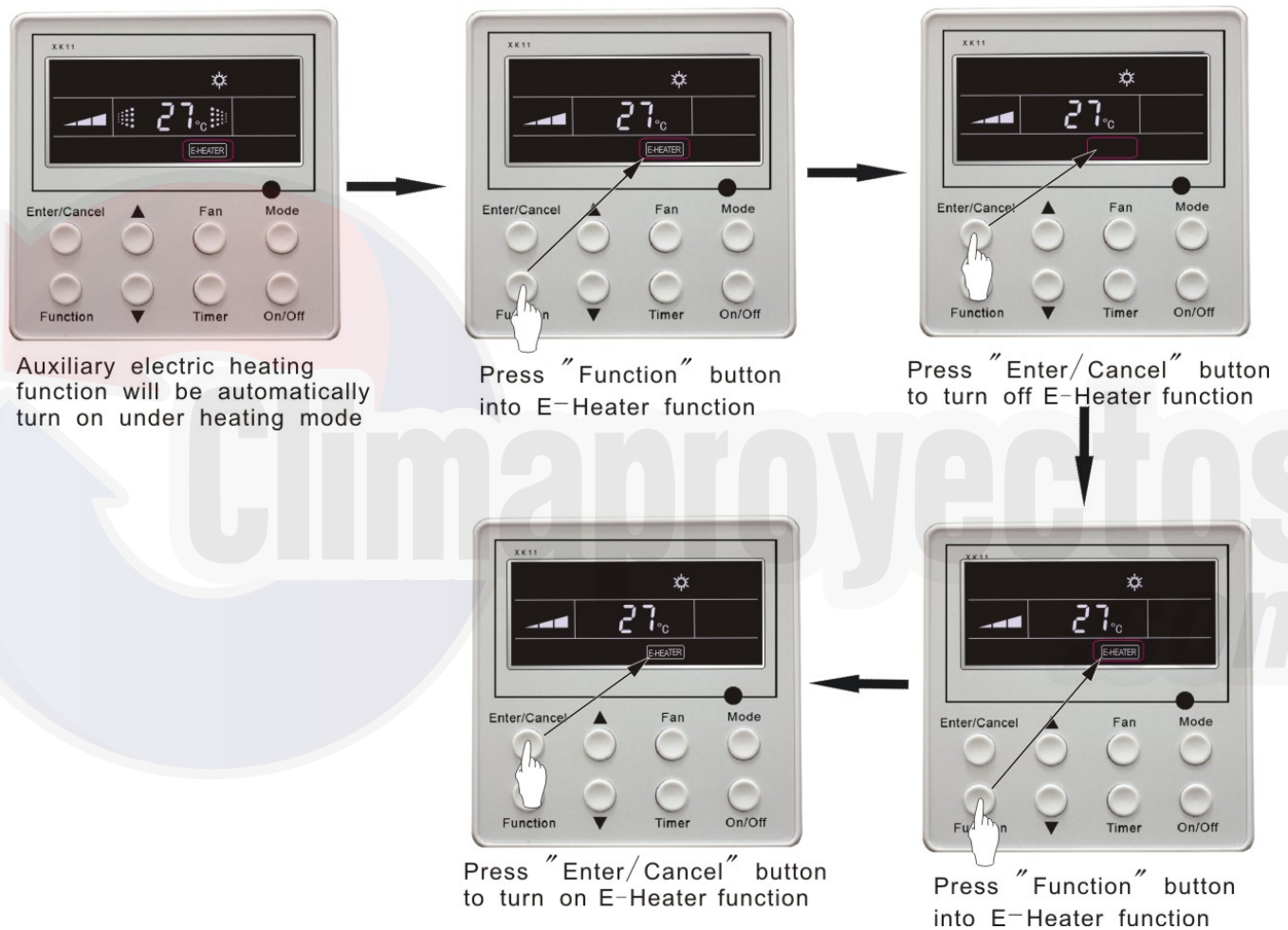


Fig. 5-15 Auxiliary Electric Heating Function Setting

Note:

E-HEATER can not be set in cooling, dry and fan mode, **E-HEATER** mark won't be displayed. The setting is shown in Fig.5-15.

5.4.12 Blow Function Setting

BLOW function: After the unit is turned off, water in evaporator of indoor unit will be automatically evaporated to avoid mildew.

In cooling and dry mode, press **Function** button till the unit enters **BLOW** function, with **BLOW** blinking, and then press **Enter/cancel** button to turn on this function.

In **BLOW** mode, press **Function** button till the unit enters **BLOW** function and then press **Enter/cancel** button to cancel this function.

BLOW function setting is shown in Fig.5-16

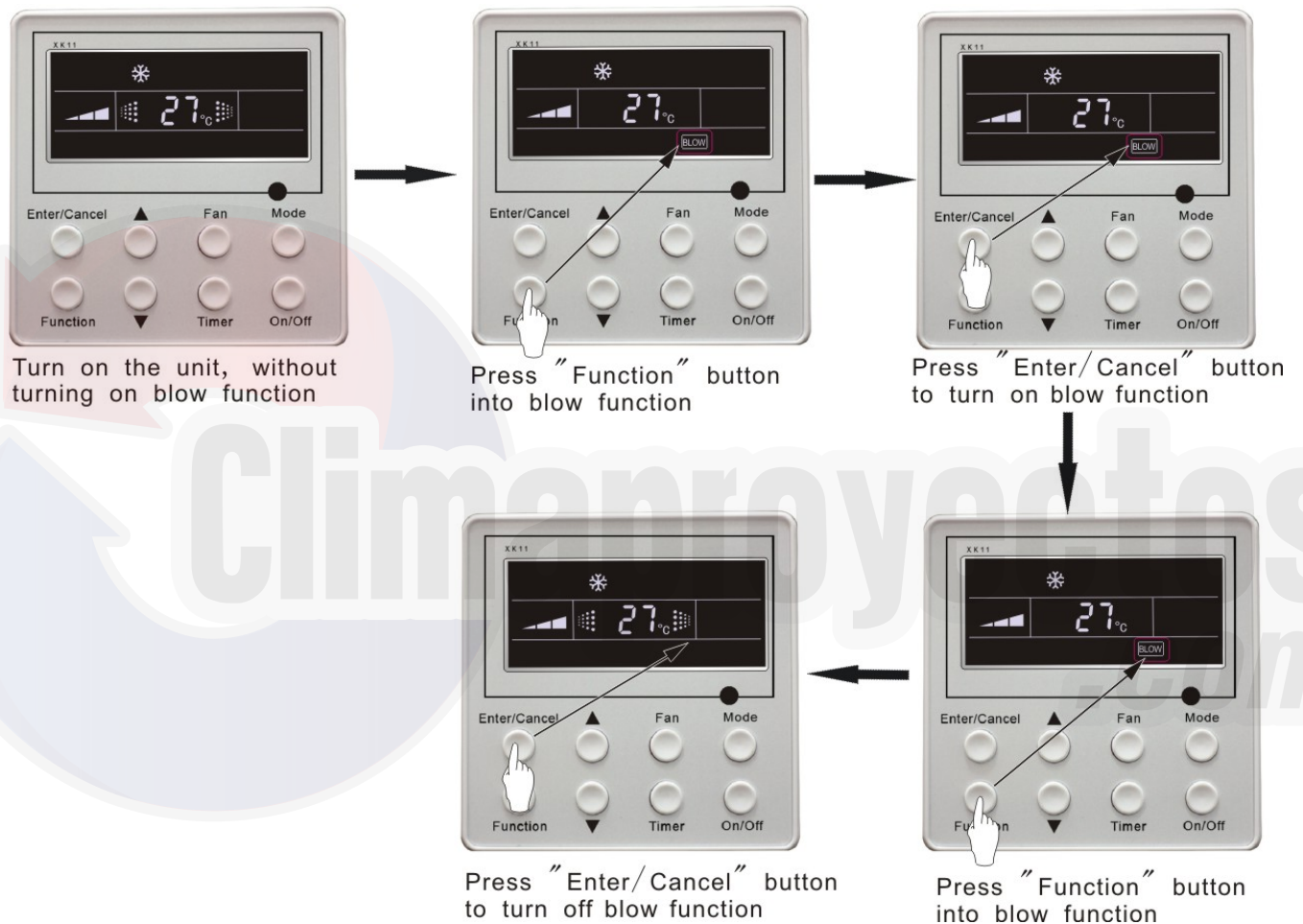


Fig. 5-16 Blow function setting

Note:

1. After setting **BLOW** function, turn off the unit by pressing **On/Off** button on remote controller, indoor fan will run at low fan speed for 10 min. (**BLOW** shows). Meanwhile, if **BLOW** function is canceled indoor fan will be turned off directly.
2. There is not **BLOW** function in fan or heating mode.

5.4.13 Quiet Function Setting

Quiet function consists of two kinds: QUIET and AUTO QUIET.

Press **Function** button till the unit enters quiet function setting state, **Quiet or Auto Quiet** mark blinks. In this case, press **▲** or **▼** button to switch between Quiet and Auto Quiet and then press **Enter/cancel** button to turn on this function.

In quiet mode, press **Function** button till the unit enters quiet function. In this case, **Quiet or Auto Quiet** icon blinks and then press **Enter/cancel** button to cancel this function.

Quiet function setting is shown in Fig.5-17

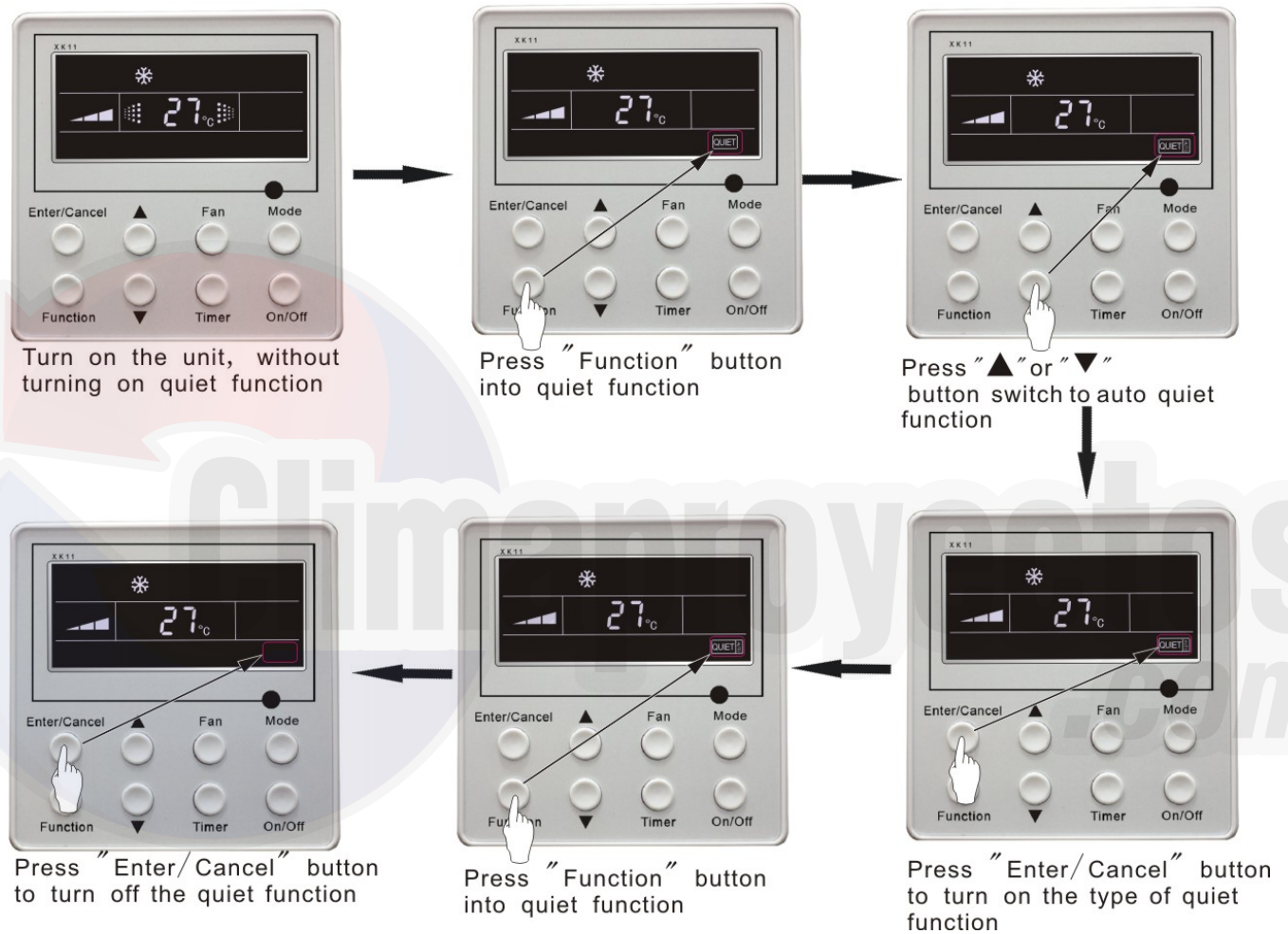


Fig. 5-17 Quiet function setting

Note:

1. During quiet function, fan speed is un-adjustable.
2. When turning on auto quiet function, the unit will enter quiet running state according to temperature difference between room temperature and setting temperature. In this case, fan speed is adjustable. If temperature difference between room temperature and setting temperature $\geq 4^{\circ}\text{C}$, fan will keep its current speed; if $2^{\circ}\text{C} \leq$ temperature difference $\leq 3^{\circ}\text{C}$; fan speed will be reduced by one grade, but if it is at minimum grade, it is un-adjustable.; if temperature difference $\leq 1^{\circ}\text{C}$, fan speed will be at minimum grade
3. In auto quiet mode, fan speed can not be raised but reduced. If high fan speed is manually adjusted, auto quiet mode will quit.

4. There is not auto quiet function in fan or dry mode. Quiet off is default after power failure and then power recovery.

5. If quiet function is set, turbo function will be canceled.

5.4.14 Field Functions

Under off-state of the unit, press **Function** and **Timer** buttons continuously for 5s to go to the debugging menu. Press **Mode** button to adjust the setting items and ▲ or ▼ button to set the actual value.

5.4.14.1 Ambient Temperature Sensor Setting

In field setting mode, press **Mode** button to adjust the temperature displayed location displaying 00, and press ▲ or ▼ button to adjust setting state at timer displayed location. There are 3 types for selection:

- (1) Indoor ambient temperature is that at return air inlet (01 is displayed at timer displayed location)
- (2) Indoor ambient temperature is that at the place of screen (02 is displayed at timer displayed location)
- (3) Return air inlet temperature sensor shall be selected for cooling, dry and fan modes and wired controller temperature sensor (03 is displayed at timer displayed location) shall be selected for heating and auto modes.

5.4.14.2 Three Grades of Speed for Indoor Fan

In field setting mode, press **Mode** button to adjust the temperature displayed location displaying 01 and press ▲ or ▼ button to adjust setting state at timer displayed location. There are 2 types for selection:


- (1) 3 low grades (LCD displays 01)
- (2) 3 high grades (LCD displays 02)

Three low grades indicate high, medium and low grades and 3 high grades indicate super-high, high and medium grades.

Press **Enter/Cancel** button to save the setting and quit after setting. If there is not any operation within 20s after the system responds to the last button operation in this interface, the system will quit this menu and display normal off-state; meanwhile, current setting won't be saved.

5.4.15 Other Functions

5.4.15.1 Lock Function

Upon startup of the unit without malfunction or under off-state of the unit, press ▲ and ▼ buttons at the same time for 5s till the wired controller enters lock state. In this case, LCD displays . After that, repress these two buttons at the same time for 5s to quit lock state.

Under lock state, any other buttons won't give any response to the press.

5.4.15.2 Memory Function

Memory switchover: Under off-state of the unit, press **Mode** and ▲ buttons at the same time for 5s to switch memory modes. During setting memory mode, **Memory** will be displayed. If this function is not set, the unit will be under off state after power failure and then power recovery.

Memory recovery: If memory mode has been set for wired controller, the wired controller after power failure will resume its original running state upon power recovery.

Note:

It will take about 5 seconds to save all the information, therefore, please do not cut down the power at this time, or it may fails.

5.4.15.3 Selection of Centigrade and Fahrenheit

Under off-state of the unit, press **Mode** and ▼ at the same time for 5s, the displayer panel will switch between Centigrade and Fahrenheit.

5.5 Error Display

If there is malfunction during running of the system, LCD will display error code at temperature–displayed location. Once there is more than one malfunction, error codes will be displayed circularly. If there are multiple circuit systems, the system number of failed system will be displayed before the colon (not for single system).

If malfunction occurs, turn off the unit and contact nearest dealer for help.

As shown in Fig.5-18, it means high pressure protection of system 2 under unit on.



Fig.5-18

Error code meaning:

Error code	Malfunction
E2	Indoor anti-freezing protection
E6	Communication malfunction
E9	Water overflow protection
F0	Indoor unit ambient sensor malfunction at air return opening
F1	Evaporator sensor malfunction
F5	Ambient sensor malfunction on Displayer (or LED board)

5.6 Setting of Indoor Room Sensor

5.6.1 Setting of Double Indoor Room Sensors

This series of ducted air-conditioning unit has two indoor room sensors. One is located at the air intake of the indoor unit and the other one is located inside the wired controller.

User can select one from the two indoor room sensors on the basis of the engineering requirement.

(Refer to the section of wire controller instructions for detailed operation.)

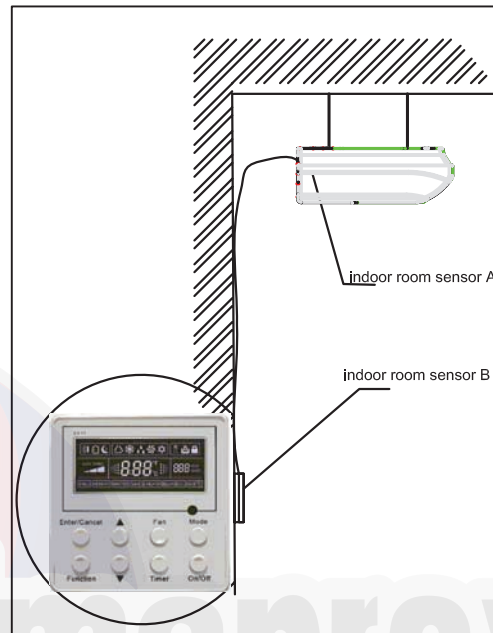


Fig.5-19

5.6.2 Position and Method of Installing Wired Remote Controller

1. One end of the control wire of the wired remote controller is connected to main board in the electric box of indoor unit, it should be tightened by wire clamps, while the other end should be connected to the wired controller. The special control wire be used between the indoor unit and wired remote controller, of which the length is 8 meters.

2. The material to be adopted for the control wire should be metallic substance. The wired controller could not be disassembled and the control wire to be used for the wired controller should not be changed by users optionally. The installation and maintenance should be carried out by the installer.

3. Firstly select an installation position. According to the size of the control wire for the wired remote controller, leave a recess or a embedded wire hole to bury the communication line.

4. If the control wire between the wired remote controller and the indoor unit is surface-mounted, use 1# metallic pipe and make matching recess in the wall (refer to Fig. 5-20); If concealed installation is adopted, 1# metallic pipe can be used (Refer to Fig. 5-21).

5. No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) between which the distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wired controller. Then insert a wood plug into each hole, fix the bottom plate of the wire controller to the way through these two holes, plug the control wire onto the control panel, and lastly install the panel of the wire controller. (Refer to Fig. 5-4)

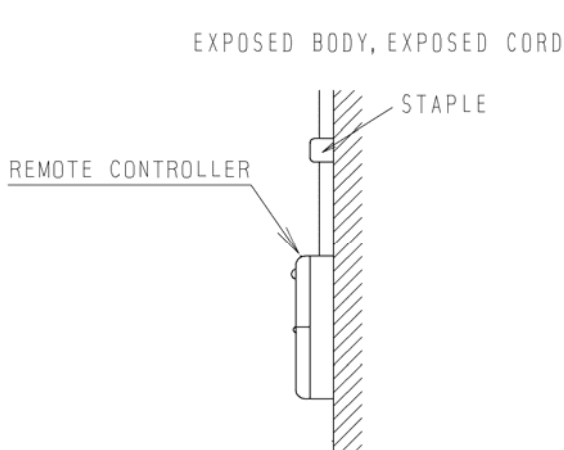


Fig.5-20

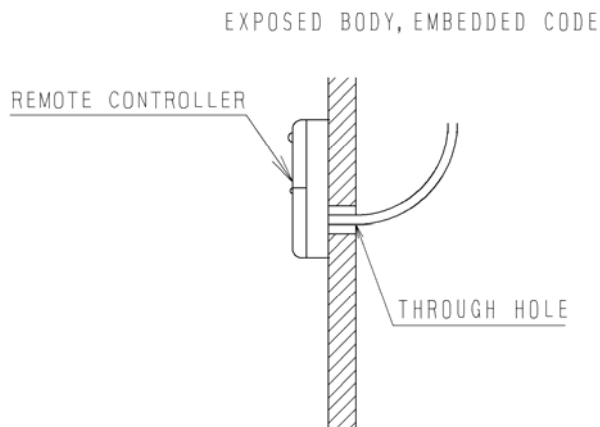


Fig.5-21



Caution:

During the installation of the bottom plate of the wired controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, otherwise the panel of the wired controller cannot be correctly installed.



Caution:

1. The communication distance between the main board and the wired controller can be as far as 20m (The standard distance is 8m).
2. The wired controller shall not be installed in a place where there is water drop or large amount of water vapor.

6 Maintenance

Before inspection and maintenance of the unit, please turn off the unit and set the power switch to "OFF" to cut off the power supply.

Cleaning the Air Filters

Remove the air filter; clean it by a vacuum cleaner or if is very dirty, wash it with soap water then wipe off until it is completely dry before reinstallation

Suggestion

If the air filter is dry, it will reduce the airflow, and the unit will be easily overloaded and consumes 6% more of electricity. So regular cleaning is necessary.

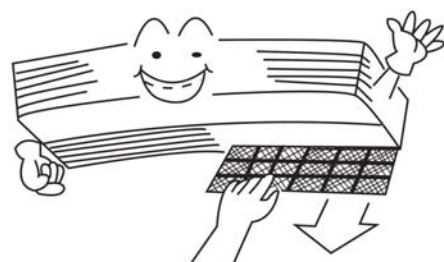
Cleaning the unit

Clean the air conditioner and the remote controller with dry cloth or vacuum cleaner. If damp cloth is used, remove moisture by using dry cloth afterward.



CAUTION

- 1、 Do not use benzene gasoline, thinners or polishing products for cleaning.



-
- 2、 Do not wash with hot water (above 40°C), otherwise some parts of the unit may be deformed.

Before the seasonal use

- 1、 Check that nothing blocks the air inlet and outlet of the indoor and outdoor unit.
- 2、 Running the unit without air filters can cause malfunctions due to dirt or dust. Always install the air filter at all times.
- 3、 Check that drainage hose is not bent or clogged.
- 4、 Check that the unit is properly installed.

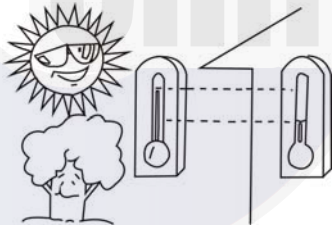
After the seasonal use

- 1、 Switch off the main switch of the power supply.
- 2、 Clean the air filters and other parts (by professionals).
- 3、 Leave the fan running along for another 2-3 hours to dry out the inside of the unit.

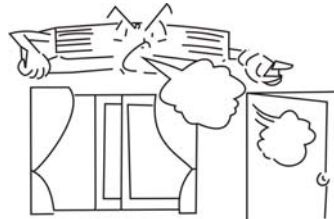
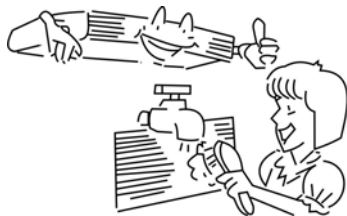
7 Operating Instructions

The cleaning and replacement of the filter is only permitted to be done by the professionals. Before open the grille to clean the filter, please cut off the power supply and wait until the fan motor stops.

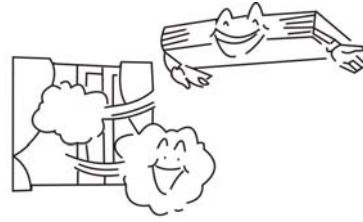
- (1) The temperature should not be set lower than what you need, otherwise it would result in increase of energy consumption.
- (2) To distribute cool air throughout the room, adjust the air flow direction as shown by the arrows (see the picture) to diffuse cool air.



- (3) Clean the air filter every week for higher efficiency.
- (4) Close the window and door while operating the unit to prevent leakage of cooled air to save energy.

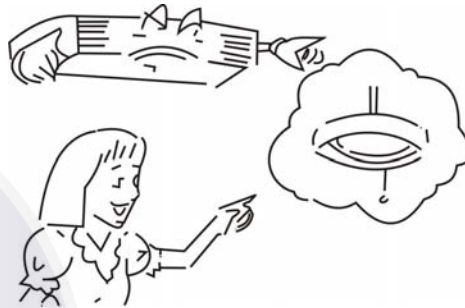


- (5) Draw close the curtains or close glass windows when cooling to prevent heat load from sun light which may cause more electricity cost.
- (6) In case of ineffective ventilation, open the window to ventilate the room air once in a while but not too long since cooled air will be uselessly drained out.

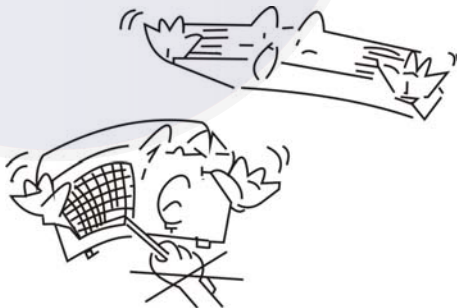


8 Precautions

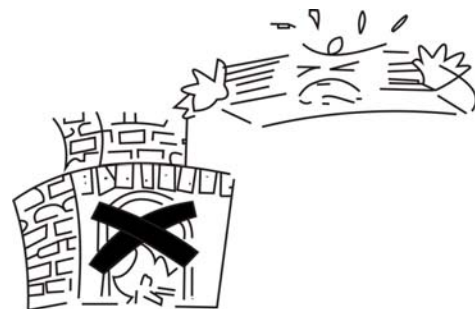
- (1) Turn off the air conditioner if it is not needed, as electricity interference may occur while it is running. If the unit is not to be used for a long time, cut off the unit power supply.



- (2) Do not insert objects into the air inlet or outlet when the air conditioner is running as it may cause damage or personal injury. Also pay special attention when children are around.
- (3) Do not locate any obstacle against the air flow direction of indoor and outdoor unit. Inefficient performance or malfunction may result.



- (4) Do not channel the air flow directly at people, especially infants, aged persons, or patients.
- (5) Do not locate a heater or any other heat source close to the unit. The heat may deform plastic parts.



9 Trouble Shooting

WARNINGS

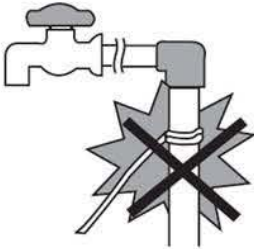
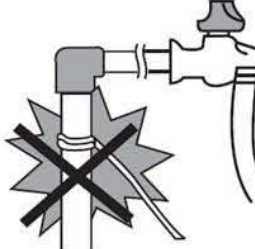
- In case of abnormal operation (such as bad smell), turn off the power switch immediately and contact the service center.
- Do not repair the air conditioner by yourself because wrong repair may cause fire. Please contact a service center to do it for you.

★ Check the items shown below before contacting the service center.

Symptom	Cause	Corrective Measures
The system does not operate at all.	Phase opposition or fuse broken	Change phase or replace fuse
	Power off	Connect a power supply
	Loose plug	Put the plug into place
	Batteries of remote controlling fall	Replace batteries
	Out of the remote controlling range	Keep the distance in 10m
The system stops right after it is started.	Object at the air intake and air outlet	Remove them
Cooling or heating fails to function.	Object at the air intake and air outlet	Remove them
	Wrong temperature setting	Refer to temperature setting
	Low fan speed	Refer to fan speed
	Air direction is not correct	Refer to swing setting
	Doors or windows are open	Close them
	Direct sunshine	Close the curtain or blinder
	Too many people in the room	
	Too many heating sources	
Dirty air filter	Clean it	

NOTE: If trouble still exists after checking the above items, please contact service center.

10 Installation Notes

Location	Noise
<ul style="list-style-type: none"> • The air conditioner must be firmly installed and have 3-4 times reliability checks every year. • Avoid place within easy reach of young children. • Avoid other heat sources or direct sun light. • Install indoor unit away from TV set or radio. • Avoid where inflammable gas is likely to leak. • At salty coastal areas or special areas such as the vicinity of a sulphurous hot spring, please contact dealer before installation to make sure it is safe to use the unit. • Don't be installed in laundries. 	<ul style="list-style-type: none"> • Select a place with good ventilation or it may affect performance or increase noise. • Install the air conditioner on a foundation that can withstand its weight. Insufficient strength may result in the fall of equipment and cause injury. • Select a place so as not to annoy neighbor with the hot air or noise. • Never place objects near the air outlet or the unit, it may affect performance or increase noise. • If there is abnormal noise during the operating, contact dealer immediately.
Installation and transportation	Wiring arrangement
<ul style="list-style-type: none"> • Installation and transportation of the unit must be done by skilled personnel. • Be sure to use only the specified accessories and parts for installation, failure to use may lead to electric shock, leakage or fire. • Strong winds, typhoons or earthquakes must be taken into consideration for installation. Improper installation may result in accidents. • If the unit is to be moved to other place, please consult dealer first. 	<ul style="list-style-type: none"> • Make sure wiring is carried out by qualified personnel according to laws and regulations and this manual, using a separate circuit and suitable fuse. • Be sure to install an earth leakage breaker. • Diameter of power supply cord must be big enough. (Refer to P24 about the sizes of diameter) • 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. • The appliance shall be installed in accordance with relative wiring regulations.
<p>Earth Be sure to connect the earth wire to earth device of the building. Install an earth leakage breaker.</p> <p>Do not connect the earth wire to gas or water pipes, lightning conductor or telephone earth wire.</p>	
<div style="display: flex; justify-content: space-around;"> <div data-bbox="188 1547 762 1675"> <p>Water pipe</p> <p>Some parts of the water pipe are made of plastic materials and not suitable for earthing.</p>  </div> <div data-bbox="863 1547 1437 1675"> <p>Gas pipe</p> <p>If there is electrical leakage accidentally from air conditioner, it is easy to cause fire or explosion.</p>  </div> </div>	

11 Instructions of the Unit Installation

11.1 Installation of the Indoor Unit

When installing the indoor unit, you can use a paper pattern for reference and make sure that the drainage side is 10mm lower than the other side in order to drain the condensation water fluently.

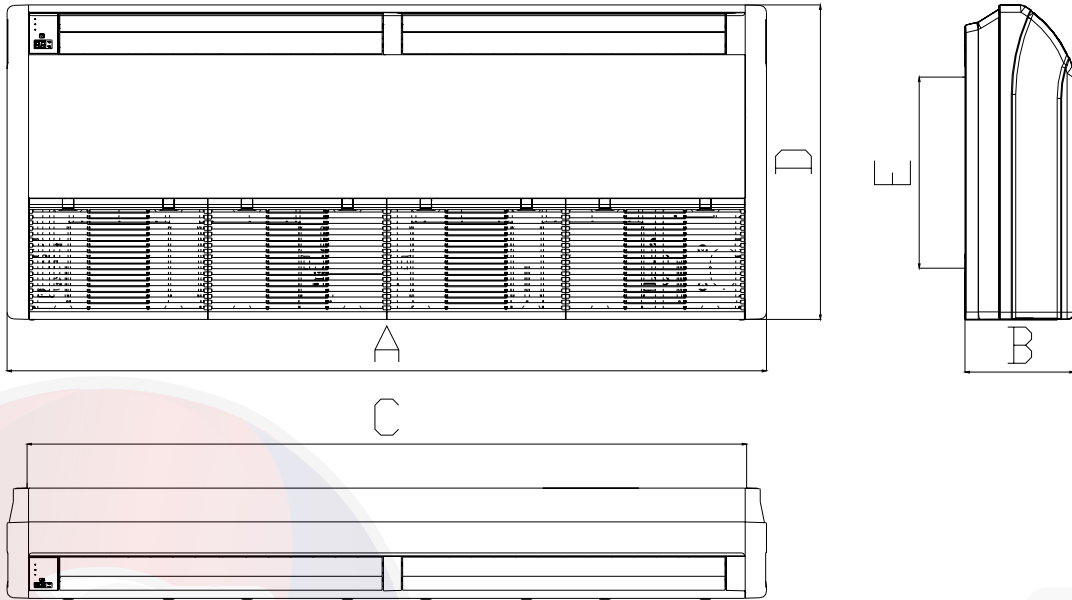


Fig. 11-1

Model	Unit: mm				
	A	B	C	D	E
MQS-24018-CFC216A	1220	225	1158	700	280
MQS-24024-CFC216A MQS-24030-CFC216A MQS-24036-CFC216A	1420	245	1354	700	280
MQS-24048-CFC216A MQS-24060-CFC216A	1700	245	1634	700	280

Cautions for Installation Where Air Conditioner Trouble is Likely to Occur

- Where there is too much oil.
- Where it is an acid base area.
- Where there is irregular electrical supply.

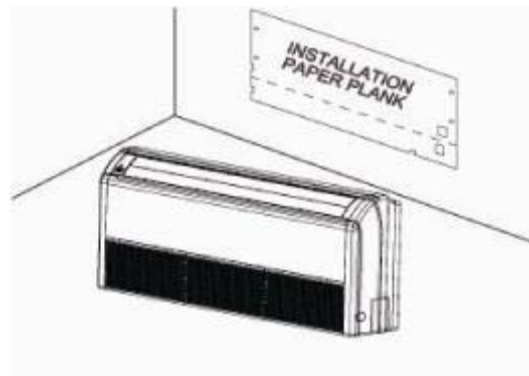


Fig. 11-2

Selection of an Installation Location

- Such a place where cool air can be distributed throughout the room.
- Such a place where condensation water is easily drained out.
- Such a place that can support the weight of indoor unit.
- Such a place which has easy access of maintenance.
- Such a place which is easy to connect the outdoor unit.
- Such a place which is 1m or more away from other electric appliances such as television, audio device, etc.
- Avoid a location where there is heat source, high humidity or inflammable gas.
- Do not use the unit in the immediate surroundings of a laundry, a bath, a shower or a swimming pool.
- Ensure that the installation conform to the installation dimension diagram.
- The space around the unit is adequate for ventilation (see Fig. 11-3).

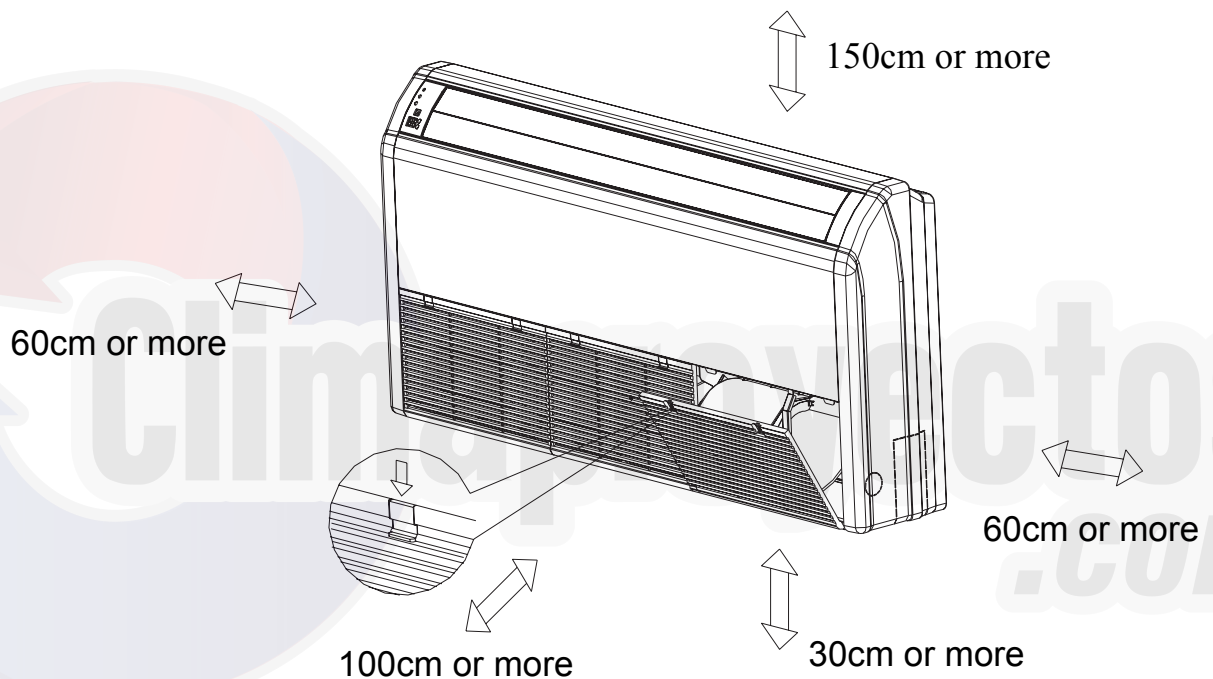


Fig. 11-3

There are two types of installation: Ceiling Type and Floor Type

Each type is similar to the other as follows:

Determine the mounting position on the ceiling or the wall by using the paper pattern to indicate the indoor frame. Mark the pattern and pull out the paper pattern. Remove the return grill, the side panel and the hanger bracket from the indoor unit as per procedures below.

1. Press the fixing knob of the return grilles and it opens widely, and then pull it out from the indoor unit.
2. Remove the side panel fixing screws by pulling it out at the front direction (arrow direction). (See Fig. 11-4)

Side panel fixing screw (M4.2)

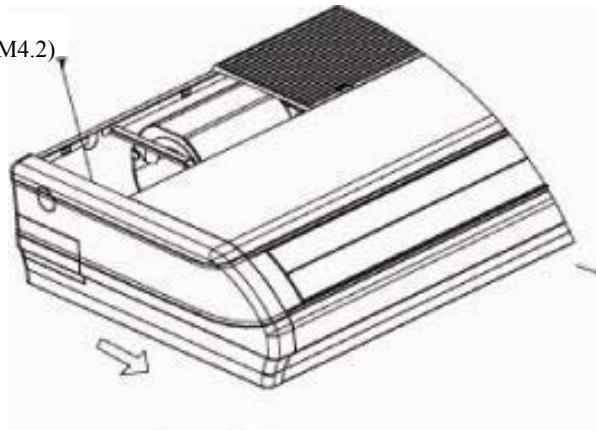


Fig. 11-4

3. Loosen two hanger bracket setting bolts (M8) on earth side for less than 10mm. Remove two hanger bracket fixing bolts (M6) on the rear side. Detach the hanger bracket by pulling it backward (See Fig. 11-5)

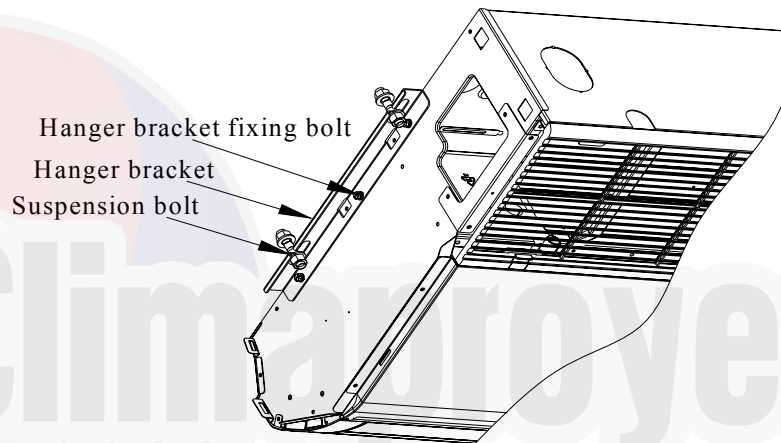


Fig. 11-5

Set the suspension bolts. (Use M10 size suspension bolts)

Adjust the distance between the unit and the ceiling slab beforehand (see Fig. 11-6). Fix the hanger bracket to the suspension bolt.

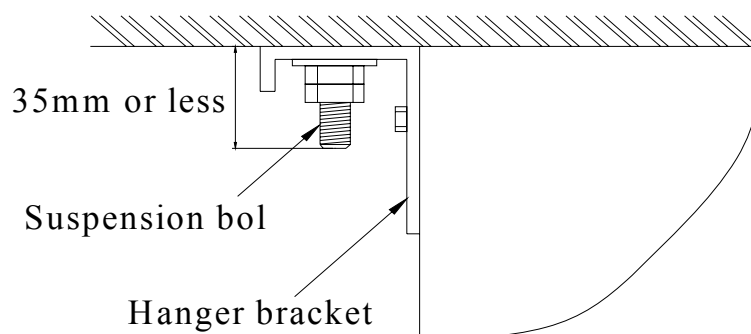


Fig. 11-6

⚠ WARNINGS!

1. Make sure that extended suspension bolts from the ceiling stay inside the arrowed position. Readjust the hanger bracket when it is outside the arrowed position. (See Fig. 11-7)

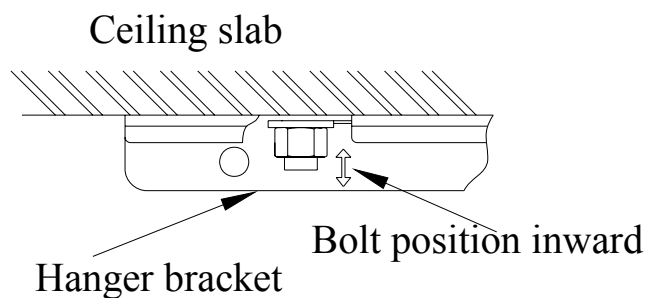


Fig. 11-7

- Suspension bolts should stay side the cap of the indoor unit .Never remove the cap. Lift the unit and slide the hanger bracket in the way that the holes on it will match with the corresponding bolts. (See Fig. 11-8)

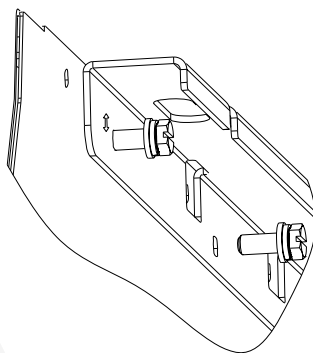


Fig.11-8

Screw tightly both hanger brackets setting bolts (M10.) (See Fig. 11-6)

Screw tightly both hanger bracket fixing bolts (M6) to prevent the movement of the indoor unit. (See Fig. 11-6)

Adjust the height of the unit to incline slightly the rear side of the drain pipe so as to optimize the drainage.

CAUTIONS!

Adjust the height by turning the unit with a spanner.

Insert the spanner from the hanger bracket opening. (See Fig. 11-9)

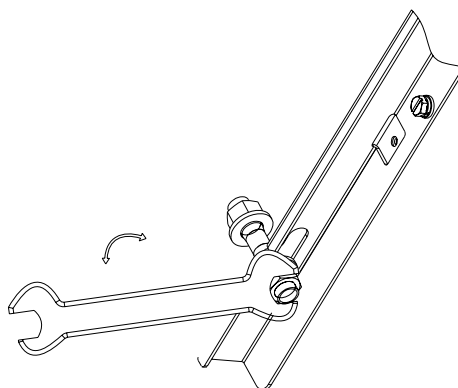


Fig. 11-9

Hanging and Mounting

It is possible to carry out the installation by using inward facing hanger brackets without moving the brackets from the indoor unit. (See Fig.11-10)

Be sure to use only the specified accessories and parts for installation work.

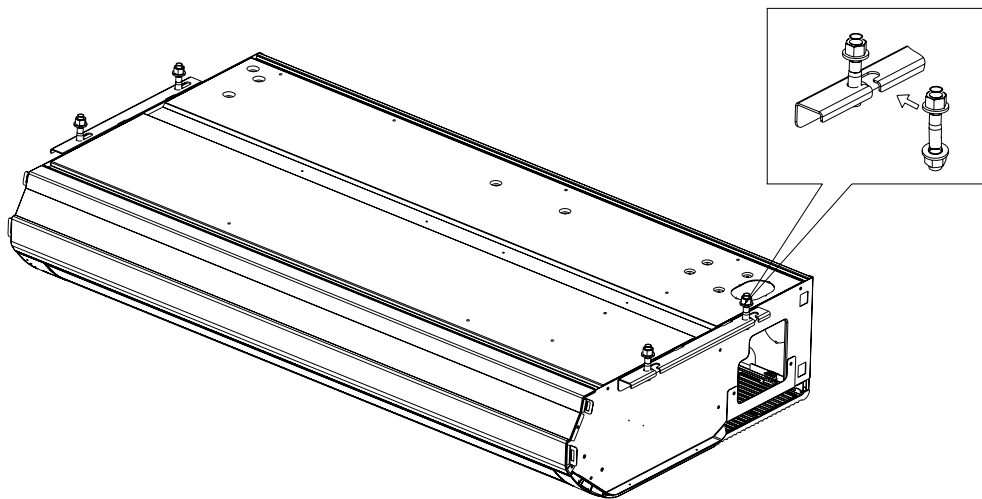


Fig. 11-10

11.2 Installation of the Outdoor Unit

A. Profile Dimensions of the Outdoor Unit

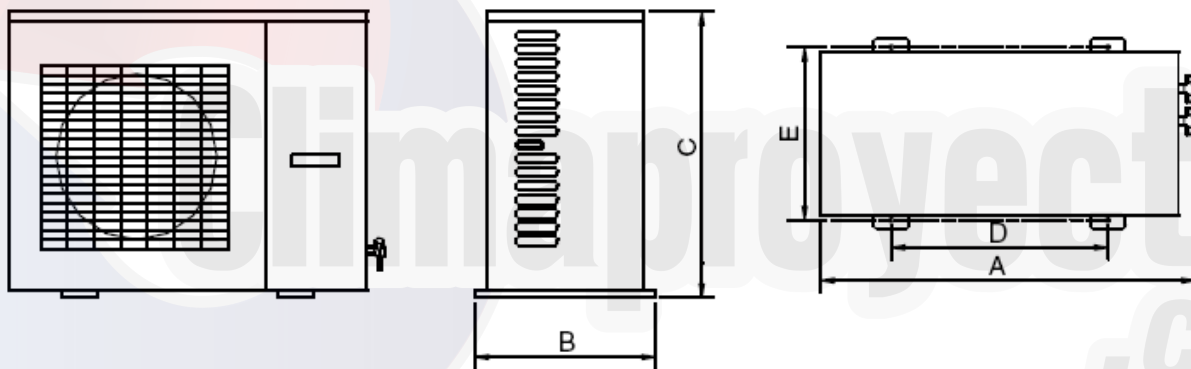
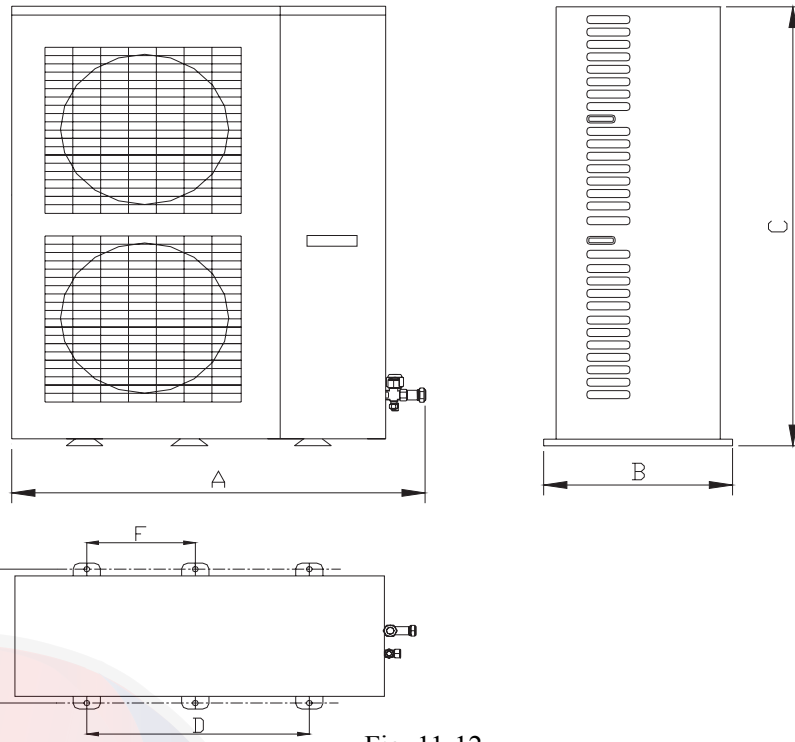


Fig. 11-11

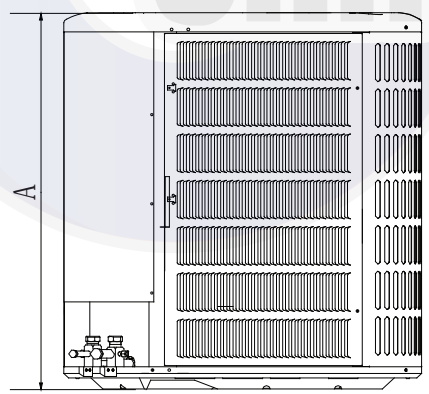
Unit: mm

Model Item	1.5TON SIDE-DISCHARGE OUTDOOR UNIT	2 TON SIDE-DISCHARGE OUTDOOR UNIT	2.5 TON SIDE-DISCHARGE OUTDOOR UNIT	3 TON SIDE-DISCHARGE OUTDOOR UNIT	3.5TON SIDE-DISCHARGE OUTDOOR UNIT	4 TON SIDE-DISCHARGE OUTDOOR UNIT
A	912	1018	980	1018	1107	1107
B	378	412	427	412	440	440
C	690	695	790	840	1100	1100
D	550	572	610	572	631	631
E	378	378	395	378	400	400

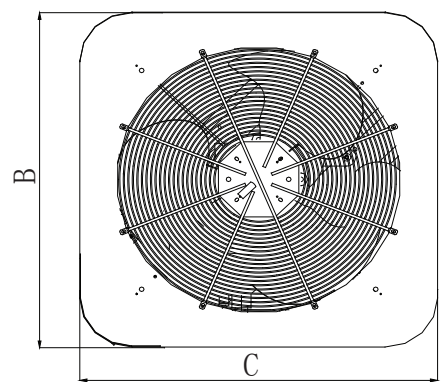


Unit: mm

Model \ Item	A	B	C	D	E	F
5 TON SIDE-DISCHARGE OUTDOOR UNIT	1255	460	1350	776	422	490



Unit: mm



Model \ Item	5 TON SIDE-DISCHARGE OUTDOOR UNIT
A	851
B	750
C	750

Fig. 11-13

B. Schematic Diagram of Installation Spaces

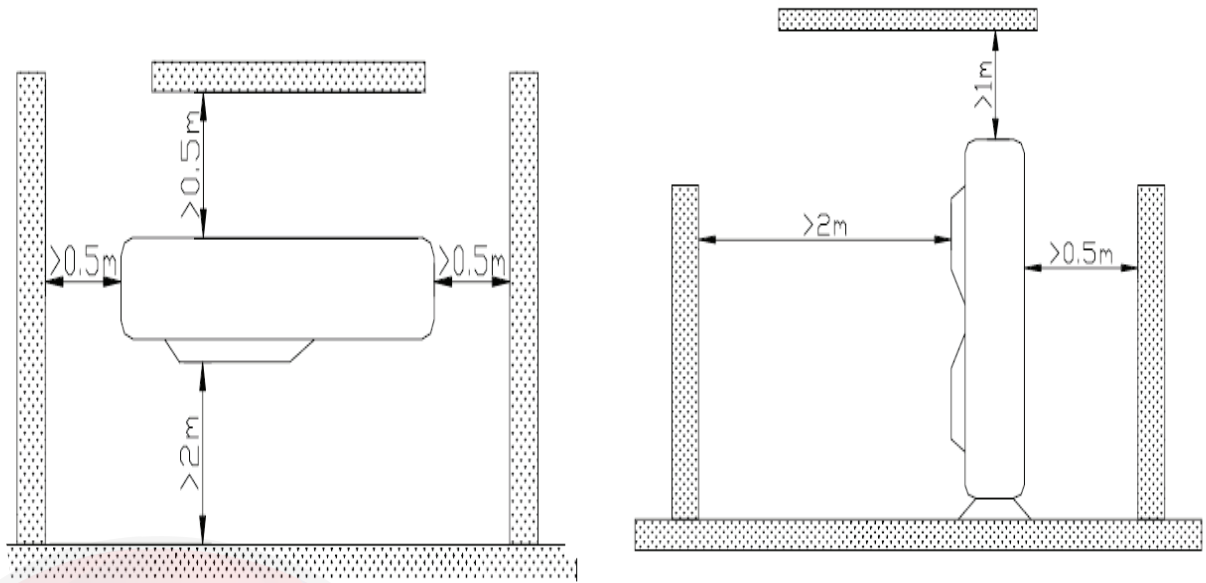


Fig. 11-14

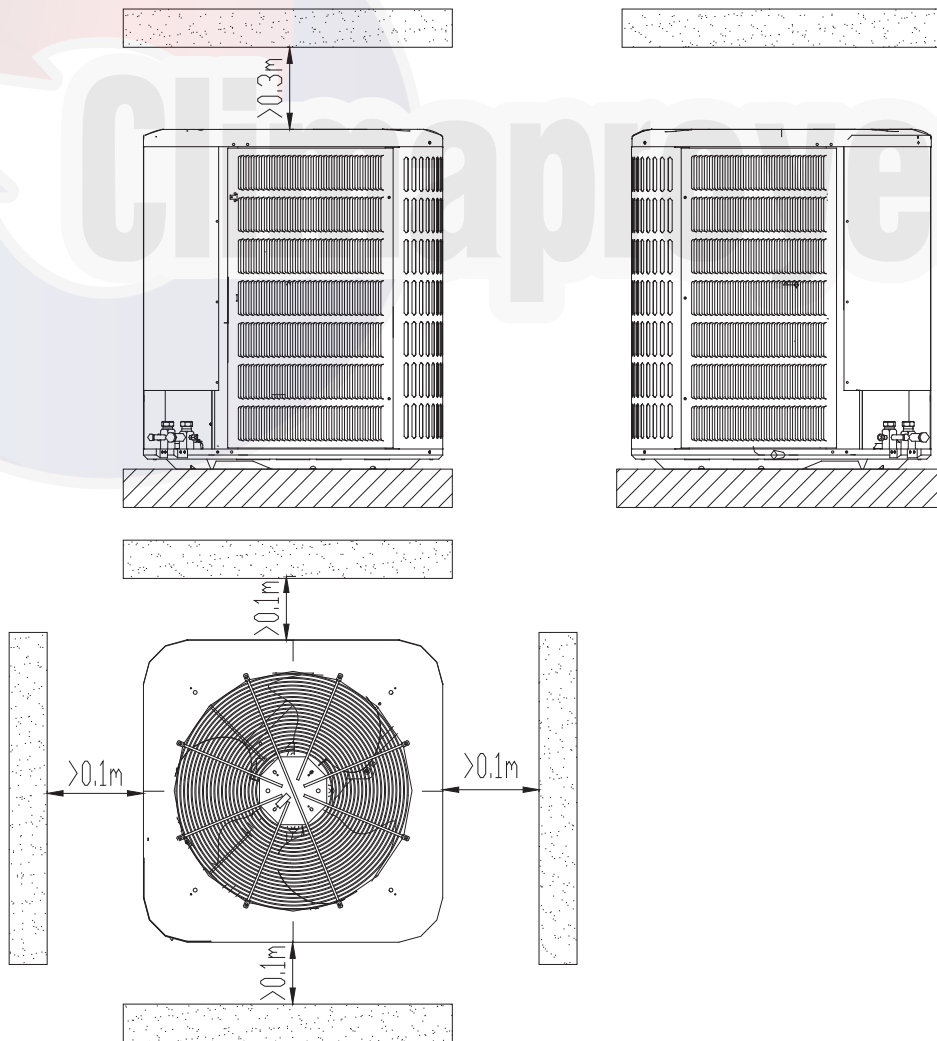


Fig. 11-15

C. Precautions on Installation of Outdoor Unit

To ensure the unit in proper function, an installation location must be selected in accordance with the following principles:

- (1) Outdoor unit should be installed in a way that the air discharged from the outdoor unit will not return and sufficient space for repair can be provided around the machine.
- (2) The installation site must be sufficiently ventilated, so that the outdoor unit can take in and exhaust enough air. Ensure no obstacle at the air intake and exhaust of the outdoor unit. If there is, remove it.
- (3) Place of installation should be strong enough to withstand the outdoor unit, and it should be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit not affect your neighbors.
- (4) Avoid direct sunshine over the unit. It is better to set up a sun shield as protection.
- (5) Place of installation must be able to drain the rainwater and defrosting water.
- (6) Place of installation must ensure the machine not be buried under snow or subject to the influence of rubbish or oil fog.
- (7) The installation should be done where the air exhaust outlet does not face strong wind.

D. Connection of Pipeline

Selection of Connecting Pipe:

Model	Size of Fitting Pipe (mm)		Max. Pipe Length (m)	Max. Height Difference between Indoor Unit and Outdoor Unit (m)	Amount of Additional Refrigerant to be Filled (For Extra Length of Pipe)
	Gas Pipe	Liquid Pipe			
MQS-24018-CFC216A	1/2	3/8	20	15	60g/m
MQS-24024-CFC216A MQS-24030-CFC216A	5/8	3/8	30	15	60g/m
MQS-24036-CFC216A MQS-24048-CFC216A MQS-24060-CFC216A	3/4	1/2	50	30	120g/m

Note:

- 1 The standard pipe length is 7.5m. When the length (L) of the connecting pipe is less than or equals 7.5m, there is no need to add refrigerant. If the connecting pipe is longer than 7.5m, it is required to add refrigerant. In the above table, the amounts of refrigerant to be added for the models are listed for each additional meter of pipe length.
2. The pipe wall thickness shall be 0.5-1.0 mm and the pipe wall shall be able to withstand the pressure of 6.0 MPa.
3. The longer the connecting pipe, the less effective the cooling or the heating will be.

Connection of Pipeline:

- (1) Align the flared end of the copper pipe with the center of the thread joint. Manually tighten the flared end nut.
- (2) Use torque spanner to tighten the flared end nut until the spanner clatters (See Fig.11-17).

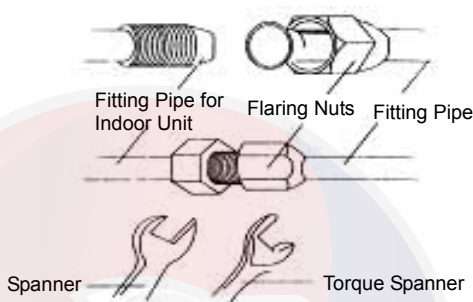


Fig. 11-16

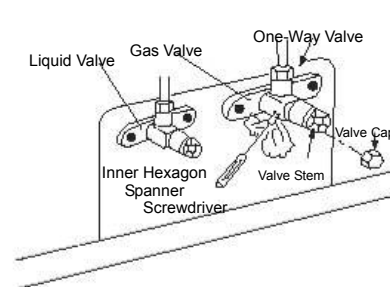


Fig. 11-17

The following table describes the torques for tightening nuts of different pipe diameters.

Pipe Diameter	Tightening Torque
φ6.34mm	15-30 (N·m)
φ9.52mm	35-40 (N·m)
φ15.88mm	60-65 (N·m)
φ12.7mm	45-50 (N·m)
φ19.05mm	70-75 (N·m)
φ22.05mm	80-85 (N·m)

- (3) The bending angle of the fitting pipe shall not be too small, and otherwise the pipe may break. Please use a bender when bending the fitting pipes.
- (4) Use sponge to wrap the connecting pipe and joint without thermal insulation, and use plastic tape to bundle the sponge.
- (5) Remove the cap of the liquid valve and the gas valve.
- (6) Use an inner hexagon spanner to turn the spool of the liquid valve for 1/4 circle. At the same time, use a screwdriver to lift the spool. Then there is discharge of gas.
- (7) Refrigerant gas shall appear after the gas is discharged for 15 seconds. Now close the one way valve immediately and tighten the bonnet.
- (8) Fully open the spools of the liquid valve and the gas valve (refer to Fig. 11-17).
- (9) Tighten the valve cover. Then use soap water or leakage detector to check if there is leakage at the position where the indoor unit or the outdoor unit is connected with pipelines.
- (10) If possible, use a vacuum pump to remove air out from the valve. Refer to Fig. 11-18

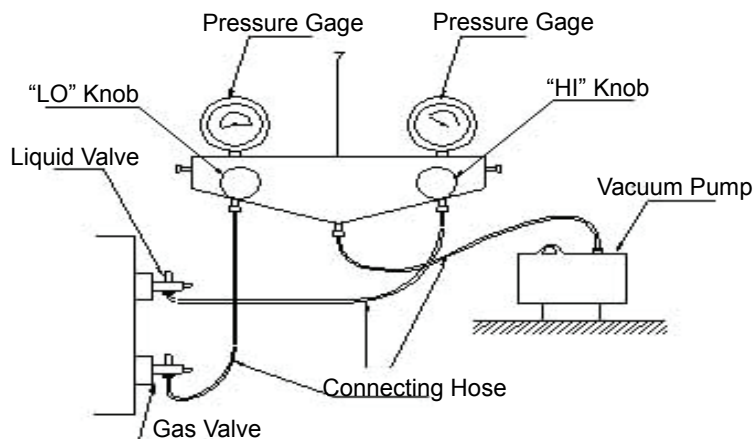


Fig. 11-18

⚠ Caution:

1. When connecting the indoor unit with the connecting pipe, do not pull the big and small joints of the indoor unit forcefully, so as to prevent the capillary of the indoor unit and other pipes from breaking and leaking.
2. The connecting pipe shall be supported by proper bracket. The weight of the pipe shall not be withstood by the unit.
3. When brazing the outdoor unit with the connecting pipe, please make sure that the valve are wrapped with wet cloth for cooling.

E. Installation of Protective Layer of Connecting Pipe

1. To avoid generation of condensate on the connecting pipe and avoid leakage, the gas and liquid connecting pipes must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from air. (refer to Fig. 11-19)
2. The joint connecting the indoor unit must be wrapped by thermal insulation materials. There should be no gap between the connecting pipe joint and the wall of the indoor unit (refer to Fig. 11-20).

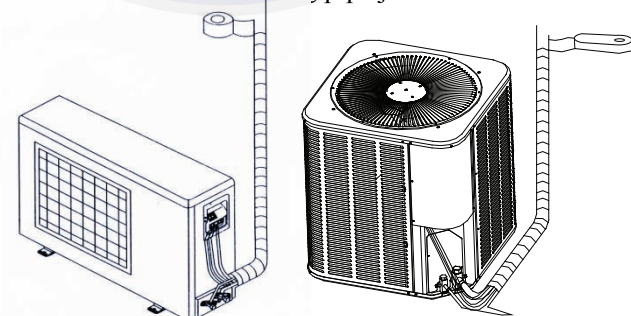


Fig. 11-19

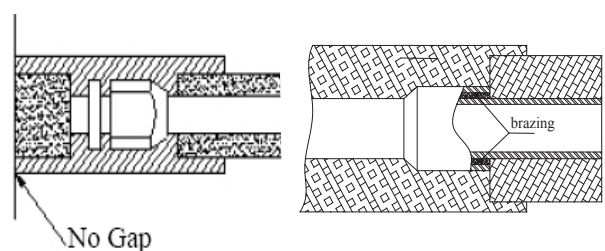


Fig. 11-20

⚠ CAUTION:

After the pipes are wrapped by protective materials, never bend the pipes even slightly, or the pipes may crack or break.

3. Use adhesive tapes to wrap the pipes:

- (1) Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from

-
- overflowing out from the drainage pipe, separate the drainage pipe from the connecting pipe and the cables.
- (2) Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit to the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the front circle of tape (refer to Fig. 11-19).
 - (3) Wrapped pipe must be fixed to wall by pipe clamps.

⚠ CAUTIONS:

- (1) Do not wrap the protective tape too tight, otherwise the efficiency of thermal insulation may be weakened. Ensure that the condensate drainage flexible tube be separated from the bundled pipes.
- (2) After the protective work is completed and the pipes are wrapped, block the hole in the wall with seal materials, so as to prevent rain and wind from entering the room.

F. Power Cable Connection

⚠ CAUTION:

Before installing the electrical equipment, please pay attention to the following matters specially pointed out by our designers:

- (1) Check if the power supply conforms to the rated one specified on the nameplate.
- (2) The capacity of the power supply must be large enough. The section area of the power cord in the room should be larger than 2.5 mm².
- (3) The lines must be installed by professionals.

⚠ WARNINGS:

If the flexible line of the power supply or the signal line of the equipment is damaged, only use special flexible line to replace it.

- (1) Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.
- (2) The air-conditioning unit should have special power supply line equipped with electricity leakage switch and air switch, so as to deal with overload conditions.
- (3) The air-conditioning unit must be earthed to avoid a hazard due to insulation failure.
- (4) All lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.
- (5) All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage to the air-conditioning unit.
- (6) Do not let any cable contact the refrigerant pipe, the compressor or moving parts such as fan.
- (7) Do not change the internal line connections inside the air-conditioning unit, or the manufacturer should not be liable for any loss or abnormal operation arising from wrong line connections.

Connection of the Power Cable

1. Air-conditioning unit with single-phase power supply

- (1) Remove the front panel of the outdoor unit.
 - (2) Pass the cable through rubber ring.
 - (3) Connect the power supply cable to the “L, N” terminals and the grounding screw.
-

- (4) Use cable fasteners to bundle and fix the cable.

2. Air-conditioning unit with 3-phase power supply

- (1) Remove the front panel of the outdoor unit.
- (2) Attach the rubber ring to the bond hole of the outdoor unit.
- (3) Pass the cable through rubber ring.
- (4) Connect the power cable to the terminal and grounding screws marked “L1, L2, L3 & N”.
- (5) Use cable fasteners to bundle and fix the cable.

CAUTION:

Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit due to electromagnetic interference.

- (1) The signal line of the wire controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.
- (2) In case the unit is installed in a place vulnerable to electromagnetic interference, it is better to use shielded cable or twisted pair as the signal line of the wire controller.

G. Main board Code Setting

Please find the corresponding mainboard according to the unit type and then check whether the mainboard code is right according to the mainboard.

The relation between mainboard type and unit type:

Main board: Z4G25A

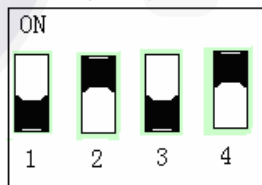
Code location and meaning:

Please find the corresponding mainboard according to the complete unit type and then check whether the mainboard code conforms to the figures below according to the mainboard. Cooling only unit as well as cooling and heating unit is differentiated by location “4” of DIP switch. When it is dialed to “4”, it means cooling and heating when it is dialed to ON, it means cooling only. The third code remains in “3”. Please refer to the following figure for detailed coding.

Floor Ceiling Type:



Cooling Only:



Heat Pump:



11.3 Drainage Pipeline Installation

● If the outdoor unit is installed lower than the indoor unit (refer to Fig. 11-21)

- (1) A drain pipe should be above ground and the end of the pipe does not dip into water. All pipes must be restrained to the wall by saddles.
- (2) Taping pipes must be done from bottom to top.
- (3) All pipes are bound together by tape and restrained to wall by saddles.

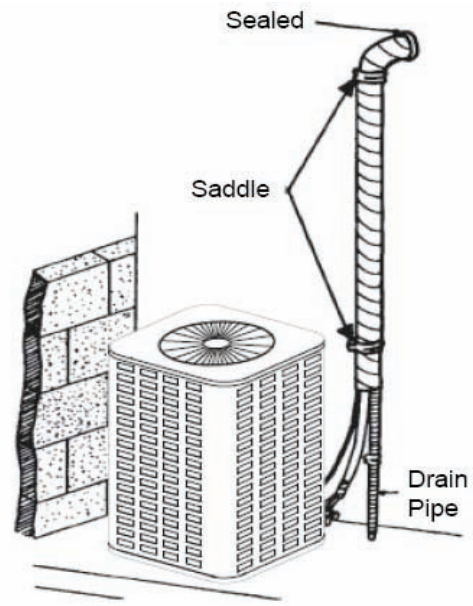
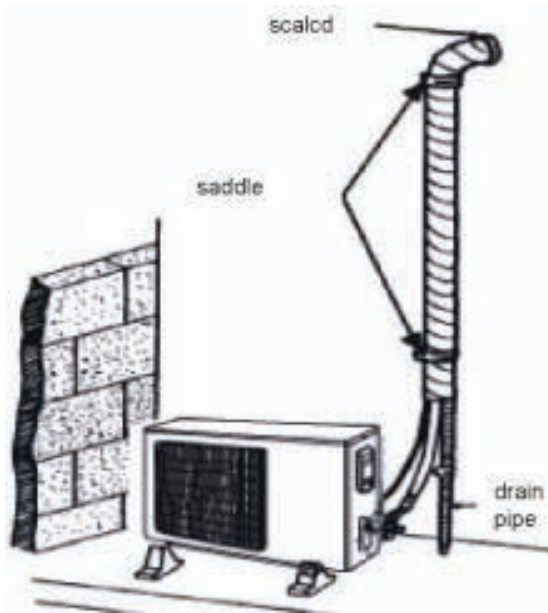


Fig. 11-21

● **If the outdoor unit is installed higher than the indoor unit (refer to Fig. 11-22)**

- (1) Taping should be done from lower to the upper part.
- (2) All pipes are bound and taped together and also should be trapped to prevent water from returning to the room (See Fig. 11-22).
- (3) Restraint all pipes to the wall with saddles

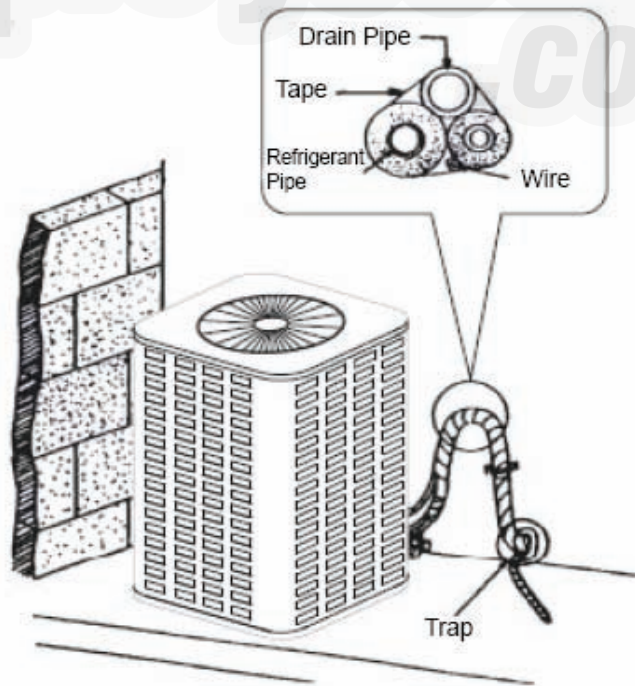
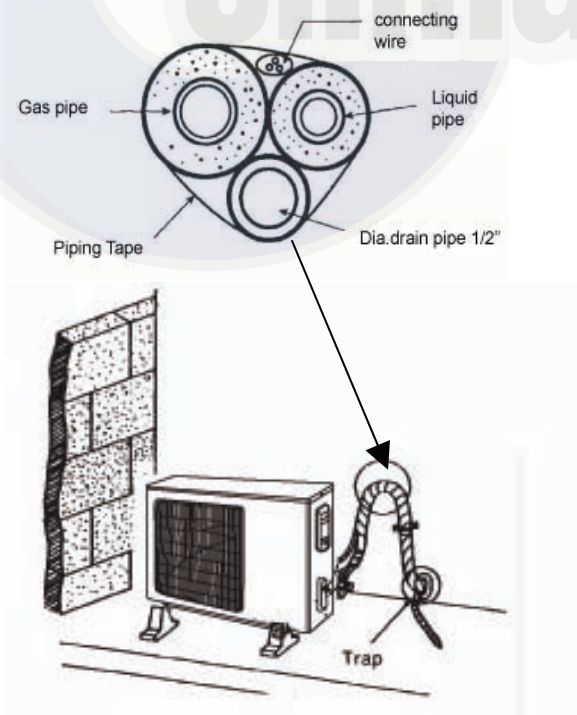


Fig. 11-22

● **Drainage Pipeline**

- (1) The drain pipe outlet direction can be chosen from either the right rear or right.

- (2) The diameter of the drain pipe should be equal to or greater than the diameter of the connecting pipe. (Vinyl tube: pipe size:20 mm, outer dimension: 26mm)
- (3) Keep the drain pipe as short as possible and incline downwards at a gradient of at least 1/100 to prevent air pockets (refer to Fig. 11-23)

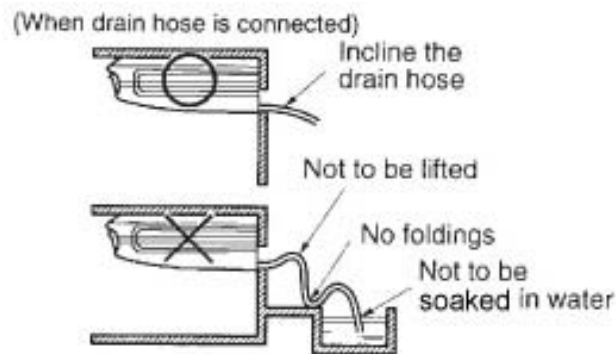


Fig. 11-23

- (4) Use the drain hose and clamp. Insert the drain hose completely into the drain socket, and tighten the clamp within the range of the gray tape unit the screw head is less than 4mm above the hose (refer to Fig. 11-24, Fig. 11-25)

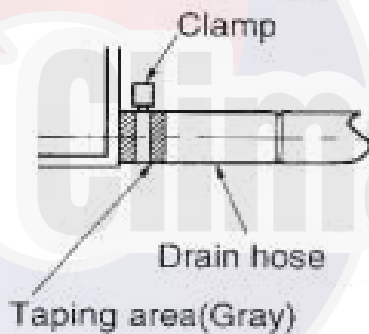


Fig. 11-2 4

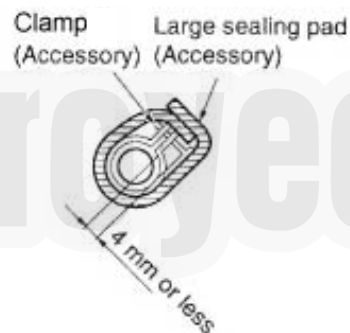


Fig. 11-2 5

- (5) Insulate the clamp and drain hose by wrapping the sealing pad over them.
- (6) No folding of the drain hose is allowed in the indoor unit. (refer to Fig. 11-26)



Fig. 11-26

- **Confirm that smooth drainage is achieved after the pipe working.**
Inject 600cc water into the drain pan from the air outlet to see if the drainage goes well or not. (refer to Fig. 11-27)

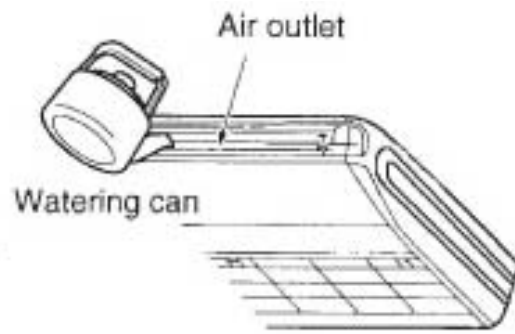


Fig. 11-27



12 Operation Test

1. Preparations for Test

- (1) Do not turn on the power switch before all installation is finished.
- (2) Connect wires correctly and firmly.
- (3) Open the check valve.
- (4) Remove all dust.

Testing

- (1) Turn on the power switch and press ON/OFF button.
- (2) Press MODE button and select COOL, HEAT, or FAN, etc to test whether it operates normally.

Pay attention to the following items during installation and check after installation is finished.

Items to be checked	Possible problems without proper operation
Is the indoor unit fixed firmly?	The unit may drop, vibrate or make noise.
Is the gas leakage test finished?	It may result in insufficient cooling.
Is the unit fully insulated?	Condensate water may drip.
Does drainage flow smoothly?	Condensate water may drip.
Does the power supply voltage correspond to that shown on the nameplate?	The unit may malfunction or the components burn out.
Are wiring and piping correct?	The unit may malfunction or the components burn out.
Is the unit safely earthed?	Risk of electric leakage.
Does wiring size meet specifications?	The unit may malfunction or the components may burn out.
Is there something blocking the air outlet or intake of either the indoor or outdoor unit?	It may result in insufficient cooling.
Have refrigerant piping length and additional refrigerant change been recorded?	Volume of refrigerant change in the system is not clear.

Notes to the installer:

- Be sure to instruct the customer how to operate the system and show him/her this manual.
- Be sure the electric supply that user applies within the tolerance (+/-10%, +/-1Hz).

Appendix:

Nominal Working Condition and Working Range of the Air Conditioner

Test condition	Indoor side		Outdoor side	
	DB(°C)	WB(°C)	DB(°C)	WB(°C)
Nominal cooling	27	19	35	24
Nominal heating	20	--	7	6
Rated cooling	32	23	52	31
Low temp. cooling	21	15	18	--
Rated heating	27	--	24	18
Low temp. heating	20	--	-7	-8

NOTES:

- The design of this unit conforms to ISO 5151 requirements.
- The air volume is measured at the relevant standard external static pressure.
- Cooling (heating) capacity stated above is measured under nominal working conditions corresponding to 0Pa external static pressure. The parameters are subject to change with the improvement of products, in which case the values on nameplate should prevail.

WARNINGS!

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

Note: This product is not designed for re-packing. In case of repacking, contact to Daikin Dealer. (SASO requirement).



This product must not be disposed together with the domestic waste. This product has to be disposed at an authorized place for recycling of electrical and electronic appliances.

