AIR CONDITIONING SYSTEMS

Models:

R1FI-30

R1FO-30

R1FI-50□□

R1FO-50□□

Floor Standing Type Air Conditioners

Owner's Manual

inventor®
Your-conditions

Thank you for choosing INVENTOR air conditioning system. For correct use of this unit, please read this manual carefully and keep it for future reference.

◆ Models and specifications

Model	Power supply	Air purify	Electric heater
R1FI-30/R1FO-30	220-240V～ 50Hz	no	Yes
R1FI-50/R1FO-50	220-240V～ 50Hz	no	Yes

◆ CONTENTS

Operation and maintenance

Installation service

The symbol stands for the items should be forbidden

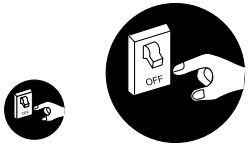
This symbol stands for the items should be followed

◆ Operation and maintenance-Notices for operation

Please read the following carefully before operating.

WARNING

★ When having a burning smell or smoke, please turn off the power supply and contact with the service center of INVENTOR.



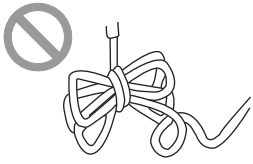
If the abnormity still exists, the unit may be damaged, and may cause electric shock or fire.

★Don't operate the air conditioner with wet hands.

Otherwise, it can cause an electric shock or fire.

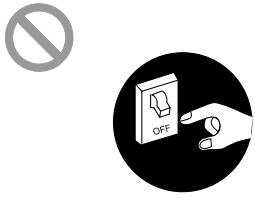
★Never cut off or damage power cables and control wires. If the power cable and signal control wire were damaged, change them by professional

★Power must adopts the special circuit to prevent fire.



Otherwise, it can cause an electric shock or fire.

★ Be sure to pull out the power plug as the air conditioner not in use for a long time.

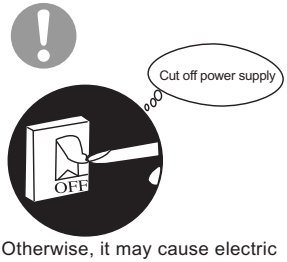


Otherwise, the accumulated dusts that may cause overheating or fire.

★ Never damage the electric wire or use the electric wire, which is not appointed.

Otherwise, it will cause overheating or fire.

★ When cleaning, it is necessary to stop driving and turn off the power supply.



Otherwise, it may cause electric shock or damage.

★ The power supply must adopt the special circuit that with air switch protection and assure it has enough capacity.

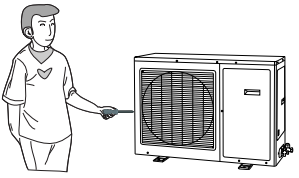
★ The unit will be turned on or off according to your requirement automatically, please do not turn on or turn off the unit frequently, otherwise disadvantage effect may be caused to the unit.

◆ Notices for operation

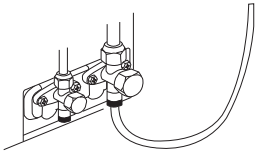
★ Earth: The ground be connected!

If not, please ask the qualified personnel to install. Furthermore, don't connect each wire to the gas pipe, water pipe, drainage pipe or any other improper places.

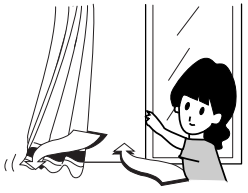
★ Please never insert any thing into the air conditioner, that may damage the air conditioner. And never insert your hands into the air outlet vent of the indoor and outdoor unit.



★ The operation of outdoor unit stop valve, should be operated by the professional personnel, in order to avoid the compressor damaged. The standard pipe length is 4m for 18,24,28 unit, standard pipe length is 5m for 36, 48 unit, it should be vacummized before installing.

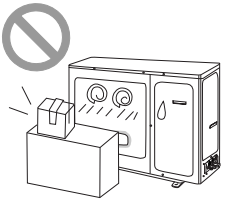


★ Don't leave windows and doors open for a long time while operating the air conditioner.



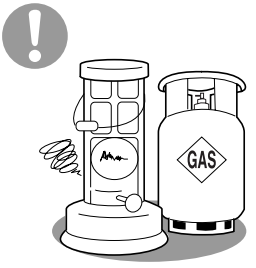
It can decrease the air conditioning capacity.

★ Never block the air inlet vent and air outlet vent of the indoor unit and outdoor unit.



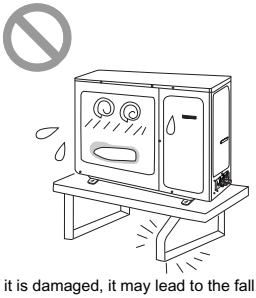
This will reduce the unit's effect or may cause unit's stop running, and even more it will cause fire.

★ Keep combustible spray away from the units more than 1m.



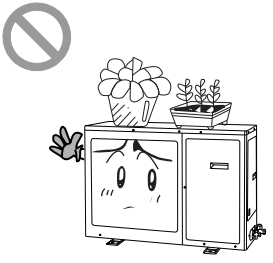
It can cause a fire or explosion.

★ Please note whether the installed stand is firm enough or not.



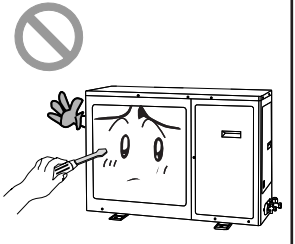
If it is damaged, it may lead to the fall of the unit and cause the injury.

★ Don't step on the top of the outdoor unit or place something on it.



As falling off the outdoor unit can be dangerous.

★ Don't attempt to repair the air conditioner by yourself.

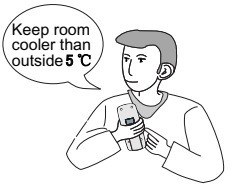


The wrong repair will lead to an electric shock or fire, so you should contact the service center of INVENTOR to repair.

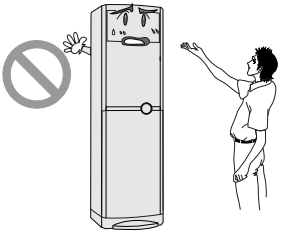
◆ Notices for operation

★ The power cords of this air conditioner adopt X-type connection, please don't cut off or damage the power cords and control cords. If they are damaged, please ask the qualified personnel to change them.

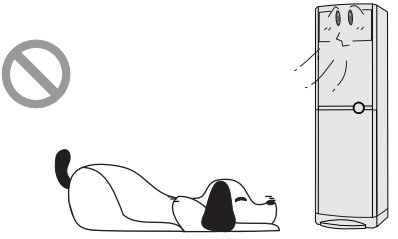
★ Select the most appropriate temperature.
It can preclude the electricity wasted.



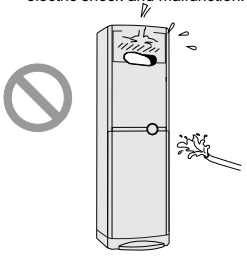
★ Don't insert your hands or stick into the air intake or outlet vents.



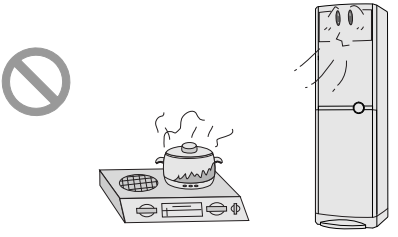
★ Don't blow the wind to animals and plants directly.
It can cause a bad influence to them.



★ Splashing water on the air conditioner can cause an electric shock and malfunction.

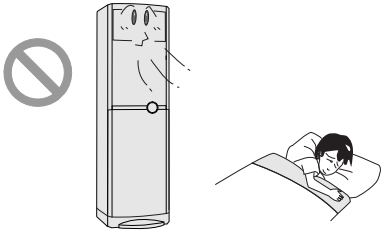


★ Don't place a space heater near the air conditioner.

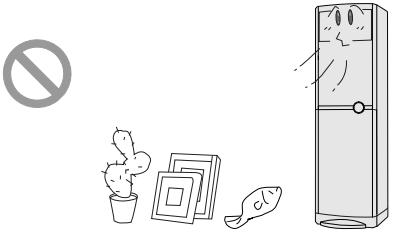


Or CO toxicosis may occur for imcomplete burning.

★ Don't apply the cold wind to the body for a long time.



★ Don't use the air conditioner for other purposes, such as drying clothes, preserving foods, etc.



Working principle and special functions for cooling

Principle:

Air conditioner absorbs heat in the room and transmit to outdoor and discharged, so that indoor ambient temperature will be decreased, its cooling capacity will be decreased by outdoor ambient temperature rising

Anti-freezing function:

If the unit is running in COOL mode and in low temperature, there will be frost formed on the heat exchanger, when indoor heat exchanger temperature decreased below -2℃, the indoor unit microcomputer will stop compressor running and protect the unit.

★The conditions of unit can't normally run

The following temperature range protection device may act, that may cause stop running.

"COOL" running	Outdoor temp. above 48℃	"DRY" running	Indoor temp. below 18℃
	Indoor temp. below 21℃		

Under the relative humidity above 80% (doors and windows opened) when cooling or dehumidifying for a long time, there will be dew drip off near the air inlet.

Working principle and special functions for heating

Principle:

Air conditioner absorbs heat from outdoor air and transmits to room and then discharge, accordingly to enhance the room air temperature. The heating principle of this kind of heat pump, its heating capacity will be declined accord with the outdoor temperature declines.

Notice: This heating air circulation system can enhance the indoor temperature in a short while.
If outdoor temperature got lower,please operate with the other heating ventilating equipments.

Defrosting:

When outdoor temperature is low but in high humidity, after a long while running, frost will form on the heat exchanger of outdoor unit, that will effect the heating effect, at this time,the auto defrosting function will act, the heating operation will stop for 5-10mins provisionally.

During the Auto Defrosting procedure, both fans of in indoor unit and outdoor unit stop to run.

During the Auto Defrosting procedure, the vapor will be emitted from outdoor unit. This is due to rapid defrosting, not malfunction.

After defrosting finished, the heating will recover automatically.

Anti-cool wind function:

In Heat mode, in the following three kinds of status, if indoor heat exchanger hasn't arrived at certain temperature, indoor fan motor will not start, in order to prevent cool wind blow out (2-5 minutes):

1.Heating starts. 2.After Auto defrosting finished. 3.Heating under the low temperature.

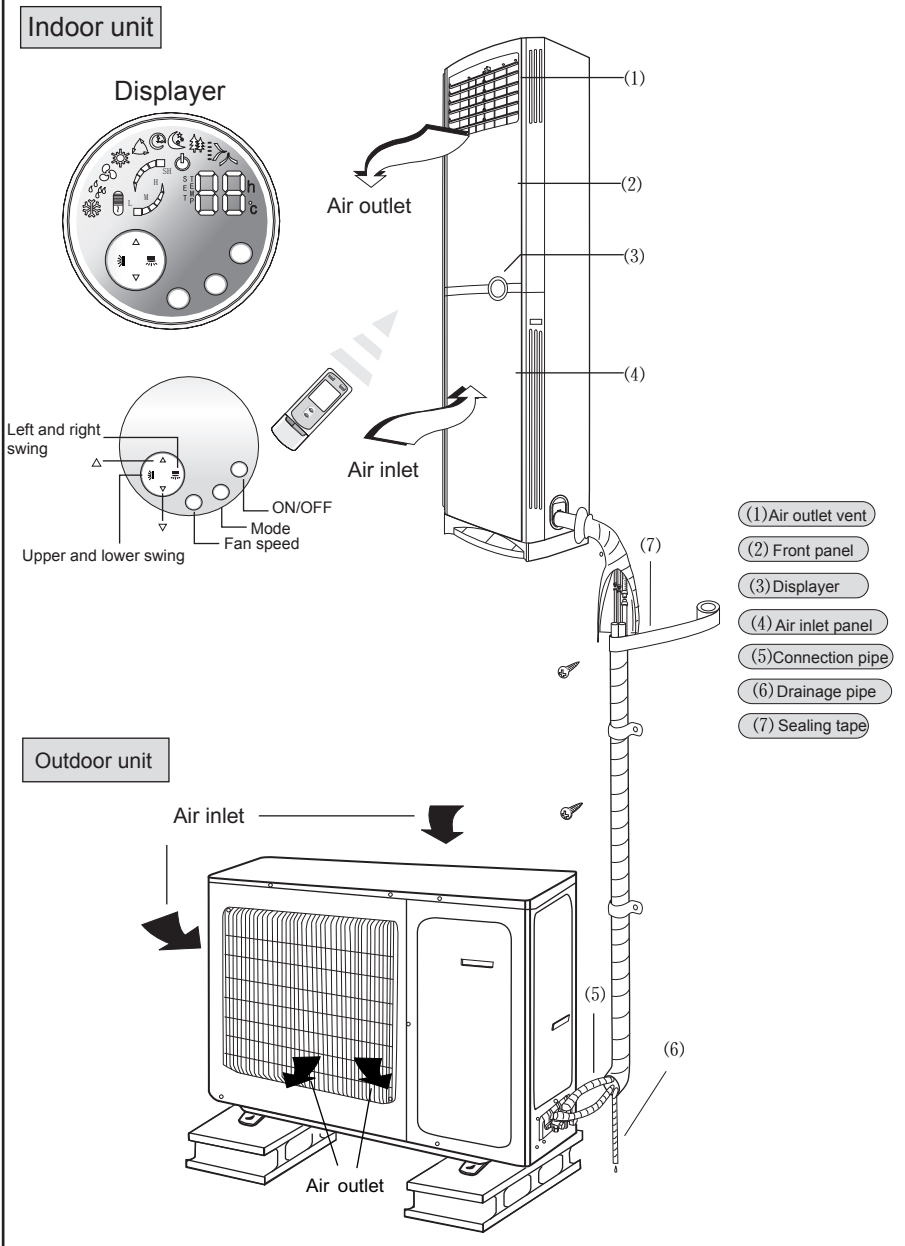
★The conditions of unit can't normally run

The following temperature range protection device may act, that may cause stop running.

"Heat " operation	Outdoor temp above 24℃	"Cool" operation	Outdoor temp above 43℃	"Dehumidi-fying" operation	Indoor temp below 18℃
	Outdoor temp above -7℃		Indoor temp below 21℃		
	Indoor temp below 27℃				

Under the relative humidity above 80%(doors and windows opened) when cooling or dihumidifying for a long time, there will be dew drip off near the air vent.

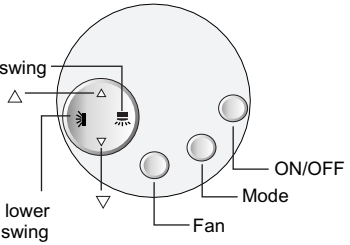
◆ Names and functions of each part



NOTE: The outline of the unit for 36, 48 is different from the picture.

Function buttons

Function buttons



ON/OFF — ON/OFF button

- Start or close the air conditioner (Press once for turning on the unit, once more for turning off the unit)

Mode — Mode button

- Press this button gradually, the mode could be shift in "Auto-Cool-Dry-Fan -Heat(unavailable for the cooling only unit)-Auto"

Upper and lower swing — Upper and lower swing button

- This button is used for the control of the upper and lower swing, and it will be selected and displayed by the following: "Degree1-Degree2-Degree3 -Degree4-Degree5- Come and go swing -Stop swing".

Left and right swing — Left and right swing button

- This button is used for control the left and right swing motor on and off, every pressing of it, the left and right swing motor on and off will shift once.

Compound — Compound button

- After pressing the "Mode" and Fan speed button simultaneously, then all buttons be shielded on the LED board, then press these two buttons simultaneously again, the shield will be unlocked. To press "Fan speed" and "Left and right swing" buttons simultaneously, could set up the sleep function on and off, when every pressing these two buttons, the on and off status of the Sleep function could be shift once. Simultaneously to press the "Fan speed" and △ button could set up the Timer function, when it is not in Timer setting status, to press these two buttons simultaneously, then can enter into Timer setting, the Timer icon flash, at this time use △and▽ buttons select Timer; After the Timer selected, then press these two buttons, and confrim the current Timer setting up;If entering into the Timer status, and don't press the above two buttons, so the Timer icon flash for 10s and return to the original status.

Fan — Fan button

- Press this button, the fan speed could be adjusted between "Auto-Low-Middle -High-Turbo-Auto". The Auto Dry or Dry mode, this button isn't available. (Thereinto, the Turbo function is the accessory function, after selected the function, the noise would be increased, it is optional by users.)

△ and ▽ — △ and ▽ button

- (1) When it is not in the Timer setting Every pressing of △and▽button, the setting temp. will be increased or decrease 1℃, the setting range is16 ℃-30℃, in Auto mode, the temperature setting is invalid.

  (2) When setting the Timer, the Timer could be adjusted, it could be adjusted in 0.5-24hours, it will be changed at 0.5h interval 10h below, and 1h interval 10h above.

  (3) The first time power on, if there isn't any button be pressed: Press ▽ button, the compel Cooling will start, the upper and lower swing louver will open to Degree5 (Min. position), then to open the other overload, the indoor, outdoor motor except the 4-way valve will run at the high speed, and will display all the icons.

  (4)Press △button, the compulsive operation will act at once, the up and down swing louver will be opened at 5(mini position), all overloads will be opened, the indoor and outdoor fan motor will run at high speed and will display all characters.If Tambient ≤－10 ℃or Tamb ≥80℃, has been detected, the buzzer will beep; If Tevaporating≤ -13℃ or Tevaporating ≥74℃ has been detected, the buzzer will beep, 5 minutes later, the unit will stop running and on standby.

◆ Controller and function

LED and displaying contents

LED

Left and right swing display

● Displays the left and right swing status.

Upper and lower swing display

● Displays the upper and lower swing status.

Sleep

● Displays the SLEEP status, this mode could be set up by the compound buttons or the buttons on the controller.

Fan speed

● Fan speed dynamic display, at the same time, it displays icons of "Lo", "Mid", "Hi", "Super Hi", "Auto".

(Thereinto the super Hi function could be the function in appendix, the noise may be increased, it is optional by users.)

Setting indoor temp.

Setting indoor temp. display

● Usually it displays indoor ambient temp., if there is no timer remote control or button signal, it will display the setting temp., 5s later, it will display the ambient temperature.

Air purify(only same modle)

● Displaying the starting or closing of the plasma panel dusting device.

Timer

● After unit turned on, if use the button select the Timer, the timer icon will flash. At this time, if to set up the Timer, the time will be displayed, after the setting temp. setup, 5s later, it will shift to Timer, 5s later it will shift to indoor temperature, and the timer icon flash. If doesn't set the Timer, 5s later it will shift to the indoor temp. display, the Timer icon will disappear. When turning off the unit, if use the function button to select the Timer, the Timer icon flash. At this time, if setup the Timer, the timer will display. If the setting timer hasn't been set up, 10s later, the display will be turned off. If use the wireless remote control to set up the timer, then the timer icon and timer will display.

Dry

● Reducing the humidity and keeping the room temperature.

Fan

● In this mode, the compressor doesn't work, only the fan indoor motor work.

Auto

● In this mode, the controller will accord the room temp. change automatically select the running mode.

Cool

● Display Cool status.

Heat

● Display Heat status.

◆ Operation of wireless remote control

Name and function of wireless remote control

Note: Besure that there are no obstructions between receiver and remote controller; Don't drop or throw the remote control; Don't let any liquid in the remote control and put the remote control directly under the sunlight or any place where is very hot.

Signal transmitter

Remote control

Displayer

Display all modes

"❄" COOL

"💧" DRY

"🌀" FAN

"☼" HEAT

"☾" SLEEP

TEMP.

TEMP. button

● Every pressing of ⊕ the setting temp. will be increased, every pressing of ⊖ the setting temp. will be decreased. In ❄ mode, the setting temp. could be adjusted between 16℃- 30℃.

At 🌀 mode, 16℃～30℃。

At ☼ mode, 16℃～30℃。

● At ☼ mode, the setting temp.could be 24℃- 26℃.

At ❄ mode, 19℃～23℃。

At 💧 mode, 20℃～24℃。

FAN

FAN speed button

● Press this button once, fan speed will change as below:

AUTO → ◢ → ◢◢ → ◢◢◢ → ◢◢ → ◢

Note: Low fan speed ◢ , Middle fan speed ◢◢ High fan speed ◢◢◢ Super High fan speed ◢◢◢

Fan speed is not available in DRY mode.

ON/OFF

ON/OFF button

● Press this button, the unit will start to run, when repressed, the unit will stop to run.

MODE

Mode button

● Press this button, the running mode will change as below.

AUTO → ❄ → 💧 → ☼ → 🌀

(Note: ☼ only for cooling and heating unit)

SWING

Left and right swing

● To set up the left and right swing on or off.

◆ Operation of wireless remote control

Names and functions of wireless remote control

NOTE: This wireless remote control is universal, it could be used for many units, some buttons of this control(Air exchange, Power saving, Damping, Anion) which are not available to this unit will not be described below.

Wireless remote control

Displayer

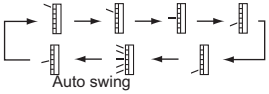
LCD displayer

- It displays all selected information.

swing

Button

- When pressing the button once, the swing direction will be displayed as follow:



Auto swing

The guide louver will swing as above.

Note: After the unit restarted, the the wireless remote control will memorize the last setting swing postition automatically.

Light

Light button

- Press it once, the displayer will light, when repressed, it will turn off.

Sleep

Sleep button

- Press this button, enter into SLEEP state, when repressed, it will quit. At COOL,DRY mode: the SLEEP mode run after 1hour, the setting temp. will be increased 1℃, 2hour, the setting temp. will be increased 2℃ and then will run at this setting temperature.

When Heating: After setting Sleep procedure mode 1hr later, the setting temperature will be decreased 1℃, 2hrs later, the setting temperature will be decreased 2℃ , then the unit will run at this preset temperature.

NOTE: there is no SLEEP function under the AUTO and FAN mode.

TIMER

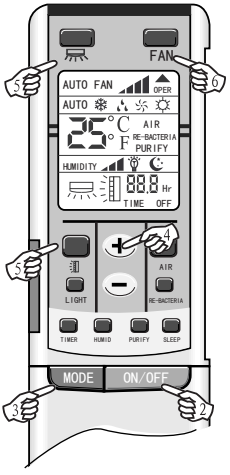
Timer button

- Press this button the icon of timer on (or off) will flash and it displays the last time of timer,press + or - button to adjust the time(press + or - button and hold the value will be increased or decreased creased rapidly),the range is 0.5 -24hours;When repressed the button for confirmation and send it right away, that the icon of timer on (or off) will not flash, if it is flashing without pressing the timer button, 10s later, it will return to original setting status automatically. At unit is turned off, press this button, could set timer on. If timer has been confirmed, press the "CANCEL" button will cancel the time.

◆ Operation of wireless remote control-guide for operation

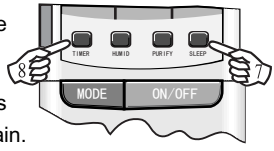
Guide for operation-general operation

1. After powered on, the buzzer will send a tuneful sound, All design will be displayed on the indoor unit displayer, the unit is stand-by.
   (NOTE: when power on or receive the signal from the wireless remote control, the buzzer will send the tuneful sound and the guide louver board and swing louver reset automatically.)
2. Press the ON/OFF button, the running indicating design will turn green, meanwhile it displays the current setting running mode, set temperature as well as fan speed, the unit will start to run.(NOTE: after the LIGHT button was turned off, all designs will turn off except the running indicatinging design.)
3. Press MODE button, select desired running mode.
4. Press TEMP. button, set the desired temperature. (It is unnecessary to set the temperature at AUTO mode)
5. Press SWING button, press once, the guide louver will automatically swing; when repressed, the guide louver will stop swinging.
6. Press FAN button, to set fan speed, the AUTO FAN, LOW, MID or HIGH could be selected.



Guide for operation-optional operation

7. Press SLEEP button, set the sleep mode. The displayer will turn off the design except the Sleep and Running mode design.
8. Press TIMER button, then press ⊕ ⊖ button, to set the cheduled timer on or timer off.



NOTE: After the TIMER set up, if press other button (such as TEMP. button etc.), that the TIMER will be set up again.

★ **About AUTO RUN**

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.

(There is no Air Exchange function in this series)

◆ Operation of wireless remote control

Changing batteries and notices

1.Slightly to press the place with OPEN along the arrowhead direction to push the back cover of wireless remote control. (As show in Fig. 1)

2.Take out the old batteries, insert two pieces of NO.7 alkali dry batteries, and pay attention to the ⊕ ⊖ (AS show in Fig.1)

3.Attach the back cover of wireless remote control.

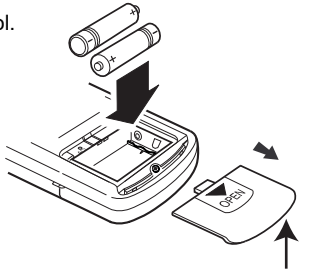


Fig.1

Cover

NOTE:

- When changing the batteries, do not use the old or different batteries, otherwise, it can cause the malfunction of the wireless remote control.
- If the wireless remote control will not be used for a long time, please take them out, and don't let the leakage liquid damage the wireless remote control. (As show in Fig.2)
- The operation should be in its receiving range. (It should be within 7 meters, and there should be no obstruction existed).
- It should be placed at where is 1m away from the TV set or stereo sound sets.

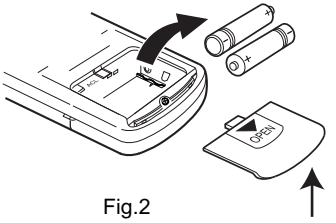


Fig.2

Cover

- The enclosed batteries are used for unit start, the batteries will be comsumed no more than 1year, please pay attention to them and change them in time.
- If the figures on the wireless remote control is displayed in disorder or cannot be adjusted, please open the cover, and use the ball point pen to press the reset button. (As show in Fig.3)
- If the wireless remote control cannot operate normally, please take them out,after 30s later and reinsert it.

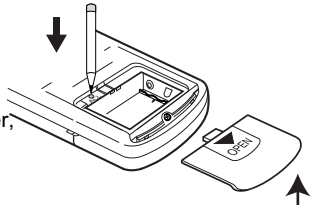


Fig.3

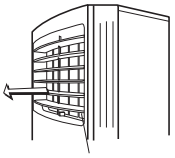
Cover

Breeze guided up and down

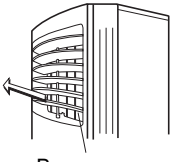
Note:

By pressing the upper and downward swing button or wireless remote control, could select the upper or downward swing method, for the control of the upper and downward swing motor operation and stopping, so the swing louver could swing upwardly or downwardly or stop at a certain degree.

If the inner fan motor has been put into work, every press of the downward button, that the swing method will run as below: "Degree1---Degree2---Degree3 ---Degree4---Degree5--- Come and go swing--- Stop swinging ". To select the "Stop", the swing icon on the wireless remote control and displayer disappear; When selecting "Come and go swing", the swing icon display.



Breeze straightly



Breeze upwards

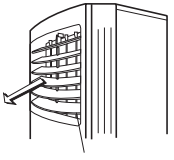
(It could be setup at Degree1 or Degree2 breeze)

Fig.4

- When cooling and drying, set to breeze straightly or upwards. (As shown in Fig. 4)

When turning on the unit, the downward swing could be selected, in order to arrive at the surrounding temperature quickly reducted, but the downard swing state cannot be lasted for a long time, in order to keep the air Jwell ventilation.

- When heating, set to breeze downwards. (As show in Fig. 5)



Breeze downwards

(It could be setup at Degree 4 or Degree5 breeze)

Fig.5

Breeze guided left and right

- Press SWING key on control panel (wireless remote control) to choose SWING and END SWING, then the swing louvers will swing left and right or stop swinging and breeze from a fixed direction. (As shown in Fig.6)

- Every time when pressing SWING,"SWING" will appear on LCD, if indoor fan is already working, then swing motor will start and breeze left and right; press the key once more, "SWING" disappears from LCD, swing motor stops, the louvers stop swinging and breeze from a fixed direction. (As shown in Fig. 6)

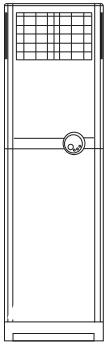


Fig.6

◆ Clean and care

Caution

Turn power off and pull out the power plug before cleaning air conditioner, or it may cause electric shock.

Never sprinkle water on the indoor unit and the outdoor unit for cleaning because it can cause an electric shock.

Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner.(So wipe the units with a dry soft cloth, or a cloth slightly moistened with water or cleanser.)

Clean the unit

① Cut power off before cleaning

After unit stop running, then turn off the unit.

② Use soft cloth when cleaning cabinet

If the unit is very dirty, dip cloth into warm water below 40℃, dry the cloth and then cleaning it. (As shown in Fig.7)

③ Don't spray water on indoor unit

Spraying water will damage microcomputer and circuit board in the unit (As shown in Fig.7)

Note: Make sure there is nothing blocking the air in and out of the outdoor unit.

Blockage cause malfunction of the unit

Fig.7

Cleaning the air filter

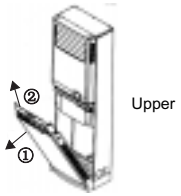
① Remove the screws of air intake grill

Use screwdriver to disassemble the screw block and fixing screw at the air inlet grill, and open the air inlet grill.

② Disassemble the air filter

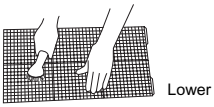
As shown in Fig.8(upper), according to direction ① to open the air inlet panel,and according to direction ② to pull out off the filter.

Fig.8



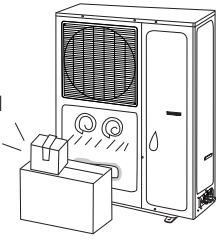
③ Cleaning the filter

Clean by patting the filter softly or use an electric cacuum. If too much accummulated on the filter, use water with containing some neutral detergent to clean, then wash with tap water. Dry after cleaning and put it back into place. (As shown in Fig.8)



NOTE: Do not dry the filter by exposing it under direct sunshine or near a heating oven, or it may get deformed.

Check before use



① Be sure that nothing obsturcts the air outlet and intake vents

② Check that whether ground wire is properly connected or not.

③ Check that whether the batteries of air conditioner are changed or not.

④ Check that whether the installation stand of the outdoor unit is damaged or not. If damaged, please contact the dealer.

Maintain after use

① Turn power off.

② Clean the filter and indoor and outdoor units' bodies.

③ Clear dust and obstruction from the outdoor unit.

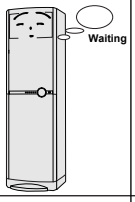
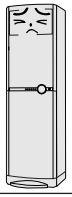
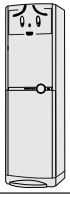
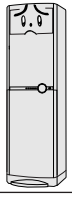
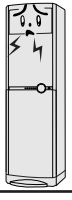
④ Repaint the rubiginous place on the outdoor unit to prevent it from spreading.

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

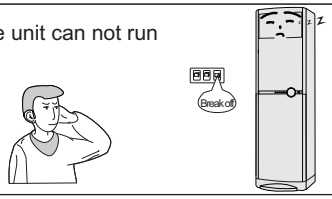
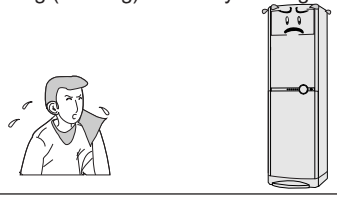
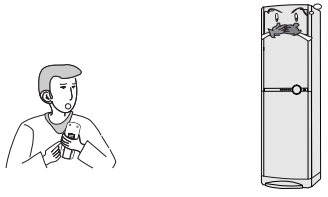
◆ Troubleshooting

CAUTION

• Don't attempt to repair the air conditioner by yourself, it can cause an electric shock or fire. Please check the following items before asking for repair, it can save your time and money.

Phenomenon	Troubleshooting
Not operate immediately when the air conditioner is restarted.  	Once the air conditioner is stopped, it will not operate in approximately 3 minutes to protect itself.
There's unusual smell blowing from the outlet after operation is started.  	The unit has no peculiar smell by itself. If has, that is due to the smell accumulated in the ambient. Solution method: Cleaning the filter(refer to P9). If problem still has, so need to clean air conditioner. (Please contact with INVENTOR authorized maintenance center.)
Sound of water flow can be heard during the operation.  	The air conditioner is started, when it is running the compressor started or stopped running, or the unit is stopped, sometimes there is swoosh or gurgle, the sound is due to refrigerant flowing they are not malfunctions.
In COOL mode, sometimes the mist emitted from the air outlet vent.  	When the indoor temperature and humidity are very high, this phenomenon would happen. This is caused by the room air is swiftly cooled down. After running for a while, indoor temperature and humidity will fall down, the mist will die away.
Creaking noise can be heard when start or stop the unit.  	This is caused by the deformation of plastic due to the changes of temperature.

◆ Troubleshooting

Phenomenon	Troubleshooting
The unit can not run 	● Has the power been shut down? ● Is the circuit protection device tripped off or not? ● Is voltage higher or lower? (Tested by professionals) ● Is the Timer correctly used?
Cooling (Heating) efficiency is not good. 	● Is Temp. setting suitable? ● Were inlet and outlet vents obstructed? ● Is filter dirty? ● Are the windows and doors clothed? ● Did Fan speed set at low speed? ● Is there any heat sources in the room?
Wireless remote control is not available 	● The unit is interfered by abnormal or frequent functions switchover occasionally the controller cannot operate. At this time, you need to pull out of the plug, and reinsert it. ● Is it in its receiving range? Or obstructed? ● To check the voltage in wireless remote control inside is charged, otherwise to replace the batteries. ● Whether the wireless remote control is damaged.
If water leakage in the room	● The air humidity is on the high side. ● Condensing water over flowed. ● The connection position of indoor unit drainage pipe is loosed.
If water leakage in outdoor unit	● In heating procedure, when the heat exchanger temperature of indoor unit is low, stop blow wind in order to avoid blowing cool air (2-5 mins). ● When heating, if the outdoor temperature is low and in high humidity, there is much frost formed in the outdoor unit heat exchanger, the unit will automatically defrost, indoor stop blowing fan about 10mins, during the defrosting procedure, there will be water or vapor emitted. ● When the unit is running in COOL mode, the pipe and connection of pipe would be condensed due to the water cooled down.
Noise from indoor unit emitted	● The sound of fan or compressor relay is switching on or off. ● When the defrosting is started or stop running, it will sound. That is due to the refrigerant flowed to the reversed direction.

◆ Troubleshooting

Phenomenon	Troubleshooting
Indoor unit can not blow	● In heating procedure, when the heat exchanger temperature of indoor unit is low, stop blow wind in order to avoid blowing cool air (2-5 mins). ● When heating, if the outdoor temperature is low and in high humidity, there is much frost formed in the outdoor unit heat exchanger, the unit will automatically defrost, indoor stop blowing fan about 10mins, during the defrosting procedure, there will be water or vapor emitted. ● In COOL mode, the power indicator will flash and E2 will display, due to the indoor temp. is very low, and frost on the heat exchanger, the system starts defrosting. About 10min., it resumes to show the displaying.
Moisture formed on air inlet grill	If air conditioner is running in a high humidity for a long time, that the moisture may condensed on the air grill and drip off.
Power indicator flash, will display H1 Power indicator flash, will display E2 Power indicator flash, will display E5 Power indicator flash, will display E4 Power indicator flash, will display E1 Power indicator flash, will display E3 Power indicator flash, will display E4	● H1: Defrost ● E2: Anti-freezing protection ● E5: Over current protection ● E1: System high-pressure protection ● E3: System low pressure protection ● E4: Air exhaust pipe high temperature protection

Immediately stop all operations and plug out, contact the dealer in following situations.

▲ There is harsh sound during operation;
▲ The terrible odors emitted during operation;
▲ Water is leaking in the room;
▲ Air switch or protection switch often breaks;
▲ Carelessly splash water or something into air conditioner.

▶ Stop running and pull out of the plug

◆ Installation service-Notices for installation

Important notices

1. The unit installation work must be done by qualified personnel according to the local rules and this manual.
2. Before installation, please contact with local authorized maintenance center, if unit is not installed by the authorized maintenance center, the malfunction cannot be solved, due to discommodious contacts.
3. When removing the unit to the other place, please firstly contact with the local INVENTOR maintenance center.

Installation location

Installation at the following places may cause failure of the air conditioner. Please contact INVENTOR installation and service agency if the installation at such places cannot be avoided.

- Choose a place far away from heat source, steam and inflammable gases.
- A place with high frequency facilities, such as radio equipment, electric welder or medical equipment;
- A region with saline-sodic soil near the sea;
- A place full of machine oil;
- A place with sulphide gases (such as sulphur spring);
- An environment with special conditions.

The installation position of indoor unit

1. Select a place, avoid the inflammable gas produce or leakage.
2. Select a place avoid the water vapor or oil sprayed on the unit.
3. Ensure that airflow can reach every conner of the room.
4. Choose a place so that the connection pipe could be easily pulled out.
5. Select the place where the airflow of the unit can not be blocked.
6. Select the position where the few outer air influenced.
7. Select the firm and flat ground.
8. Ensure sufficient clearance and space for service and maintenanc.
9. Ensure the installation of indoor unit is in conformity with the requirements of installation dimension drawing;

The installation position of outdoor unit

1. A place where noise and airflow generated by air exhaust do not affect the neighbors, animals and plants.
2. Ensure good ventilation of outdoor unit.
3. No obstacles near the outdoor unit obstructing the air intake and air exhaust of the unit
4. The installation position shall be able to withstand the weight and vibration of the outdoor unit .
5. Choose a place far away the direct sunshine or strong wind.
6. The indoor unit shall be in conformity with the requirements of installation diagram, and ensure sufficient clearance and space for service and maintenance.
7. The height of connection pipe should be within 5 meters, and the length of it should be within 15 meters.
8. Please select the place keep out of the children's reach.
9. Select the place where do not influence the communal path way and the appearance of the city.

◆ Installation service- Notices for installation

Electric wiring

1. It should be connected with the special earth device on the building, it should be installed by the professional personnel. There should be enough capacity of creepage protector and air switch. (please refer to the following table)
2. The power supply must use the rated voltage and special circuit.
3. The diameter of the power wiring should be large enough. (Please refer to the following table)
4. The wiring work should conform to relative standard.
5. The ground must be connected.
6. Don't pull the power wire strongly.

Requirements for electric safety

1. First install wire of outdoor unit and then wire of indoor unit. After finishing wiring and piping, connect the unit to the power supply.
2. Please strictly follow the instruction of this manual when installing indoor unit and its piping.
3. The unit is subject to change without prior notice.
4. Please read this manual carefully before installation.

The unit power is large, the power supply circuit supplied for the unit should accord with the following:

1. Installed the air switch with suitable capacity, please refer to the following, the air switch must have the functions of magnetic tripping and heat tripping. (Note: never use the fuse to protect the branch circuit.)
2. The capacity of wire diameter should be 1.5 times larger than the unit max. current.
3. Installed the creepage protector with enough capacity.
4. Make sure to divide the branch circuit for the special circuit.
5. The min. clearance between combustible surface and the air conditioner is 1.5 meters.

Models	Air switch capacity
18、24、28K	25A
36K/48K Cool only (380-415V 3N～)	16A
36K/48K Cool and heat (380V)	20A
36K/48K Cool only (220V 3N～)	25A

Note:

- Please pay attention to surrounding conditions (eg. Ambient temp., direct sun shine, rain drops etc.)
- The data of lead wire cross section listed above is the min. area. The cross section area of power cable, power connection wire should not be less than the data listed above.
- The power cable, power connection wire must adopt the standard copper-core cable accord with the national criterion.
- Earth wire must be connected to both of indoor and outdoor units.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- the appliance shall be installed in accordance with national wiring regulations.

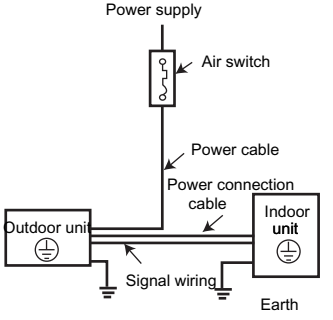
◆ Notes for installation

Notes for electric wiring:

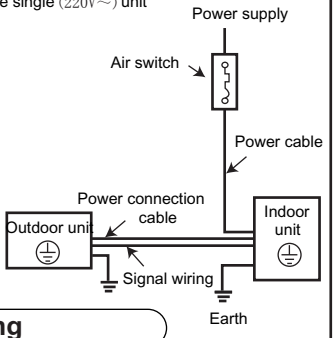
1. Special circuit must be used for power supply.
2. The circuit must be installed by special serviceman.
3. Please do the wiring according to the following wiring diagram. The screws must be tightly fastened, the slippery screws must be changed, the tapping screw cannot be used for electric wiring.
4. Please wiring according to the circuit diagram on the unit.
5. Adopts the cables which are attached with the unit, please do not to change the cables optionally, and do not change the length and ends of the cable, if need to adjust, please contact with the INVENTOR local after-sales service center.
6. For the power cord which is without the plug, that cannot be connected the plug for using.
7. The electric wiring connection of indoor and outdoor should not be affected by the stretch and bending.
8. ⏚ is the symbol of earthing, it denotes that the yellow-green dual wire only can be connected with the place with the symbol.
9. After the electric installation completed, make sure to use wire clamp to fix the power cord, power supply connection cable and signal cable tightly, and ensure that there is enough space in the fix position and each connection terminals of the lead wires.
10. Please use about a half kilogram of force, to check whether each lead wire is installed well. When checking the air connector, please enclasp it, and check each lead wire of which is connecting with the connector.

Installation diagram, please refer to the following.

For the three-phase (380-415V 3N～/220V 3～) unit



For the single (220V～) unit



Requirements for earthing

1. The air conditioner is the first class electric appliance:
2. The yellow and green dual color wire in the air conditioner is earth wire, it cannot be used for other purposes, do not cut off it. Do not fix it by the tapping screw: otherwise, it can cause the electric shock.
3. Please do not connect the earth wire to the place

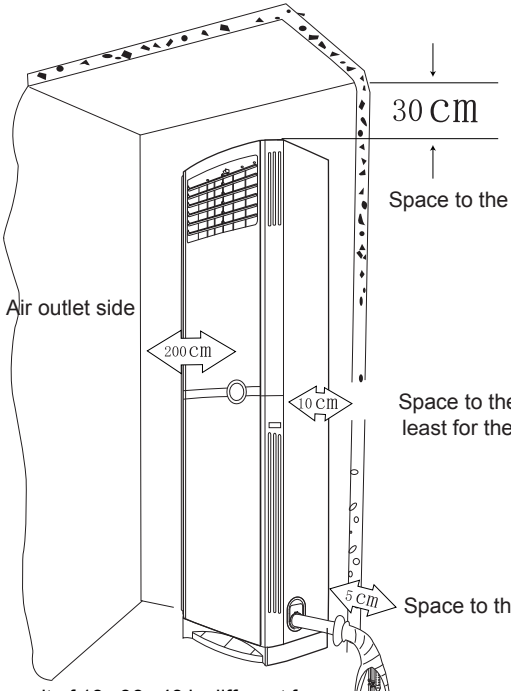
① Water pipe ② Gas pipe ③ Drainage pipe ④ The place where is unreliable suggested by the professional.

Others

1. All electric installation must be done by professional personnel according to local law, regulation and this manual.
2. The connection method between air conditioner and power cable as well as the interconnection of each separate components, please refer to the circuit diagram on the unit.
3. The model and rated value of blown fuse please refer to the corr-esponding silk-screen on the controller or fuse sleeve.
4. The outer static pressure is 0MPa when the unit is testing.

◆ Installation service- Installation dimension diagram

Installation dimension diagram



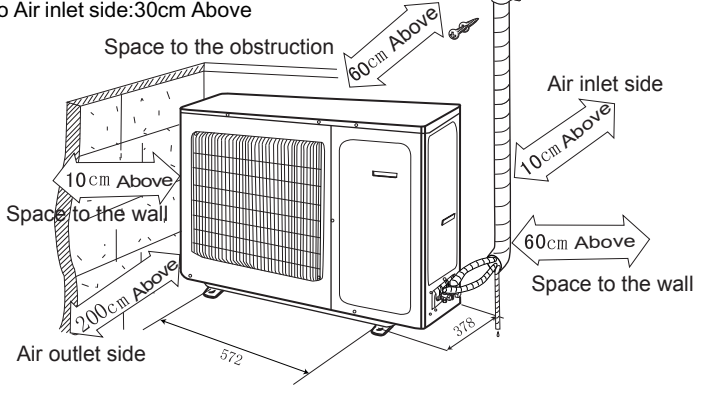
Note:The outline of the unit of 18 , 36 , 48 is different from the picture.

Space to the left wall:30cm Above

Space to the right wall:50cm Above

Space to the obstruction:50cm Above

Space to Air inlet side:30cm Above



Install the connection pipe

- Before wiring and piping, please remove air intake grill.

1.Remove screw cap from the left and right sides of air intake grill. (As shown in Fig.9)

2. Pull out air intake grill by the handle towards the arrow direction. (As shown in Fig.10)

3.When doing the piping and wiring at left, right and rear side, please use attached accessories, upper/lower baffle. (As shown in Fig.11)

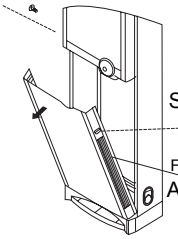
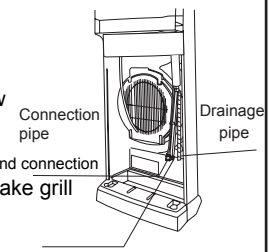


Fig.9



Flare-end connection Fig.10

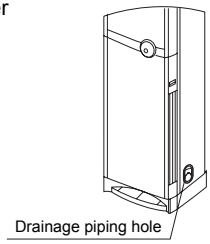


Fig.11

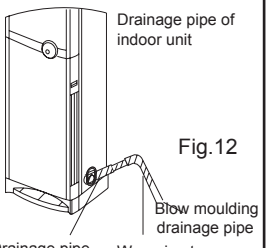


Fig.12

Install drainage pipe

1. Make sure drainage pipe is leading to the outdoor side (discharge side).
2. Joint drainage pipe with blow moulding drainage pipe and fix with tape from the accessories.
3. If the drainage pipe needs to be led indoors, please wrap it with insulation material (at least 9mm thick), and then wrap with tape to prevent air from going into the pipe and cause congealing.
4. After connecting, check if water can discharge properly and if there is any leaking. (As shown in Fig.12)

Electric connection

1.Disassemble the air intake grill.

2.Remove screws from the cover of electric box to expose the box.

Heat pump:18K	One signal wire
Heat pump:24K	Two signal wires

◆Install indoor unit

3. Put the power connection wire through the single wire hole of the indoor unit rear side, the pull it out from the front.

4. According to the diagram for wiring, according to the marks on wire board for connection correspondingly. N(4), N5 connect with indoor power supply cable, N(1), N2, N3 for indoor and outdoor power supply. (As shown in Fig.13)

5. Place the section with sleeve of the power connection wire into the wire groove, then cover the electric box cover, tighten the fixing screw, and tighten the connection wire.

6. Recover the electric box cover.

7. For the cooling and heating unit, the signal control wire is connected via connector and indoor unit, and clasp the signal control wire with the wire clamp, which is under the bottom of body case.

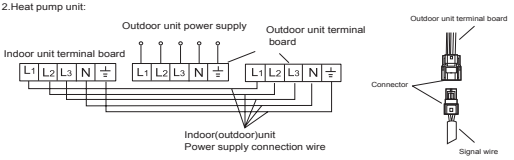


Fig.13

Note:

When the connection wire length isn't enough, please contact with the appointed service shop for buying a dedicated electric wire with enough length, the connection isn't allowed between the wire.

- The wrong wiring connection isn't allowed, it may cause the malfunction of the components.
- Tighten the terminal screw.
- After tightened the screw, and slightly pull the electric wire to confirm whether it is firmed or not.
- Wrong earth wire connection may cause electric shock.
- The electric wire covering plate must be fixed well, and tighten the connection wire, if the wire covering plate isn't installed well, that may lead the dust, moisture enter in or due to the outside force impact, it may cause fire or electric shock.

Install the baffle

● Please according to the following sketch map for installation while the connection pipe, water drainage pipe has been installed completely:

1. Loosen the bolts, adjust the baffle position up and down, to grip the connection pipe, water drainage pipe possibly.(As shown in Fig.14)

2. Tighten the bolts.

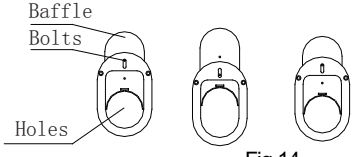


Fig.14

Notes for piping

Pipes for refrigerant and drainage pipe should be insulated to avoid frosting and dripping.

1. Both of the indoor and outdoor units adopt flare-end connection. Refrigerant pipe as shown below is used to connect indoor and outdoor units.(As shown in Fig.15)

Note: Don't bend the bendable pipe back and forth more than 3 times. Insulate all exposed parts of the flare-end connection joint and refrigerant pipe. (As shown in Fig.16)

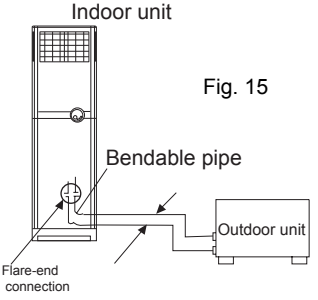


Fig. 15

2.Connecting the pipe

Check valve of the outdoor unit should be shut (like position unworking). Every time when connecting, remove bonnet from the check valve and connect to flare-end pipe immediately (Within 5min), otherwise, dust, moisture and other small things may go into the pipe and cause trouble.

When using copper pipe bought locally

1.The part with bendable pipe should be used on the indoor side.
2. The bending angle should not be more than 90.
3. It's better for the bend to be in the middle of the pipe and the radius of the bend is the bigger the better.
4. Don't bend the bendable pipe more than three times. (As shown in Fig.15)

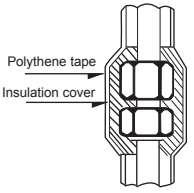


Fig. 16

When bending the pipe

1. Cut some part of the insulation pipe at the place of the bend (and wrap with polythene tape after bending).
2. Make radius of the bend as big as possible so that the pipe will not get flat or broken.
3. Tighten the pipe bending by the rubber bender. (As shown in Fig.17)

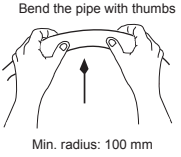
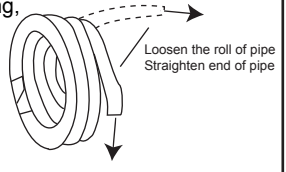


Fig. 17

When using copper pipe bought locally

Check valve of the outdoor unit should be shut (like position unworking). After the refrigerant pipe has been connected to both indoor and outdoor units, exhaust from service mouth on low-pressure check valve of the outdoor unit. After exhausting, put back nut of the service mouth and fasten.

Install the big handle.
After finishing step 1 and 2
Check valve of the outdoor unit should be fully opened so that there is no blockage between the indoor and outdoor refrigerant pipe.



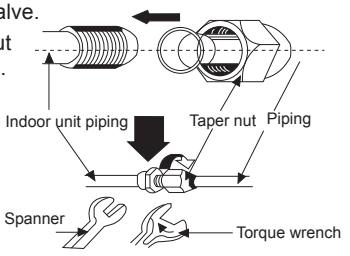
Note: Before fastening nut of the flare-end pipe, please apply some refrigerant oil to the end of the pipe and the joint.

◆ Install indoor unit

Install the connection pipe

1. Align the center of the piping flare with the relevant valve.
2. Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench refer to the following.

Hex nut diameter(mm)	Tightening torque table(N.m)
9.52	35～40
12	45～50
16	60～65
19	70～75



NOTE: Firstly connect the connection pipe to indoor unit, then to outdoor unit; pay attention to the piping bending, do not damage the connection pipe; the joint nut couldn't tighten too much, otherwise it may cause leakage.

Exhausting(with A5mm hexagon wrench)

● When using refrigerant of outdoor unit:

1. Tighten nuts A, B, C, D substantially.
2. Remove cover from check valve A (As show in Fig.18)
3. Twist open core of liquid valve B with hexagon wrench, and at the same time hold screw driver against core of gas valve A to let gas out. After 15 seconds of exhausting and refrigerant appears, close one-way valve and tighten bonnet.
4. Fully open cores of both liquid valve and gas valve, tighten bonnet, then check with soap wate or leakage detector to see if there is any leaking in the joints of piping between indoor and outdoor units.

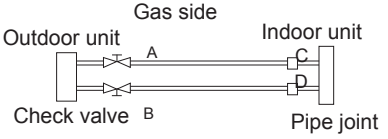
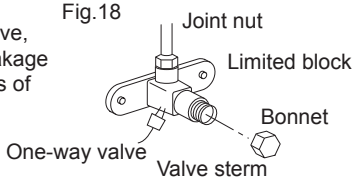


Fig.18



Length of pipe	Exhausting	Value of refrigerant charge
No longer than 5m	Use refrigerant of the outdoor unit	As the value on the nameplate
5-15m	Use vacuum pump	Nameplate value +30g/m (Charge 30g more for every meter added to the pipe.)

When using the vacuum pump

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open handle of Lo manifold valve.
4. Open the vacuum pump to evacuate. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside.
5. After finishing evacuation, shut Lo handle of manifold valve to stop the vacuum pump. (Keep evacuating for more than 15 minutes and make sure the reading of multi-meter is $-1.0X10^5$pa(-76cmHg).)
6. Fully open high/low pressure valves.
7. Remove charging hose from charging end of low pressure valve.
8. Tighten bonnet of low-pressure valve. (As shown in Fig.19)

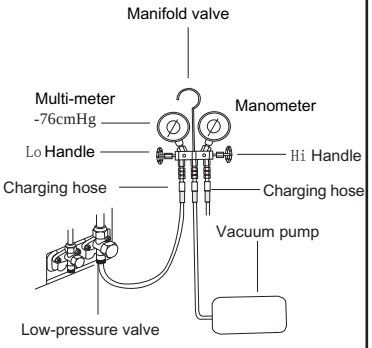
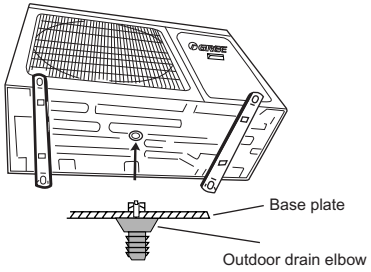


Fig.19

Outdoor condensation drainage (Heat pump type only)

When the unit is heating, the waste water formed in the outdoor unit can be drained out reliably through the drain hose.

Installation: Install the outdoor drain elbow in the Ø25 on the base plate as below, and joint the drain hose to the elbow, so that the waste water formed in the outdoor unit can be drained out to a proper place.

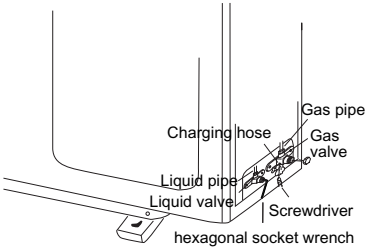


◆ Installation service- Install outdoor unit

Leakage checking

Check with soap water or leakage detector
to see if there is any leaking in the joints.
(As shown in Fig.20)

Fig.20



Wiring method

1. Remove the front side plate.
2. Put it through to the outdoor wire hole.
3. please refer to the electric wiring connection of the indoor unit, then fix with wire clamp. (As shown in Fig.21)

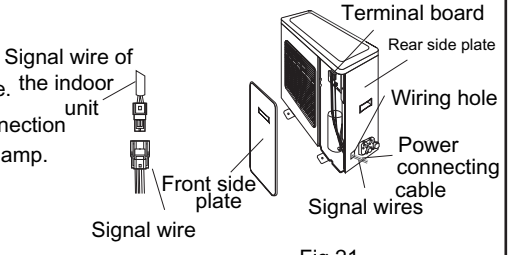


Fig.21

46,50 unit:

① Disassemble the handle on the right side of outdoor unit.
② After wiring according to the sketch map, fix it with wire clamp.
③ Make sure if the wiring is fixed or not.
④ Install the big handle.(As shown in Fig.22)

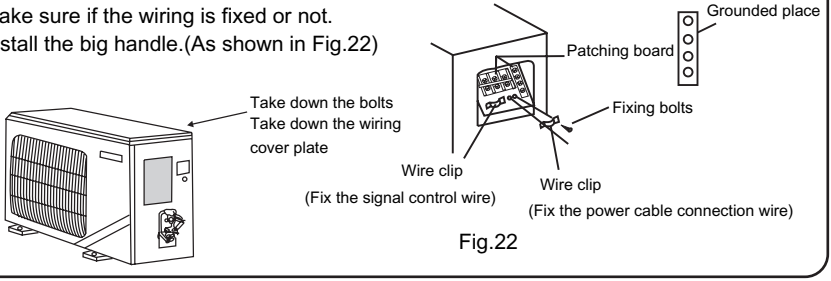


Fig.22

◆ Test operation and check after installation

Check after installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating) capacity.
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage well?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.
Is the electric wring and piping connection installed correctly and securely?	It may cause electric malfunction or damaged the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Is the inlet and outlet been covered?	It may cause insufficient cooling(heating) capacity.
Has the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

Test operation

1. **Before test operation**

(1) Do not switch on power before installation is finished completely.

(2) Electric wiring must be connected correctly and securely.

(3) Cut-off valves of the connection pipes should be opened.

(4) All the impurities such as scraps and thrums must be cleared from the unit.

2. **Test operation method**

(1) Switch on power, press "ON/OFF" button on the wireless remote control to start the operation.

(2) Press MODE button, to select the COOL, HEAT, FAN to check whether the operation is normal or not.

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