

INSTALLATION AND OWNER'S MANUAL
FOR

DUCT TYPE AIR-CONDITIONING UNIT

The logo for Climaproyectos features a stylized circular arrow graphic on the left, composed of three segments in different shades of gray. The word "Climaproyectos" is written in a large, bold, sans-serif font, with the "C" and "P" being significantly larger than the other letters.

Climaproyectos



Thank you for choosing our company products!

Air conditioning facilities are valuable products. In order to protect your legitimate rights and interests, please make sure that the installations are done by professional technicians. This manual is a general-purpose version for the conditioning systems manufactured by our CO., the one that you have chosen might be a little different in appearance from the ones described in the manual . But these differences will not have any impacts upon your operation and use of the system.

Please read the manual carefully before you operate the system and check to see if the model is identical to the one you have purchased, keep the manual properly in case you might refer to it in the future.



CONTENTS

1 NOTICES TO USERS	1
2 PARTS NAME AND FUNCTION	4
3 INSTALLATION OF THE UNIT	5
4 ELECTRIC WIRING	19

1 NOTICES TO USERS

Safety Notices

"Important Safety Information" affords very important points about how to operate the unit safely. To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

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



WARNING

Failure to observe a warning may result in serious injury, grave accidents even death.



CAUTION

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

Please read the mark of the unit carefully. If you detect any abnormality, such as abnormal noise, smell, fog, temperature rise, creepage, fire and so on; Please turn off the power supply immediately and call your dealer or local service center for instructions. Do not repair the unit by yourself. If necessary, call the local fire department or Emergency department for help.



WARNING

- This product is extensively applied in offices, restaurants, hotels, residence and so on.
- Be sure only trained and qualified service personnel to install, repair or service the equipment. Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, fire or other damage to the equipment.
- Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop to cause injury.
- While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation. Improper drain piping may result in water leakage and property damage.

- Never use or stockpile some flammable objects such as hair spray, alcohol or paint near the unit. It may cause a fire.
- Cut off the power of the air conditioner in case of accidents, such as smelling something burning.
- Keep the air-conditioning room with good ventilation to avoid of oxygen deficiency.
- Do not insert fingers, rods or other objects into the air inlet or outlet. When the fan is rotating at high speed, it will cause injury.
- Never try to plug in or pull out the power plug for starting or shutting the air conditioner.
- Pay attention to the mounting support in case of damage for a long usage.
- Ask your dealer or qualified service personnel for improvement, repair, and maintenance. Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- If the appliance is fixed wiring, the appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under over voltage category III conditions, and these means must be incorporated in the fixed wiring in accordance with the wiring rules.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- If the equipment contains fluorinated greenhouse gas R410A ,the value of Global Warming Potential(GWP) is 2087.5.

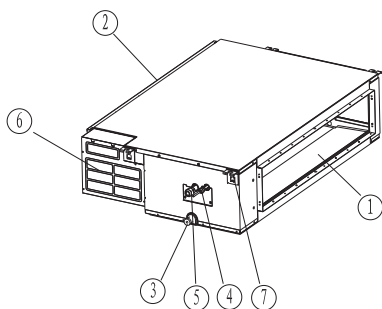
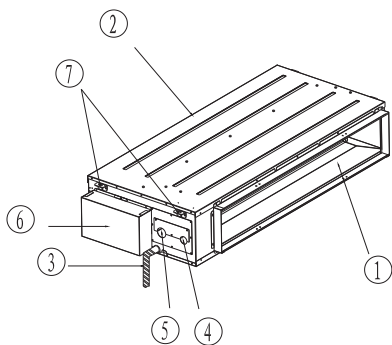


CAUTION

- Before installing, check whether the power is safe and keep it accordance with its nameplate;
- Before operating, make sure that all connections of cables, drain pipes and other pipes are in good condition in case of water leakage, refrigerant leakage, electric shocks, fires.
- Be sure the air conditioner is grounded. In order to avoid electric shock, make sure that the unit is grounded and that the earth wire is not connected to gas or water pipe, lightning conductor or telephone earth wire.
- Keep the air conditioner running for 5 minutes at least before shutdown, otherwise, it will do bad to the oil return of the compressor.
- The child is not allowable to operate the air conditioner.
- Do not operate the air conditioner with a wet hand. An electric shock may happen.
- Cut off the power of the air conditioner prior to cleaning the unit or replacing the air strainer;
- Cut off the power of the air conditioner before the unit being idle for a long time.
- Do not step on the outdoor unit or avoid placing any object on it. Falling or tumbling may result in injury.
- Please electrify the unit and then carry out electric leakage test after the installation of electric devices.

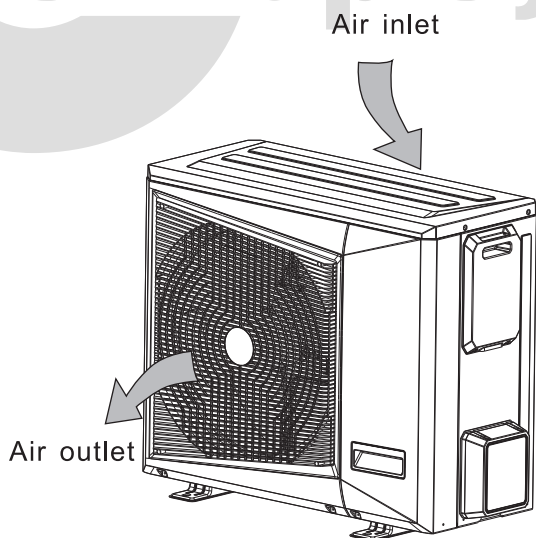
2 PARTS NAME AND FUNCTION

■ Indoor unit



- ① Air outlet ② Air inlet ③ Drain pipe ④ Liquid pipe
⑤ Gas pipe ⑥ Electric control cabinet ⑦ Hook

■ Outdoor unit



3 INSTALLATION OF THE UNIT

■ Outline view and dimension of Indoor units

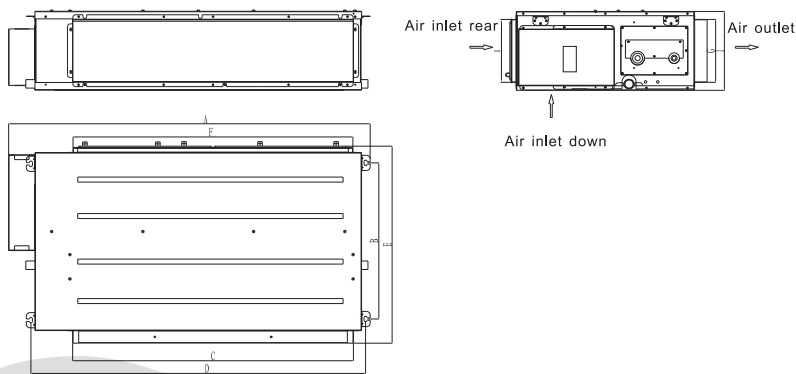


Table 1: unit : mm

Items Model(Btu/h)	A	B	C	D	E	F	G	H	I
18/24K	1190	515	920	1100	643	920	207	207	260
36K	1425	515	1155	1337	643	1155	207	207	260

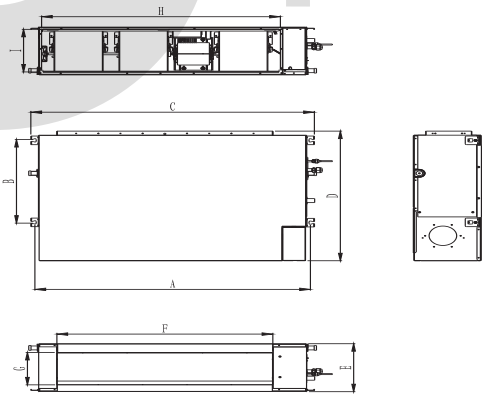


Table 2: unit : mm

Items Model(Btu/h)	A	B	C	D	E	F	G	H	I
48/60K	1242	535	1279	830	307	973	207	1077	273

3. 1. 2 Installation dimensions of Indoor unit

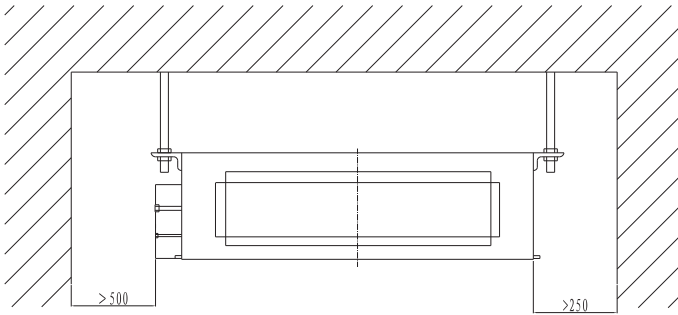


Fig 3

3. 1. 3 Selection of the installation site

- Make sure top hangers can bear the weight of the unit;
- Make sure that the drain pipe can drain the water conveniently;
- Make sure that the air inlet and the outlet of the indoor unit should not be blocked, with a good ventilation;
- There is enough space for maintenance and installation as listed in Fig 1 and Fig 2;
- Keep the unit off heat source, inflammable gas or smog.
- The unit is ceiling type or concealed in the ceiling type;
- Make sure that indoor unit, outdoor unit, power wires and connecting wires are 1 meter at least away from TV or radio in case of noise or image interference. Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

3. 1. 4 Install the indoor unit

- Insert M10 Expansion bolts into mounting holes and then drive iron nails into bolts, see Fig 4. As for the hole intervals, please refer to Fig 1 and Fig 2.

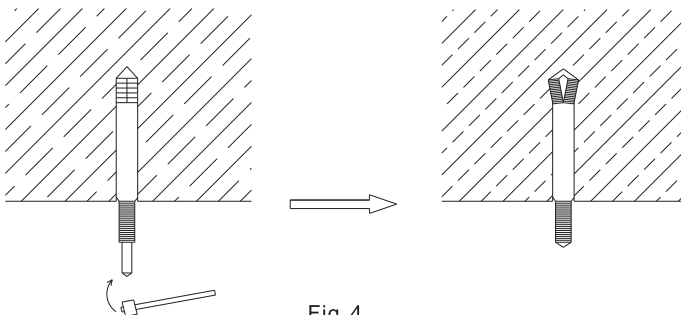


Fig 4

- Fix hooks in the indoor unit (refer to Fig 5)

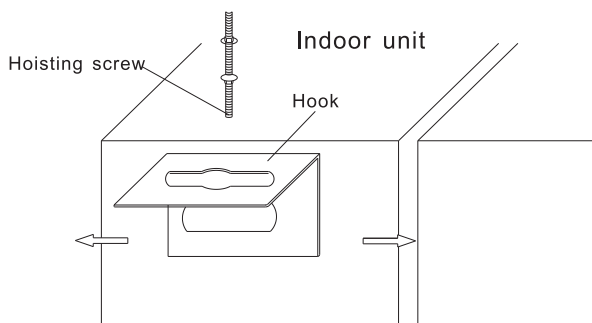


Fig 5

- Install the indoor unit on the ceiling (refer to Fig 6)

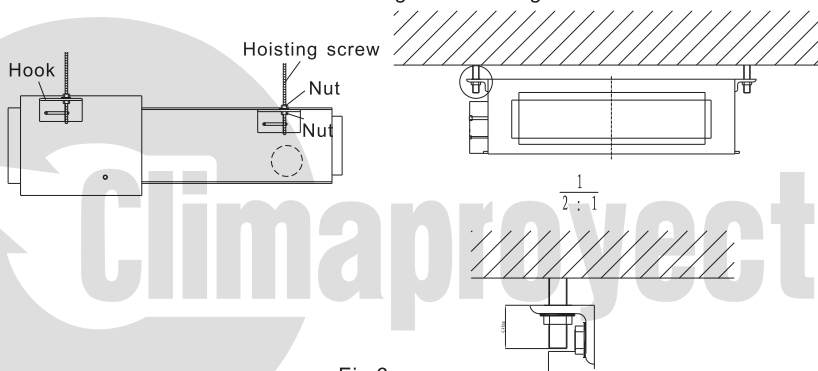


Fig 6



CAUTION

- Before installation, please finish the installation of all ducts (refrigerant duct, drainage duct) and the connection of the all power lines (the power lines of the outdoor unit), once the installation has finished, the ducts and the power lines can be connected with the indoor units immediately.
- In order to keep the ceiling level and from vibrating, please reinforce the ceiling before digging an opening in the ceiling .
- If the ceiling is not strong enough, please install a angle iron bracket and lay the unit on the bracket.

3. 2 Install Outdoor unit

3. 2. 1 Outline view and dimensions of Outdoor unit

■ Outline view and dimension of Outdoor units

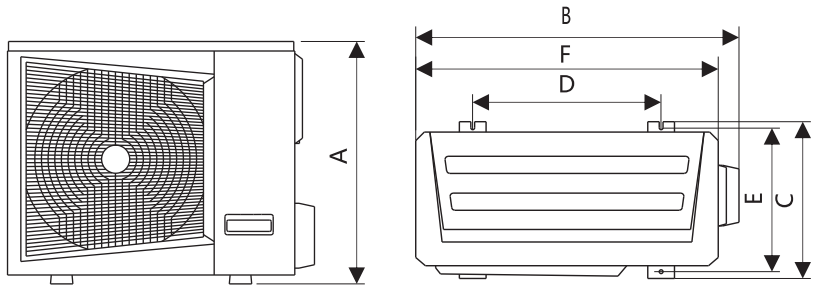


Fig 7

Table 3: unit : mm

Model(KBtu/h)	Items	A	B	C	D	E	F
18/24		702	935	383	554	353	845
36		810	1032	445	670	400	940
48/60		870	1100	528	635	485	1020

3. 2.2 Hoisting and fixing of the equipment

Each set of air - conditioning unit has been strictly inspected and tested before delivery at the factory so as to guarantee the quality and performances of the unit . Therefore , much care shall be taken during the installation of the unit to avoid of damage to the control system and the pipline.

The installation of the indoor units or the outdoor units must be taken care the different of the left side and the right side . In the event that indoor units or outdoor units are too big to be moved due to its large dimensions or the limitation of small space , hoisting installation may be considered.

■ General requirements for hoisting are as follows:

- 1.The gradient of the outdoor unit shall not exceed 20° ;
- 2.The damage to the units shall be avoided by putting soft materials, such as Cloth, between the rope and the unit during hoisting;
- 3.Take care when handing and hoisting ,the force in each point of hoisting must be uniform.

■ The following methods in hoisting are for your reference:

1. Hoisting by hand, hoisting by forklift;
2. Putting round logs (or pipes) under the unit for movement by worker with hands.

■ Fixing up the unit

The following work must be done after hoisting is completed:

1. After hoisting the unit on the base, please adjust the unit as level as possible with the gradient error no more than 0.1%.
2. Fixing up the unit with the force on each fixing point uniform when the unit is in a proper level.

3. 3 Connect and install refrigerant pipes

3. 3. 1 Inspection of pipes:

The inspection of pipes must be carried out accordance with the following requirements before connection of the pipes.

- Keep the pipes inside clean;
- The flares in both ends and the nuts must be complete.

3. 3. 2 Connection of pipes

Connect refrigerant pipes of indoor units as quickly as possible. For field installation, the time for connecting two pipes shall not exceed 5 minutes.

- When connecting flared connectors, the two pipes must be aligned with the same center. Then put on the nut and revolve it in and then tighten it with two spanners, see Fig 8.

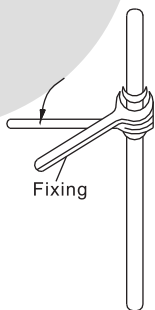


Fig 8

Note:

Two spanners must be used: One is normal spanner, the other is torque spanner.

When connecting the copper pipes, please adjust the torque spanner according to the following torque parameters in Table 4 before operation.

Table 4

Pipe Diameter ϕ (mm)	Tiorque force (kgf • m)
6.35	1.4~1.7
9.52	1.4~1.7
12.7	4.8~6.2
15.88	4.8~6.2
19.05	6.9~9.9

■ Getting through the wall:

When getting pipes of the outdoor and indoor units through the wall , the sleeve must be used in order to protect the pipe and cables shown as Fig 9:

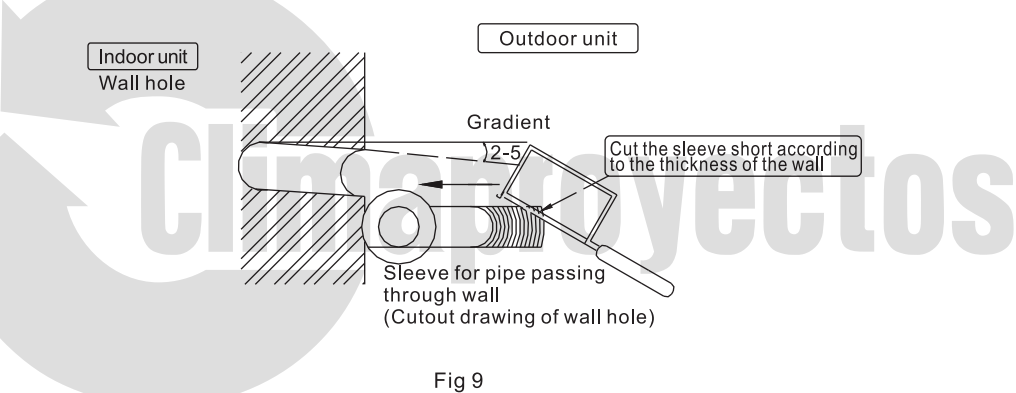


Fig 9

■ Pressure test, vaccumize and leakage check for connection pipes and indoor pipeline:

After installing the units and connection ducts , Using R22 keep filling the connection duct and the pipeline of the indoor units with nitrogen gas until the pressure in the duct reach 2. 4~3.0MPa (absolute pressure), Using R410A keep the pressure in the duct reach 3. 6~4.0MPa; Maintain this pressure for about 24 hours with the value change no less than 0.03Mpa. Meanwhile, the leak test should be carried out to each joint and weld points by using soap bubble , if there is no leak point, please discharge the nitrogen gas until the pressure reduces to 130Pa (absolute pressure), and maintain this pressure value for about 24hours with the value change no less than 20pa. At last, open the valve of the main machine to start the commission. If the refrigerant pipe is longer than the stated one, please charge more refrigerant according to the following

experienced formula:

$$R_1 = L_1 \times 0.030 \text{ kg/m} + L_2 \times 0.065 \text{ kg/m} + L_3 \times 0.115 \text{ kg/m} + L_4 \times 0.190 \text{ kg/m} + L_5 \times 0.290 \text{ kg/m} + L_6 \times 0.380 \text{ kg/m} + L_7 \times 0.580 \text{ kg/m} + L_8 \times 0.760 \text{ kg/m} \quad (R_{22})$$

$$R_2 = L_1 \times 0.023 \text{ kg/m} + L_2 \times 0.060 \text{ kg/m} + L_3 \times 0.120 \text{ kg/m} + L_4 \times 0.180 \text{ kg/m} + L_5 \times 0.270 \text{ kg/m} + L_6 \times 0.380 \text{ kg/m} + L_7 \times 0.520 \text{ kg/m} + L_8 \times 0.680 \text{ kg/m} \quad (R_{410A})$$

Remarks:

R--Total charging amount of refrigerant;

L1--Total length of $\phi 6.4$ Liquid pipe

L2--Total length of $\phi 9.5$ Liquid pipe

L3--Total length of $\phi 12.7$ Liquid pipe

L4--Total length of $\phi 16.9$ Liquid pipe

L5--Total length of $\phi 19.1$ Liquid pipe

L6--Total length of $\phi 22.2$ Liquid pipe

L7--Total length of $\phi 25.4$ Liquid pipe

L8--Total length of $\phi 28.6$ Liquid pipe



CAUTION

Please vacuumize its pipeline with a vacuum pump prior to installation, for the refrigerant in the pipeline of the outdoor unit is not emptied before delivery.

■ Heat Insulation:

When everything is normal after leakage inspection and pressure testing, carry out heat insulation operation accordance with the requirements as below:

- ① The insulated material must be wrapped tightly without any cracks;
- ② The thickness of the insulated material is no less 8 mm.
- ③ After wrapping with insulated material, please carry on rainproof and dampproof treatment for the surface, such as wrap it with some bands.
- ④ Condensation on the surface of the copper pipes is not allowed during cooling operation.

3. 4 Dispose tubing

Because of the different installation positions of the air-conditioners, the accessory pipe for the piping is varied in length. The longer the pipe is, the more the refrigerant is needed, therefore, please select the proper pipe as short as possible according to Table 5

3. 4. 1 The most working distance of the piping:

Table 5

Rated refrigeration (Btu/h) Value	<24K	24K~60K	≥96K
Max. length (m)	30	30	50
Max. Height (m)	10	10	20
Max. number of bends(piece)	5	10	15



CAUTION

Under the conditions to guarantee 80% cooling capacity , the parameters above mentioned are obtained considering the loss of refrigeration and oil return.

3. 4. 2 Allocate oil loops and non-return bends

When the difference of heights between outdoor unit and indoor unit is great , allocate some loops in the pipeline for easy oil return. For actual operation , the typical installation methods may be used as shown in Fig 10 :

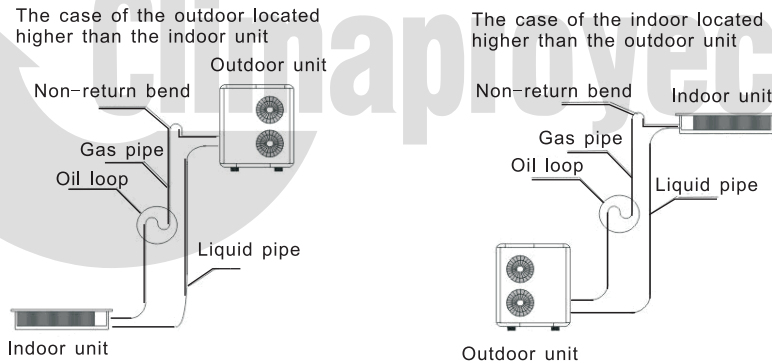


Fig 10



CAUTION

- The radius of oil loops shall be as small as possible and one is allocated every 5 meters as shown in the above figures.
- When the height difference is more than 5 meters between the indoor unit and the outdoor unit , some oil loops or non-return bends need to be installed in the pipeline system.
- The figures above are just for the multi-connecting unit with one indoor unit, it is the same with ones with several indoor units.

3. 5 Install condensate pipes

As for the condensate pipe of indoor unit of central air-conditioning, the following points shall be considered :

- ① The large drainage amount of the condensate ;
- ② The loss of refrigeration capacity;
- ③ For built-in types, it is not convenient to maintain the unit and the leakage might occur at this place.

3. 5. 1 Select the material of condensate pipes

The materials of condensation water pipe may be U-PVC pipe and Zinc-plated pipe. Considering the problems of sanitary and rusting, the U-PVC pipe is recommended.

3. 5. 2 Requirement of installation:

- The water outlet outside the house must have water seal which shall be fixed.
- The gradient of the drainage pipe is no less than 1% .
- The indoor part of the condensate pipe shall be sleeved with insulating pipe or wrapped with thermal insulating asbestos.
- After the installation of condensate pipes, leakage test must be carried out by pouring some water to confirm no leakage in any connecting point and the drainage is smooth . For the installation, please see Fig 11 :

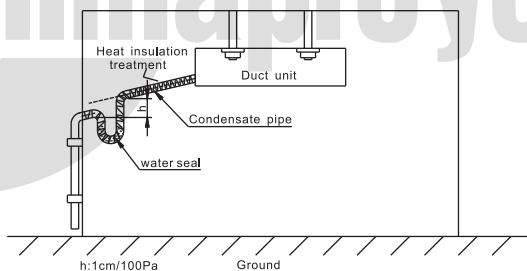


Fig 11

3. 6 Installation and heat insulation of air pipes

3. 6. 1 Install fresh air pipes

The inlet of new air pipe shall be located at the clean place. The air inlet of outdoor units shall be installed with shutter and filter against rain.

It is recommended to install a flow adjuster valve at the section of fresh air pipes and keep the fresh air volume is 10~15% of total air volume, see Fig 12.

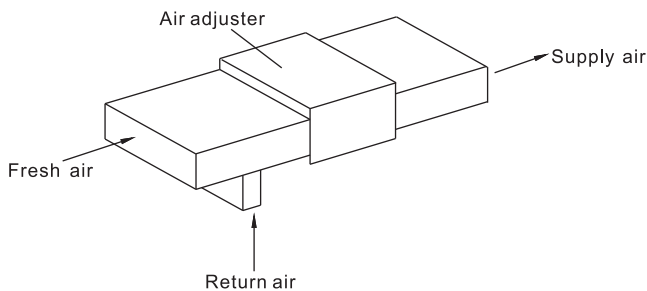


Fig 12

3. 6. 2 Install blast tubes

The rectangular blast tubes can be connected directly with the outlet of indoor unit and lead to the air diffuser with the total length less than 6 m.

The flow speed at each outlet of the air diffuser shall be basically uniform to meet the requirement of air-conditioning in the room as shown in Fig 13:

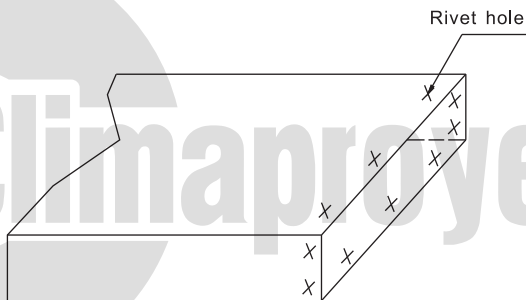
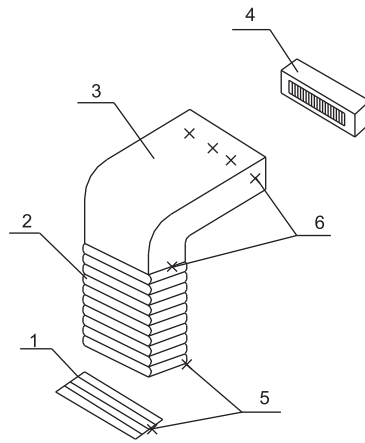


Fig 13

3. 6. 3 Install return air tubes

Connecting one end of return air tubes with rivets to air inlet of indoor unit, the other end is connected to indoor air inlet . A short hose of fireproofing canvas is fold up as the coupling tube penetrated through with 8# Iron wire so that the length of the coupling tube can be adjusted freely according to the height of the ceiling , as shown in Fig 14:



- | | |
|-----------------------------|---|
| 1--shutter for return air | 2--air pipe made of fireproofing canvas |
| 3--pipe for return air flow | 4--indoor unit |
| 5--wood screw | 6--rivet |

Fig 14

3. 6. 4 Heat-insulation for air pipes

Both blast tubes and return air tubes should be wrapped with PE or Glass wool insulated materials. In case that glass wool is used, clean the surface of air tubes at first, and then stick PE with matched glue onto tubes. In case that glass wool is used, affix the glass wool onto tubes with rubber nails and then wrap with a layer of tinfoil and fix them with rubber nails. At last, seal the connecting joints tightly with tinfoil adhesive tapes as shown in Fig 15:

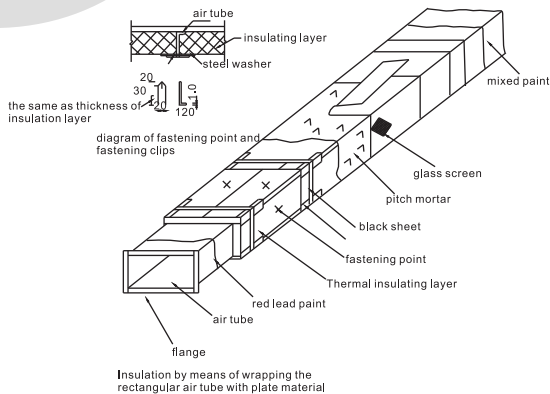


Fig 15



CAUTION

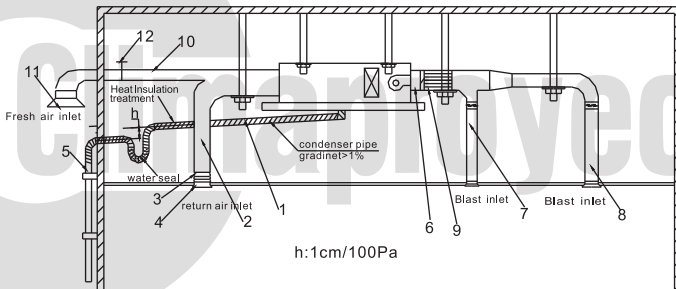
- Paste density of rubber nails are as Table 6:
- Tips for wrapping insulation material : The surface of insulation material is not dewing during cooling operation.

Table 6

On the side of air pipe or under it	On the top side of air pipe
12 pcs/ m ²	5 pcs/ m ²

3. 6. 5 Others

It is recommended that the distance between the wall and the edge of return air tube is more than 150 mm. The following figure is the diagram of hoisting of air duct unit :



- | | | |
|----------------------|-----------------------|---------------------------|
| 1—hook | 2—return air tube | 3—air pipe made of canvas |
| 4—return air shutter | 5—drainage pipe | 6—coupling tube |
| 7—blast tube | 8—air diffuser | 9—muffler |
| 10—fresh air tube | 11—rain-proof shutter | 12—air adjuster |

Fig 16



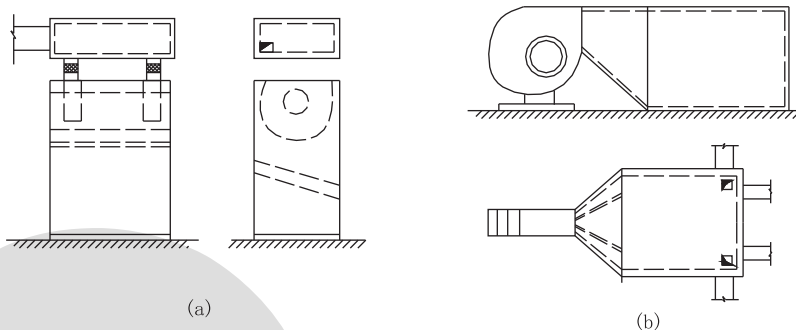
CAUTION

Return air tube must be installed in order to garatee the operation efficiency of the unit.

3. 7 Plenum chamber

3. 7. 1 Location and function of Plenum chamber

In the air outlet of the unit, the plenum chamber should be allocated and affixed with sound absorbing material, which not only make the air flow stable but also effectively reduce the fan noise result from abrupt change of plenum chamber sectional area and sound-absorbing function of the inner surface.



(a) sound-absorbing box installed
at outlet of the unit

(b) sound-absorbing box working as
branch plenum chamber

Fig 17 Plenum chamber application

3. 7. 2 Install Plenum chamber

■ Regulations of Plenum chamber

- If the air outlet static pressure is higher than 30Pa, a plenum chamber must be allocated in the air tube;
- The plenum chamber shall be located on the section with smooth air flow in the piping system. When the flow speed in the air pipe is slower than 8m/s , the plenum chamber shall be placed near outlet of the main air pipe of the fan; When it is faster than 8m/s , plenum chamber shall be installed separately on the branch pipes.
- The plenum chambers are not suitable to be installed in the air-conditioning rooms , nor out of the rooms because the noise from outdoors may get through the pipes at the rear of muffler. And in this case , the insulation capacity of sound of the static pressure box shall be validated .
- The speed of air flow through the plenum chamber shall not exceed the following data:
Resistance plenum chamber: 5-10m/s (4-6m/s for high requirement case)
Resonant plenum chamber: 5m/s Sound-absorbing elbow: 6-8 m/s

e. The plenum chamber is mainly used for reducing the aerodynamic noise. As for the noise generated by the ventilator, some measures for shock proof shall be executed.

■ Installation requirement of the plenum chamber

- The plenum chamber should be installed in the proper place against moisture or damage;
- Keep the punching plate clean without corrosion and holes not blocked;
- The supports for plenum chamber and sound-absorbing elbow shall be located separately.
- The fixing screws for plenum chambers are distributed equably and the joints are even and firm.
- Make sure glass fiber cloth on the outside surface of sound-absorbing baffle is even and no scratch and rusting.

3. 8 Sound-through preventing

When the air flow from one pipe is sent to more than one rooms, the sound in one room may spread to the other rooms. In order to avoid this problem, the schemes from (a) to (e) in Fig 18 may be carried out:

- Increase the distance between the air outlets of the two rooms;
- Affix the sound absorption materials;
- Adding elbow to branch air outlet in room B;
- Air supply is sent by two pipe systems;

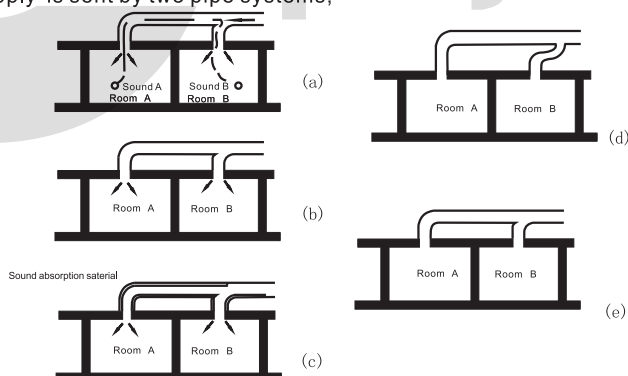


Fig 18



CAUTION

After installation of the unit, make sure to call the after-sale personnel of our company for debugging, or the aftereffect will be charged with the user or installation people.

4 ELECTRIC WIRING

4. 1 Connect wires to amphenol connectors



CAUTION

- Make sure that the power specification is of accordance with one listed on the nameplate;
- Make sure that the capacity of power supply is proper and the section-cross-area of room wires is more than 2.5mm^2 ;
- Wiring construction must be carried out by professional;
- As for fixed lines, the leakage protective switch and air switch should be allocated and make sure that the distance between electrode tips is more than 3 mm;
- Solid cable wiring:
 - a. Strip off the insulating material with wire stripper about 25 mm at the end of the solid cable;
 - b. Take down screws of the air-conditioner terminal;
 - c. Make the end of solid cable into a ring with size as large as screws with the clamp;
 - d. Get screws through the ring and then fix it on the terminal;
- Stranded wire wiring:
 - a. Strip off the insulating material with wire stripper about 10 mm at the end of the stranded wire;
 - b. Then put the corresponding number tubes on the stripped wires (Pay attention to the terminal number of indoor unit and outdoor unit)
 - c. Insert the stranded wire into connector with size as large as screws with the clamp;
 - d. Take down screws of the air-conditioner terminal;
 - e. Get screws through the connector of the stranded wire and then fix it on the terminal;

NOTE: Please connect power wires and connecting wires to corresponding connectors.



WARNING

If supply cords and signal wires are broken, please replace them with special cords.

- Prior to wiring, affirm voltages of all parts listed on the nameplate and then carry out the wiring construction according to Electric wiring diagram;
- The air-conditioner should apply special power supply, leakage protective switch and air switch in case of overload trouble.
- In case of electric shock, get the air conditioner grounded unfailingly;
- All wires should apply with clamping connectors or solid cable. If stranded wires is connected to terminal, it may lead to fires.

- In case of air conditioner breakdown or damage, the wiring construction will be firmly conformed to the electric wiring diagram;
- Never get the cables in touch with refrigerant pipe , compressor , fan or other operating parts;
Not remove wires of the air conditioner, or it may lead to damage or breakdown and the manufacturer will not take responsibility for the aftermath.

4. 2 Power wires connection

4. 2. 1 Connect power wires to outdoor units

- Take down the front end board or the large handle;
- Connect power wires to L connector and N connector and grounding screws;
- Fix power wires with cable clip.

4. 2. 2 Connect power wires to indoor units

- Take down the electric control box of indoor units;
- Connect power wires to L connector and N connector and grounding screws;
- Fix power wires with cable clip.

4. 3 Signal wires connection of wire controller

- Take down the electric control box of indoor units;
- Get the signal wires through the rubber ring;
- Insert the signal wires into five-needlebar on the electric control panel of indoor units.

4. 4 Signal connection between indoor and outdoor unit

- Units of communication cables, must use 485 communications dedicated shielded twisted-pair cable ;
- Signal connection between indoor and outdoor units, according to the signal terminal station logo connection



CAUTION

In case of Electromagnetic interference (EMI) ,pay attention to the following wiring operation;

- Separate signal wires from power wires and connecting wires of indoor units and outdoor units;
- When the air conditioner is installed in the place where there is EMI, take shielded wires and twisted pair as signal wires.

4.4 Power wiring diagram

1. To avoid the electrical shock, please connect the air conditioner with the ground plug.

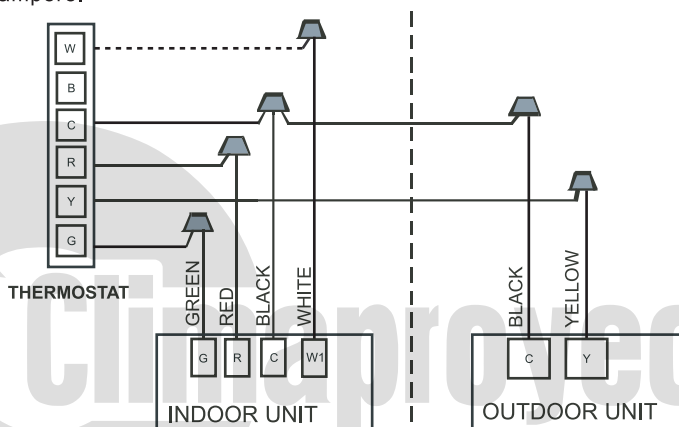
The main power plug in the air conditioner has been joined with the ground wiring, please don't change it freely.

2. The power socket is used as the air conditioner specially.

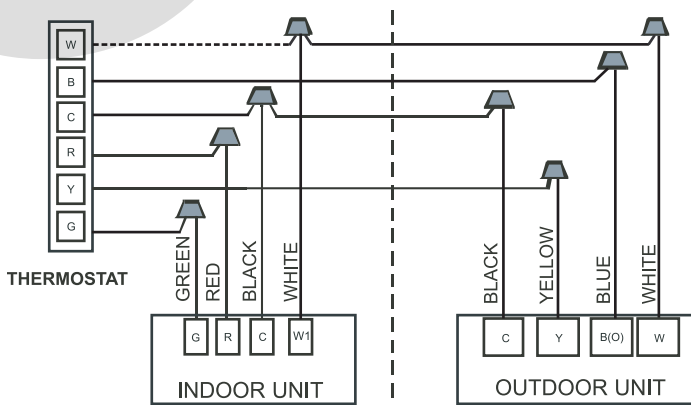
3. Don't pull the power wiring hard.

4. When connecting the air conditioner with the ground, observe the local codes.

5. If necessary, use the power fuse or the circuit, breaker or the corresponding scale ampere.



Control Wiring for A/C Systems.



Control Wiring for H/P Systems.

NOTE 1: ——— Expressed the actual installment may choose the part

4 . 4 Electric wiring

NOTE: The cross-section areas of wires or lines should not be less than the corresponding ones listed in the table below; Besides, if the power wires is quite long from the unit, please choose the windings with larger cross-section area to guarantee the nomal power supply.

Model(cooling only type)			18K	24K	36K	48K	60K
Line Gauge	Indoor Unit Power Line	Line Quantity	3	3	3	3	3
		Line Diameter(AWG)	16	16	16	16	16
	Outdoor Unit Power Line	Line Quantity	3	3	3	3	3
		Line Diameter(AWG)	12	12	12	12	12
	Outdoor-Indoor Singal Line	Line Quantity	2	2	2	2	2
		Line Diameter(AWG)	18	18	18	18	18
	Thermostat Singal Line	Line Quantity	5	5	5	5	5
		Line Diameter(AWG)	18	18	18	18	18

Model(Cooling & heating type)			18K	24K	36K	48K	60K
Line Gauge	Indoor Unit Power Line	Line Quantity	3	3	3	3	3
		Line Diameter(AWG)	16	16	16	16	16
	Outdoor Unit Power Line	Line Quantity	3	3	3	3	3
		Line Diameter(AWG)	12	12	12	12	12
	Outdoor-Indoor Singal Line	Line Quantity	4	4	4	4	4
		Line Diameter(AWG)	18	18	18	18	18
	Thermostat Singal Line	Line Quantity	6	6	6	6	6
		Line Diameter(AWG)	18	18	18	18	18





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