giatsu

DUCT

MEDIUM ESP KM

GIA-71CMKOMP
GIA-100CMKOMP| GIA-120CMKOMP | GIA-150CMKOMP

EN Installation Manual

Please read carefully

giatsu

D U C T
MEDIUM ESP KM

ENGLISH

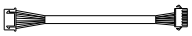
Installation Manual

GIA-71CMKOMP
GIA-100CMKOMP| GIA-120CMKOMP | GIA-150CMKOMP

Contents

Accessories and parts purchased locally

Accessories

Name of accessories	Numbers	Shape	Application
Installation instruction for indoor unit	1	The manual	(Please be sure to hand it to user.)
Insulating tube	2		To encase single joints of high and low pressure pipes.
Ribbon	6		Bind up cables and connecting pipes.
Dome insulated tip	6		Used to connect wires
X-type insulated tip	3		Used to connect wires
Wire controller	1		Control A/C
Connecting pipe of electronic expansion valve	1		Connect electronic expansion valve and liquid side of indoor unit (Different models may have different sizes and calibers. Please install according to the real products.)
Connection wire for wire controller	1		The wire that connect the wire controller and PCB
Blank valve bag	3		Used to contain accessories.

Parts Purchased Locally

Cooper pipe	Type	2. 2kW～2. 8kW	3. 2kW～5. 6kW	6. 3kW～8. 0kW	9. 0kW～16. 0kW	20. 0kW～28. 0kW	45. 0kW～56. 0kW
	Liquid pipe (mm)	ϕ 6. 35 × 0. 8		ϕ 9. 52 × 0. 8		ϕ 12. 7 × 0. 8	ϕ 15. 88 × 1. 0
	Gas pipe (mm)	ϕ 9. 52 × 0. 8	ϕ 12. 7 × 0. 8	ϕ 15. 88 × 1. 0		ϕ 22. 2 × 1. 0	ϕ 28. 6 × 1. 2
PVC drainpipe	For the indoor unit drainpipe. The length is decided according to the actual need.						
Insulation bushing	Assort inner diameter respectively with relevant copper pipe and hard polyethylene plastic pipe. The thickness is usually 10 mm (above). It should be appropriately thickened in closed and wet areas.						

1. Safety Precautionary Measures

⚠ Warning

- The installation work must be done by the distributor or a professional worker.
  The installation worker must be equipped with all related knowledge as a wrong operation may cause fire risk, electric shock, injury or water leakage, etc.
- Parts purchased locally should be appointed products of our company.
  Retailed parts like humidifier should be appointed products of our company, the violation of which may cause fire, electric shock or water leakage, etc. The installation work of retailed products must be installed by professionals.
- If the unit has to be installed in a small room, suitable measures shall be done to make sure any refrigerant leakage concentration if happened in the room will not exceed the critical level.
- For detailed measures, place consult with the distributor.
- Connection of power supply must be complying with rules specified by the local electrical authority.
  Required by law, must be reliable ground works. If the ground is not perfect, it may result in electric shock.
- If the air conditioner need to be moved or reinstalled, please let the distributor or a professional worker operate.
  Incorrect installation will cause fire risk, electric shock, injury or water leakage, etc.
- The user is not permitted to rebuild or repair the unit by themselves.
  Incorrect repairing will cause fire risk, electric shock, injury or water leakage, etc, so repairing must be performed by the distributor or a professional worker.

⚠ Notice

- Make sure the water drainage pipe is useable.
  Incorrect installation of water drainage pipe will cause water leakage and furniture wetting, etc.
- Make sure a current leakage protection switch is equipped.
  The current leakage protection switch must be equipped or there may be an electric shock.
- It mustn't be installed in any position with potential leakage of inflammable gas.
  If any inflammable gas leaks, there may be a fire risk around the indoor unit.
- Make sure the foundation installation or suspending installation is firm and reliable.
  If the foundation or suspension is not firm and reliable enough, there may be a fall accident.
- Make sure all electric cables are correctly connected.
  If any electric cable is incorrectly connected, any electrical part may be damaged.
- Exposure of this machine to water or other moisture before installation will cause short-circuit of electrical components.
  Don't store it in humid basement or expose it to rain or water.
- If the refrigerant leaks during installation, the room must be ventilated at once.
  The leaked refrigerant may generate some toxic gas if it contacts any flame.
- After installation, make sure there is no refrigerant leakage.
  If the refrigerant gas enters and contacts some flame source such as a heater, a stove or an electric cooker, it may generate some toxic gas.

2. Selection of Installation Site

2-1 Selection of Installation Site for Indoor Unit

1 ） Provide enough space for installation and maintenance.
2 ） The ceiling is horizontal and the building construction can support indoor unit.
3 ） Ventilation is accessible and the site suffers from the minimal impact of extraneous air.
4 ） Air stream can spread to everywhere of the room.
5 ） Connecting pipe and drainpipe are easy to be extracted.
6 ） No direct radiation of heat.

⚠Attention

It may result in faults (if it' s inevitable, please consult) if the unit is installed in the following places:

- Places where there is mineral oil like cutting oil.
- Places like seaside where there is much salt in the air.
- Places where there is aggressive gas like sulfur gas.
- Places like factory where power supply voltage severely fluctuates.
- In car or cabin.
- Places like kitchen which is full of oil gas and oil bloom.
- Places where there is strong electromagnetic wave.
- Please where there is inflammable gas or material.
- Please where acidic or alkaline gas evaporates.
- Other special environments.
- This series of air conditioning of comfort air conditioning, do not use computer, precision instrument, food, animals and plants, art and other special places.

⚠Attention

About electromagnetic compatibility order 89/336/EEC.
In order to avoid the trembling caused by compressor starts running (technical program), please install the outdoor unit according to the steps below:

- The unit power supply must be equipped with qualified circuit breaker with earth leakage protection.
- The power supply switch of the unit can not be connected to other electrical equipment.
- If there are restrictions for washing machine, air conditioning or induction cooker, please contact power supply department to obtain detailed license of installation provisions.
- The user power supply must have ground wire .
- Please refer to electricity range on product nameplate about the detailed specification of air conditioning power supply.

3. Installation of Indoor Unit

3-1 Installing Size of Indoor Unit

A 、 Appearance Size and Air Outlet Size of Low Static Pressure Ducted Unit:

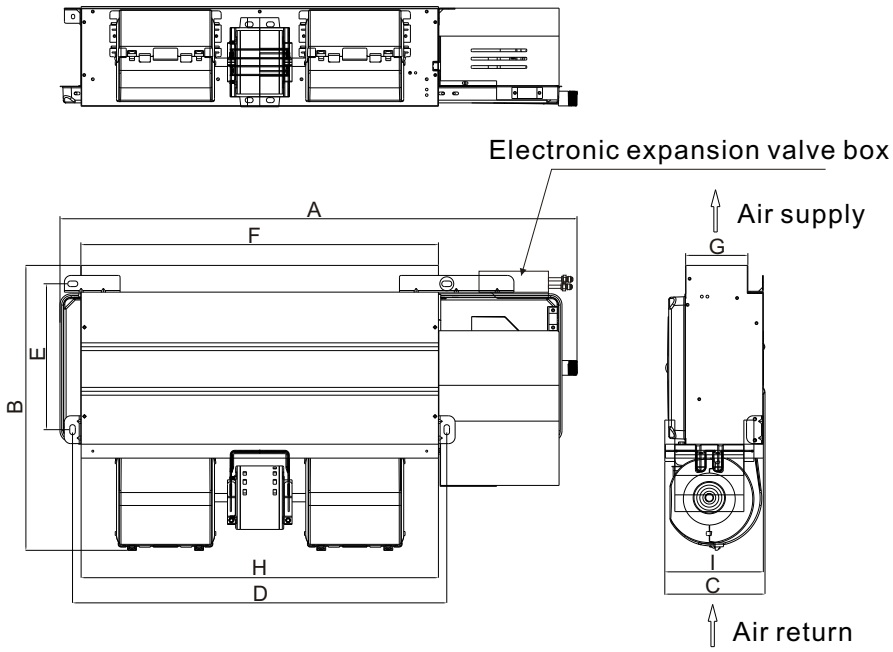


Table 3.1 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
2. 2kW～3. 6kW	925	510	181	672	261	642	112	642	176
4. 5kW～5. 6kW	1205	510	181	951	261	921	112	920	176
7. 1kW	1530	510	181	1274	261	1244	112	1243	176

3. Installation of Indoor Unit

3-1 Installing Size of Indoor Unit

B 、 Appearance Size and Air Outlet Size of Short Ducted Unit:

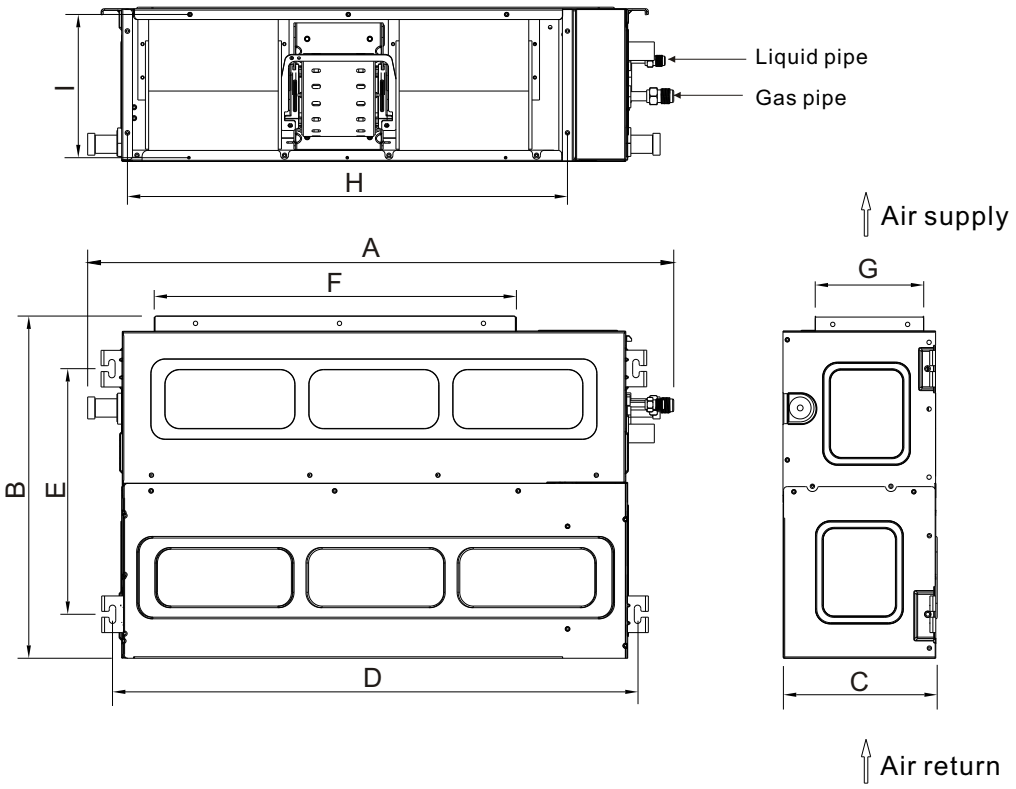


Table 3.2 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
2. 2kW～4. 5kW	814	467	210	728	335	503	150	611	200
5. 6kW	1010	467	210	928	335	705	150	811	200
7. 1kW	1214	467	210	1128	335	905	150	1011	200

3. Installation of Indoor Unit

C 、 Appearance Size and Air Outlet Size of Standard Static Pressure Ducted Unit

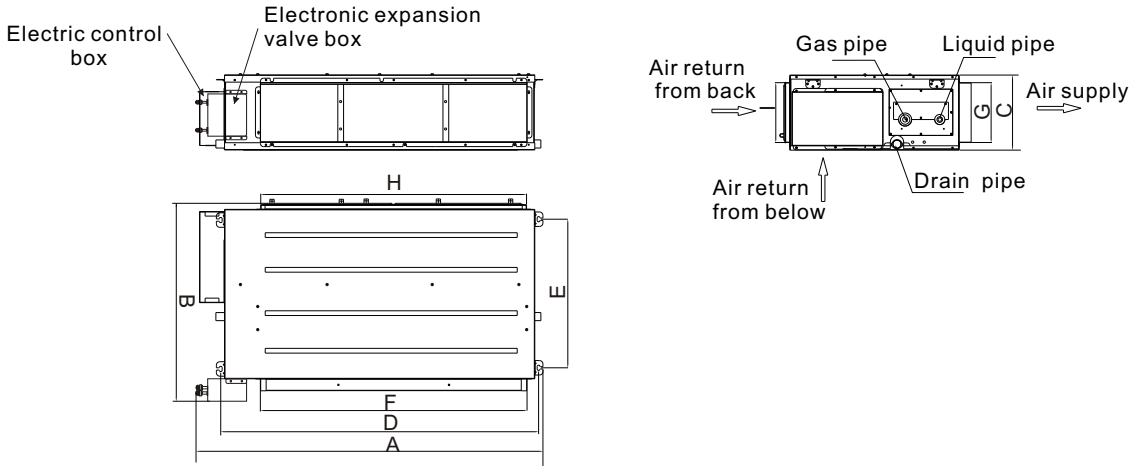


Table 3.3 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
7.1kW～8.0kW	1209	680	260	1100	515	920	197	920	207
9.0kW～15.0kW	1445	680	260	1337	515	1156	197	1156	207

D 、 Appearance Size and Air Outlet Size of High Static Pressure Ducted Unit（1）

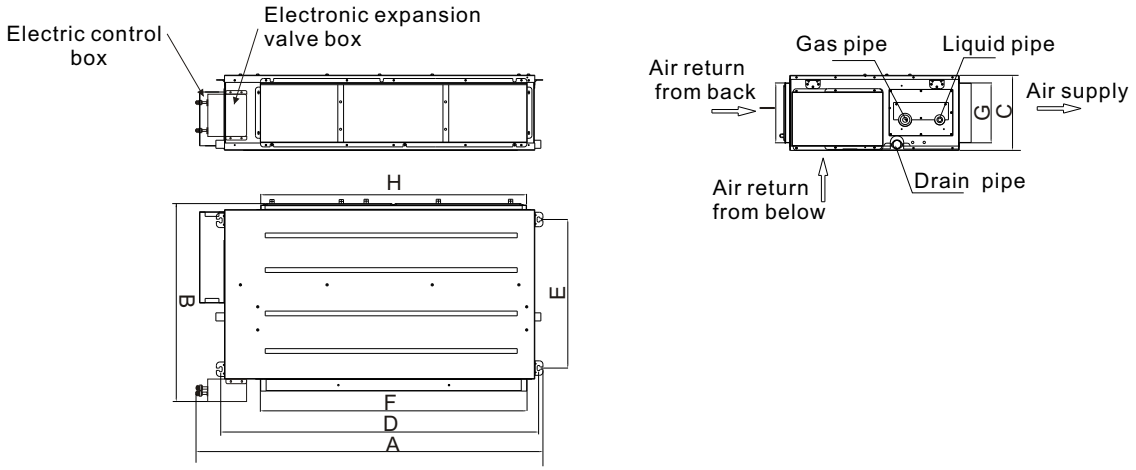


Table 3.4 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
7.1kW～9.0kW	1445	680	260	1337	515	1156	197	1156	207

3. Installation of Indoor Unit

E 、 Appearance Size and Air Outlet Size of High Static Pressure Ducted Unit（2）

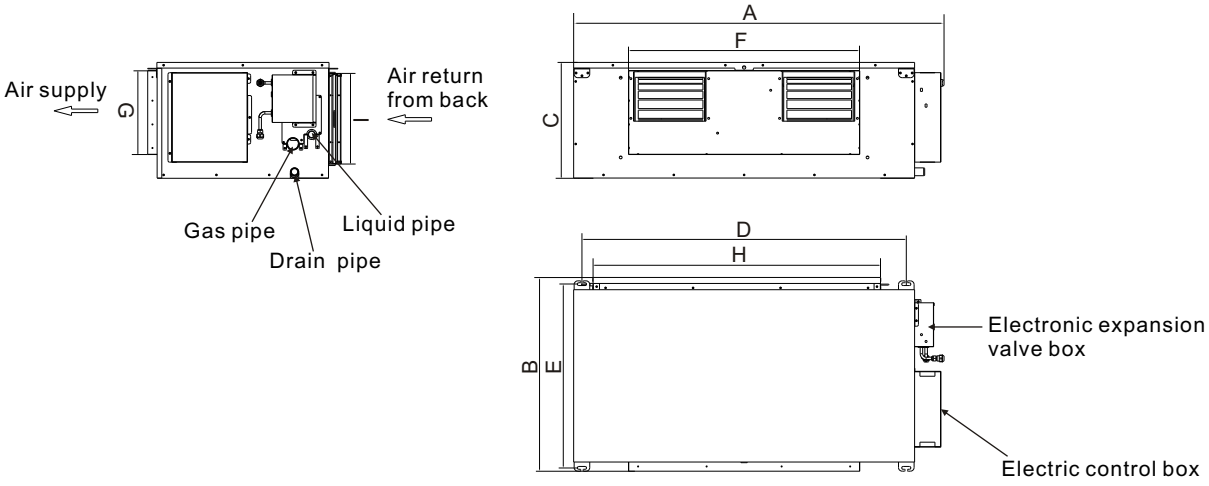


Table 3.5 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
10.0kW～15.0kW	1190	620	370	1038	588	740	267	920	290

F 、 Appearance Size and Air Outlet Size of High Static Pressure Ducted Unit（3）

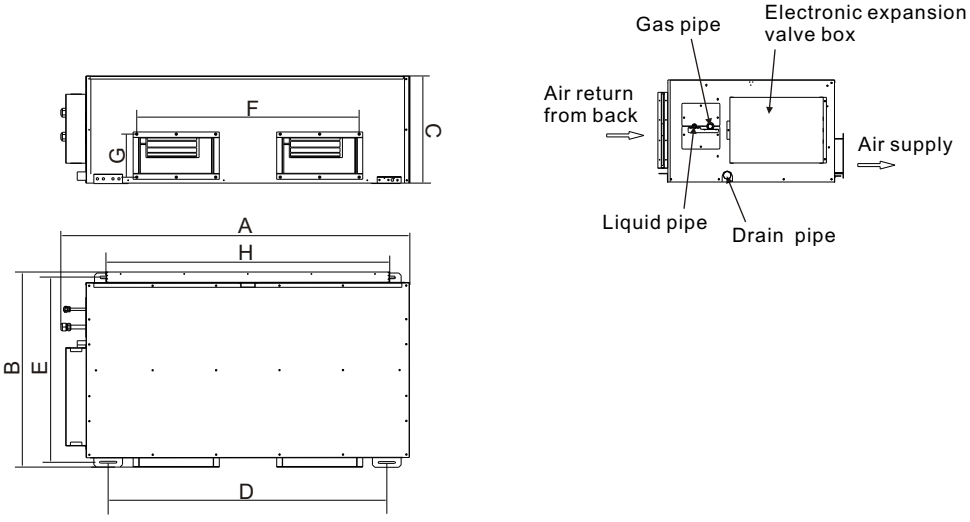


Table 3.6 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
20.0kW～28.0kW	1465	811	448	1162	771	930	180	1174	272

3. Installation of Indoor Unit

G 、 Appearance Size and Air Outlet Size of High Static Pressure Ducted Unit（4）

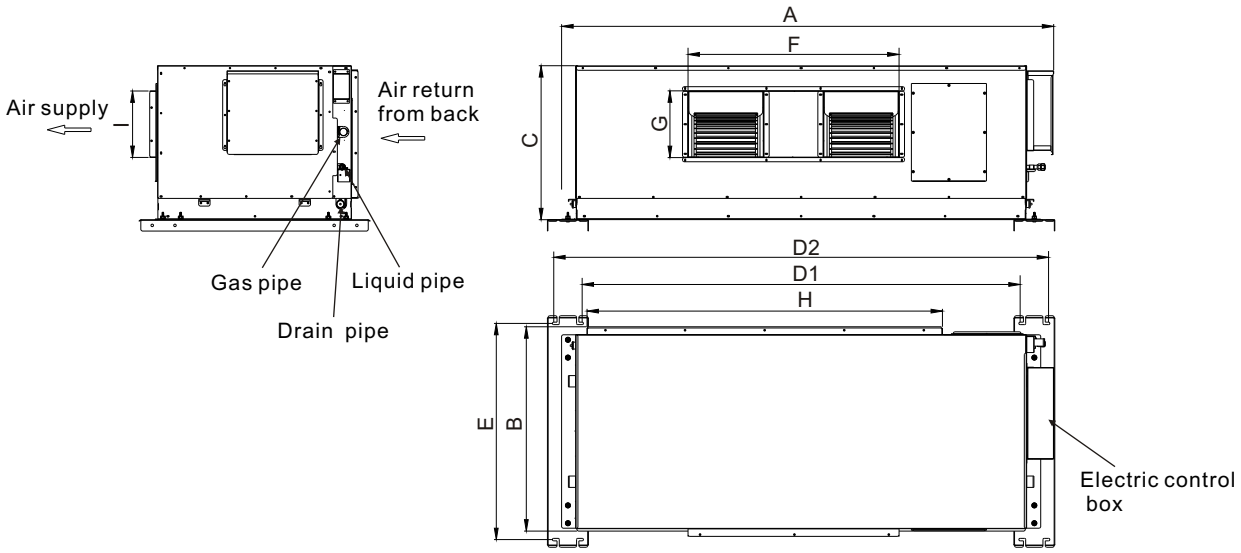


Table 3.7 Unit: mm

Size code / Model of indoor unit	Body size			Installing size			Air outlet size		Air return size	
	A	B	C	D1	D2	E	F	G	H	I
45. 0～56. 0kW	2165	916	676	1926	2176	950	928	292	1563	563

H 、 Appearance Size and Air Outlet Size of Full Fresh Air Processor (1): The structure is the same as the high static pressure ducted unit 10. 0kW ～ 15.0kW

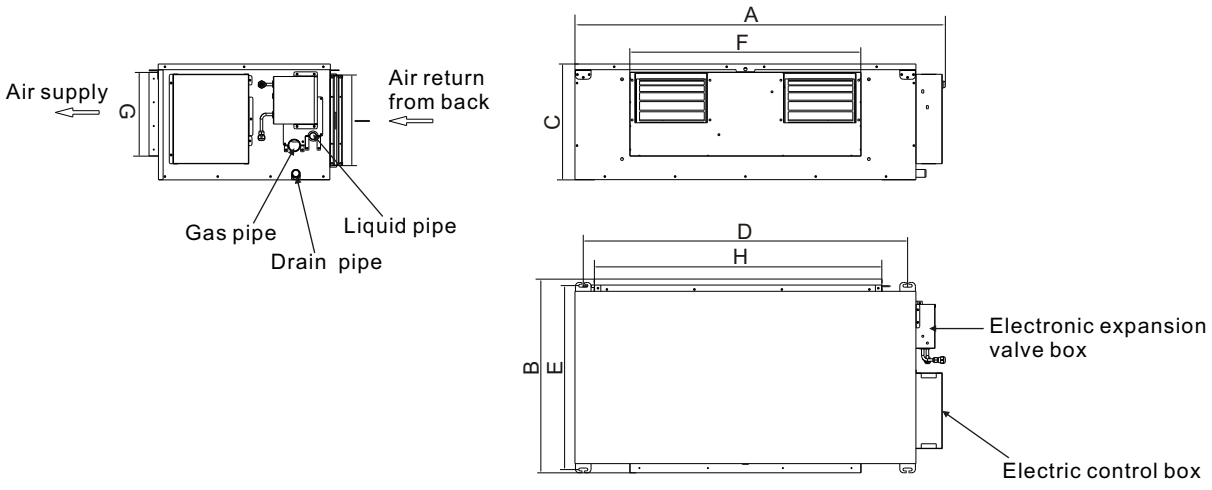


Table 3.8 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
14.0kW	1190	620	370	1038	588	740	267	920	290

3. Installation of Indoor Unit

I 、 Appearance Size and Air Outlet Size of Full Fresh Air Processor (2)

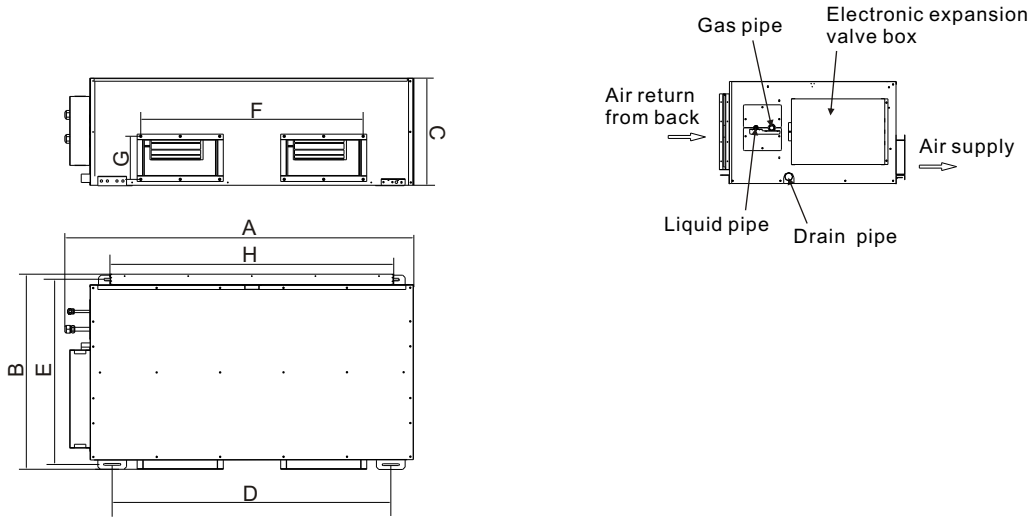


Table 3.9 Unit: mm

Size code / Model of indoor unit	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
22.4kW～28.0kW	1465	811	448	1162	771	930	180	1174	272

J 、 Appearance Size and Air Outlet Size of Full Fresh Air Processor (3)

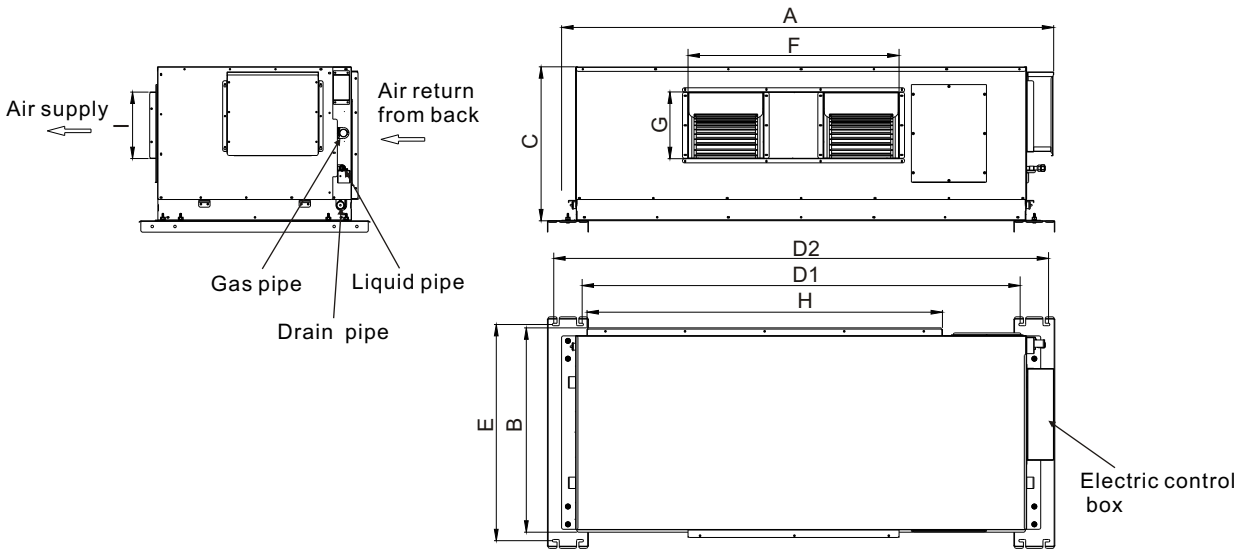


Table 3.10 Unit: mm

Size code / Model of indoor unit	Body size			Installing size			Air outlet size		Air return size	
	A	B	C	D1	D2	E	F	G	H	I
45. 0～56. 0kW	2165	916	676	1926	2176	950	928	292	1563	563

3. Installation of Indoor Unit

⚠ Warning

- The air conditioner must be installed in a place of enough strength to support the machine weight.
  If it lacks of strength, the machine may fall down and cause some personal injury.
- For specific installation work, in order to prevent winds or earthquakes.
- Incorrect installation may cause some accident because of machine falling down.

3-2 Installation of Main Body

3-2-1 Installation of Lifting Bolt with Φ10

1) Please use the lifting Bolt with Φ10.

2) Removal of Ceiling: For the difference of the building structure, please consult with the indoor decoration personnel for the details.

a. Treatment of Ceiling: In order to ensure the levelness of the ceiling and prevent the ceiling from the vibration, it is necessary to reinforce the framework of the ceiling.

b. Cut off and remove the framework of the ceiling.

c. Reinforce the end face after the ceiling is removed, and reinforce the framework that is used to fix the ceiling at both ends further.

d. After the main body is lifted, it is necessary to carry out the piping and wiring operation in the ceiling. Determine the route direction of the piping after the installation site is selected. Especially on the occasion with existing ceiling, pull the refrigerant piping, drain pipe, indoor and outdoor connection cable and line control line to the connection location.

3-2-2 Lifting of Indoor Unit

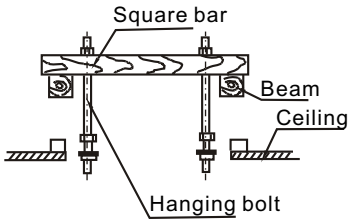
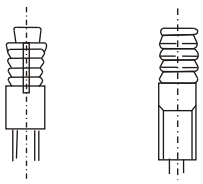
1) Lift the indoor unit to the lifting bolt by the pulley.

2) Install the indoor unit with certain levelness by the level meter. It may cause the water leakage if the levelness can not meet the requirement.

3-3 Installation Method of Lifting Bolt

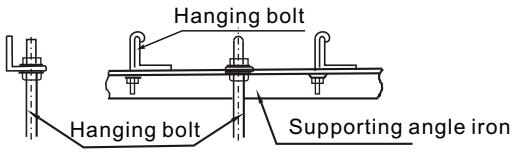
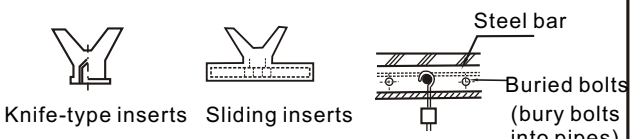
For the installation situation of the lifting bolt, refer to the table below (table 3.11 and 3.12).

Table 3.11

Wooden with steel skeleton	Occasions with original concrete billet
The square bar by lifting hanging bolt is arranged on the beam.  	Set with inlay appliances , embedded bolts. 

3. Installation of Indoor Unit

Table 3.12

Occasions with steel skeleton	Occasions with new concrete billet
Set and directly use supporting angle iron. 	Set with inlay appliances , embedded bolts. 

⚠Notice

- ●Bolt material is made of high-quality carbon steel (surface is galvanized or has been undergone other anti-corrosive treatments) or stainless steel.
- ●Ceiling is different in different buildings, the detailed information should be consult with the decoration engineers.
- ●Fix hanging bolts based on specific circumstances. Make sure to be solid and reliable.

3-4 Adjustment of Air Return Box

You can select the air return box for the low static pressure ducted unit. There are two air return modes, the one is air return from back, which is the factory default, and the other is the air return from below, which shall be adjusted in the field. For the adjustment method, refer to the table below.

Remove the air return plate and the filter.

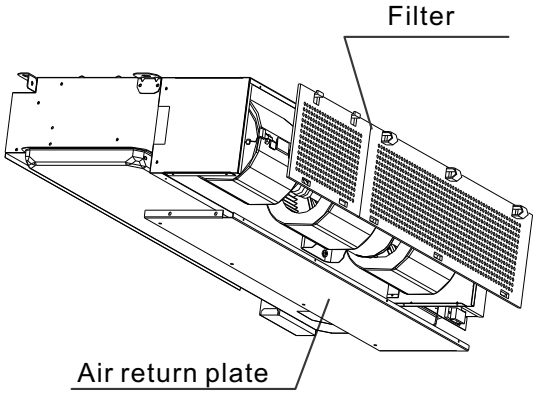


Figure. 3.1

Install the air return plate and the filter.

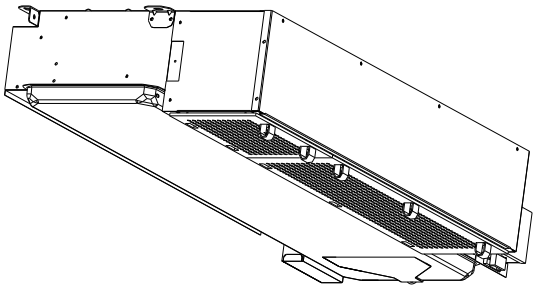


Figure. 3.2

3. Installation of Indoor Unit

The air return box of the short ducted unit is as standard, but the filter is optional. There are two air return modes,the one is air return from back, which is the factory default, and the other is the air return from below, which shall be adjusted in the field. For the adjustment method, refer to the table below.

Remove the air return plate, the filter and the filter baffle.

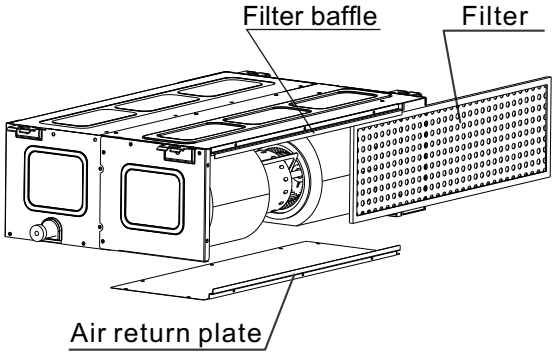


Figure. 3.3

Install the air return plate, the filter and the filter baffle.

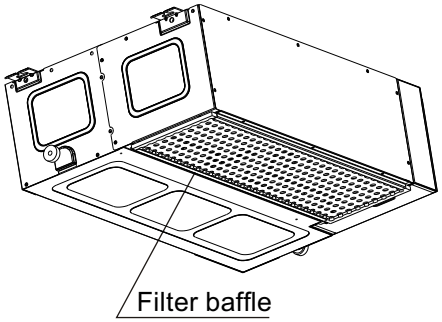


Figure. 3.4

The air return box of the standard static pressure ducted unit and the high static pressure ducted unit 7.1kW, 8.0kW and 9.0kW is as standard. There are two air return modes, the one is the air return from back, which is the factory default, and the other is air return from below, which shall be adjusted in the field. For the adjustment method, refer to the table below.

Remove the air return plate, the filter and the filter baffle.

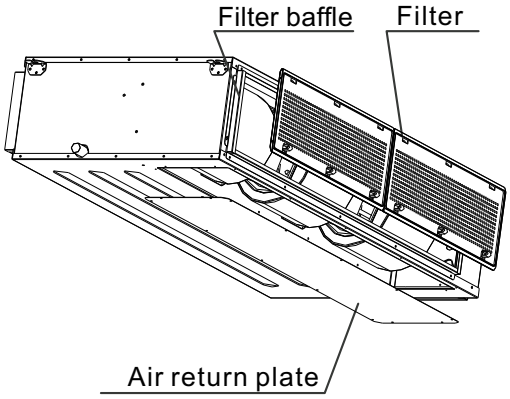


Figure. 3.5

Install the air return plate, the filter and the filter baffle.

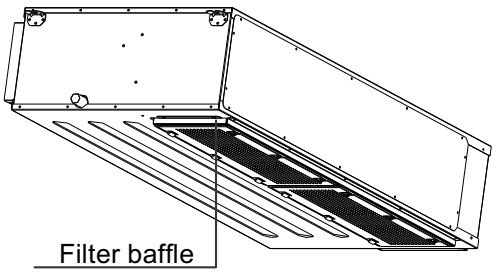


Figure. 3.6

The air return box of the high static pressure ducted unit 10.0kW ～ 28.0kW is as standard. There is only one air return mode, namely, air return from back, which is the factory default. The high static pressure ducted unit 45.0kW ～ 56.0kW and the fresh air processor is not configured with any air return box.

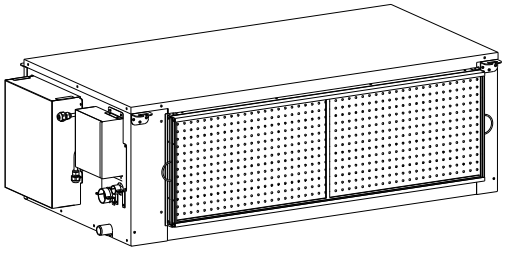


Figure. 3.7

3. Installation of Indoor Unit

3-5 Hanging of Indoor Unit

1) Adjust the location of the nut, and determine the space between the washer (lower side) and the ceiling according to the actual construction situation. Refer to Figure 3.8.

2) Hang the nut of the lifting bolt in the long round hole to install the lug.

3) Confirm the levelness of the main body by the level meter (strictly prohibit the declination toward the non-drain side. It had better decline toward the drain side). Refer to Figure 3.9.

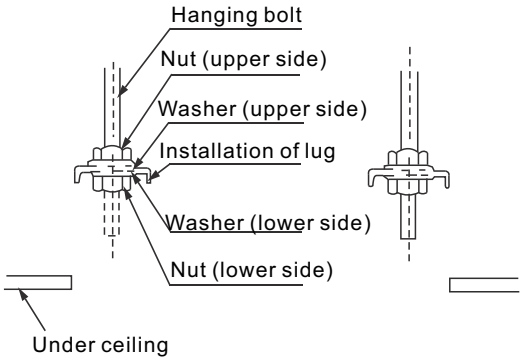


Figure 3.8

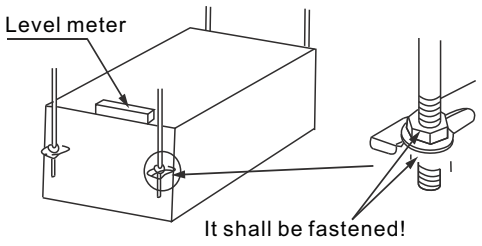


Figure 3.9

4) The high static pressure ducted unit 45.0kW～56.0kW and the fresh air 45.0kW～56.0kW need use hanger plate to install. The hanger plate is as standard. (The hanger plate should be installed when hoisting, and use the eight lifting bolt with Φ10). Refer to Figure 3.10.

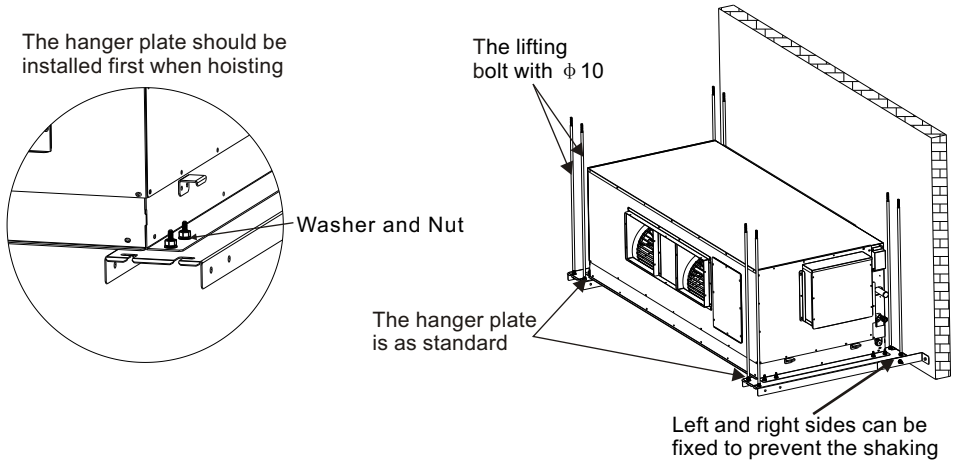


Figure 3.10

3. Installation of Indoor Unit

3-6 Air Intake Panel of Air Return Box

⚠Notice

1）Pay attention to maintain the parallelism between the air grid angle and the air intake direction when you make the air intake panel of the air return box. Refer to Figure 3.11.

2)There shall not any angle between the air grid angle and the air intake direction. Otherwise, it may increase the noise. Figure 3.12 is the incorrect making method of the air intake grid.

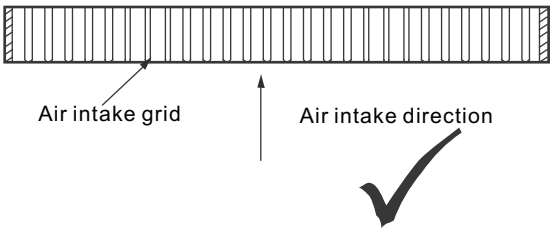


Figure 3.11

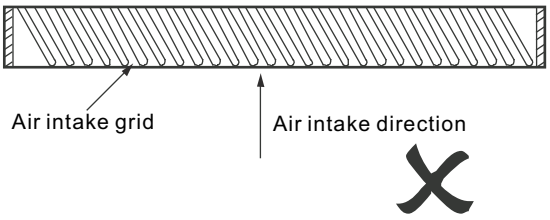


Figure 3.12

4. Drain Pipe Layout

4-1 Installation of Drainpipe of Indoor Unit

1) The drain outlet is the pipe thread of PTI, which may use the PVC pipe. Users can purchase the drain pipe with proper length from their dealers or the local after-sales service center of Chigo Air Conditioner, or purchase it on the market directly.

2) Please use the auxiliary sealing material and casing pipe when you connect the drain outlet and the drain pipe. Use the hard PVC adhesive when you connect the drain pipe, and confirm there is not any leakage.

3) The drain pipe connector and drain pipe of the main body (especially for the indoor part) shall be bound by the insulation sleeve and tightened by the tightening belt, to prevent the ingress of air from condensing.

4) To prevent the condensed water from flowing into the internal of air conditioner, the drain pipe shall decline toward the outdoor side (drain side), and the degree of declination is 1/100 or more. It shall not display any projection or water accumulation (see Figure 4.1a).

5) Don't pull it by force when you connect the drain pipe, to prevent the force of the main body. The drain pipe shall be pulled out within 20m horizontally. Furthermore, it is necessary to set one supporting point every other 0.8 - 1.0m, to prevent the deflection of the drain pipe (see Figure 4.1b).

6) Follow Figure 4.2 for the piping when you install the drain pipe in the centralized way.

7) The height from the end of the drain pipe to the floor or the bottom of the drain groove shall be greater than 50mm, and it shall not be put into the water. When the condensed water is drained into the drain ditch directly, the drain pipe shall be bent into one U-shape water seal upward, to prevent the odor from entering into the indoors via the drain pipe.

⚠ Notice

Various interfaces of the Drain system shall be sealed, to prevent from the water leakage.

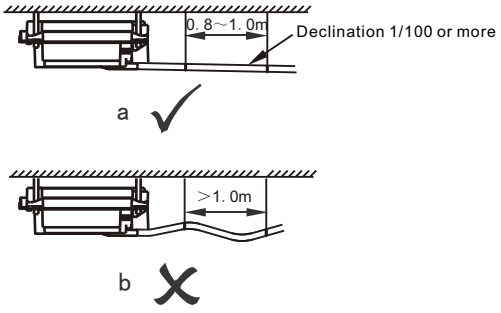


Figure 4.1

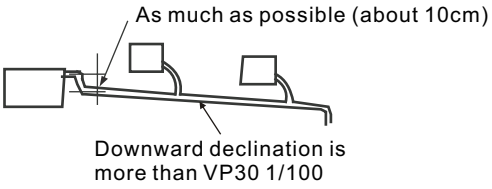


Figure 4.2 Centralized Drain

4-2 Drain Test

4-2-1 It is necessary to ensure the drain pipe is smooth before the test, and check whether the flat interface is sealed properly.

4-2-2 The drain test shall be carried out before the ceiling is laid out for the new room.

1) The drain test shall be carried out before the ceiling is laid out for the new room.

2) Check whether the drain outlet can drain normally and whether there is any water leakage at various interfaces.

5. Install Connecting Pipes and Electronic Throttle

5-1 Requirements for the connecting length and drop height of the tubing of both indoor and outdoor units

1) Please refer to the allowed length of tubing in the instruction of outdoor unit.

2) Please refer to the allowed drop height of tubing in the instruction of outdoor unit.

⚠Notice

- ●During the installation process, keep the air, dust and other impurities from getting into the pipeline system.
- ●Fix indoor and outdoor units before installing the connecting pipe.
- ●Keep dry while installing the connecting pipe and keep the water from getting into the pipeline system.
- ●Connecting pipe must be wrapped by heat insulator. (Usually, the thickness is more than 10 mm, and it is even thicker in closed humid area.)

5-2 Material and Size of Tubing

Table 5.1

Type	2. 2kW～2. 8kW	3. 2kW～5. 6kW	7. 1kW～8. 0kW	9. 0kW～15. 0kW	20. 0kW～28. 0kW	45. 0kW～56. 0kW
Liquid pipes (mm)	Φ 6. 35 × 0. 8		Φ 9. 52 × 0. 8		Φ 12. 7 × 0. 8	Φ 15. 88 × 1. 0
Gas pipes (mm)	Φ 9. 52 × 0. 8	Φ 12. 7 × 0. 8	Φ 15. 88 × 1. 0		Φ 22. 2 × 1. 0	Φ 28. 6 × 1. 2

5-3 Procedures for Connecting Pipes

5-3-1 Measure the needed length of connecting tubing, and make connecting tubing according to the flowing methods. (For details, see the “Tubing Connection” column)

1) Connect the indoor unit before connecting the outdoor unit.

a. Pay attention to the configuration of winding tubing so as not to damage the tubing and its insulation layer.

b. Smear the refrigerator oil (it must be engine oil which is compatible with the cooling medium of this type) on the outside surface of flared joint and the conical surface of connecting nut and screw it 3 or 4 rounds with your hand (Fig. 5.1) before screwing the flared nut up.

c. Use two spanners at the same time when connecting or taking the tubing down.

d. The interface of indoor unit can't bear all the weight of the connecting tubing, because if the interface is over-burdened, it will affect the cooling or heating effects of indoor unit.

2) The stop valve of outdoor unit should be completely shut down (as the default state when leaving the factory). Unscrew the nut from the stop valve and connect the flared tube at once (within 5 minutes).

3) After connecting the refrigerant tubing to both indoor and outdoor units, eliminate the air according to the column of “Vacuum Supply”, then screw the nut up.

a. Notes for flexible coupling:

①The winding angle should be less than 90°(Fig. 5.2).

②Its sinuosity had better be in the centre of the pipe range, its bending radius should be more than 3.5 D (the diameter of pipeline).

③Don't bend the flexible coupling pipe for more than 3 times.

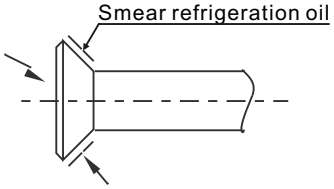


Figure 5.1

Bend pipe with thumbs

Figure 5.2

5. Install Connecting Pipes and Electronic Throttle

b. Bending thin-wall connecting pipe (Fig. 5.3).

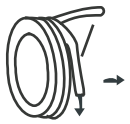
①Cut away a notch of a required size in the insulated tubing at the place of sinuosity when operating with the sinuosity, then expose the pipeline (wrap it up with binder after it gets bent).

②Bend radius as much as possible so as to avoid squash or destruction.

③Use pipe bender to make close sinuosity.

c. Use copper pipe sold in the market:

When using the copper pipe purchased in the market, you must use the same type insulating material (thickness is often more than 10 mm, and it is even thicker in closed humid area.).



Remove coil methods
make pipe end straight

Figure 5.3

5-3-2 Pipe Arrangement

1) It is necessary to bend pipe or drill holes on the wall. The section surface of bending pipe should not exceed 1/3 of original section surface. When drilling wall or board, ensure to set protection bushings. Welding lines are not allowed to be made within the protection bushings. When drilling external wall for the pipe, ensure to seal it tightly with binder so as to prevent impurities from entering the pipe. The pipe should be insulated by appropriate and suitable insulating tube.

2) The encased connecting pipe should get through the hole on the wall from outside and enter into the room. Arrange pipes carefully. Don't destroy pipes.

5-4 Connection of Pipe

5-4-1 Flaring

1) Cut off pipe with a pipe cutting knife (See Figure 5.4).

2) Insert the pipe into the connected flared nut (Table 5.2).

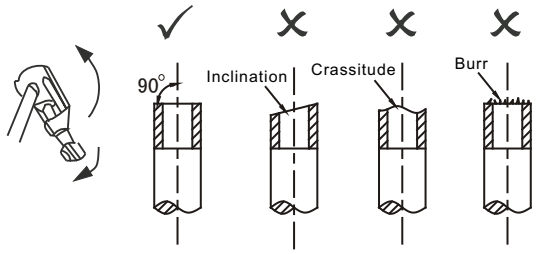
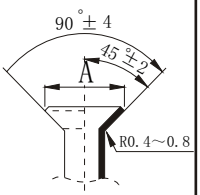


Figure 5.4

Table 5.2

External diameter (mm)	A (mm)	
	Maximum	Minimum
φ 6. 35	8. 7	8. 3
φ 9. 52	12. 4	12. 0
φ 12. 7	15. 8	15. 4
φ 15. 88	19. 0	18. 6
φ 19. 05	23. 3	22. 9



5-4-2 Fasten Nuts

Aim at the connecting pipe and screw up nuts with hand and then screw them up with wrenches as shown in Figure 5.5.

⚠Notice

In accordance with installation conditions, too large torque will break loudspeaker while too small torque will cause leakage of air. Please ensure that the torque has been screwed up according to Table 5.3.

Table: 5.3

pipes size (mm)	Tightening torque (N.m)
φ 6. 35	10 ～ 12
φ 9. 52	15 ～ 18
φ 12. 7	20 ～ 23
φ 15. 88	28 ～ 32
φ 19. 05	35 ～ 40

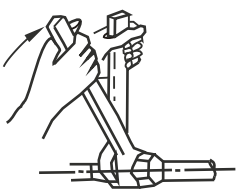


Figure 5.5

5. Install Connecting Pipes and Electronic Throttle

5-5 Installation of Electronic Throttle Component and Connecting Pipe Assembly

5-5-1 Schematic Diagram for Installation of Electronic Throttle Component

The electronic throttle components of Low Static Pressure Ducted Unit, Standard Static Pressure Ducted Unit, High Static Pressure Ducted Unit 7.1kW ～ 15.0kW and Full Fresh Air Processor 14.0kW have been installed in the main body during the shipment. For the details, refer to Figure 5.6 - 5.8. It is only necessary to align the connecting nut of the electronic expansion valve with the liquid pipe connector of the main body evaporator during the installation of the entire unit. Furthermore, it shall be tightened by the torque wrench.

The electronic expansion valve of Short Ducted Unit, High Static Pressure Ducted Unit 20.0kW ～ 56.0kW and Full Fresh Air Processor 22.4kW ～ 56.0kW has been welded in the evaporator of the body inside. It isn't necessary the connecting nut of the electronic expansion valve during the installation of the entire unit.

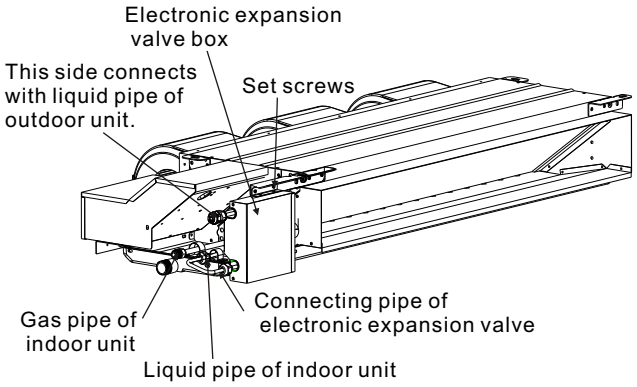


Figure 5.6 Low Static Pressure Ducted Unit

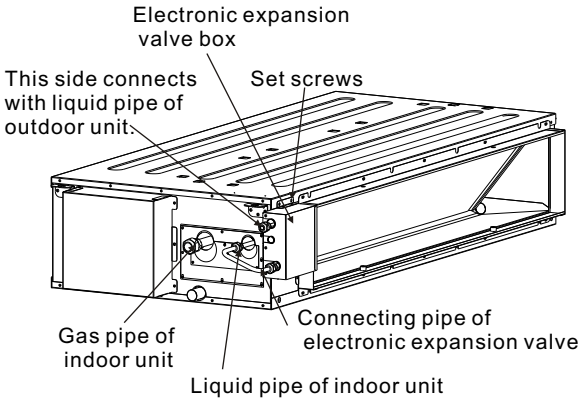


Figure 5.7 Standard Static Pressure Ducted Unit and High Static Pressure Ducted Unit 7.1kW～9.0kW

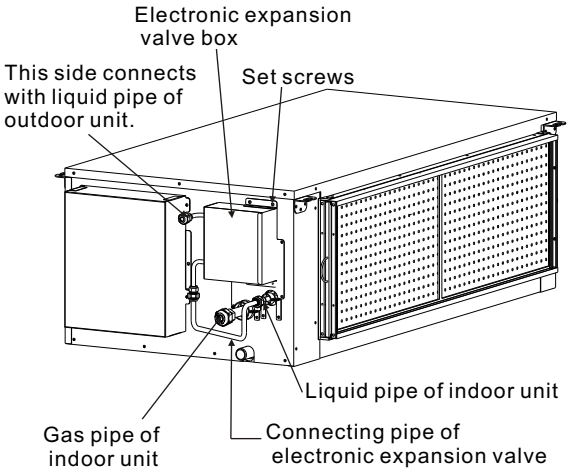


Figure 5.8 High Static Pressure Ducted Unit 10.0kW ～15.0kW and Full Fresh Air Processor 14.0kW

5. Install Connecting Pipes and Electronic Throttle

5-6 Leakage Test

After having installed refrigerant pipe, connect it before outdoor unit. Inject nitrogen with certain pressure (4.0MPa) from gas pipe side and liquid pipe side at the same time to take leakage test for 24 hours.

5-7 Vacuum Supply

Connect refrigerant pipe with the two sides of gas pipe and liquid pipe of outdoor, use vacuum pump to vacuumize from the two sides of gas pipe and liquid pipe of outdoor at the same time.

⚠ Notice

Never use refrigerant sealed in outdoor unit to vacuumize.

5-8 Valve Switch

Use 5 mm hex socket to open and close the valve of outdoor unit.

5-9 Leak Detection

When detecting leakage, detect leak in the valves at the interface of the pipe joints with soap bubbles.

5-10 Insulated Treatment

Insulate gas pipe side and liquid pipe side. When refrigerating, the temperature of gas pipe side and liquid pipe side should be low. To prevent condensation, please fully insulate (See Figure 5.9).

1) Gas pipe must be made from insulated material which can resist more than 120℃.

2) Please seamlessly insulate the connecting parts of indoor unit single joints with accessorial insulating tube.

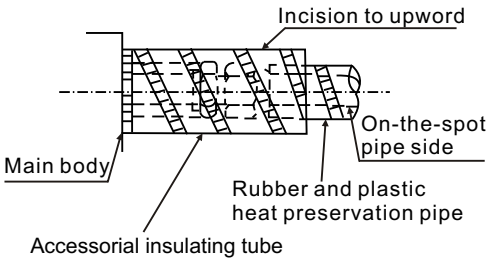


Figure 5.9

6. Connection of Electricity

6-1 Electric Wiring

⚠ Notice

- Air conditioning applies special power supply and power supply voltage should conform to the rated voltage.
- The external power supply circuit of air conditioning must have ground wire. Power supply's ground wire of indoor unit should be connected accurately with external circuit.
- Wiring should be installed by professional technicians according to labeling of circuit diagram.
- The connected fixed circuit must be furnished with an all-pole disconnection equipment with at least 3mm trigger distance.
- Install protective equipment of creepage in accordance with standard of national electrical equipment technology.
- Power and signal lines should be appropriately arranged in good order, and can not interfere with each other.

  Meanwhile, they cannot connect with connecting pipes and valve body. At the same time, two wires cannot be connected, unless they are welded firmly and wrapped with insulating tapes.
- After installation has done, before connecting to power supply, please check carefully and make sure everything is fine.

6-2 Specification of Power Supply

The specification of power supply wires recommends the following Figure 6.1. Wirings may be overheated and the machine will break down if the capacity is too small.

Table 6.1

Project / Mode	Power supply of indoor part					Connecting wire		Ground wire
	Power supply	Power switch		Power Cord		Signal wire of indoor and outdoor units		
		Capacity	Fuse	Below 20 m	Below 50 m	Number	Wire diameter	
2. 2～15. 0kW	Single-phase	15A	15A	2.5mm²×2	4mm²×2	1	Two-core shielded cable 0.75mm²	Single wire 2.5mm²
20.0～28. 0kW	Single-phase	15A	15A	2.5mm²×2	4mm²×2			Single wire 4.0mm²
45.0～56. 0kW	Three-phase	15A	15A	2.5mm²×4	4mm²×4			Single wire 2.5mm²

⚠ Warning

As you review this manual, along with the wiring instructions presented in this section, keep in mind that: all field-installed wiring must conform to National Electric Code (NEC) guidelines, and any applicable state and local codes. Be sure to satisfy proper equipment grounding requirements per NEC.

6-3 Wiring Suggestion of Signal Wire of Indoor Unit

1) Shielded wire should be used as signal wire. Using other wires may cause signal interference and malfunction.

2)Wiring shielding layers of shielded wire into one line and then connect it to port E of terminal. (See Figure 6.1)

3)It is forbidden to tie the signal wire with refrigerant pipe, power supply wires etc. When power supply wires are paved in parallel with signal wire, they should keep a distance of more than 300mm to avoid interference of signal source.

4)Signal wire cannot form a closed circuit.

5)Signal wire contains polarity, so be careful when connecting wires.Signal wire of indoor unit should be connected to ports labeled "P, Q, E". And they should conform to ports labeled "P, Q, E" of the main machine of outdoor unit and cannot be connected wrongly.

6. Connection of Electricity

6)Please use two-core twisted shielded pair cable (not less than 0.75mm^2) as signal wire of indoor and outdoor units. Because it contains polarity, it should be connected properly. Signal wires of indoor and outdoor units can only be led out from the main machine of outdoor unit and connected to all indoor units of a same system.

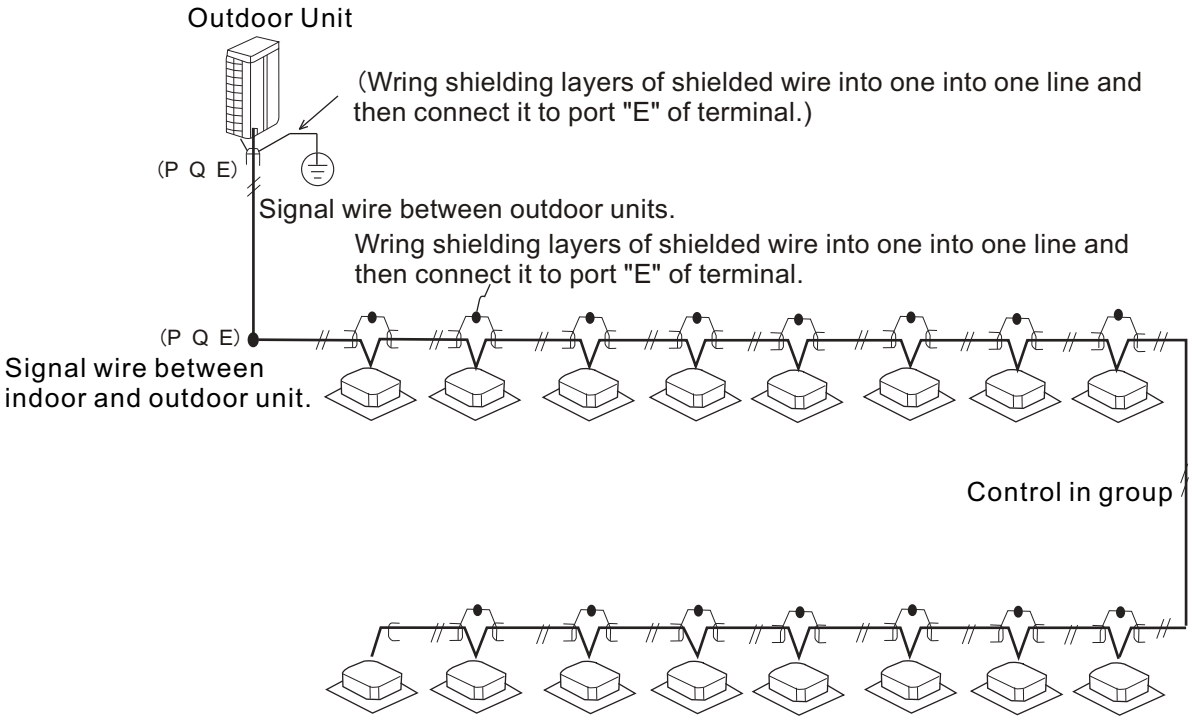


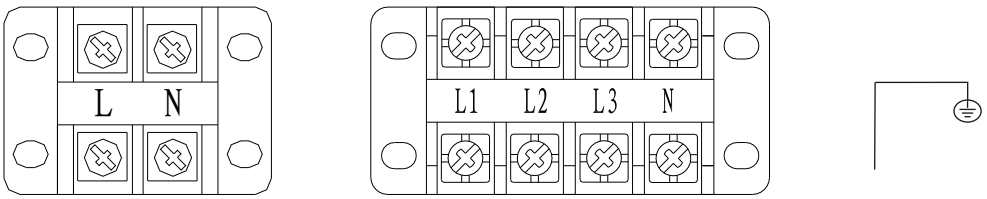
Figure 6.1

6-4 Wiring Suggestion of Power Supply of Indoor Unit

1) The indoor unit power supply in the same system must be in the same circuit and switched on or off at the same time, or the system service life may be shortened and the machine may fail in starting up.

2)Power supply, current leakage protector and manual switch connected to the same outdoor unit must be with the versatility.

3)Power supply wires should be connected to the terminal labeled“L, N”, ground wire of power supply should be connected to electricity control box “⏚”.



Single-phase power Three-phase power Ground

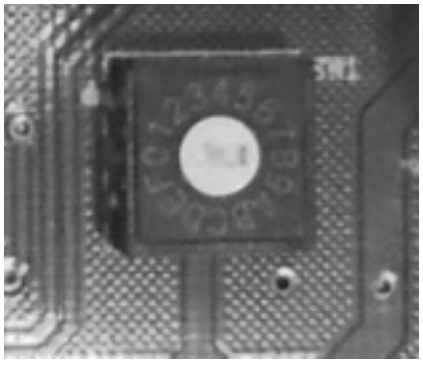
6-5 Handling of Wiring Interface

Wiring interface should be sealed with insulated material. Failure to seal will cause condensation.

7. Supplying and Controlling

7-1 Introduction of Functional Dial-up

7-1-1 Dial-up Switch SW1

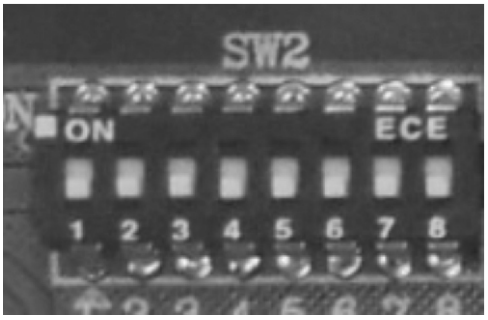


By using the dial switch SW1 (with 16 numbers in its dialing disk) on the indoor plate can regulate the horse power of indoor unit (set up before leaving factory). The indoor unit includes the following horse power:

power of dials	The unit below 14HP		The unit above 14HP	
	Capacity factor	HP	Capacity factor	HP
0	18/22	0. 8	18/22	0. 8
1	25/26/28	1	25/26/28	1
2	32/35/36	1. 2	32/35/36	1. 2
3	40/45/46	1. 7	40/45/46	1. 7
4	50/51/56	2	50/51/56	2
5	60/63/66/71	2. 5	60/63/66/71	2. 5
6	80	3	80	3
7	88/90	3. 2	88/90	3. 2
8	100/110/112	4	100/110/112	4
9	120/125/140	5	120/125/140	5
9	150/160	6	/	/
A	/	/	/	/
B	/	/	200-335	10
C	/	/	400-450	15
D	/	/	500-600	20
E	/	/	680-730	25
F	/	/	800-900	30

7. Supplying and Controlling

7-1-2 Dial-up SW2



The unit below 14HP:

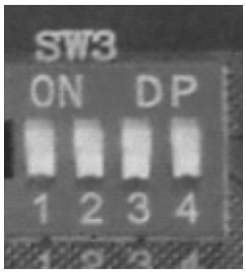
Selector of units with the DC motor		Selector of heating temperature and compensatory temperature choices	
SW2 1th,2th	Unit	SW2 3th,4th	Temperature selection
ON OFF 1 2	Short Ducted Unit	ON OFF 3 4 (Factory Default)	6℃
ON OFF 1 2	Four-way Cassette Unit	ON OFF 3 4	2℃
ON OFF 1 2	Standard Static Pressure Ducted Unit	ON OFF 3 4	4℃
ON OFF 1 2	Floor-ceiling Unit	ON OFF 3 4	8℃
Temperature selector of turning off fan motor in anti-cold		Time selector of stopping fan motor in heating model	
SW2 5th,6th	Temperature selection	SW2 7th,8th	Temperature selection
ON OFF 5 6 (Factory Default)	15℃	ON OFF 7 8 (Factory Default)	4min
ON OFF 5 6	20℃	ON OFF 7 8	8min
ON OFF 5 6	24℃	ON OFF 7 8	12min
ON OFF 5 6	26℃	ON OFF 7 8	16min

The unit above 14HP:

Indoor unit address allocation range selection		Selector of heating temperature and compensatory temperature choices	
SW2 1th,2th	Address allocation range	SW2 3th,4th	Temperature selection
ON OFF 1 2	32～39	ON OFF 3 4 (Factory Default)	6℃
ON OFF 1 2	40～47	ON OFF 3 4	2℃
ON OFF 1 2	48～55	ON OFF 3 4	4℃
ON OFF 1 2	56～63	ON OFF 3 4	8℃
Temperature selector of turning off fan motor in anti-cold		Time selector of stopping fan motor in heating model	
SW2 5th,6th	Temperature selection	SW2 7th,8th	Temperature selection
ON OFF 5 6 (Factory Default)	3℃	ON OFF 7 8 (Factory Default)	4min
ON OFF 5 6	8℃	ON OFF 7 8	8min
ON OFF 5 6	12℃	ON OFF 7 8	12min
ON OFF 5 6	15℃	ON OFF 7 8	16min

7. Supplying and Controlling

7-1-3 Dial-up SW3



The unit below 14HP:

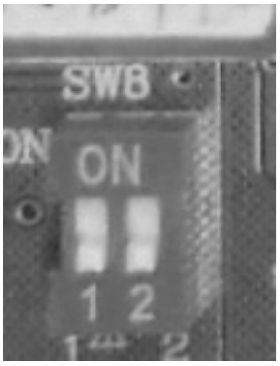
Setting up power-off memory according to agreement			Selector of windshield		
SW3 1th	ON OFF 1	Power-down memory (Factory default)	SW3 2th	ON OFF 2	High windshield
	ON OFF 1	No power-down memory		ON OFF 2	Ultrahigh windshield (Factory default)
Selector of addressing model					
SW3 4th	ON OFF 4	Automatic Addres-sing mode (Factory default)			
	ON OFF 4	Test mode (to allow clear address)			

The unit above 14HP:

Setting up power-off memory according to agreement			Selector of units		
SW3 1th	ON OFF 1	Power-down memory (Factory default)	SW3 2th	ON OFF 2	Full Fresh Air Processor
	ON OFF 1	No power-down memory		ON OFF 2	Ducted Unit
Selector of addressing model					
SW3 4th	ON OFF 4	Automatic Addres-sing mode (Factory default)			
	ON OFF 4	Test mode (to allow clear address)			

7. Supplying and Controlling

7−1−4 Dial-up SW8



Dialing function of SW8 is temporarily retained, so it is not defined temporarily. It was dialed to the digital side before leaving factory.

ON OFF 1	Means dialing to ON
ON OFF 1	Means dialing to digital side

Notes: Dialing function of SW8 is used for debugging and it is commonly dialed to digital side.

8. Fault Code Table

8-1 Display with Fault

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	FE
Errors of phase sequence or fault of losing phase	E0
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
Testing fault of zero-crossing signal	E6
EEPROM malfunction	E7
Wind testing fault of PG electric motor	E8
Communication fault of wire controller	E9
Alarming fault of water level switch	EE
Model conflict	EF

8-2 Display of LED

LED running indicators shine slowly when it is electrified and reset. All of them will go out when it is on standby, while starting up, they will light up. When it is anti-cold or defrost, the preheating light /defrost light will turn on. If timing function is turned on, timing light will light up. When it encounters fault, it manifests the following contents:

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	LED timing light and running light shine slowly at the same time.
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

It shines slowly with a cycle of 2 seconds and quickly with a cycle of 0.4 second.

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ADVERTENCIAS PARA LA ELIMINACIÓN CORRECTA DEL PRODUCTO SEGÚN ESTABLECE LA DIRECTIVA EUROPEA 2002/96/EC.
Al final de su vida útil, el producto no debe eliminarse junto a los residuos urbanos. Debe entregarse a centros específicos de recogida selectiva establecidos por las administraciones municipales, o a los revendedores que facilitan este servicio. Eliminar por separado un aparato eléctrico o electrónico (WEEE) significa evitar posibles consecuencias negativas para el medio ambiente y la salud derivadas de una eliminación inadecuada y permite reciclar los materiales que lo componen, obteniendo así un ahorro importante de energía y recursos. Para subrayar la obligación de eliminar por separado el aparato, en el producto aparece un contenedor de basura móvil listado.