TESLA

FLOOR STANDING INDOOR UNIT

USER MANUAL

For Indoor unit models:

TGSS-48HVI3
TGSS-60HVI3

ENG

Ver. 2023

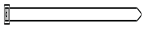
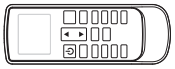
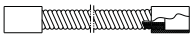
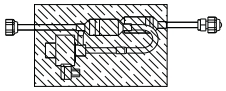
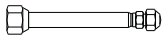
ENG

OPERATING INSTRUCTION

Note: All the pictures in this manual are just schematic diagrams, the actual is the standard. Please read this owner's manual carefully and thoroughly before operating the unit! Take care of this manual for future reference.

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
Remote controller	1		Control A/C
Battery	2		Supply power to remote controller
Drain pipe	1		Used to drain water
Electronic expansion valve component	1		Used for floor-standing unit of the external electronic expansion valve
Switch pipe	1		The ϕ19.05mm pipe switch the ϕ15.88mm pipe
Blank valve bag	3		Used to contain accessories

Parts Purchased Locally

Cooper pipe	Type	7. 1kW～16. 0kW
	Liquid pipe (mm)	ϕ 9. 52 × 0. 8
	Gas pipe (mm)	ϕ 15. 88 × 1. 0
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.	

Correct Disposal of this product

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

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.
  This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- 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
  The appliances that are intended to be permanently connected to fixed wiring, and have a leakage current that may exceed 10mA, shall state that the installation of a residual current device (RCD) having a rated residual operating current not exceeding 30mA is advisable.
- 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.
  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.

⚠ 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 Installation of Indoor Unit

3-1-1 Installation Diagram of Indoor Unit

1) The unit should keep balanced and no vibration.

2) The air inlets and outlets of the unit are free and ensure that the air inflow and outflow are unhindered. Besides, it can not be affected with heat and moisture nearby.

3) In order to ensure that the unit can run well and it is easy to install and maintain the unit, please leave enough room. (see Figure 3-1 and Figure 3-2)

4) When outdoor unit installation place is higher than the indoor one, in order to prevent rainwater from flowing into room along the connecting pipe, arrange a downward arcuate bend before the connecting pipe enters the room, so as to ensure that the apogee is out of the room.

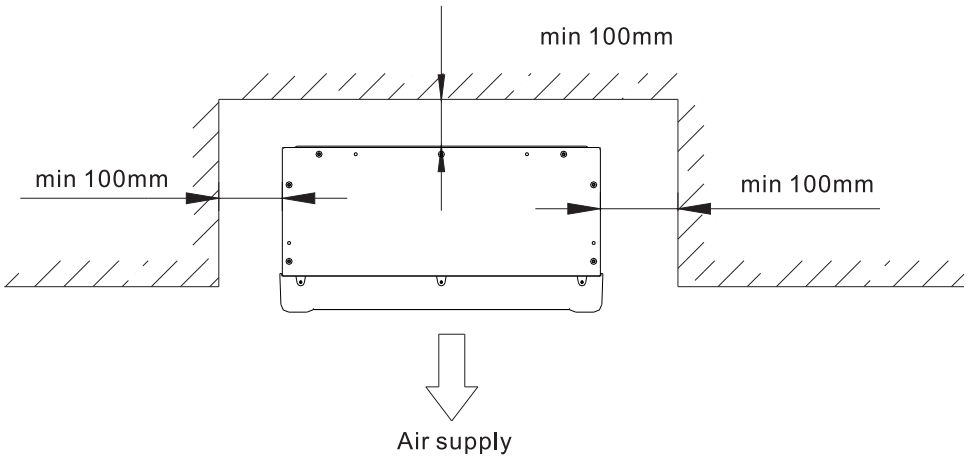


Figure 3-1

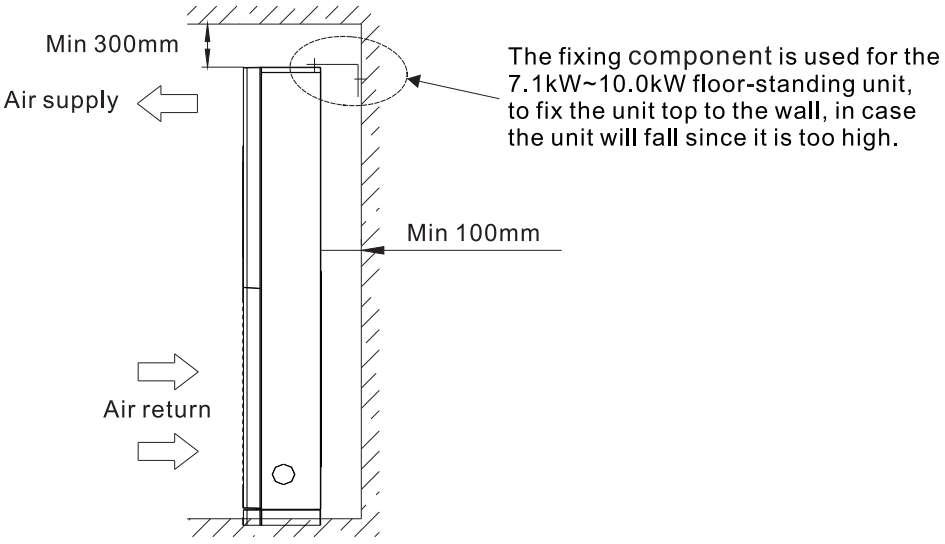


Figure 3-2

3. Installation of Indoor Unit

3-1-2 Punch Wall Hole

1) Choose a place to install.

2) Determine the direction of pipeline and the location where pipeline comes out.

3) Choose drill according to the machine model. Use electric hammer or hydraulic drill to punch wall hole. Generally, the size of wall hole is: the diameter of wall hole for the 7.1kW~10.0kW unit is recommended to be φ90 mm, and the diameter of wall hole for 14.0kW~16.0kW unit is recommended to be φ150 mm.

4) Try to avoid wall with wire inside and outside or with foreign material, or hard wall when punching holes. The inner side of the hole should be 0.5 cm~1 cm higher than the outer side, so as facilitate drain. The wall hole that exit pipeline from the side of indoor unit should be a little lower than the underside of indoor unit. When punching with hydraulic drill, stick plastic sheet to wall or adopt other methods to prevent water from flowing on the wall. When punching with electric hammer, take measures to prevent dust.

3-2 Arrange Pipeline and Bind up

1) Bind up power supply lines and signal lines on the upper side, connection pipe on the middle and water pipe on the lower side.

2) Determine water-exit place and connect drainpipe.

3) Don't over-pull drainpipe while binding up.

4) When extending pipe, use ethylene tape to fix 5 to 6 positions.

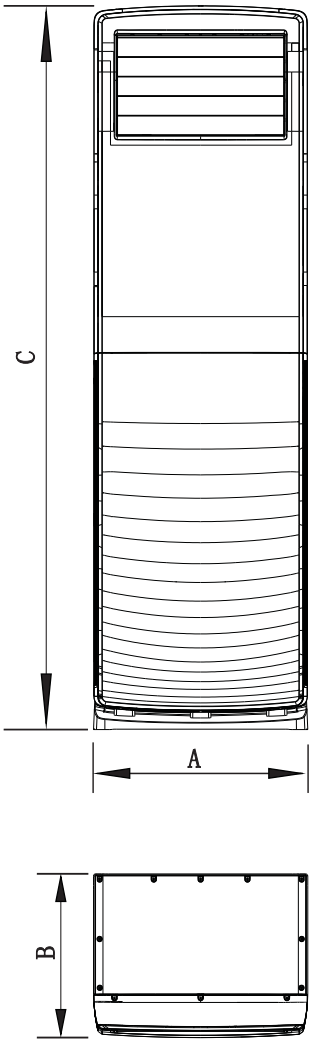
5) Cover heat-insulating materials while extracting pile widthwise.

6) Avoid connected pipe joints for leak detection while binding up.

7) When drainpipe is not long enough and needed to be lengthened, note that the indoor part of extended part of drain should be wrapped with protection pipe; Seal drain interface with universal glue, and pipe can't be twisted in any position.

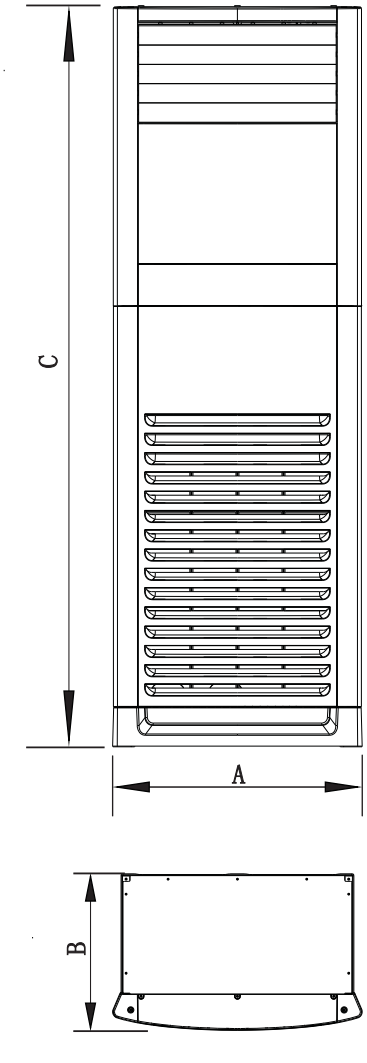
3. Installation of Indoor Unit

3-3 Installing Size of Indoor Unit



Unit: mm

Size code / Model of indoor unit	Body size		
	A	B	C
7. 1kW～10. 0kW	549	419	1853



Unit: mm

Size code / Model of indoor unit	Body size		
	A	B	C
14. 0kW～16. 0kW	648	406	1922

4. Drain Pipe Layout

4-1 Installation of Drainpipe of Indoor Unit

⚠Notice

Be sure to comply with the instruction for installation to connect the Drain pipe, to prevent the condensed water. The insulation of the Drain pipe shall be implemented effectively.

1) The inner diameter of the PVC Drain pipe is 20mm, and users can purchase and arrange the Drain pipe with proper length at the dealer or the local air conditioner after-sales service, or purchase the Drain pipe on the market directly.

2) Connect the Drain pipe in accordance with Figure 4.1.

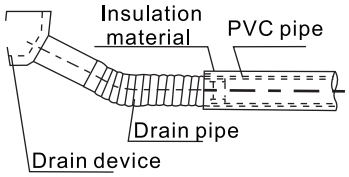


Figure 4.1

⚠Notice

Don't exert too much force, to prevent the drain pipe from the rupture.

3) The water pump pipe 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 water from flowing into the air conditioner back during the downtime, 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 4.2a).

5) Don't pull it by force when you connect the Drain pipe, to prevent the stress of the main body. Furthermore, it is necessary to set one supporting point every other 0.8 - 1.0m, to prevent the deflection of the Drain pipe.

6) It is necessary to bind the indoor part when you connect the lengthened Drain pipe, but the lengthened Drain pipe shall not be loosened.

⚠Notice

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

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.

Note: The highest point of the U-shape water seal shall be lower than the height of the Drain outlet, to prevent the poor Drain.

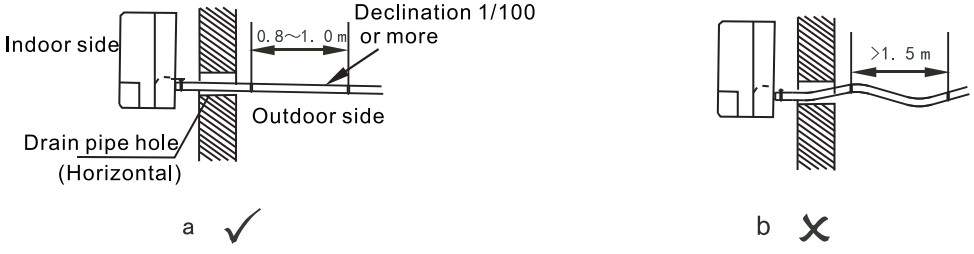


Figure 4.2

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	7.1kW～16.0kW
Liquid pipes	ϕ 9.52 × 0.8
Gas pipes	ϕ 15.88 × 1.0

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.

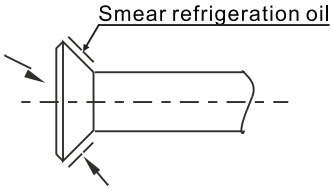


Figure 5.1

Figure 5.2

5. Install Connecting Pipes and Electronic Throttle

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

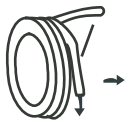
①Cut away a notch of a required size in the insulated tubing at the place of sinuosity when operating with the sinuosity, then expose the pipeline (wrap it up with binder after it gets bent).

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).

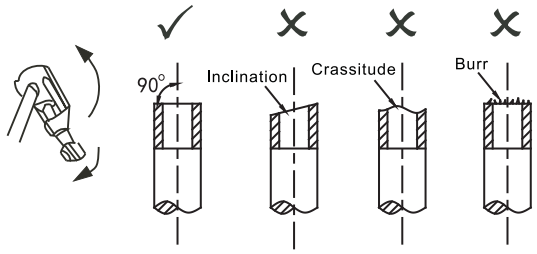
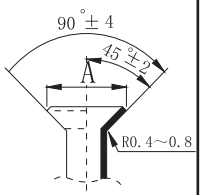


Figure 5.4

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

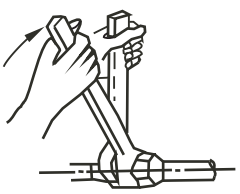


Figure 5.5

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

For the external electronic expansion valve component of the floor-standing unit, refer to Figure 5.6 and Figure 5.7. During the installation, the external electronic expansion valve component is connected with the liquid pipe connector of the indoor unit evaporator. Furthermore, it shall be tightened by the torque wrench.

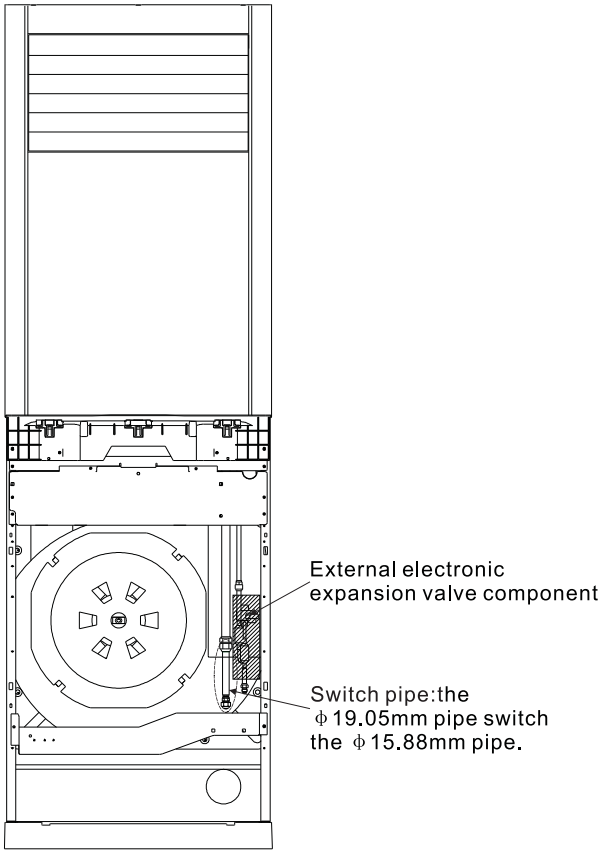


Figure 5.6 The 14.0kW~16.0kW floor-standing unit

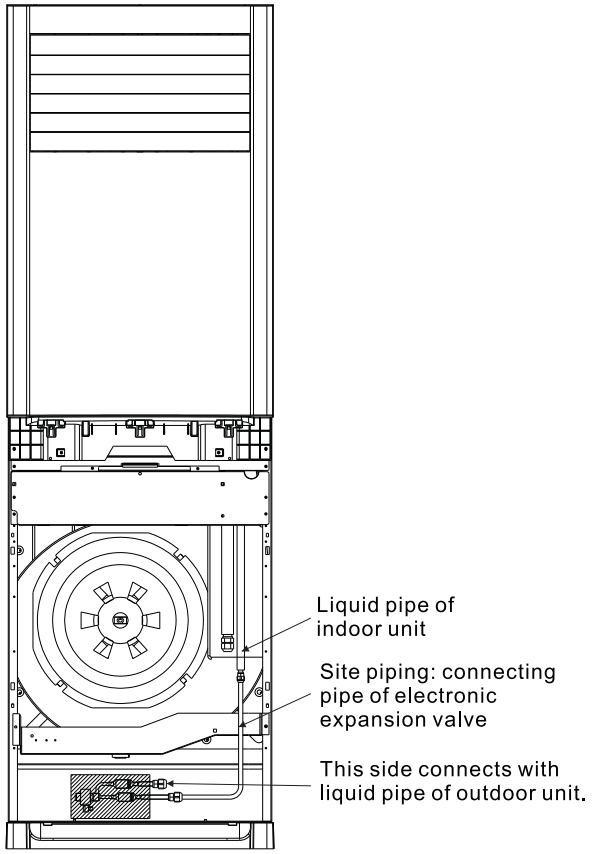


Figure 5.7 The 7.1kW~10.0kW floor-standing unit

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 5.8).

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

2) Please seamlessly insulate the connecting parts of indoor pipe with accessorial insulated materials.

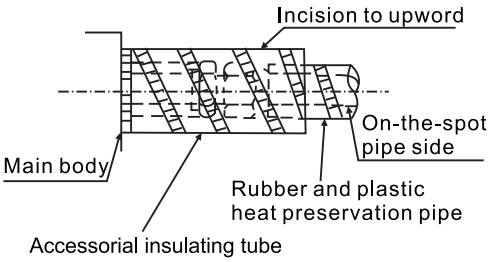


Figure 5.8

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 is shown in 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	
7.1～16.0kW	Single-phase	15A	15A	2.5mm²×2	4mm²×2	1	Two-core shielded cable 0.75mm²	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.

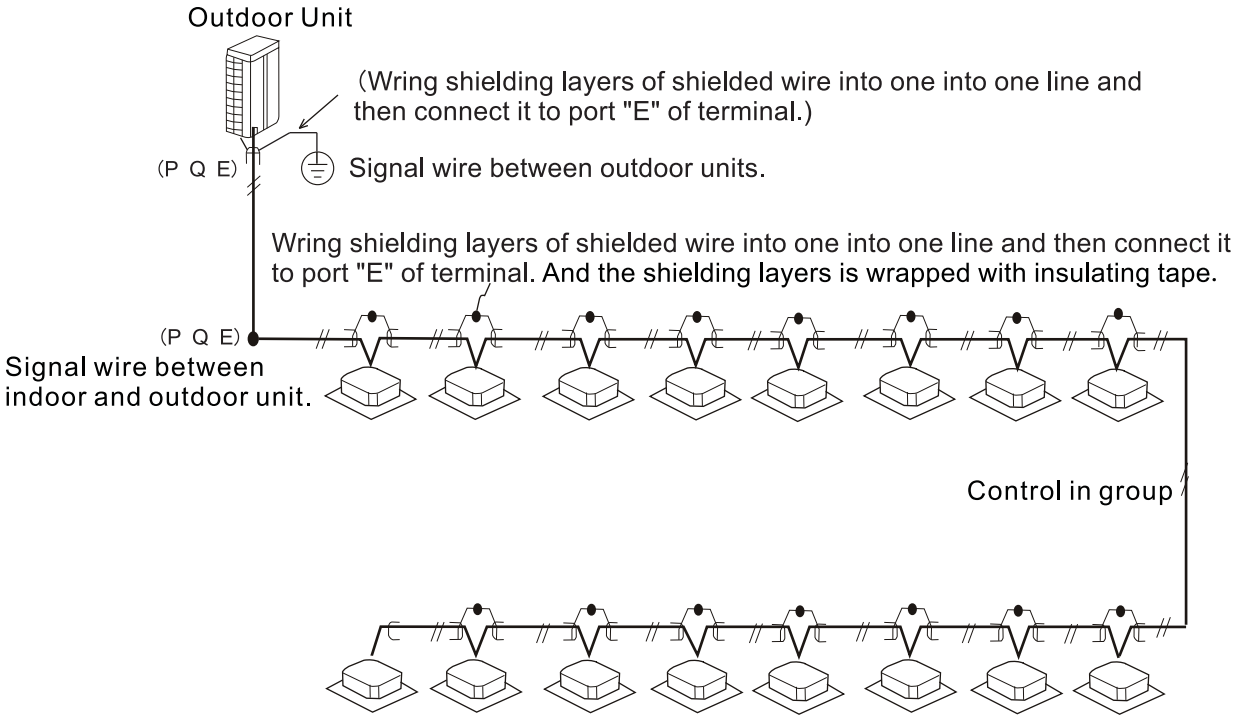


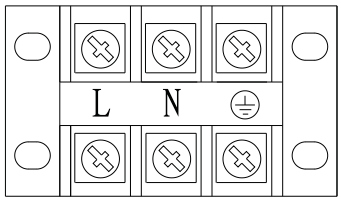
Figure 6.1

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 also connected to the terminal labeled “⏚”.



6-5 Handling of Wiring Interface

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

7. Fault Code Table

7-1 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

7-2 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.