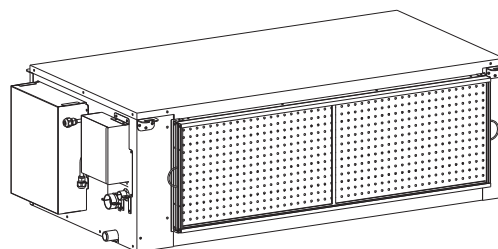


'HIDEN' SERIES MVH LOW AND MEDIUM STATIC PRESSURE DUCT TYPE INDOOR UNIT Installation and Owner`s manual



Installation and owner's manual

CONTENTS

| | |
|---------------------------------------|----|
| Installation and owner's manual | 03 |
| Wired controller manual | 26 |

IMPORTANT

Thank you for selecting super quality Air Conditioners. To ensure satisfactory operation for many years to come, this manual should be read carefully before the installation and before using the air conditioner. After reading, store it in a safe place. Please refer to the manual for questions on use or in the event that any irregularities occur. This Air Conditioner should be used for household use. This unit must be installed by a professional according to RD 795/2010, RD 1027/2007 and RD 238/2013.

WARNING

The power supply must be SINGLE-PHASE (one phase (L) and one neutral (N)) with its grounded power (GND)) or THREE-PHASE (three phase (L1, L2, L3) and one neutral (N) with its grounded power (GND)) and this manual

NOTE

In line with the company's policy of continual product improvement, the aesthetic and dimensional characteristics, technical data and accessories of this appliance may be changed without notice.


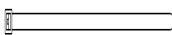


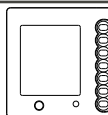
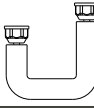
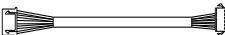

ATTENTION

Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

Contents

| | | |
|---|--|----|
| 1 | Safety precautionary measures | 01 |
| 2 | Selection of Installation Site | 02 |
| 3 | Installation of indoor unit | 03 |
| 4 | Drain pipe layout | 09 |
| 5 | Install connecting pipes and electronic throttle | 10 |
| 6 | Connection of Electricity | 14 |
| 7 | Supplying and controlling | 16 |
| 8 | Fault code table | 20 |

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 liquidside 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 | | φ9.52×0.8 | | φ12.7×0.8 | φ15.88×1.0 |
| | Gas pipe (mm) | φ9.52×0.8 | φ12.7×0.8 | φ15.88×1.0 | | φ22.2×1.0 | φ28.6×1.2 |
| 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, please 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 needs 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:

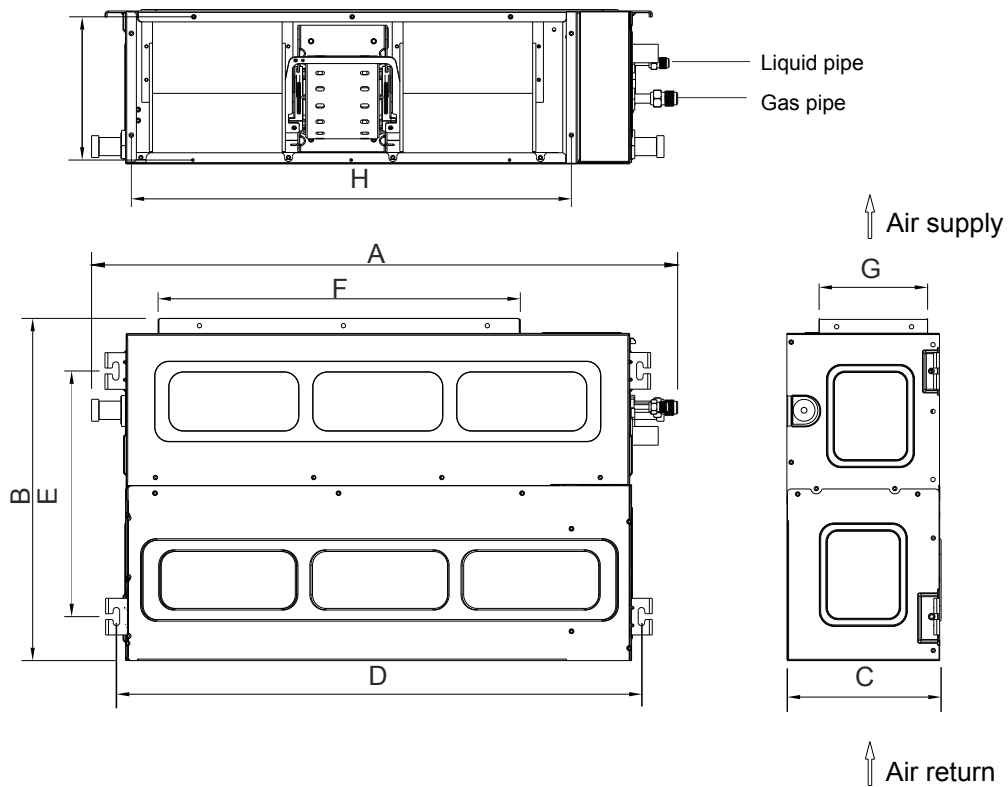


Table 3.1 Unit: mm

| 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 - 4.5kW | 814 | 467 | 210 | 728 | 335 | 503 | 150 | 611 | 200 |
| 5.6kW | 1010 | 467 | 210 | 928 | 335 | 705 | 150 | 811 | 200 |

3. Installation of Indoor Unit

3-1 Installing Size of Indoor Unit

B) Appearance Size and Air Outlet Size of meddium static pressure Ducted Unit:

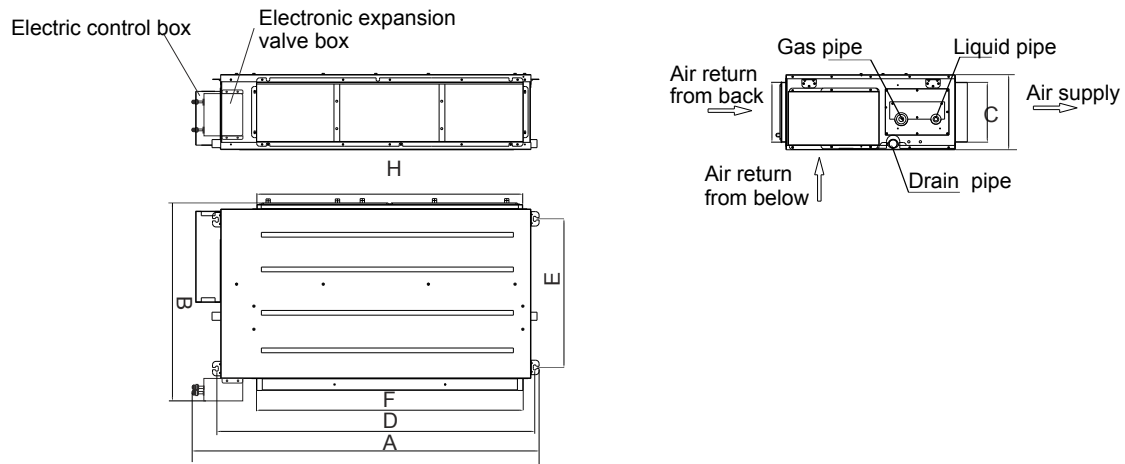


Table 3.2 Unit: mm

| 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 |
| 7.1kW - 8.0kW | 1209 | 680 | 260 | 1100 | 515 | 920 | 197 | 920 | 207 |
| 9.0kW - 12.0kW | 1445 | 680 | 260 | 1337 | 515 | 1156 | 197 | 1156 | 207 |

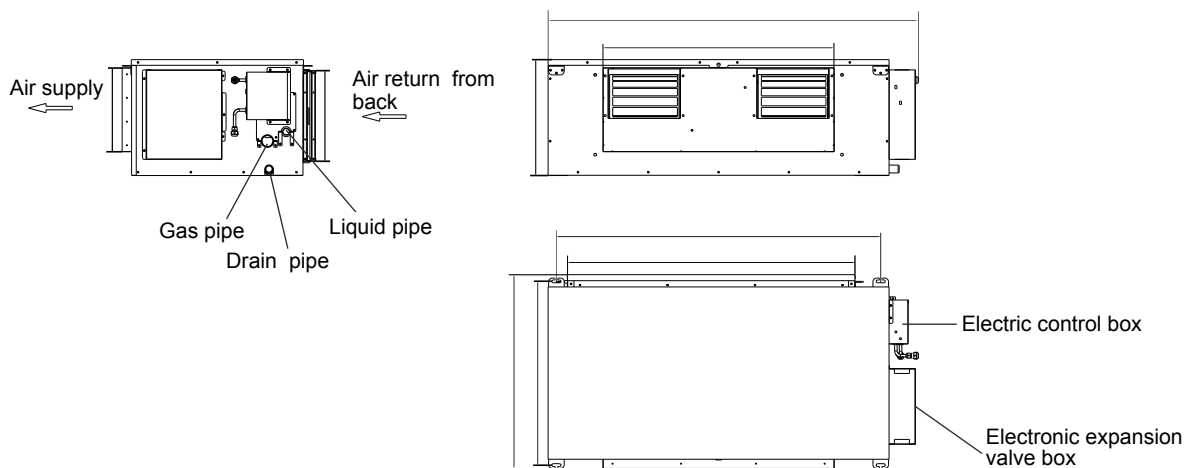


Table 3.4 Unit: mm

| 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 |
| 15.0kW | 1190 | 620 | 370 | 1038 | 588 | 740 | 267 | 920 | 290 |

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 $\phi 10$

- 1) Please use the lifting Bolt with $\phi 10$.
- 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.

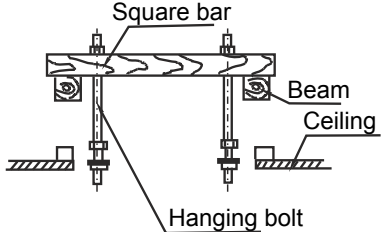
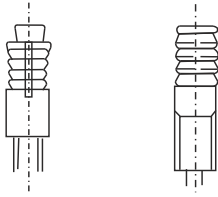
3-2-2 Lifting of Indoor Unit

- 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

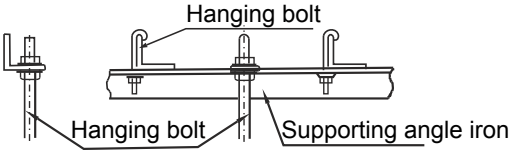
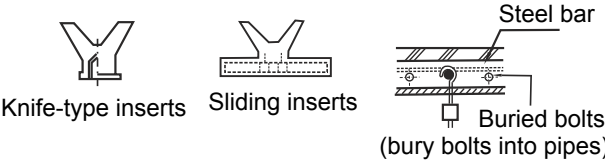
For the installation situation of the lifting bolt, refer to the table below (table 3.11 and 3.12).

Table 3.11

| Wooden with steel skeleton | Occasions with original concrete billet |
|--|--|
| <p>The square bar by lifting his arranged on the beam. anging bolt</p>  | <p>Set with inlay appliances , embedded bolts.</p>  |

3. Installation of Indoor Unit

Table 3.12

| Occasions with steel skeleton | Occasions with new concrete billet |
|--|---|
| <p>Set and directly use supporting angle iron.</p>  <p>The diagram shows a horizontal supporting angle iron. Two vertical hanging bolts are attached to it, one on each side. Labels point to the 'Hanging bolt' and the 'Supporting angle iron'.</p> | <p>Set with inlay appliances , embedded bolts.</p>  <p>The diagrams show three types of embedded bolts: 1. Knife-type inserts: A Y-shaped insert with a knife-like edge. 2. Sliding inserts: A Y-shaped insert with a sliding mechanism. 3. Buried bolts: A steel bar with a buried bolt (bury bolts into pipes). Labels point to the 'Steel bar' and 'Buried bolts'.</p> |

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. Installation of Indoor Unit

3-4 Adjustment of Air Return Box

The air return box of the low static pressure 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.

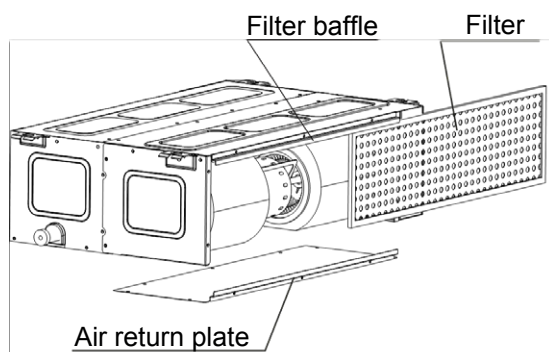


Figure. 3.1

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

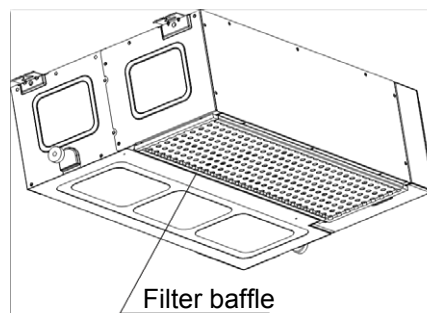


Figure. 3.2

The air return box of the meddium static pressure ducted unit 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.

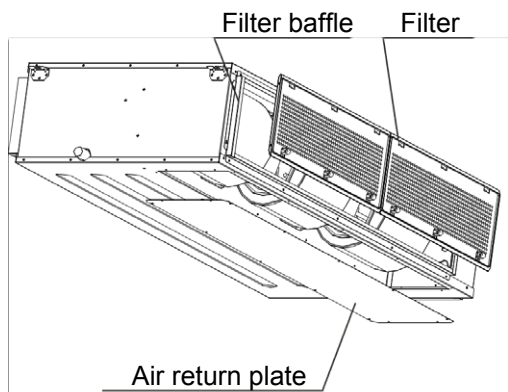


Figure. 3.3

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

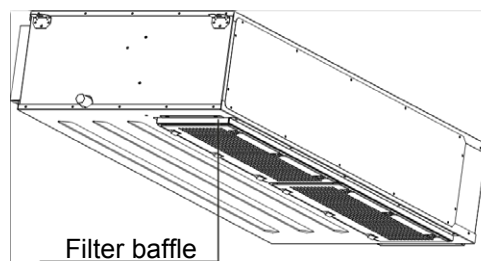


Figure. 3.4

The air return box of the Medium static pressure ducted unit of 15.0kW is as standard.

There is only one air return mode, namely, air return from back, which is the factory default

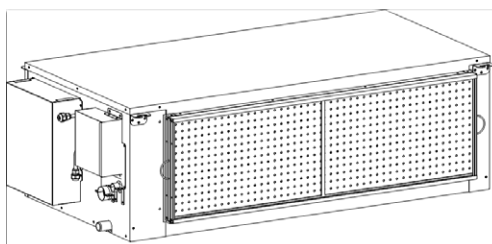


Figure. 3.5

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 3.6.
- 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 3.7.

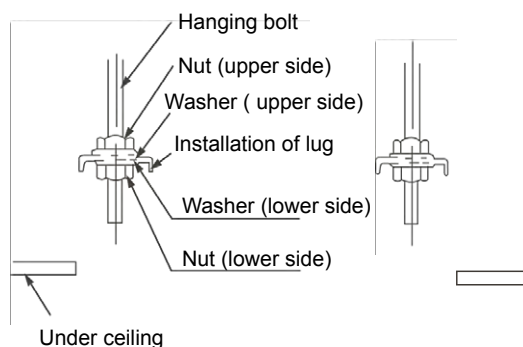


Figure 3.6

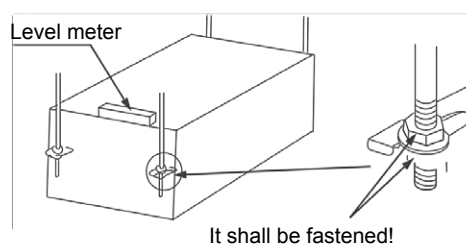


Figure 3.7

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 3.10.
- 2) There shall not any angle between the air grid angle and the air intake direction. Otherwise, it may increase the noise. Figure 3.11 is the incorrect making method of the air intake grid.

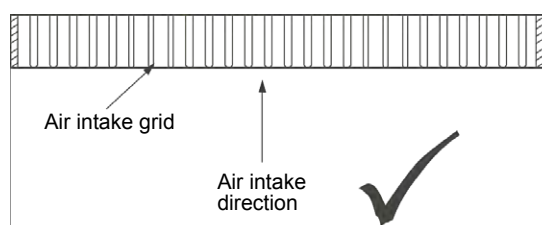


Figure 3.10

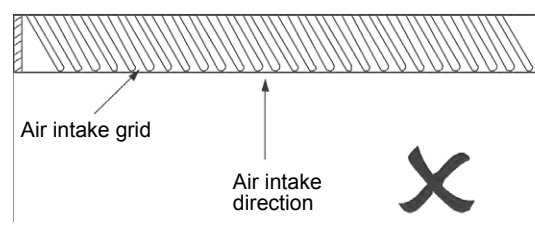


Figure 3.11

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, 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.

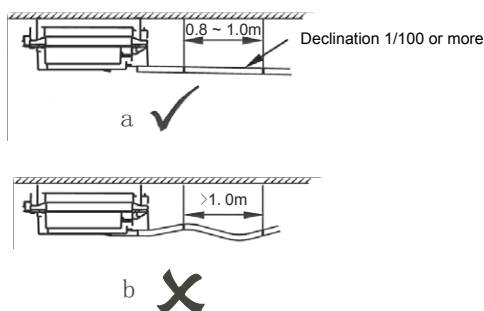


Figure 4.1

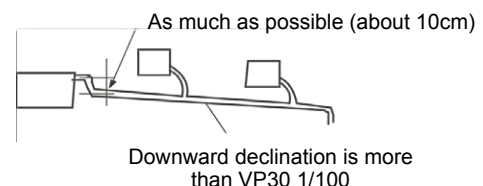


Figure 4.2 Centralized Drain

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 | 6.3kW 8.0kW | 9.0kW 16.0kW | 20.0kW 28.0kW | 45.0kW 56.0kW |
|-------------|-------------------|------------------------|------------------------|-------------------------|--------------|------------------------|-------------------------|
| Cooper pipe | Liquid pipes (mm) | $\phi 6.35 \times 0.8$ | | $\phi 9.52 \times 0.8$ | | $\phi 12.7 \times 0.8$ | $\phi 15.88 \times 1.0$ |
| | Gas pipes (mm) | $\phi 9.52 \times 0.8$ | $\phi 12.7 \times 0.8$ | $\phi 15.88 \times 1.0$ | | $\phi 22.2 \times 1.0$ | $\phi 28.6 \times 1.2$ |

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:
 - The winding angle should be less than 90° (Fig. 5.2).
 - Its 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).
 - Don't bend the flexible coupling pipe for more than 3 times.

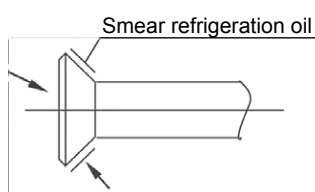


Figure 5.1

Bend pipe with thumbs

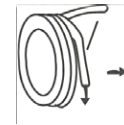


Figure 5.2

5. Install Connecting Pipes and Electronic Throttle

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

- Cut 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).
- Bend radius as much as possible so as to avoid squash or destruction.
- Use pipe bender to make close sinuosity.



Remove coil methods
make pipe end straight

Figure 5.3

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.).

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)

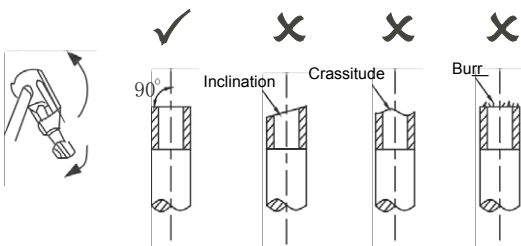
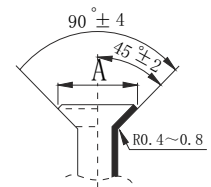


Figure 5.4

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 |

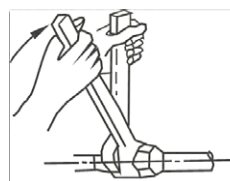


Figure 5.5

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 Medium Pressure Ducted Unit until 15.0kW have been installed in the main body during the shipment. For the details, refer to Figure 5.6 - 5.7. 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 Low Static Pressure Ducted Unit 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.

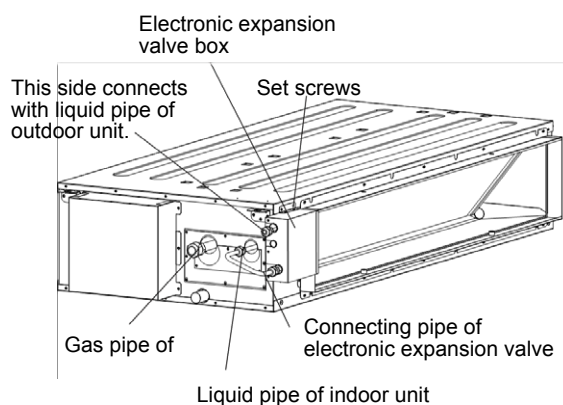


Figure 5.6 Medium Static Pressure Ducted Unit 7.1kW ~ 9.0kW

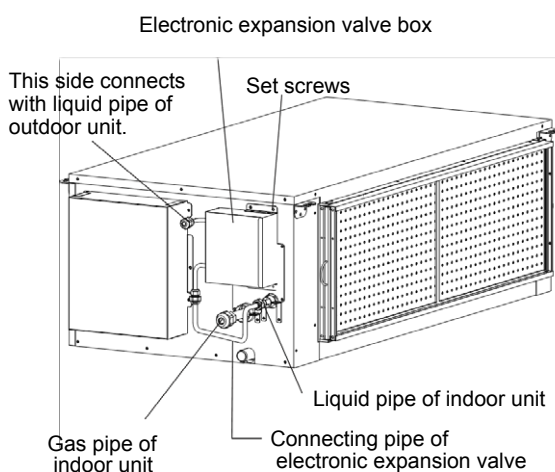


Figure 5.7 Medium Static Pressure Ducted Unit 15.0kW

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

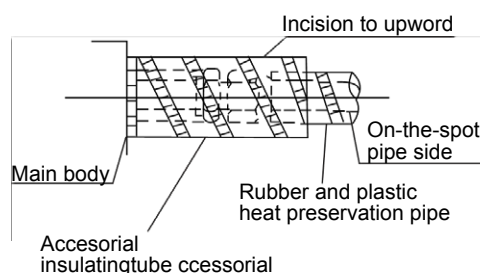


Figure 5.9

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 | 4 mm²×4 | | | 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.

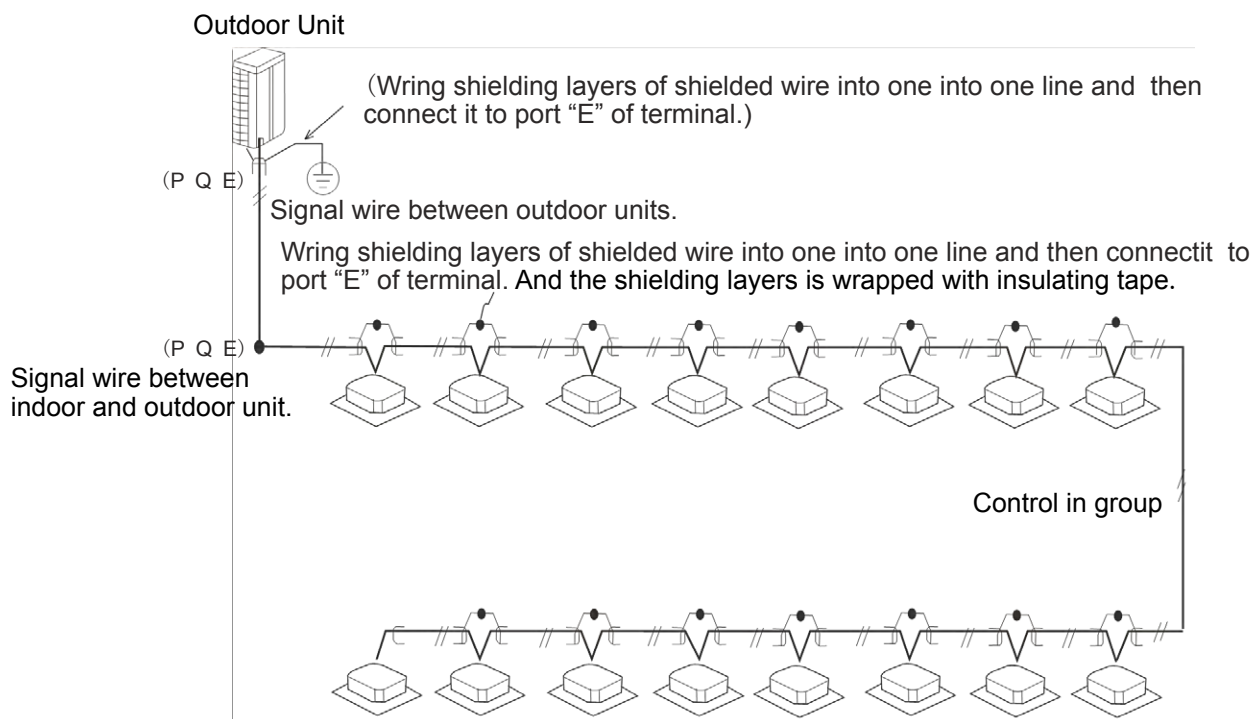
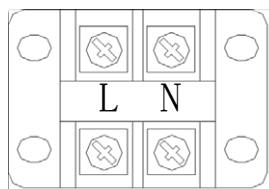


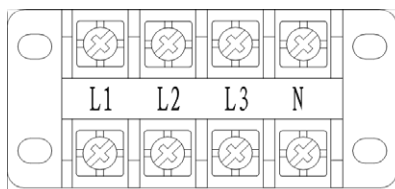
Figure 6.1

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

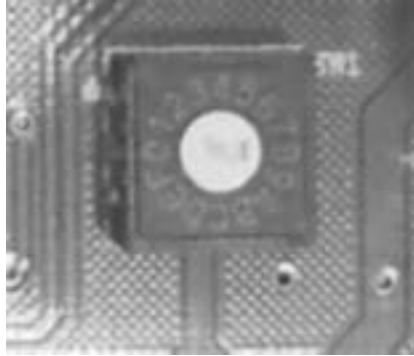
Wiring interface should be sealed with insulated material. Failure to seal will cause condensation.

7. Supplying and Controlling

7-1 Introduction of Functional Dial-up

Note: as the dial-up of different unit may be different, the specific content please refer to the wiring diagram of the unit. The following way of the dial-up can only be for reference.

7-1-1 Dial-up Switch SW1

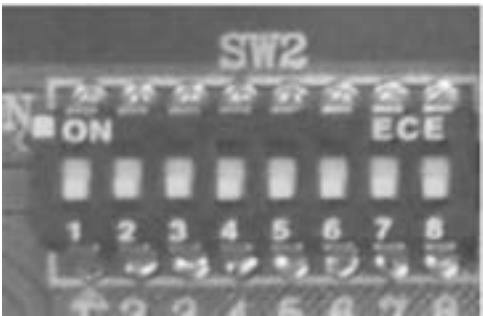


By using the dial switch SW1 (with 16 numbers in its dialing disk) on the indoor plate can regulate the horse power of indoor unit (set up before leaving factory). The indoor unit includes the following horse power:

| power of dials | Capacity factor | HP |
|----------------|-----------------|-----|
| 0 | 18/22 | 0.8 |
| 1 | 25/26/28 | 1 |
| 2 | 32/35/36 | 1.2 |
| 3 | 40/45/46 | 1.7 |
| 4 | 50/51/56 | 2 |
| 5 | 60/63/66/71 | 2.5 |
| 6 | 80 | 3 |
| 7 | 88/90 | 3.2 |
| 8 | 100/110/112 | 4 |
| 9 | 120/125/140 | 5 |
| A | 150/160 | 6 |
| B | / | / |
| C | / | / |
| D | / | / |
| E | / | / |
| F | / | / |

7. Supplying and Controlling

7-1-2 Dial-up SW2



| | | | |
|--|-----|-------------------------------------|--|
| Refrigeration temperature compensation temperature valuesselect bits | | | |
| SW2 | ON | <input checked="" type="checkbox"/> | 3 <input type="checkbox"/> Factory default |
| NO.1 | OFF | <input type="checkbox"/> | 1 <input type="checkbox"/> |

| | | | |
|--------------------------------------|-----|-------------------------------------|----------------------|
| Heating stop the fan time to chooset | | | |
| SW2 | ON | <input checked="" type="checkbox"/> | 4min Factory default |
| NO.5 | OFF | <input type="checkbox"/> | 8min |

| | | | |
|--|-----|-------------------------------------|--|
| Heating temperature compensation temperature value select bits | | | |
| SW2 | ON | <input checked="" type="checkbox"/> | 6 <input type="checkbox"/> Factory default |
| NO.2 | OFF | <input type="checkbox"/> | 2 <input type="checkbox"/> |

| | | | |
|--|-----|-------------------------------------|-------------------------------------|
| According to the contract custom power lost memory functions | | | |
| SW2 | ON | <input checked="" type="checkbox"/> | power-down memory (Factory default) |
| NO.6 | OFF | <input type="checkbox"/> | No power-down memory |















| | | | |
|--|-------------------------------------|-----------------------|-----------------------------|
| Anti-cold wind off the fan temperature selection bit | | | |
| SW2 NO.3&4 | | Temperature selection | |
| ON | <input checked="" type="checkbox"/> | Factory default | 15 <input type="checkbox"/> |
| OFF | <input type="checkbox"/> | | 20 <input type="checkbox"/> |
| ON | <input checked="" type="checkbox"/> | | 24 <input type="checkbox"/> |
| OFF | <input type="checkbox"/> | | 26 <input type="checkbox"/> |





| | | | |
|-----------------------|-----|-------------------------------------|------------------------------------|
| HIGH/SUPER HIGH SPEED | | | |
| SW2 | ON | <input checked="" type="checkbox"/> | SUPER HIGH SPEED (Factory default) |
| NO.8 | OFF | <input type="checkbox"/> | HIGH SPEED |

7. Supplying and Controlling















7-1-3 Dial-up SW3



| Type selection | |
|--|----------------------|
| SW3 NO1,2,3 | Type |
| ON  OFF  | Short duct unit |
| ON  OFF  | Slim duct unit |
| ON  OFF  | Medium ESP duct unit |
| ON  OFF  | Floor ceiling unit |
| ON  OFF  | Floor standing unit |
| ON  OFF  | Reserve |
| ON  OFF  | Reserve |

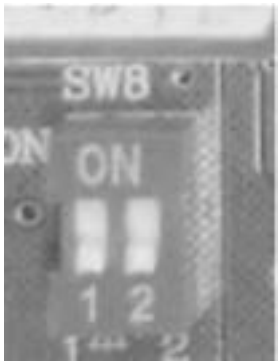
| Mode Select bits | | |
|------------------|---|---|
| SW3 | ON  | Automatic Address-sing mode and (Factory default) |
| | OFF  | |
| NO.4 | ON  | Test mode (to allow clear address) |
| | OFF  | |

For model 150

| Type selection | |
|--|--------------------------|
| SW3 NO1,2,3 | Type |
| ON  OFF  | Normal duct unit |
| ON  OFF  | Fresh air processor |
| ON  OFF  | One-way cassette |
| ON  OFF  | Two-way cassette |
| ON  OFF  | HRV |
| ON  OFF  | 10HP floor standing unit |
| ON  OFF  | Reserve |

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.

| | |
|---|-------------------------------|
| <div>ON</div> <div>OFF</div> <div>1</div> | Means dialing to ON |
| <div>ON</div> <div>OFF</div> <div>1</div> | 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.

VRF Wire Controller Manual- ZKX-C/T/A-06 (CL09203)

Figure Number:SA-XK02ENG-2
Material Code:802000190339

Please read this manual carefully before installation and install according to the instruction.

I. Use-method

The control panel of wire controller is responsible for controlling the operation status of the system by the button and displaying the working status of the entire system by its LCD screen, and is responsible for communicating with the control board of the system.



Fig1 Appearance of Wire Controller

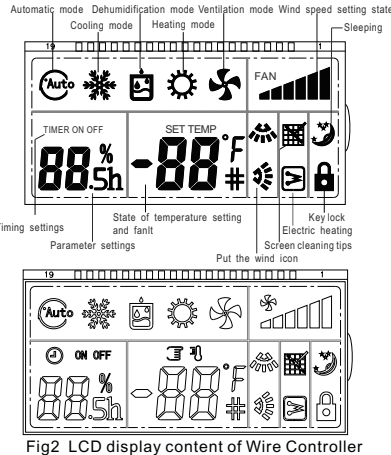


Fig2 LCD display content of Wire Controller

Operation and Instruction :

1. "ON/OFF" Button:

Control the On/Off status of the system.

2. "MODE" Button :

When the air conditioning is powered on, every time you press mode button or the mode button of remote controller, the mode will change in the following sequence.

Auto Mode - Refrigeration - Dehumidification - Heating - Ventilation - AutoMode

3. "▲" and "▼" Button(TEMP+ and TEMP-):

1) Boot state, press "▲" and "▼" Button, increase/decrease the setting temperature. Refrigeration, Dehumidification, Ventilation and Heating mode Scope of temperature setting: 16 ° ~ 32 °. The setting temperature do not adjust in Auto Mode.

2) Press the "▲" and "▼" button for 3s simultaneously to lock this button. At this time, It will display the locking icon in LCD. Deactivate this button, and press the "▲" and "▼" button again simultaneously.

4. "FAN+" and "FAN-" Button (FAN+ and FAN-):

1) In dehumidification mode: the wind speed is fixed in the second gear and can not be adjusted.

2) Adjust the wind speed of the indoor fan, every time you press the key of the wind speed, the wind speed will change according to the figure below.

Sixth gear → Fifth gear → Fourth gear → Third gear → Second gear → First gear → Auto wind (DC motor)

Sixth gear → Fourth gear → Second gear → Auto wind (AC motor)

5. "26°C/Q" Button (ON/OFF) :

1) Short press this button will enter a state of energy saving of 26°C, namely the setting temperature is 26°C and fan speed set to 2 gear. This function under system running cooling or heating model is effective.

2) Long press this button will enter the query state, the lower left of the display screen shows the serial number of point inspection, the middle shows the data content of the query, press the temperature + and temperature - key to select the query data;

3) In the query state, press this key for a long time or do nothing 10 seconds or press the open key, then exit the query state interface.

Following table is the data of the query:

| | |
|----|--|
| 1 | Indoor unit address |
| 2 | HP |
| 3 | Capacity |
| 4 | T1 |
| 5 | T2 |
| 6 | T2B |
| 7 | T2B average |
| 8 | Electronic expansion valve opening ratio |
| 9 | Last time error(no error display"E") |
| 10 | Penultimate error(no error display"P") |
| 11 | Temperature |

6. "SW" Button:

At any time, press this button to enter the function setting interface. Under the function setting interface, each time this button is pressed, the corresponding icon of the item to be set will enter the flickering state. Press the switch key to confirm the settings and exit the function settings interface after the settings are completed.

1) Press the function button, the pendulum icon () flickers, and the middle position of the display displays setting parameters: 0-close, 1-open; press

"▲" or "▼" key to adjust on or off.

2) Press the function button to enter the next setting, the swing icon () flickers, and the middle position of the display screen shows setting parameters: 0-close, 1-open; press "▲" or "▼" key to adjust on or off.

3) Press the function key to enter the next setting, when the filter screen cleaning reminder icon (), the middle position of the display screen will display setting parameter : 1, press "▲" or "▼" key to adjust cancel or not cancel the warning function; If without " ", the time for regular cleaning is not up; otherwise, skip to the next function setting.

4) Press the function button to enter the next setting, the electric heating setting icon () flashes, and the setting parameters will be displayed in the middle position of the display screen: 0-manually close; 1- manually open; 2- auto switch, press "▲" or "▼" key to adjust parameters;

5) Press the function button to enter the next setting, the sleep setting icon () flashes. Setting parameters will be displayed in the middle of the display screen: 0-close, 1-open; press "▲" or "▼" key to open or close;

6) Press the function button to enter the next setting, and the key lock icon () flashes. Setting parameters will be displayed in the middle of the display screen: 0-close, 1-open; press "▲" or "▼" key to open or close; (effective after exiting the function setting interface)

7) Press the function button to enter the next setting, enter the setting of timing startup time, and the "ON" icon set at a certain time flashes, the current state is displayed at the lower left corner of the display screen; "--" means no setting open time, by pressing "▲" or "▼" key to adjust time to start up, 0.5h; "h" means setting starting up after ** hour;

8) Press the function button to enter the next setting and enter the time setting of the timer switch. The "OFF" icon of the timer switch flashes and the current state is displayed at the lower left corner of the display screen; "--" refers to no fixed shutdown time, pressing "▲" or "▼" key to setting timing shutdown time, 0.5h; "h" means setting shutdown after ** hour;

9) Press the function button to enter the next setting, and "--" will be displayed in the middle of the display screen. At this time, enter the function setting entry. Long press "26°C/Q" button to enter the user parameter setting interface; In the user parameters interface. The number on the left side of the display screen displays the serial number of setting items, and the number in the middle of the display screen displays the value of setting parameters.

Following below table .In the user parameter setting interface, press "wind speed +" and "wind speed -" buttons or function buttons to select the serial number of the setting item; press "▲" and "▼" keys to regulate parameter values.

| Items | Parameter | Instructions | remarks |
|-------|---------------------------------------|--|--|
| 1 | Fahrenheit / centigrade setting | default °C, °C to °F to °C | Display setting temperature |
| 2 | Max temperature setting | Default 32°C, 24°C-32°C can be adjusted. Default 88°F, 76°F-88°F can be adjusted | Display settings |
| 3 | Min temperature setting | Default 16°C, 16°C-24°C can be adjusted. Default 61°F, 61°F-76°F can be adjusted | Display settings |
| 4 | Main interface temperature display | Display setting temperature (default) / display indoor side temperature | Display setting temp/display indoor side temperature |
| 5 | select prompt tone of press button | 0:voiced(default) 1:silent | Display 0 or 1 |
| 6 | Clean time setting | 2000h/3000h/3500h/4000h/5000h (default:4000h) | Display 20/30/40/50 |
| 7 | Wire controller master /slave setting | 0: master (default) 1: slave | It can be set when two wire controller connected otherwise can't communication |
| 8 | VRF system address setting | 0-63 | |
| 9 | Constant air flow setting | 0:OFF 1:ON | Only valid for constant air flow ducted units |

10) Operation guidance of Constant air flow setting:

After entering No.9 constant air flow setting, press "▲" key to set 1, and press "SW" button to confirm, and then the controller will flash "AF". If the ducted unit has constant air flow function, the unit will enter the automatic identification mode. After finishing, it will return to main interface automatically. If the ducted unit does not have constant air flow function, the controller will display "AF" and it will return to main interface after a few seconds.

7. Description of DIP Switch:

| | | |
|-------|-----------------------|--------------------------|
| | 2 ON | 2 OFF |
| 3 ON | -4°C | -2°C |
| 3 OFF | 2°C | 0°C |
| | ON | OFF |
| 1 | reserved | reserved |
| 4 | with power-off memory | without power-off memory |

1) The second and the third switch choice of room temperature compensation value, while the second and the third are ON, the compensation value is -4 degree, when the second and the third are OFF, the compensation value is 0 degree, when the second is ON and the third is OFF, the compensation value is 2 degree, while the second is OFF and the third is ON, the compensation value is -2 degree. (Only for ambient temperature sensors on the wire controller)

2) The fourth ON of the DIP switch indicates that with power-off memory function. And the fourth OFF indicates that without power-off memory function. The factory dials to the OFF state.

II. Installation of Wire Controller

Safety Precautions

- ! Read the safety precautions carefully before installation.
- ! The following is the important content to be paid for the safety, be sure to follow it.
- ! The meaning of each part:

| | |
|-----------------|---|
| Warning: | Indicate it may cause the death or serious injury for the improper operation. |
| Note: | Indicate it may cause the death or serious injury for the improper operation. |
| Notes: | <ul style="list-style-type: none"> • Please do not install the wire controller in damp or direct sunlight places. • Please do not hit, throw and frequent disassembling the wire controller. • Please do not operate the wire controller with Wet hand; Don't make any fluid into the wire controller. • Please do not do dismantling the wire controller without authorization. Please consult after-sales maintenance personnel if you have a problem. • To prevent water and dust into the wire controller, Affect the wire controller normal use. Please dismantle the wire controller When the indoor decoration and maintenance. |

Installation and disassembly of the wire controller

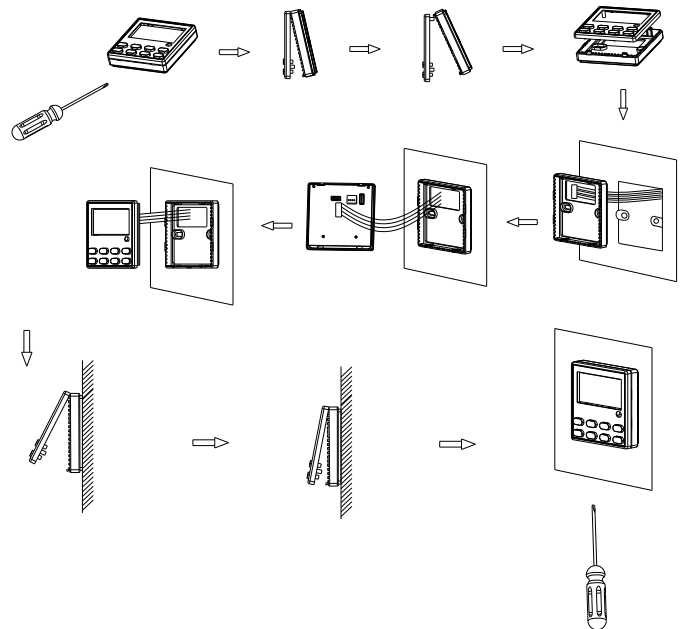
1. The installation position and requirements of the wire controller

- 1) Please do not install the wire controller in damp or direct sunlight places.
- 2) Please do not install the wire controller in the places, where is near the high temperature or easy to splash water.
- 3) To avoid the interference of the neighbors' remote controller which has the same model, then cause abnormal work. Please do not install the wire controller where the face up to the window.
- 4) Before installation, please cut off the power which is Buried in the wall mounting holes. The whole installation process does not allow operation with power.
- 5) In order to avoid the unit by reason of electromagnetic interference caused by abnormal work. When wiring, please pay attention to the following matters.
 - A) Ensure that communication line access right, otherwise will lead to communication failures.
 - B) If the air conditioning unit is installed on the places, which is influence by electromagnetic interference. the wire controller signal lines must use shielded twisted-pair cable.
- 6) The standard accessories which is installation need to prepare: installed inside a wall socket bottom box, controller base plate, screw the M4 x 25, control panel.

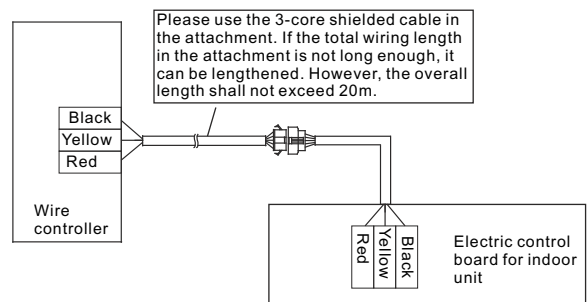
2. The installation of the wire controller

First of all, the wire controller signal line connection mode is as follows:

- 1) Open interior electrical lifted the lid, and the signal wires through the rubber ring;
- 2) Plug the wire controller signal lines within the five core needle base on the indoor machine circuit boards, and using cable tie line tied tightly fixed. Next, the wire controller installation steps as shown in the figure below:



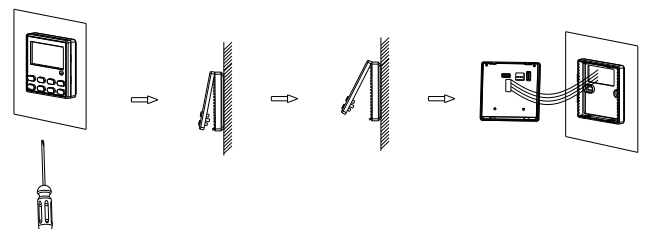
Connect the wire controller in the way as shown in the figure below



Brief description of the installation process is as follows:

- 1) The signal lines of short through rectangle hole of the wire controller bottom plate, and then pull out five core twisted pair from the wall installation hole. Finally connect the line and the other end.
- 2) Use screws M4 x 25 to fix the controller base plate on the mounting holes of the wall.
- 3) Put the wire controller panel and floor buttons together, and this installation is complete. When installation, please reserve a certain length of the line at the bottom of box, to facilitate maintenance later removed.

3. Disassembly of the wire controller



! After the completion of the installation, confirm there is no abnormality for the commissioning, and deliver the instruction to customers for storage.

Note:

- It may cause the rear cover deformed if the screw is tightened too much.
- It is necessary to reserve a certain length for the connecting cable of the wire controller during the installation, so as to take down the wire controller for the maintenance.

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