



AC Pro Multi-Zone 4 & 5 Ton Installation Manual

Super Free Match
Models:
AWHD(48S)ND3CO
AWHD(56S)ND3CO

Part I: Installation

1. PRECAUTIONS FOR INSTALLATION

Before installation, please ensure the installing site, power ratings, possible operating range (pipe distance, height difference between indoor and outdoor unit, power voltage) and installing space are correct and suitable.

- To ensure correct installation, please make sure to read the Safety Considerations thoroughly before starting the installation works.

- After completing the installation and test run and confirming that all are normal, please introduce to the client on how to use and repair the machine according to the Operating Instructions. Besides, please deliver the considerations herein to the clients together with the Operating Instructions, and ask them to keep properly.

 **Warning!:** It indicates improper operation which will lead to human casualty or severe injury.

 **Caution!:** It indicates improper operation which will lead to injury or property damage.

Warning!:

The installation and relocation should be left to the appointed service center and must be installed by professional or qualified persons. Otherwise, it may cause water leakage, electric shocks or fire etc.

Please install the air conditioner according to the instructions given in the installation instructions. Improper installation may cause fall down, water leakage, electric shock or fire etc.

To install a large air-conditioning system in a small room, please make sure to take measures to prevent that the refrigerant will not exceed the limit concentration in case of leakage. For the measures to prevent the refrigerant from exceeding the limit concentration, please consult your dealer. If no proper measures, it might cause human suffocation in case of refrigerant leakage.

Please install the unit on a solid place where is strong enough to support the weight of the unit; Otherwise, the unit would fall down and cause injury or death.

Please keep the room well-ventilated and it could avoid oxygen deficit.

Electrical work should be carried out in accordance with the installation manual and the local laws and regulations. Insufficient capacity or incomplete electrical work may cause electrical shock or fire etc.

Please use suitable cables and connect them securely. Please fix the terminal joints securely. The terminal connection shall not be affected due to any external force applied onto the cable. Improper connection and fixing may cause heating and fire accidents.

The power supply must adopt the special circuit with air switch protection and assure it has enough capacity; The unit will be turned on or off according to your requirement automatically, please do not turn on or off the unit frequently. Otherwise, disadvantage effect may be caused to the unit. Never cut off or damage power cables and control wires. If the power cable and signal control wire were damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

The electrical work should use a cable length enough to cover the entire distance with no connection. If it is unavoidable, please make sure the connection should be reliable and the external forces will not act on the wires. Otherwise it will cause electrical shock or fire etc.

When erecting or relocating the air conditioner, do not let any air enter into cooling circulation system except the specified refrigerant. If any air is mixed, abnormal high pressure will occur in the cooling circulation system, thus causing crack or human injury accidents.

Do not use or store flammable, explosive, poisonous or other dangerous substances beside the air conditioner.
The compressor will vibrate sharply if the voltage is too low and damage the refrigerating system. Electrical component are easy to damage if the voltage is too high. The voltage should be stable; there shouldn't be big fluctuation
Please take notice of the installation foundation of the unit after long use, if it is damaged, it may lead to the fall of the unit and cause the injury.
The refrigerant pipes and accessories must be designed exclusively for R410A.

 Caution!:
Before installation, please check that whether the power supply corresponds with the requirement specified on the nameplate and also check its security.
Before using the unit, please check the piping and wiring, ensure they are correct to avoid water leakage, refrigerant leakage, electric shock, or fire etc.
Ground connection: connect to the ground reliably! The ground wire should be connected to the appropriate grounding device of the building. If the appropriate grounding device is not available, please ask a professional to install. Never connect the ground wire to gas pipe, water pipe, lightning rod, telephone line or other unreliable places considered by a professional.
The total capacity of the indoor units which runs at the same time cannot exceed the capacity of the outdoor units; otherwise, the cooling (heating) effect of each indoor unit would be lower than the nominal capacity.
If the supply power fails when the unit is running, then the indoor unit will send the "start" signal to the outdoor unit three minutes later after the power recovery.
It must install an earth leakage breaker. Otherwise, it maybe cause electric shocks or fire etc.
Install the air conditioner, the power wire and transmission line must be more than one meter away from televisions or radios which can emit electromagnetic waves to prevent image interference or noise. Otherwise, the unit maybe cannot work.
The drain pipe should be installed as instructed in the manual to guarantee the proper drainage; meanwhile it should be insulated to prevent condensing; otherwise the improper installation would cause water leakage and then wet the household wares in the room.
Be sure to shut off the power supply when you do not use the air conditioner for a long time. Otherwise, the dusts may accumulate in it, which may cause overheating or fire hazards.
Never standing on the outdoor unit or place objects on it. Person or objects falling from the unit may cause injury.
The air conditioner is not support to install in the circumstances as the following that where there is full of mist of oil, corrosive gas, flammable gases, the acidic or alkaline vapor and the ocean.
Before startup of the compressor, please turn on the main power switch of the unit for more than 8 hours and it makes sure that the heater belt of the compressor has been energized for at least eight hours! Once the compressor is started, it must be guaranteed that it works continuously for at least 30 minutes, otherwise it would be damaged!
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
Never operate the unit with wet hands. Otherwise, it may cause electric shock.
Before cleaning and repairing, it is necessary to stop working and turn off the power supply. Otherwise, it may cause electric shock or damage.
It is suggested to have a power-on test annually.

1.1 Key Points of Installation

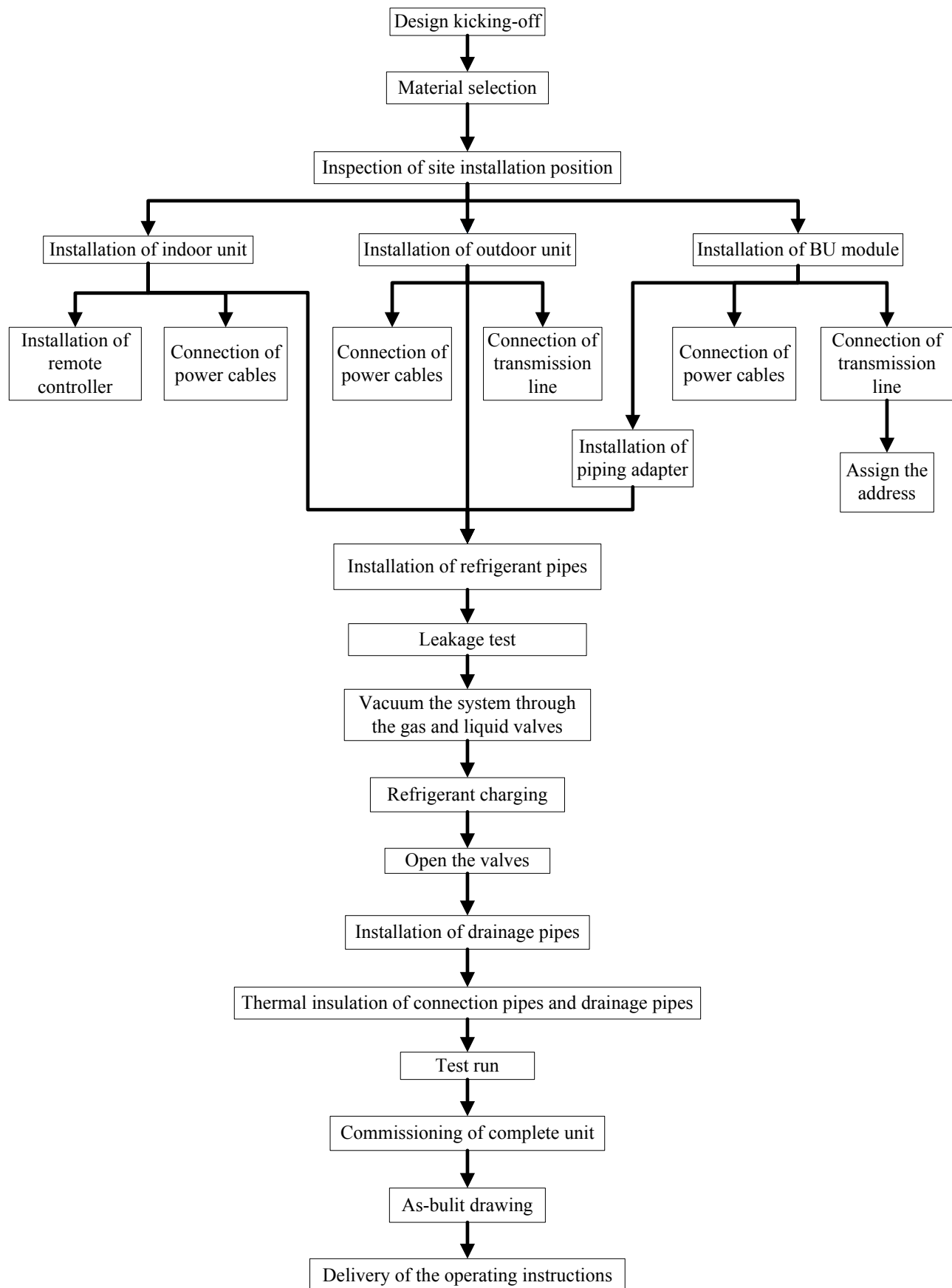
Installation Procedures			Description and Acceptance Criteria
Material Selection and Equipment Inspection			● The materials specified on the engineering drawing shall be purchased as specified (e.g. copper tube, thermal insulation tube, PVC pipe, power cables, air switch, etc). ● The materials not specified on the engineering drawing shall be purchased according to the actual quantity of works (e.g. hanger frame, cable duct, etc). ● Check if the outdoor unit, indoor unit, BU modules, communication wires and accessories are complete.
Installation of indoor unit	Communication wire	Connection	● The power cables shall be separated from communication wires at a least distance of 0.75 in. ● To avoid breaking the communication wires, please do not use strong force. ● For multiple units, please mark them properly. ● Switch on the unit, and ensure there is no display of "Communication Wire Error E6".
		Address dial Code	● Each BU module and indoor unit under the same system has a unique address dial code. ● The wired controller and its corresponding indoor unit have the same address dial code.
	Remote Control		● Select the remote control mode. ● The centralized controller and communication module shall be installed free from the source of interference.
	Power Cord		● The power cable must meet the specifications.
	Drainage Pipe	Installation	● The PVC pipes must meet the specifications. ● A specific gradient must be provided along the water flow direction. ● Carry out water detection after installation. ● Carry out thermal insulation to the drainage pipe only after the water detection is accepted.
		Thermal insulation	● The thermal insulation tube must meet the specifications. ● Seal between the thermal insulation pipes to avoid air entry.
Installation of connection pipes	Welding		● The copper tube must meet the specifications. ● Ensure it is dry and clean inside the tube. ● Make sure to charge nitrogen as required for protection when welding the tubes. ● Please keep to the welding process and ensure the system free of leakage. ● Add a dual-way filter on liquid pipe side ● For multiple systems, please mark them properly. ● Carry out leakage detection under pressure after welding.
	Purge and make leakage detection under pressure		● Purge the system clean. ● Keep the pressure for 24 hours ● Except for the influence by temperature, it is deemed

		● Except for the influence by temperature, it is deemed acceptable if pressure drop is within 0.02MPa. (With the temperature change by 1.8F, the pressure will change by approx. 0.01MPa)
	Thermal insulation	● The thermal insulation tube must meet the specifications. ● Seal between the thermal insulation pipes to avoid air entry.
Installation of outdoor unit		● Select the installing position correctly. ● Build the foundation according to the anchor bolt position and the dimension of outdoor unit ● Build the damping device properly. ● Avoid sharp knock when handling the outdoor unit. The inclination angle shall not be higher than 15°.
Connection of indoor unit and outdoor unit		● Tighten the nuts. ● Provide proper protection to the outdoor connection pipe, communication wires and power supply.
Leakage detection under pressure		● Keep the pressure for 24 hours. Except for the influence by temperature, it is deemed acceptable if pressure drop is within 0.02MPa. (With the temperature change by 1.8F, the pressure will change by approx. 0.01MPa).
Vacuuming		● Establish vacuum simultaneously in the gas pipe and liquid pipe; ● The vacuuming time shall be long enough. ● Put still for 1 hour after vacuuming. It is deemed acceptable if the pressure will not rise.
Add refrigerant		● Add refrigerant according to the volume as specified on the engineering drawing.

Remarks:

- Described above are general working procedures. The procedures might vary with the site conditions.
- For detailed installation rules, please see the description in each chapter

2.FLOW CHART OF INSTALLATION



3. OUTDOOR UNIT INSTALLATION

3.1 Precautions for R410A

- It is very strict that the refrigerant pipes should be clean and dry.
- The R410A is a mixed refrigerant, when add the refrigerant to the unit, it must keep the refrigerant in its liquid state. If the refrigerant is in gas state, the composition has been changed and the capability of the unit will decrease.
- When the refrigerant is leak out, please do not touch the leakage. Otherwise, it will result in frostbite.
- It does not support to let a lot of refrigerant go into the ambient atmosphere, because it will strengthen the green house effect. Otherwise, it will produce toxic gas when the refrigerant contacts with the fire.

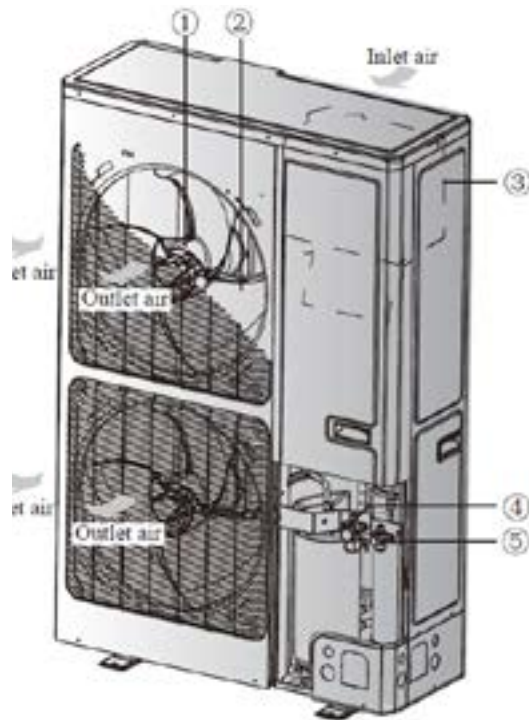
3.2 Precaution for Installation

- The unit is so heavy that it is more than 110kg, so more than two persons will be needed to remove the unit. The package cannot bear it, so do not grasping it.
- When remove the units, please place the hands on the corner and take care not to hurt the hands by the fins.
- It is very likely to dispose the waste to the garbage bin after the installation.

3.3 Precaution for Operation Test

In order to protect the compressor from vibrating during transportation and 2 metal gaskets are used. They must be removed prior to commissioning and tied back the nut firmly; otherwise the unit might not be operated well.

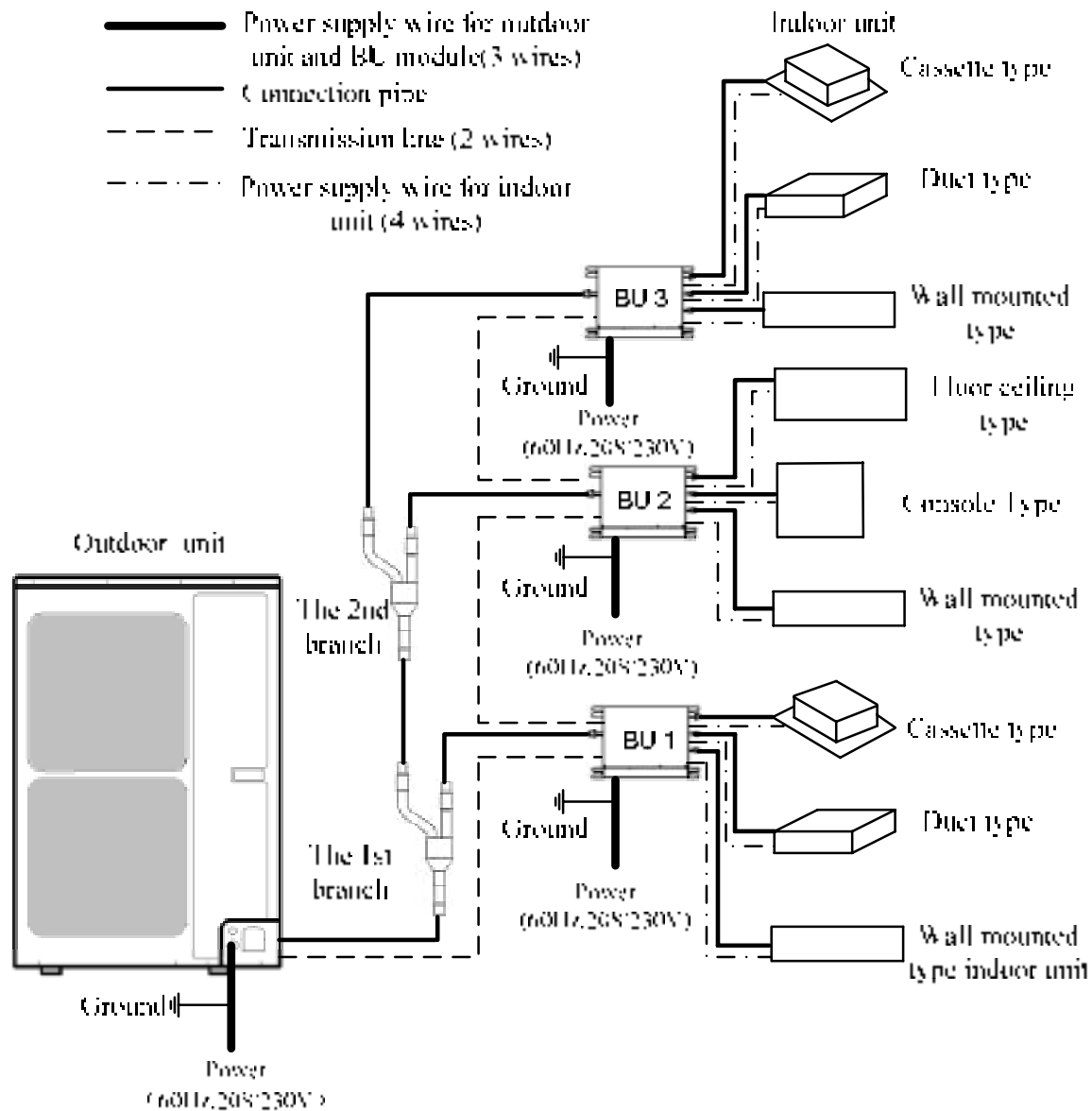
3.4 Names of Main Parts



No.	1	2	3	4	5
Name	Fan Motor	Axial Flow Fan Blade	Electrical Box	Gas Side Stop Valve	Liquid Side Stop Valve

3.5 Parts and Components of Unit

For the super free match series system, one outdoor unit is able to drive up to three BU modules and nine indoor units which include cassette type, duct type, wall-mounted type, floor ceiling type and console type. The outdoor unit will run as long as any one indoor unit receives the running command, and all indoor units stop once the outdoor unit is turned off.

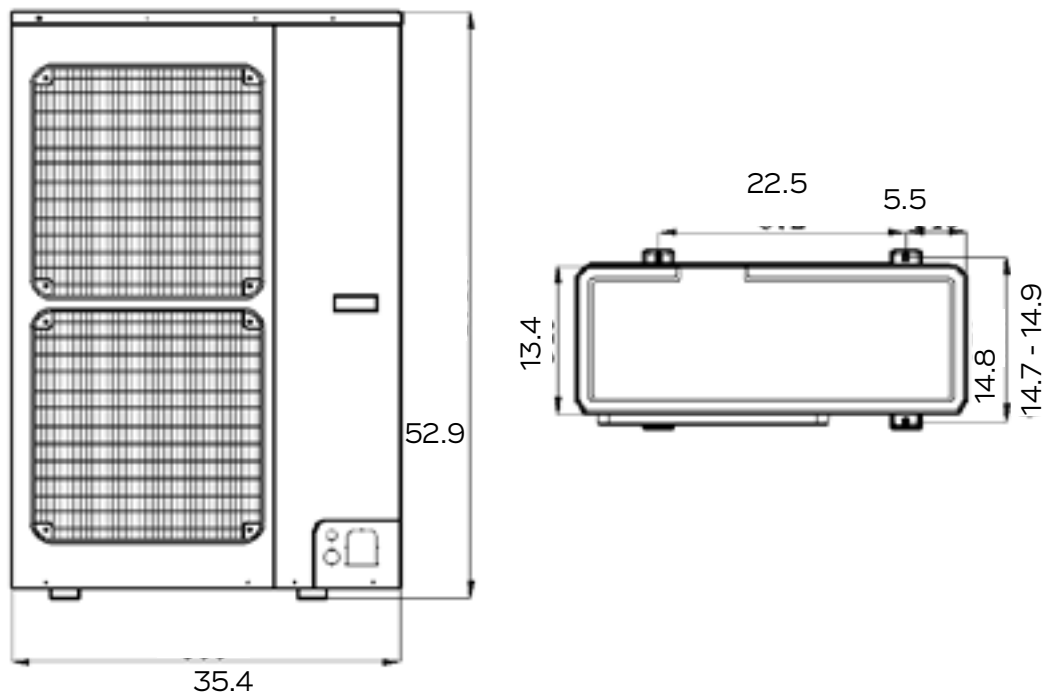


3.6 Selection of Installation Location

- The installation of the air conditioner must be in accordance with the national and local laws and regulations.
- The quality of the installation will affect the capability of air conditioner directly. The installation should be left to the appointed service center. Please contact your dealer after purchasing this machine. Professional installation workers will provide installation and test services according to the installation manual.
- The air conditioner should not install in this place where the small animals exist, because they may cause malfunctions, smoke or fire. Please keep the area around the unit clean.
- The outdoor unit must be installed on a firm and solid support which can withstand the weight and the mounting surface must be horizontal plane.

- There is enough space for the installation and maintenance.
- The place should be well-ventilated, so the machine can absorb and discharge sufficient air.
- Outdoor unit shall be installed close to the indoor unit, hence to minimize the length and bends of cooling pipe.
- Avoid place the outdoor unit under the windows or between the constructions, hence to prevent normal operating noise from entering the room.
- Do not install in the place where there is flammable or explosive gas exist or a place subject to severe dust, salty fog and polluted air. Installation at the following places might lead to the air conditioner malfunction. If it is unavoidable, please contact the appointed service center.
 - A place which is full of machine oil;
 - A region with saline-sodic soil near the sea;
 - A place where the sulphide fog exists, such as the sulphur spring;
 - A place where the high frequency facilities exist, such as radio equipment, electric welder and medical equipment;
 - An environment with special conditions.

3.7 Outline Dimension of the Outdoor Unit



1) 3.8 Installation and Servicing Space

When the place of the installation is exposed to strong wind
 When strong winds of 5 m/sec or more exist in the place of the installation, the outlet of the unit cannot face the wind. If the wind blows against the outdoor unit's air outlet, it will cause deterioration of the operational capacity and maybe break the fan.

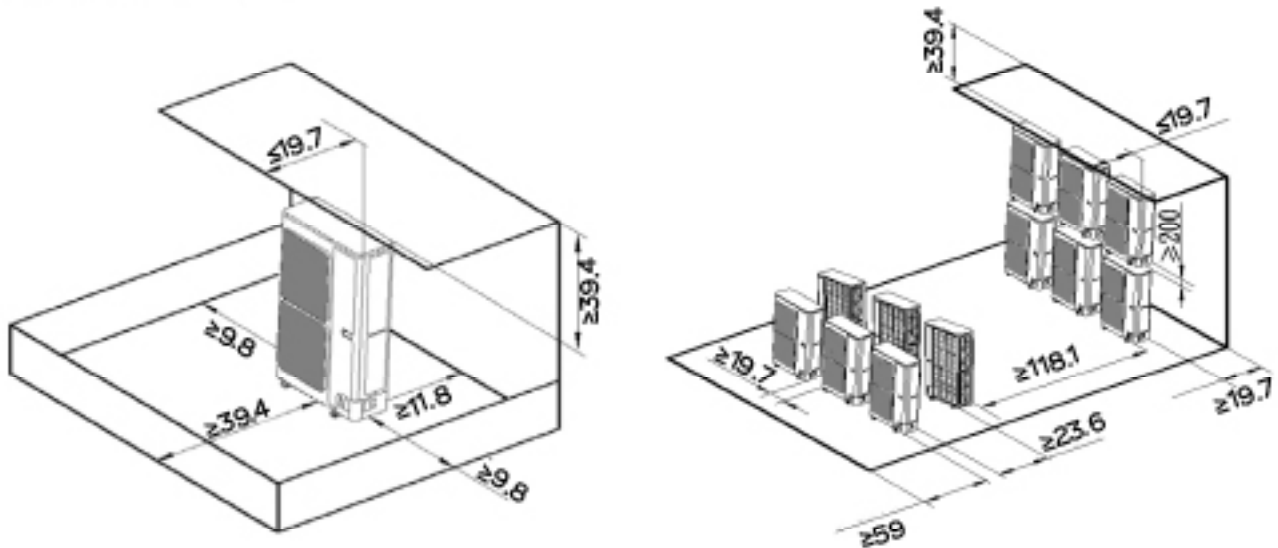
2) In case of installing only one unit

In case obstacles exist around the unit, the required installation space is in the following figure. The unit of the values is in inches.

3) In case of installing multiple units(2 units or more)

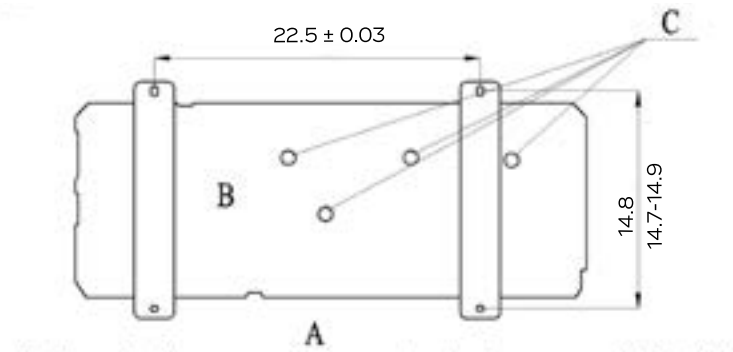
In case multiple rows of series installation, the required installation space is in the following figure. The unit of the values is mm.

3.9 Installation of the Outdoor Unit



1) Check the installation location and ensure it is strength and level, so that the unit will not cause any operating vibration or noise after installation.

2) In accordance with the foundation drawing in the following figure, please drill 4 holes in the installation location.

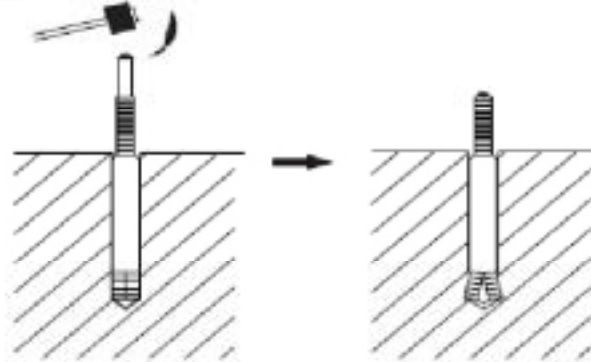


A: The outlet side

B: Bottom view (in)

C: Drain hole

3) Fix the unit securely with the foundation bolts. You can get the M10 or M8 foundation bolts, nuts and washers from the market



4) Rubber or spring shock absorbers should be used during the installation of the outdoor unit to meet the noise and vibration requirements.

5) Screw the foundation bolts into the ground and it is better that their length is less than 0.8 in from the foundation face.

4. INDOOR UNIT INSTALLATION

4.1 Installation of Wall Mounted Type

4.1.1 Important Notices

- The installation of air conditioner unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact the dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

4.1.2 Basic Requirements for Installation Position

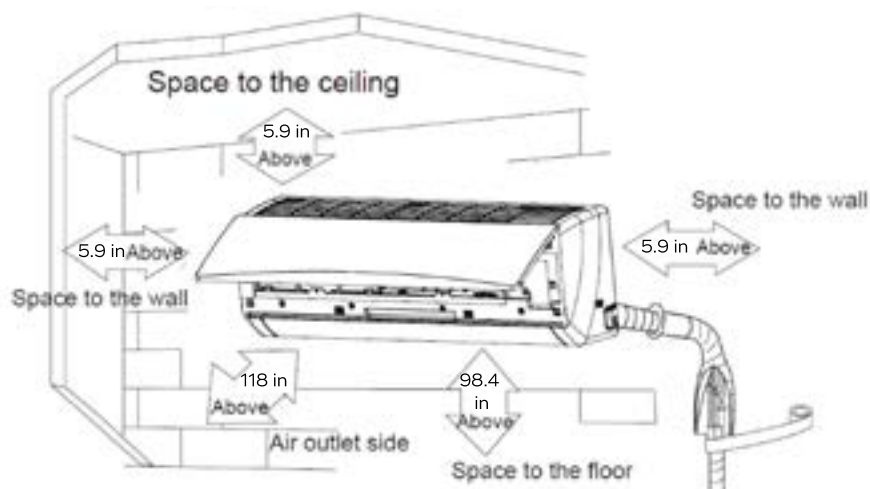
Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the dealer:

- The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
- The place with high-frequency devices (such as welding machine, medical equipment).
- Place where a lot of salinities such as coast exists.
- Place where the oil (machine oil) or fumes is contained in the air.
- Place where a sulfured gas such as the hot spring zones is generated.
- The appliance shall not be installed in the laundry.
- Other place with special circumstance.

4.1.3 Indoor Unit Installation Position Selection

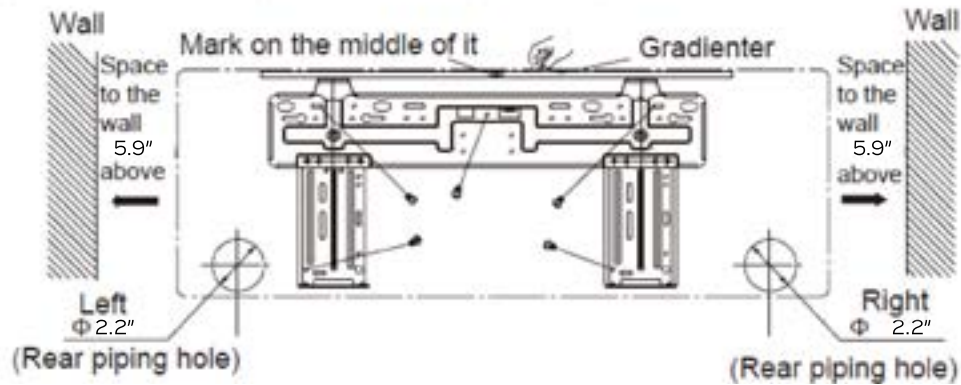
- There should be no obstruction near air inlet and air outlet.
- Select a position where the condensing water can be dispersed easily and won't affect other people, otherwise the place is easily connected for outdoor unit.
- Select a location where the children cannot reach.
- Can select the place where is strong enough to withstand the full weight and vibration of the unit. And will not increase the noise.
- Be sure to leave enough space to allow access for routine maintenance. The height of the installed location should be 98.4 in or more from the floor.
- Select a place about 39.4in or more away from TV set or any other electric appliances.
- Select a place where the filter can be easily taken out.
- Make sure that the indoor unit installation should accord with installation dimension diagram requirements.

4.1.4 Installation and Servicing Space



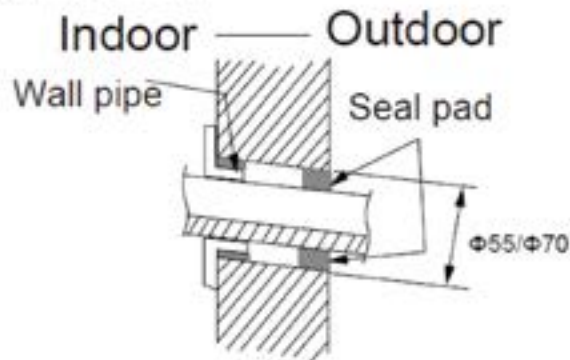
4.1.5 Installation of Mounting Plate

- 1) Mounting plate should be installed horizontally. As the water drainage pipe for the indoor unit is two-way type, during installation, the indoor unit should slightly slant to water tray's outlet for smooth drainage of condenser water.
- 2) Fix the mounting plate on the selected location with screws.
- 3) Be sure that the mounting plate has been fixed firmly enough to withstand the weight of an adult of 132lb, furthermore, the weight should be evenly shared by each screw.



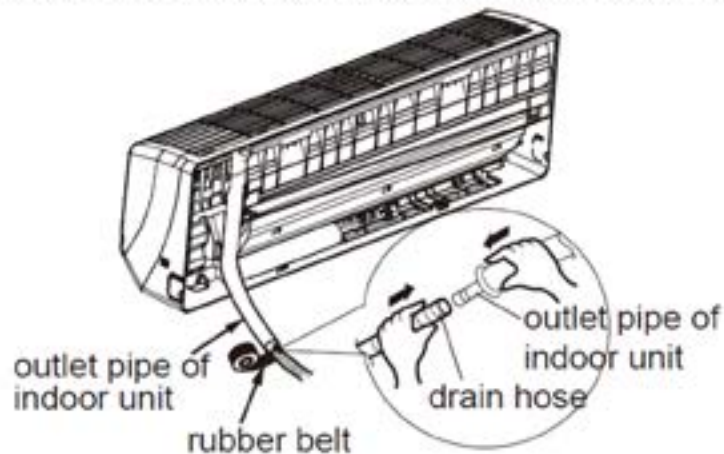
4.1.6 Drill piping hole

- 1) Slant the piping hole ($\Phi 2.1\text{in}/\Phi 2.75\text{in}$) on the wall slightly downward to the outdoor side.
- 2) Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.



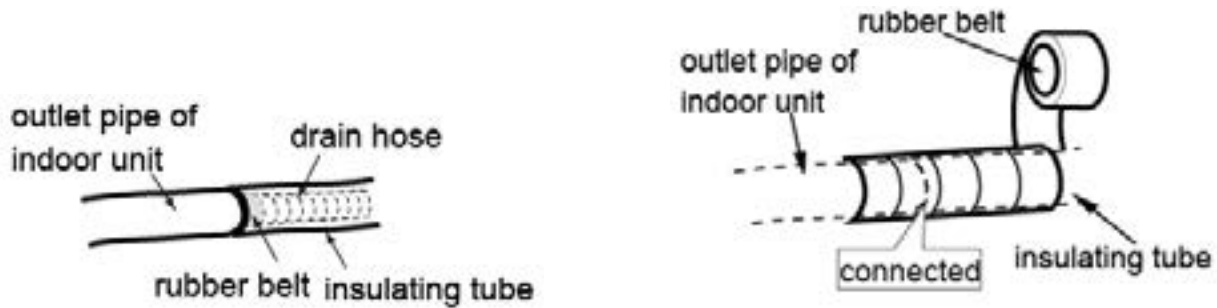
4.1.7 Installation of drain hose

- 1) Connect the drain hose to the outlet pipe of the indoor unit. Bind the joint with rubber



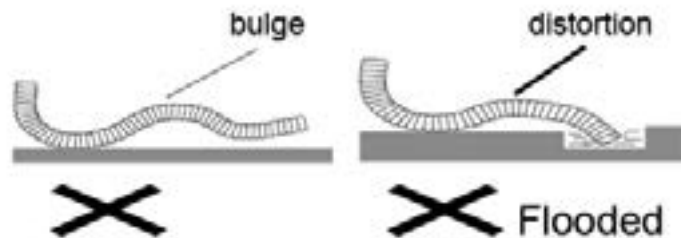
2) Put the drain hose into insulating tube.

Wrap the insulating tube with wide rubber belt to prevent the shift of insulating tube. Slant the drain hose downward slightly for smooth drainage of condensate.



Note:

The insulating tube should be connected reliably with the sleeve outside the outlet pipe. The drain hose should be slanted downward slightly, without distortion, bulge or fluctuation. Do not put the outlet in the water.



4.2 Installation of Duct Type

4.2.1 Installation Location and Matters Needing Attention

- The installation of air conditioner unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact your dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

4.2.2 How to select the installation location for the indoor unit

- Where there is no direct sunlight.
- Where the top hanger, ceiling and the building structure are strong enough to withstand the weight of the unit.
- Where the drain pipe can be easily connected to outside.
- Where the flow of the air inlet and outlet are not blocked.
- Where the refrigerant pipe of the indoor unit can be easily led to outside.
- Where there is no inflammable, explosive substance or their leakage.
- Where there is no corrosive gas, heavy dust, salt mist, smog or moisture.

The unit which is installed in the following places is likely to run abnormally. If unavoidable, please contact the professional personnel at the GREE appointed service center:

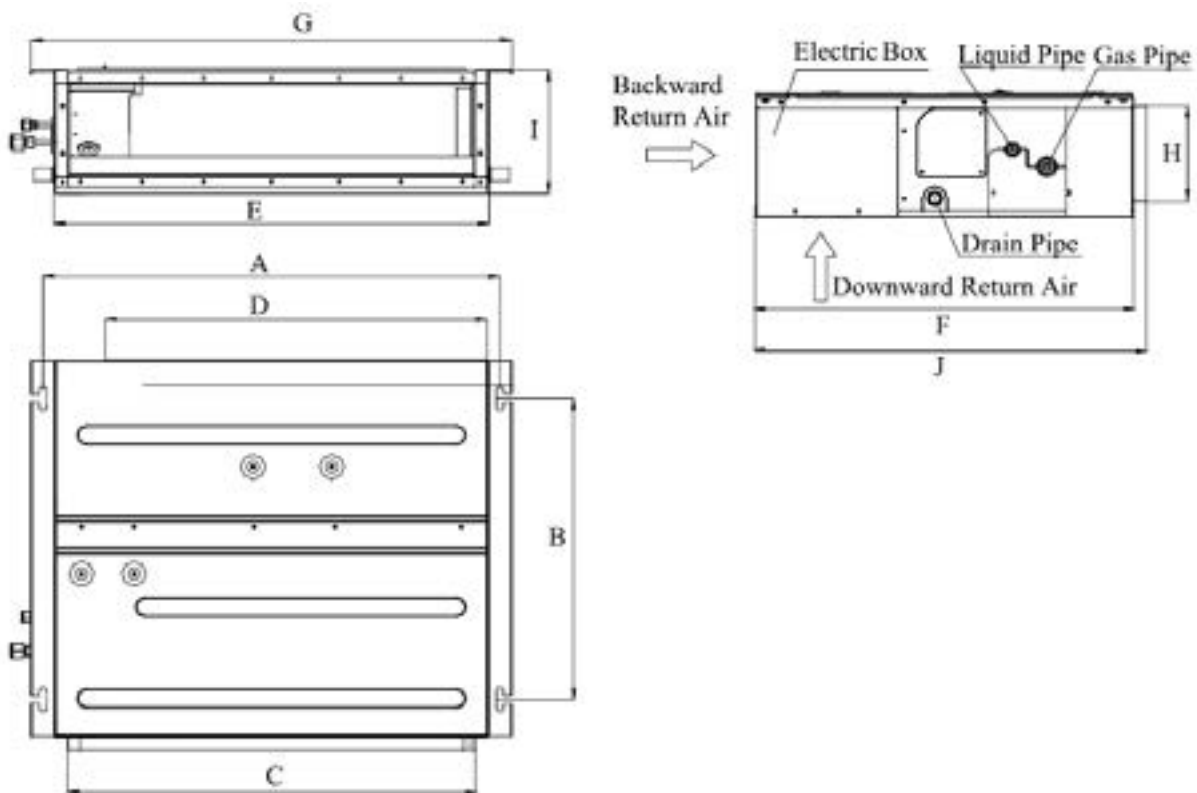
- 1) Where is full of oil;
- 2) Alkaline soil off the sea;
- 3) Where there is sulfur gas (like sulfur hot spring);
- 4) Where there are devices with high frequency (like wireless devices, electric welding devices, or medical equipments);
- 5) Special circumstances.

4.2.3 Caution for Installation

- Ensure the hanger is strong enough to withstand the weight of the unit.
- The drainage of the drain pipe is easy.
- No obstacle is in the inlet/outlet and the air circulation is in good condition.
- Ensure the installation space is left for the access to maintenance.
- It should be far away from where there is heat source, leakage of inflammable, explosive substances, or smog.
- It is the ceiling type unit (concealed in the ceiling).
- The power cords and connection lines of the indoor and outdoor units must be at least 1m away from the TV set or radio to avoid the image interference and noise (even if 39.4 in is kept, the noise may be produced due to the strong electric wave).

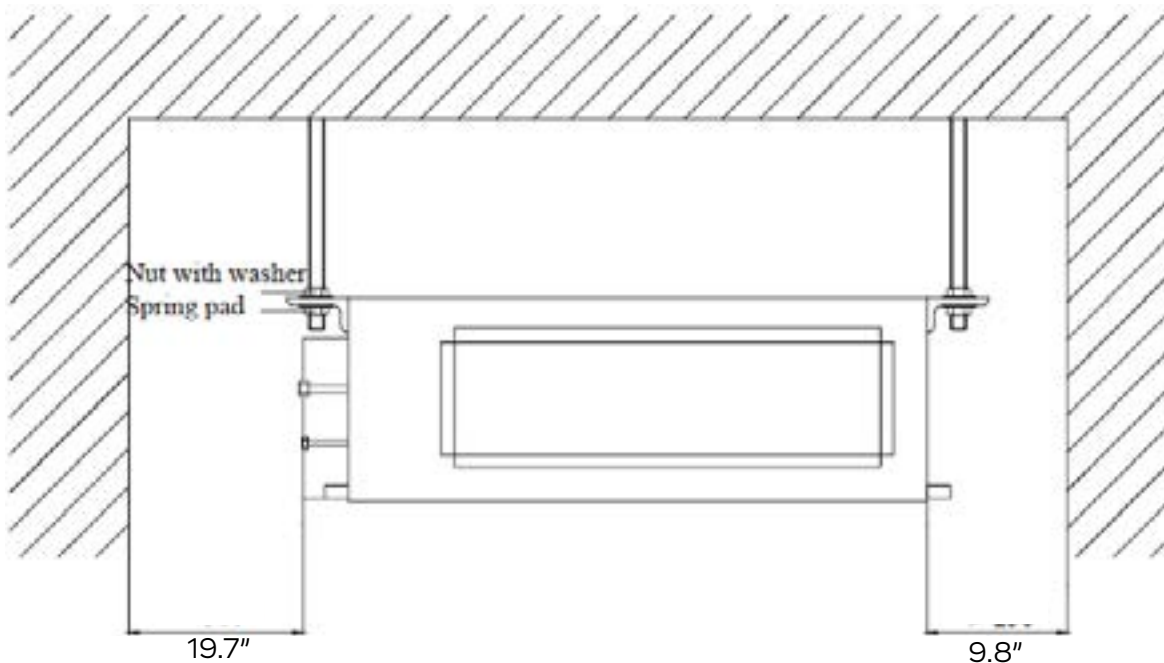
4.2.4 Outline Dimension Drawings of the Indoor Unit

Note: the unit in the followings figures is inches, unless otherwise specified.



Model	A	B	C	D	E	F	G	H	I	J
AFH(09)EA-D3DNA1A/I	29.2	19.3	26	24.4	27.5	24.2	30.8	6.1	7.8	25
AFH(12)EA-D3DNA1A/I										
AFH(18)EA-D3DNA1A/I	37	19.3	33.9	32.2	35.4	24.2	38.6	6.14	7.8	25
AFH(21)EA-D3DNA1A/I	45	19.3	41.8	40.1	43.3	24.2	46.5	6.1	7.8	25
AFH(24)EA-D3DNA1A/I										

4.2.5 Dimension Requirements on the Installation Space of the Indoor Unit



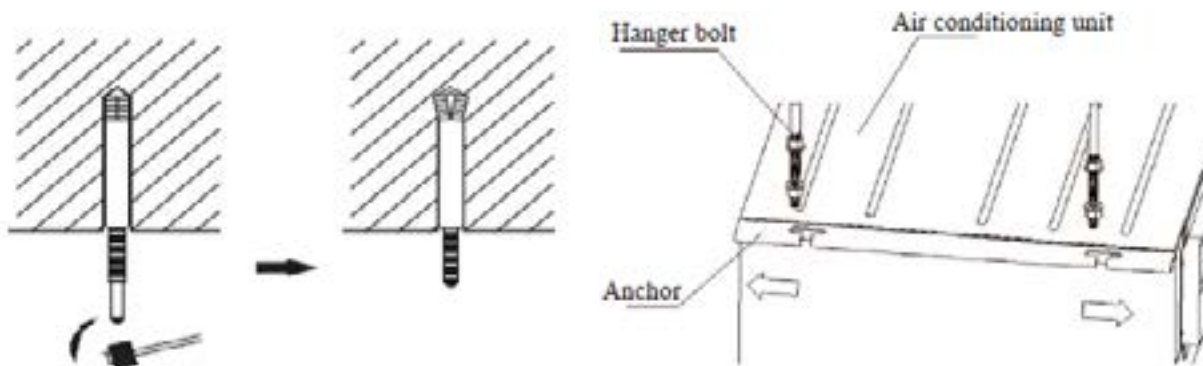
4.2.6 Installation of the Indoor Unit

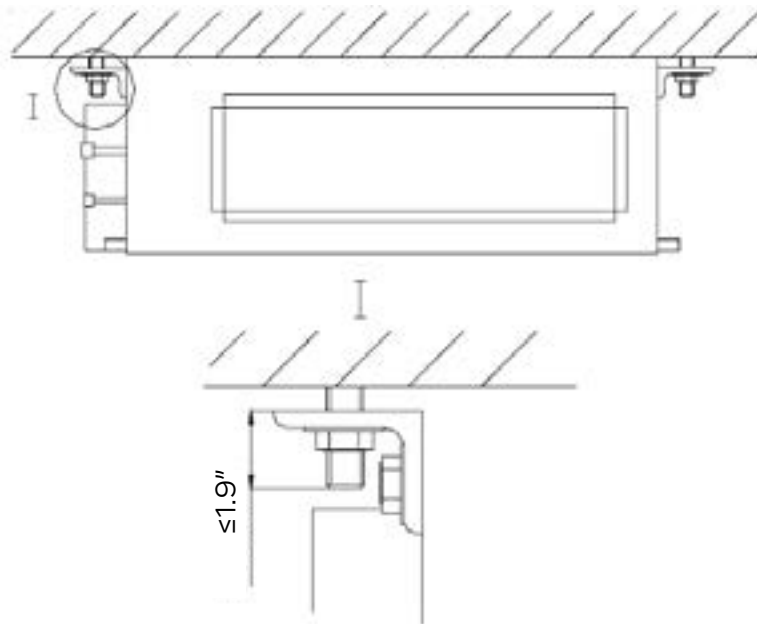
1) Requirements on the Installation Location

- Ensure the hanger is strong enough to withstand the weight of the unit.
- The drainage of the drain pipe is easy.
- No obstacle is in the inlet/outlet and the air circulation is in good condition.
- Ensure the installation space shown in the following figures is left for the access to maintenance.
- It should be far away from where there is heat source, leakage of inflammable, explosive substances, or smog.
- It is the ceiling type unit (concealed in the ceiling).
- The power cords and connection lines of the indoor and outdoor units must be at least 1m away from the TV set or radio to avoid the image interference and noise (even if 1m is kept, the noise may be produced due to the strong electric wave).

2) Installation of the Indoor Unit

Insert the M10 expansion bolt into the hole, and then knock the nail into the bolt. Refer to the Outline Dimension Drawings of the Indoor Unit for the distance between holes and see the following figures for the installation of the expansion bolt.



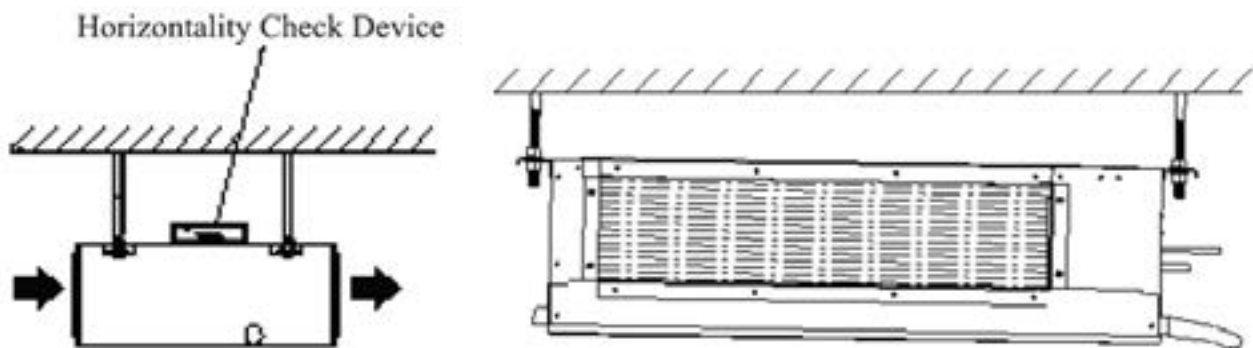


⚠ Caution !

- Prior to the installation, please make a good preparation for all piping (refrigerant pipe, drain pipe) and wiring (wires of the wired controller, wires between the indoor and outdoor unit) of the indoor unit to make the further installation much easier.
- If there is an opening in the ceiling, it is better to reinforce it to keep it flat and prevent it vibrating. Consult the user and builder for more details.
- If the strength of the ceiling is not strong enough, a beam made of angle iron can be used and then fix the unit on it.
- If the indoor unit is not installed in the air conditioning area, please use sponge around the unit to prevent condensing. The thickness of the sponge depends on the actual installation environment.

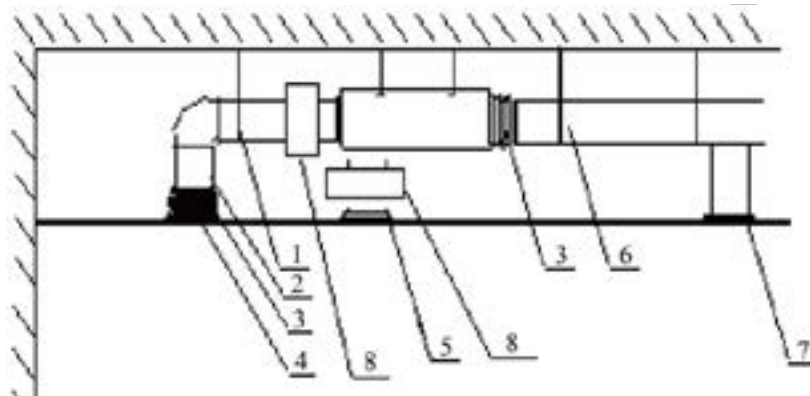
4.2.7 Horizontality Check of the Indoor Unit

After the installation of the indoor unit, its horizontality must be checked to make sure the unit keep horizontal fore and aft and keep an inclination of 5° toward the drain pipe right and left.



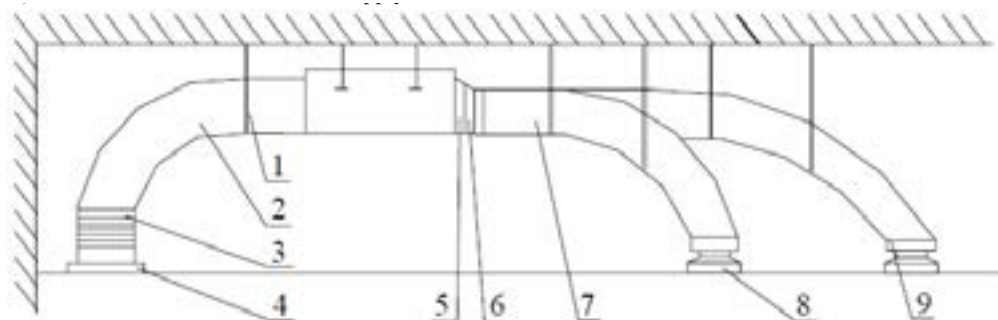
4.2.8 Installation of the Air Supply Duct

- 1) Installation of the Rectangular Air Supply Duct.



No.	Name	No.	Name	No.	Name
1	Hanger	4	Return Air Inlet	7	Air Supply Outlet
2	Return Air Duct	5	Filter Screen	8	Plenum Box
3	Canvas Duct	6	Main Air Supply Duct		

2) Installation of the Round Air Supply Duct



No.	Name	No.	Name	No.	Name
1	Hanger	4	Return Air Louver	7	Air Supply Outlet
2	Return Air Duct	5	Air Supply Outlet	8	Diffuser
3	Canvas Duct	6	Transition Duct	9	Diffuser Joint

3) Installation Steps of the Round Air Supply Duct

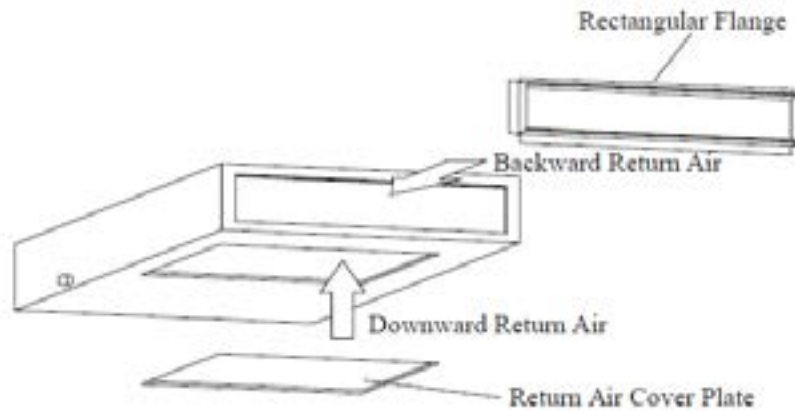
- Preinstall the outlet of the round duct on the transition duct and then fix it by the self-tapping screw.
- Place the transition duct to the air outlet of the unit and fix it with rivet.
- Connect the outlet to the duct and then tighten them with tape. Other installation details are not covered herein.

⚠ Caution !

- The maximum length of the duct means the maximum length of the air supply duct plus the maximum length of the return air duct.
- For the unit with the auxiliary electric heating function, if the round duct is to be adopted, then the straight length of the transition duct cannot be less than 7.8".
- The duct is either rectangular or round and connected with the air inlet/outlet of the indoor unit. Among all air supply outlets, at least one should be kept open. As for the round duct, it needs a transition duct of which the size should match with the air supply outlet of the unit. After the fitting of the transition duct, it is the turn of the round duct, which is better to be kept 393.7in far away from the corresponding diffuser. The standard accessories supplied is the transition duct 7.8" long and round air outlet 200, however, those of other specifications can be purchased.

4.2.9 Installation of the Return Air Duct

1) The default installation location of the rectangular flange is in the back and the return air cover plate is in the bottom.

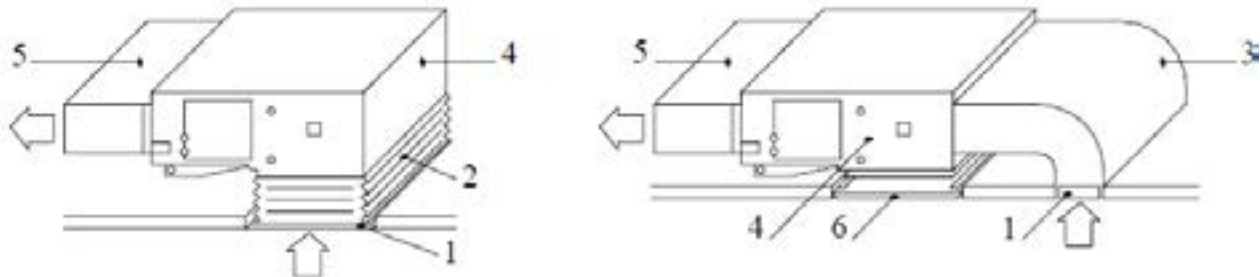


2) If the downward return air is desired, just change the place of the rectangular flange and the return air cover plate.

3) Connect one end of the return air duct to the return air outlet of the unit by rivets and the other to the return air louver. For the sake of the convenience to freely adjust the height, a cutting of canvas duct will be helpful, which can be reinforce and folded by 8 # iron wire.

4) More noise is likely to be produced in the downward return air mode than the backward return air mode, so it is suggestive to install a silencer and a plenum box to minimize the noise.

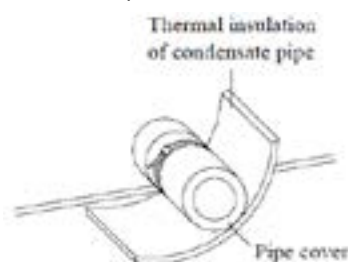
5) The installation method can be chose with considering the conditions of the building and maintenance etc.



No.	Name	No.	Name
1	Return Air Louver(with the filter screen)	4	Indoor Unit
2	Canvas Duct	5	Air Supply Duct
3	Return Air Duct	6	Access Grille

4.2.10 Installation of the Condensate Pipe

1) The condensate pipe should keep a inclination angle of 5~10°, which can facilitate the drainage of the condensate water. And the joints of the condensate pipe should be insulated by the insulation material to prevent condensing.



2) There is a condensate outlet on both left and right sides of the unit. Once one is confirmed to be used, the other should be clogged by a rubber plug, bundled by the binding wire and insulated by the insulation material to avoid water leakage.

3) The right outlet is defaulted to be clogged with a plug.



Caution !

No water leakage is allowed on the joint of the condensate pipe.

4.2.11 Design of the Drain Pipe

1) The drain pipe should always keep an inclination angle($1/50 \sim 1/100$) to avoid the water gathering in some certain place.

2) During the connection of the drain pipe and device, do not impose too much force on the pipe on one side of the device and the pipe should be fixed as close as to the device.

3) The drain pipe can be the ordinary hard PVC pipe which can be purchased locally. During the connection, inset the end of the PVC pipe to the drain outlet, then tighten it with the drain hose and binding wire but never connect the drain outlet and the drain hose by adhesive.

4) When the drain pipe is used for multiple devices, the public section of the pipe should be 3.9 inches lower than the drain hole of each device and it is better to use the much thicker pipe for such a purpose.

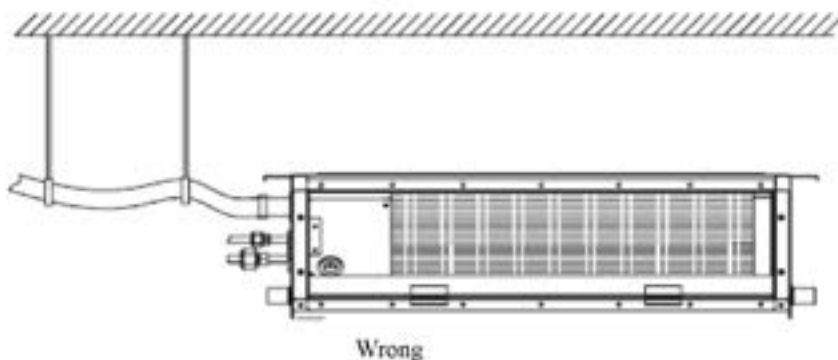
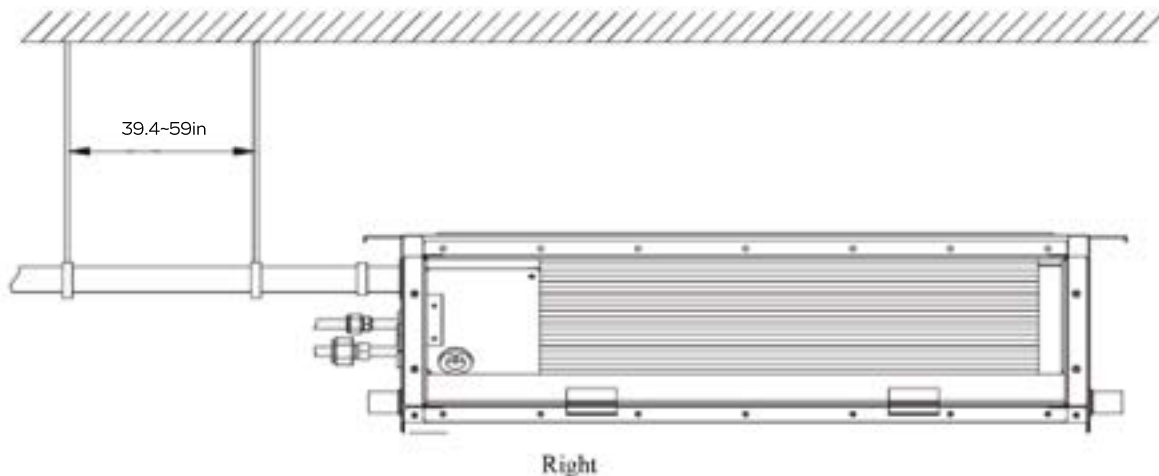
4.2.12 Installation of the Drain Pipe

1) The diameter of the drain pipe should be larger or equal to that of the refrigerant pipe (PVC pipe, outer diameter: 1 in, wall thickness ≥ 0.05 in).

2) The drain pipe should be as short as possible and with at least a $1/100$ degree of slope to avoid forming air pockets.

3) If the proper degree of slope of the drain pipe is not allowed, a lift pipe should be installed.

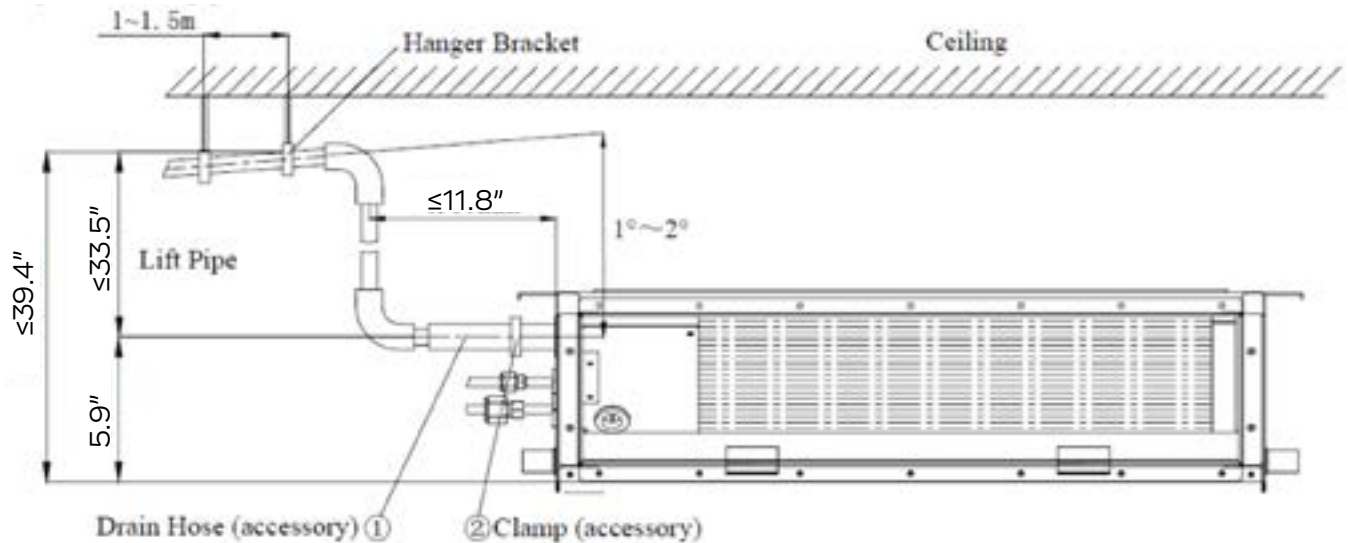
4) A distance 39.5~59in should be kept between the hangers to avoid the drain hose making a turn.



- 5) Insert the drain hose into the drain hole and tighten it with clamps.
- 6) Wrap the clamps with large amount of sponge for thermal insulation.
- 7) The drain hose inside the room also should be insulated.

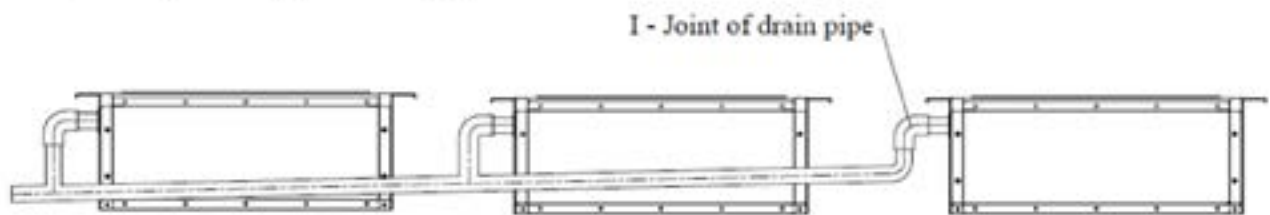
4.2.13 Precautions for the Lift Pipe.

The installation height of the lift pipe should be less than 33.5 in. It is recommended to set an inclination angle 1~2 degrees for the lift pipe toward the drainage direction. If the lift pipe and the unit form a right angle, the height of the lift pipe must be less than 31.5 in

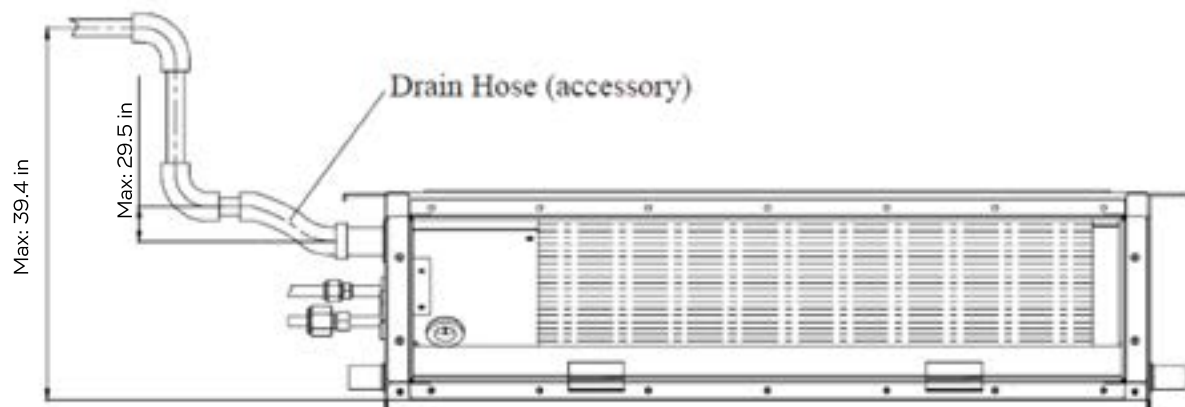


Notes:

- 1) The inclination height of the drain hose should be within 2.95 in so that the outlet of the drain hose does not suffer the external force.
- 2) If multiple drain pipes converge, please follow the installation steps below.



The specification of the joint of the drain pipe should be suitable to the running capacity of the unit



4.3 Installation of Cassette Type

4.3.1 Installation Location and Matters Needing Attention

- The installation of air conditioner unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact your dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

4.3.2 Select install location of the indoor unit

- Obstruct should put away from the intake or outlet vent of the indoor unit so that the airflow can be blown through all the room.
- Make sure that the installation had accord with the requirement of the schematic diagram of installation spaces.
- Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and oscillate.
- The horizontally of the installation place should be guaranteed.
- Select the place where easy drains condensate water, and easy connects with outdoor unit.
- Make sure that there are enough space for care and maintenance. Make sure that the weight between the indoor unit and ground is above 70.9 in .
- When installing the hanger bolts, check if the install place can stand the weight 4 times of the unit's. If not, reinforce before installation. (Refer to the install cardboard and find where should be reinforced)

There will be lots of lampblack and dust stick on the top, heat exchanger and water pump in dining room and kitchen, which would reduce the capacity of heat exchanger, lead water leakage and abnormal operation of the water pump.

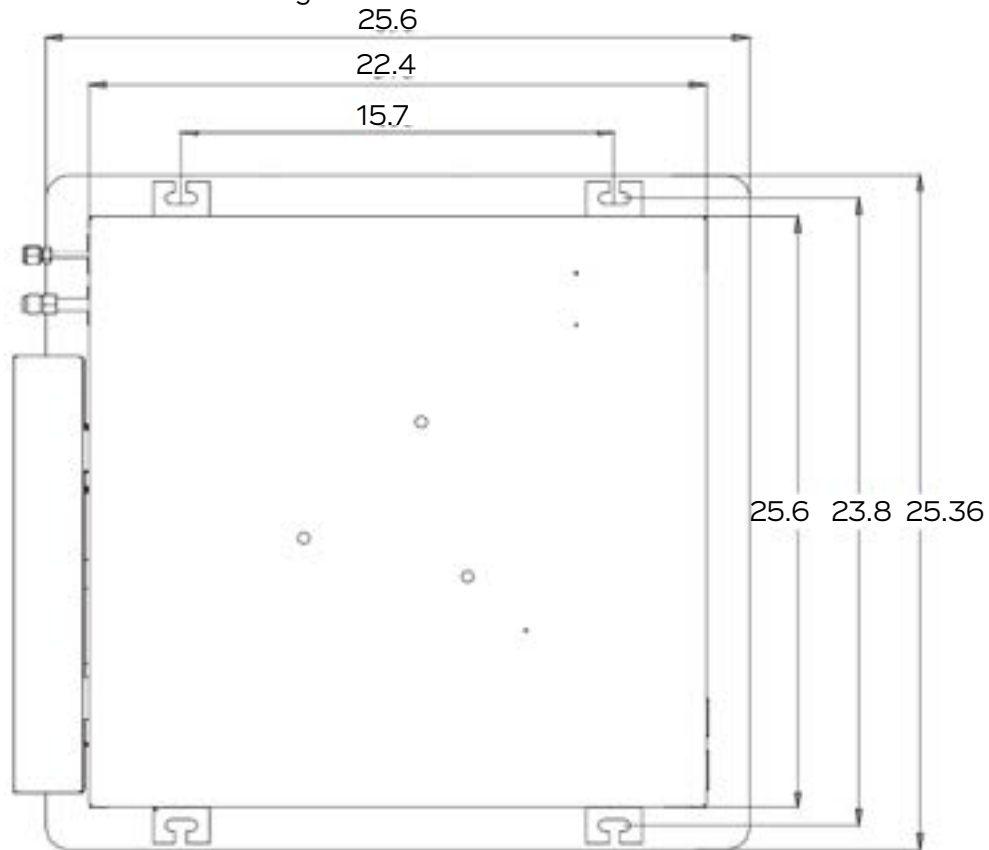
The following treatment should be taken under this circumstance:

- Ensure that the smoke trap above cooker has enough capacity to obviate lampblack to prevent the indraft of the lampblack by the air conditioner.
- Keep the air conditioner far from the kitchen so that the lampblack would not be indraft by the air conditioner.

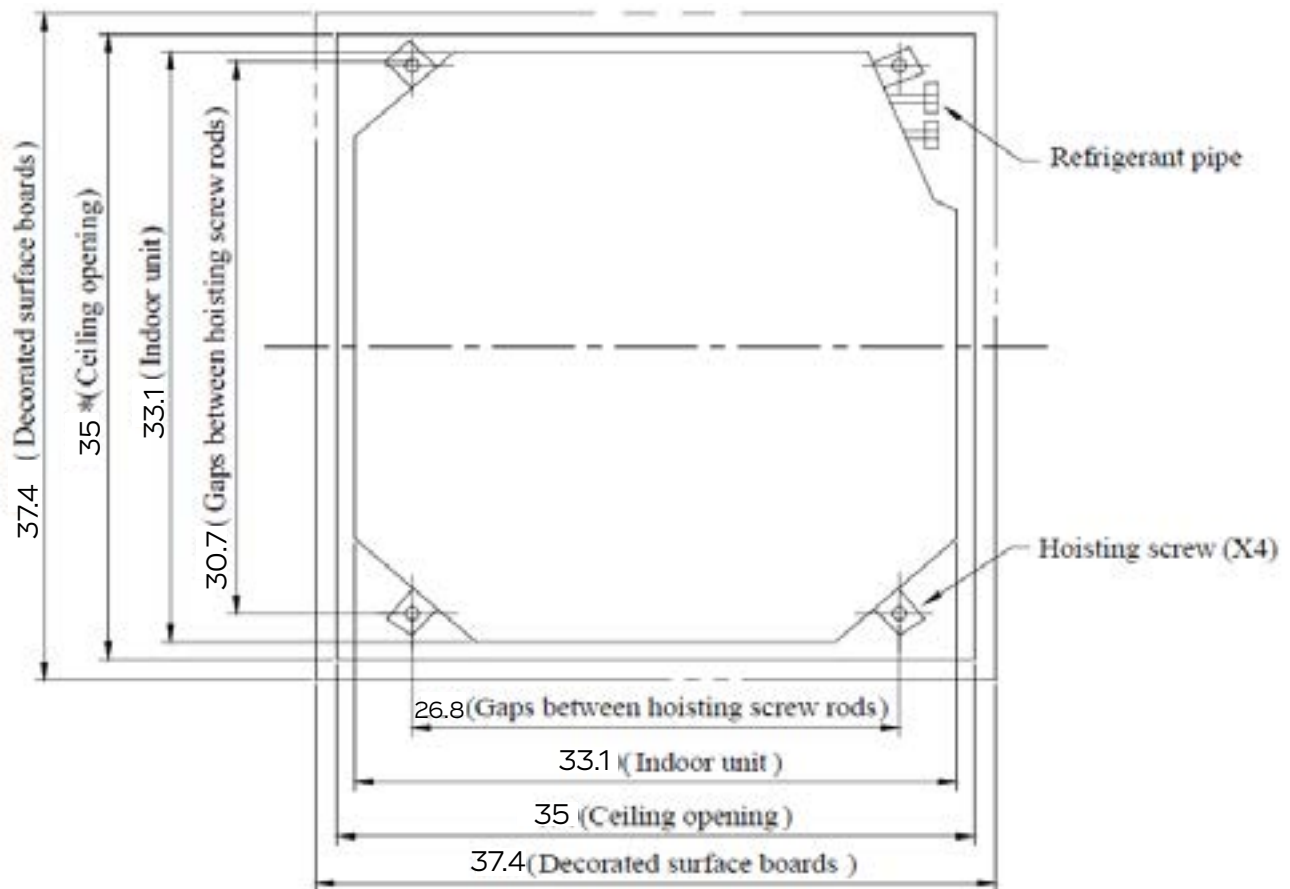
Important notice:

- To guarantee the good performance, the unit must be installed by professional personnel according with this instruction.
- Please contact the local Gree special nominated repair department before installation. Any malfunction caused by the unit that is installed by the department that is not special nominated by Gree would not deal with on time by the inconvenience of the business contact.

4.3.3 Outline Dimension Drawings of the Indoor Unit: Inches

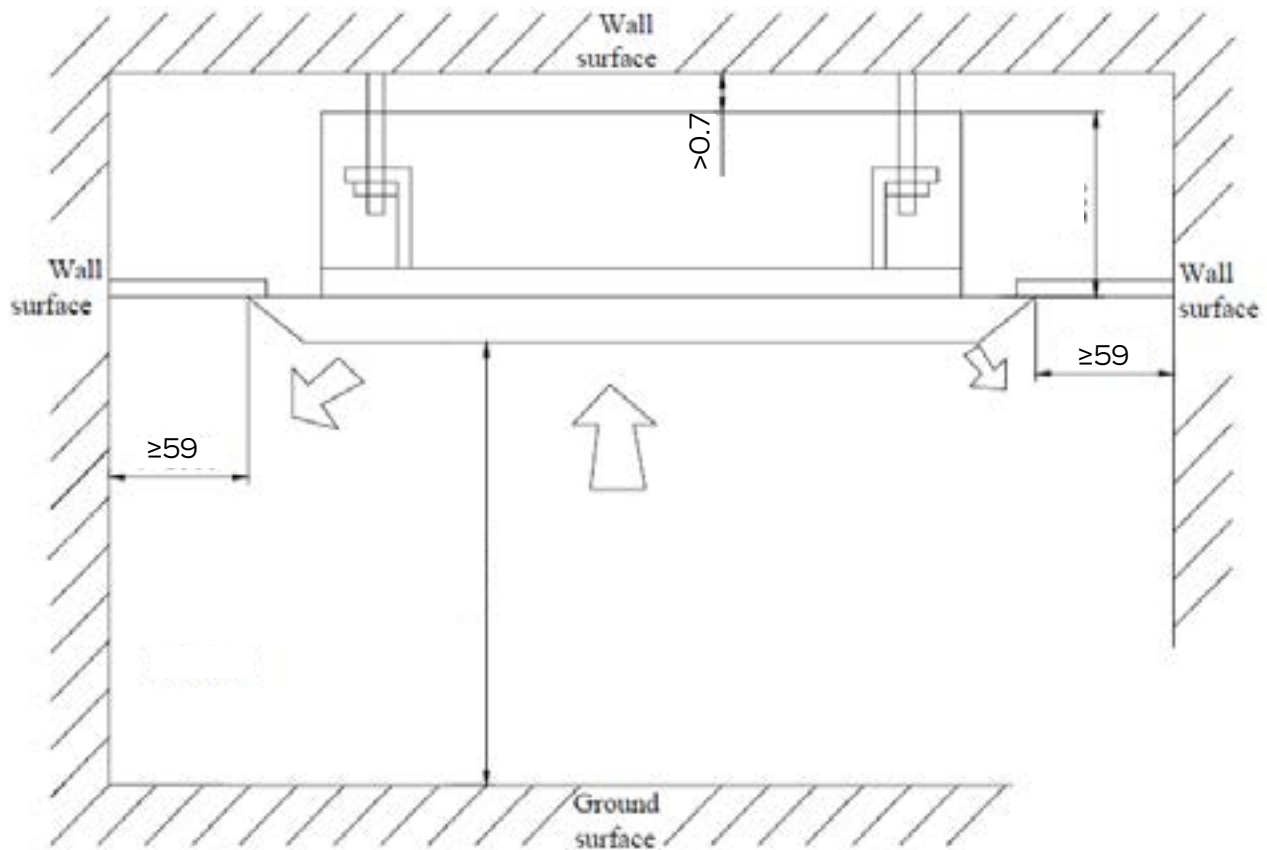


AKH(12)BA-D3DNA2A/I; AKH(18)BA-D3DNA2A/I

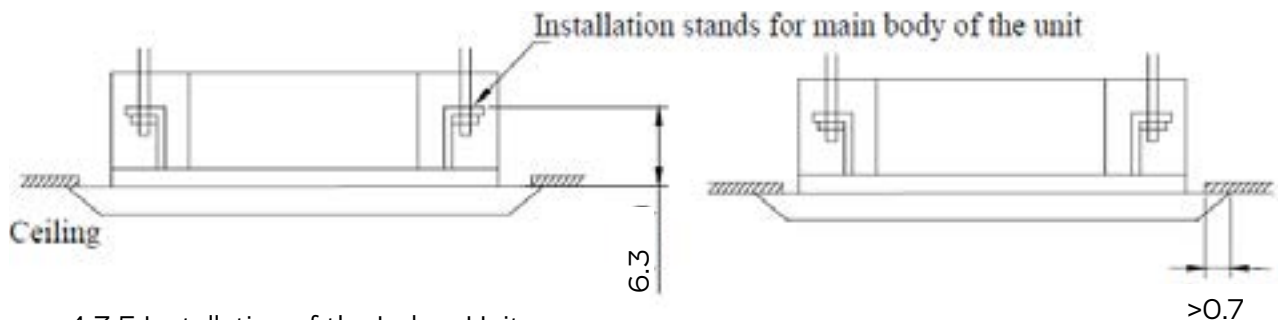


AKH(24)BA-D3DNA1A/I

4.3.4 Installation and Servicing Space



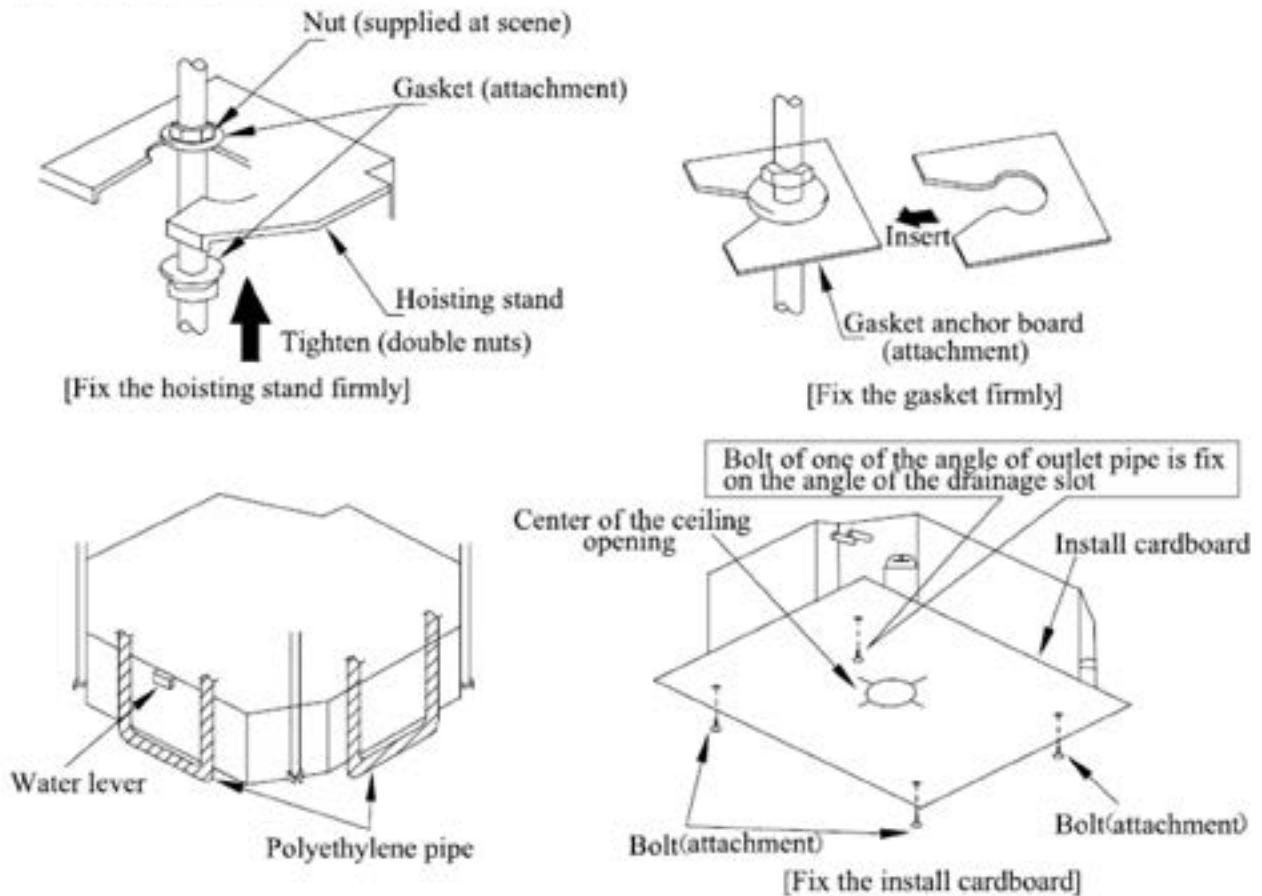
- The drilling of holes in the ceiling must be done by the professional personnel.



4.3.5 Installation of the Indoor Unit

- 1) The primary step for install the indoor unit.
 - When attach the hoisting stand on hoisting screw, do use nut and gasket individually at the upper and lower of the hoisting stand to fix it. The use of gasket anchor board can prevent gasket break off.
- 2) Use install cardboard
 - Please refer to the install cardboard about the dimension of ceiling opening.
 - The central mark of the ceiling opening is marked on the install cardboard.
 - Install the install cardboard on the unit by bolt (3 piece), and fix the angle of the drainage pipe at the outlet vent by bolt.
- 3) Adjust the unit to the suitable install place.
- 4) Check if the unit is horizontal.
 - Inner drainage pump and bobber switch are included in the indoor unit, check if 4 angle of every unit are horizontal by water lever. (If the unit is slant toward the opposite of the coagulate water flow, there may be malfunction of the bobber switch and lead water drop.)
- 5) Backout the gasket anchor board used to prevent gasket break off and tighten the nut on it.

6) Backout the install cardboard.



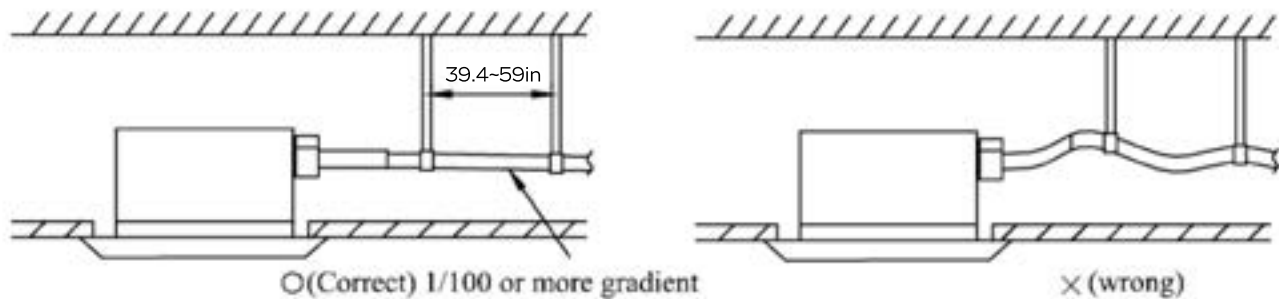
Note:

Please do tighten the nuts and bolts to prevent air conditioner break off.

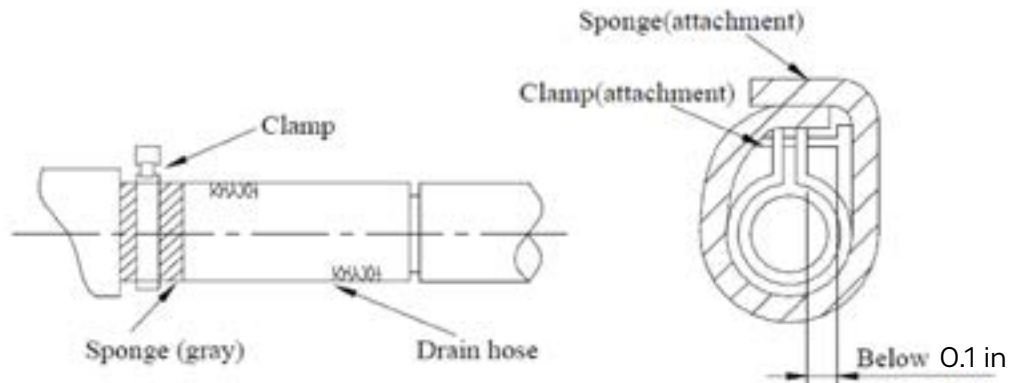
4.3.6 Drainage hose

1) Install the drain hose

- The diameter of the drain hose should be equal or bigger than the connection pipe's. (The diameter of polythene pipe: Outer diameter 1 in Surface thickness ≥ 0.06 in)
- Drain hose should be short and drooping gradient should at less 1/100 to prevent the formation of air bubble.
- If drain hose cannot has enough drooping gradient, drain raising pipe should be added.
- To prevent bent of the drain hose, the distance between hoisting stand should is 1 to 59 in.

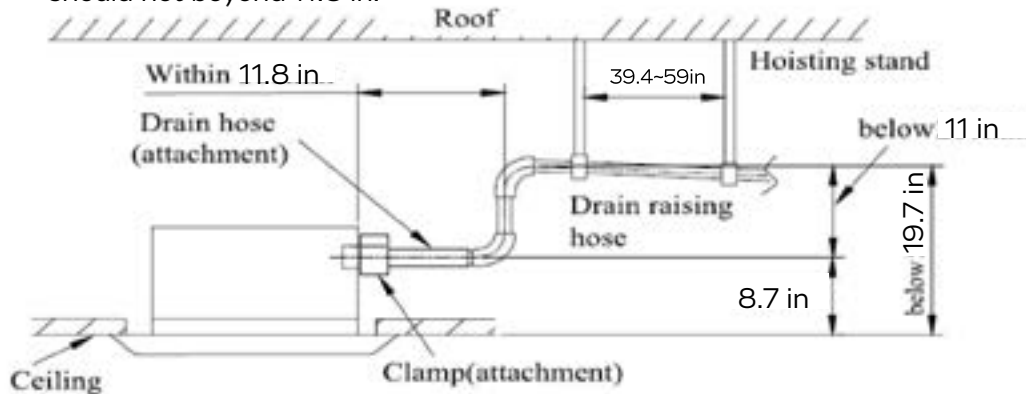


- Use the drain hose and clamp attached. Insert the drain hose to the drain vent, and then tighten the clamp.
- Entwine the big sponge on the clamp of drain hose to insulate heat.
- Heat insulation should be done to indoor drain hose.



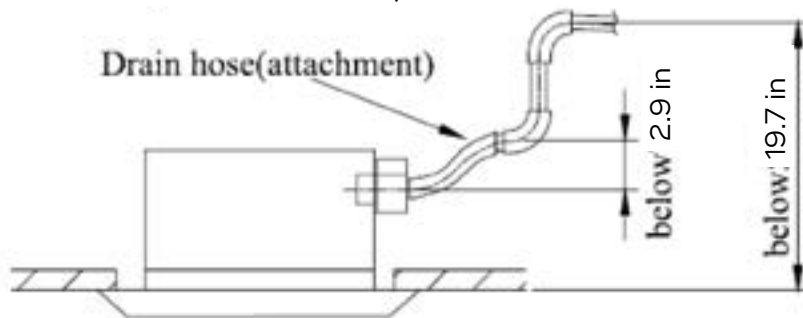
2) Drain stepup pipe note

- The install height of the drain raising pipe should be less than 11 in
- The drain raising pipe should form a right angle with the unit, and distance to unit should not be beyond 11.8 in.

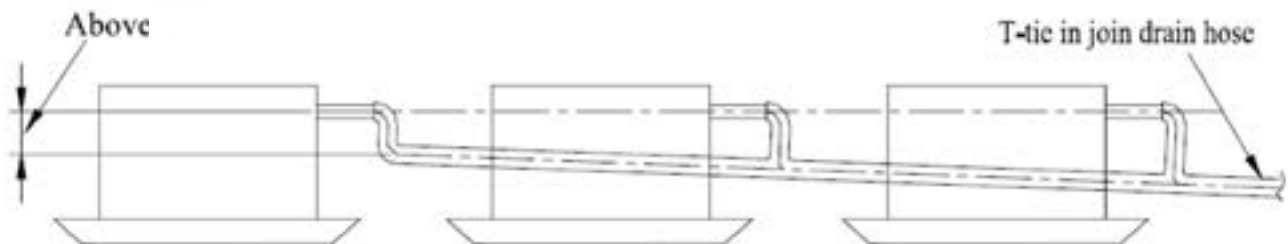


3) Instruction

- The slant gradient of the attached drain hose should be within 2.95in so that the drain hole doesn't have to endure the unnecessary outside force.



- Please install the drain hose according to the following process if several drain hoses join together.

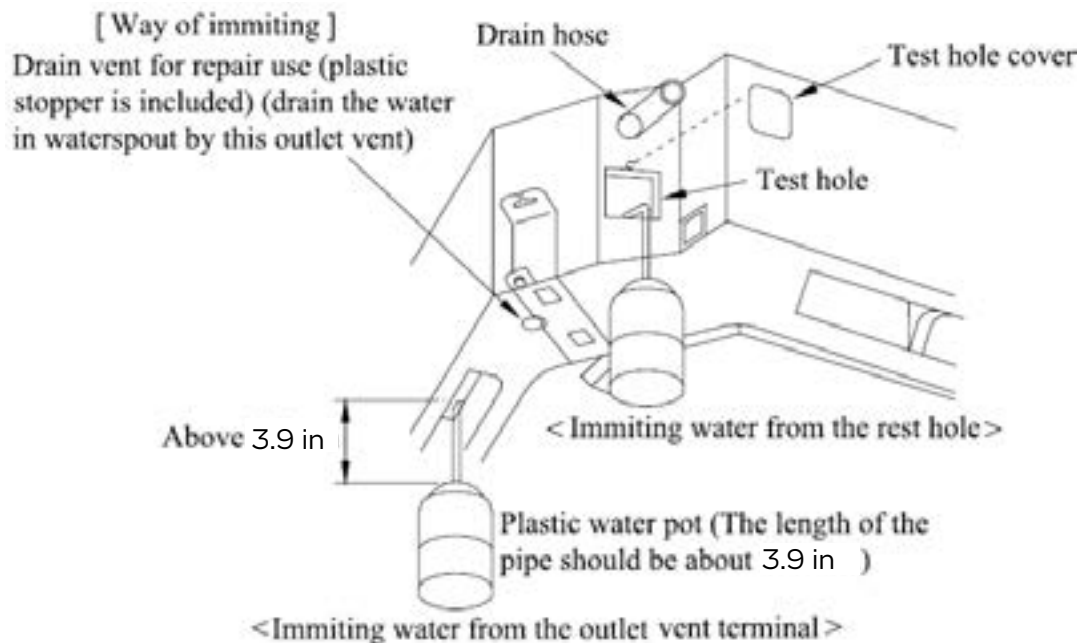


The specs of the selected join drain hose should fit the running capacity of the unit.

4) Check the smoothness of drain after installation.

- Check the drain state by immitting 600cc water slowly from the outlet vent or test hole.

- Check the drain in the state of refrigerating after installation of the electric circuit.



4.4 Installation of Floor Ceiling Type

4.4.1 Important Notices

- The installation of air conditioner unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact your dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

4.4.2 Selection of Installation Location

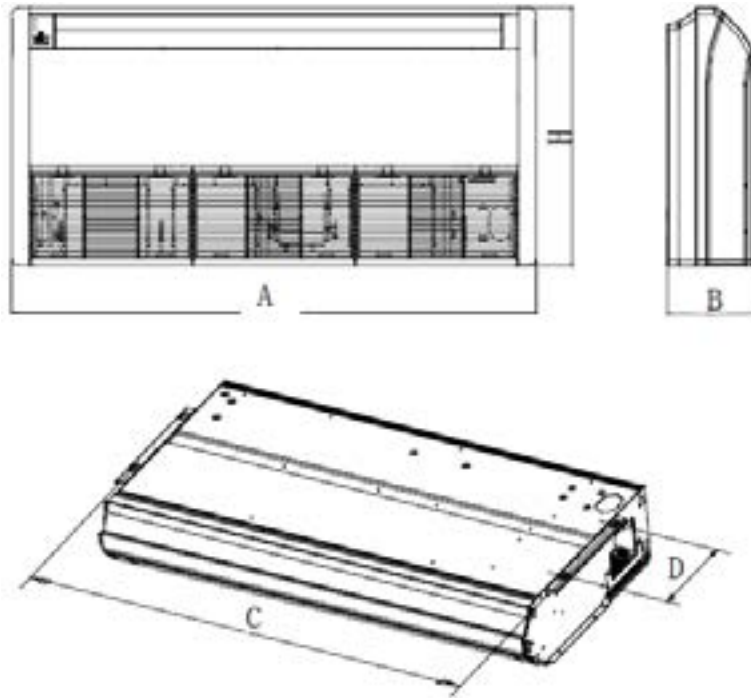
- Such a place where cool air can be distributed throughout the room.
- Such a place where is condensation water is easily drained out.
- Such a place that can handle the weight of indoor unit.
- Such a place, which has easy access for maintenance.
- Such a place where is permitting easy connection with the outdoor unit.
- Such a place where is 1m or more away from other electric appliances such as television, audio, etc.
- Avoid a location where there is heat source, high humidity or inflammable gas.
- Do not use the unit in the immediate surroundings of a laundry, a bath, a shower or a swimming pool.
- Be sure that the installation conforms to the installation dimension diagram.

4.4.3 Caution for installation where air conditioner trouble is likely to occur

- Where there is too much of oil.
- Where it is acid base area.
- Where there is irregular electrical supply.

4.4.4 Outline Dimension Drawings of the Indoor Unit

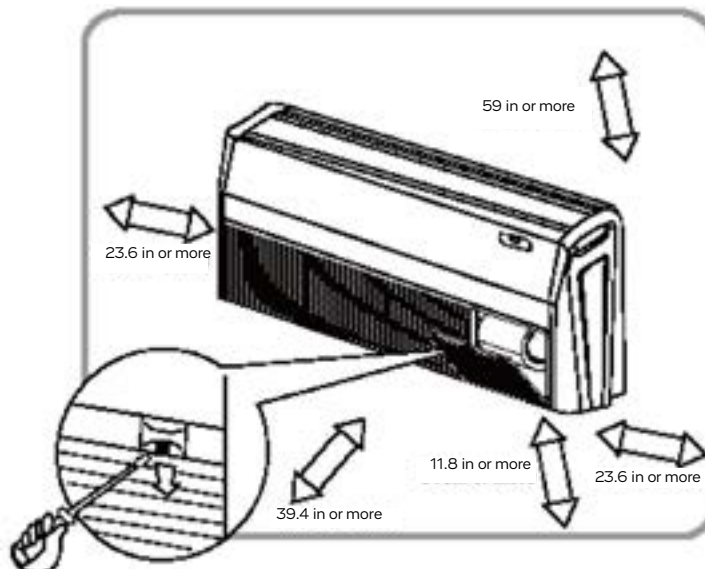
When installing the indoor unit, you can refer the paper pattern for installation, and make sure that the drainage side must be 0.4 in lower than the other side in order to drain the condensation water fluently.



Model	A	B	H	C	D
ATH(09)BA-D3DNA1A/I	1220	225	700	1158	280
ATH(12)BA-D3DNA1A/I					
ATH(18)BA-D3DNA1A/I					
ATH(24)BA-D3DNA1A/I					

4.4.5 Installation and Servicing Space

1) The space around the unit is adequate for ventilation.



2) Important notice

- The unit must be installed by the professional personnel according to this install instruction to ensure the well use.

Please contact the local Gree special nominated repair department before installation. Any malfunction caused by the unit that is installed by the department that is not special nominated by Gree would not deal with on time by the inconvenience of the business contact..

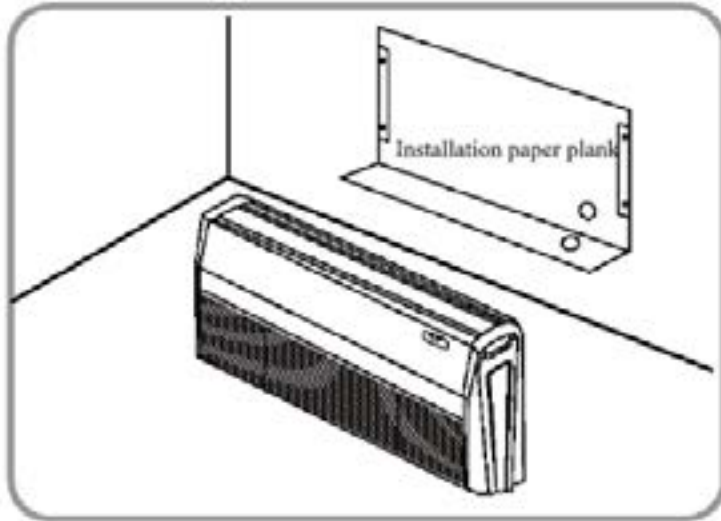
- It should be done by professional personnel when the air conditioner unit is moved to other place

14.4.6 There are 2 types of installation

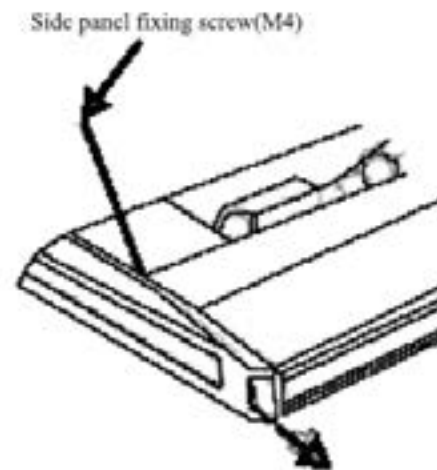
- Ceiling type and Floor type

Each type is similar to the other as follows:

1) Determine the mounting position on ceiling or wall by using paper pattern to indicate indoor frame. Mark the pattern and pull out the paper pattern. (Refer to 1)



①



②

2) Remove the return grill, the side panel and the hanger bracket from the indoor unit as per procedure bellow.

- Press the fixing knob of the air intake grills, the grilles will be opened wider and then pull them out from the indoor.

- Remove the side panel fixing screw and pull to the front direction (arrow direction) to remove. Side panel fixing screw. (Refer to 2)

- Loosen two hanger bracket setting bolts(M8) on each side for less than 10mm. Remove two hanger bracket fixing bolts (M6) on the rear side. Detach the hanger bracket by pulling it backward(Refer to 4).

3) Set the suspension bolt. (Use W3/8 or M10 size suspension bolts)
Adjust the distance from the unit to the ceiling slab beforehand (Refer to 3)

4) Fix the hanger bracket to the suspension bolt.

Warning!

- Make sure that extended suspension bolt from the ceiling stays inside the arrowed position. Readjust the hanger bracket when it is outside the arrowed position. (Refer to 5)

- Suspension bolt stays inside the cap of indoor unit. Never remove the cap.

5) Lift the unit and slide forward unit the dent. (Refer to 6)

6) Screw tightly both hanger bracket-setting bolts (M8). (Refer to 4)

7) Screw tightly both hanger bracket-fixing bolts (M6) to prevent the movement of the indoor unit.(Refer to 4)

8) Adjust the height so that rear side of the drainpipe slightly inclines to improve drainage.

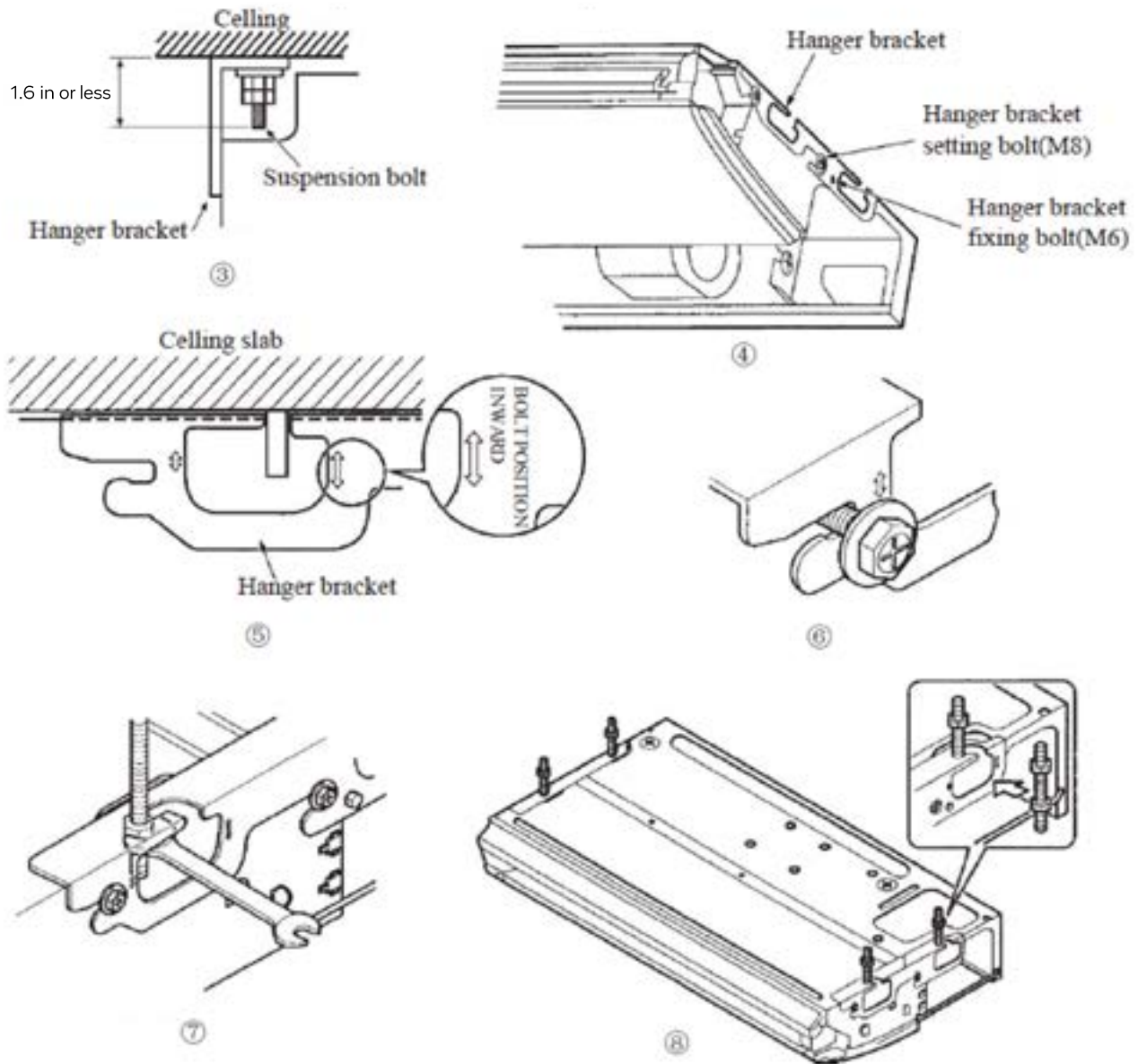
Caution!

- Adjust the height by turning the nut with a spanner.

- Insert the spanner from the hanger bracket opening. (Refer to 7)

In case of hanging

- It is possible to install using inward facing hanger brackets by not removing the brackets from the indoor unit. (Refer to 8)
- Be sure to use only the specified accessories and parts for installation work.



4.5 Installation of Console Type

4.5.1 Installation Location and Matters Needing Attention

- The installation of air conditioner unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact your dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

4.5.2 Selection of installation location

- Such a place where cool air can be distributed throughout the room.
- Such a place where condensation water is easily drained out.
- Such a place that can handle the weight of indoor unit.
- Such a place which has easy access for maintenance.
- The appliance shall not be installed in the laundry.

4.5.3 There are 2 styles of installation

ceiling type and floor type

Each type is similar to the other as follows:

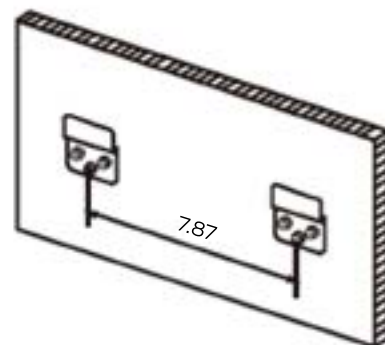
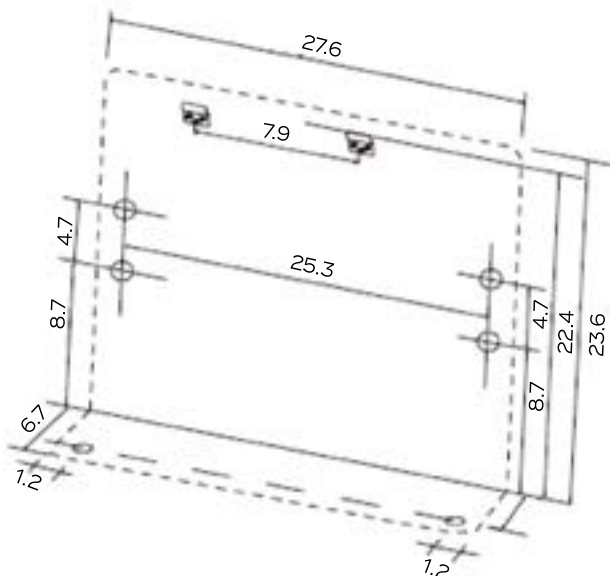
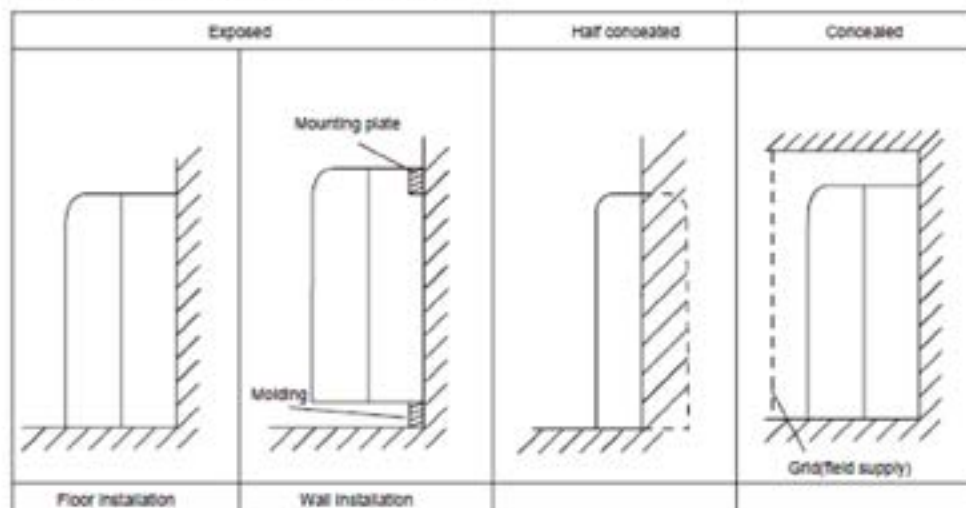
The indoor unit should be sited in a place where:

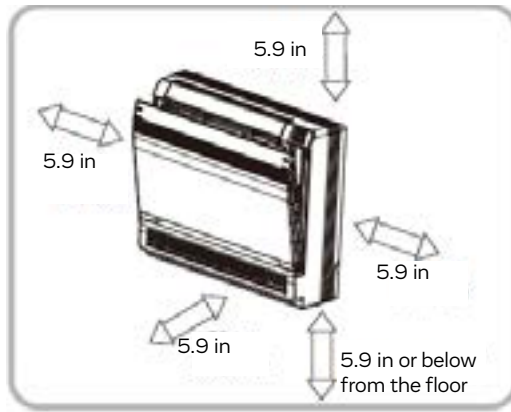
- 1) restrictions on installation specified in the indoor unit installation drawings are met.
- 2) Both air intake and exhaust have clear paths met.
- 3) The unit is not in the path of direct sunlight.
- 4) The unit is away from the source of heat or steam.
- 5) There is no source of machine oil vapour (this may shorten indoor unit life).
- 6) Cool(warm) air is circulated throughout the room.
- 7) The unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range.
- 8) The unit is at least 39.4 inches away from any television or radio set(unit may cause interference with the picture or sound).

4.5.4 Cautions for installation where air conditioner troubles liable to occur

- Where there is too much of oil area.
- Where it is acid base area.
- Where there is irregular electrical supply.

4.5.5 Outline Dimension Drawings of the Indoor Unit: In

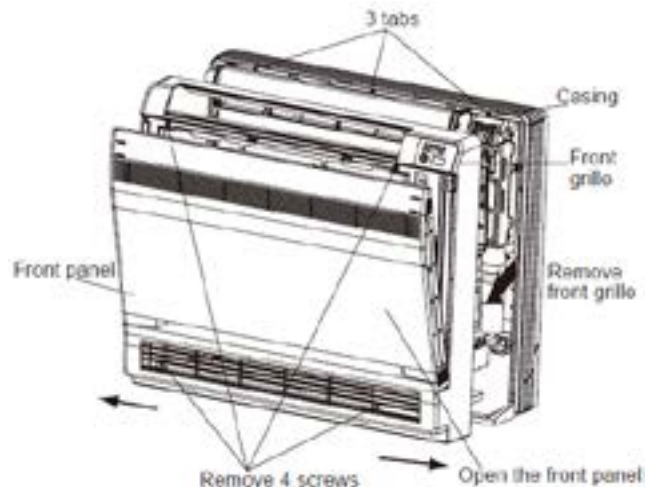




4.5.7 Installation of the Indoor Unit

1) Preparation

- Open the front panel, remove the 4 screws and dismount the front grille while pulling it forward.
- Follow the arrows to disengage the clasps on the front case to remove it.
- Follow the procedure below when removing the slit portions.



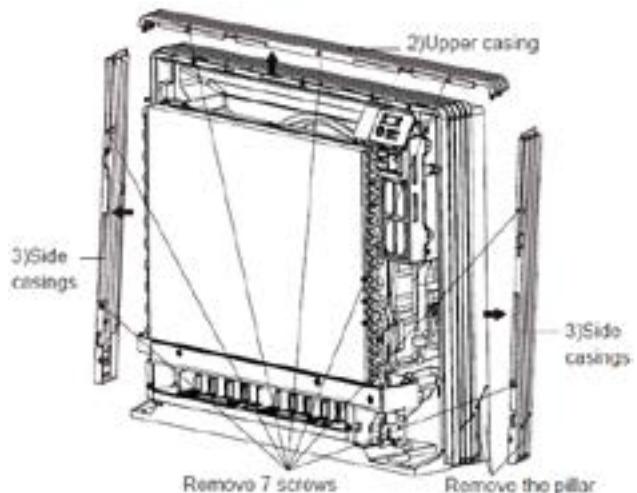
2) For Moldings

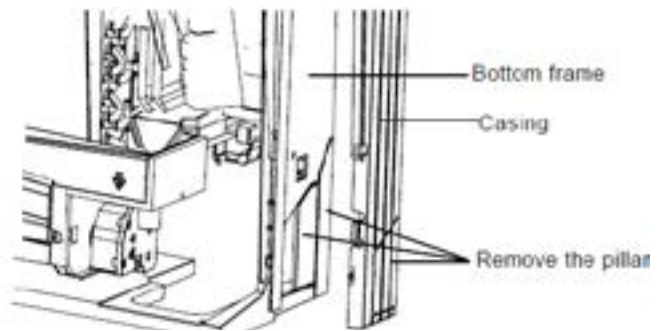
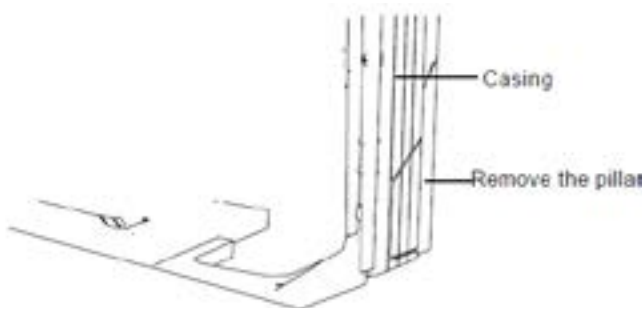
Remove the pillars. (Remove the slit portions on the bottom frame using nippers.)

3) For Side Piping

Remove the pillars.

- 1 Remove the 7 screws.
- 2 Remove the upper casing (2 tabs).
- 3 Remove the left and right casings (2 tabs on each side).
- 4 Remove the slit portions on the bottom frame and casings using nippers.
- 5 Return by following the steps in reverse order (3>2>1).





4) Installation

- Secure using 6 screws for floor installations. (Do not forget to secure to the rear wall.)
- For wall installations, secure the mounting plate using 5 screws and the indoor unit using 4 screws.

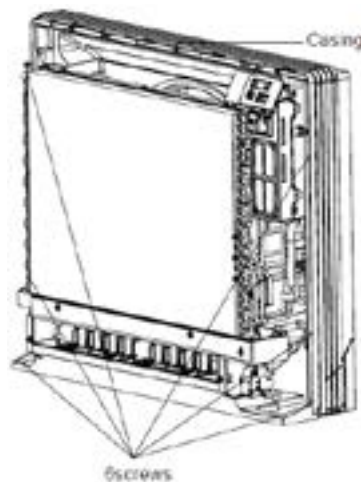
The mounting plate should be installed on a wall which can support the weight of the indoor unit.

- Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.

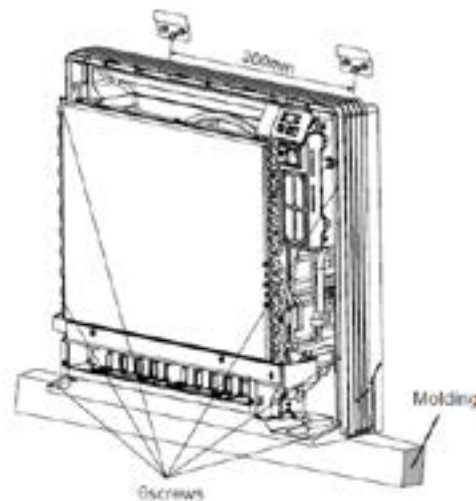
- Secure the mounting plate to the wall with screws.

Floor Installation Wall Installation

Floor Installation



Wall Installation



- Once refrigerant piping and drain piping connections are complete, fill in the gap of the through hole with putty. A gap can lead to condensation on the refrigerant pipe, and drain pipe, and the entry of insects into the pipes.

- Attach the front panel and front grille in their original positions once all connections are complete.

4. 5.8 Connecting the drain hose

- 1) Use commercial rigid polyvinyl chloride pipe general VP 20 pipe, outer diameter 26mm, inner diameter 0.8 in for the drain pipe.

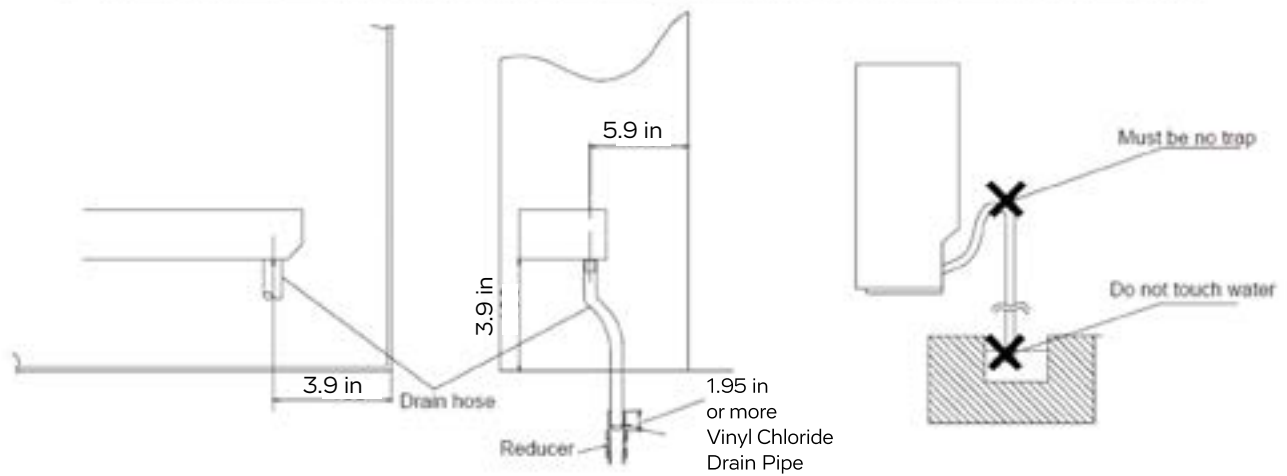
- 2) The drain hose (outer diameter 0.7 in at connecting end, 8.7 in long) is supplied with the indoor unit. Prepare the drain pipe picture below position.

- 3) The drain pipe should be inclined downward so that water will flow smoothly without any accumulation. (Should not be trap.)

- 4) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.

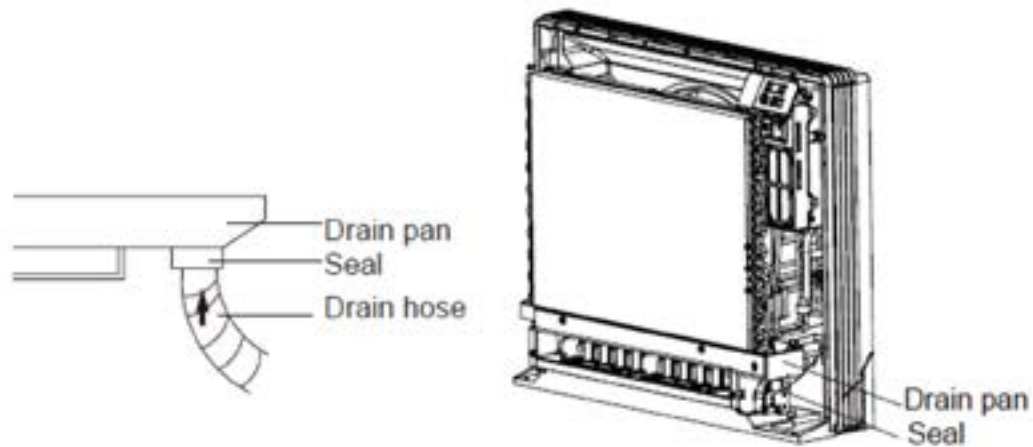
- 5) Insulate the indoor drain pipe with 0.4 in or more of insulation material to prevent condensation.

6) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



7) Insert the supplied C drain hose into the socket of the drain pan.

8) Fully insert the drain hose until it adheres to a seat of the socket.

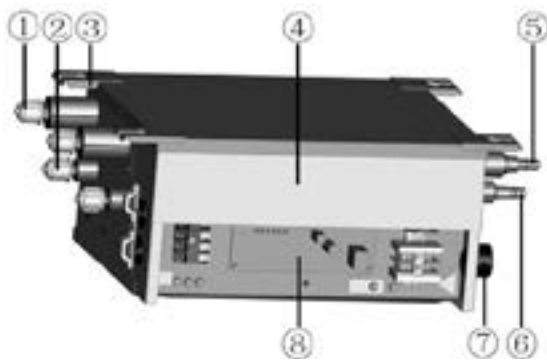


5. BU MODULE INSTALLATION

5.1 Precaution for Installation

- The installation of the air conditioner must be in accordance with the national and local laws and regulations.
- The quality of the installation will affect the capability of air conditioner directly. The installation should be left to the appointed service center. Please contact your dealer after purchasing this machine. Professional installation workers will provide installation and test services according to the installation manual.
- The air conditioner should not install in this place where the small animals exist, because they may cause malfunctions, smoke or fire. Please keep the area around the unit clean.

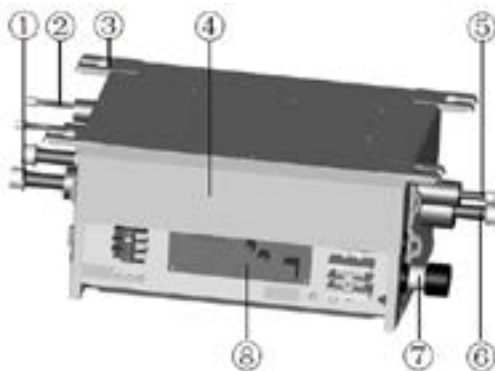
5.2 Names of Main Parts



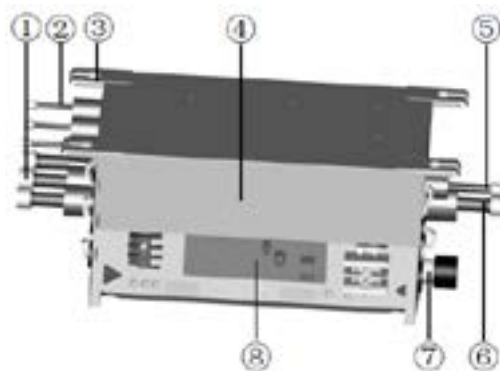
a) FXA2A-D



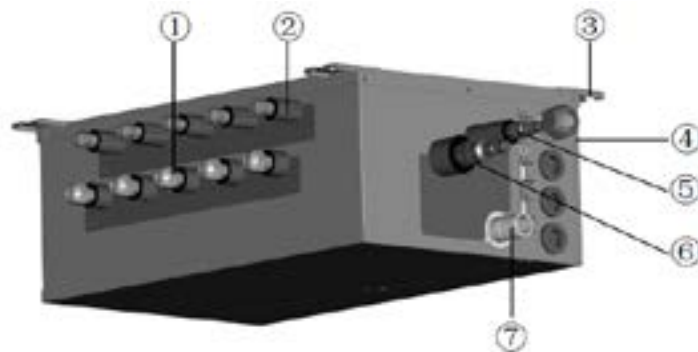
b) FXA3A-D



c) FXA2B-D



d) FXA3B-D



e) FXB5A-D

No.	1	2	3	4
Name	Gas piping of indoor unit side	Liquid piping of indoor unit side	Hanger metal	Electrical equipment plate
No.	5	6	7	8
Name	Liquid piping of outdoor unit side	Gas piping of outdoor unit side	Drain hole	Printed circuit board

5.3 Selection of Installation Location

● The BU module is for indoor use. If installing in the outdoors, the location must be away from wind and rain. Otherwise, it may cause water leakage, electric shocks or fire etc.

● The BU module must be installed on a firm and solid support which can withstand the weight of the module and the mounting surface must be horizontal plane. The BU module can be chosen to install in the ceiling, such as the ceiling of parlor, corridor, balcony, storeroom and etc

- There is enough space for the installation and maintenance.
- Avoid direct sunlight or other heat sources exist
- Do not install in location that is hot or humid for long periods of time.
- Avoid the BU module installed in the bedroom and study, where these places need to be quiet
- BU module cannot be installed in the place of inflammable and explosive materials and severe dust, smoke and the other air pollution, such as the kitchen.
- There is enough space to install drainage pipe, so that the condensed water can be discharged.

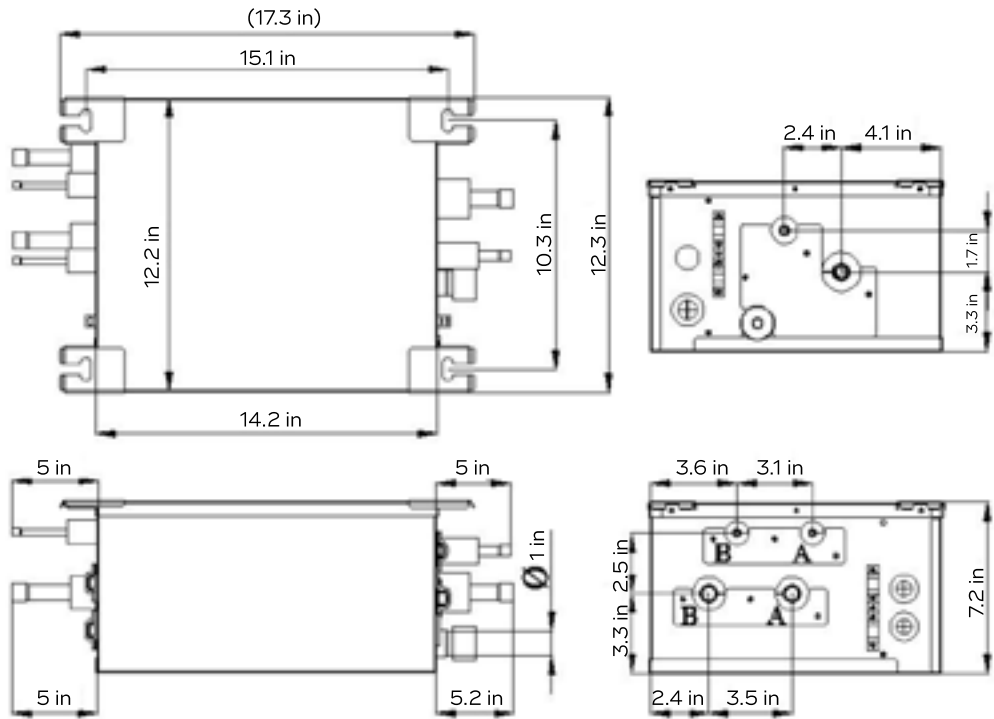
Caution!

Installation at the following places might lead to the air conditioner malfunction. If it is unavoidable, please contact the appointed service center.

- A place which is full of machine oil;
- A region with saline-sodic soil near the sea;
- A place where the sulphide fog exists, such as the sulphur spring;
- A place where the high frequency facilities exist, such as radio equipment, electric welder and medical equipment;
- An environment with special conditions.

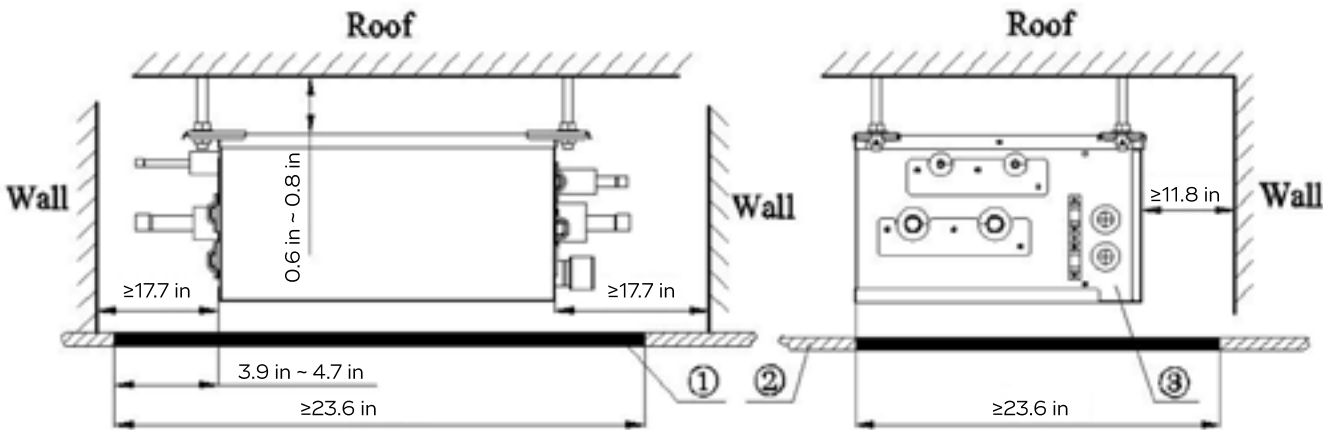
5.4 Outline Dimension and Servicing Space of FXA2B-D

1) Outline dimension



Sorts	Indoor Unit Side (in.)		Outdoor Unit Side (in.)
	Port A	Port B	
Liquid Pipe	1/4	1/4	3/8
Gas Pipe	5/8	5/8	5/8

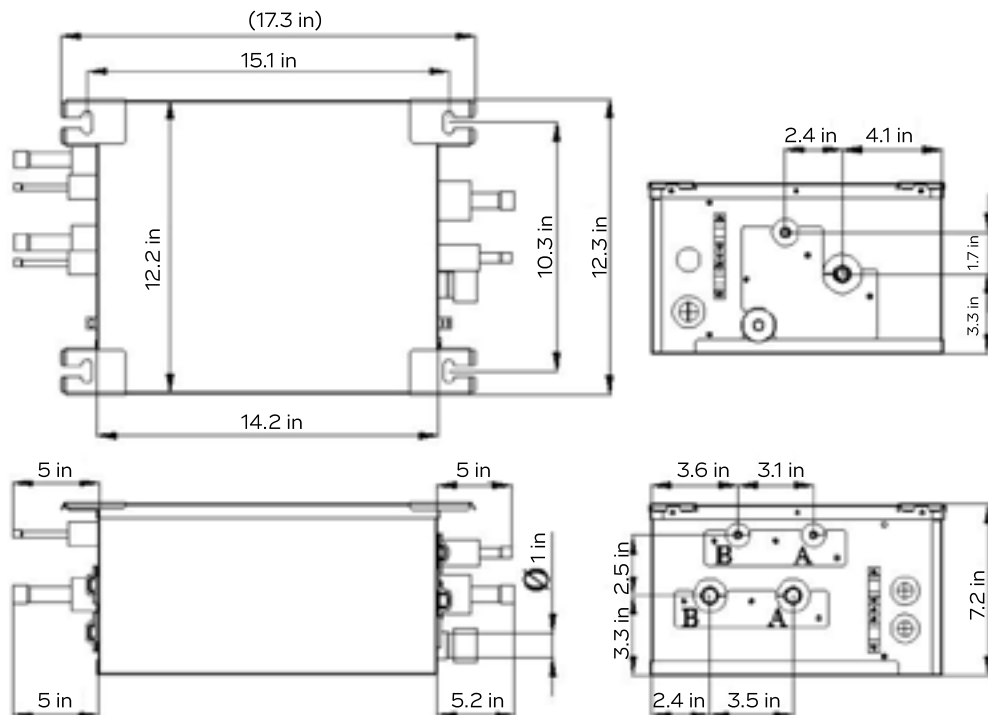
2) Installation and service space



No.	1	2	3
Name	Servicing Space	Ceiling	Electrical Box Side

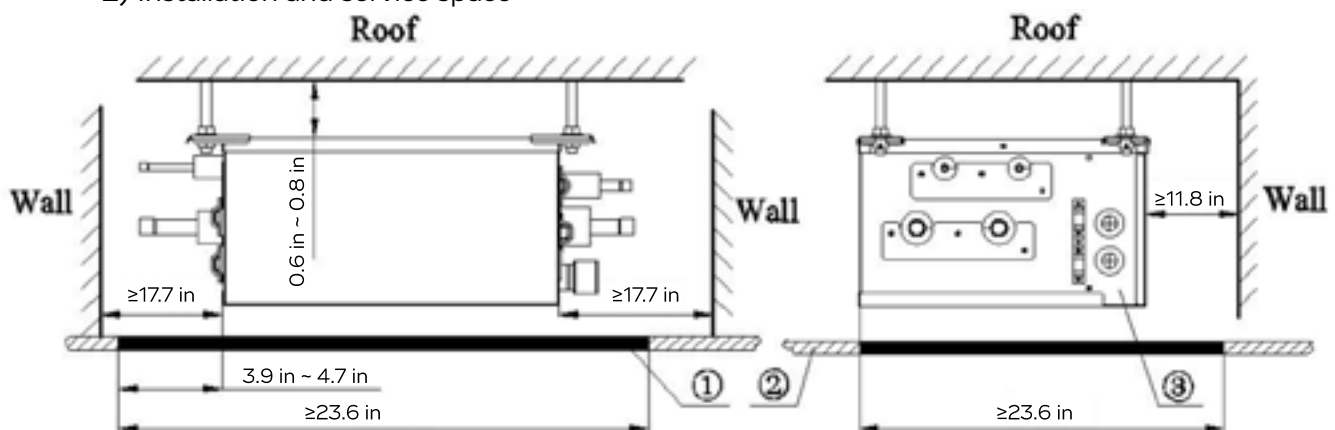
5.5 Outline Dimension and Servicing Space of FXA3B-D

1) Outline dimension



Sorts	Indoor Unit Side (in.)		Outdoor Unit Side (in.)
	Port A	Port B	
Liquid Pipe	1/4	1/4	3/8
Gas Pipe	5/8	5/8	5/8

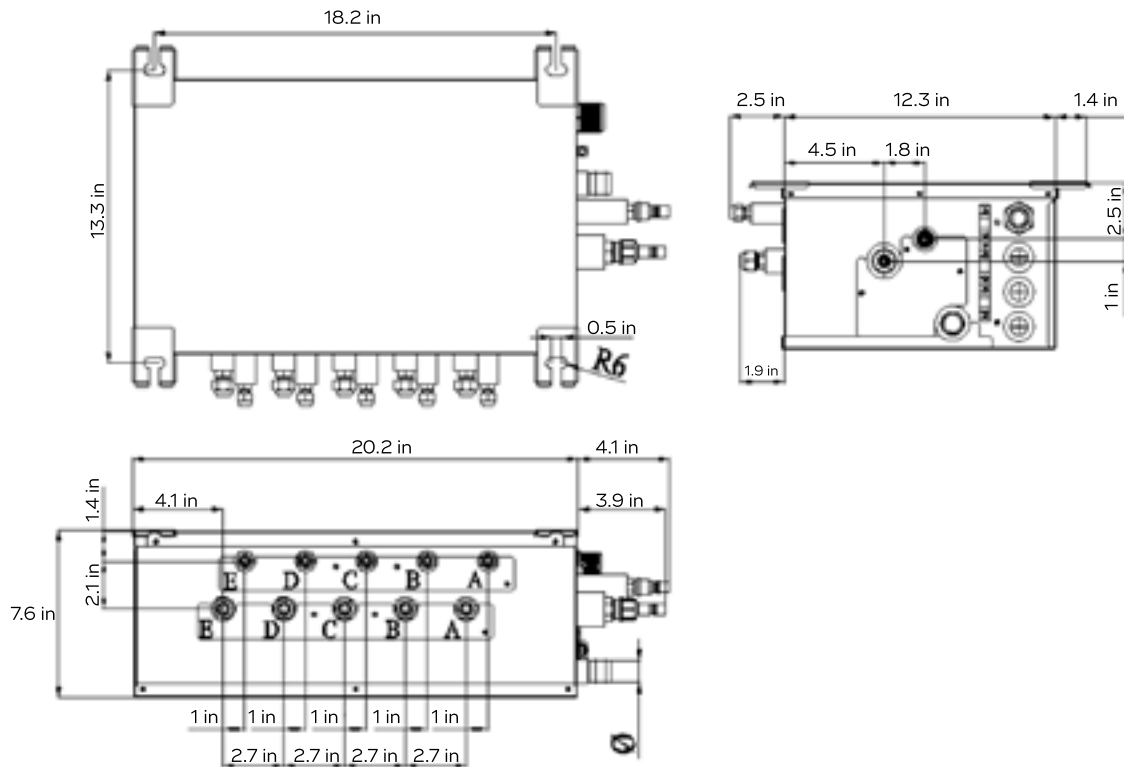
2) Installation and service space



No.	1	2	3
Name	Servicing Space	Ceiling	Electrical Box Side

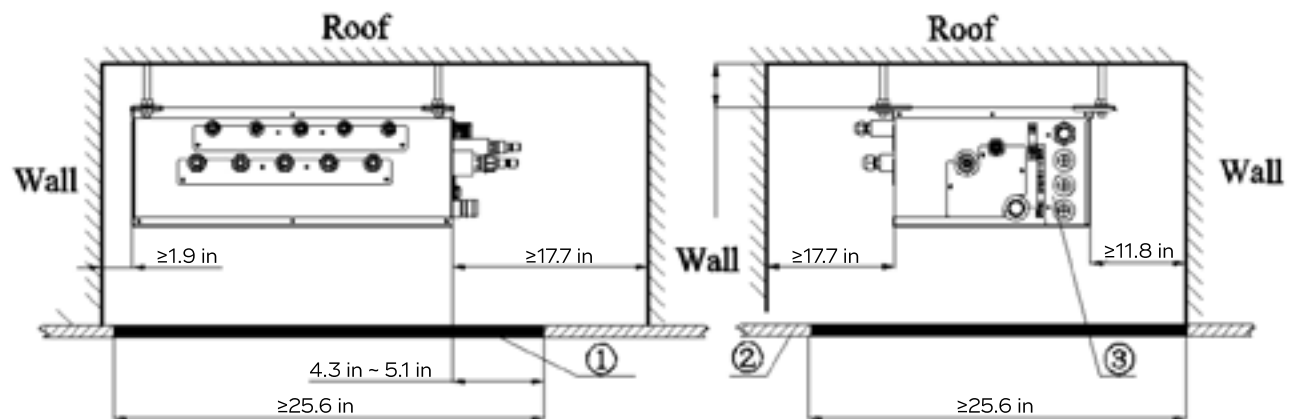
5.6 Outline Dimension and Servicing Space of FXB5A-D

1) Outline dimension



Sorts	Indoor Unit Side (in.)	Outdoor Unit Side (in.)
Liquid Pipe	1/4	3/8
Gas Pipe	3/8	5/8

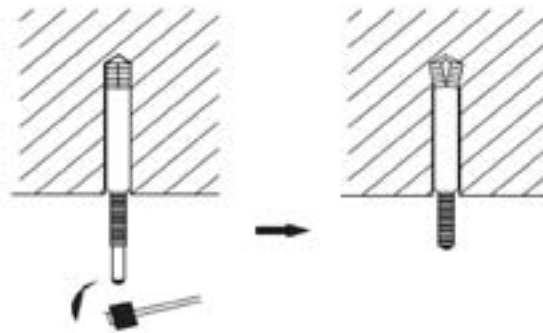
2) Installation and service space



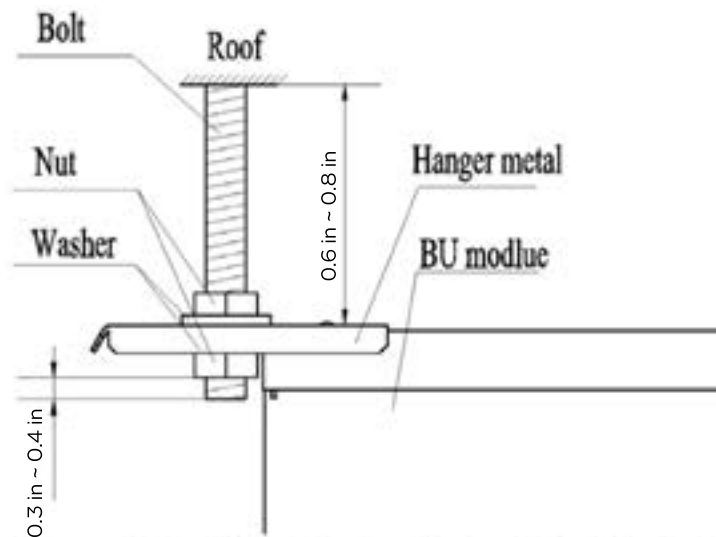
No.	1	2	3
Name	Servicing Space	Ceiling	Electrical Box Side

5.7 Installation Instruction

- 1) Check the installation location and ensure it is strength and level. Otherwise, there should be enough space to install drainage pipe, so that the condensed water can be discharged.
- 2) Reference to the size of hanger metal and drill 4 holes in the installation location.
- 3) Hang the hanger bolts.



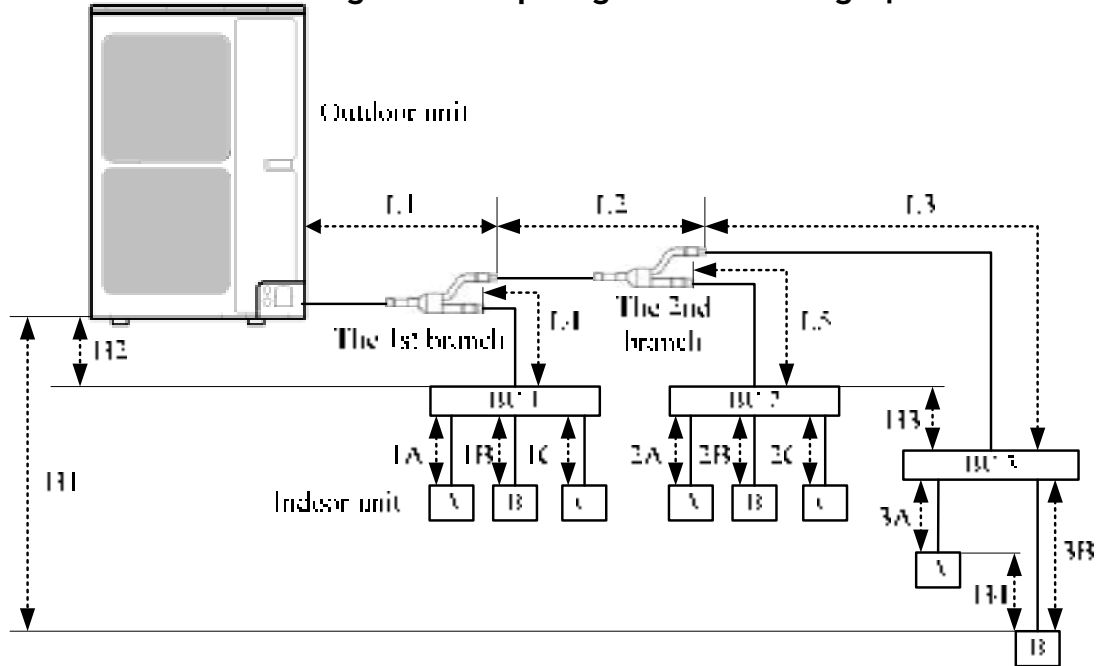
- 4) Fix the modules securely with the hanger bolts. You can get the M10 or M8 hanger bolts, nuts and washers from the market.



- 5) Adjusting the nuts position, so that the BU module should be level in front/back and left/right.

6. REFRIGERATION PIPING WORK

6.1 Allowable Length and Drop Height of Connecting Pipe



The Sorts		The Pipes		Length (m)
Maximum allowable length	Total length between outdoor unit and BU modules		$L1+L2+L3+L4+L5$	≤ 55
	Total length between indoor unit and BU	AWHD(48S)ND3CO	$1A+1B+1C+2A+2B+2C+3A+3B$	≤ 80
		AWHD(56S)ND3CO		≤ 90
	Between indoor unit and BU module		$1A;1B;1C;2A;2B;2C;3A;3B$	≤ 15
	Between indoor unit and the 1st branch		$L4+1B;L2+L5+2A;L2+L3+3B$	≤ 40
Maximum allowable length	Between outdoor and indoor units		H1	≤ 30
	Between outdoor units and BU		H2	≤ 30
	Between BU and BU modules		H3	≤ 15
	Between indoor and indoor units		H4	≤ 15
Minimum allowable length	Between outdoor and the 1st branch		L1	≥ 5
	Between BU and the branch		$L3;L4;L5$	as short as possible

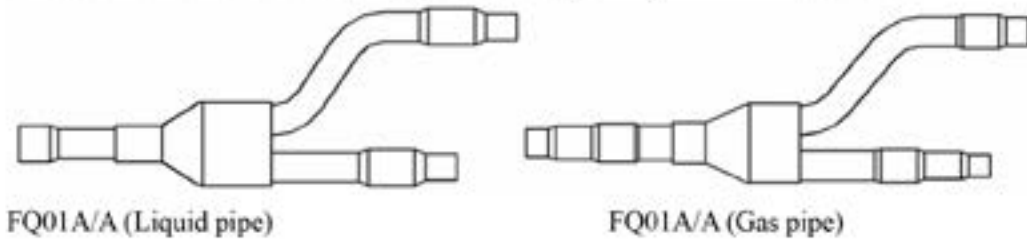
- BU module should be placed within the level between the outdoor unit and indoor unit.

6.2 Dimension of Connecting Pipe

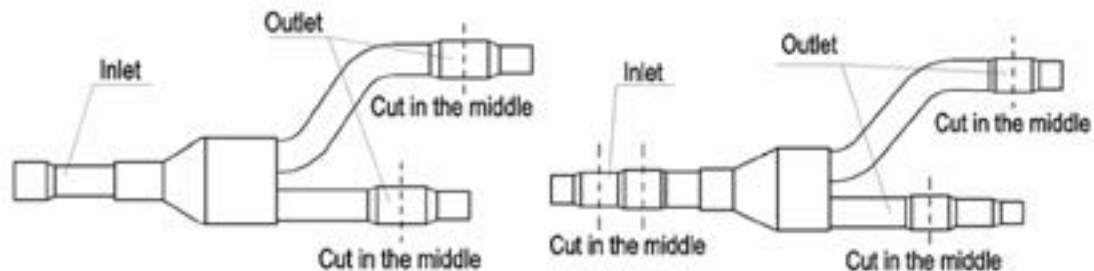
Sorts		Gas Pipe (in.)	Liquid Pipe (in.)
Outdoor Unit	AWHD(48S)ND3CO	5/8	3/8
	AWHD(56S)ND3CO		
Between outdoor unit and the 1st branch	The Pipe L1	3/4	3/8
Between the 1st and 2nd branch	The Pipe L2	5/8	3/8

6.3 Connection of Branch Pipe

1) If two or three BU modules used, Y-type branch pipe of FQ01A/A will be chosen. FQ01A/A (Liquid pipe) FQ01A/A (Gas pipe)



2) Y-type branch pipe is equipped with auxiliary tubes to adjust the diameter of different pipes. If the dimension of the pipe selected is different from the dimension of branch pipe joint, Cut the copper tube in the middle with tube cutter and clear up burrs. Please do that as following figure.



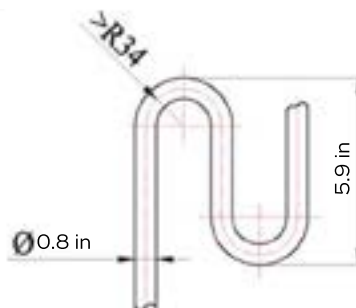
3) Y-type branch pipe must be installed in vertical or horizontal direction. In the inlet of the branch pipe, keep at least 19.7 inches straight pipe.

6.4 Design Requirements for Oil Trap

If the height different between the indoor unit and outdoor unit exceeds 6m, one oil trap shall be installed every 6m from lower to upper on the vertical section of gas pipe. The oil trap shall be fabricated into two U-type elbows or one return-type elbow. The height shall be 3~5 times the piping diameter.

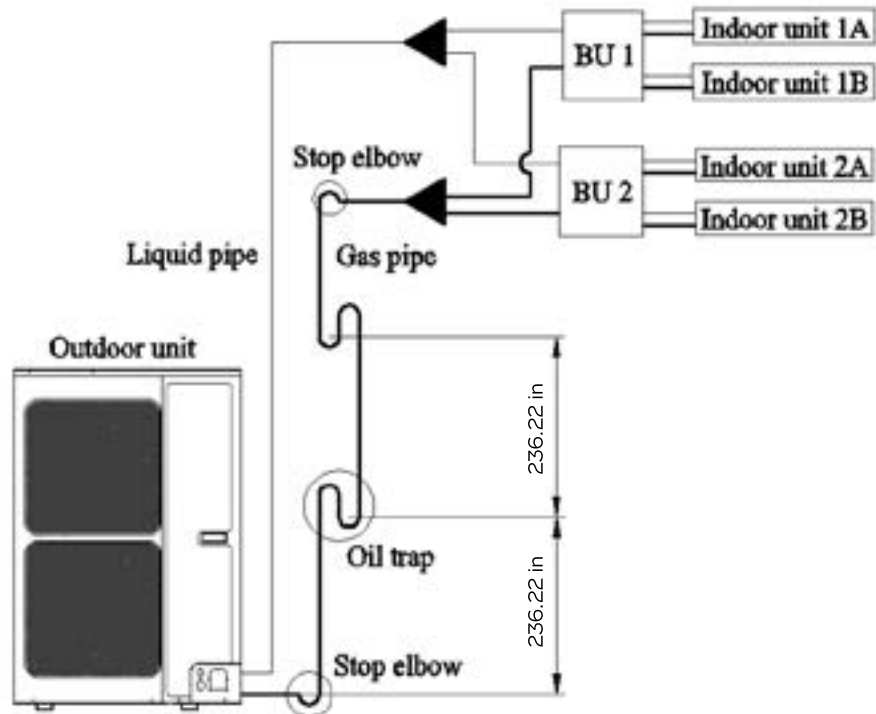
Follow below for details on installation and fabrication of oil trap.

- 1) The oil trap may be fabricated into U-type or return-type.
- 2) If outdoor unit is below indoor unit, it is not needed to install oil trap on the vertical pipe of gas piping.
- 3) If the outdoor unit is below the indoor unit, it is not needed to install oil trap at the highest or lowest position. If the outdoor unit is above the indoor unit, oil trap and stop elbow must be installed at the lowest and highest position of the vertical pipe. See the schematics below:
- 4) Fabrication dimension of oil trap is as shown below:

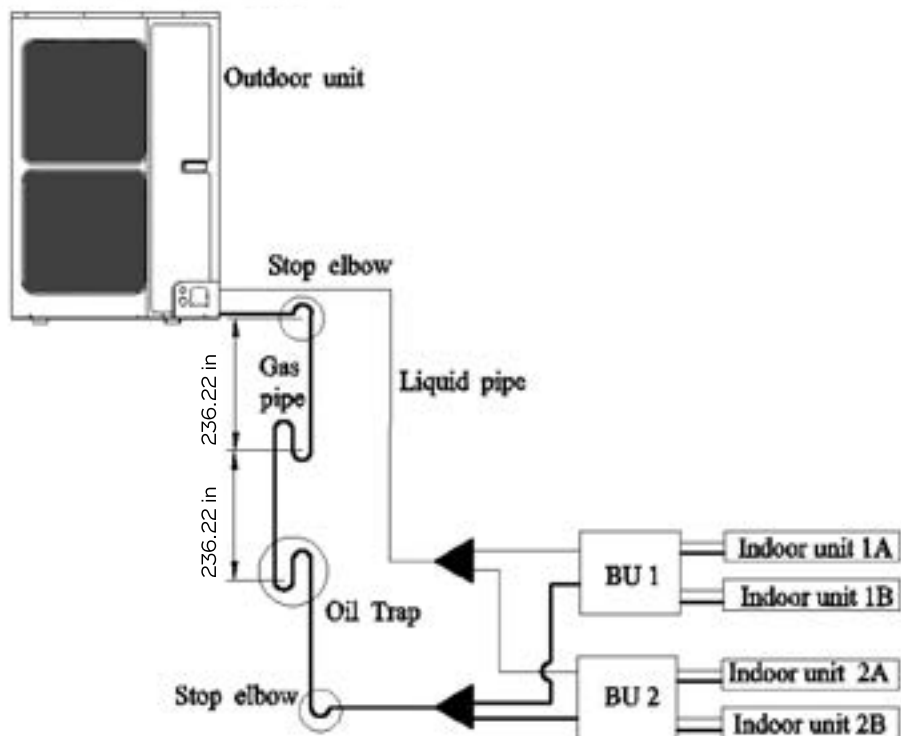


5) See the schematics below:

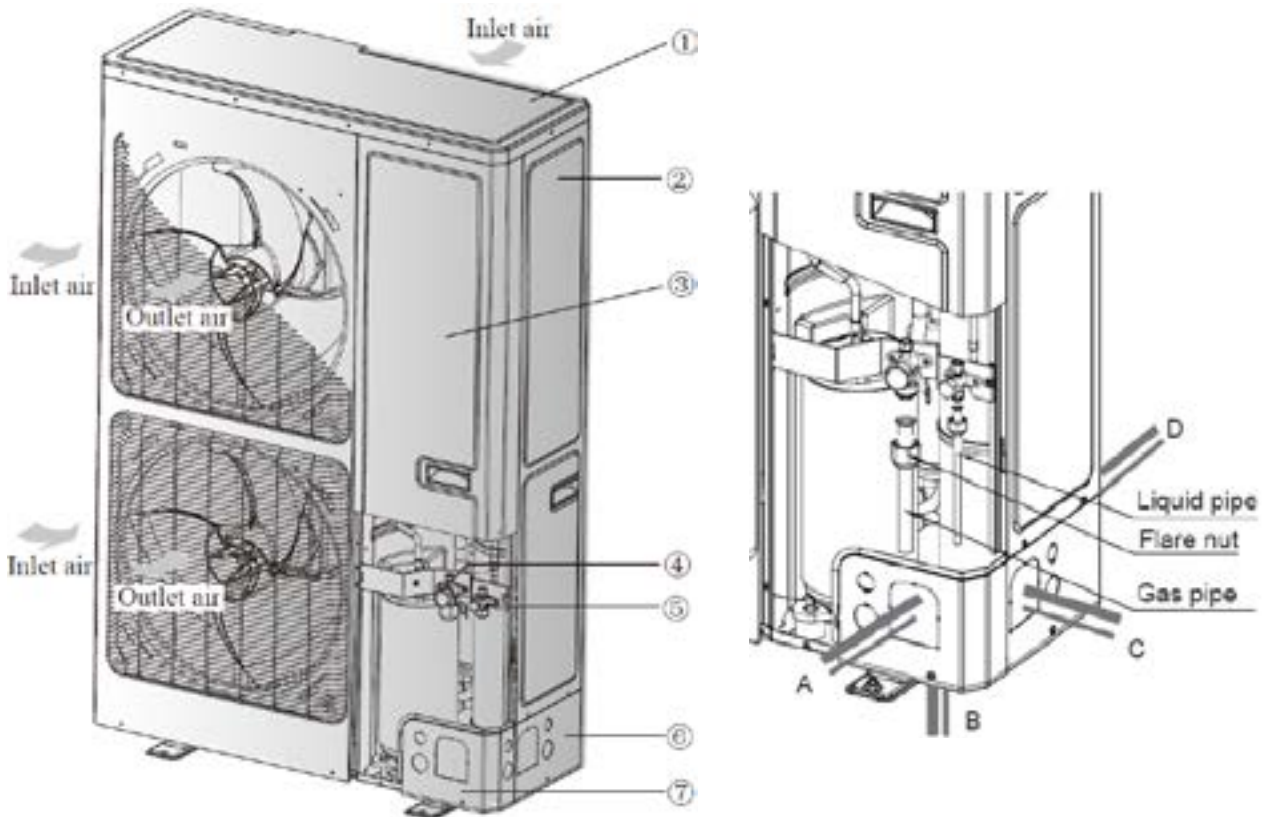
- Outdoor unit lower than indoor unit



- Outdoor unit higher than indoor unit



6.5 Connection of Outdoor Unit Refrigerant Pipe



No.	1	2	3	4
Name	Coping plate	Rear side plate	Front side plate	Gas side stop valve
No.	5	6	7	
Name	Liquid side stop valve	Right connection board	Front connection board	
No.	A	B	C	D
Name	Front connection	Bottom connection	Side connection	Rear connection

- 1) Unscrew the coping plate, front side plate, right connection board and front connection board.
- 2) The refrigerant pipes can be installed in four directions, please choose the proper direction.
- 3) Knock the holes in the plate of the chosen direction with the drill and hammer.
- 4) Connect the pipes to the stop valves.
- 5) Bend the pipes to go through the knockout holes.
- 6) Cover the through-holes with sealing materials to prevent the water, dust or small animals going into the outdoor unit.

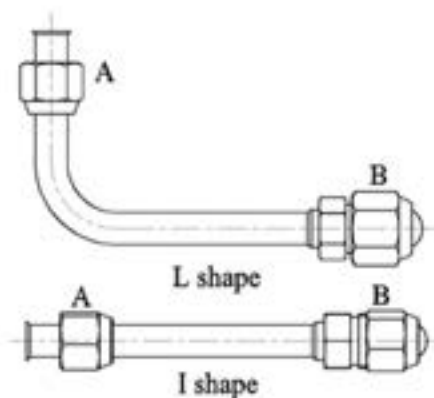
6.6 Installation of Piping Adapter

If the piping connection size of BU module does not match with that of the outdoor unit and indoor units, it should prevail with the piping connection size of the outdoor unit and indoor units. Install the optional piping adapters to the BU module, so that the piping connection size of BU module can match with that of the outdoor unit and indoor units.

16.6.1 FXA2A-D; FXA3A-D and FXB5A-D

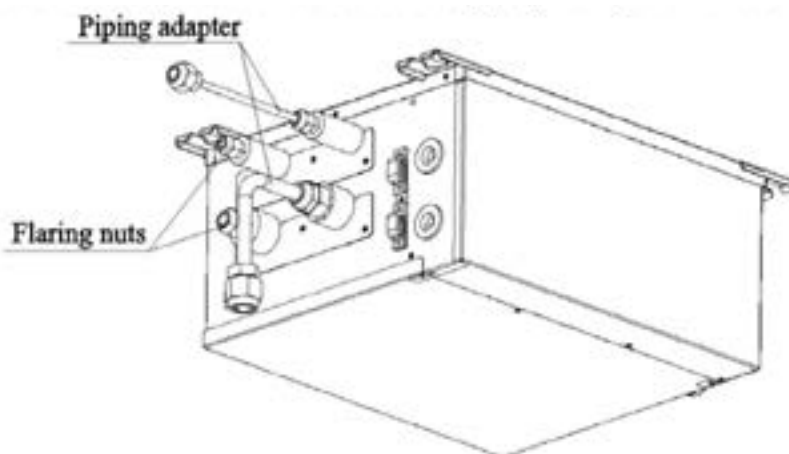
1) Piping adapter (Optional accessories)

No.	Name	Port A (in.)	Port B (in.)
1	5/8 - 3/4	5/8	3/4
2	3/8 - 1/2	3/8	1/2
3	3/8 - 5/8	3/8	5/8
4	1/4 - 3/8	1/4	3/8



2) Install the piping adapter

- Refer to the piping connection size of the outdoor unit and indoor units, the appropriate piping adapters should be adopted.
- Align the flared end of copper tube with the center of pipe joint. Tighten the nuts with hands.



3) Sealing the unconnected port

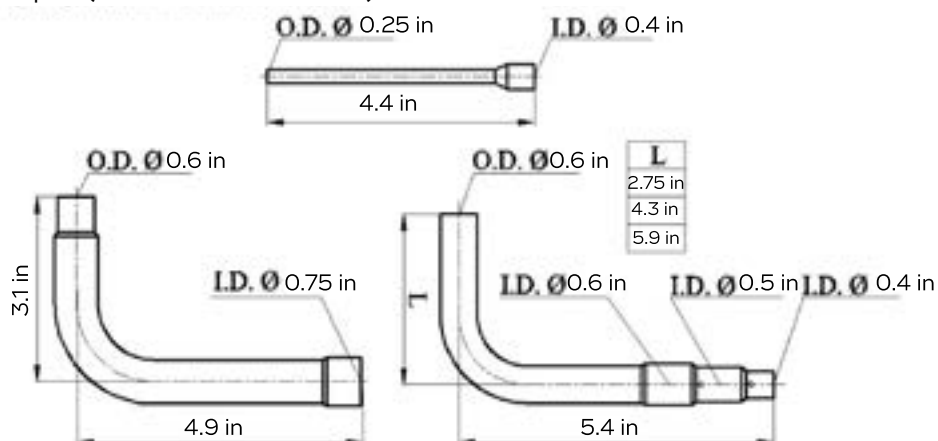
If the port of BU module indoor side does not connected to one indoor unit, the port must be sealed to prevent refrigerant leaks. Please tighten the copper flaring nuts to the unconnected port with torque wrench until you hear a "click".

⚠ Caution!

The unconnected ports must not be sealed well by the plastic flaring nuts but by the copper flaring nuts in the accessories.

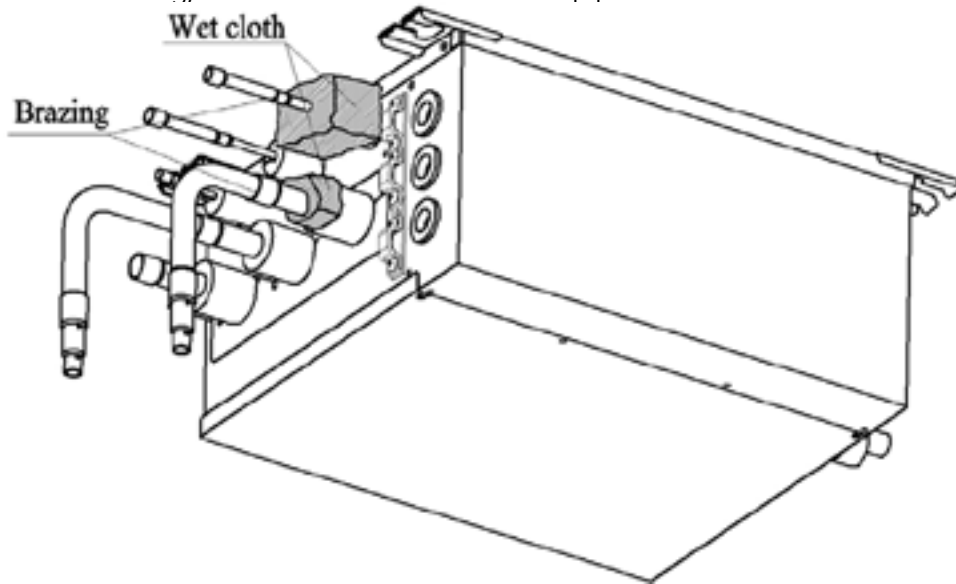
6.6.2 FXA2B-D and FXA3B-D

1) Piping adapter(Standard accessories)



2) Brazing the piping adapter

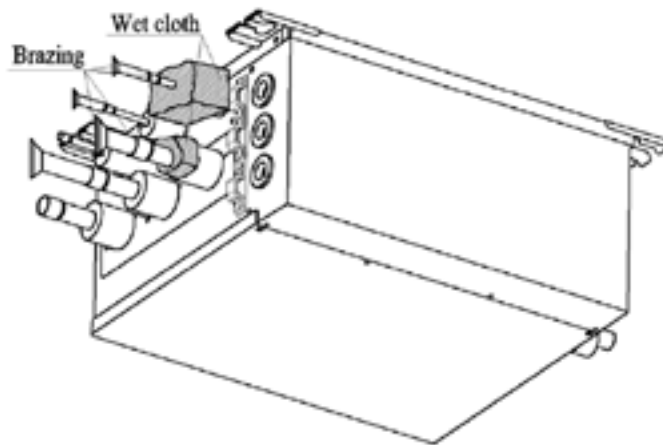
- If the connection size of the pipe adapter selected is different from the piping connection size of BU module, cut the tube of the piping adapter from middle with tube cutter and remove the burrs.
- To avoid heat damage the internal structure of the BU module, wrap the pipes to be brazed with sufficient wet cloths.
- After brazing, use wet cloths to cool off the pipes to be brazed sufficient.



3) Sealing the unconnected port

If the port of BU module indoor side does not connected to one indoor unit, the port must be sealed to prevent refrigerant leaks.

- Select the appropriate piping adapter.
- Pinch the end of the chosen piping.
- To avoid heat damage the internal structure of the BU module, wrap the pipes to be brazed with sufficient wet cloths.



- After brazing, use wet cloths to cool off the pipes to be brazed sufficient.

6.7 Precaution for Connection

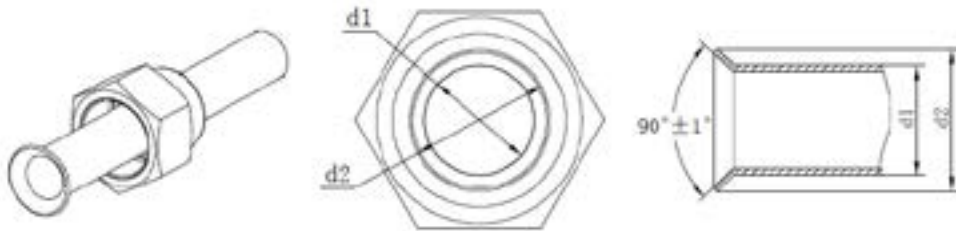
16.7.1 Precaution for connection

- 1) Pipe connections should be follow the following rules:

- Outdoor unit shall be installed close to the indoor unit, hence to minimize the length and bends of connection pipes.
 - The height gap of outdoor unit and indoor units should be as small as possible
- 2) The brazing operation must be strictly in accordance with the process requirements. During the installation, do not damage the pipeline.

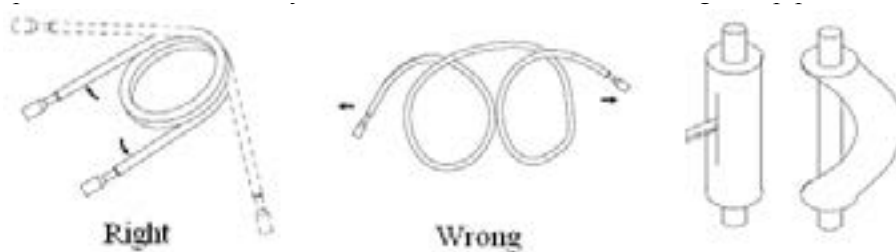
6.7.2 The process of flaring

- Using the tube cutter to cut the connecting pipe in the appropriate place and remove the burrs.
- Install the nut before the flaring operation.
- Check the flared portion, whether there is fractured or not.



6.7.3 Precaution for elbow operation

- The elbow operation could be done by hands. Be careful and do not damage the pipe.

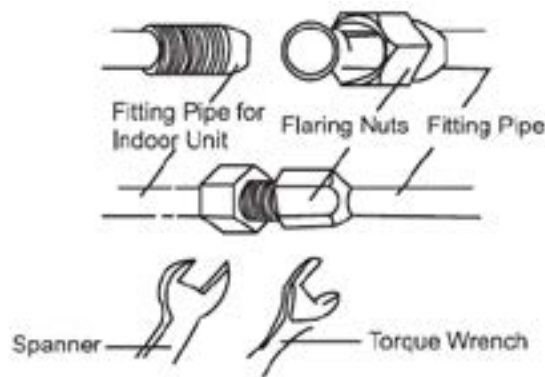


- The bending diameter of the pipeline must be greater than 7.9 in. The connection pipe cannot often be bent or straightened. Otherwise it will harden and crack.
- If the thermal insulation of the refrigerant pipe is not removed, please do not bend the pipe. Otherwise, it maybe leads the pipe to crack. It is better to make an incision with a knife in the thermal insulation and removes it. After elbow operation is finished, recover the thermal insulation with binding band.

6.7.4 The process of install refrigerant pipes

- Remove the screw caps from the pipes.
- Align the flared end of copper tube with the center of pipe joint. Tighten the nuts by hands. (If the flared end of copper tube and the center of pipe joint are not in coaxial, it is hard to tighten the nuts by hands, please do not tighten it with spanners, because the screw thread may be broken by force).
- Tighten the flaring nuts with torque wrench until you hear a "click". (The spanner and torque wrench should be perpendicular to the refrigerant pipeline).
- The following table for the torque required to tighten the nuts.

Pipe Diameter	Thickness of copper tube	Tightening torque
1/4	1/32	11~22 ft.lb
3/8	1/32	26~30 ft.lb
1/2	1/32	33~37 ft.lb
5/8	3/64	44~48 ft.lb
3/4	3/64	51~55 ft.lb



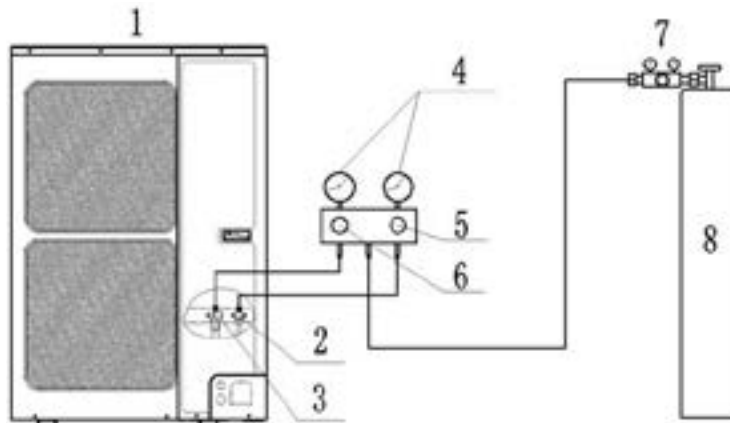
⚠ Caution!

- During the connection of the indoor unit and BU module to the refrigerant pipe, never pull any joints of the indoor unit and the BU module by force; otherwise the capillary pipe or other pipe may crack, which then would result in leakage.
- The refrigerant pipe should be supported by brackets, that is, don't let the unit withstand the weight of it.
- For the Super Free Match system, each pipe should be labeled to tell which system it belongs to avoid mistaken inaccurate piping.

6.8 Leak Test

- 1) Please make sure that the stop valves of the outdoor unit are closed during the operation.
- 2) The leak test should be made by pressurizing nitrogen gas.
- 3) Turn on the Hi-knob and Lo-knob. The leak test should be done simultaneously at both the gas and liquid stop valves.
- 4) Open the pressure reducing valve, pressurize the connection pipes to 1.0 MPa (10 bar) slowly, wait fifteen minutes, and make sure that the pressure will not drop.
- 5) Rise the pressure to 4.0 MPa (40 bar) slowly, wait 24 hours, and make sure the pressure will not drop.
- 6) If the pressure does not decrease, the pipes have passed the test. Otherwise, look for where the gas leaks from.

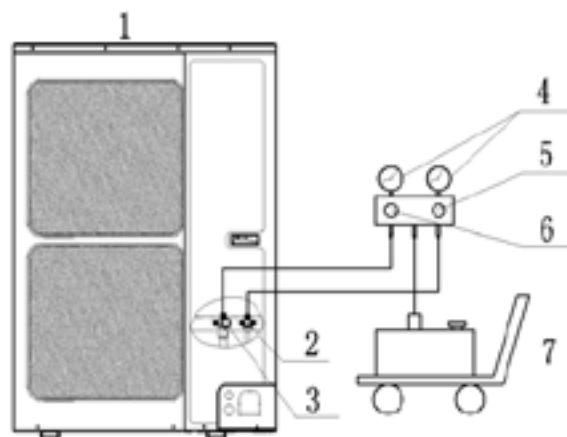
- 1: Outdoor unit
- 2: Liquid side stop valve
- 3: Gas side stop valve
- 4: Pressure-vacuum gauge
- 5: Hi-knob
- 6: Lo-knob
- 7: Pressure reducing valve
- 8: Nitrogen



6.9 Vacuum Operation

- 1) Make sure that the liquid and gas stop valve of the outdoor unit are closed fully during the operation.
- 2) As shown in the following figure, expel the gas from the refrigerant pipes by the vacuum pump.
- 3) Open the pump and turn on the knobs to evacuate the gas in the liquid and gas pipes. The vacuuming should be done simultaneously at both the gas and liquid stop valves.
- 4) When the pressure of the system is less than -0.1Mpa (-1bar), keep the system for more than one hour under the condition.

- 1: Outdoor unit
- 2: Liquid side stop valve
- 3: Gas side stop valve
- 4: Pressure-vacuum gauge
- 5: Hi-knob
- 6: Lo-knob
- 7: Vacuum pump



5) Turn off the knobs firstly and then the pump, and if the pressure of the pressure-vacuum gauge does not rise within 2 hours, the system is under a vacuum. Otherwise, the system has leaked, please look for where the gas leaks in.

6.10 Refrigerant Charging

The refrigerant has been charged into the outdoor unit before shipped from the manufacturer, while additional refrigerant still need be charged into the refrigerant pipe during the field installation.

6.10.1 Calculation of the Additional Refrigerant Charging

1) Get the refrigerant charge of the outdoor unit from the nameplate.

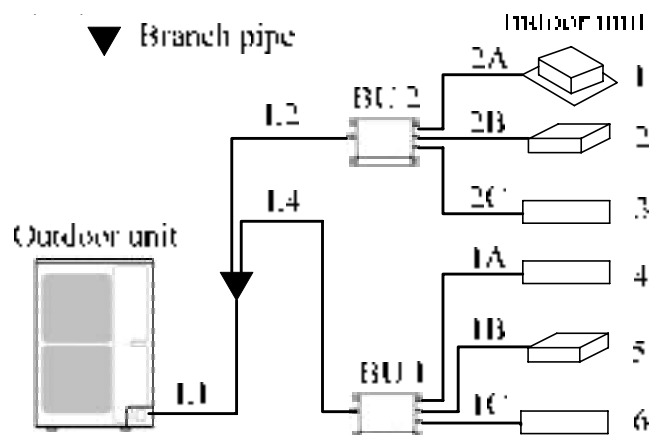
Note:

- The refrigerant charge of the outdoor unit does not include the charged additionally in the indoor unit, BU module and the refrigerant pipe.
- For the length of the connecting pipe is decided on the field, the amount of additional refrigerant shall be decided depending on the dimension and the length of the liquid pipe used on the field.
- Record the additional refrigerant charge for future maintenance.
- It does not need to add refrigerant if the total length of liquid pipe is within 1,181.1".

2) Calculating the Mass of Additional Refrigerant

Additional Refrigerant Charge (kg) = Σ the Liquid Pipe Length of $\Phi 6.35 \times 0.022 \text{ kg/m} + \Sigma$ the Liquid Pipe Length of $\Phi 9.52 \times 0.054 \text{ kg/m} - 1.47 \text{ (kg)}$

● If the additional refrigerant charge is negative, it does not need to add the refrigerant.



Serial No.	Model	
Indoor Unit 1	Cassette Type	AKH(12)BA-D3DNA2A/I
Indoor unit 2	Duct Type	AFH(09)EA-D3DNA1A/I

Indoor Unit 3	Wall Mounted Type	AWH09UB-D3DNA1A/I
Indoor unit 4	Wall Mounted Type	AWH09MB-D3DNA3D/I
Indoor Unit 5	Duct Type	AFH(O9)EA-D3DNA1A/I
Indoor Unit 6	Wall Mounted Type	AWH09TB-D3DNA3A/I

Serial No.	Diameter (in.)	Length (in)
L1	3/8	787.4
L2	3/8	393.7
L4	3/8	393.7
1A	1/4	196.9
1B	1/4	196.9
1C	1/4	196.9
2A	1/4	196.9
2B	1/4	196.9
2C	1/4	196.9

The total length of the liquid pipes: $20+10+10+5+5+5+5+5+5=70(\text{m})$.
Thus, the total length is over than 1,181.1", so the air conditioner needs to add refrigerant.

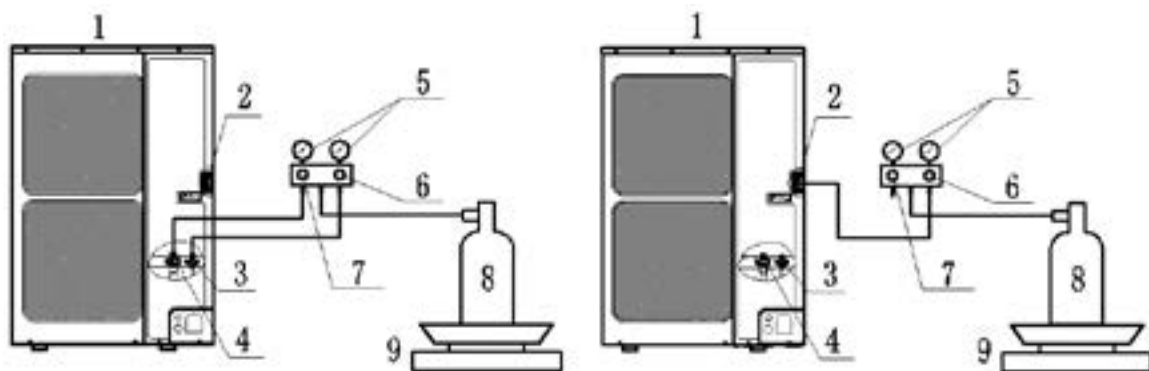
● Additional refrigerant charge

Σ the Liquid Pipe Length of $\Phi 6.35 \times 0.022\text{kg/m} + \Sigma$ the Liquid Pipe Length of

$\Phi 9.52 \times 0.054\text{kg/m} - 1.47(\text{kg})$

$= (5+5+5+5+5+5)(\text{m}) \times 0.022\text{kg/m} + (20+10+10)(\text{m}) \times 0.054\text{kg/m} - 1.47(\text{kg}) = 1.35(\text{kg})$

6.10.2 Procedures for adding refrigerant



No.	1	2	3	4	5
Name	Outdoor Unit	Service port	Liquid side stop valve	Gas side stop valve	Pressure-vacuum gauge
No.	6	7	8		9
Name	Hi-knob	Lo-knob	R410A tank		Scale

1) When the liquid and gas stop valves have not been opened, the system is under the vacuum:

● Refer to the left of the figure above; connect the R410A tank to the system.

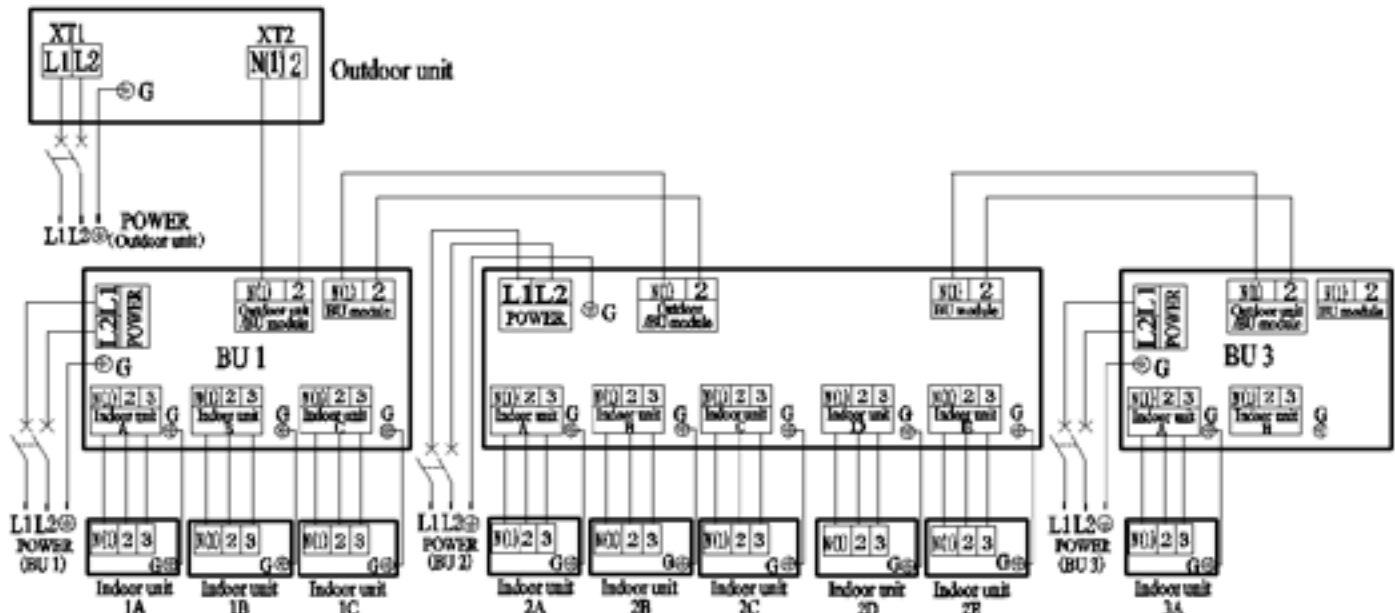
- Turn on the R410A tank and the Hi-knob; charge the R410A refrigerant into the unit from the liquid side stop valve. The Lo-knob should be closed completely.
 - Turn off the R410A tank and the Hi-knob immediately, when the adding refrigerant is enough.
 - Turn on the liquid and gas side stop valves in an anticlockwise direction slowly and completely.
- 2) If the pressure of the system is too high to charge refrigerant, you can do as follow.
- Turn on the liquid and gas side stop valves in an anticlockwise direction slowly and completely.
 - Turn on the power of the air conditioner, and set cooling mode, running more than 0.5h when outside temperature is higher than 59F DB.
 - a) Refer to the left of the figure above; connect the R410A tank to the system.
 - b) Turn on the R410A tank and the Lo-knob, charge the R410A refrigerant into the unit from the gas side stop valve. The Hi-knob should be closed completely.
 - c) Turn off the R410A tank and the Lo-knob immediately, when adding refrigerant is enough.
 - Turn on the power of the air conditioner, and set heating mode, running more than 0.5h when outside temperature is lower than 59F DB.
 - a) Refer to the right of the figure above; connect the R410A tank to the system.
 - b) Turn on the R410A tank and the Hi-knob; charge the R410A refrigerant into the unit from service port. The Lo-knob should be closed completely.
 - c) Turn off the R410A tank and the Hi-knob immediately, when adding refrigerant is enough.

Caution !

- Make sure the liquid and gas side stop valves are opened completely after the installation.
- Make sure the length of liquid pipe is exactly.
- Additional refrigerant charge must be measured exactly.
- Make sure that the refrigerant which charge into the unit is in liquid state.
- Please prevent the refrigerant leakage from your body when remove the charging hose.
- Please heat the refrigerant tank with hot water or hot air when the outside temperature is too low. However, it must be forbidden to heat with fire directly, otherwise it may lead to explosion.

7. Electrical Wiring Work

7.1 Wiring Connection



The "L1", "3" terminals are connected to the live wire, the "L2", "N(1)" terminals are connected to the neutral wire and the "2" terminal is connected to the transmission line.

7.2 Requirements of Power Circuit and Cable

Phase and Frequency		1Ph,60Hz
Voltage		208/230V
Recommended cable of outdoor unit (Pieces × Sectional area)	AWHD(48S)ND3CO	3×6.0 mm2
	AWHD(56S)ND3CO	
Recommended cable of BU module (Pieces × Sectional area)		3×0.75 mm2
Transmission line (Pieces × Sectional area)		2×1.5 mm2
Recommended cable of indoor unit (Pieces × Sectional area)		4×0.75mm2
Capacity of the air switch	AWHD(48S)ND3CO	40A
	AWHD(56S)ND3CO	40A
	BU module	10A

Note:

- The total length of the transmission line between the outdoor unit and the furthest BU module is not more than 2,165.3 in. Otherwise, the system cannot work possibility.
- The specifications of the power cable and transmission line listed in the table above are determined based on the maximum power (maximum amps) of the unit.
- The specifications of the power cable listed in the table above are applied to the conduit-guarded multi-wire copper cable (like, YJV copper cable, consisting of PE insulated wires and a PVC cable jacket) used at 104F and resistible to 194F, and shall be at least those of ordinary polychloroprene sheathed cords. If the working condition changes, they should be modified according to the related national standard.
- The specifications of the air switch listed in the table above are applied to the breaker with the working temperature at 104F. If the working condition changes, they should be modified according to the related national standard.

- The length of the recommended power cable should be less than 590.5 in; otherwise, the diameter of the power cable is not enough.
- Mentioned power cable and transmission line length is just a reference value. It may be different depending on the condition of installation, humidity or materials, etc.
- An all-pole disconnection switch having a contact separation of at least 0.1 in in all poles should be connected in fixed wiring.

7.3 Ground Requirements

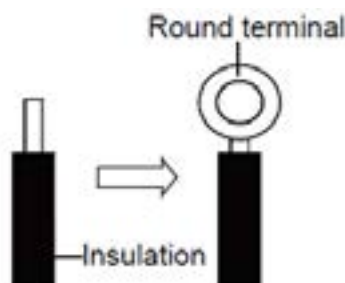
- The air conditioner is classified into the Class I appliances, so its ground ways must be reliable.
- The ground wire must be fixed on the screw hole with the sign as the right figure.
- The yellow-green wire of the air conditioner is the ground wire and must be fixed by the tapping screw. And it cannot be used for other purpose or cut off. Otherwise, it will cause the hazard of electric shock.
- The reliable ground terminal should be provided and the ground wire cannot be connected to any of the following places: a. Water pipe; b. Coal gas pipe; c. Sewage pipe; d. Lightning rod; e. Telephone line; f. Other unreliable places considered by a professional.

7.4 Precautions of Electrical Wiring Work

- The ground connection should be reliable and the ground wire should be connected to the dedicated device of the building by the professional.
- The electric installation should be carried out by the professional as instructed by the local laws, regulations and also this manual.
- The air switch coupled with the leakage current protection switch must be equipped in the circuits, which is of enough capacity and of both magnetic and thermal tripping functions in case of the short circuit and overload.
- The electrical work should use a cable length enough to cover the entire distance with no connection. If it is unavoidable, please make sure the connection should be reliable, the external forces will not act on the wires and the joint is not bared. Otherwise it will cause electrical shock or fire etc.
- The power cable with the rated voltage and exclusive circuit for the air conditioning should be used.
- Do not pull the power cable by force after it is installed.
- The diameter of the power cable should be large enough and once it is damaged, it must be replaced by the dedicated one.
- The multi-wire copper cable should be used for the power cable and the transmission line.

7.5 Precaution of Laying Wires

- 1) Use a wire stripper to strip off a length of the insulation layer at the end of the wires;
- 2) Loosen the screws on the terminal block of the air conditioner;
- 3) Press the ends of the cable tightly onto the round terminals corresponding to the size of the screws.
- 4) Pass the screw through the round terminals and fix it onto the terminal block.



7.6 Electrical Wiring Work for Outdoor Unit

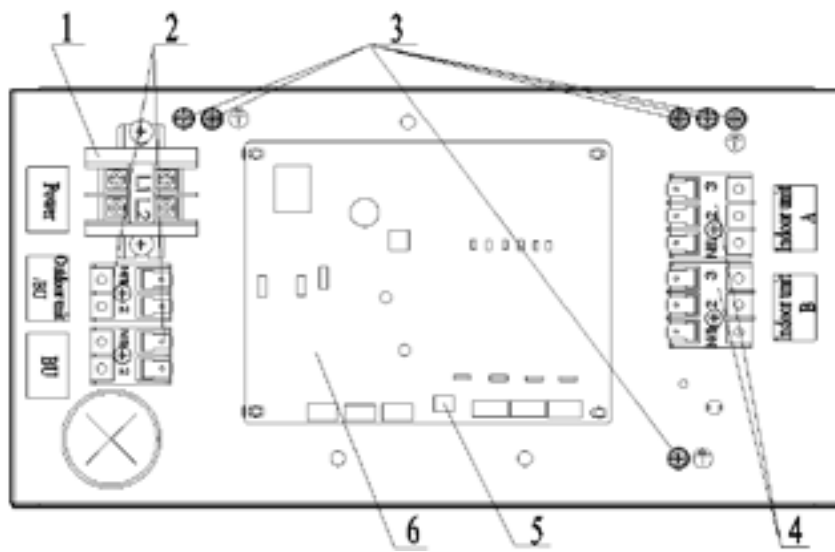
- 1) Knock the holes in the plate of the chosen direction with the hammer.
- 2) Place the rubber ring on the knockout hole.
- 3) Let the power cable and transmission line go through the knockout hole.
- 4) Connect the power cable of the outdoor unit to the L1, L2 terminals with the sign of the XT1 and as well as the ground screw.
- 5) Connect the transmission line of the outdoor unit to the N(1), 2 terminals with the sign of the XT2.
- 6) Fix the power cable and transmission line firmly by cable fixing clip.
- 7) Screw the coping plate, front side plate, right connection board, front connection board back.
- 8) Cover the through-holes with sealing materials to prevent the water, dust or small animals going into the outdoor unit.

Caution !

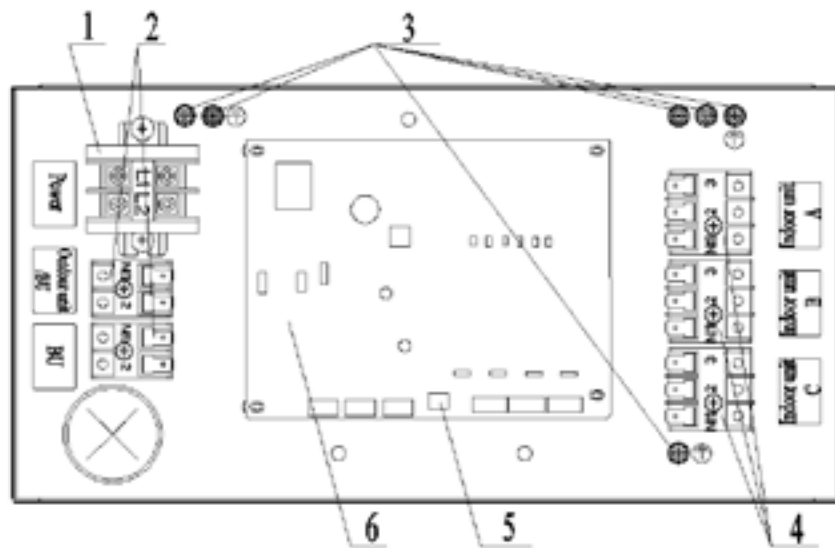
- The transmission line and the power cable must be separated and separated with an interval of at least 0.8 in; otherwise it may be result in communication problem.
- In order to protect the power cable and transmission line from damaging by the hole, the rubber ring must be placed on the hole. Otherwise, it may cause electrical shock or fire etc.
- The power wire and transmission line must be more than one meter away from televisions or radios which can emit electromagnetic waves to prevent image interference or noise. Otherwise, the unit maybe cannot work.
- Confirm the each cable connected to the terminal screw is exactly and securely after finishing the electric work.
- Fix each ground wire separately with the ground screw.
- If the connecting wire is connected to the terminal incorrectly, the unit will not work normally.

7.7 Electrical Wiring Work for BU Module

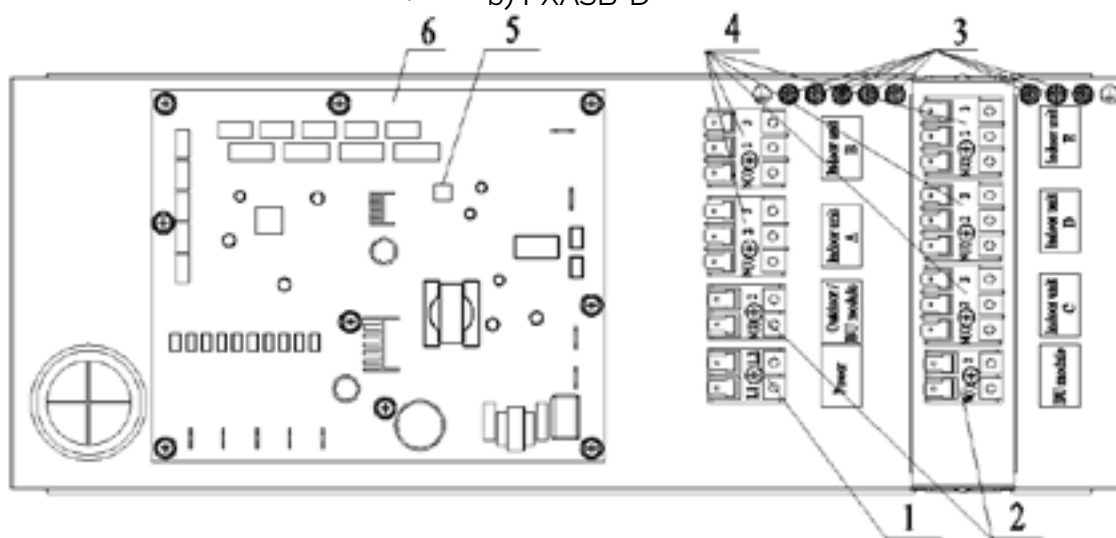
- 1) Unscrew the electrical equipment plate.
- 2) The structure of behind the electrical equipment plate.



a) FXA2B-D



b) FXA3B-D



c) FXB5A-D

No.	1	2	3
Name	Terminal block for BU module power supply	Terminal block for transmission line	Ground screw
No.	4	5	6
Name	Terminal block for indoor unit power supply	DIP switch	Printed circuit board

3) Let the power cable and transmission line go through the rubber ring. In order to protect the power cable and transmission line from damaging by the hole, the rubber ring cannot fall from that, otherwise, it may cause electrical shock or fire etc.

4) Connect the power cable of the BU module to the L1, L2 terminals with the sign of Power and as well as the ground screw.

5) Connect the transmission line of the BU module to the N(1), 2 terminals with the sign of Outdoor unit/BU module.

6) If the transmission line need to be connected to the other BU module, please connect the extra line to the N(1), 2 terminals with the sign of BU module.

7) Connect the power cable of the indoor unit to the N(1), 2 and 3 terminals with the sign of Indoor unit A (B, C, D and E) and as well as the ground screw.

8) Fix the power cable and transmission line firmly by cable fixing clip.

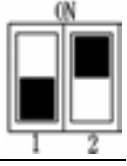
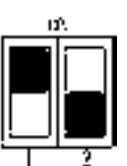
9) Screw the electrical equipment plate.

Caution !

- The transmission line and the power cable must be separated and separated with an interval of at least 0.8 inches; otherwise it may be result in communication problem.
- Confirm the each cable connected to the terminal screw is exactly and securely after finishing the electric work.
- Fix each ground wire separately with the ground screw.
- When connecting indoor units, make sure to connect refrigerant pipes and power cables to the same connection ports marked with matching signs (A, B, C, D and E).
- If the connecting wire is connected to the terminal incorrectly, the unit will not work normally.

7.8 Instructions for DIP Switch

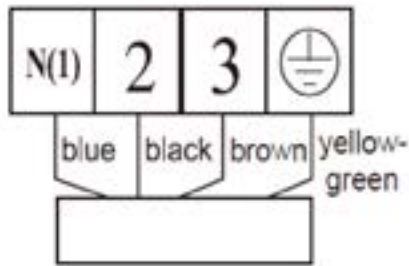
- 2 digits DIP is adopted to assign the address when using multi-BU modules and the address cannot be repeated in the same unit.
- One outdoor unit can connect to no more than 3 BU modules.
- "ON" side means "ON" and the opposite side represents "OFF". (Note: The black part is lever.)

Number	DIP Code		Icon	Address
	Dip 1	Dip 2		
1	Off	Off		BU 1
2	Off	On		BU 2
3	On	Off		BU 3

7.9 Electrical Wiring Work for Indoor Unit

- 1) Open surface panel.
- 2) Remove the electrical box cover.
- 3) Route the power connection cord from the back of the indoor unit and pull it toward the front through the wiring hole upward.
- 4) Connect the wiring (communication) through the piping hole of the chassis and the bottom of the appliance upward, then connect the brown wire to the Terminal board "3"; black wire (the communication wire) to the Terminal board "2"; blue wire to the Terminal board "N(1)" and connect the ground wire to the screw terminal on the electric box. Clamp them with the corresponding wire clamp packed in the chassis.
- 5) Reassemble the electrical box cover.

- 6) Recover the surface panel.
- 7) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.



8 INSTALLATION OF DRAINAGE PIPELINE

8.1 Material Quality Requirements for Condensate Pipe

Generally, the condensate pipe shall be water supply U-PVC pipe, adhered by using special glue. The other materials available include: PP-R pipe, PP-C pipe and hot-dipped galvanized steel pipe. It is not allowed to use aluminum plastic composite pipe.

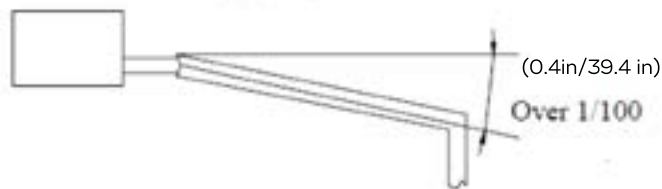
8.2 Key Points for Condensate Pipe Installation

1) Work Order

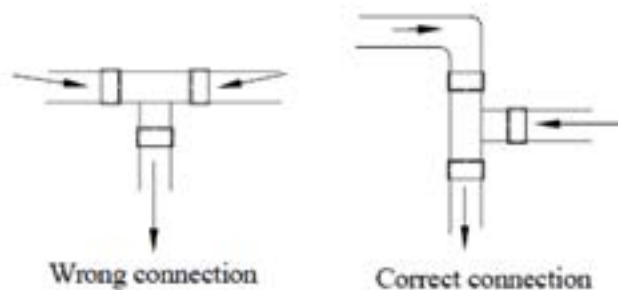


2) Determine the direction and elevation of condensate pipe before installation. To ensure the gradient smooth and straight, avoid intersecting with other pipelines. The height of the clamp fixing the pipe hanger frame shall be adjustable and fixed from the outer of thermal insulation.

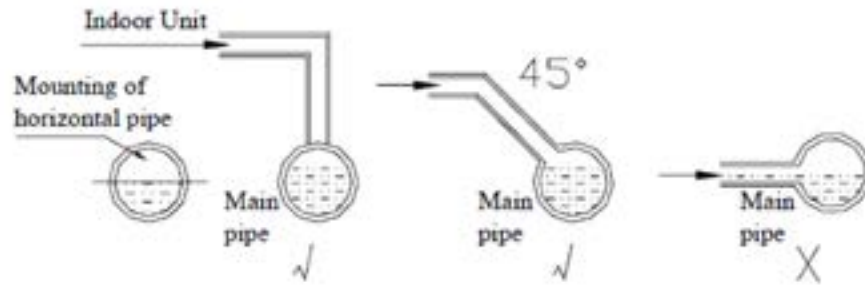
3) The gradient of condensate pipe shall be over 1% and the gradient of main pipe shall not be less than 0.3%, while there shall be no overhanging slope.



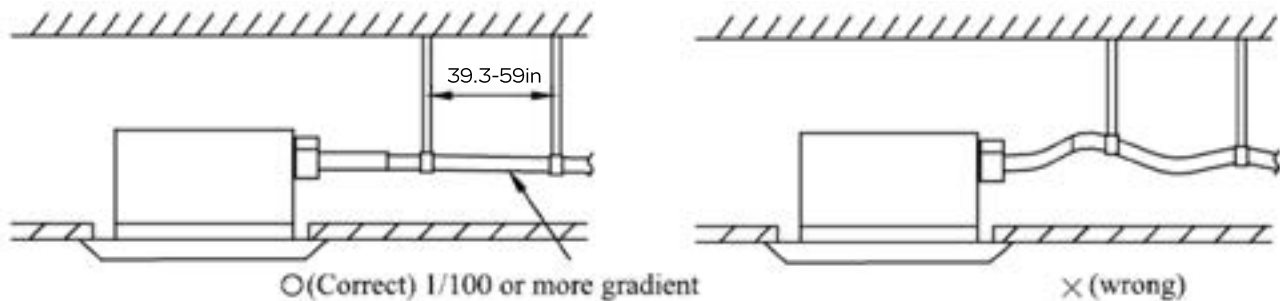
4) When connecting the 3-way section of condensate pipe, the 2-way straight section on 3-way pipe shall be on the same gradient. The two ends of 2-way section shall not have different gradient. See the schematics below:



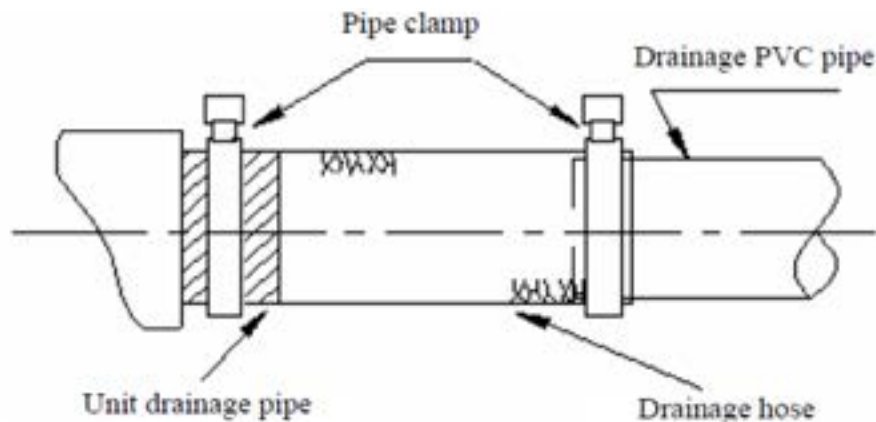
5) Confluence toward the horizontal pipe shall be best from the upper. Back flow is easy to occur if from the lengthwise direction.



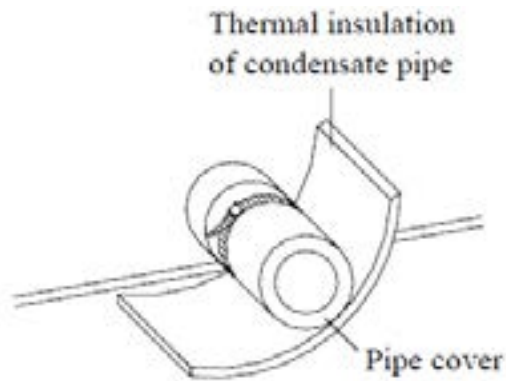
- 6) Do not tie the condensate pipe and refrigerant pipe together.
- 7) To ensure smooth drainage of condensate, a vent hole shall be set at the highest point of drainage pipe.
- 8) Carry out water flow test and full water test after the pipe connection is completed. On one hand, check if the drainage is smooth; on another hand, check the piping system for any leakage.
- 9) Steel sheath shall be provided to the pipe crossing the wall or slab. The pipe joint shall not be positioned within the sheath. The steel sheath shall be flush with the wall surface or slab base, but 0.75in higher than the slab base. The sheath shall not affect the pipe gradient. The clearance between pipe and sheath shall be blocked by using flexible inflammable materials. The sheath shall not be used as the supporting point of the pipe.
- 10) The joint of thermal insulation materials must be adhered by using special glue and then wrapped with plastic tape having a width not less than 2in to avoid condensing.
- 11) Ensure a gradient over 1% when connecting the drainage pipe to the indoor unit.



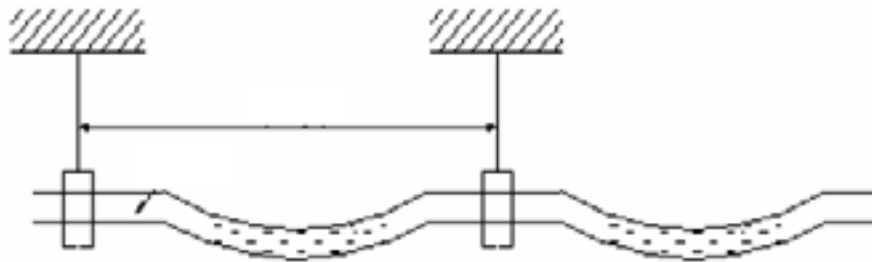
- 12) When connecting the drainage pipe to the indoor unit, please fix with the included pipe clamp and do not use glue water, thus to ensure easy repair.
- 13) Installation requirements for auxiliary drainage pipe



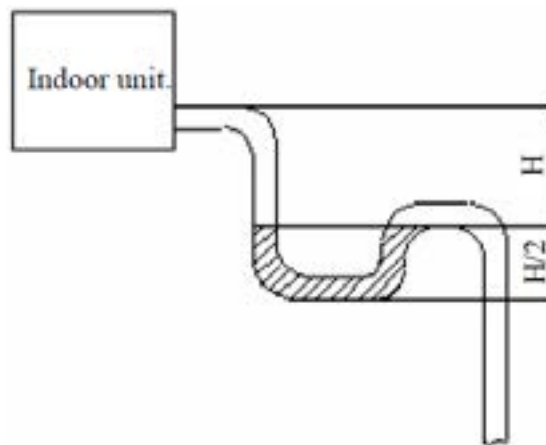
The auxiliary drainage pipe must be thermally insulated:



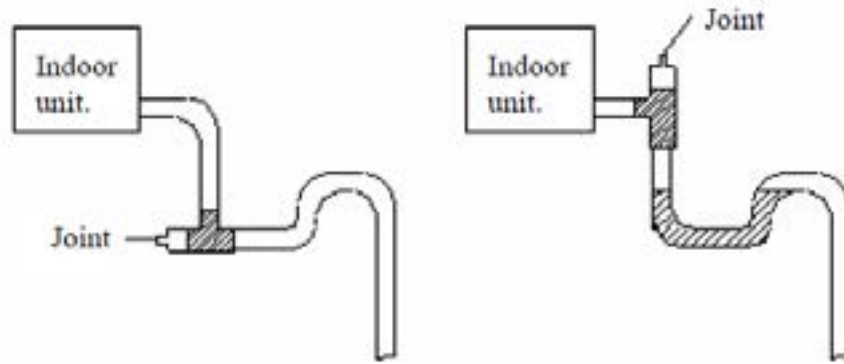
14) The long drainage pipe may be fixed by using hanger bolts, thus to ensure a gradient of 1/100 (PVC cannot be bent). The spacing between the supports of horizontal pipe is 31.5-39.4in. Twisting will be caused and thus air bag will be formed if the spacing is too high. Once the air bag is formed, the pump can only compress the air bag no matter how forcible it pushes, but there is no flowing water, thus resulting in abnormal water level. This will cause flooding of the ceiling.



15) If the air flow of indoor unit is high, this might cause negative pressure and result in return suction of outdoor air. Therefore, U-type water trap shall be designed on the drainage side of each indoor unit.

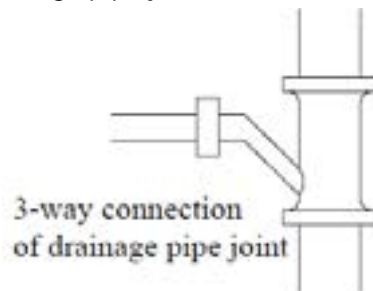


- Install water trap as shown below;
- Install one water trap for each unit.
- Installation of water trap shall consider easy cleaning in the future.

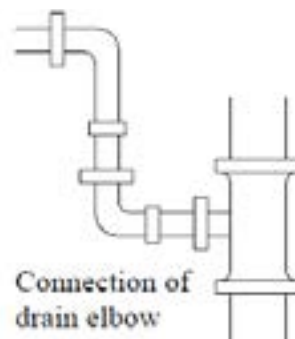


16) Connection of drainage branch pipe to the standpipe or horizontal pipe of drainage main pipe. The horizontal pipe cannot be connected to the vertical pipe at a same height. It can be connected in a manner as shown below:

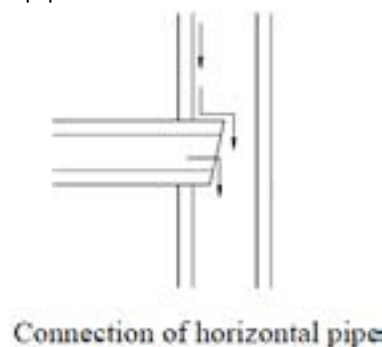
- No.1: 3-way connection of drainage pipe joint



- No.2: Connection of drain elbow



- No.3: Connection of horizontal pipe

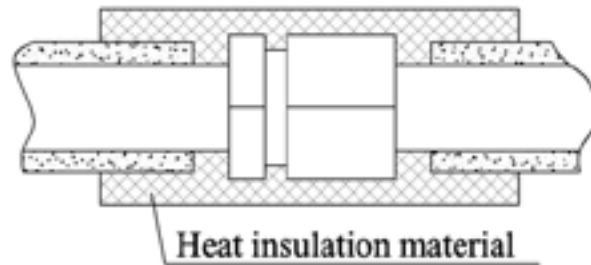


Drainage pipe is requisite for air conditioner unit. During cooling, the moisture in the air will condense on the surface of evaporator. Such condensing water must be drained out of the unit. Meanwhile, the drainage pipe has an important role to determine if the air conditioner can play its full functions.

17) All the condensate pipes must be installed at a distance over 19.7 in. from the electric box of the unit.

9. Installation of Protective Layer on Connection Pipe

- 1) The refrigerant pipes should be insulated by the heat insulation material and plastic tape in order to prevent water condensation and leakage.
- 2) Do not use the foam on the branch pipe as the material for heat insulation.
- 3) The heat insulation material: Heat resistance to 212 F or more; Thickness of 0.35 in. or more.
- 4) The joints of the system should be wrapped with the heat insulation material and no gap is allowed on the joint of the system, as shown in the following figure.



- 5) Bundle the refrigerant pipe and transmission line together with tape, and separate them from the drain pipe to prevent the condensate water overflowing.
- 6) Wrap the pipe from the bottom of the outdoor unit to the top of the pipe where it enters the wall. During the wrapping, the later circle should cover half of the former one.
- 7) At intervals of about 39.4 in, fix the refrigerant pipes to the wall with brackets, that is, don't let the unit withstand the weight of it or float it in the air.

Caution !

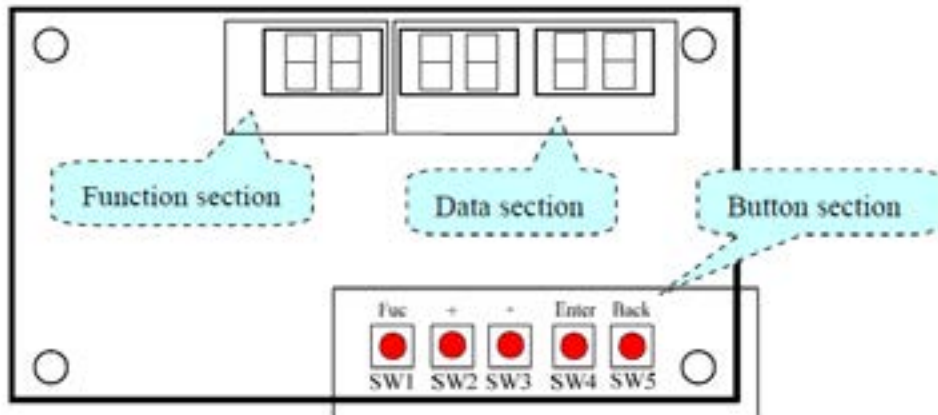
- After the pipe is protected well enough, never bend it to form a small angle ($<90^\circ$), otherwise it would crack or break.
- Do not wrap the refrigerant pipes very tight, otherwise the insulation effect would be weakened. Additionally, make sure the drain hose is separated from the refrigerant pipes.
- After that, cover the hole on the wall with sealing materials to prevent wind and noise going into the room.

Part II: Maintenance

10. Testing Board Introductiontion Pipe

10.1 Compose of Testing Board

The testing board is in front of electrical box and can be observed well. It has several following advantages: detect indoor unit numbers and indoor unit address, displays real running function and error code automatically. It is composed of the function section, data section and button section.



10.2 Instruction of Function and Data Section

Running state	The display of function section	The display of data section		
Stop	1) The section will display the numbers of the indoor units which have established communication with the outdoor unit. For example, if there are seven established indoor units, the section will display "7". 2) It will display the address of the indoor units by turns. For example, the "1b" is represented of the indoor unit 1B.(BU module:1/2/3, Indoor unit: A/b/C/d/E)	1) If the function section displays the numbers of the indoor units, the data section will display the outside temperature. For example, the "35" is represented of 35C. 2) If the function section displays the address of the indoor unit, the data section will display the model of the indoor unit, for example, the "35" is represented of 35 model.		
Normal	The Code of Running State:			
	Code	Running state	Code	Running state
	UE	Pressure equalization	UH	Heating
	UP	Pump Down	F7	Oil Returning
	UC	Cooling	H1	Defrosting
Malfunction	If the malfunction occurs in the system, the section will display the error code. If there are several malfunctions, it will display the error codes by turns at intervals of 2 seconds.	1) If the malfunction occurs in the outdoor unit, the section displays nothing; 2) If the malfunction occurs in the indoor units, the section displays the address of the indoor unit.		

10.3 Process Control Setting

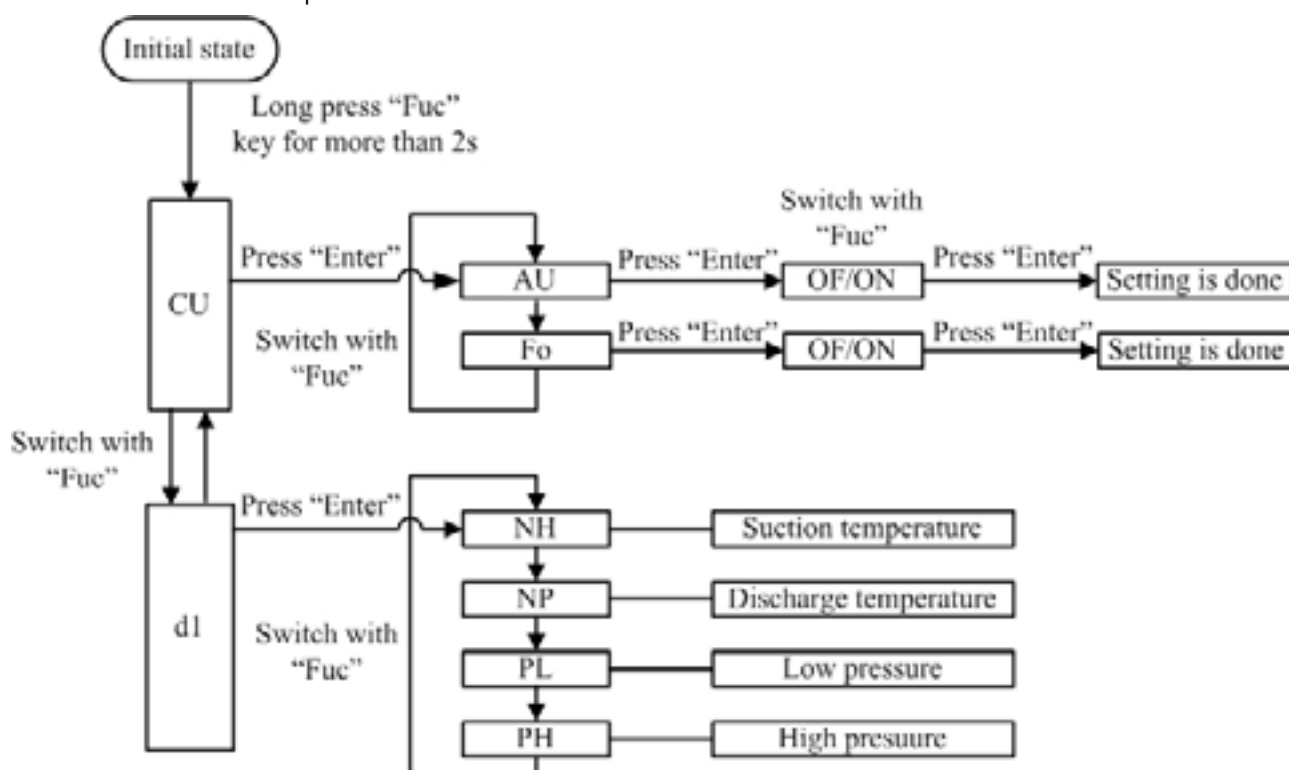
10.3.1 Button section

Key	Fuc	+	-	Enter	Back
Signification	Function	Increase	Decrease	Enter	Back

⚠ Caution !

- 1) When entering the menu to set parameters, the function section will flash running codes and the data section will flash the current parameters.
- 2) When the menu is set, the data section will flash "=". After the "=" stops blinking, the unit will run the new parameters.

10.3.2 Flow chart of operation



Note:

1) Long press "Fuc" key for more than 2s to enter the first-level menu. The first-level menu includes control unit and display unit 1.

- Press "Enter" key to enter the second-level menu.
- Press "Fuc" key to switch the menu.
- Press "Back" key to the previous menu.

2) Control unit (CU) operation:

● When entering into the control unit:

The function section flashes the running code and the data section display the current parameter uninterrupted.

● Set parameters:

Press "Enter" key to enter the second-level menu, and set parameters with the "+" "-" keys. Now the function section displays the running code uninterrupted and the data section flashes the set parameters.

● Finish setting:

After press "Enter" key to the end, the function section will display the running code uninterrupted and the data section display the set parameters uninterrupted.

● **Back:**

Press "Back" key to the previous menu, and long press the "Back" key to exit the operation.

3) Display unit 1(d1) operation:

● **When entering into the display unit 1:**

The function section display running code uninterrupted and the data section display the current value uninterrupted.

● **"+" "-"Keys are invalid in the operation.**

4) If no operation is performed within 1min, it will automatically return to the normal display.

10.3.3 The meaning of running code

Sorts	Function section	Data section	Remarks
Control Unit	CU	Blank	
Vacuum operation	AU	The current parameter	Use the "+" "-" keys to switch ON, OF. ● ON represents that the unit is running the current state. ● OF represents that the unit is not running the current state.
Set refrigerant recovery mode	Fo	The current parameter	
Display Unit 1	d1	Blank	
Display suction temperature	NH	Suction temperature. For example, 15 represents 15C	"+" "-"Keys are invalid in the operation.
Display discharge temperature	NP	Discharge temperature. For example, 70 represents 70C	
Display low pressure	PL	Low pressure. For example, 95 represents 0.95Mpa	
Display high pressure	PH	High pressure. For example, 280 represents 2.80Mpa	

10.3.4 For example: How to Display low pressure

- 1) Long press "Fuc" key for more than 2s to enter the first-level menu: the function section flashes "CU" code and the data section is blank.
- 2) Switch with the "Fuc" key again: the function section flashes "d1" code and the data section is blank.
- 3) Press "Enter" key to enter the second-level menu: the function section flashes "NH" code and the data section display the current suction temperature.
- 4) Switch with the "Fuc" key to display low pressure: the function section flashes "PL" code and the data section display the current low pressure.

10.3.5 How to Recover the refrigerant to the outdoor unit

- 1) Let all the indoor units work in the Cooling mode for more than half one hour.
- 2) Set the units running the "Fo" mode.
 - Long press "Fuc" key for more than 2s to enter the first-level menu: the function section flashes "CU" code and the data section is blank.
 - Press "Enter" key to enter the second-level menu: the function section flashes "AU" code and the data section display the current parameters.
 - Switch with the "Fuc" key until the function section flashes "Fo" code and the data section display the current parameters.
 - Press "Enter" key: the function section display "Fo" code uninterrupted and the data section flashes the current parameters.

● Switch with the "+" "-" to the target value, and then press "Enter" key: the function section display "Fo" code uninterrupted and the data section flashes the new parameters uninterrupted.

3) After the unit is running in the "Fo" mode, please turn off the liquid stop valve.

4) Check the low pressure by operating the testing board. If the low pressure is 0.03Mpa for more than 30 second, please turn off the gas stop valve.

Note:

If the operation of Recover the refrigerant is not complete in ten minutes, it will exit automatic.

11. Troubleshooting

Warning!

a. In the event of abnormal conditions (like, stinky smell), please shut off the main power supply immediately and then contact the GREE appointed service center; otherwise the continuous abnormal running would damage the air conditioning unit and also would cause electric shock or fire hazard etc.

b. Do not repair the air conditioner personally but instead contact the professionally skilled personnel at the GREE appointed service center, as the incorrect repair would cause electric shock or fire hazard etc.

11.1 Check before Contacting Maintenance Serviceman

Please check the following items before contacting the maintenance serviceman.

Conditions	Causes	Corrective Actions
The unit does not run at all	Broken fuse or breaker is off	Replace the damaged fuse or close the breaker
	Power off	Restart the unit after power supply resumes
	Power supply plug is loose	Plug the power supply properly
	The batteries voltage of the remote controller is insufficient	Replace with new batteries
	Remote controller is out of the control scope	The distance shall be within 8m
The unit stops soon after it starts	Air inlet or outlet of indoor unit or outdoor unit is blocked	Remove the obstacles
Cooling or heating is abnormal	Air inlet or outlet of indoor unit or outdoor unit is blocked	Remove the obstacles
	Temperature setting is improper	Adjust the setting of remote controller or wire controller
	Air speed is set too low	Adjust the setting of remote controller or wire controller
	Improper airflow direction	Adjust the setting of remote controller or wire controller
	Door or window is open	Close the door or window
	Under direct sunshine	Hang curtain or blinders over the window
	Too many people in the room	
	Too many heat sources indoors	Reduce the heat sources
	The filter screen is dirt or blocked	Clean the filter screen

Note:

If the air conditioner still runs abnormally after the above check and handling, please contact the local appointed service center and also give a description of the error occurred as well as the model of the unit.

11.2 Problem Handling

The conditions listed below are not classified into errors.

Conditions		Causes
The unit does not run	When restart the unit soon after it is stopped	The overload protection switch of the unit let the startup delayed for three minutes
	As soon as power supply is on	The unit will stand by for approximate one minute
The unit blows out mist	When the cooling operation starts	The hi-humidity air indoor is cooled quickly
The unit generates noise	The unit "clatters" as soon as it starts running	It is the sound generated during the initialization of the electronic expansion valve
	The unit "swishes" during the cooling operation	It is the sound when the refrigerant gas runs inside the unit
	The unit "swishes" when it is started or stopped	It is the sound when the refrigerant gas stops running
	The unit "swishes" when it is in and after the running	It is the sound when the draining system is operating
	The unit "squeaks" when it is in and after the running	It is the sound of friction generated by the skin plate etc which swells due to the temperature change
The unit blows out dust	When the unit restarts after it is not used for a long time	The dust inside the unit is blown out again
The unit emits odors	When the unit is running	The odors absorbed in are blown out

11.3 Error description

● Outdoor unit

If some error occurs when the unit is running, the error code will be displayed on the wired controller, the testing board  of the outdoor unit. Check for more details about the meaning of each error.

Errors of definition	Main control display for outdoor unit			Indoor unit code	Testing board code
	Yellow LED	Red LED	Green LED		
The compressor is startup	Flash 1 time				
IPM current protection	Flash 3 times			H5	
IPM temperature protection	Flash 5 times			P8	P8
PFC current protection	Flash 7 times				HC
PFC temperature protection	Flash 8 times			P8	P8
Low voltage protection	Flash 9 times			PL	PL
High voltage protection	Flash 10 times			PH	PH
Low pressure protection	Flash 11 times				E3
High pressure protection	Flash 12 times				E8
High pressure switch protection	Flash 13 times				E1
Capacitor charging error	Flash 14 times				PU
AC current protection	Flash 15 times			E5	E5
Memory card error	Flash 16 times				EE
Compressor demagnetizing protection	Flash 17 times			HE	HE
Compressor desynchronizing	Flash 18 times			H7	H7
Compressor phase lack	Flash 19 times			U2	U2
Compressor phase circuit detection error	Flash 20 times			U1	U1

Errors of Definition	Main control display for outdoor unit			In-door code	out-door code
	Yellow LED	Red LED	Green LED		
Compressor power protection	Flash 21 times			L9	L9
Compressor overload protection	Flash 22 times			H3	H3
Compressor discharge temperature protection	Flash 23 times			E4	E4
Lack of refrigerant or jam protection	Flash 31 times			F0	F0
Normal operation		Flash 1 time			
Frequency limitation for AC current		Flash 2 times			F8
Oil returning		Flash 3 times			F7
Defrosting		Flash 4 times		H1	H1
Frequency limitation for IPM temperature		Flash 5 times			EU
Frequency limitation for PFC temperature		Flash 6 times			EU
Frequency limitation for compressor overload		Flash 8 times			LU
Frequency limitation for compressor discharge temperature		Flash 9 times			F9
Frequency limitation for low pressure		Flash 10 times			Pn
Frequency limitation for high pressure		Flash 11 times			F6
Discharge temperature sensor error		Flash 12 times		F5	F5
Outdoor temperature sensor error		Flash 13 times		F3	F3
Suction temperature sensor error		Flash 15 times			dc
Condenser temperature sensor error		Flash 16 times		A7	A7
Sub-cool temperature sensor error		Flash 17 times			bC
Low pressure sensor error		Flash 18 times			dL
High pressure sensor error		Flash 19 times			e1
Fan motor error for indoor unit		Flash 20 times		H6	H6
Driving board is connected		Flash 7 times	Flash 1 time		
Testing board is connected			Flash 2 times		
Computer is connected			Flash 4 times		
Indoor unit 1 is connected			Flash 5 times		
Indoor unit 2 is connected			Flash 6 times		
Indoor unit 3 is connected			Flash 7 times		
Indoor unit 4 is connected			Flash 8 times		
Indoor unit 5 is connected			Flash 9 times		
Indoor unit 6 is connected			Flash 10 times		
Indoor unit 7 is connected			Flash 11 times		
Indoor unit 8 is connected			Flash 12 times		
Indoor unit 9 is connected			Flash 13 times		
Indoor unit anti-freeze protection				E2	E2
Indoor temperature sensor error				F1	F1
Indoor evaporator midway temperature sensor error				F2	F2
Temperature sensor error for liquid pipe of BU module				b5	b5
Temperature sensor error for gas pipe of BU module				b7	b7

Errors of Definition	Main control display for outdoor unit			In-door code	out-door code
	Yellow LED	Red LED	Green LED		
Running mode conflicts				E7	E7
Communication error				E6	E6
Communication error between the mainboard and driving board					P6
Communication error between the main board and testing board					CE
Gas sensor error of indoor unit					Fn
Humidity sensor error of indoor unit					L1
Water full error of indoor unit				E9	E9
Jumper terminal error of indoor unit				C5	C5
Phase lack of power supply					dJ
Fan motor error of outdoor unit					L3
Refrigerant recovery mode				Fo	Fo
Total capacity index of to be connected indoor units is less than 50%				LCP	
Total capacity index of to be connected indoor units is more than 150%				OCP	

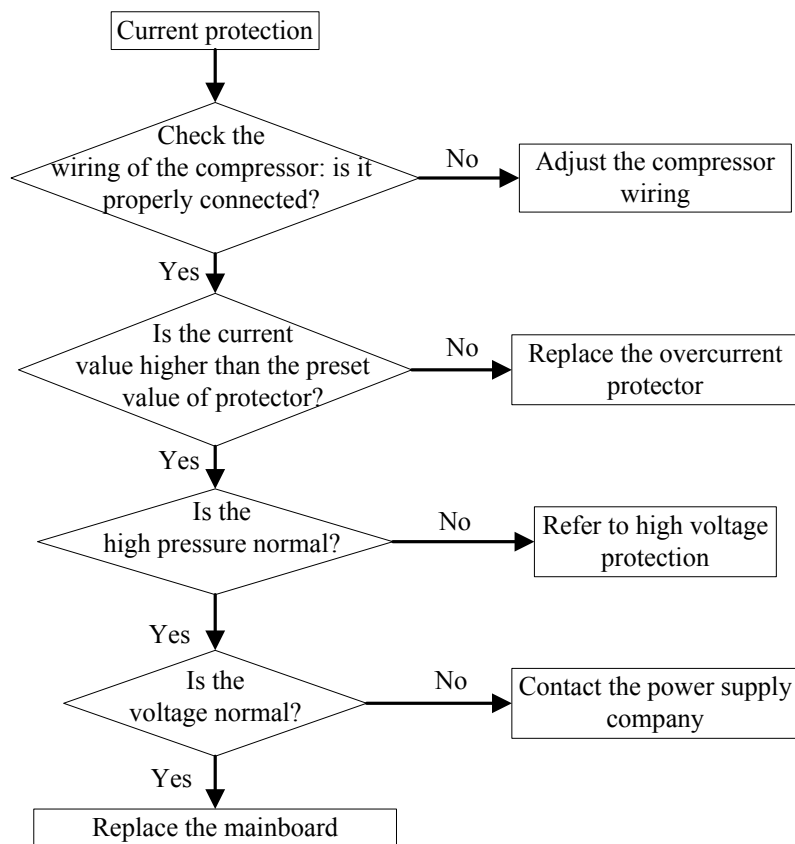
● BU module

Errors of Definition	Main control display for outdoor unit			In-door code	outdoor code
	Yellow LED	Red LED	Green LED		
BU 1 is connected	Flash 1 time				
BU 2 is connected	Flash 2 times				
BU 3 is connected	Flash 3 times				
Indoor unit A is connected		Flash 1 time			
Indoor unit B is connected		Flash 2 times			
Indoor unit C is connected		Flash 3 times			
Indoor unit D is connected		Flash 4 times			
Indoor unit E is connected		Flash 5 times			
Indoor unit A gas tube temperature sensor error			Flash 1 time	b7	b7 indoor unit address
Indoor unit A liquid tube temperature sensor error			Flash 2 times	b5	b5 indoor unit address
Indoor unit B gas tube temperature sensor error			Flash 3 times	b7	b7 indoor unit address
Indoor unit B liquid tube temperature sensor error			Flash 4 times	b5	b5 indoor unit address
Indoor unit C gas tube temperature sensor error			Flash 5 times	b7	b7 indoor unit address
Indoor unit C liquid tube temperature sensor error			Flash 6 times	b5	b5 indoor unit address
Indoor unit C liquid tube temperature sensor error			Flash 7 time	b7	b7 indoor unit address
Indoor unit D liquid tube temperature sensor error			Flash 8 times	b5	b5 indoor unit address
Indoor unit E gas tube temperature sensor error			Flash 9 time	b7	b7 indoor unit address
Indoor unit E liquid tube temperature sensor error			Flash 10 times	b5	b5 indoor unit address

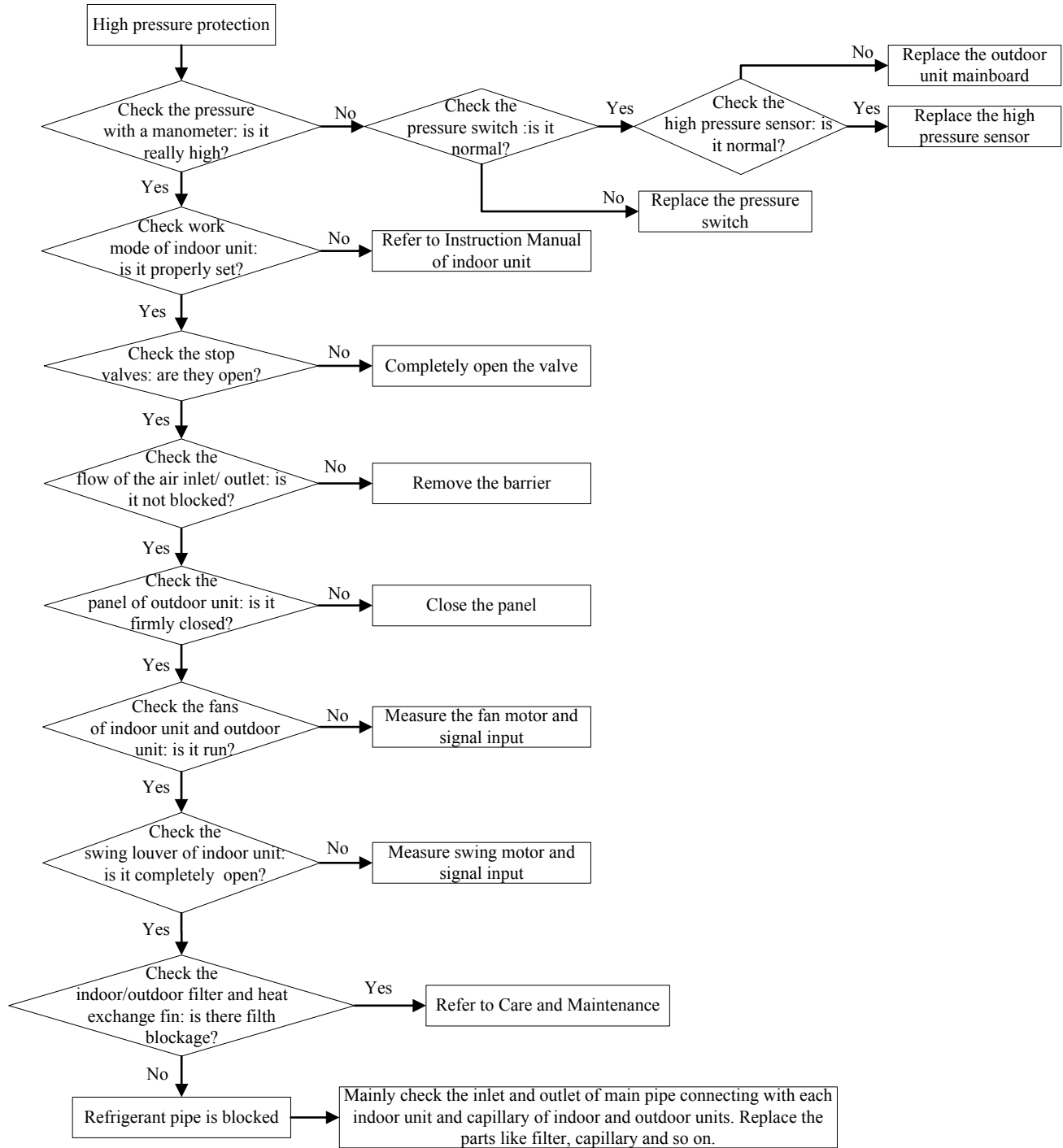
12. FLOW CHART OF TROUBLESHOOTING

Service personnel shall collect the malfunction information as much as possible and research them thoroughly, list these electrical parts which may cause malfunction, and shall be able to determine the specific reason and solve the faulted parts. Observe the status of the complete device and do not observe the partial. It is advised to start from the simple operation during analyzing, judging and confirming malfunction reason, then conduct the complicated operations such removal of device, part replacement and refrigerant filling. Find the malfunction reason carefully as unit may occur several malfunction at the same time and one malfunction may develop into several malfunction, so entire system analysis shall be established to make the judged result exact and credible.

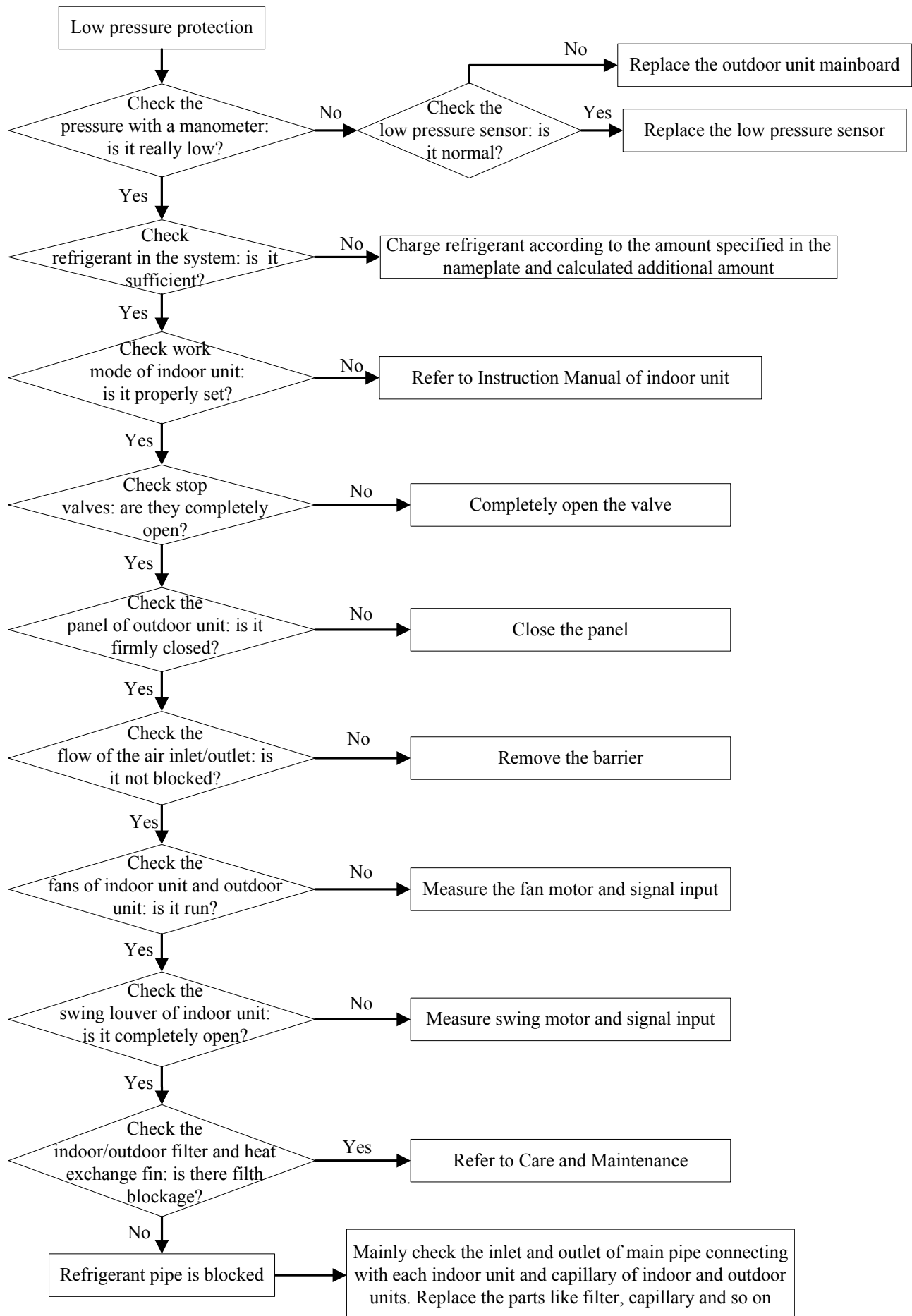
12.1 Malfunction display: Current Protection



12.2 Malfunction of display: High Pressure Protection

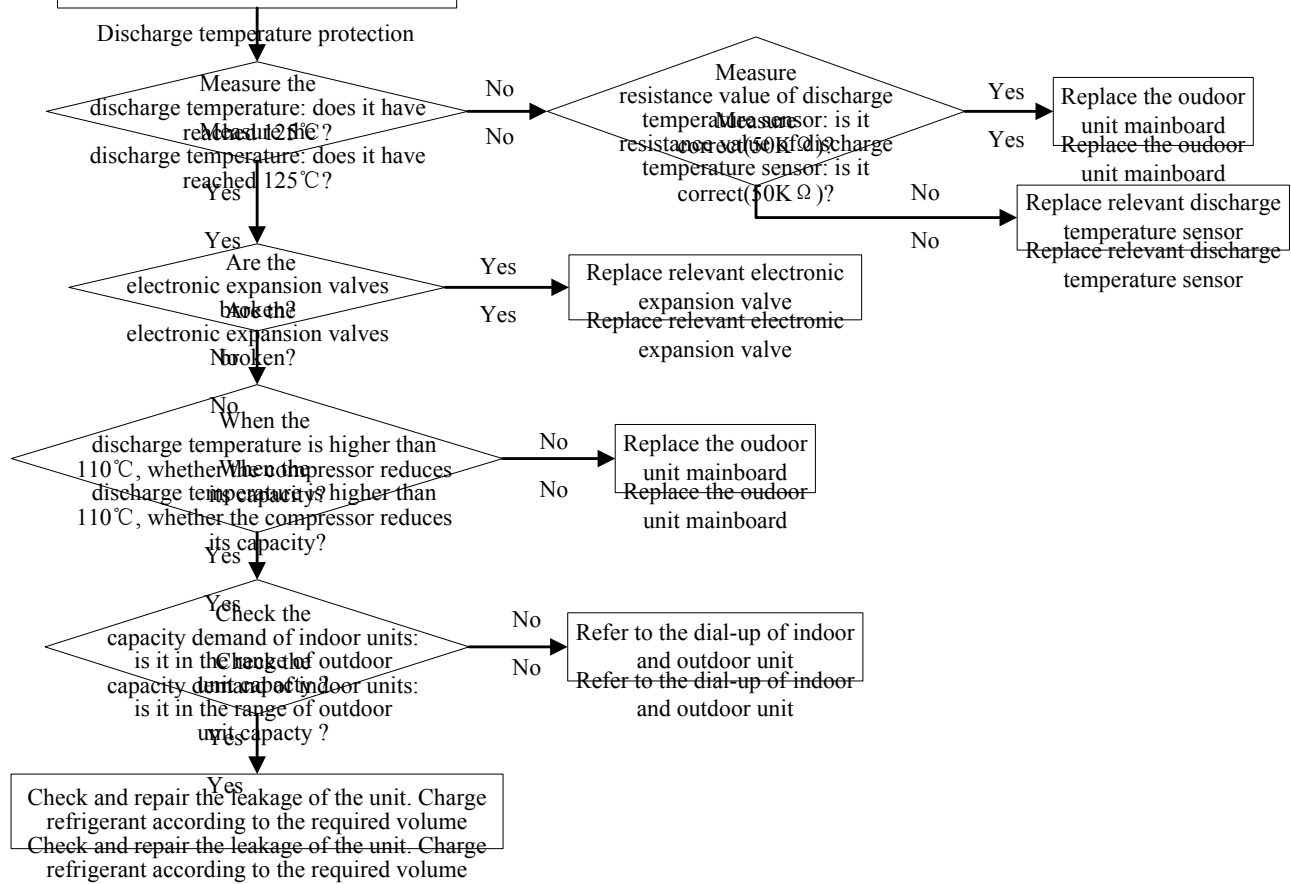


12.3 Malfunction display: Low Pressure Protection

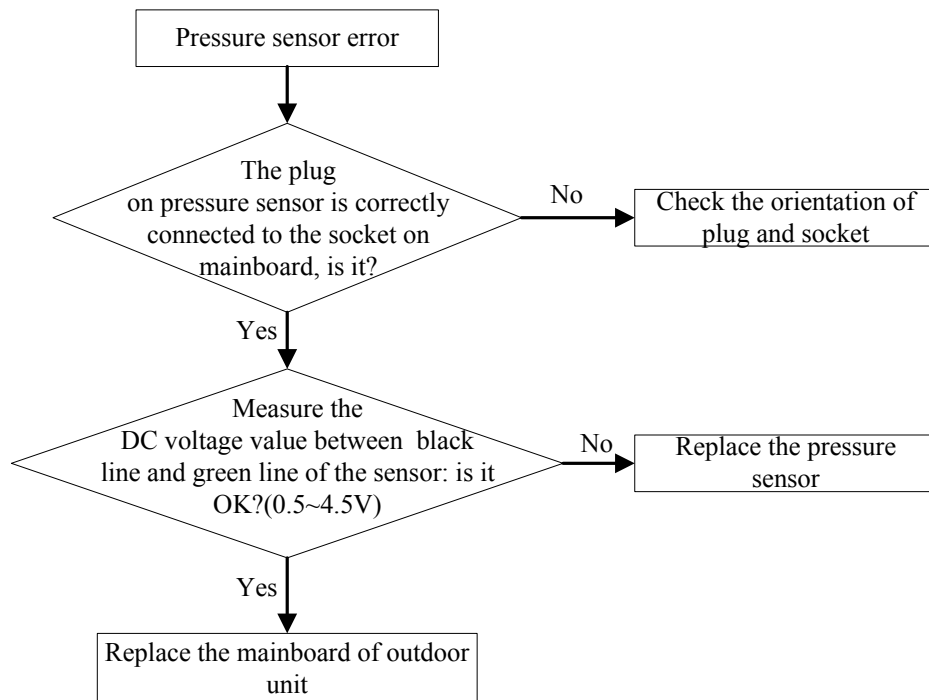


12.4 Malfunction display: Discharge temperature protection

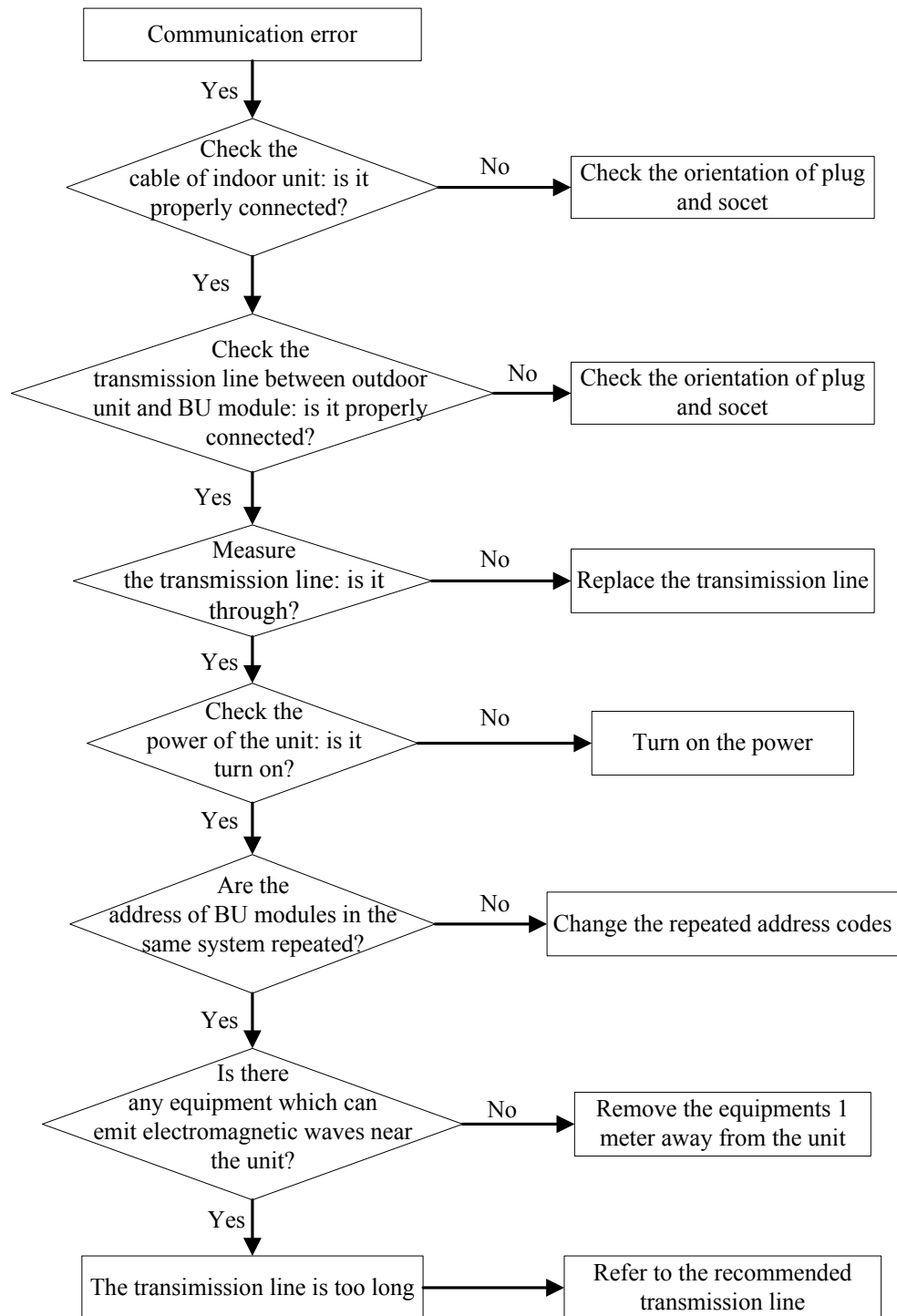
3.4 Malfunction display: Discharge temperature protection



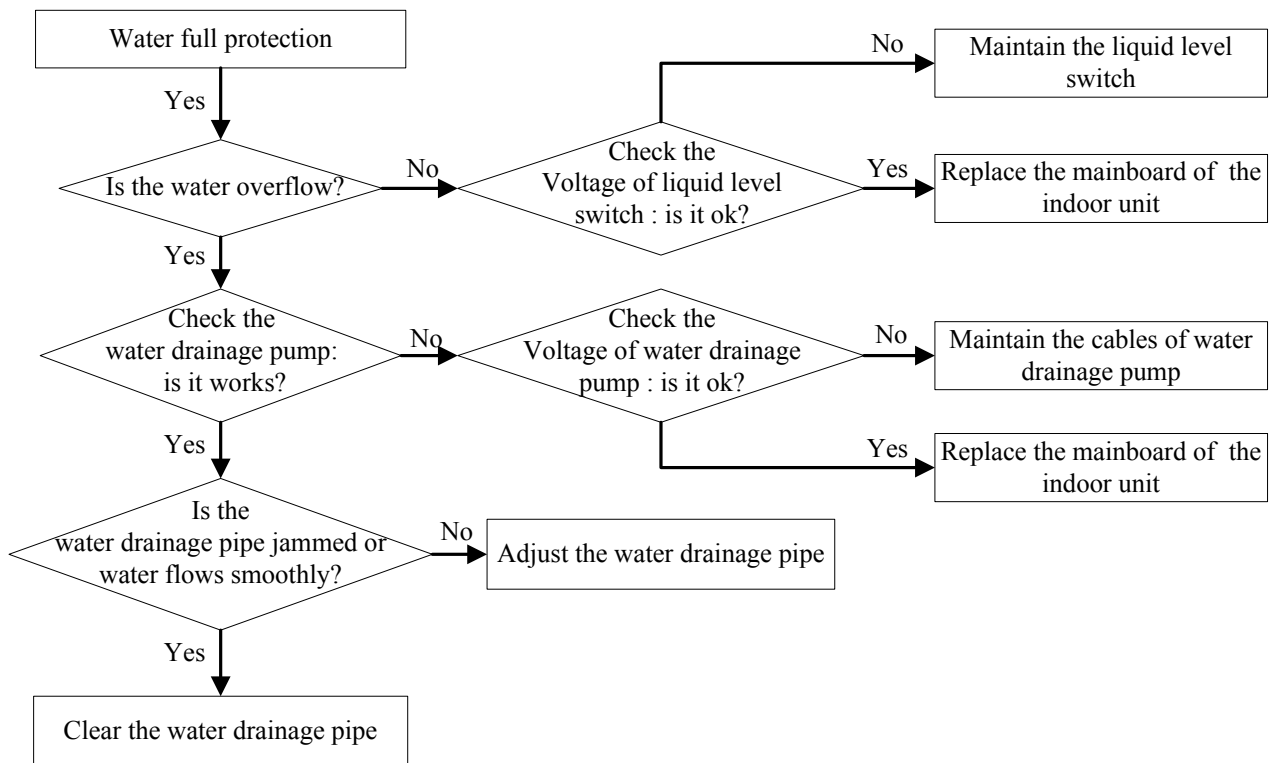
12.5 Malfunction display: High/Low pressure sensor error



12.6 Malfunction display: Communication error



12.7 Malfunction display: Indoor unit water full protection

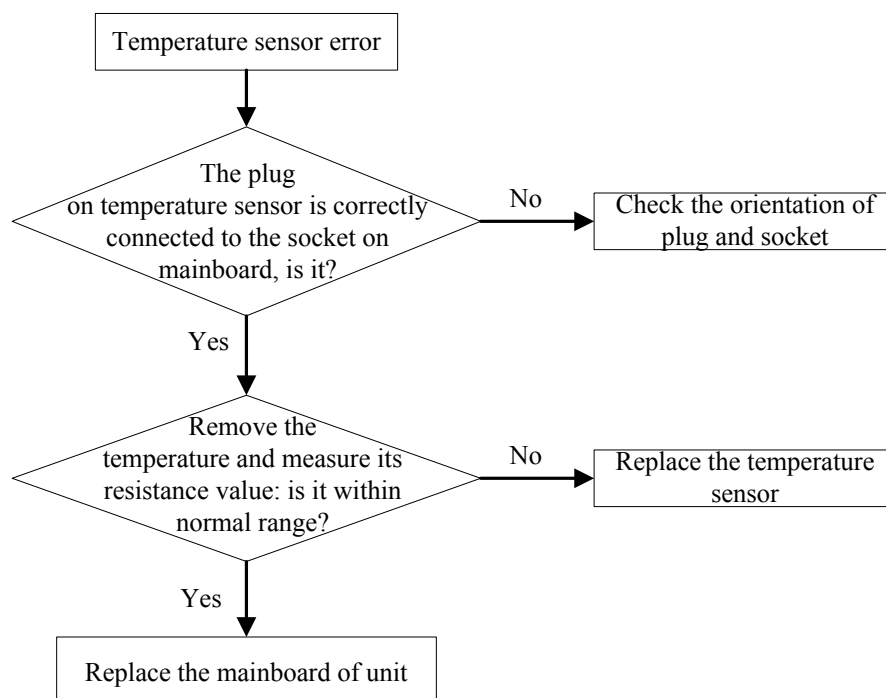


12.8 Malfunction display: Temperature sensor error

The resistance value of discharge temperature sensor is 50 K Ω ;

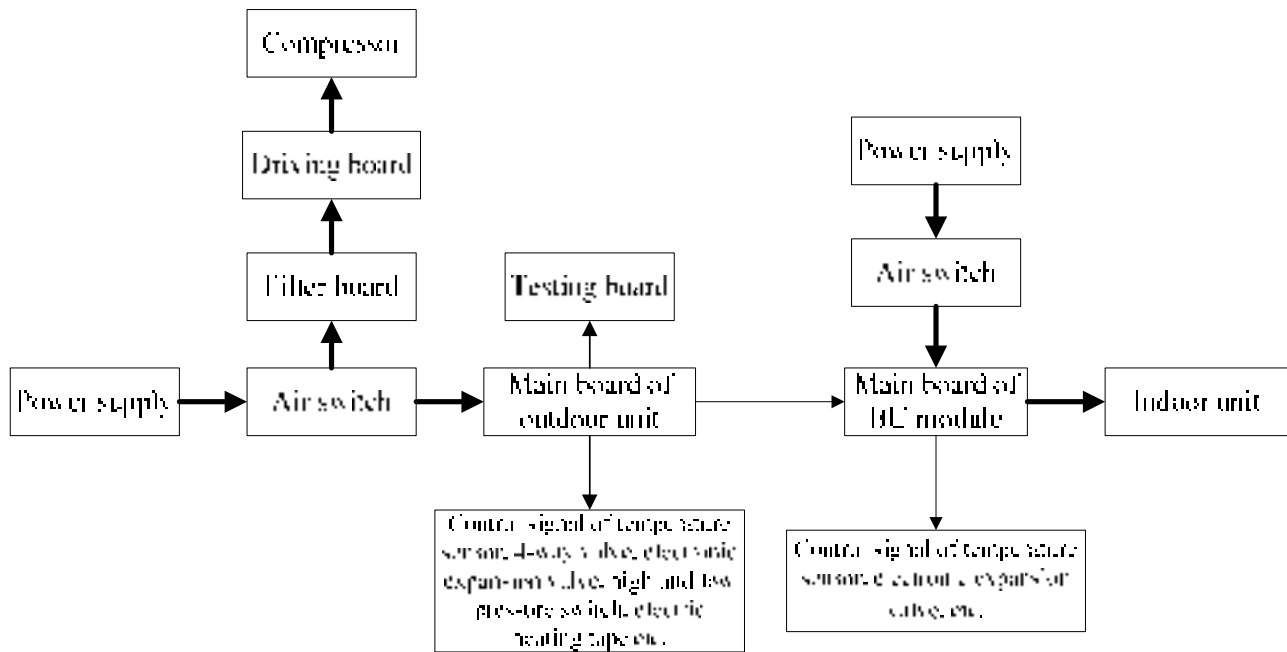
The resistance value of outside temperature sensor and inside temperature sensor are all 15 K Ω ;

The others are 20 K Ω .



13. POWER DISTRIBUTION

13.1 Diagram of Power Distribution

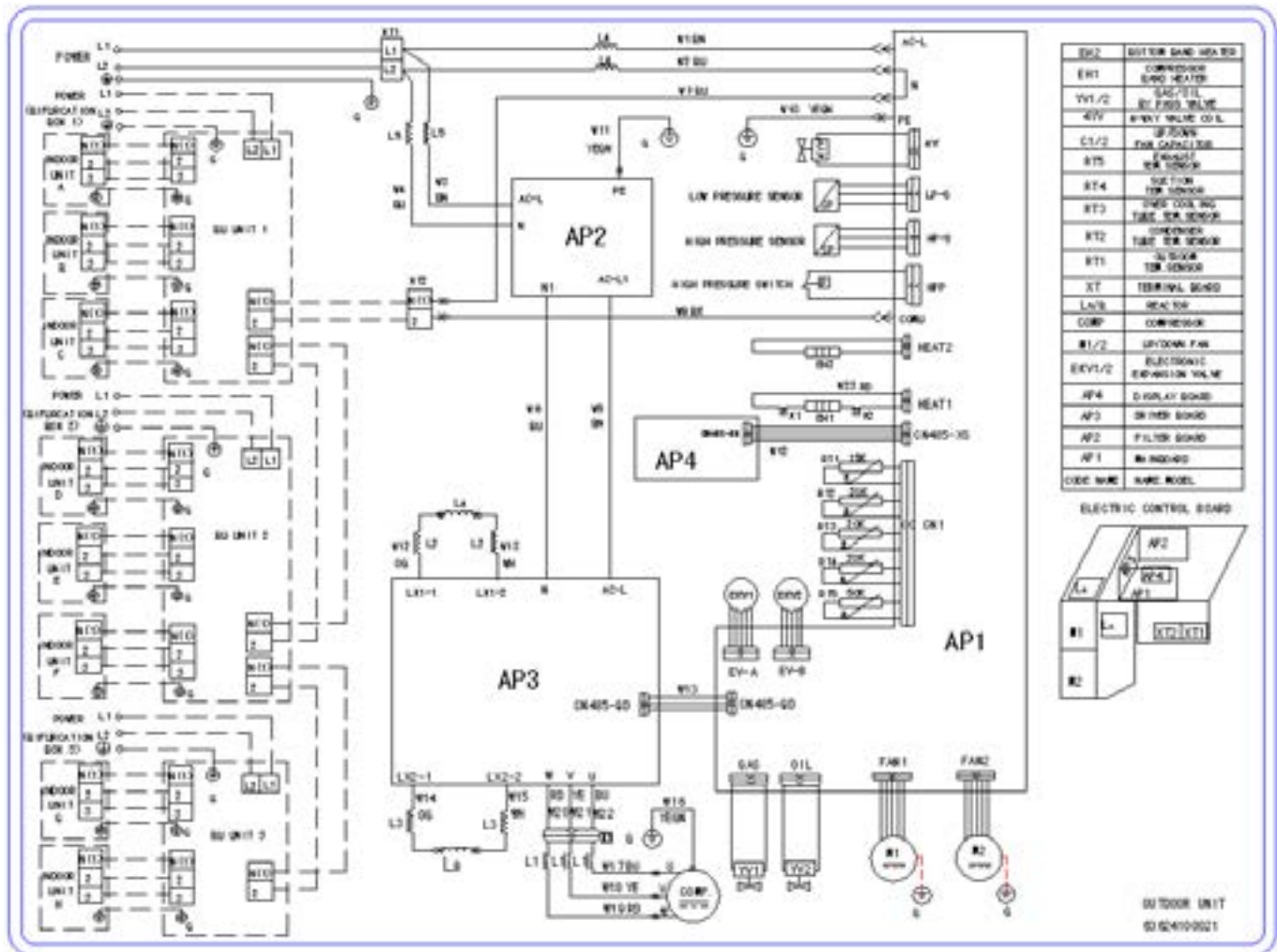


(The thick line represents power line while thin line represents the control line.)

13.2 Wiring diagram

13.2.1 Outdoor unit

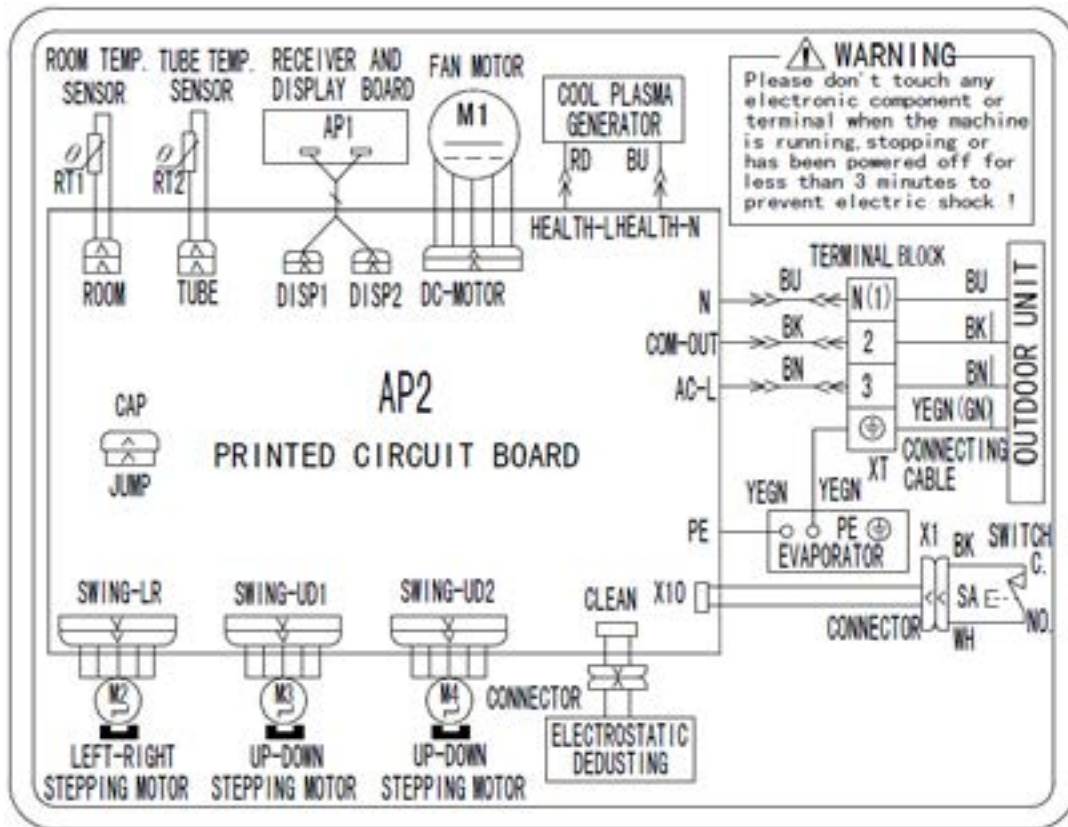
AWHD(56S)ND3CO; AWHD(48S)ND3CO



13.2.2 Indoor unit

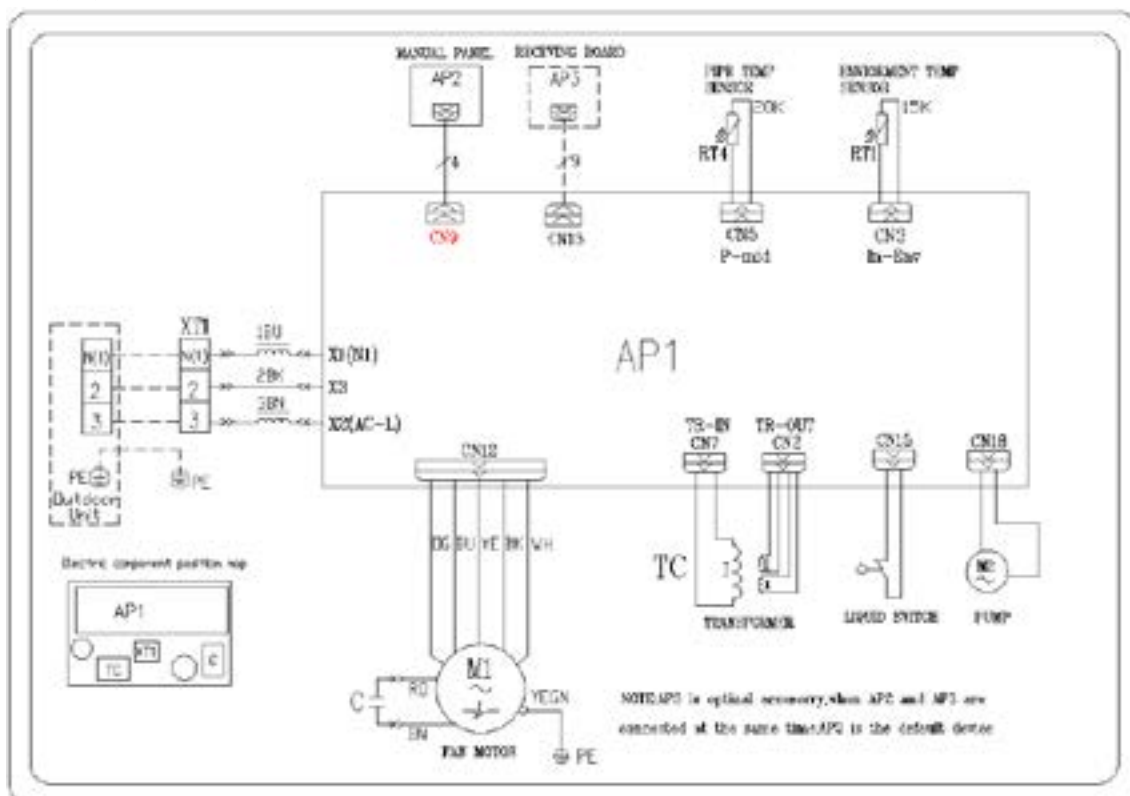
1) Wall mounted type

AWH09TB-D3DNA3D/I; AWH12TB-D3DNA3D/I; AWH18TC-D3DNA3D/I;
AWH24TD-D3DNA3D/I



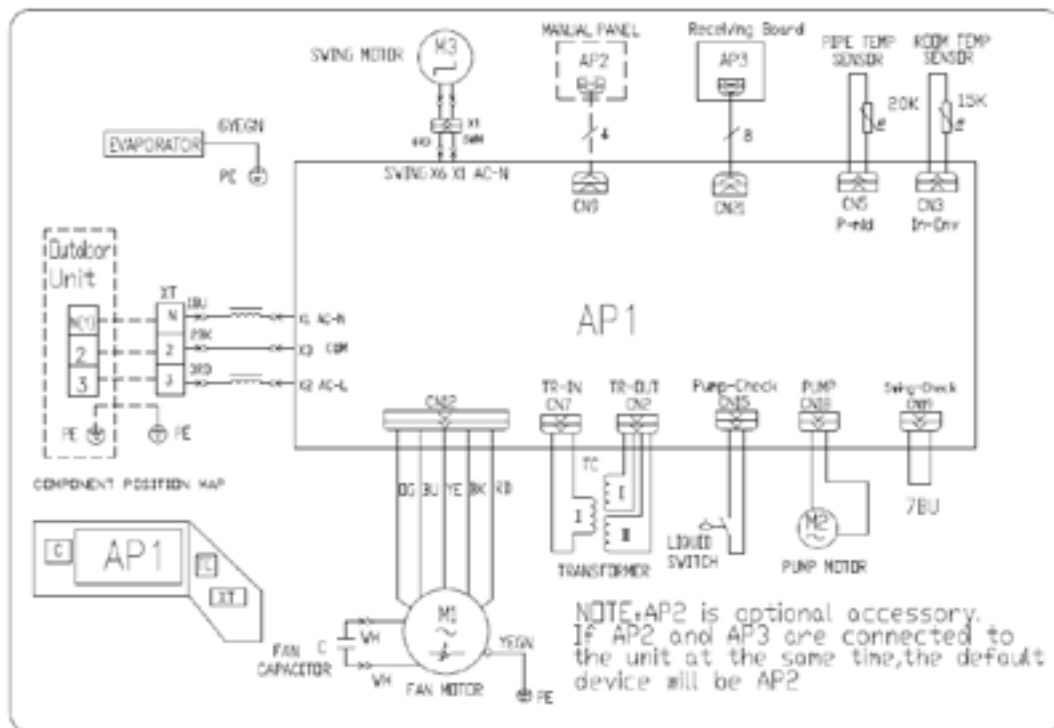
2) Duct type

AFH(09)EA-D3DNA1A/I; AFH(12)EA-D3DNA1A/I; AFH(18)EA-D3DNA1A/I;
AFH(24)EA-D3DNA1A/I



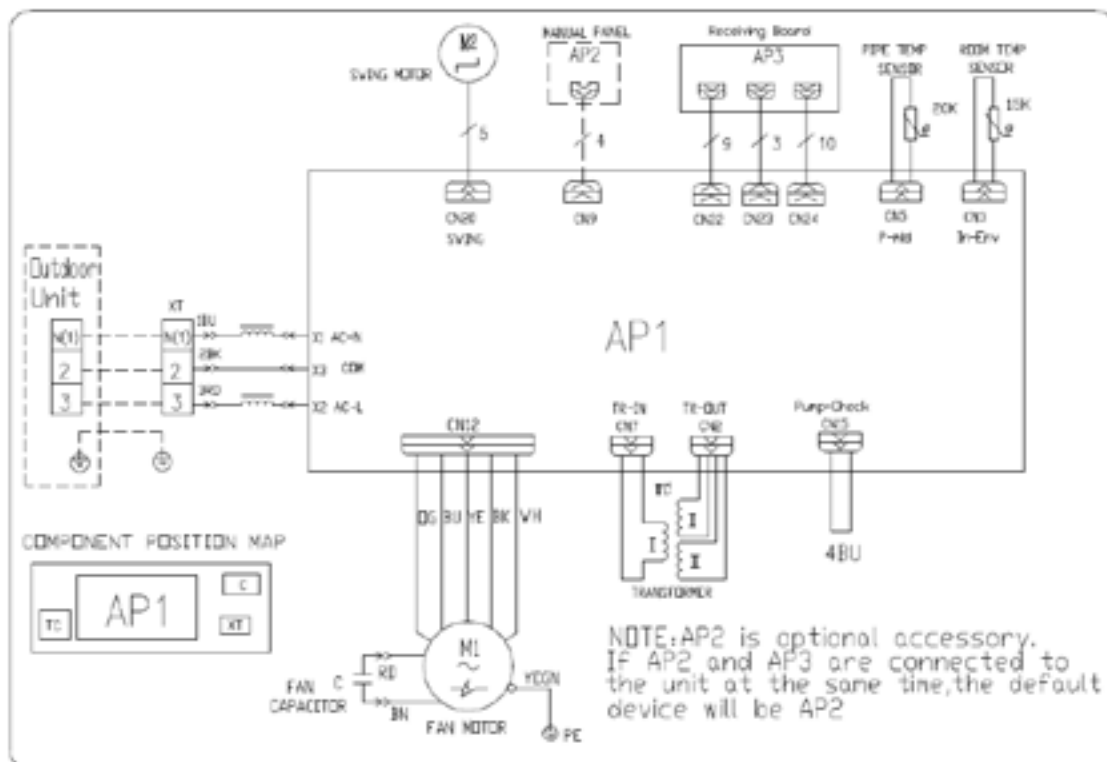
3) Cassette

AKH(12)BA-D3DNA2A/I; AKH(18)BA-D3DNA2A/I; AKH(24)BA-D3DNA1A/I



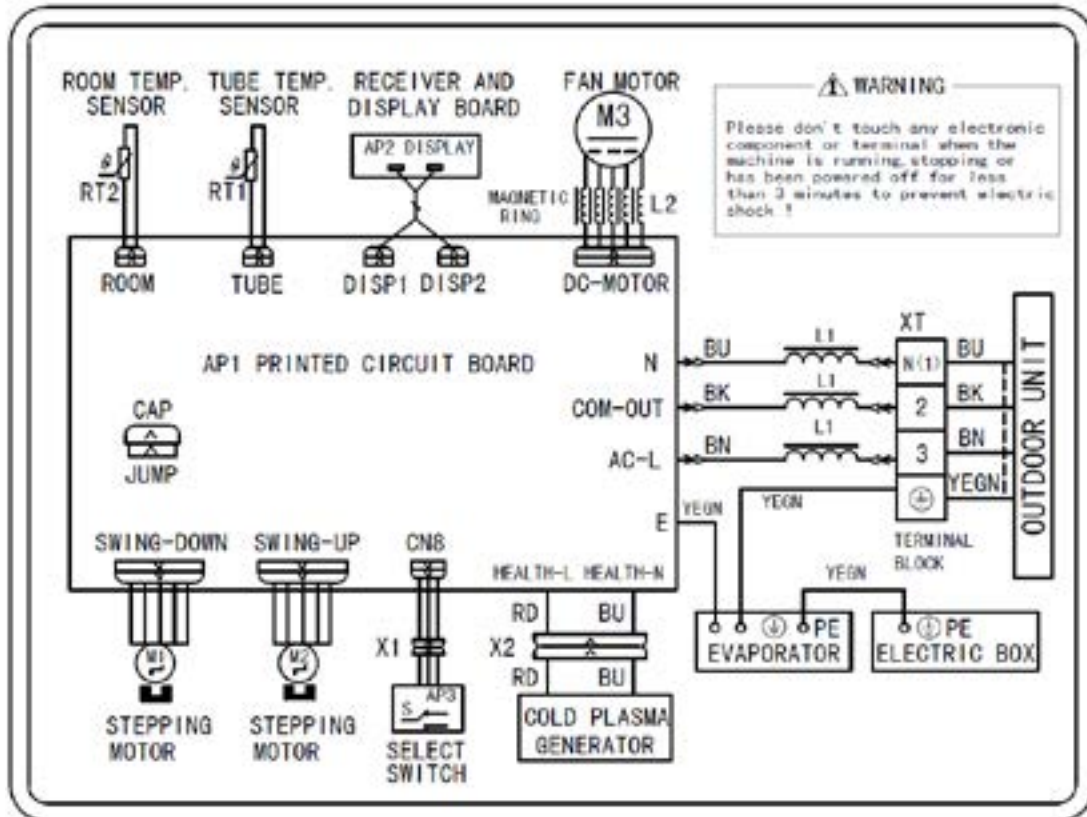
4) Floor ceiling

ATH(09)BA-D3DNA1A/I; ATH(12)BA-D3DNA1A/I; ATH(18)BA-D3DNA1A/I; ATH(24)BA-D3DNA1A/I



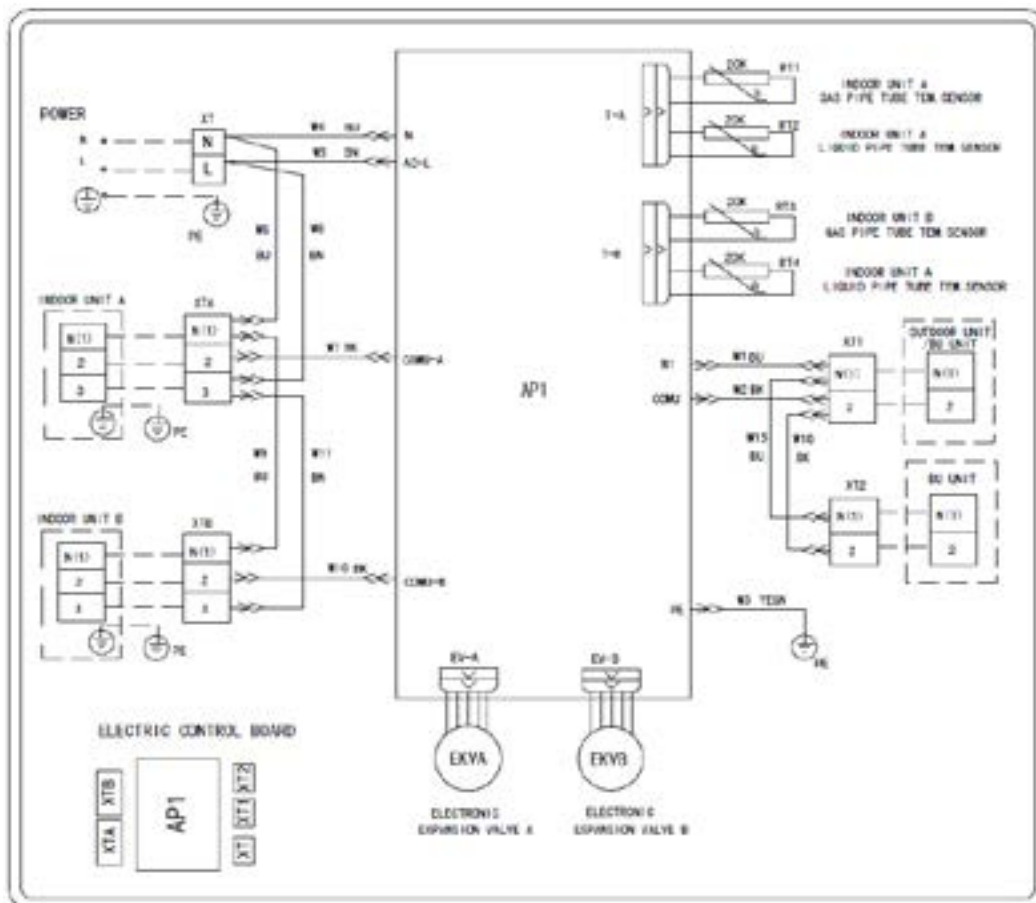
5) Console

AEH(09)AA-D3DNA1C/I; AEH(12)AA-D3DNA1C/I; AEH(18)AA-D3DNA1C/I

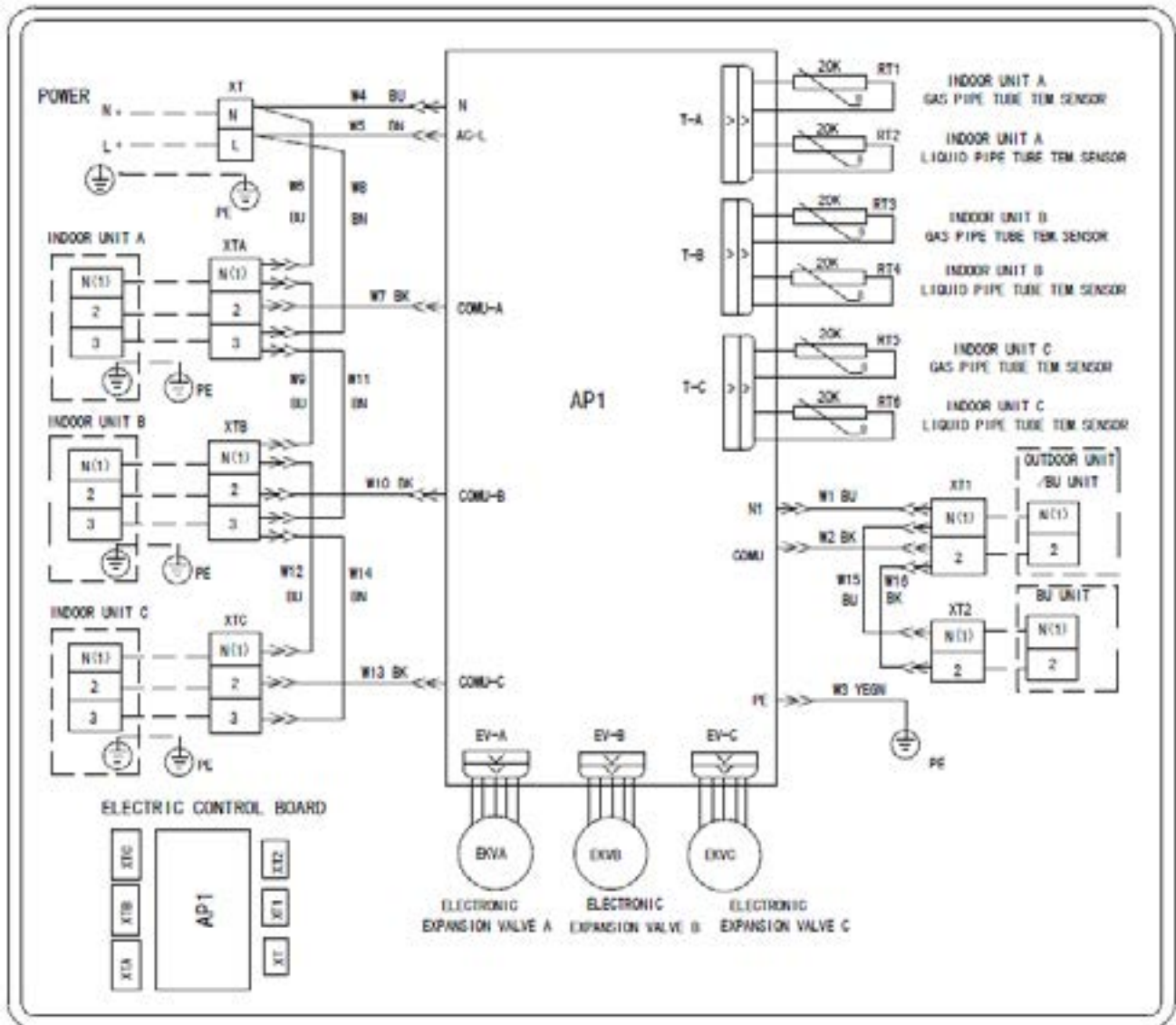


13.2.3 BU module

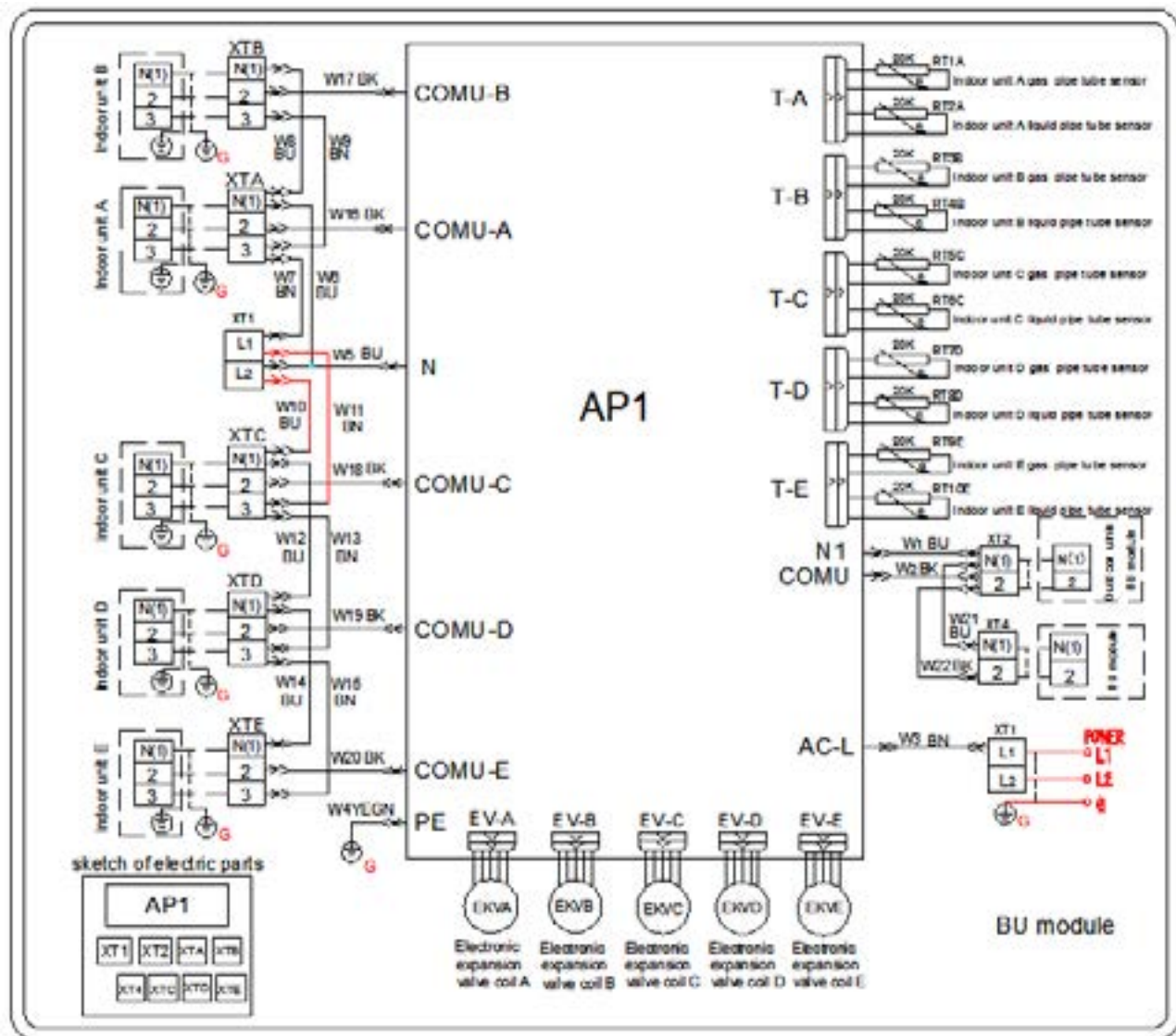
FXA2B-D



FXA3B-D



FXB5A-D



14. THE RESISTANCES OF COMMON TEMPERATURE SENSORS

14.1 15 K Ω

Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)
-4	144.000	0.472	0.311	68	18.750	2.222	1.467
-2.2	138.100	0.490	0.323	69.8	17.930	2.278	1.503
-0.4	128.600	0.522	0.345	71.6	17.140	2.334	1.540
1.4	121.600	0.549	0.362	73.4	16.390	2.389	1.577
3.2	115.000	0.577	0.381	75.2	15.680	2.445	1.613
5	108.700	0.606	0.400	77	15.000	2.500	1.650
6.8	102.900	0.636	0.420	78.8	14.360	2.554	1.686
8.6	97.400	0.667	0.440	80.6	13.740	2.610	1.722
10.4	92.220	0.699	0.462	82.4	13.160	2.663	1.758
12.2	87.350	0.733	0.484	84.2	12.600	2.717	1.793
14	82.750	0.767	0.506	86	12.070	2.771	1.829
15.8	78.430	0.803	0.530	87.8	11.570	2.823	1.863
17.6	74.350	0.839	0.554	89.6	11.090	2.875	1.897
19.4	70.500	0.877	0.579	91.4	10.630	2.926	1.931
21.2	66.880	0.916	0.605	93.23	10.200	2.976	1.964
23	63.460	0.956	0.631	95	9.779	3.027	1.998
24.8	60.230	0.997	0.658	96.8	9.382	3.076	2.030
26.6	57.180	1.039	0.686	98.6	9.003	3.125	2.062
28.4	54.310	1.082	0.714	100.4	8.642	3.172	2.094
30.2	51.590	1.126	0.743	102.2	8.297	3.219	2.125
32	49.020	1.172	0.773	105.8	7.653	3.311	2.185
33.8	46.800	1.214	0.801	107.6	7.352	3.355	2.215
35.6	44.310	1.265	0.835	109.4	7.065	3.399	2.243
37.4	42.140	1.313	0.866	111.2	6.791	3.442	2.272
39.2	40.090	1.361	0.899	113	6.529	3.484	2.299
41	38.150	1.411	0.931	114.8	6.278	3.525	2.326
42.8	36.320	1.461	0.965	116.6	6.038	3.565	2.353
44.6	34.580	1.513	0.998	118.4	5.809	3.604	2.379
46.4	32.940	1.564	1.033	120.2	5.589	3.643	2.404
48.2	31.380	1.617	1.067	122	5.379	3.680	2.429
50	29.900	1.670	1.102	123.8	5.179	3.717	2.453
51.8	28.510	1.724	1.138	125.6	4.986	3.753	2.477
53.6	27.180	1.778	1.174	127.4	4.802	3.787	2.500
55.4	25.920	1.833	1.210	129.2	4.625	3.822	2.522
57.2	24.730	1.888	1.246	131	4.456	3.855	2.544
59	23.600	1.943	1.282	132.8	4.294	3.887	2.566
60.8	22.530	1.998	1.319	134.6	4.139	3.919	2.586
62.6	21.510	2.054	1.356	136.4	3.990	3.949	2.607
64.4	20.540	2.110	1.393	138.2	3.848	3.979	2.626
66.2	19.630	2.166	1.429	140	3.711	4.008	2.646

Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)
141.8	3.579	4.037	2.664	150.8	2.998	4.167	2.750
143.6	3.454	4.064	2.682	152.6	2.898	4.190	2.766
145.4	3.333	4.091	2.700	154.4	2.797	4.214	2.781
147.2	3.217	4.117	2.717	156.2	2.702	4.237	2.796
149	3.105	4.143	2.734	158	2.611	4.259	2.811

24.2 20 K Ω

Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)
-22	361.8	0.262	0.173	35.6	59.08	1.265	0.835
-20.2	339.8	0.278	0.183	37.4	56.19	1.313	0.866
-18.4	319.2	0.295	0.195	39.2	53.46	1.361	0.898
-16.6	300	0.313	0.206	41	50.87	1.411	0.931
-14.8	282.2	0.331	0.218	42.8	48.42	1.462	0.965
-13	265.5	0.350	0.231	44.6	46.11	1.513	0.998
-11.2	249.9	0.371	0.245	46.4	43.92	1.564	1.033
-9.4	235.3	0.392	0.259	48.2	41.84	1.617	1.067
-7.6	221.6	0.414	0.273	50	39.87	1.670	1.102
-5.8	208.9	0.437	0.288	51.8	38.01	1.724	1.138
-4	196.9	0.461	0.304	53.6	36.24	1.778	1.174
-2.2	181.4	0.497	0.328	55.4	34.57	1.833	1.209
-0.4	171.4	0.522	0.345	57.2	32.98	1.888	1.246
1.4	162.1	0.549	0.362	59	31.47	1.943	1.282
3.2	153.3	0.577	0.381	60.8	30.04	1.998	1.319
5	145	0.606	0.400	62.6	28.68	2.054	1.356
6.8	137.2	0.636	0.420	64.4	27.39	2.110	1.393
8.6	129.9	0.667	0.440	66.2	26.17	2.166	1.429
10.4	123	0.699	0.462	68	25.01	2.222	1.466
12.2	116.5	0.733	0.484	69.8	23.9	2.278	1.503
14	110.3	0.767	0.507	71.6	22.85	2.334	1.540
15.8	104.6	0.803	0.530	73.4	21.85	2.389	1.577
17.6	99.13	0.839	0.554	75.2	20.9	2.445	1.614
19.4	94	0.877	0.579	77	20	2.500	1.650
21.2	89.17	0.916	0.605	78.8	19.14	2.555	1.686
23	84.61	0.956	0.631	80.6	18.32	2.610	1.722
24.8	80.31	0.997	0.658	82.4	17.55	2.663	1.758
26.6	76.24	1.039	0.686	84.2	16.8	2.717	1.793
28.4	72.41	1.082	0.714	86	16.1	2.770	1.828
30.2	68.79	1.126	0.743	87.8	15.43	2.822	1.863
32	65.37	1.171	0.773	89.6	14.79	2.874	1.897
33.8	62.13	1.218	0.804	91.4	14.18	2.926	1.931

Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)
93.2	13.59	2.977	1.965	131	5.942	3.855	2.544
95	13.04	3.027	1.998	132.8	5.726	3.887	2.565
96.8	12.51	3.076	2.030	134.6	5.519	3.919	2.586
98.6	12	3.125	2.063	136.4	5.32	3.949	2.607
100.4	11.52	3.173	2.094	138.2	5.13	3.979	2.626
102.2	11.06	3.220	2.125	140	4.948	4.008	2.646
104	10.62	3.266	2.155	141.8	4.773	4.037	2.664
105.8	10.2	3.311	2.185	143.6	4.605	4.064	2.682
107.6	9.803	3.355	2.215	145.4	4.443	4.091	2.700
109.4	9.42	3.399	2.243	147.2	4.289	4.117	2.717
111.2	9.054	3.442	2.272	149	4.14	4.143	2.734
113	8.705	3.484	2.299	150.8	3.998	4.167	2.750
114.8	8.37	3.525	2.326	152.6	3.861	4.191	2.766
116.6	8.051	3.565	2.353	154.4	3.729	4.214	2.781
118.4	7.745	3.604	2.379	156.2	3.603	4.237	2.796
120.2	7.453	3.643	2.404	158	3.481	4.259	2.811
122	7.173	3.680	2.429	159.8	3.364	4.280	2.825
123.8	6.905	3.717	2.453	161.6	3.252	4.301	2.838
125.6	6.648	3.753	2.477	163.4	3.144	4.321	2.852
127.4	6.403	3.787	2.500	165.2	3.04	4.340	2.865
129.2	6.167	3.822	2.522	167	2.94	4.359	2.877

24.3 50 K Ω

Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (k Ω)	Voltage (15K/5V)	Voltage (15K/3.3V)
-22	911.56	0.054	0.036	6.8	342.83	0.142	0.094
-20.2	853.66	0.058	0.038	8.6	323.94	0.150	0.099
-18.4	799.98	0.062	0.041	10.4	306.23	0.158	0.104
-16.6	750.18	0.066	0.043	12.2	289.61	0.167	0.110
-14.8	703.92	0.070	0.046	14	274.02	0.176	0.116
-13	660.93	0.075	0.049	15.8	259.37	0.186	0.123
-11.2	620.94	0.079	0.052	17.6	245.61	0.196	0.129
-9.4	583.72	0.084	0.056	19.4	232.67	0.206	0.136
-7.6	549.04	0.089	0.059	21.2	220.5	0.217	0.143
-5.8	516.71	0.095	0.063	23	209.05	0.228	0.151
-4	486.55	0.101	0.066	24.8	198.27	0.240	0.158
-2.2	458.4	0.107	0.070	26.6	188.12	0.252	0.167
-0.4	432.1	0.113	0.075	28.4	178.65	0.265	0.175
1.4	407.51	0.120	0.079	30.2	169.68	0.278	0.184
3.2	384.51	0.127	0.084	32	161.02	0.292	0.193
5	362.99	0.134	0.088	33.8	153	0.307	0.202

Temp. (F)	Resistance (kΩ)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (kΩ)	Voltage (15K/5V)	Voltage (15K/3.3V)
35.6	145.42	0.322	0.212	113	21.425	1.591	1.050
37.4	138.26	0.337	0.223	114.8	20.601	1.634	1.078
39.2	131.5	0.353	0.233	116.6	19.814	1.677	1.107
41	126.17	0.367	0.242	118.4	19.061	1.721	1.136
42.8	119.08	0.387	0.256	120.2	18.34	1.764	1.164
44.6	113.37	0.405	0.267	122	17.651	1.808	1.193
46.4	107.96	0.424	0.280	123.8	16.99	1.853	1.223
48.2	102.85	0.443	0.292	125.6	16.358	1.897	1.252
50	98.006	0.463	0.306	127.4	15.753	1.942	1.281
51.8	93.42	0.483	0.319	129.2	15.173	1.986	1.311
53.6	89.075	0.505	0.333	131	14.618	2.031	1.340
55.4	84.956	0.527	0.348	132.8	14.085	2.076	1.370
57.2	81.052	0.549	0.362	134.6	13.575	2.121	1.400
59	77.349	0.572	0.378	136.4	13.086	2.166	1.429
60.8	73.896	0.596	0.393	138.2	12.617	2.211	1.459
62.6	70.503	0.621	0.410	140	12.368	2.235	1.475
64.4	67.338	0.647	0.427	141.8	11.736	2.300	1.518
66.2	64.333	0.673	0.444	143.6	11.322	2.345	1.548
68	61.478	0.700	0.462	145.4	10.925	2.389	1.577
69.8	58.766	0.727	0.480	147.2	10.544	2.434	1.606
71.6	56.189	0.755	0.499	149	10.178	2.478	1.635
73.4	53.738	0.784	0.518	150.8	9.8269	2.522	1.664
75.2	51.408	0.814	0.537	152.6	9.4896	2.565	1.693
77	49.191	0.845	0.558	154.4	9.1655	2.609	1.722
78.8	47.082	0.876	0.578	156.2	8.9542	2.638	1.741
80.6	45.074	0.908	0.599	158	8.5551	2.695	1.778
82.4	43.163	0.941	0.621	159.8	8.2676	2.737	1.806
84.2	41.313	0.974	0.643	161.6	7.9913	2.779	1.834
86	39.61	1.008	0.665	163.4	7.7257	2.821	1.862
87.8	37.958	1.043	0.688	165.2	7.4702	2.862	1.889
89.6	36.384	1.078	0.711	167	7.2245	2.903	1.916
91.4	34.883	1.114	0.735	168.8	6.9882	2.943	1.943
93.2	33.453	1.151	0.759	170.6	6.7608	2.983	1.969
95	32.088	1.188	0.784	172.4	6.542	3.023	1.995
96.8	30.787	1.226	0.809	174.2	6.3315	3.062	2.021
98.6	29.544	1.264	0.835	176	6.1288	3.100	2.046
100.4	28.359	1.303	0.860	177.8	5.9336	3.138	2.071
102.2	27.227	1.343	0.886	179.6	5.7457	3.175	2.096
104	26.147	1.383	0.913	181.4	5.5647	3.212	2.120
105.8	25.114	1.424	0.940	183.2	5.3903	3.249	2.144
107.6	24.128	1.465	0.967	185	5.2223	3.285	2.168
109.4	23.186	1.507	0.994	186.8	5.0605	3.320	2.191
111.2	22.286	1.549	1.022	188.6	4.9044	3.355	2.214

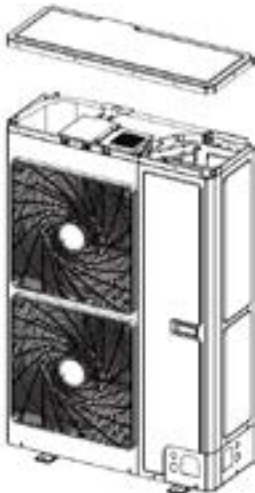
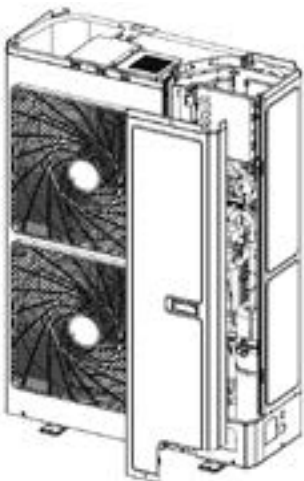
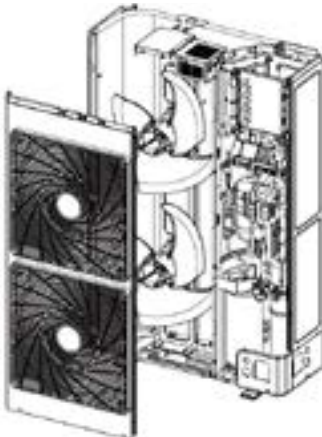
109Temp. (F)	Resistance (kΩ)	Voltage (15K/5V)	Voltage (15K/3.3V)	Temp. (F)	Resistance (kΩ)	Voltage (15K/5V)	Voltage (15K/3.3V)
190.4	4.7541	3.389	2.237	230	2.4983	4.001	2.640
192.2	4.6091	3.423	2.259	231.8	2.4308	4.022	2.655
194	4.4693	3.456	2.281	233.6	2.3654	4.044	2.669
195.8	4.3345	3.488	2.302	235.4	2.3021	4.064	2.682
197.6	4.2044	3.520	2.323	237.2	2.2409	4.085	2.696
199.4	4.0789	3.551	2.344	239	2.1816	4.105	2.709
201.2	3.9579	3.582	2.364	240.8	2.1242	4.124	2.722
203	3.841	3.612	2.384	242.6	2.0686	4.143	2.734
204.8	3.7283	3.642	2.404	244.4	2.0148	4.162	2.747
206.6	3.6194	3.671	2.423	246.2	1.9626	4.180	2.759
208.4	3.5143	3.700	2.442	248	1.9123	4.197	2.770
210.2	3.4128	3.728	2.460	249.8	1.8652	4.214	2.781
212	3.3147	3.755	2.478	251.6	1.8158	4.232	2.793
413.6	3.22	3.782	2.496	253.4	1.7698	4.248	2.804
215.6	3.1285	3.809	2.514	255.2	1.7253	4.264	2.814
217.4	3.0401	3.834	2.531	257	1.6821	4.280	2.825
219.2	2.9547	3.860	2.547	258.8	1.6402	4.295	2.835
221	2.8721	3.884	2.564	260.6	1.5996	4.310	2.845
222.8	2.7922	3.909	2.580	262.4	1.5996	4.325	2.855
224.6	2.715	3.932	2.595	264.2	1.522	4.340	2.864
226.4	2.6404	3.956	2.611	266	1.485	4.354	2.873
228.2	2.5682	3.978	2.626				

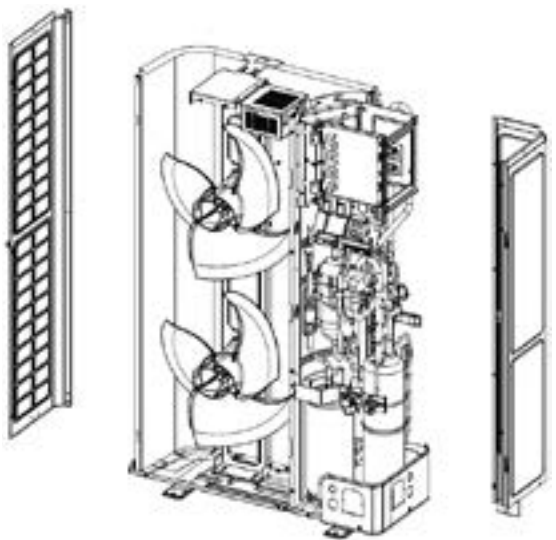
15. DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

15.1 Outdoor Unit

15.1.1 Disassembly and Assembly of the plates

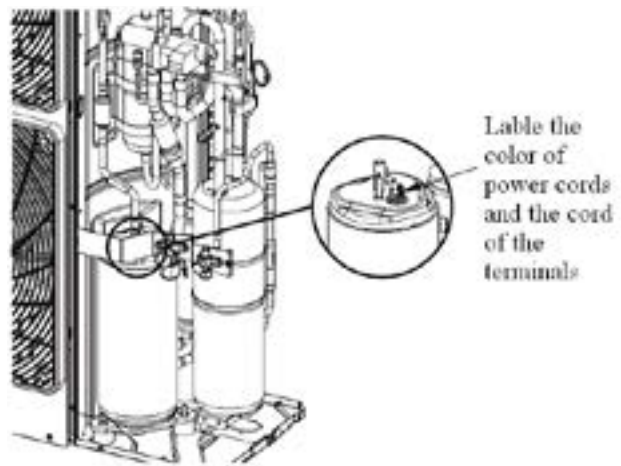
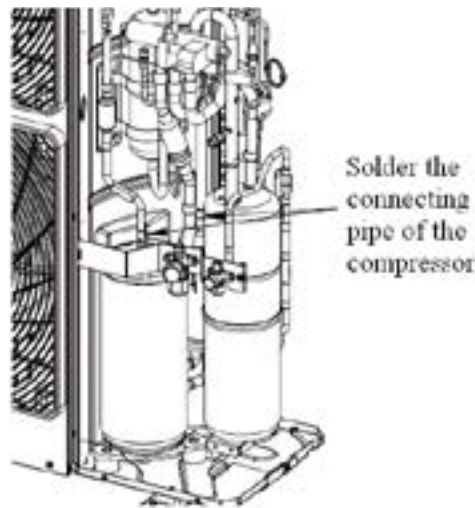
Remarks: Prior to the assembly of the plates, make sure the power supply is cut off.

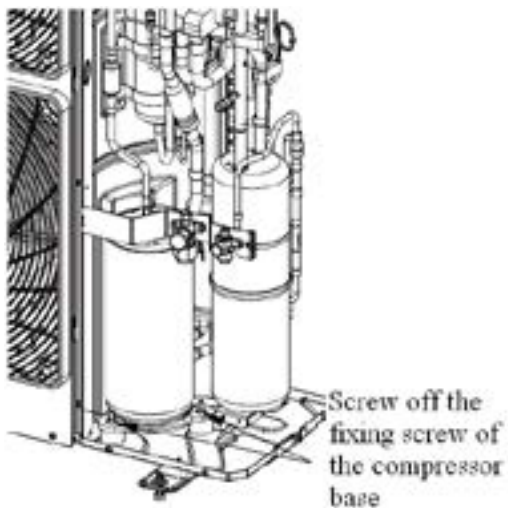
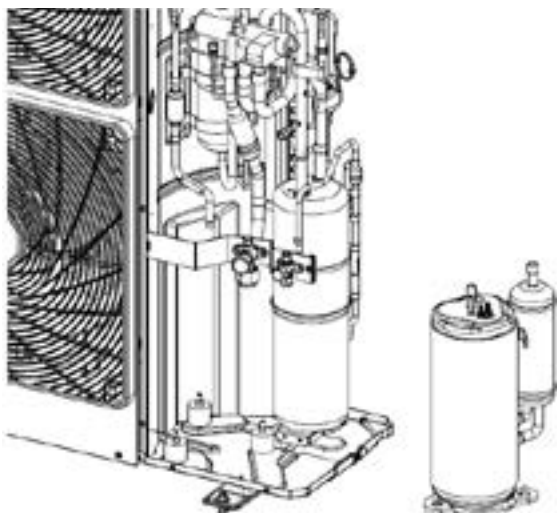
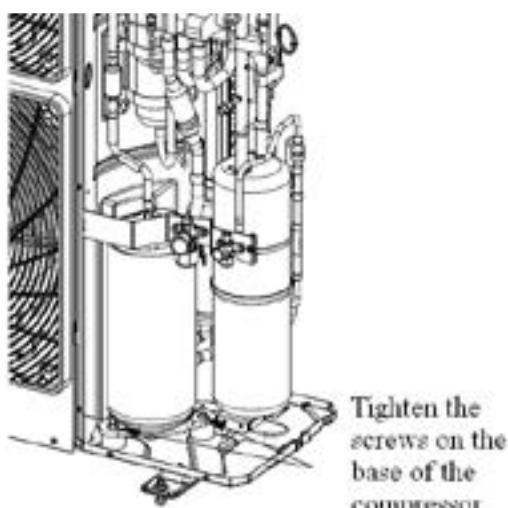
Steps	Illustrations	Operation Instructions
1) Disconnect the coping plate		a) Unscrew the fixed screws of the coping plate; b) Remove the coping plate.
2) Disconnect the front side plate		a) Unscrew the fixed screw of the front side plate; b) Remove the front side plate.
3) Disconnect the outer case		a) Unscrew the fixed screws of the outer case; b) Remove the outer case.

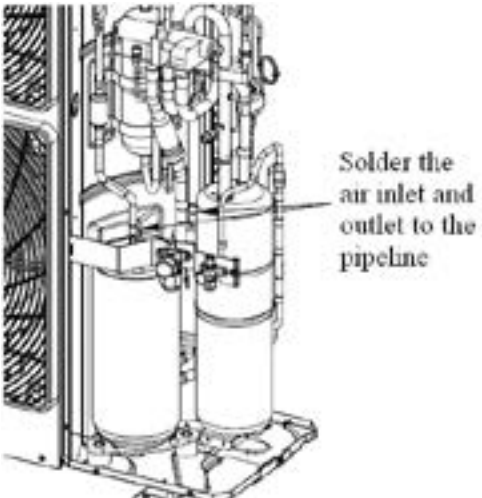
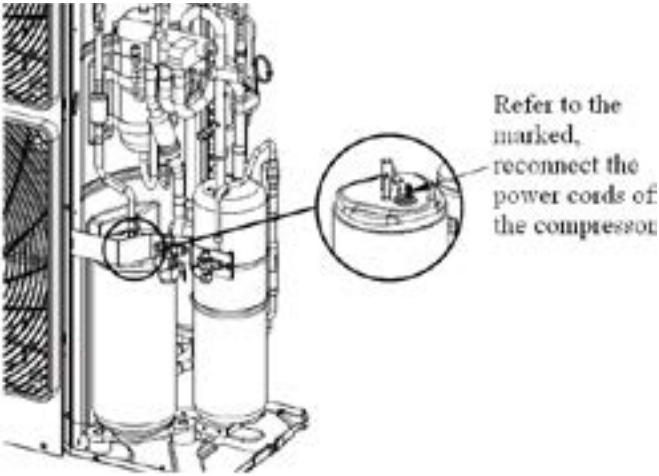
4.Disconnect the left side plate and rear side plate		a) Unscrew the fixed screws of left side plate and rear side plate; b) Remove left side plate and rear side plate.
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15.1. 2 Assembly and Disassembly of the Compressor

Remarks: Prior to the assembly of the compressor, make sure there is no refrigerant in the pipeline and the power supply is cut off.

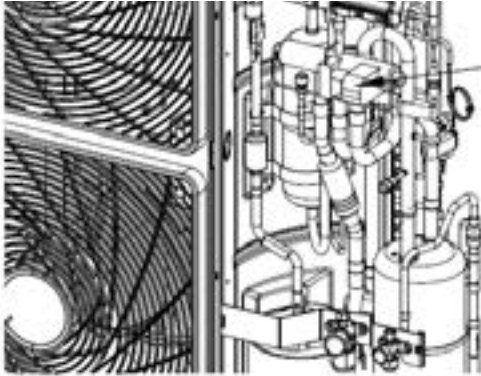
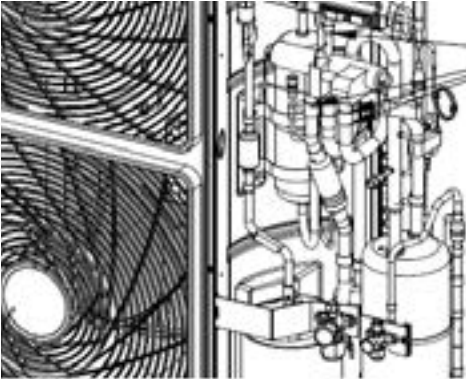
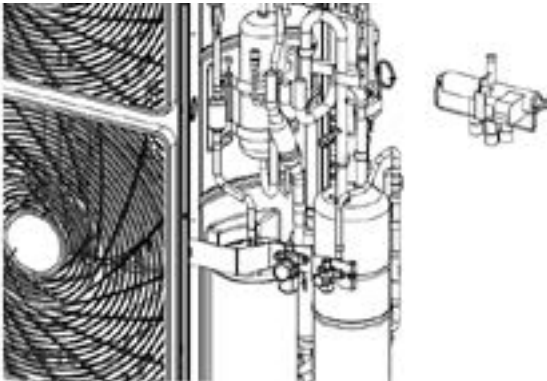
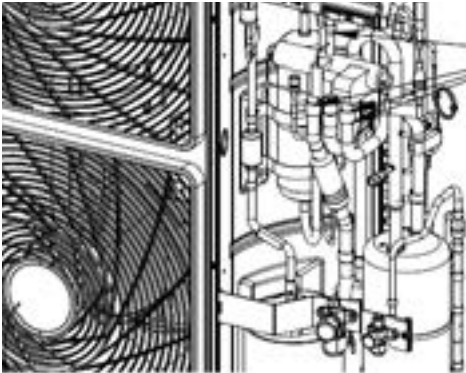
Steps	Illustrations	Operation Instructions
1.Remove the power code of the compressor		a) Unscrew the fixed screws of power code; b) Remove the power code. Note: when removing the power cord, please label the power cord and the terminals to avoid misconnecting next time.
2.Remove the connecting pipe of the compressor		a) Solder the joint of connecting pipe of the compressor. b) Pull out the connecting pipe Note: never let the flame contact any other component.

3. Loosen the fixed screws of the compressor base	 Screw off the fixing screw of the compressor base	Unscrew the fixed screw of the compressor base
4. Remove the compressor away from the seating		Remove and replace the compressor. Note: never let the flame contact any other component during the replacement.
5. Fix the new compressor on the seating	 Tighten the screws on the base of the compressor	Tighten the screws on the seating of the new compressor.

6.Solder the pipeline with the suction and discharge ports of the compressor		Solder the connecting pipe to make them connected Note: never let the flame contact any other component.
7.Reconnect the power cords		a) Tighten the fixing screw of the power cord. b) Connect the power cord. Note: mark the color of the power cord and corresponding terminal.
8.Put back the electric heating belt and the discharge temperature sensor etc.		
9.Check and screw back the plates		a) Check if the pipe is well connected. b) Check if the parts and wire well connected. c) If there is no problem, fix the cover.

15.1.3 Disassembly and Assembly of 4-way valve

Remarks: Prior to the assembly of the compressor, make sure there is no refrigerant in the pipeline and the power supply is cut off.

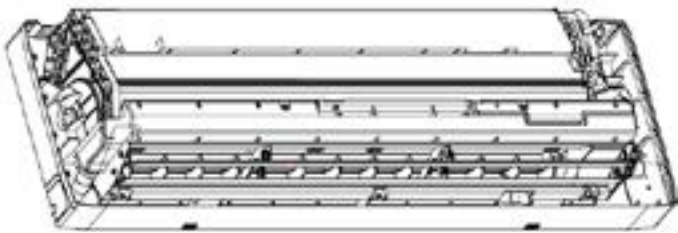
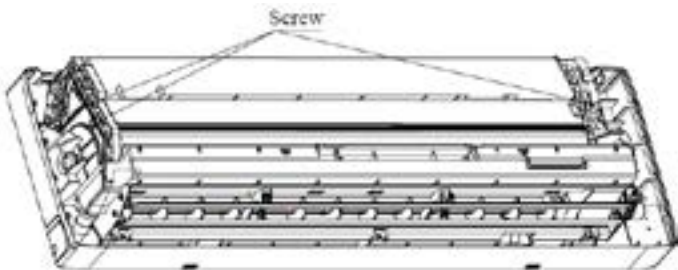
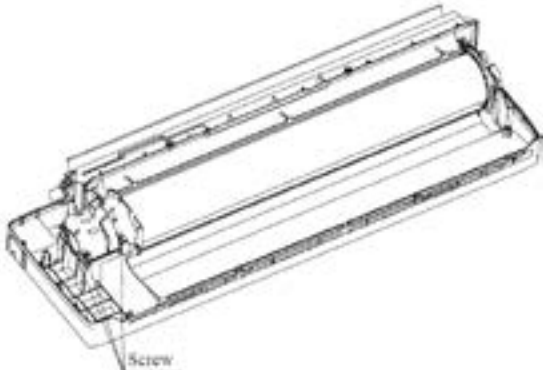
Steps	Illustrations	Operation Instructions
1.Remove the magnet coil of the 4-way valve		a) Unscrew the fixed screws of the magnet coil; b) Remove the magnet coil.
2.Disconnect the 4-way valve and the connecting pipe		Solder off the connecting pipes. Note: never let the flame contact any other component.
3.Replace the new 4-way valve		Install the new 4-way valve
4.Solder the new 4-way valve and install the magnet coil.		Solder the connecting pipes Note: To avoid heat damage the internal structure of the 4-way, wrap it to be brazed with sufficient wet cloths.

15.2 Indoor Unit

15.2.1 Wall mounted type

● Removal and Assembly of Fan Motor

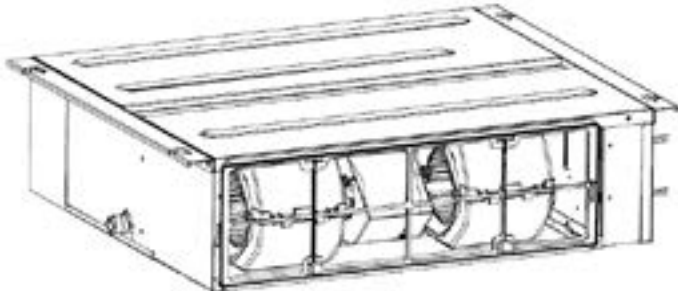
Remark: Prior to the assembly of the motor, make sure the power supply is cut off.

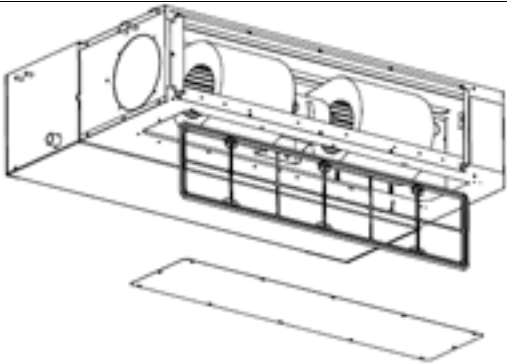
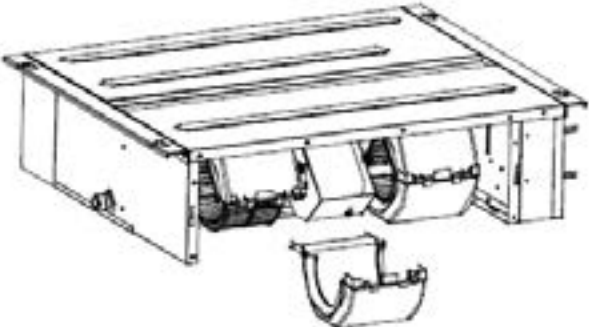
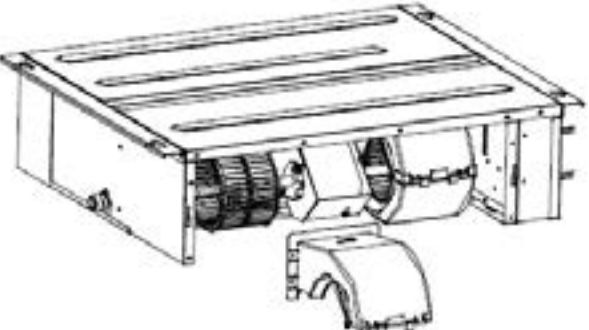
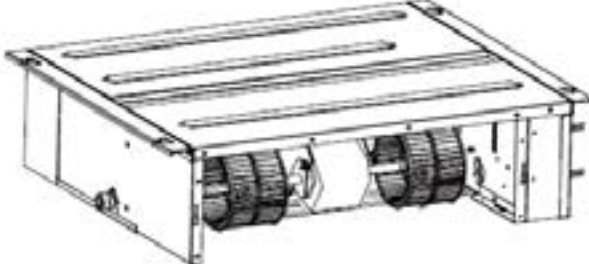
Steps	Illustrations	Operation Instructions
1.Remove the front panel, front case and electric box		a) Loosen the screws; b) Unplug the motor terminals in the electric box. Loosen the earth screws and lift up
2.Remove the evaporator		Unscrew the fixed screws of the evaporator, and then remove it
3.Remove the motor and cross flow fan		a) Unscrew the fixed screws of the motor press plate and cross flow fan b) Separate the motor from the cross flow fan.

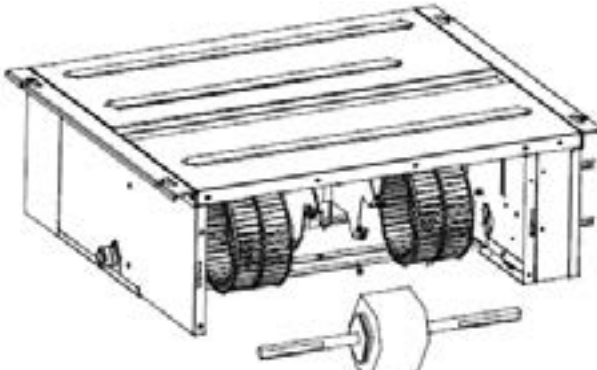
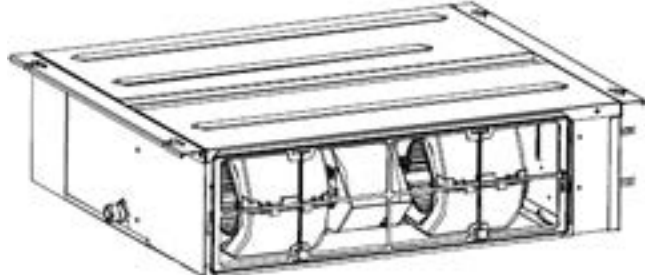
15.2.2 Ducted type

● Removal and Assembly of Fan Motor

Remark: Prior to the assembly of the motor, make sure the power supply is cut off.

Steps	Illustrations	Operation Instructions
1.Pull out the electric wire of the motor		Open the cover plate of the electric box and then pull out the electric wire inside the box.

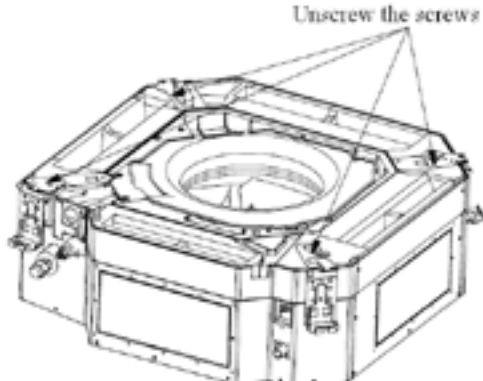
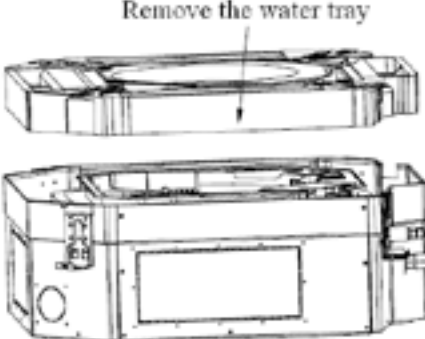
2.Remove the cover plate for return air		a) Remove the filter screen b) Unscrew the fixed screws of the return air air
3.Remove the rear volute		Undo the buckle of the rear and front volutes and then remove the rear volute away.
4. Remove the front volute		Unscrew the fixed screws of the front volute and then remove it away
5.Loosen the fan blade and fan motor		Unscrew the fixed screws of the fan blades and then undo the buckle of the motor

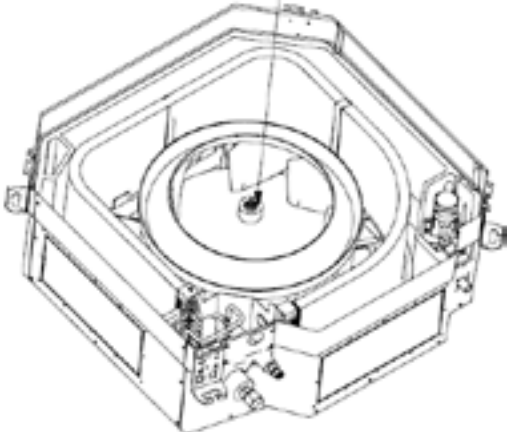
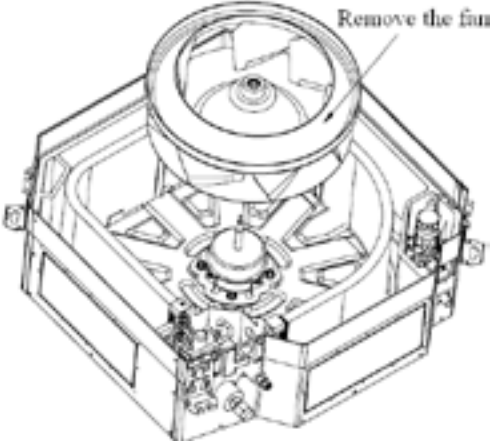
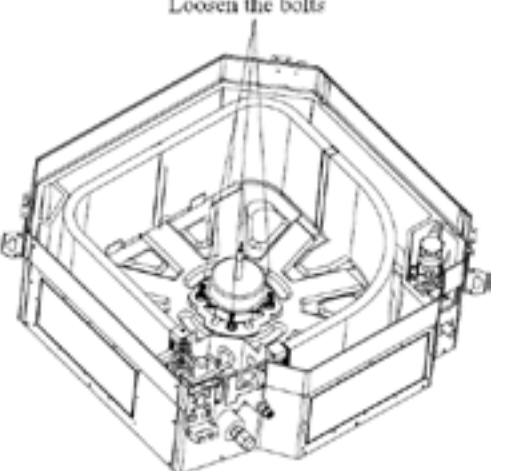
6. Remove the motor away.		a) Separate the motor away from the motor support. b) Remove the fan blade c) Take the motor out from the return air frame Note: the motor support shall be removed in advance and then changed to the unit.
7. Replace with a new motor		Assemble the fan as the reverse disassembly order and then take a power-on test.

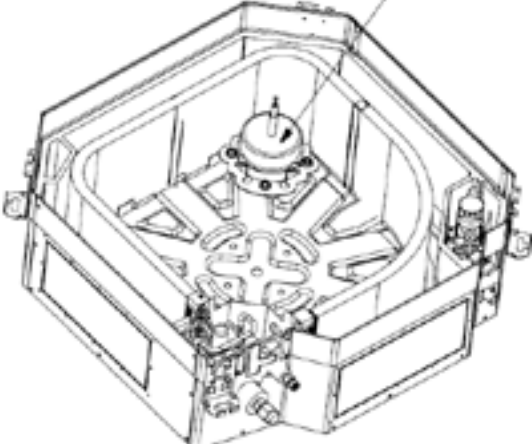
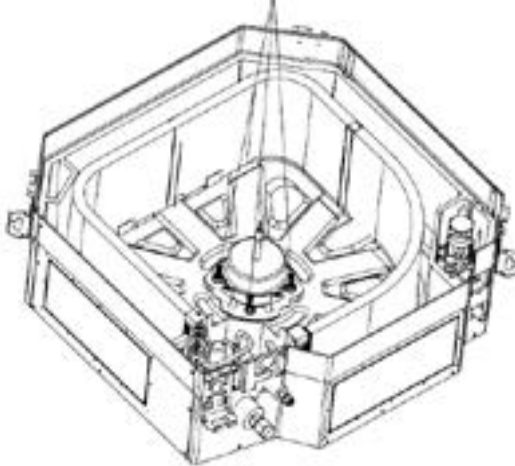
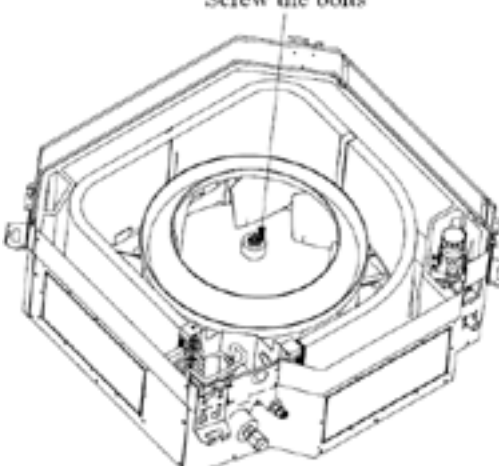
15.2.3 Four-way cassette type

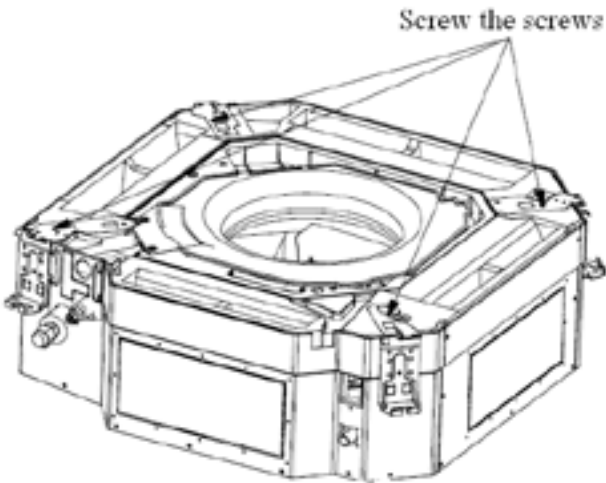
● Removal and Assembly of Fan Motor

Remark: Prior to the assembly of the motor, make sure the power supply is cut off.

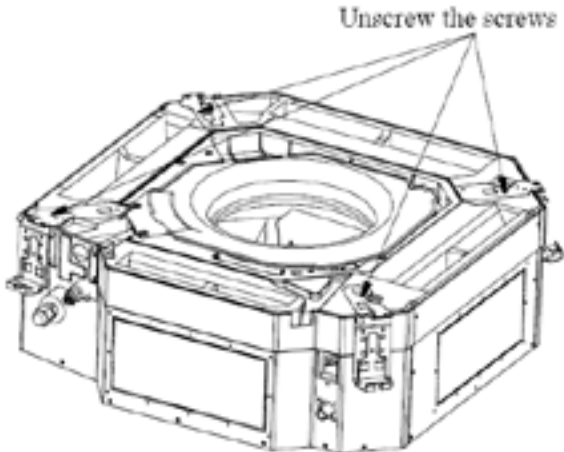
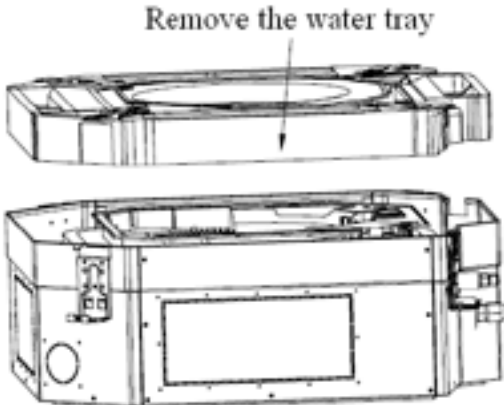
Steps	Illustrations	Operation Instructions
6. Remove the motor away.		a) Separate the motor away from the motor support. b) Remove the fan blade c) Take the motor out from the return air frame Note: the motor support shall be removed in advance and then changed to the unit.
7. Replace with a new motor		Assemble the fan as the reverse disassembly order and then take a power-on test.

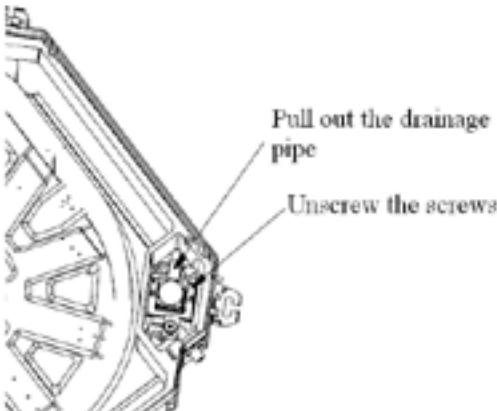
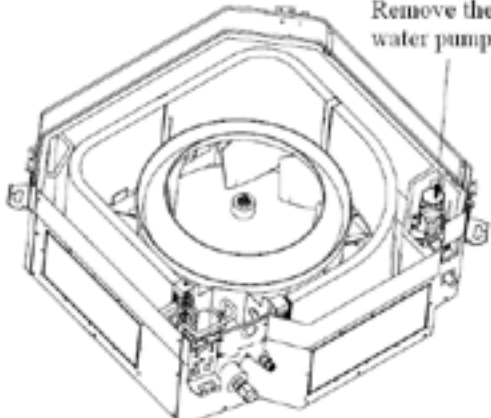
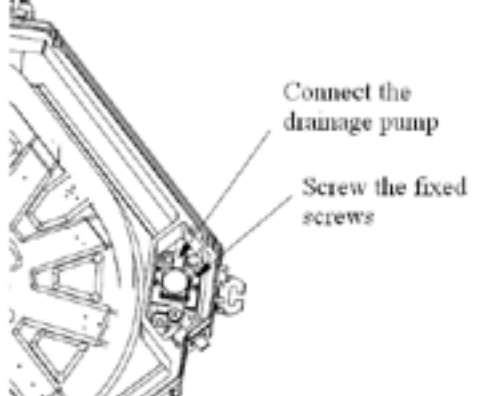
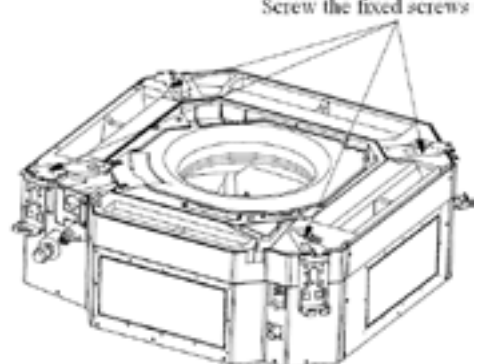
3.Unscrew the fixed bolts of the fan	Unscrew the bolts 	Unscrew the fixed bolts of the fan with the spanner
4.Remove the fan	Remove the fan 	Remove the fan
5.Loosen the fixed bolts of the fan motor	Loosen the bolts 	Loosen the fixed bolts of the fan motor

6.Remove the motor and replace it	Remove the fan motor 	Remove the motor and replace it
7.Screw the fixed bolts of the motor	Screw the bolts 	Screw the fixed bolts of the motor
8.Mount the fan and screw the fixing bolts	Screw the bolts 	Mount the fan and screw the fixing bolts

9. Mount the water tray and screw the screws	 Screw the screws	Mount the water tray and screw the screws
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● Removal and Assembly of drainage pump
 Remark: Prior to the assembly of the drainage pump, make sure the power supply is cut off.

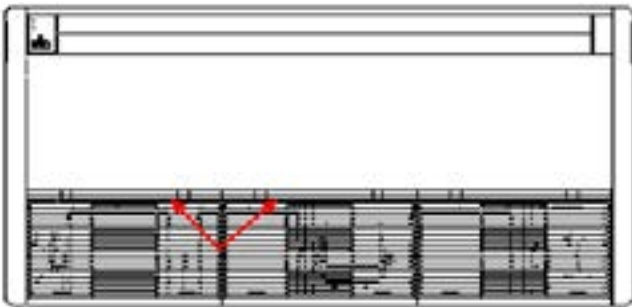
Steps	Illustrations	Operation Instructions
1. Unscrew the fixed screws of the water tray	 Unscrew the screws	Unscrew the fixed screws of the water tray
2. Remove the water tray	 Remove the water tray	Remove the water tray

3. Pull out the drainage pipe and unscrew the fixed screws the water pump.	 Pull out the drainage pipe Unscrew the screws	Pull out the drainage pipe and unscrew the fixed screws the water pump.
4. Take out the pump and replace it	 Remove the water pump	Take out the pump and replace it
5. Connect the drainage pipe and screw the fixed screws the water pump.	 Connect the drainage pump Screw the fixed screws	Connect the drainage pipe and screw the fixed screws the water pump.
6. Mount the water tray and tighten the screws	 Screw the fixed screws	Mount the water tray and tighten the screws

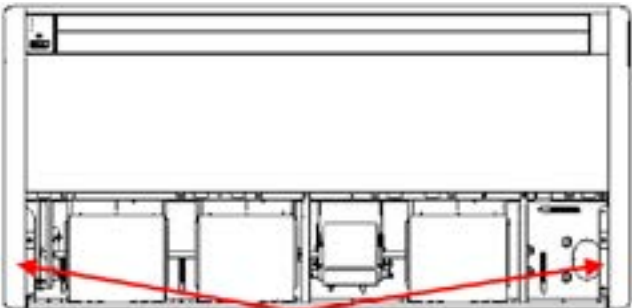
15.2.4 Floor ceiling type

Remark: Prior to the assembly of the indoor unit, make sure the power supply is cut off.

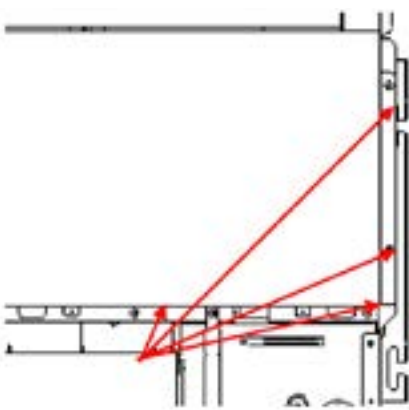
● Removal panel grating module

Steps	Illustrations	Operation Instructions
Remove sub-assy of front grill		Move down the clip of the sub-assy of front grill until the front grill is open. (As is shown in the graph, arrow represents the position of bottoms. There are two clips for each grating.)

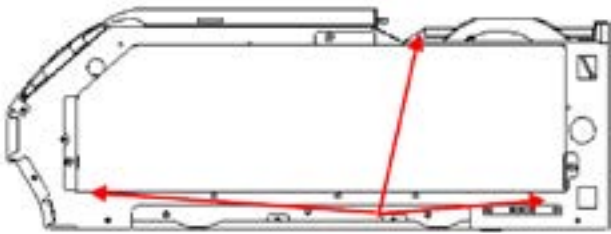
● Remove right and left finishing plates

Steps	Illustrations	Operation Instructions
Remove sub-assy of front grill		Move down the clip of the sub-assy of front grill until the front grill is open. (As is shown in the graph, arrow represents the position of bottoms. There are two clips for each grating.)

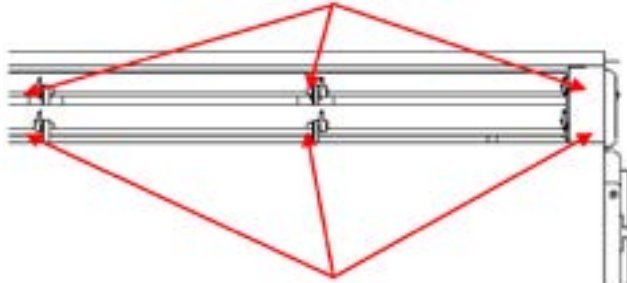
● Remove panel parts

Steps	Illustrations	Operation Instructions
Remove panel parts		Remove the screws shown by the arrow in the graph with screwdriver (two on both right and left and 4 in the front) and then remove the panel parts.

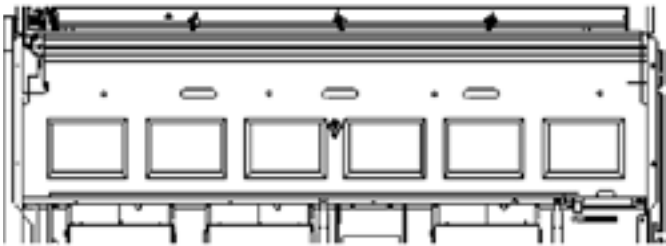
● Remove sub-assy of electric box

Steps	Illustrations	Operation Instructions
Remove of electric box cover		Remove 3 screws as shown by the arrow in the graph on left and remove the electric box cover.

● Remove air deflecting plate modules

Steps	Illustrations	Operation Instructions
Remove sub-assy of air deflecting plate		Remove the air deflecting plates from the air deflecting plate support assembly, and then remove both ends from the air sweeping motor joint (As is shown in the graph, arrow represents the support assembly and circle the air sweeping motor joint.)

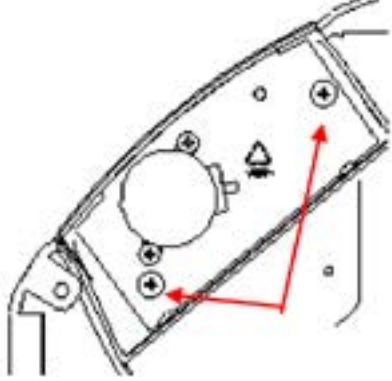
● Remove the water tray

Steps	Illustrations	Operation Instructions
Remove the water tray		Remove the water tray

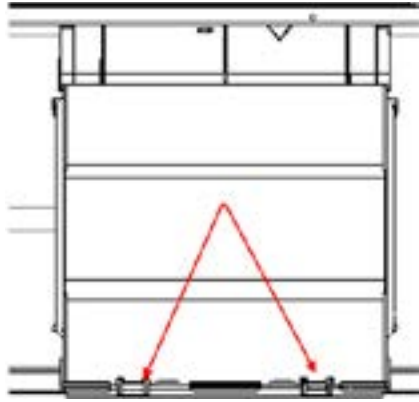
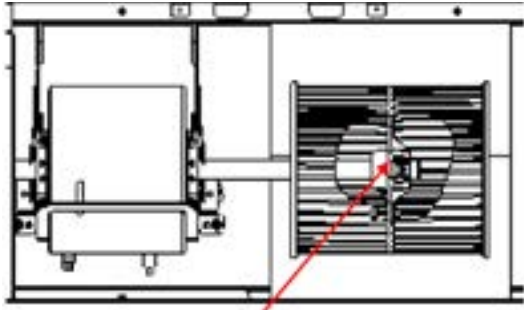
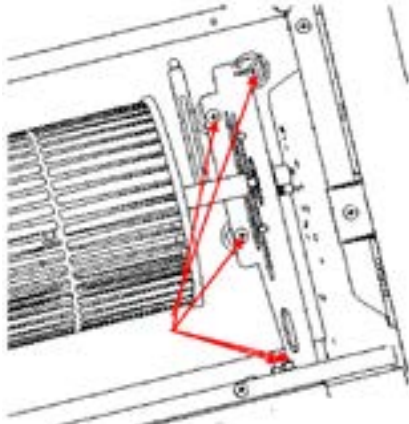
● Remove the evaporator

Steps	Illustrations	Operation Instructions
Remove the evaporator		Remove the screws as shown by the arrow in the graph (There are 6 screws on left and right of the evaporator and 5 on evaporator outlet press plate modules)

● Remove fixing plate sub-assy for air sweeping fans

Steps	Illustrations	Operation Instructions
Remove fixing plate sub-assy for air sweeping fans		Remove the screws shown in the graph

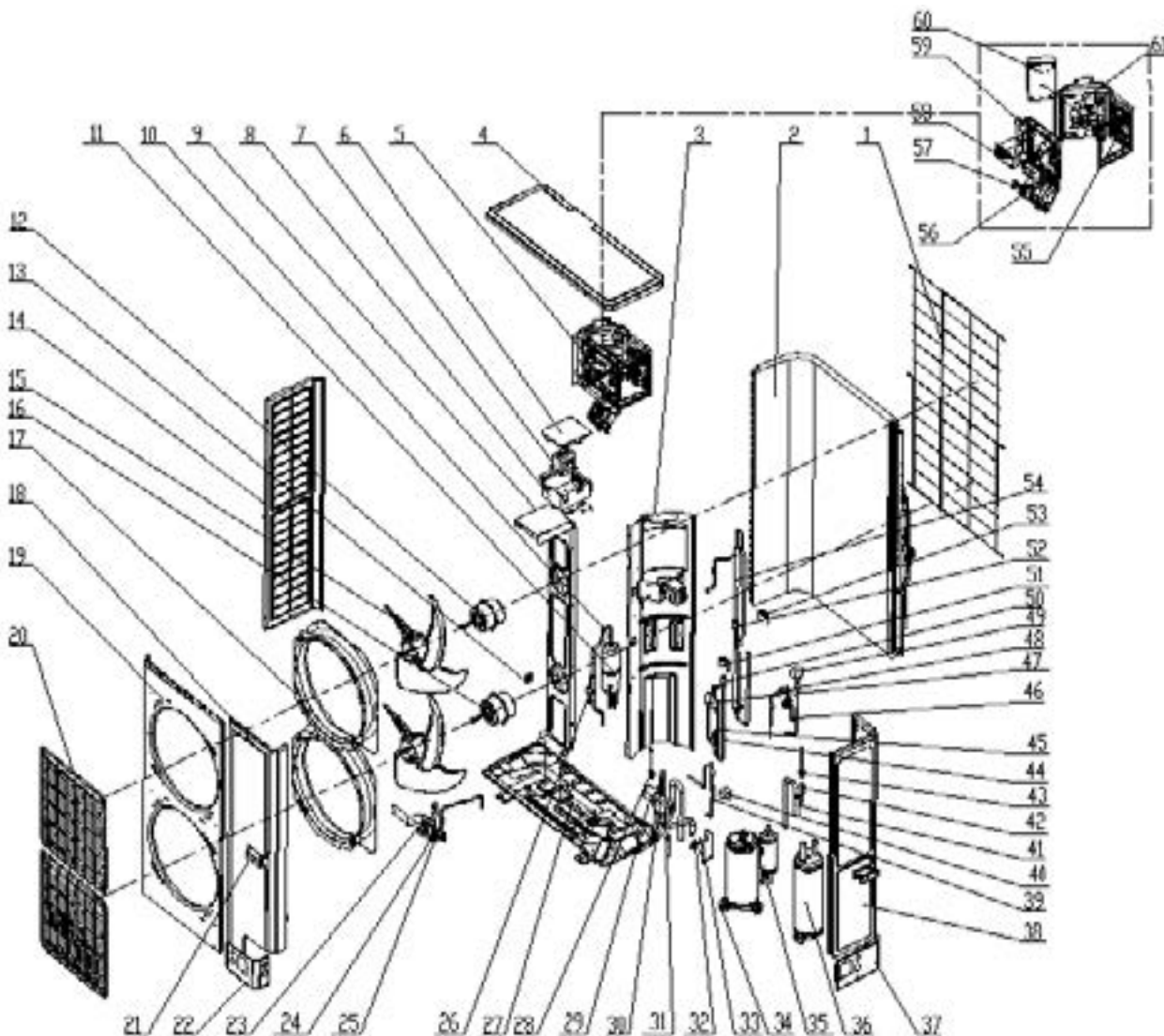
● Remove fan and motor components

Steps	Illustrations	Operation Instructions
1. Remove front and back scroll cases		Press the buckle at the joints of front and back scroll cases with hands and pull upward to remove the front scroll case. Then remove the screws on the back scroll case. Lift the buckle of back scroll case with hands and remove it. (As is shown in the graph, circle represents 2 screws on left and right.)
2. Remove fans		Remove the fixed screws of fan wheel with inner hexagonal and remove the wheel. The inner hexagonal and its direction of effect are shown by the arrow in the graph.
3. Remove bearing fixing plates		Remove 4 screws on the bearing fixing plates with screwdriver. (As shown in the box in the graph)

16. EXPLODED VIEWS AND PART LIST

16.1 Outdoor Unit

AWHD(48S)ND3CO; AWHD(56S)ND3CO



Part list:

AWHD(48S)ND3CO for CN860W0140; AWHD(56S)ND3CO for CN860W0150

No.	Description	AWHD(48S)ND3CO		AWHD(56S)ND3CO	
		Code	Qty	Code	Qty
1	Rear Grill	01574100004	1	01574100004	1
2	Condenser Assy	01124100088	1	01124100088	1
3	Clap board	01244100005	1	01244100005	1
4	Coping Plate	01264100008P	1	01264100008P	1
5	Electrical Box	01395200307	1	01395200308	1
6	Reactor Box Cover	01424100030	1	01424100030	1
7	Reactor	43138004	2	43138004	2
8	Reactor Box	01394100064	1	01394100064	1
9	Motor Support Sub-assy	01804100178	1	01804100178	1
10	Discharge Tube Sub-assy	04534100021	1	04534100021	1
11	Oil Separator	07424105	1	07424105	1

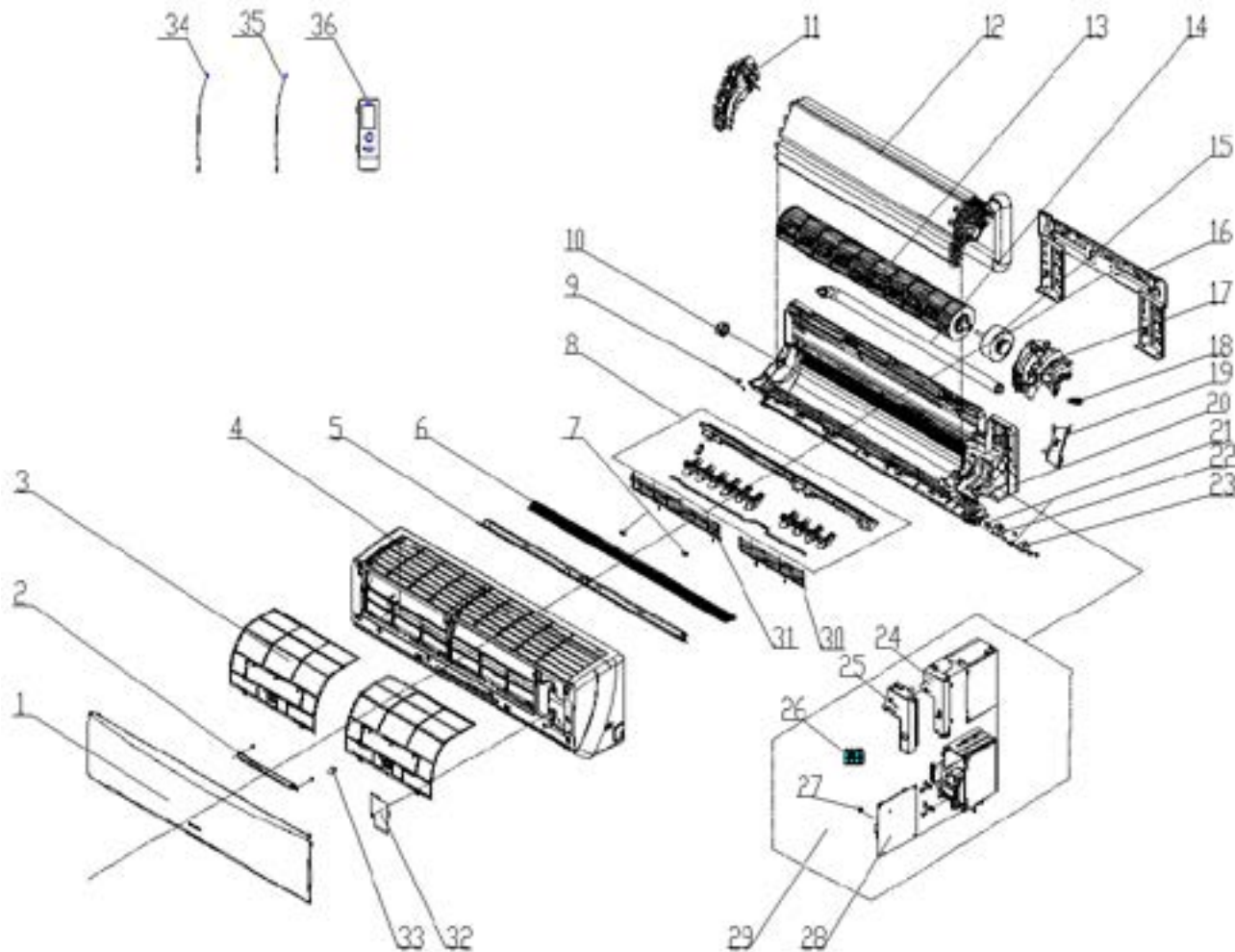
12	Fan Motor	15704115	1	15704115	1
13	Temperature Sensor Sub-assy	39008252G	1	39008252G	1
14	Left Side Plate	01314100013P	1	01314100013P	1
15	Axial Flow Fan Blade	10434100003	2	10434100003	2
16	Fan Motor	1570411501	1	1570411501	1
17	Diversion Circle	10474100001	2	10474100001	2
18	Front Side Plate	01314100012P	1	01314100012P	1
19	Outer Case	01514100002P	1	01514100002P	1
20	Front Grill	01574100009	2	01574100009	2
21	Handle	26904100016	2	26904100016	2
22	Front Connection Board	01344100002P	1	01344100002P	1
23	Gas Stop Valve	07334100016	1	07334100016	1
24	Liquid Stop Valve	07330000002	1	07330000002	1
25	Filter	07212001	1	07212001	1
26	Protect Switch	4602000902	1	4602000902	1
27	Chassis Sub-assy	01194100045P	1	01194100045P	1
28	High pressure sensor	322101032	1	322101032	1
29	4-way Valve	43000338	1	43000338	1
30	4-Way Valve assy	04045200066	1	04045200066	1
31	Magnet Coil	4300040029	1	4300040029	1
32	Nozzle for Adding Freon	06135201	1	06135201	1
33	Filter	07210022	2	07210022	2
34	Compressor Gasket	76710247	3	76710247	3
35	Compressor	0020410000101	1	0020410000101	1
36	Gas-liquid Separator	07424100014	1	07424100014	1
37	Right Connection Board	01344100003P	1	01344100003P	1
38	Rear Side Plate	01314100014P	1	01314100014P	1
39	Gas By-pass Sub-assy	07334100018	1	07334100018	1
40	Magnet Coil	4304000405	1	4304000405	1
41	Suction Tube Sub-assy	04574100011	1	04574100011	1
42	Nozzle for Adding Freon	06120012	2	06120012	2
43	Low pressure sensor	322101001	1	322101001	1
44	Electronic Expansion Valve Sub-assy	43044100022	1	43044100022	1
45	Check Valve	07130101	1	07130101	1
46	Capillary Sub-assy (oil returning)	04004100011	1	04004100011	1
47	Pressure regulating valve	07334100002	1	07334100002	1
48	Electromagnetic Valve	43000054	1	43000054	1
49	Magnet Coil	4304000415	1	4304000415	1
50	Electronic Expansion Valve	07334412	1	07334412	1
51	Electronic Expansion Valve Coil	4304413205	1	4304413205	1
52	Electronic Expansion Valve	43042800005	1	43042800005	1
53	Electronic Expansion Valve Coil	4304413208	1	4304413208	1
54	Sub-cool Copper Assy	04534100044	1	04534100044	1
55	Filter Board	30228000016	1	30228000016	1
56	Terminal Board	420111451	1	420111451	1

57	Terminal Board	42011154	1	42011154	1
58	Testing Board	30118000003	1	30118000003	1
59	Main Board	30226000049	1	30226000049	1
60	Radiator	49018000010	1	49018000010	1
61	Driving Board	30118000004	1	30118000004	1

16.2 Indoor Unit

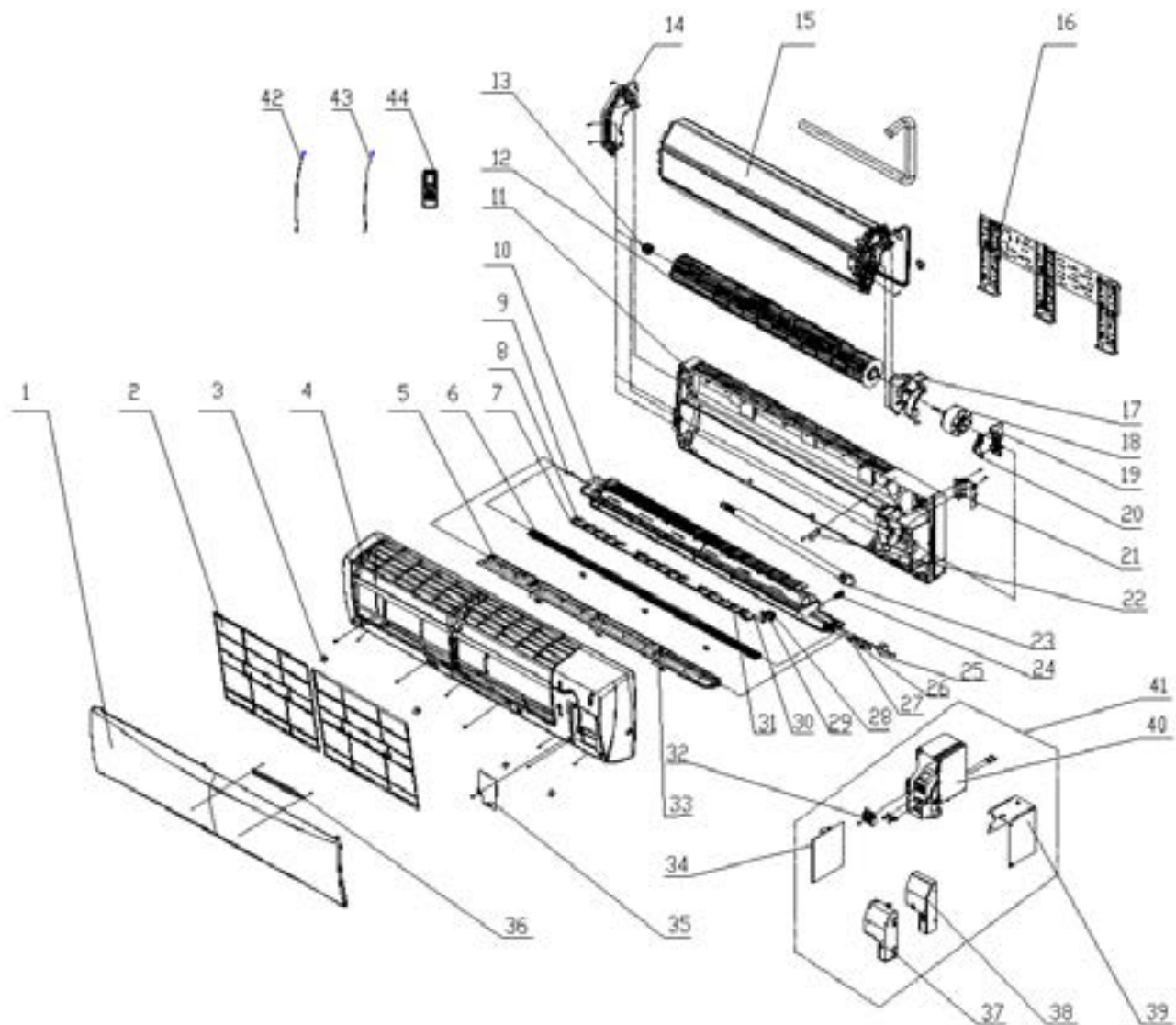
16.2.1 Wall mounted type

AWH09TB-D3DNA3D/I; AWH12TB-D3DNA3D/I; AWH18TC-D3DNA3D/I



No.	Description	AWH09TB-D3DNA1D/I		AWH12TB-D3DNA1D/I		AWH18TC-D3DNA1D/I	
		Code	Qty	Code	Qty	Code	Qty
1	Front Panel	20012850K	1	20012820U	1	20012820U	1
2	Display Board	30565140	1	30565141	1	30565140	1
3	Filter Sub-Assy	1112211602	2	1112209105	2	1112211602	2
4	Front Case Sub-Assy	2001288902	1	20012821	1	2001288902	1
5	Guide Louver	10512267	1	10512283	1	10512267	1

6	Guide Louver (small)	10512127	1	10512127	1	1051222601	1
7	Crank	10582070	2	10582070	2	10582070	2
8	Helicoid Tongue sub-assy	2611224404	1	2611224404	1	2611236701	1
9	Left Axile Bush	10512037	2	10512037	2	1051203701	2
10	Propeller Axile Bush	1054202101	1	1054202101	1	1054204701	1
11	Evaporator Support	24212114	1	24212114	1	24212139	1
12	Evaporator Assy	01002364	1	01002364	1	0100238601	1
13	Cross Flow Fan	10352033	1	10352033	1	10352045	1
14	Drainage Hose	05230014	1	05230014	1	0523001406	1
15	Fan Motor	15013314	1	15013314	1	15012127	1
16	Wall Mounting Frame	01252484	1	01252484	1	01252123	1
17	Motor Press Plate	26112209	1	26112209	1	26112330	1
18	Rubber Plug (WaterTray)	76712012	1	76712012	1	76712012	1
19	Pipe Clamp	2611216402	1	2611216402	1	26112188	1
20	Rear Case assy	2220216103	1	2220216103	1	22202499	1
21	Axile Bush	10542036	3	10542036	3	10542036	4
22	Step Motor	15212123	1	15212123	1	1501208602	1
23	Step Motor	15212123	1	15212123	1	15212404	1
24	Shield Cover of Electric Box	01592084	1	01592084	1	01592084	1
25	Electric Box Cover	2012240903	1	2012240903	1	2012240903	1
26	Terminal Board	42011233	1	42011233	1	42011233	1
27	Jumper	4202300107	1	4202300108	1	4202300115	1
28	Main Board	30148296	1	30148296	1	30148469	1
29	Electric Box Assy	20302492	1	20302490	1	20302705	1
30	Rear Grill	01472029	1	01472029	1	01472028	1
31	Rear Grill	01472030	1	01472030	1	01472030	0
32	Electric Box Cover2	2012207504	1	2012207504	1	2012214207	1
33	Screw Cover	24252016	1	24252016	1	24252016	3
34	Ambient Temperature Sensor	390000451	1	390000451	1	390000451	1
35	Temperature Sensor	390000598	1	390000598	1	390000598	1
36	Remote Controller	30510138	1	30510138	1	30510138	1

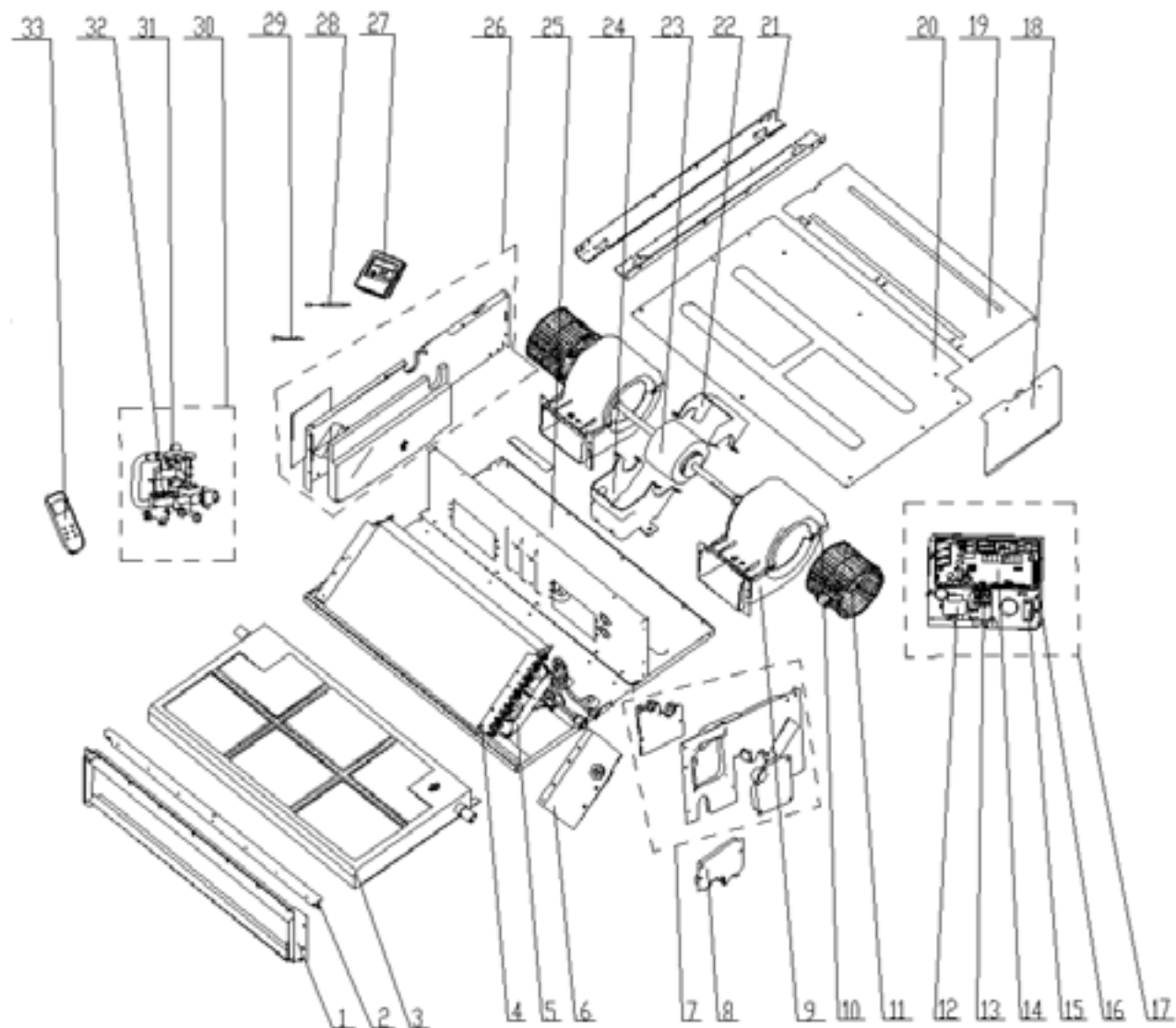


Part list:
AWH24TD-D3DNA1D/I for CB148N03800

No.	Description	AWH24TD-D3DNA3D/I	
		Code	Qty
1	Front Panel	20012894U	1
2	Filter Sub-Assy	11122136	2
3	Screw Cover	242520053	4
4	Front Case Sub-assy	20022004	1
5	Guide Louver	10512236	1
6	Guide Louver (small)	1051223701	1
7	Swing Lever 2	1058211601	1
8	Air Louver	10512252	15
9	Left Axile Bush	1051203701	2
10	Water Tray Assy	01272119	1
11	Rear Case assy	22202092	1
12	Cross Flow Fan	10352420	1

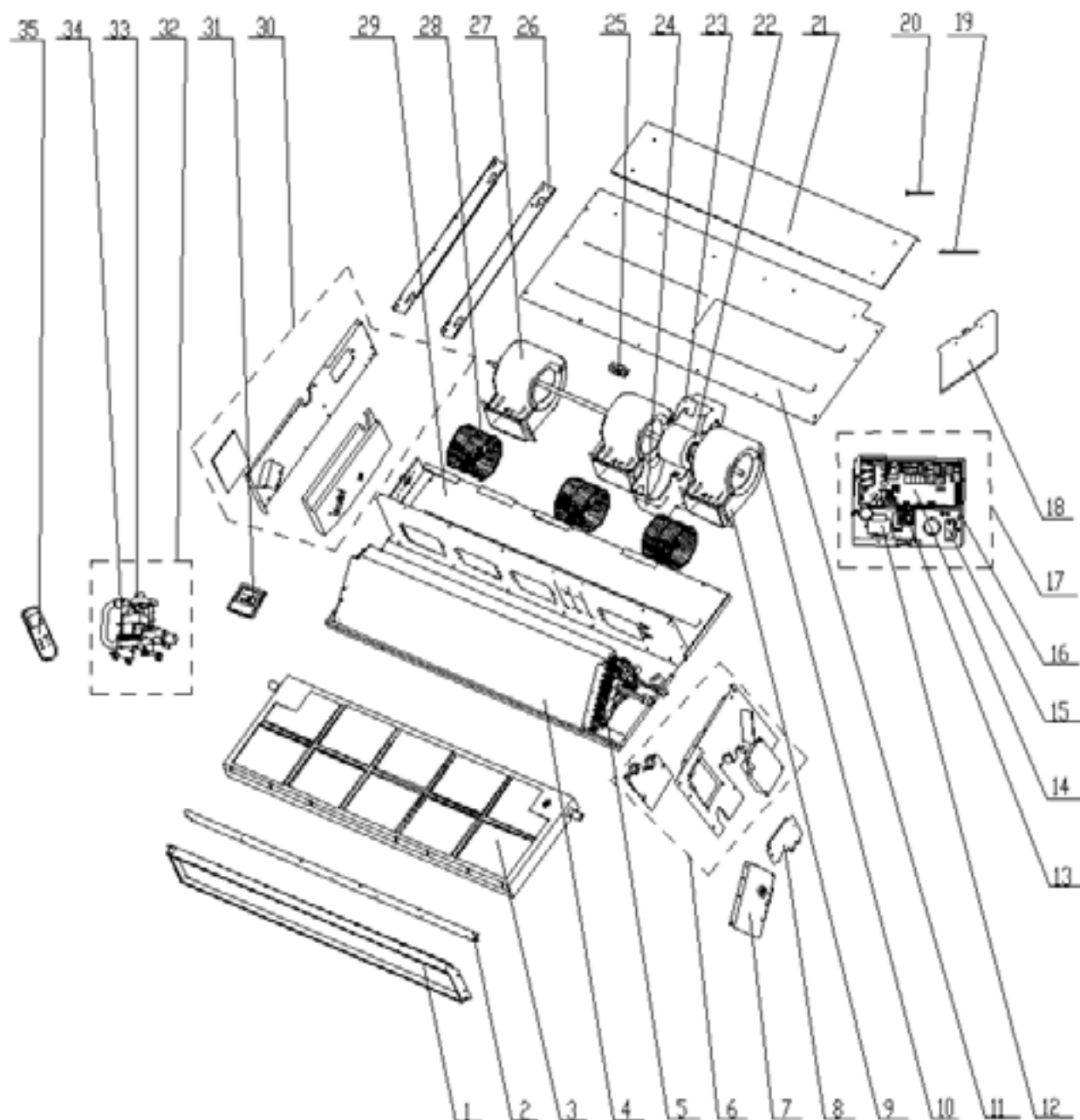
13	O-Gasket of Cross Fan Bearing	76512203	1
14	Left Evaporator Support	24212041	1
15	Evaporator Assy	01002340	1
16	Wall Mounting Frame	01252398	1
17	Right Evaporator Support	2421204201	1
18	Fan Motor	1501213401	1
19	Motor Fixed Clip1	26112324	1
20	Motor Fixed Clip2	26112325	1
21	Pipe Clamp	26112071	1
22	Fixed Clip(Evaporator)	02112009	1
23	Drainage Hose	0523001403	1
24	Rubber Plug (Water Tray)	76712012	1
25	Step Motor	1521240208	1
26	Step Motor	1521212602	1
27	Crank	73012021	2
28	Step Motor	1521212301	1
29	Motor Holder	26152046	1
30	Swing Lever 3	1058211701	1
31	Swing Lever 1	1058211501	1
32	Terminal Board	42011233	1
33	Axle Bush	10542036	3
34	Main Board	30148469	1
35	Electric Box Cover2	2012214202	1
36	Display Board	30565141	1
37	Shield Cover of Electric Box Cover	01592108	1
38	Electric Box Cover	2012216401	1
39	Shield Cover of Electric Box	01592107	1
40	Electric Box	2011214001	1
41	Electric Box Assy	20302612	1
42	Ambient Temperature Sensor	390000451	1
43	Temperature Sensor	390000598	1
44	Remote Controller	30510138	1

16.2.2
AFH(09)EA-D3DNA1A/I; AFH(12)EA-D3DNA1A/I



No.	Description	AFH(09)EA-D3D-NA1A/I		AFH(12)EA-D3DNA1A/I	
		Code	Qty	Code	Qty
1	Air outlet frame assy	01865216	1	01865216	1
2	Cover of air outlet	01265298	1	01265298	1
3	Water Tray Assy	01285332	1	01285332	1
4	Top Cover Board Assy	01265200099	1	01265325	1
5	Evaporator Assy	01025200024	1	01024905	1
6	Plate of the Evaporator Sub-Assy	01495317	1	01495317	1
7	Left Side Plate Assy	01315334	1	01315334	1
8	Plate of the Exit Tube Sub-Assy	01495316	1	01495316	1
9	Front volute casing	26905205	2	26905205	2
10	Rear volute casing	26905206	2	26905206	2
11	Centrifugal fan	10425200	2	10425200	2
12	Transformer	4311023303	1	4311023303	1

13	Terminal Board	420111041	1	420111041	1
14	Main Board	30226338	1	30226338	1
15	Capacitor	33010020	1	33010027	1
16	Electric Box Sub-Assy	01395200071	1	01395200071	1
17	Electric Box assy	01395200034	1	01395000001	1
18	Electric Box Cover	01424253	1	01424253	1
19	Cover Plate of the Fan	01265300	1	01265300	1
20	Bottom Cover Plate	01265299	1	01265299	1
21	Supporter	01895225	2	01895225	2
22	Bar Clasp	70819522	4	70819522	4
23	Fan Motor	1570520102	1	1570520104	1
24	Motor Supporter	01804348	1	01804348	1
25	Fan Mounting Plate	01325200010	1	01325200010	1
26	Right Side Plate Assy	01315335	1	01315335	1
27	Display Board	30296317	1	30296317	1
28	Ambient Temperature Sensor	39000206	1	39000206	1
29	Temperature Sensor	390001982G	1	390001982G	1
30	Water Pump Assy	15405241	1	15405241	1
31	Water Level Switch	45018012	1	45018012	1
32	Water Pump	43130324	1	43130324	1
33	Remote Controller	305100491	1	305100491	1

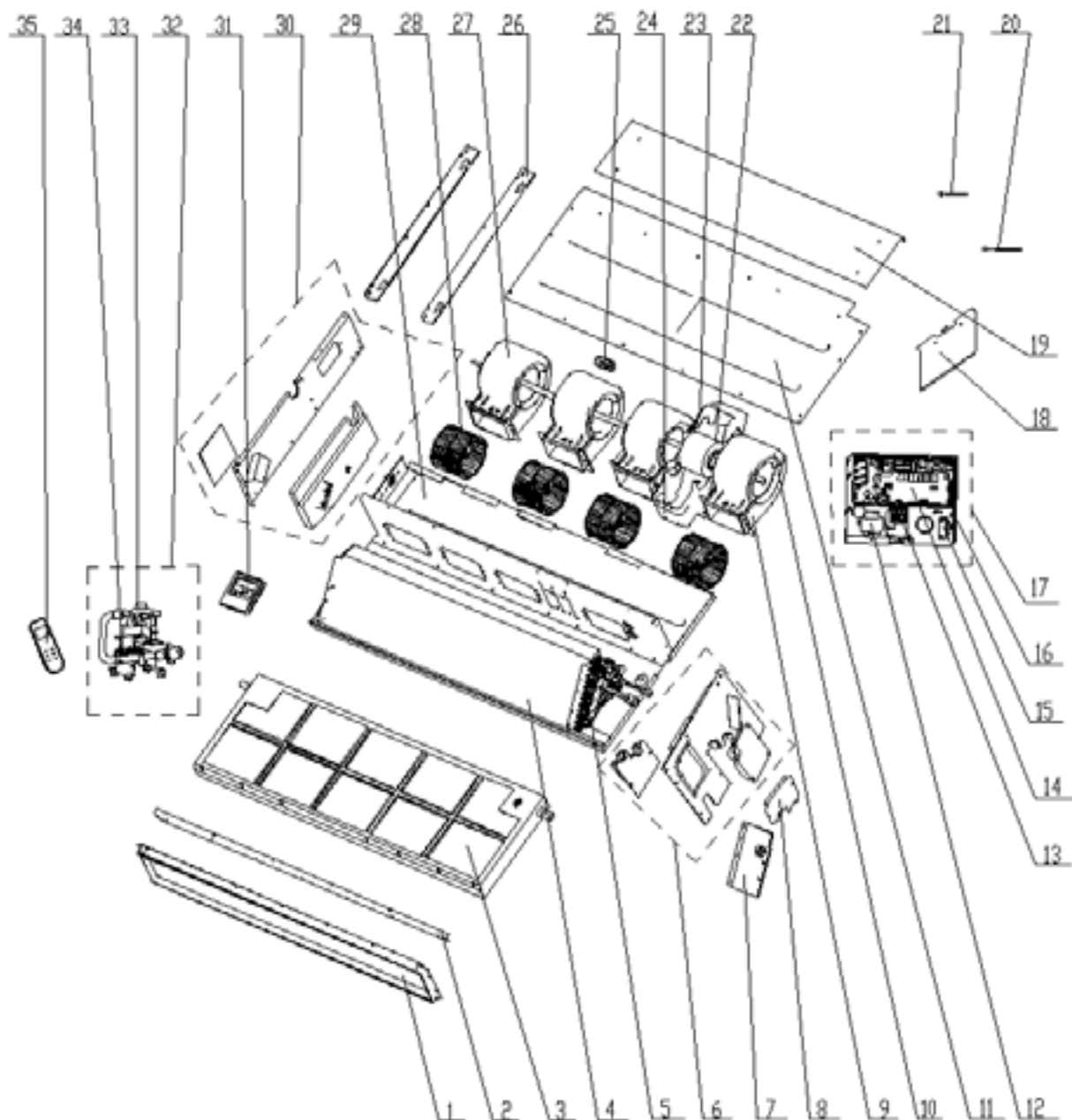


Part List: AFH(18)EA-D3DNA1A/I for CN210N0080;

No.	Description	AFH(18)EA-D3DNA1A/I	
		Code	Qty
1	Air outlet frame assy	01865217	1
2	Cover of air outlet	01265331	1
3	Water Tray Assy	01285333	1
4	Evaporator Assy	01024268	1
5	Lower Cover Plate Sub-Assy	01265328	1
6	Left Side Plate Assy	01315334	1
7	Plate of the Evaporator Sub-Assy	01495317	1
8	Plate of the Exit Tube Sub-Assy	01495316	1
9	Front volute casing	26905205	3

10	Rear volute casing	26905206	3
11	Bottom Cover Plate	01265332	1
12	Transformer	4311023303	1
13	Terminal Board	420111041	1
14	Main Board	30226338	1
15	Capacitor	33010027	1
16	Electric Box Sub-Assy	01395200071	1
17	Electric Box assy	01395000001	1
18	Electric Box Cover	01424253	1
19	Temperature Sensor	390001982G	1
20	Ambient Temperature Sensor	39000206	1
21	Cover Plate of the Fan	01265333	1
22	Fan Motor	15705218	1
23	Bar Clasp	70819522	4
24	Supporter	01804348	1
25	Joint Slack	73018731	1
26	Supporter	01895225	2
27	Rotary Axis Sub-Assy	73018020	1
28	Centrifugal fan	10425200	3
29	Fan Mounting Plate	01325200009	1
30	Right Side Plate Assy	01305263	1
31	Display Board	30296317	1
32	Water Pump Assy	15405241	1
33	Water Level Switch	45018012	1
34	Water Pump	43130324	1
35	Remote Controller	305100491	1

AFH(21)EA-D3DNA1A/I; AFH(24)EA-D3DNA1A/I

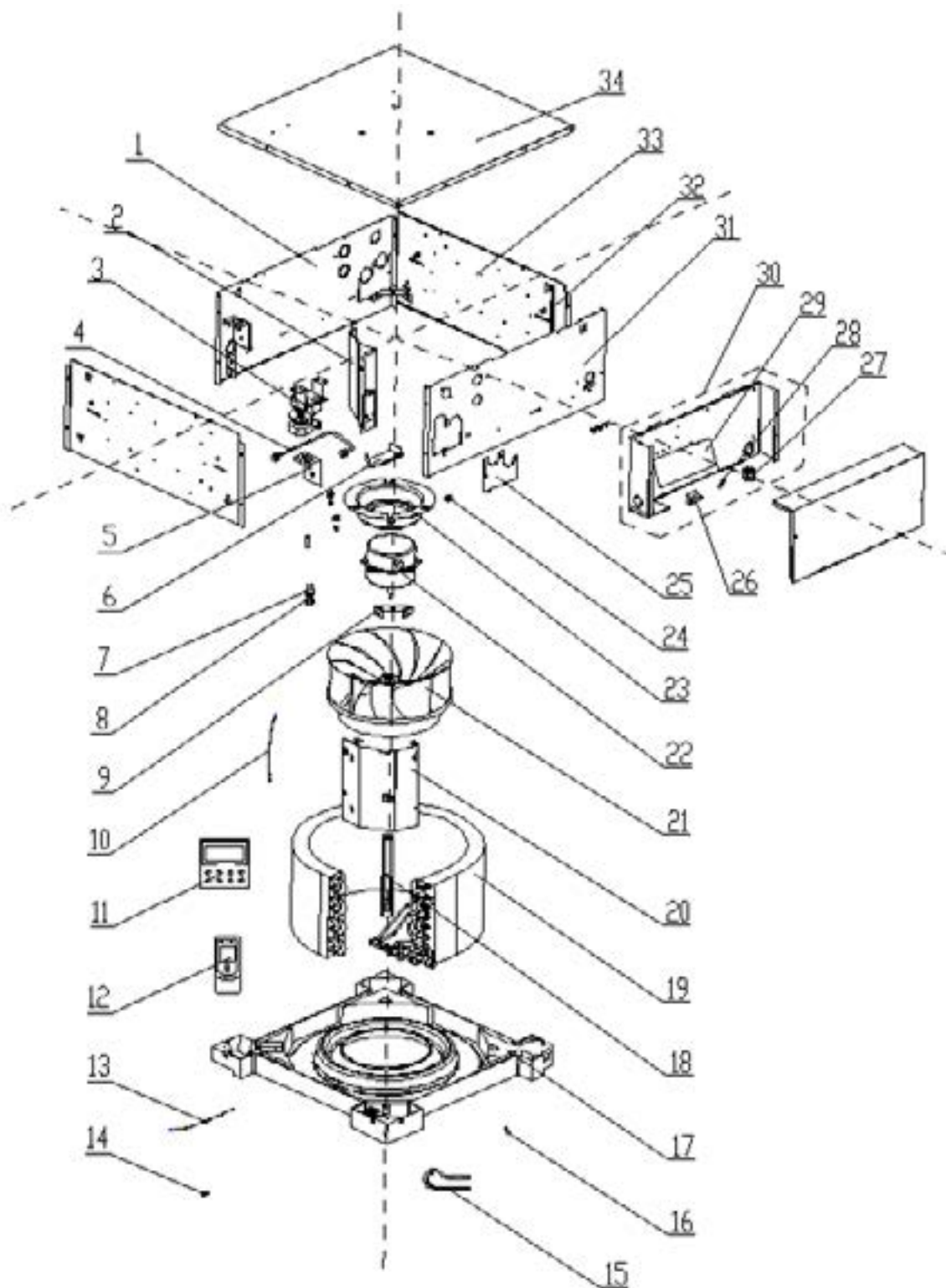


Part list: AFH(21)EA-D3DNA1A/I for CN210N0080; AFH(24)EA-D3DNA1A/I for CN210N0090

No.	Description	AFH(21)EA-D3DNA1A/I AFH(24)EA-D3DNA1A/I	
		Code	Qty
1	Air Outlet Frame assy	01375224	1
2	Cover of air outlet	01265335	1
3	Water Tray Assy	01285334	1
4	Evaporator Assy	01025200025	1
5	Lower Cover Plate Sub-Assy	01265339	1
6	Left Side Plate Assy	01315334	1
7	Plate of the Evaporator Sub-Assy	01495317	1
8	Plate of the Exit Tube Sub-Assy	01495316	1

9	Front volute casing	26905205	4
10	Rear volute casing	26905206	4
11	Bottom Cover Plate	01265337	1
12	Transformer	4311023303	1
13	Terminal Board	420111041	1
14	Main Board	30226338	1
15	Capacitor	33010027	1
16	Electric Box Sub-Assy	01395200071	1
17	Electric Box assy	01395000001	1
18	Electric Box Cover	01424253	1
19	Cover Plate of the Fan	01265338	1
20	Temperature Sensor	390001982G	1
21	Ambient Temperature Sensor	39000206	1
22	Fan Motor	1570411102	1
23	Bar Clasp	70819522	4
24	Supporter	01804348	1
25	Joint Slack	73018731	1
26	Supporter	01895225	2
27	Rotary Axis Sub-Assy	73018000013	1
28	Centrifugal fan	10425200	4
29	Fan Mounting Plate	01325200008	1
30	Right Side Plate Assy	01305263	1
31	Display Board	30296317	1
32	Water Pump Assy	15405241	1
33	Water Level Switch	45018012	1
34	Water Pump	43130324	1
35	Remote Controller	305100491	1

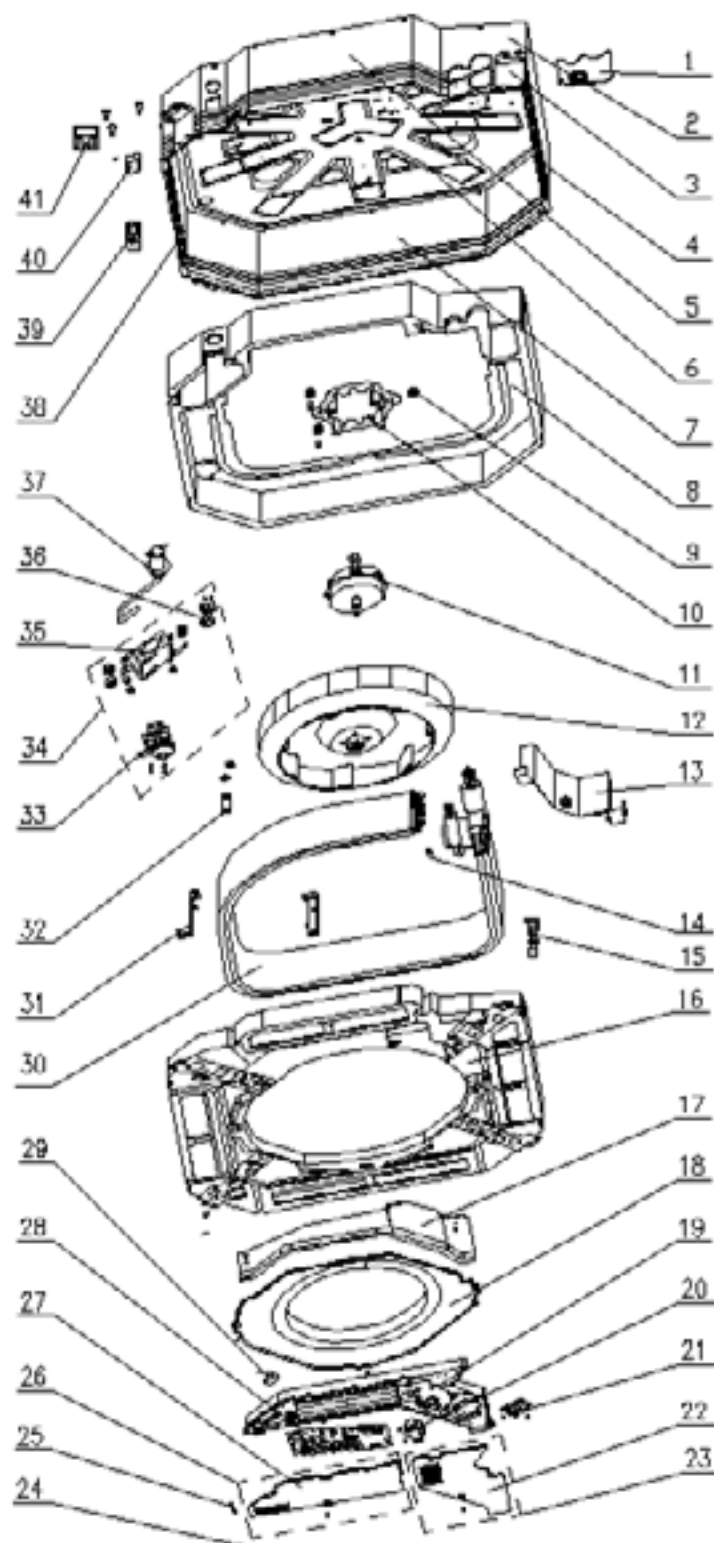
16.2.3 Cassette type
AKH(12)BA-D3DNA2A/I; AKH(18)BA-D3DNA2A/I



Part list:

AKH(12)BA-D3DNA2A/I for CN510N0060; AKH(18)BA-D3DNA2A/I for CN510N0070

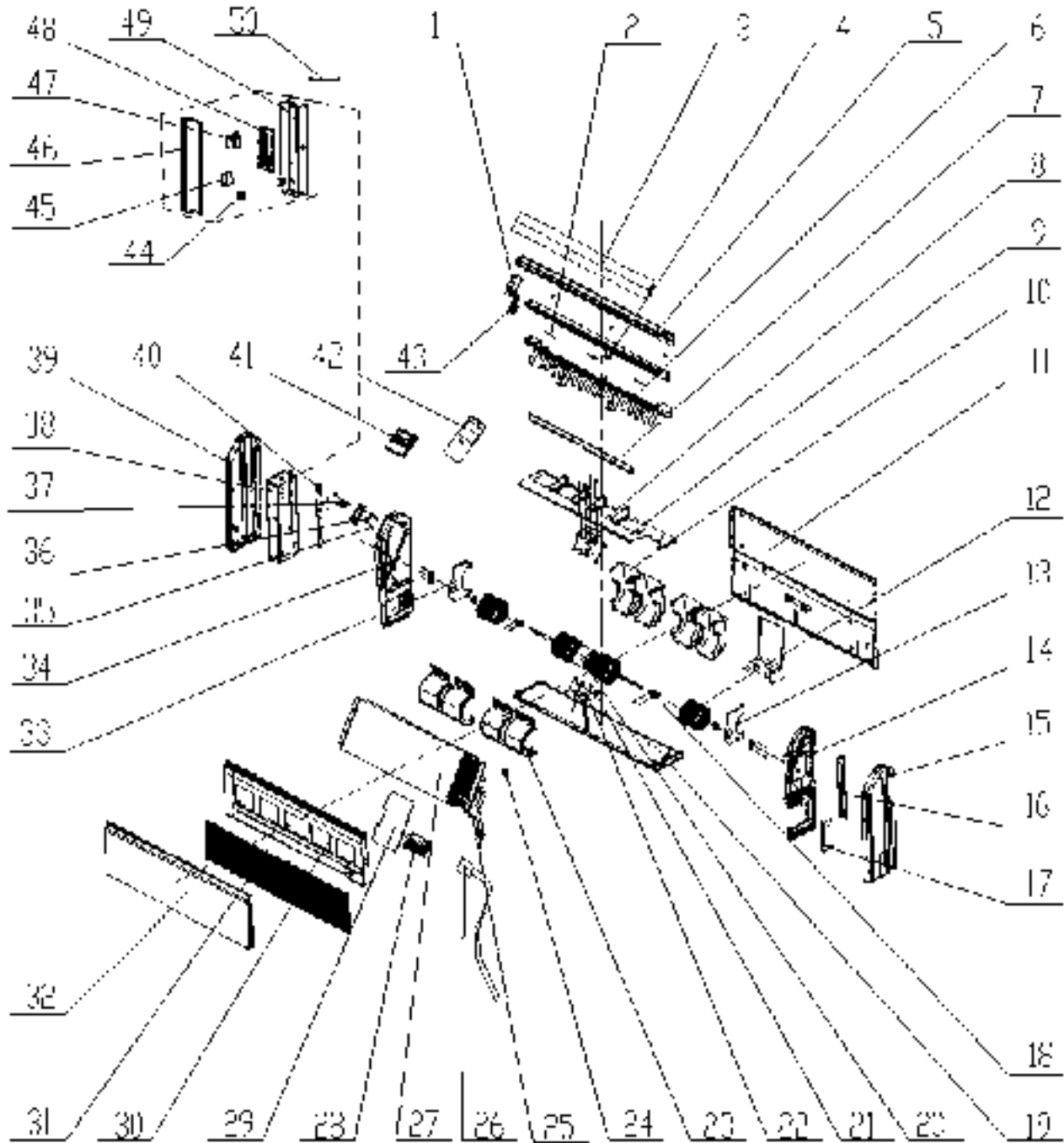
No.	Description	AKH(12)BA-D3D-NA2A/I		AKH(18)BA-D3DNA2A/I	
		Code	Qty	Code	Qty
1	Front Side Plate	01302741	1	01302741	1
2	Right Baffle Assy	01362704	1	01362704	1
3	Water Pump	43130320	1	43130320	1
4	Pump Drainpipe	05232722	1	05232722	1
5	Body Installing Support	01332705	4	01332705	4
6	Pump Support Assy	01332708	1	01332708	1
7	Water Level Switch Support	24212705	1	24212705	1
8	Water Level Switch	450127011	1	450127011	1
9	Water Tray Support	01332706	4	01332706	4
10	Temperature Sensor	390001982G	1	390001982G	1
11	Display Board	30296317	1	30296317	1
12	Remote Controller	305100491	1	305100491	1
13	Ambient Temperature Sensor	3900019813	1	3900019813	1
14	Filter Sub-Assy	11120011	1	11120011	1
15	Clamp(Power pord)	71010105	1	71010105	1
16	Filter Sub-Assy	11120012	1	11128633	1
17	Water Tray Assy	20182704	1	20182704	1
18	Evaporator Support	01072714	1	01072714	1
19	Evaporator Assy	01024307	1	0102430701	1
20	Evaporator Connection Board	01072713	1	01072713	1
21	Centrifugal Fan	10312702	1	10312702	1
22	Fan Motor	1570411401	1	1570411401	1
23	Motor Support	01702702	1	01702702	1
24	Motor Gasket	76712705	3	76712705	3
25	Tube Exit Plate Assy	01382719	1	01382719	1
26	Transformer	43110257	1	43110257	1
27	Terminal Board	420111041	1	420111041	1
28	Capacitor	33010089	1	33010089	1
29	Main Board	30226354	1	30226354	1
30	Electric Box Assy	01399536	1	01399536	1
31	Front Side Plate	01302741	1	01302741	1
32	Pass Wire Plate	01362701	1	01362701	1
33	Right Side Plate Sub-Assy	01302743	2	01302743	2
34	Seat Board Sub-Assy	01222712	1	01222712	1



No.	Description	AKH(24)BA-D3DNA1A/I	
		Code	Qty
1	Tube Exit Plate Assy	0138271502	1
2	Shell Assy	01432704	1
3	Body Installing Plate	01332701	4
4	Front Side Plate Assy	01302718	1
5	Left Side Plate Assy	01302715	1
6	Base Plate Assy	01222701	1
7	Rear Side Plate Assy	01302714	1
8	Bottom Foam Assy	52012722	1
9	Motor Gasket	76712711	4
10	Motor Support	01702701	1
11	Fan Motor	15704102	1
12	Centrifugal Fan	10312705	1
13	Connected Board Assy Of evaporator	01074042	1
14	Filter Sub-Assy	11120012	1
15	Drain Hose Sub-Assy	05232702	1
16	Water Tray Assy	20182701	1
17	Electric Base Plate	01412721	1
18	Diversion Circle	10372701	1
19	Electric Box Assy	01399400006	1
20	Terminal Board	42010196	1
21	Transformer	4311023303	1
22	Electric Box Cover I	20102702	1
23	Electric Box Cover Sub-Assy1	20122054	1
24	Temperature Sensor	390001982G	1
25	Ambient Temperature Sensor	390001977	1
26	Electric Box Cover Sub-Assy2	20122055	1
27	Electric Box Cover II	20102703	1
28	Main Board	30226340	1
29	Capacitor CBB61	33010027	1
30	Evaporator Assy	01029400012	1
31	Evaporator Support Assy	01072703	2
32	Magnetic Ring	49010104	1
33	Water Pump	43130324	1
34	Water Pump Assy	01332752	1
35	Pump Support	01329416	1
36	Water Level Switch	45018012	1
37	Pump Drainpipe	05230026	1
38	Right Side Plate Assy	01302716	1
39	Remote Controller	305100491	1
40s	Pump Cover Board Assy	01252713	1
41	Display Board	30296317	1

16.2.4 Floor ceiling type

ATH(09)BA-D3DNA1A/I; ATH(12)BA-D3DNA1A/I; ATH(18)BA-D3DNA1A/I; ATH(24)BA-D3DNA1A/I

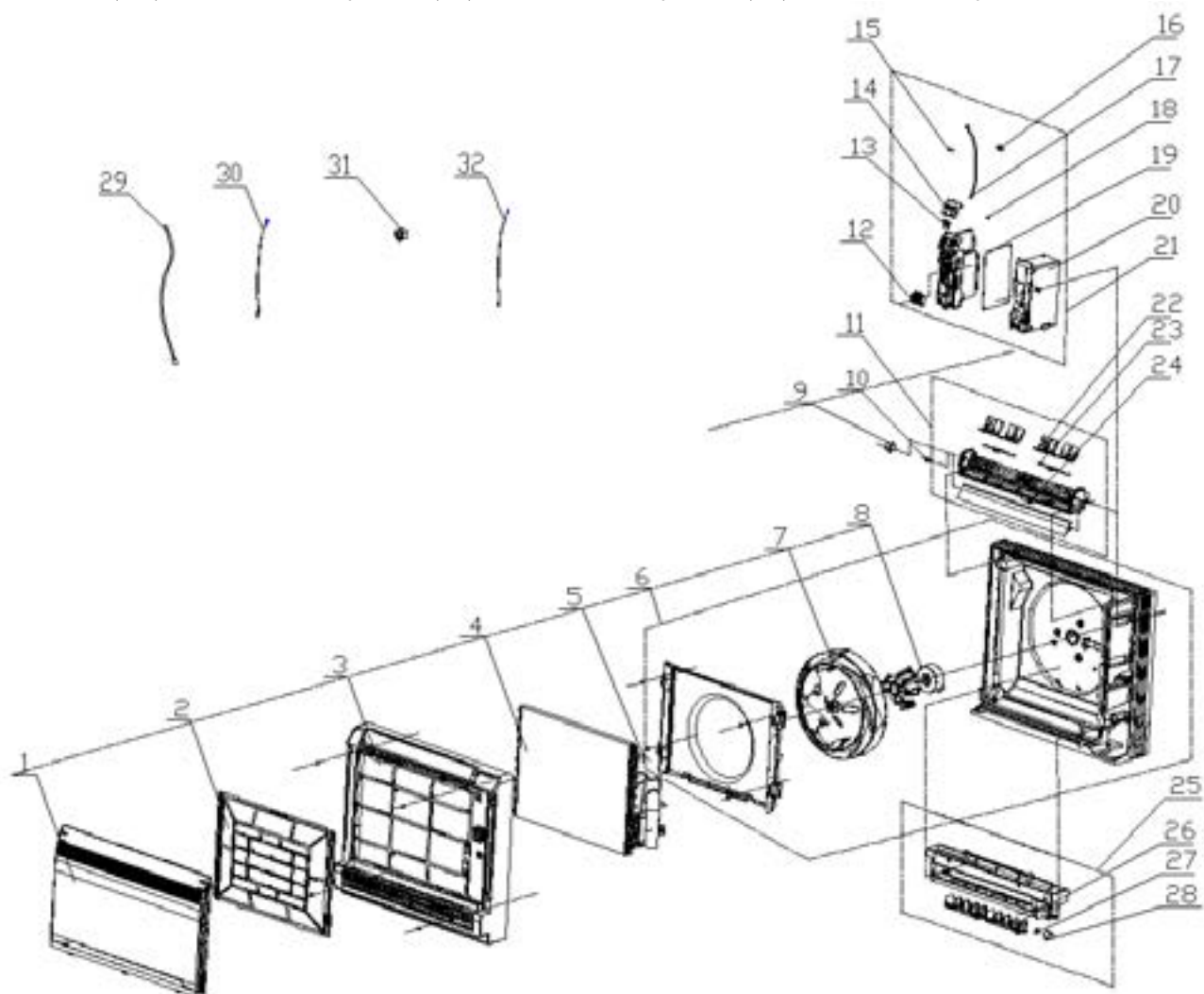


No.	Description	ATH(09)BA-D3DNA1A/I ATH(12)BA-D3DNA1A/I		ATH(18)BA-D3DNA1A/I		ATH(24)BA-D3DNA1A/I	
		Code	Qty	Code	Qty	Code	Qty
1	Fixed Mount	26909426R	1	26909426R	1	26909426R	1
2	Louver Clamp	26112127	2	26112127	2	26112127	2
3	Guide Louver	10619403	1	10619403	1	10619403	2
4	Rotating Shaft	26909430	4	26909430	4	26909430	4

5	Front Connecting Plate	01349414P	1	01349414P	1	01349414P	1
6	Base Frame	26909448	1	26909448	1	26909448	1
7	Air Lead Plate sub-assy	02229418	1	02229418	1	02229418	1
8	Supporter(Motor)	01805288	1	01805288	1	01805288	1
9	Mid-clapboard sub-assy	01249427	1	01249427	1	01249427	1
10	Front volute casing	26905205	4	26905205	4	26905205	4
11	Rear side plate assy	01319440	1	01319440	1	01319440	1
12	Centrifugal fan	10425200	4	10425200	4	10425200	4
13	Support 1	01809417	1	01809417	1	01809417	1
14	Right Side Plate Sub-Assy	01319429	1	01319429	1	01319429	1
15	Right Cover Plate	26909444	1	26909444	1	26909444	1
16	Installation Supporting Frame(Right)	01809402	1	01809402	1	01809402	1
17	Connection Board(Right)	02229406	1	02229406	1	02229406	1
18	Joint Slack	73018731	2	73018731	2	73018731	2
19	Rear Connecting Plate	01349422	1	01349422	1	01349422	1
20	Fan Motor	1570940901	1	15704111	1	15709409	1
21	Bar Clasp	70818405	1	70818405	1	70818405	1
22	Bar Clasp Sub-assy	70815201	1	70815201	1	70815201	1
23	Rear volute casing	26905206	4	26905206	4	26905206	4
24	Rubber ring	76513101	1	76513101	1	76513101	1
25	Filter 2	07216221	1	07216221	1	07216221	1
26	Ambient Temperature Sensor	390001978G	1	390001978G	1	390001978G	1
27	Evaporator Assy	01029482	1	01029469	1	01029474	1
28	Press Plate of Water Lead flume	26909442	1	26909442	1	26909442	1
29	Connection Board(Evaporator)	01344115	1	01344115	1	02229428	1
30	Water Tray Assy	01289404	1	01289404	1	01289404	1
31	Front Grill sub-assy	01579403	1	01579403	1	01579403	1
32	Top Cover Board Sub-assy	01269409	1	01269409	1	01269409	1
33	Support 2	01809418	1	01809418	1	01809418	1
34	Left Side Plate Sub-Assy	0131942801	1	0131942801	1	0131942801	1
35	Rotating Shaft	26909412	1	26909412	1	26909412	1
36	Rotating Shaft	26909413	1	26909413	1	26909413	1
37	Step Motor	1521240206	1	1521240206	1	1521240206	1
38	Electric Box Assy	02404651	1	02404653	1	02404654	1
39	Left Cover Plate	26909443	1	26909443	1	26909443	1
40	Installation Supporting Frame(Left)	01809401	1	01809401	1	01809401	1
41	Display Board	30296317	1	30296317	1	30296317	1
42	Remote Controller	305100491	1	305100491	1	305100491	1

43	Display Board	30294220	1	30294220	1	30294220	1
44	Terminal Board	420111041	1	420111041	1	420111041	1
45	Capacitor CBB61	33010089	1	33010026	1	33010027	1
46	Electric Box Cover	01429420	1	01429420	1	01429420	1
47	Transformer	43110257	1	43110257	1	43110257	1
48	Main Board	30226350	1	30226350	1	30226350	1
49	Electric Box	01429419	1	01429419	1	01429419	1
50	Room Sensor	3900019822	1	3900019822	1	3900019822	1

16.2.5 Console type

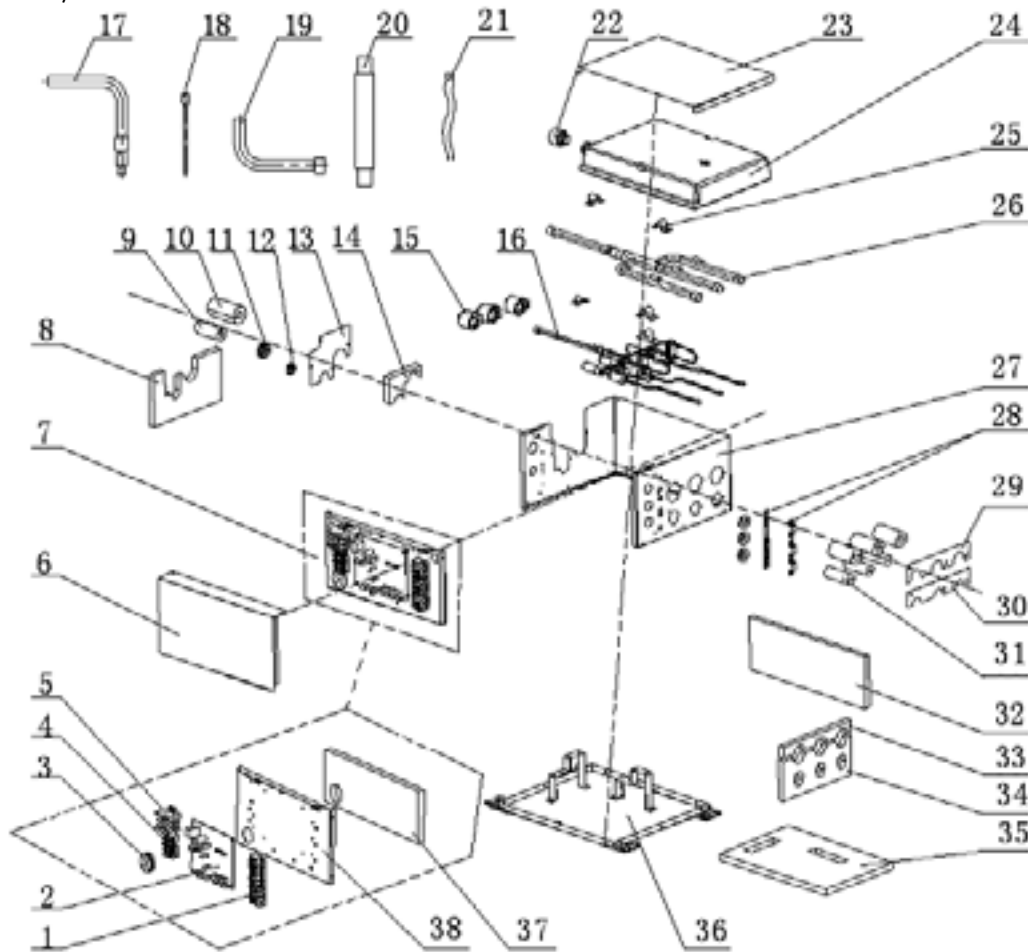


No.	Description	AEH(09)AA-D3DNA1C/I		AEH(12)AA-D3DNA1C/I		AEH(18)AA-D3NA1C/I	
		Code	Qty	Code	Qty	Code	Qty
1	Front Panel Assy	20012756	1	20012756	1	20012756	1
2	Filter Sub-Assy	11122139	1	11122139	1	11122139	1
3	Front Case Assy	20012601	1	20012601	1	20012601	1
4	Evaporator Assy	01002637	1	01002333	1	01002332	1

5	Temp. Sensor sleeving	05212423	1	05212423	1	05212423	1
6	Rear Case assy	22202462	1	22202462	1	22202462	1
7	Centrifugal fan	10312005	1	10312005	1	10312005	1
8	Fan Motor	15012123	1	15012123	1	15012123	1
9	Step Motor	1521210805	1	1521210805	1	1521210805	1
10	Crank	73012005	1	73012005	1	73012005	1
11	Swing Assy	10102042	1	10102042	1	10102042	1
12	Terminal Board	42011233	1	42011233	1	42011233	1
13	Switch Board	30112007	1	30112007	1	30112007	1
14	Display Board	30568131	1	30568131	1	30568131	1
15	Fuse	46010055	1	46010055	1	46010055	1
16	Radiator	49010252	1	49010252	1	49010252	1
17	Signal Wire	4003004202	1	4003004202	1	4003004202	1
18	Jumper	4202300101	1	4202300102	1	4202300102	1
19	Main Board	30138613	1	30138613	1	30138613	1
20	Electric Box	20112116	1	20112116	1	20112116	1
21	Electric Box Assy	2020262201	1	2020262101	1	2020242301	1
22	Air Louver (upper)	10512143	2	10512143	2	10512143	2
23	Swing lever	10582096	2	10582096	2	10582096	2
24	Shaft of guide louver	10542020	2	10542020	2	10542020	2
25	Water Tray Assy	20182141	1	20182141	1	20182141	1
26	Air Louver (lower)	10512144	2	10512144	2	10512144	2
27	Axis (lower step motor)	10542034	1	10542034	1	10542034	1
28	Step Motor	1521210101	1	1521210101	1	1521210101	1
29	Connecting Cable	400204056	0	400204056	0	400204056	0
30	Tube Sensor	390000591	1	390000591	1	390000591	1
31	Pipe Connection Nut accessories	06320020	1	06320020	1	06320020	1
32	Ambient Temperature Sensor	3900004508	1	3900004508	1	3900004508	1

16.3 BU Module

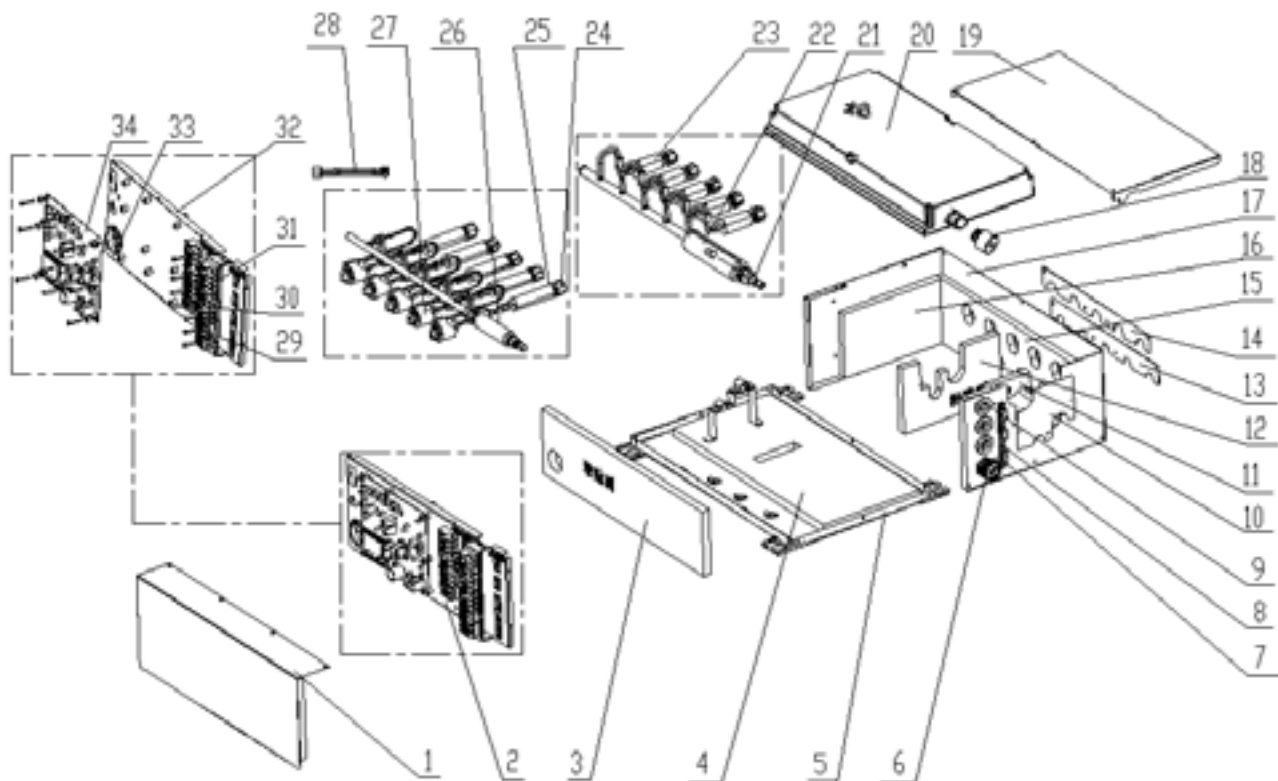
FXA2B-D; FXA3B-D



No.	Description	FXA2B-D		FXA3B-D	
		Code	Qty	Code	Qty
1	Terminal Board	420111041	2	420111041	3
2	Main Board	30276000002	1	30276000002	1
3	Rubber Ring	76515202	1	76515202	1
4	Terminal Board	42011154	2	42011154	2
5	Terminal Board	420111451	1	420111451	1
6	Electrical Equipment Plate	01424731P	1	01424731P	1
7	Electric Box Sub-assy	01324100033	1	01324100032	1
8	Sponge (Left base Frame)	12204440	1	12204440	1
9	Heat Insulation Pipe 2	7509410000601	1	7509410000601	1

10	Heat Insulation Pipe	1220552703	1	1220552703	1
11	Rubber Ring	76510031	1	76510031	1
12	Rubber Ring	76510021	1	76510021	1
13	Fixed Plate 3	01844100008P	1	01844100008P	1
14	Sponge (Coping plate)	12204437	1	12204437	1
15	Electric Expansive Loop	4304413215	1	4304413215	1
		4304413216	1	4304413216	1
				4304413217	1
16	Liquid Branch Pipe	04224100163H	1	04224100161H	1
17	Branch Pipe 7	05375200002	1	05375200002	1
	Branch Pipe 8	05375200003	1	05375200003	1
	Branch Pipe 9	/	0	05375200004	1
18	Branch Pipe 2	05375200005	1	05375200005	1
13	Branch Pipe (Outdoor unit)	05375200001	1	05375200001	1
20	Drainage Pipe	05232046	1	05232046	1
21	Temperature Sensor Assy	3900825301G	1	39008253G	1
22	Rubber Plug (Water Tray)	76815214	1	76815214	1
23	Coping Plate	01264715P	1	01264715P	1
24	Water Tray	12504100001	1	12504100001	1
25	Wire Clamp	71010103	1	71010103	1
26	Gas Branch Pipe	04574100032H	1	04574100031H	1
27	Rear Side Plate	01314100060P	1	01314100059P	1
28	Wire Clamp	71010003	2	71010003	3
29	Fixed Plate 2	01844100042P	1	01844100007P	1
30	Fixed Plate 1	01844100041P	1	01844100006P	1
31	Heat Insulation Pipe	75094100008	2	75094100008	3
32	Sponge	12204439	1	12204439	1
33	Sponge	12204100128	1	12204100126	1
34	Sponge	12204100127	1	12204100125	1
35	Sponge	12204441	1	12204441	1
36	Rear Case Assy	01284100097P	1	01284100097P	1
37	Sponge	12204442	1	12204442	1
38	Electric Plate	01324100047	1	01324100047	1

FXB5A-D



No.	Description	FXB5A-D	
		Code	Qty
1	Electrical Equipment Plate	01264100017P	1
2	Electric Box Sub-assy	01324100058	1
3	Sponge	12204100052	1
4	Sponge	12204100078	
5	Rear Case Assy	0128410001801P	1
6	Cable-Cross Loop	76510026	1
7	Wire Clamp	71010003	3
8	Insulation Gasket	70410524	1
9	Rubber ring	76510021	1
10	Fixed Plate 1	01844100017P	1
11	Sponge	12204100057	1
12	Sponge	12204100055	1
13	Fixed Plate 3	01844100019P	1
14	Fixed Plate 2	01844100018P	1
15	Sponge	12204100053	1
16	Sponge	12204100054	1
17	Rear Side Plate	01324100037P	1
18	Rubber Plug(Water Tray)	76815214	1
19	Coping Plate	01264100016P	1
20	Water Tray	12504100004	1
21	Gas Branch Pipe	04574100033H	1
22	Heat Insulation Pipe 1(Gas)	75094100005	1

23	Heat Insulation Pipe 2(Gas)	75094100006	5
24	Liquid Branch Pipe	04224100290H	1
25	Heat Insulation Pipe 5(Liquid)	75094100004	5
26	Heat Insulation Pipe 1(Liquid)	75094100003	1
27	Electric Expansive Loop	4304413208	1
		4304413222	1
		4304413216	1
		4304413217	1
28	Temperature Sensor Assy	39008000044G	1
29	Terminal Board	42011154	2
30	Terminal Board	4201115402	1
31	Terminal Board	420111041	5
32	Electric Plate	01244100012	1
33	Rubber ring	76514801	1
34	Main Board	30276000003	1