

BHI

12,000 BTU - 17 SEER2

24,000 BTU - 17 SEER2

36,000 BTU - 19 SEER2

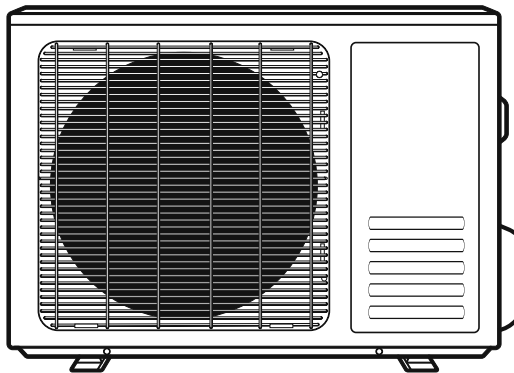
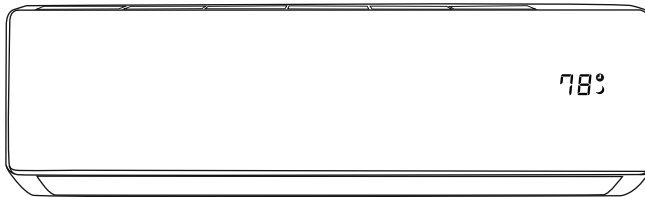
DC Inverter Ductless Mini Split

Air Conditioner with Heat Pump

Model No.: BHI-T17-12K115V-US (12K BTU)

BHI-T17-24K230V-US (24K BTU)

BHI-T19-36K230V-US (36K BTU)



Customer & Technical Support information
(Please contact us BEFORE returning product)

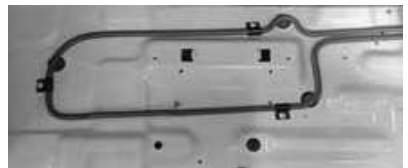
Website : www.bhiair.com

Contact Phone # : 1-626-427-3298

(Mon-Fri, 9am-5pm/PST)

Email: support@bhiair.com

help@bhiair.com



"BHI" Outdoor Unit has "Heating Belt" that works by Temperature Sensor, if temperature lower than 32°F (0°C) degree, it would start to heat and when over than 32°F (0°C) degree, would stop working automatically to ensure that Outdoor Unit does not freeze, it's a great feature to use BHI Mini Split AC at cold temperature region / area / season.

INSTALLATION PRECAUTIONS

Pipe Length and Additional Refrigerant

Inverter Models Capacity (Btu/h)	9K-12K		18K-24K		30K-36K	
Length of pipe with standard charge	5m/16ft	5m/16ft	5m/16ft	5m/16ft	5m/16ft	5m/16ft
Length of pipe with standard charge (Like: North American, etc.)	7.5m/24ft	7.5m/24ft	7.5m/24ft	7.5m/24ft	7.5m/24ft	7.5m/24ft
Maximum distance between indoor and outdoor unit	15m/49ft	15m/49ft	20m/65ft	20m/65ft	30m/98ft	30m/98ft
Additional refrigerant charge	20g/m	15g/m	30g/m	25g/m	30g/m	25g/m
Max. diff. in level between indoor and outdoor unit	10m/32ft	10m/32ft	15m/48ft	15m/48ft	20m/65ft	20m/65ft
Type of refrigerant	R22/R410A	R32	R22/R410A	R32	R22/R410A	R32

ON-OFF Models Capacity (Btu/h)	9K-12K		18K-36K	
Length of pipe with standard charge	5m/16ft	5m/16ft	5m/16ft	5m/16ft
Maximum distance between indoor and outdoor unit	15m/49ft	15m/49ft	15m/49ft	15m/49ft
Additional refrigerant charge	20g/m	15g/m	30g/m	25g/m
Max. diff. in level between indoor and outdoor unit	5m/16ft	5m/16ft	5m/16ft	5m/16ft
Type of refrigerant	R22/R410A	R32	R22/R410A	R32

Torque Parameters

PIPE Size	Newton meter[N x m]	Pound-force foot (lbf-ft)	Kilogram-force meter (kgf-m)
1/4 " (ϕ 6.35)	15 - 20	11.1 - 14.8	1.5 - 2.0
3/8 " (ϕ 9.52)	31 - 35	22.9 - 25.8	3.2 - 3.6
1/2 " (ϕ 12)	45 - 50	33.2 - 36.9	4.6 - 5.1
5/8 " (ϕ 15.88)	60 - 65	44.3 - 48.0	6.1 - 6.6

Dedicated Distribution Device and Wire for Air Conditioner

Min. Circuit Ampacity of Air Conditioner (A)	Minimum Wire Cross-sectional Area(mm ²)	Specification of Socket or Switch (A)	Fuse Specification (A)
≤8	0.75	15	15
>8 and ≤10	1.0	15	15
>10 and ≤15	1.5	20	25
>15 and ≤24	2.5	25	40
>24 and ≤28	4.0	35	45
>28 and ≤32	6.0	40	55

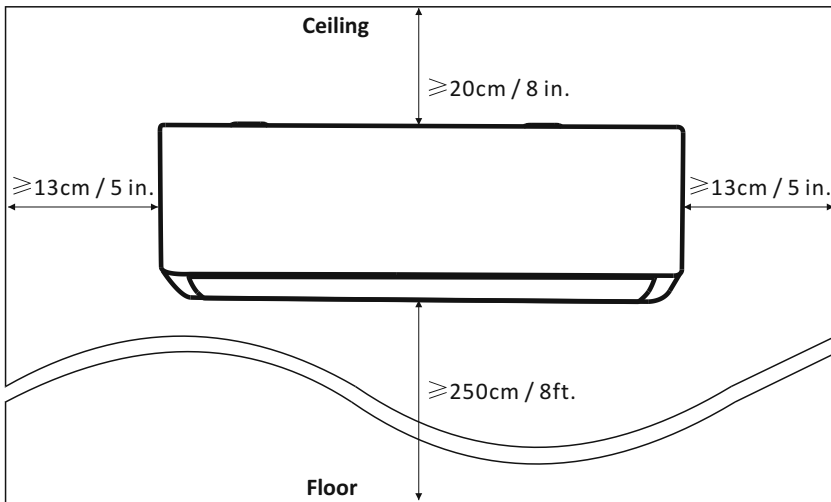
 **Note:** This table is only for reference, the installation shall meet the requirements of local laws and regulations.

INDOOR UNIT INSTALLATION

Step1: Select Installation location

- 1.1 Ensure the installation complies with the installation minimum dimensions (defined below) and meets the minimum and maximum connecting piping length and maximum change in elevation as defined in the System Requirements section.
- 1.2 Air inlet and outlet will be clear of obstructions, ensuring proper airflow throughout the room.
- 1.3 Condensate can be easily and safely drained.
- 1.4 All connections can be easily made to outdoor unit.
- 1.5 Indoor unit is out of reach of children.
- 1.6 A mounting wall strong enough to withstand four times the full weight and vibration of the unit.
- 1.7 Filter can be easily accessed for cleaning.
- 1.8 Leave enough free space to allow access for routine maintenance.
- 1.9 Install at least 10 ft. (3 m) away from the antenna of TV set or radio. Operation of the air conditioner may interfere with radio or TV reception in areas where reception is weak. An amplifier may be required for the affected device.
- 1.10 Do not install in a laundry room or by a swimming pool due to the corrosive environment.
- 1.11 For ETL certification area, Caution: Mount with the lowest moving parts at least 8 ft. (2.4 m) above floor or grade level.

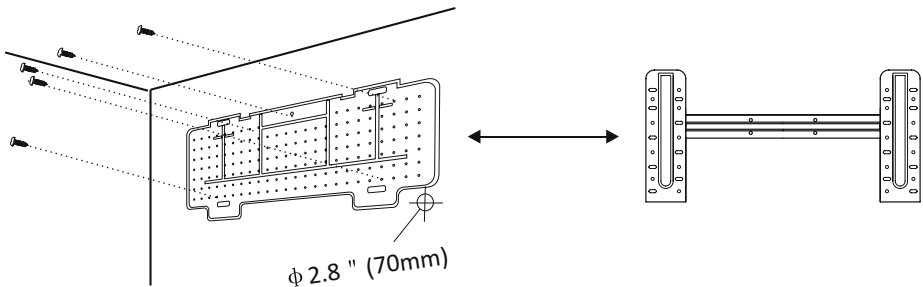
Minimum Indoor Clearances



INDOOR UNIT INSTALLATION

Step2: Install Mounting Plate

- 2.1 Take the mounting plate from the back of indoor unit.
- 2.2 Ensure to meet the minimum installation dimension requirements as step 1, according to the size of mounting plate, determine the position and stick the mounting plate close to the wall.
- 2.3 Adjust the mounting plate to a horizontal state with a spirit level, then mark out the screw hole positions on the wall.
- 2.4 Put down the mounting plate and drill holes in the marked positions with drill.
- 2.5 Insert expansion rubber plugs into the holes, then hang the mounting plate and fix it with screws.



Note:

- (I) Make sure the mounting plate is firm enough and flat against the wall after installation.
- (II) This figure shown may be different from the actual object, please take the latter as the standard.

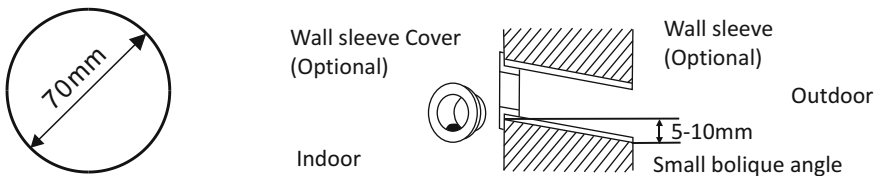
Step3: Drill Wall Hole

A hole in the wall should be drilled for refrigerant piping ,the drainage pipe, and connecting cables.

- 3.1 Determine the location of wall hole base on the position of mounting plate.
- 3.2 The hole should be have a 70mm diameter at least and a small oblique angle to facilitate drainage.
- 3.3 Drill the wall hole with 70mm core drill and with small oblique angle lower than the indoor end about 5mm to 10mm.
- 3.4 Place the wall sleeve and wall sleeve cover(both are optional parts) to protect the connection parts.

Caution:

When drill the wall hole, maker sure to avoid wires, plumbing and other sensitive components.



INDOOR UNIT INSTALLATION

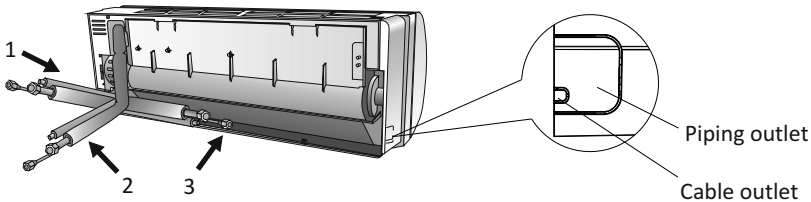
Step4: Connecting Refrigerant Pipe

4.1 According to the wall hole position, select the appropriate piping mode.

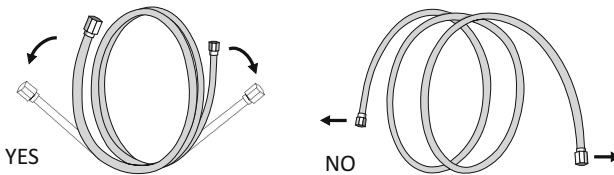
There are three optional piping modes for indoor units as shown in the figure below:

In Piping Mode 1 or Piping Mode 3, a notch should be made by using scissors to cut the plastic sheet of piping outlet and cable outlet on the corresponding side of the indoor unit.

Note: When cutting off the plastic sheet at the outlet, the cut should be trimmed to smooth.



4.2 Bending the connecting pipes with the port facing up as shown in the figure.



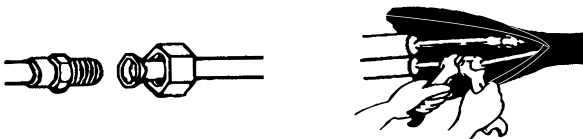
4.3 Take off the plastic cover in the pipe ports and take off the protective cover on the end of piping connectors.

4.4 Check whether there is any sundry on the port of the connecting pipe and make ensure the port is clean.

4.5 After align the center, rotate the nut of the connecting pipe to tighten the nut as tightly as possible by hand.

4.6 Use a torque wrench to tighten it according to the torque values in the torque requirements table; (Refer to the torque requirements table on section **INSTALLATION PRECAUTIONS**)

4.7 Wrap the joint with the insulation pipe.

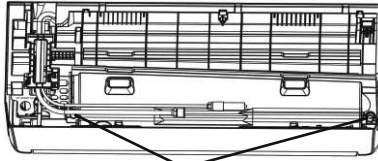


INDOOR UNIT INSTALLATION

Step5: Connect Drainage Hose

5.1 Adjust the drainage hose(if applicable)

In some model, both sides of the indoor unit are provided with drainage ports, you can choose one of them to attach the drainage hose. And plug the unused drain port with the rubber attached in one of the ports.

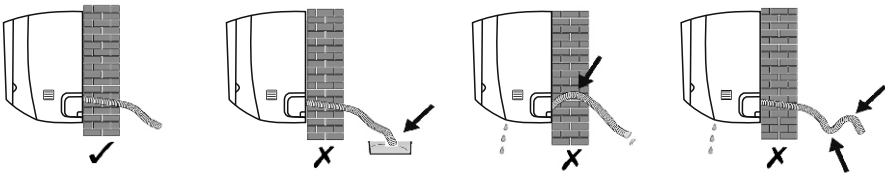


Drainage ports

5.2 Connect the drainage hose to the drainage port, ensure the joint is firm and the sealing effect is good.

5.3 Wrap the joint firmly with teflon tape to ensure no leaks.

Note: Make sure there is no twists or dents, and the pipes should be placed obliquely downward to avoid blockage, to ensure proper drainage.



Step6: Connect Wiring

6.1 Choose the right cables size determined by the maximum operating current on the nameplate.
(Check the cables size refer to section **INSTALLATION PRECAUTIONS**)

6.2 Open the front panel of indoor unit.

6.3 Use a screwdriver, open the electric control box cover, to reveal the terminal block.

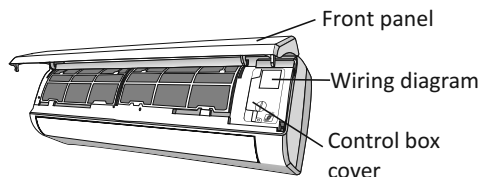
6.4 Unscrew the cable clamp.

6.5 Insert one end of the cable into the position of control box from the back of the right end of the indoor unit.

6.6 Connect the wires to corresponding terminal according to the wiring diagram on the electric control box cover. And make sure that they are well connected.

6.7 Screw the cable clamp to fasten the cables.

6.8 Reinstall the electric control box cover and front panel.

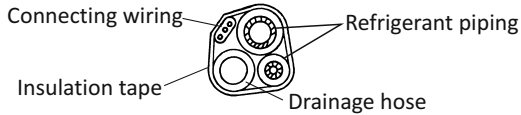


INDOOR UNIT INSTALLATION

Step7: Wrap Piping and Cable

After the refrigerant pipes, connecting wires and drainage hose are all installed, in order to save space, protect and insulate them, it must be bundle with insulating tape before passing them through the wall hole.

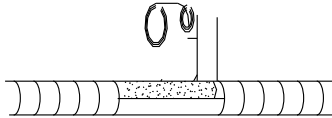
7.1 Arrange the pipes ,cables and drainage hose well as the following picture.



Note: (I) Make sure the drainage hose is at the bottom.

(II) Avoid crossing and bending of parts.

7.2 Using the insulating tape wrap the refrigerant pipes, connecting wires and drainage hose together tightly.



Step8: Mount Indoor Unit

8.1 Slowly pass the refrigerant pipes, connecting wires and drainage hose wrapped bundle through the wall hole.

8.2 Hook the top of indoor unit on the mounting plate.

8.3 Apply slight pressure to the left and right sides of the indoor unit, make sure the indoor unit is hooked firmly.

8.4 Push down the bottom of indoor unit to let the snaps onto the hooks of the mounting plate, and make sure it is hooked firmly.

Sometimes, if the refrigerant pips were already embedded in the wall, or if you want to connecting the pips and wires on the wall, do as below:

(I) Hook the top of the indoor unit on the mounting plate without piping and wiring.

(II) Lift the indoor unit opposite the wall, unfold the bracket on the mounting plate, and use this bracket to prop up the indoor unit, there will be a big space for operation.

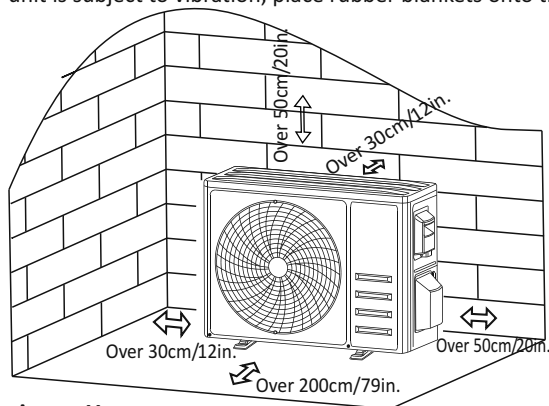
(III) Do the refrigerant piping, wiring, connect drainage hose, and wrap them as **Step 4 to 7**.

OUTDOOR UNIT INSTALLATION

Step1: Select Installation Location

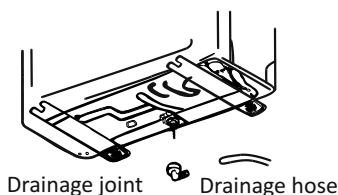
Select a site that allows for the following:

- 1.1 Do not install the outdoor unit near sources of heat, steam or flammable gas.
- 1.2 Do not install the unit in too windy or dusty places.
- 1.3 Do not install the unit where people often pass. Select a place where the air discharge and operating sound will not disturb the neighbors.
- 1.4 Avoid installing the unit where it will be exposed to direct sunlight (other wise use a protection, if necessary, that should not interfere with the air flow).
- 1.5 Reserve the spaces as shown in the picture for the air to circulate freely.
- 1.6 Install the outdoor unit in a safe and solid place.
- 1.7 If the outdoor unit is subject to vibration, place rubber blankets onto the feet of the unit.



Step2: Install Drainage Hose

- 2.1 This step only for heating pump models.
- 2.2 Insert the drainage joint to the hole at the bottom of the outdoor unit.
- 2.3 Connect the drainage hose to the joint and make the connection well enough.

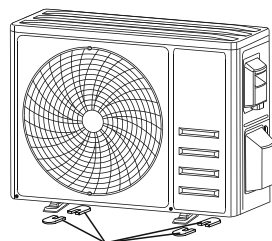


Step3: Fix Outdoor Unit

- 3.1 According to the outdoor unit installation dimensions to mark the installation position for expansion bolts .
- 3.2 Drill holes and clean the concrete dust and place the bolts .
- 3.3 If applicable install 4 rubber blankets on the hole before place the outdoor unit (Optional).
This will reduce vibrations and noise.
- 3.4 Place the outdoor unit base on the bolts and pre-drilled holes.
- 3.5 Use wrench to fix the outdoor unit firmly with bolts.

Note:

The outdoor unit can be fixed on a wall-mounting bracket. Follow the instruction of the wall-mounting bracket to fix the wall-mounting bracket on the wall, and then fasten the outdoor unit on it and keep it horizontal. The wall-mounting bracket must be able to support at least 4 times of the weight of outdoor unit.



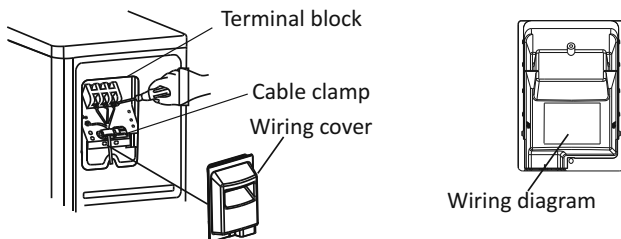
Install 4 rubber blankets (Optional)

OUTDOOR UNIT INSTALLATION

Step4: Install Wiring

- 4.1 Use a phillips screwdriver to unscrew wiring cover, grasp and press it down gently to take it down.
- 4.2 Unscrew the cable clamp and take it down.
- 4.3 According to the wiring diagram pasted inside the wiring cover, connect the connecting wires to the corresponding terminals, and ensure all connections are firmly and securely
- 4.4 Reinstall the cable clamp and wiring cover.

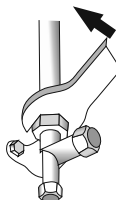
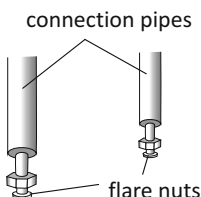
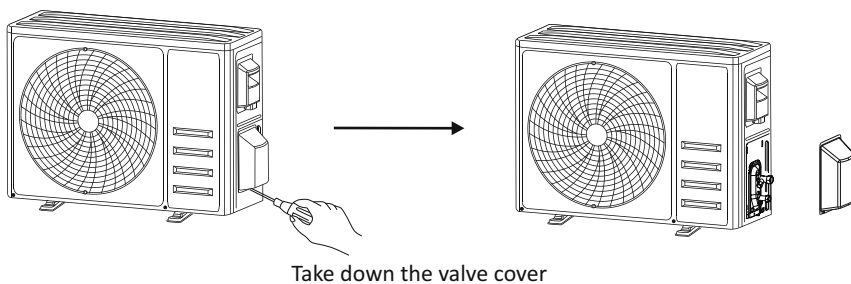
Note: When connecting the wires of indoor and outdoor units, the power should be cut off.



Step5: Connecting Refrigerant Pipe

- 5.1 Unscrews the valve cover, grasp and press it down gently to take it down(if the valve cover is applicable).
- 5.2 Remove the protective caps from the end of valves.
- 5.3 Take off the plastic cover in the pipe ports and check whether there is any sundry on the port of the connecting pipe and make ensure the port is clean.
- 5.4 After align the center, rotate the flare nut of the connecting pipe to tighten the nut as tightly as possible by hand.
- 5.5 Use a spanner hold the body of the valve and use a torque wrench to tighten the flare nut according to the torque values in the torque requirements table.

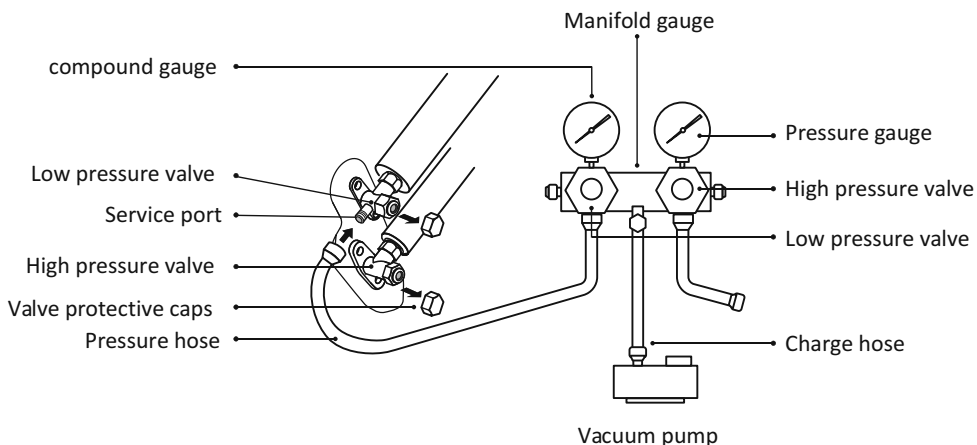
(Refer to the torque requirements table on section **INSTALLATION PRECAUTIONS**)



OUTDOOR UNIT INSTALLATION

Step6: Vacuum Pumping

- 6.1 Use a spanner to take down the protective caps from the service port, low pressure valve and high pressure valve of the outdoor unit.
- 6.2 Connect the pressure hose of manifold gauge to the service port on the outdoor unit low pressure valve.
- 6.3 Connect the charge hose from the manifold gauge to the vacuum pump.
- 6.4 Open the low pressure valve of the manifold gauge and close the high pressure valve.
- 6.5 Turn on the vacuum pump to vacuum the system.
- 6.6 The vacuum time should not be less than 15 minutes, or make sure the compound gauge indicates -0.1 MPa (-76 cmHg)
- 6.7 Close the low pressure valve of the manifold gauge and turn off the vacuum.
- 6.8 Hold the pressure for 5 minutes, make sure that the rebound of compound gauge pointer does not exceed 0.005 MPa .
- 6.9 Open the low pressure valve counterclockwise for $1/4$ turn with hexagonal wrench to let a little refrigerant fill in the system, and close the low pressure valve after 5 seconds and quickly remove the pressure hose.
- 6.10 Check all indoor and outdoor joints for leakage with soapy water or leak detector.
- 6.11 Fully open the low pressure valve and high pressure valve of the outdoor unit with hexagonal wrench.
- 6.12 Reinstall the protective caps of the service port, low pressure valve and high pressure valve of the outdoor unit.
- 6.13 Reinstall the valve cover.



TEST OPERATION

Inspections Before Test Run

Do the following checks before test run.

Description	Inspection method
Electrical safety inspection	<ul style="list-style-type: none">• Check whether the power supply voltage complies with specification.• Check whether there is any wrong or missing connection between the power lines, signal line and earth wires.• Check whether the earth resistance and insulation resistance comply with requirements.
Installation safety inspection	<ul style="list-style-type: none">• Confirm the direction and smoothness of drainage pipe.• Confirm that the joint of refrigerant pipe is installed completely.• Confirm the safety of outdoor unit, mounting plate and indoor unit installation.• Confirm that the valves are fully open.• Confirm that there are no foreign objects or tools left inside the unit.• Complete installation of indoor unit air inlet grille and panel.
Refrigerant leakage detection	<ul style="list-style-type: none">• The piping joint, the connector of the two valves of the outdoor unit, the valve spool, the welding port, etc., where leakage may occur.• Foam detection method: Apply soapy water or foam evenly on the parts where leakage may occur, and observe whether bubbles appear or not, if not, it indicates that the leakage detection result is safe.• Leak detector method: Use a professional leak detector and read the instruction of operation, detect at the position where leakage may occur.• The duration of leak detection for each position should last for 3 minutes or more; If the test result shows that there is leakage, the nut should be tightened and tested again until there is no leakage; After the leak detection is completed, wrap the exposed pipe connector of indoor unit with thermal insulation material and wrap with insulation tape.

TEST OPERATION

Test Run Instruction

1. Turn on the power supply.
2. Press the ON/OFF button on the remote controller to turn on the air conditioner.
3. Press the Mode button to switch the mode COOL and HEAT.
In each mode set as below:
COOL-Set the lowest temperature
HEAT-Set the highest temperature
4. Run about 8 minutes in each mode and check all functions are properly run and respond the remote controller. Functions check as recommended:
 - 4.1 If the outlet air temperature respond the cool and heat mode
 - 4.2 If the water drains properly from the drainage hose
 - 4.3 If the Louver and deflectors(optional) rotate properly
5. Observe the test run state of the air conditioner at least 30 minutes.
6. After the successfully test run, return the normal setting and press ON/OFF button on the remote controller to turn off the unit.
7. Inform the user to read this manual carefully before use, and demonstrate to the user how to use the air conditioner, the necessary knowledge for service and maintenance, and the reminder for storage of accessories.

Note:

If the ambient temperature is excess the range refer to section OPERATION INSTRUCTIONS, and it can not run COOL or HEAT mode, lift the front panel and refer to the emergency button operation to run the COOL and HEAT mode.

MAINTENANCE

<p>Warning</p>	<ul style="list-style-type: none"> • When cleaning, you must shut down the machine and cut off the power supply for more than 5 minutes. • Under no circumstances should the air conditioner be flushed with water. • Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner, so only use soft dry cloth or wet cloth dipped with neutral detergent to clean the air conditioner. • Pay attention to cleaning the filter screen regularly to avoid dust covering which will affect the filter screen effect. When the operating environment is dusty, the cleaning frequency should be increased appropriately. • After removing the filter screen, do not touch the fins of the indoor unit to avoid scratching.
<p>Clean the unit</p>	<div data-bbox="322 475 935 619"> </div> <p>Wring it dry Gentle wipe the unit surface</p> <p>Tip: Wipe frequently to keep air conditioner clean and good appearance .</p>
<p>Clean the filter</p>	<div data-bbox="252 742 1024 938"> </div> <p>Take out the filter from the unit Clean the filter with soapy water and air dry it Replace the filter</p> <p>Tip: When you find accumulated dust in the filter, please clean the filter in time to ensure the clean, healthy and efficient operation inside the air conditioner.</p>
<p>Service and maintenance</p>	<ul style="list-style-type: none"> • When the air conditioner is not in use for a long time, do the following work: Take out the batteries of the remote controller and disconnect the power supply of the air conditioner. • When starting to use after long-term shutdown: <ol style="list-style-type: none"> 1. Clean the unit and filter screen; 2. Check whether there are obstacles at the air inlet and outlet of indoor and outdoor units; 3. Check whether the drain pipe is unobstructed; Install the batteries of the remote controller and check whether the power is on.

TROUBLESHOOTING

MALFUNCTION	POSSIBLE CAUSES
The appliance does not operate	Power failure/plug pulled out.
	Damaged indoor/outdoor unit fan motor.
	Faulty compressor thermomagnetic circuit breaker.
	Faulty protective device or fuses.
	Loose connections or plug pulled out.
	It sometimes stops operating to protect the appliance.
	Voltage higher or lower than the voltage range.
	Active TIMER-ON function.
	Damaged electronic control board.
Strange odor	Dirty air filter.
Noise of running water	Back flow of liquid in the refrigerant circulation.
A fine mist comes from the air outlet	This occurs when the air in the room becomes very cold, for example in the “COOLING” or “DEHUMIDIFYING/DRY” modes.
A strange noise can be heard	This noise is made by the expansion or contraction of the front panel due to variations in temperature and does not indicate a problem.
Insufficient airflow, either hot or cold	Unsuitable temperature setting.
	Obstructed air conditioner intakes and outlets.
	Dirty air filter.
	Fan speed set at minimum.
	Other sources of heat in the room.
	No refrigerant.
The appliance does not respond to commands	Remote control is not close enough to indoor unit.
	The batteries of remote control need to be replaced.
	Obstacles between remote control and signal receiver in indoor unit.
The display is off	Active DISPLAY function.
	Power failure.
Switch off the air conditioner immediately and cut off the power supply in the event of:	Strange noises during operation.
	Faulty electronic control board.
	Faulty fuses or switches.
	Spraying water or objects inside the appliance.
	Overheated cables or plugs.
	Very strong smells coming from the appliance.

TROUBLESHOOTING

ERROR CODE ON THE DISPLAY

In case of error, the display on the indoor unit shown the following error codes:

Display	Description of the trouble
E1	Indoor room temperature sensor fault
E2	Indoor pipe temperature sensor fault
E3	Outdoor pipe temperature sensor fault
E4	Refrigerant system leakage or fault
E6	Malfunction of indoor fan motor
E7	Outdoor ambient temperature sensor fault
E0	Indoor and outdoor communication fault
E8	Outdoor discharge temperature sensor fault
E9	Outdoor IPM module fault
ER	Outdoor current detect fault
EE	Outdoor PCB EEPROM fault
EF	Outdoor fan motor fault
EH	Outdoor suction temperature sensor fault

DISPOSAL GUIDELINE (European)

This appliance contains refrigerant and other potentially hazardous materials. When disposing of this appliance, the law requires special collection and treatment. **DO NOT** dispose of this product as household waste or unsorted municipal waste.

When disposing of this appliance, you have the following options:

- Dispose of the appliance at designated municipal electronic waste collection facility.
- When buying a new appliance, the retailer will take back the old appliance free of charge.
- The manufacturer will also take back the old appliance free of charge.
- Sell the appliance to certified scrap metal dealers.
- Disposing of this appliance in the forest or other natural surroundings endangers your health and is bad for the environment. Hazardous substances may leak into the ground water and enter the food chain.

