

TOSOT

15.5SEER2 INVERTER HEAT PUMP

GREE COMMERCIAL

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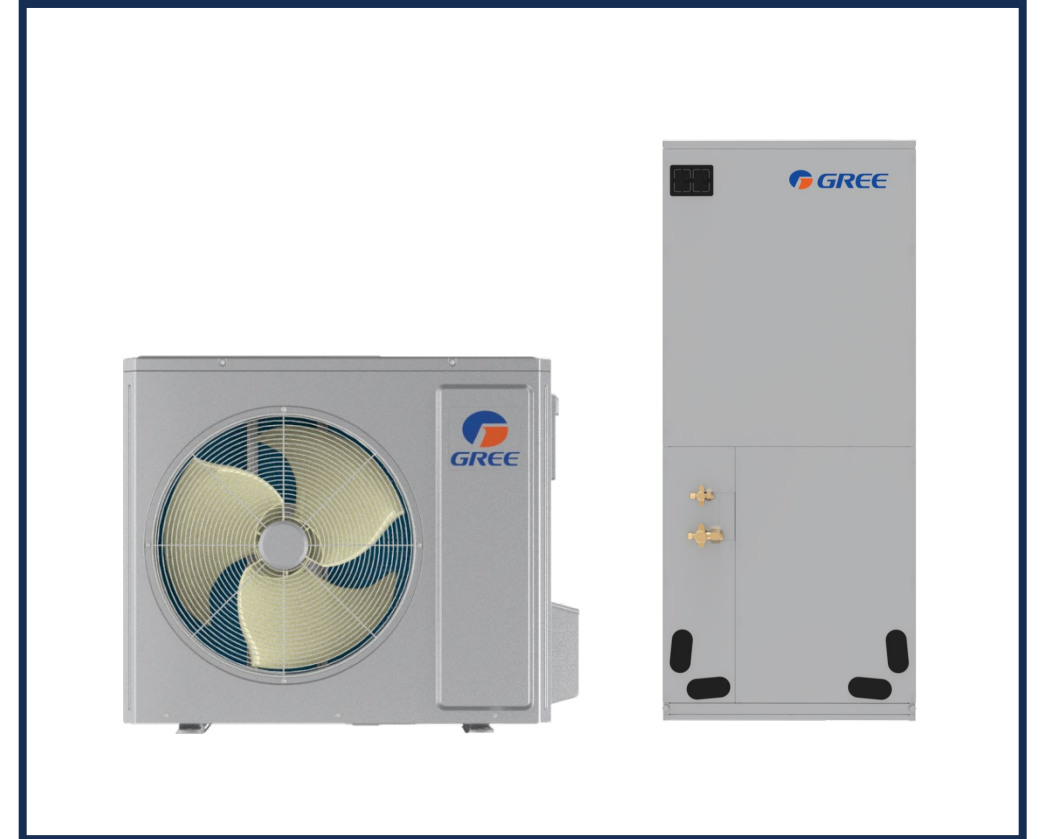




➤ **Product Introduction**

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15.5SEER2 Inverter Heat Pump are designed for the North America. The system provides efficient comfort and low costs. The units would be compatible with most standard 24V thermostat in the market. It can also be widely used in house, villas and more other places.







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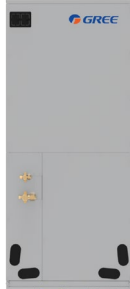
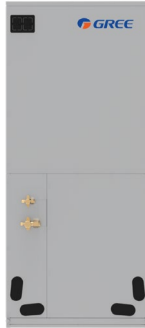
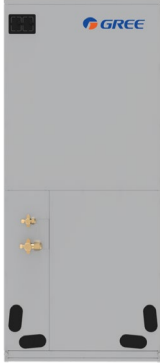
There are models with capacity range in 2~5ton which can meet different customers' needs. The performance of the product complies with AHRI 2023 with SEER2 up to 15.5.

Capacity	Outdoor unit	Indoor unit	Refrigerant	Type	Power (V, Ph, Hz)
2ton	TUD24W2/D-D(U)	TUD24AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz
2.5ton	TUD48W2/D-D(U)	TUD30AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz
3ton	TUD36W2/D-D(U)	TUD36AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz
3.5ton	TUD42W2/D-D(U)	TUD42AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz
4ton	TUD48W2/D-D(U)	TUD48AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz
5ton	TUD60W2/D-D(U)	TUD60AH2/D-D(U)	R410A	Inverter, Heat Pump	208/230V, 1Ph, 60Hz

The outdoor units are side discharge with mid-grey color, that's easy to bring to the installation site and install on the ground or append on the wall.

Capacity	2ton	2.5/3ton	3.5/4ton	5ton
Outdoor Unit Picture				
Outline dimension (W×D×H)mm(inch)	889×340×658 (35×13-3/8×25-7/8)	923×370×746 (36-5/16×14-9/16×29-3/8)	943×370×826 (37-1/8×14-9/16×32-1/2)	990×370×960 (39×14-9/16×37-13/16)

The indoor units are mid-grey and could be installed in the vertical(air outlet up) or horizontal plane.

Capacity	2/2.5ton	3/3.5ton	4/5ton
Indoor Unit Picture			
Outline dimension (W×D×H)mm(inch)	460×540×1105 (18-1/8×21-1/4×43-1/2)	540×540×1224 (21-1/4×21-1/4×48-3/16)	630×540×1320 (24-13/16×21-1/4×52)



➤ **Product Advantages**

Product Advantages



DC inverter compressor and motor which can adjust automatically base on different ambient temperature, comfort and efficient.

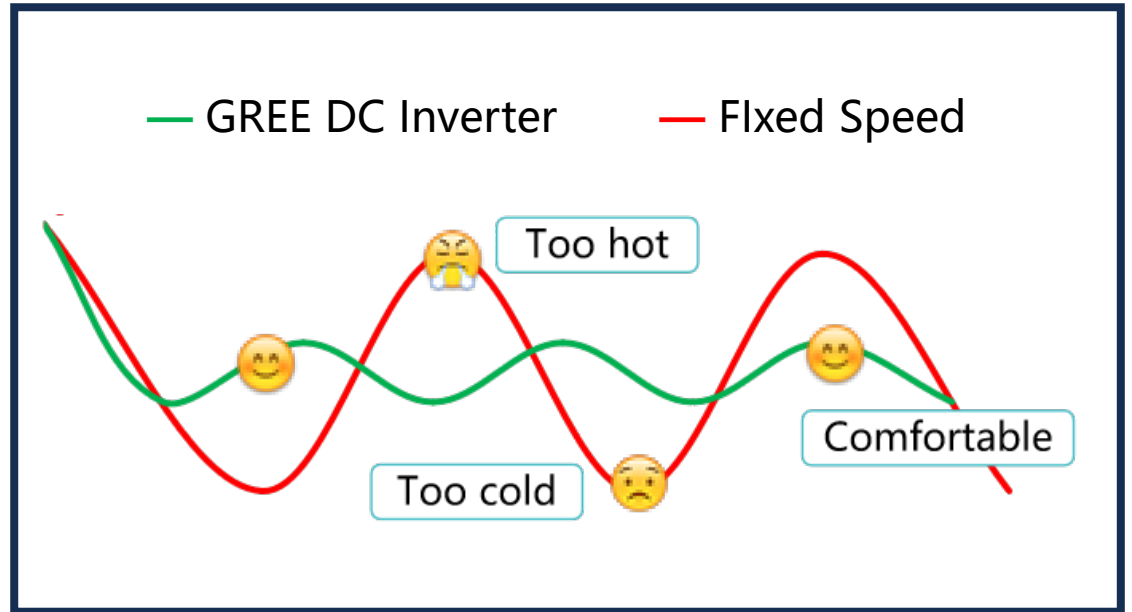
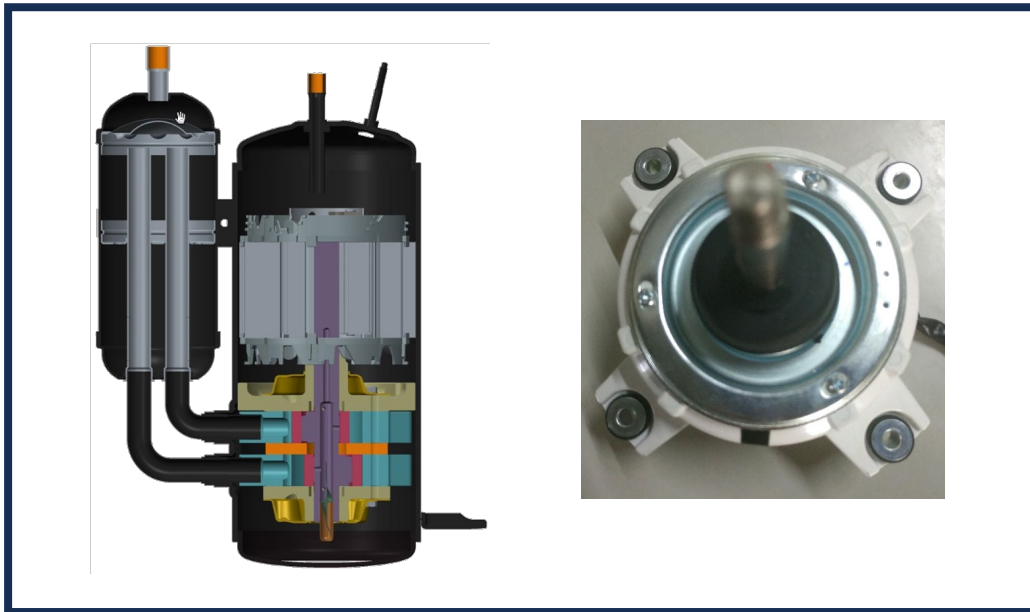
The units' adopt universal 24V communication, that's compatible with most typical 24V thermostat in the market.

The outdoor unit are side discharge with low profile constructure which is easy to transport and install, and the noise is lower (3~5dBA) than traditional top discharge unit.

The static pressure of the indoor unit is up to 1 in.wg(250Pa), and the air flow is rated at 100% with 1 in.wg static pressure.

1. DC inverter, comfort and efficiency

The products adopt DC inverter compressor and DC fan motor. The frequency of compressor is adjusted intelligently and the temperature is controlled precisely, thus the unit has high energy efficiency and high reliability. The compressor adopts high efficiency pump structure and strengthened shafting design, which adapt to complex working condition.

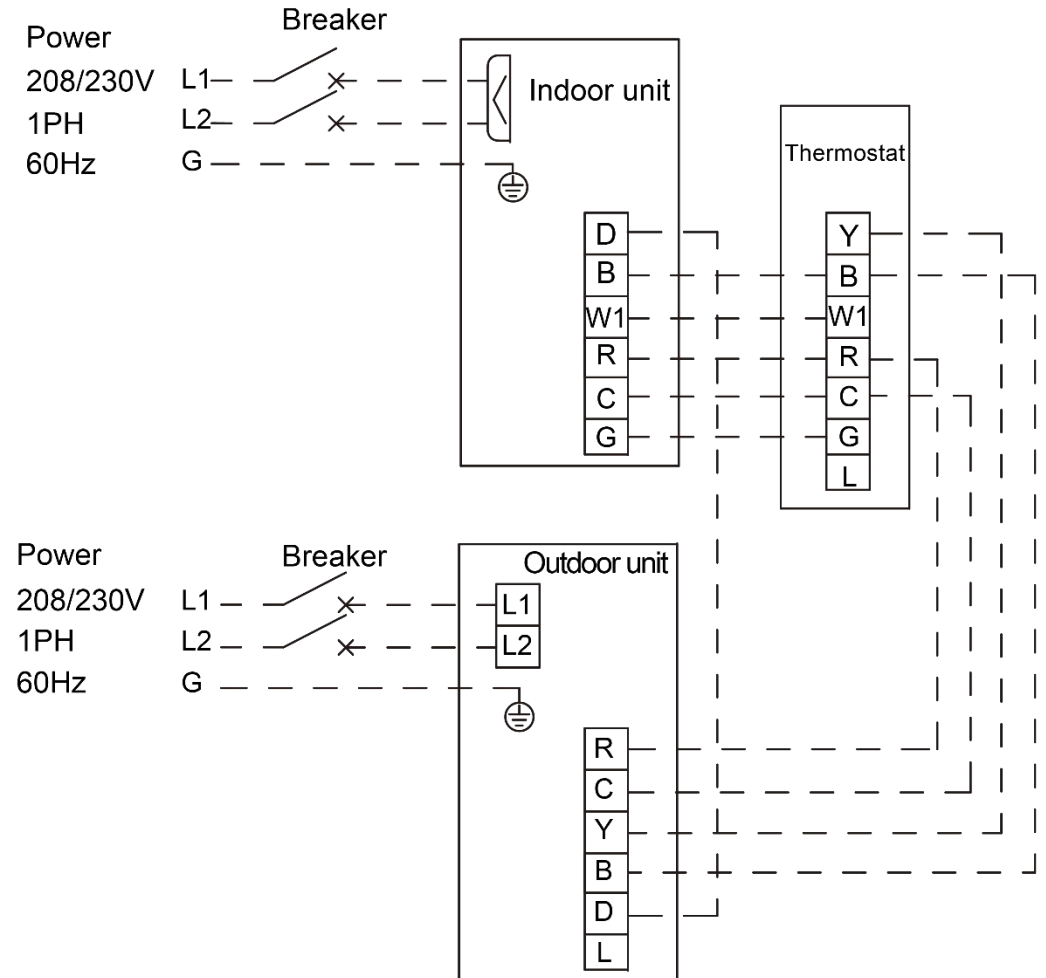


2. Universal 24V communication

The units' adopt universal 24V communication, that's compatible with most typical 24V thermostat in the market.

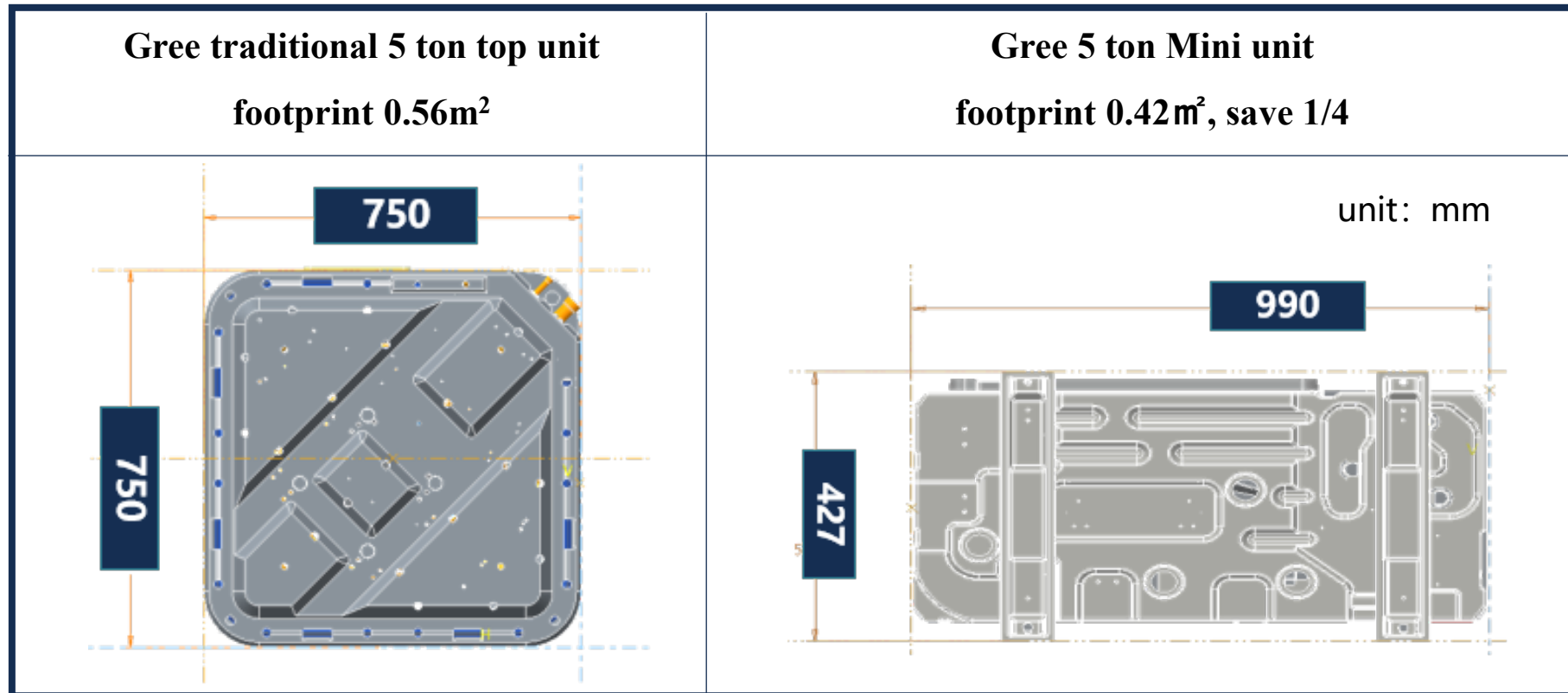
The exist connect line is no need to change, that's a good way to save money.

Terminal	Function
Y	Compressor
R	24V AC power supply
C	24V common wire
B	4-way valve
W1	Heater control
G	Indoor unit fan
D	Defrosting



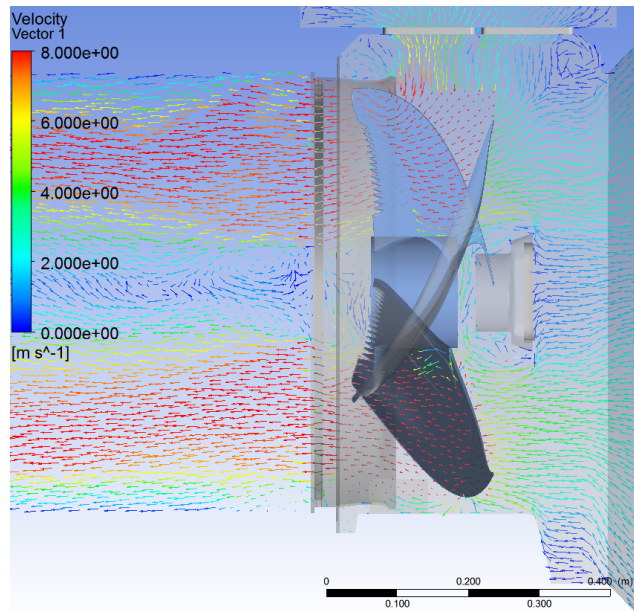
3. Flexible installation and space saving

All outdoor units are side discharge with single fans, with smaller footprint for saving space. The height of units is less than 1m. So the installation is flexible on the ground or append on the wall.

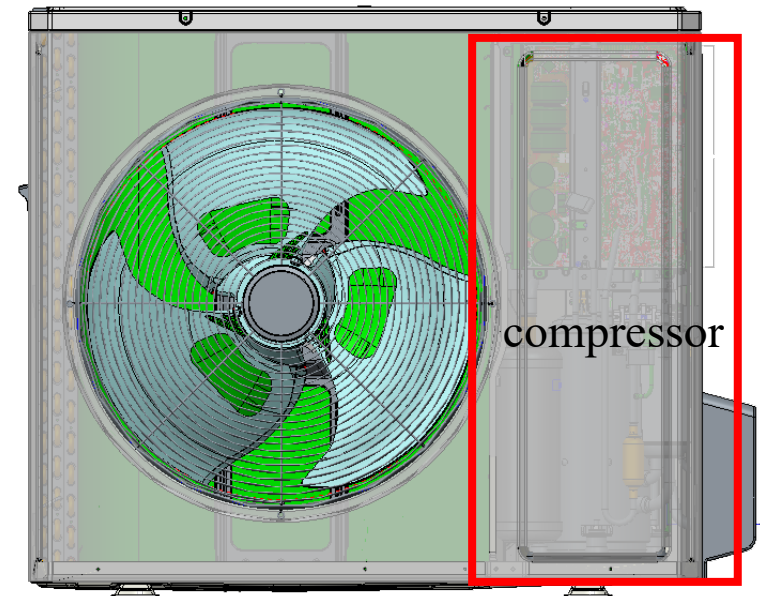


4. High efficiency airfoil blade, Low noise design

The fan of outdoor is used new type of blade like airfoil which could enhance the aerodynamic performance, improve air volume and reduce noise.

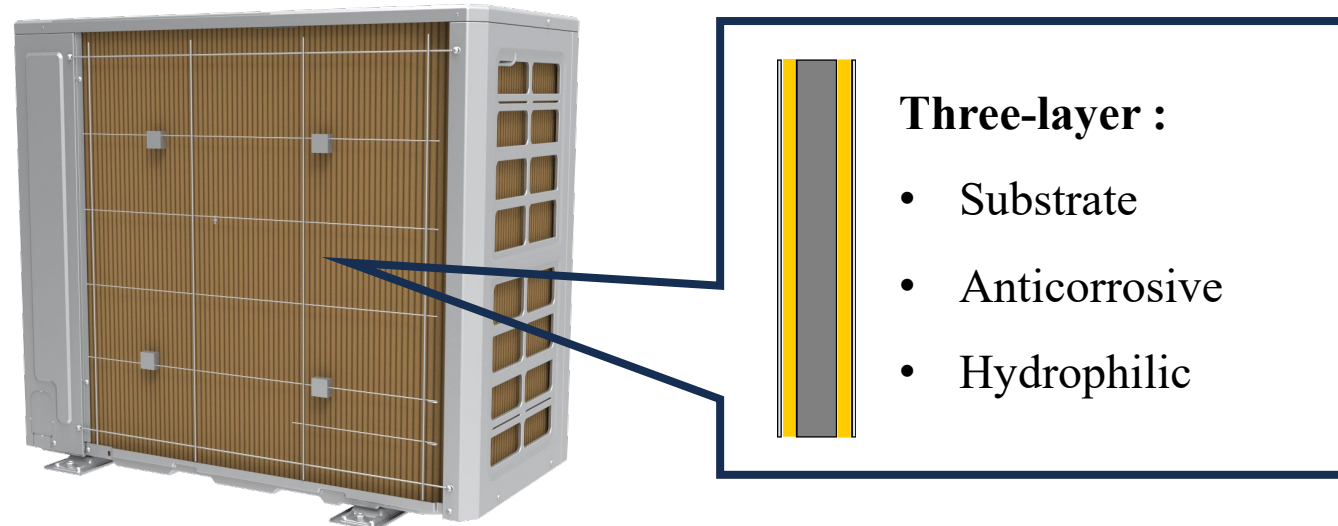


The compressor is placed in a closed cavity and wrapped with sound insulation cover. Noise is 3~5db(A) lower than top discharge unit.



5. Gold fins, better anticorrosion

The condenser adopts golden fins which consists substrate, high anticorrosive and hydrophilic layer. The material could withstand 1500h neutral salt spray test. The corrosion resistance time is 3 times that of blue fin.



6. Dependable heat dissipation with refrigerant

The drive module adopts refrigerant heat dissipation(3.5-5ton). The refrigerant temperature has a small fluctuation relative to the outdoor ambient temperature so that the heat dissipation effect is better than the air cooling. The lower the temperature of the driving module, the more stable the control. Meantime, the controller could also operate stably in high temperature.

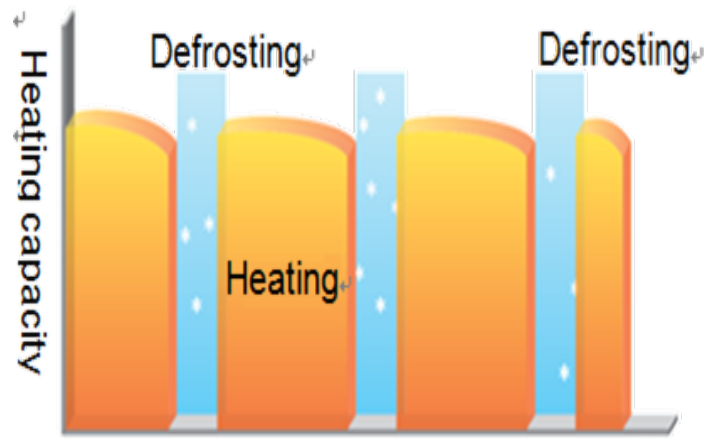


7. Intelligent defrosting control, heating comfort

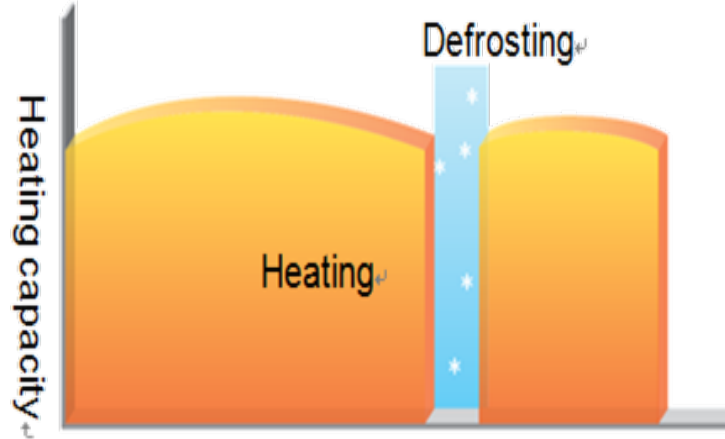
For improving the comfort of heating, the unit will be intelligent to defrosting base on analysis the defrosting status of the unit by detecting ambient temperature and the tube temperature of heat exchanger.

The indoor unit can start the electric heater or shut down the fan to avoid of cold air during defrosting.

The compressor is equipped with crankcase electric heating belt which can keep the oil warm(3.5-5ton).



Conventional Defrosting



Intelligent Defrosting



Compressor electric heating belt

8. Convenient external wiring and valve connection

The wiring board and valves of the outdoor unit are convenient to access, which would reduce installation time.



The TXV of indoor unit is to throttle in cooling mode while The EXV of outdoor unit is to throttle in heating mode.

The liquid line is no need to be insulated, which is convenient for installation, and especially for replacing outdoor unit without necessary of changing the existing conventional connection lines.



9. Optional indoor unit connection

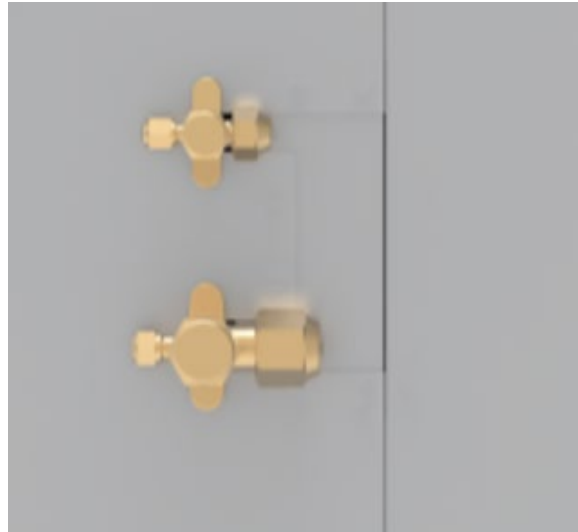
Default connection type:

Liquid line is flare connection and gas line is blaze connection. The evaporator is filled with helium.



Optional connection type:

Liquid line and gas line have shut-off valves with flare connection. The evaporator is filled with R410A. It can use quick connection pipe for convenient installation.

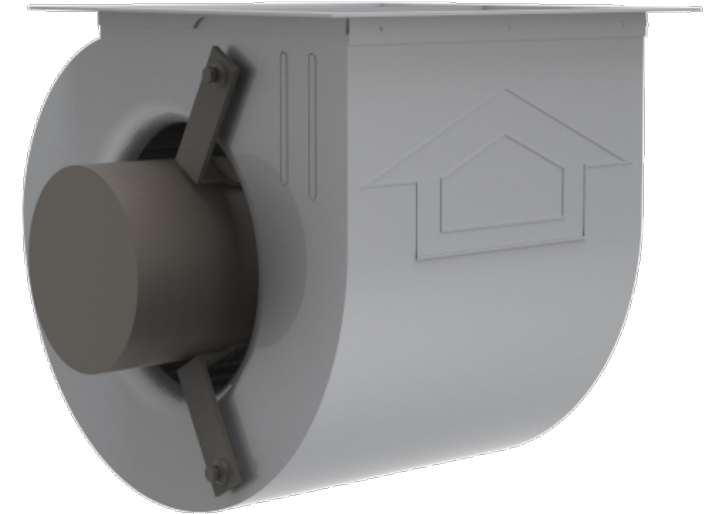


The electrical box of indoor unit adopts double-layer closed design. The configuration which separates main control space with electric heater area can solve both fire-prevention and water-condensation issues. The electrical box is independent of the air duct and enclosed space could prevent fire.



11. Static pressure up to 1 in.wg(250Pa)


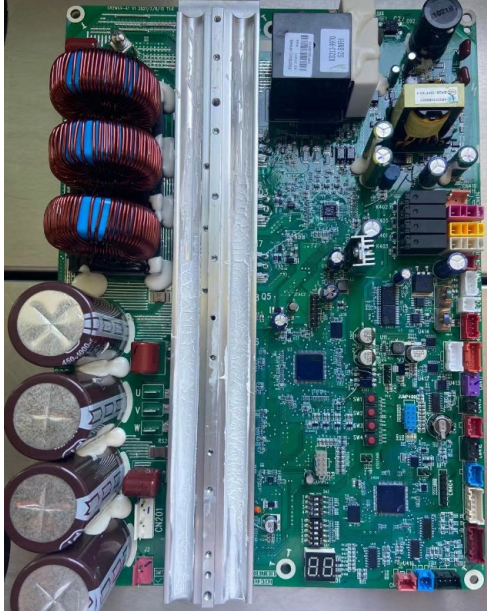
Indoor unit adopts high efficiency DC fan motor and centrifugal fan. The fan motor could provide none-attenuation air flow under static pressure 1 in.wg(250Pa). It could also meet high resistance air duct or high efficiency purification. User could choose 8 different fan speeds to match different application.





➤ **Product Control Function**

The mainboard of 2-3ton is designed to one integrated board and with heat dissipation by air. While the mainboards of 3.5-5ton consist of one integrated board(driving + main control) which with heat dispation by refrigerant, and one independent filtration board.

Capacity	2-3ton	3.5-5ton
Mainboard	 A photograph of a green printed circuit board (PCB) for a 2-3ton outdoor unit. The board is densely packed with electronic components, including several large electrolytic capacitors, integrated circuits, and various resistors. A prominent feature is a large black component with a silver top, likely a power MOSFET or IGBT, which is mounted on a heat sink. The board is populated with numerous surface-mount components and through-hole parts.	 A photograph of a green PCB for a 3.5-5ton outdoor unit. This board is more complex, featuring a large silver metal heat sink on the left side, which is used for refrigerant-based cooling. The board is populated with a variety of components, including capacitors, resistors, and integrated circuits. A digital display showing '88' is visible at the bottom right of the board.

No.	Function	Description
1	Multi-operation mode	<p>There are four mode to choose, The standard mode is default, others can be switched by setting the DIP-switch of the outdoor unit.</p> <p>Strong mode: The unit can quickly increase the capacity output on the premise of reliable.</p> <p>Energy saving mode: The unit operate with a small load range.</p> <p>E-learning mode: Intelligently change the output target according to the usage of consumer.</p>
2	Defrosting mode	<p>There are two mode to choose, factory default setting is standard defrost. Under extremely low environment temperature, if the standard defrost cannot have the condenser defrosted completely, user could set the second mode to defrost strongly.</p>
3	Error display	<p>When error occurs in the system, the mainboard will display error code.</p>

No.	Protection	Description
1	High pressure protection (3.5-5ton)	When the system pressure is too high, high pressure switch trips, then the system shut down.
2	Low pressure protection	When the system pressure is too low, low pressure switch trips, then the system shut down.
3	High discharge temperature protection	Frequency would decrease or the system shut down when the discharge temperature of compressor is too high.
4	Overload protection	Frequency would decrease or the system shut down When the tube temperature is too high.
5	IPM protection	Frequency would decrease or the system shut down when IPM temperature is too high.
6	Over current protection	Frequency would decrease or the system shut down when the current of compressor is too high.
7	Sensor failure protection	When the temperature sensor fails, the system would shut down.



No.	Function	Description
1	Eight fan speeds	Set the indoor fan speed through the eight dip switches of the indoor mainboard. The higher level, the higher speed of the indoor unit fan(0~1in.wg/0~250Pa).
2	Electric heater safety control	The indoor unit electric heating is interlocked with the mainboard and indoor fan. If the fan can not work, the electric heater will be shut down immediately.
3	Avoidance of cold air	Indoor unitboard can start the electric heater or shut down the fan to avoid of cold air during defrosting.

24V thermostat (Optional):

- The function is comprehensive which can be compatible with condensing unit, heat pump, gas furnace etc.
- The appearance is fashionable with mechanical key-press and good operation experience
- The port of connection is pressed type, that is advantaged to installtion just by hand and tool.
- The thermostat could control the unit with WIFI conveniently.



WK-010WA1
WK-010WB1(WIFI)

No.	Function	Description
1	Memory function	The unit restarts with the last setting when power resumes.
2	Operation mode	According to the type of outdoor and indoor to set cooling only, heat pump, gas furnace etc.
3	4-way valve energizing	According to the 4-way valve energizing to insert O or B.
4	Schedule function	The Schedule function is used to set specific time of the week to execute a specific mode.
5	°F/°C switch function	The temperature can set to display with °For °C.
6	heating equipment switch	According to temperature of outdoor to switch between heat pump and gasfurnace automaticly.
7	WIFI (WK-010WB1)	The consumer could control the unit by phone conveniently.

Portable commissioning tool (unreleased):

- The tool is handy for after-sales and maintenance, the display is colour LED.
- The function is comprehensive like as forcible defrosting, error display, parameter examination, data memory etc.
- The tool can test the system and memory the operation data by the communication port of outdoor.



The picture is for reference only

No.	Function	Description
1	Refrigerant recovery	It is convenient for recycling the refrigerant to the outdoor unit during after-sales transfer and maintenance.
2	Forcible start up	the unit would be operate normally for a while under the condition of the thermostat failure.
3	Forcible defrosting	It is forced to defrost necessarily.
4	Error display	When error occurs in the system, the mainboard will display error code.
5	Parameter examination	The function is to examine the temperature,pressure of the system.
6	Data memory	The function is to memory the operation data of the system.

TQSDT

THANKS

ZHUHAI