COOLING AIR FOR PROPITIOUS SUMMER
SPRING RETURNS WITH WARM AIR FROM RUIDONG

RUIDONG

MUSHROOM PLANTING AIR CONDITIONER

RUIDONG GROUP

RUIDONG

Ruidong Group Co., Ltd is one modern large-scale enterprise integrating design, production, sales and installation of central air-conditioning products.

Ruidong is located in Dezhou City, Shandong Province. The Beijing-Shanghai High-speed Railway and Beijing-Shanghai Expressway passing through the city, make Dezhou become a key coordinate of the national economic artery. The registered capital of the group is one hundred fifty five and a half million yuan, covering an area of 300,000 square meters and construction area of 180,000 square meters.

Main business coverage:

1. Host series:

· Water cooled series: centrifugal cold (hot) water unit, screw type cold water unit, screw type water (ground) source cooling and heating unit, scroll type water (ground) source cooling and heating unit.

· Air cooled series: screw type cold (hot) water unit, modular type cold (hot) water unit, mini type cold (hot) water unit, VRV series unit.

· Packaged Unitary unit: constant temperature and humidity unit, air (water) cooled unitary unit, dehumidification unit.

2. Direct expansion series: Rooftop packaged unit, ducted split unit.

3. Terminal series: Purification air handling unit, combined air handling unit, fresh air unit, fan coil unit series.

ENTERPRISE PROFILE

4. Ventilation series: Fire exhaust fan, roof fan, axial fan, diagonal fan, centrifugal fan, etc.
5. Engine room equipment: cyclone sand remover, water separator (separator), decontamination device, demineralized water device, plate heat exchange unit, constant pressure equipment, etc.
6. Air conditioning accessories: All kinds of fire valves, regulating valves, tuyere series.
7. Other products: Low-temperature industrial chillers, air-conditioning equipment for planting and breeding industries.

The R & D team composed of high-tech talents will continue to introduce new products, advanced production equipment and adopt the international ISO9001 quality management system as a strong guarantee for product quality. Precision testing equipment and rigorous testing methods are the fundamental insurance of quality and are timely and thoughtful. After-sales service solves the problems that may arise in use for you.

The company has established a complete sales and service system. Set up offices in 18 cities including Beijing, Tianjin, Shanghai, Xi'an, Shenyang, Chengdu and other cities to provide users with timely, efficient and high-quality pre-sales, sales and after-sales services.

Ruidong Air Conditioning wishes you: Cooling air for propitious summer, spring returns with warm air from Ruidong.

CERTIFICATIONS

Ruidong group always takes "create first-class quality, offer sincere service" as the quality concept, builds customer-oriented quality management system, focuses on teamwork and insists on continuous innovation.

CONTENTS

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1. Features

Ruidong mushroom planting air conditioner is a new air-conditioning equipment that integrates several functions such as cooling, heating, air treatment and filtration based on the specific environment of the factory production of edible mushroom. This equipment widely used in the pleurotus eryngii, hypsizygus marmoreus, maitake, enoki, pleurotus nebrodensis, agaricus bisporus, and cordyceps militaris, black fungus and other rare and precious edible fungus factory production of the whole process.

According to the growth characteristics of various kinds of fungi, the special air conditioning unit of edible fungus is a product developed through years of research and long-term application.

The power consumption of air conditioning equipment is one of the main production costs in the production process of edible fungus. Air purification and bacteria filtration are the important measures to ensure the high and stable yield of edible fungi. With the popularization of edible fungus factory production, how to reduce the running energy consumption, control the environmental pollution, improve the product quality are the important goals of the production enterprises of edible fungi.

2.Application Scopes

2.1 The refrigeration and air purification of cooling room and inoculation room.

The cleanliness of the environment in cooling room and inoculation room is an important condition for the production of edible fungi factory. Conventional refrigeration or air conditioning equipment (chillers or air conditioners, etc.) do not have the high efficiency air filtration function, so it can not filter out the bacteria attached to the dust particles. The cleanliness of the space environment can not be guaranteed.

The configuration of monolithic mushroom air conditioning unit including the large capacity evaporative coil which can make the cooling room cools down quickly, the adjustable air volume of the centrifugal fan with big air volume and high wind pressure, the high sealing performance of high static pressure case. It also has the initial and medium effect air filter. The high static pressure performance design can meet the air pressure requirement of the high efficiency vents. All the configurations mentioned above constitute the air conditioning system with the unit as the core.

Edible mushroom unit has large air volume and two sets of heat exchanger coil (refrigerant direct evaporation and cool / heat water coil. It can work in the cycle of large air flow conditions, make full use of well water, lakes, rivers, reservoirs and other natural water, to achieve rapid cooling and economic operation.

2.2 Can meet the air conditioning of pleurotus eryngii, hypsizygus marmoreus, maitake, cordyceps militaris and other mid-temperature varieties of industrial cultivation process.

According to the refrigeration characteristics of edible mushroom air units, from the perspective of volume and economy, it applies to the air conditioning system of pleurotus eryngii, hypsizygus armoreus, maitake, cordyceps militaris and other medium temperature varieties of edible fungus's factory production, cultivation, harvesting, packing and other functional areas.

Its comprehensive functions of refrigeration, heating, air filtration, new and return air ratioeconomic operation. control, high wind pressure, big air volume, convenience of connecting duct and balanced ventilation makes it very suitable for the various stages of factory cultivation in high density and three-dimensional conditions. Especially the fine air filter and precise air composition adjustment function, to avoid the pollution of bacterial spores, on-demand control CO2 gas concentration and fresh air into the important process parameters such as volume provides a convenient way.

Especially the fine air filter and precise air composition adjustment function provides convenience for the important process parameters of avoiding the pollution of bacteria, on-demand control CO2 gas concentration and fresh air quantity.

It can guarantee the optimum temperature for the factory cultivation of the plant , such as pleurotus eryngii, maitake and so on. It can be fully utilized well water and other natural cold source to improve the efficiency of refrigeration, reduce energy consumption and the cost. Cooling and central heating energy design approach of edible mushroom air units make the operating costs of the factory have been greatly reduced.


Hypsizygus marmoreus


Pleurotus eryngii

2.3 It can meet the air conditioning of the low temperature varieties such as enoki and pleurotus nebrodensis.

In the process of edible fungi factory cultivation, mycelium in training stage under a state of high density, three-dimensional stack of the surrounding environment temperature difference is smaller between culture bottle, the better the overall effect of bacteria, the higher the quality and yield.

Due to the axial fan as the wind power with low wind pressure, conventional front wind or ceiling two side of the wind-cooled fan can not overcome the air resistance between the bulkload so that the temperature difference between the culture bottle over the index, affecting the overall Mycelial growth and resulting in yield and quality decreased .

Integral edible mushroom unit use the centrifugal fan, high wind pressure with the characteristics of high wind pressure and big air volume. Through the pipeline well-distributed air, it can effectively overcome the bulkload resistance and keep the temperature, humidity and CO2 concentration throughout the room consistent. While reducing the contamination rate of mixed bacteria, the production cycle of mycelium was shortened and the quality and yield were improved.


Needle mushromm


Pleurotus nebrodensisi

3. Variable equipment type

It is divided into water source type, ground source type, cooling water type, air source type and water chiller/heat pump type, which can be widely used in different areas and different environment conditions. The design of the unit combines the performance advantages of various countries and various air conditioners.

3.1 Water source type

With cooling tower circulating water as the cooling mode of the integral unit. The device is connected to the cooling tower by pipe and cooling water is provided by the cooling tower system.In winter, hot water is provided by the boiler.

3.2 Groundwater source type

With groundwater as the cooling water of the integral unit. The well water system can provide the cooling water in a centralized way and the water pump can be independently used by each unit.Besides the refrigeration function, the unit also has the function of heat pump, which can dispense boiler system. and has two uses.

Because the groundwater temperature is low, the condensation temperature of the refrigeration system can be reduced.The cooling effect is better than the air-cooled type and the cooling tower type.The energy efficiency of the unit can be improved and the operation is more reliable and stable.

In order to maximize the use of underground water and reduce the operating cost, the unit has installed the well water direct cooling device in the design to further reduce the energy consumption of the refrigeration system.

3.3 Air-cooled type

Air conditioning unit adopts air cooling method, which is suitable for water resource poor area.

The unit is integral design, installation is simple, connect the power supply to work.Because there is no circulating water system, it does not need to release water to prevent freezing, which prevents the equipment from freezing in winter.

Air cooled unit uses heat pump principle to extract heat from the air in order to heat the fungi room, so it can be used for both the cooling of the fungi room in summer and the room heating in winter.However, it is not recommended to rely on heat pump in winter especially cold region.The unit can be fitted with hot water coils and heating boilers in winter.

3.4 Centralized cold and heat source unit

In the integrated unit, each unit is equipped with a refrigeration compressor. In the production process, many mushroom houses are built together.The service time of each fungi room is different, which means the units are not working at the same time. This results in low utilization of the equipment.Aimed at this situation, we developed a centralized cold and heat source unit which is provided by a group of large equipment provide cold water or hot water. When the fungi room unit needs to cool or warm the fungi room, it can realize the established function by using the cold water or hot water provided by the large equipment, which can reduce the investment.

Large heating and cooling equipment can also use air-cooled equipment or water cooled (water source, etc.) equipment.

3.5 Control System

PLC intelligent control unit has the advantages of simple operation, powerful function and high control precision which is suitable for using in different sizes and types of mushroom houses.PLC controller can realize the complete automation control of single unit. It also canform the networked operation system to manage all the units operating in the same network. It has manual, automatic, intelligent, simple and other control types to meet the needs of different customers.

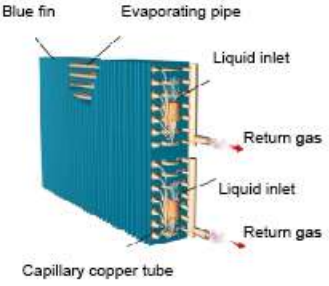
4. Main Parts

4.1 Using famous brand scroll compressor with the advantages of the operation is reliable, high efficiency, long life and low noise

The hermetic scroll compressor has the following advantages:

- No suction valve and exhaust valve, reliable work and long life;
- The efficiency is more than 10% higher than the reciprocating compressor, which is more than 5% higher than the rotor compressor.
- It is not sensitive to liquid strike and it can allow a small amount of liquid to compress to improve the reliability and life of air conditioner.
- Low noise, 5 decibels lower than the reciprocating compressor;
- Operation balance and small vibration;
- The exhaust process is continuous so that the exhaust pulse is greatly reduced.
- The number of parts is small, the weight is light, the volume ratio is 40% smaller than that of the reciprocating compressor and the weight is 15% lighter.
- Low temperature of the motor, so the possibility of motor failure is lower.

4.2 Select special materials and professional design, which make the air conditioning refrigeration/ heating efficiency is improved



The use of special surface air cooler fin and special materials to reduce the wind resistance and improve the heat transfer rate as well as solve the problem of fin corrosion. Aluminum fin use two times punching and flanging technology and double corrugated piece design. Through the mechanical tube expanding technology to guarantee the aluminum fin and the copper pipe joint together tightly and get the best heat transfer effect.

Using hydrophilic aluminum foil to improve the water flow effect and the efficiency of the unit.

4.3 Special design of the shell

Agaricus bisporus air-conditioner shell using double galvanized steel and surface spray treatment or double organic-coating insulation board steel materials production, greatly improving the sealing and corrosion resistance of the unit that is suitable for mushroom house special working conditions.

4.4 Refrigerant control element

Air conditioning refrigerant control system adopts imported famous brand control components, including DANFFOS expansion valve, Emerson refrigerant filter unit, Japan SAGINOMIYA pressure switch, CO2 and temperature and humidity sensor using the well-known brand components with high precision and long service life.

4.5 Siemens control system

The control system adopts Siemens PLC system. It has integrated compressor control, fan control, fan variable frequency control, temperature control, CO2 monitoring, return air valve control, new air valve control, compressor protection, protection of fan, power protection and other functions, which cooperates with Siemens contactor and thermal relay, providing full control and protection and ensuring the long-term stable operation of the unit.

4.6 Variable air supply system

The fan system controlled by the inverter can adjust the air volume according to the working environment and temperature change of the system. It can meet the requirement of fungi room at any time to make the mushroom grow in the best environment.The frequency converter can realize the soft start of the fan.

In order to ensure the long running stability and easy to maintain, motor and fan has separable design. This design completely solve the effect of high temperature and high humidity when the fungi room is pasteurized and extend the motor life. When the user changes the belt, it is only necessary to open the belt side protector.

4.7 Reliable operation

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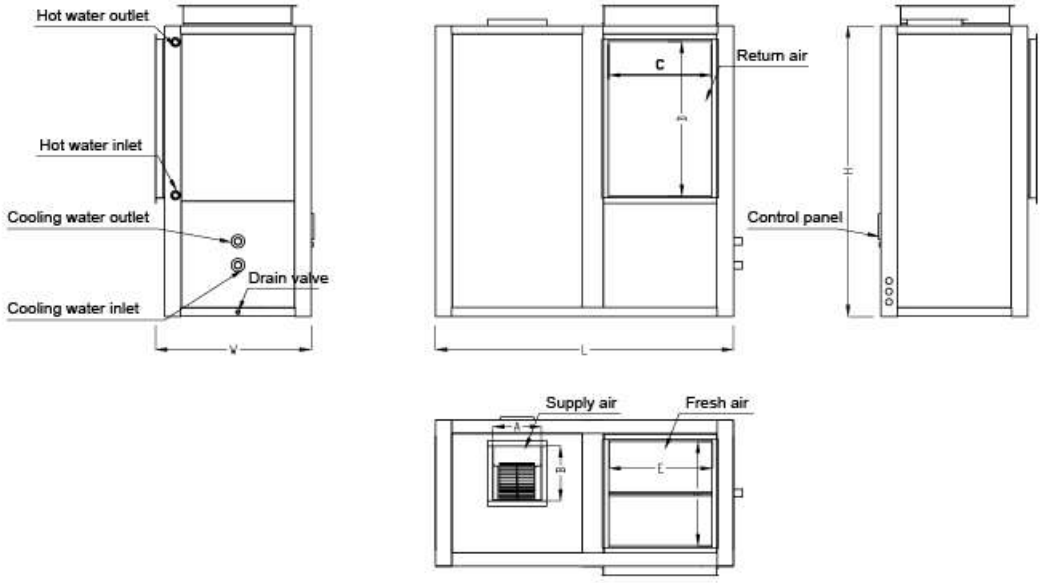
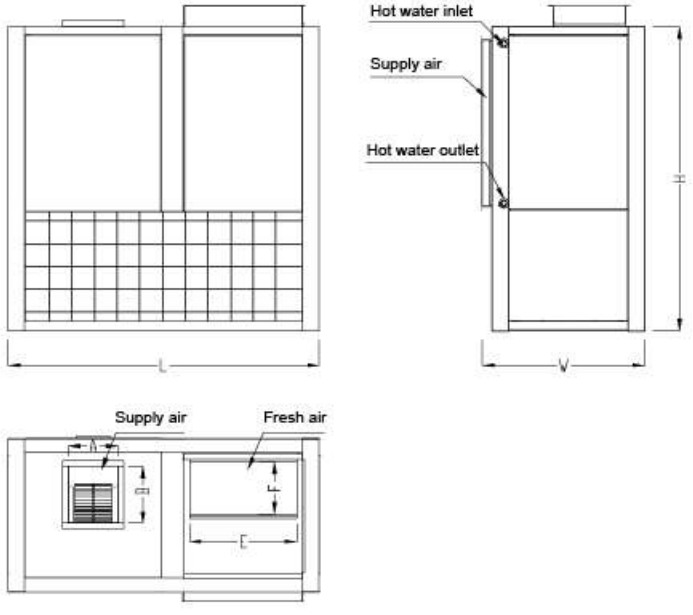
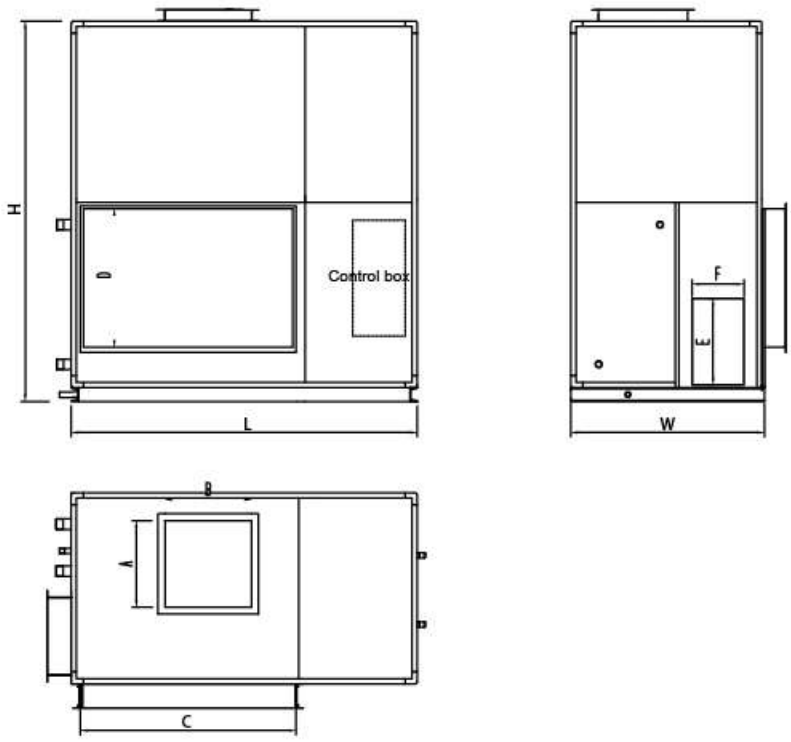
5. Drawing



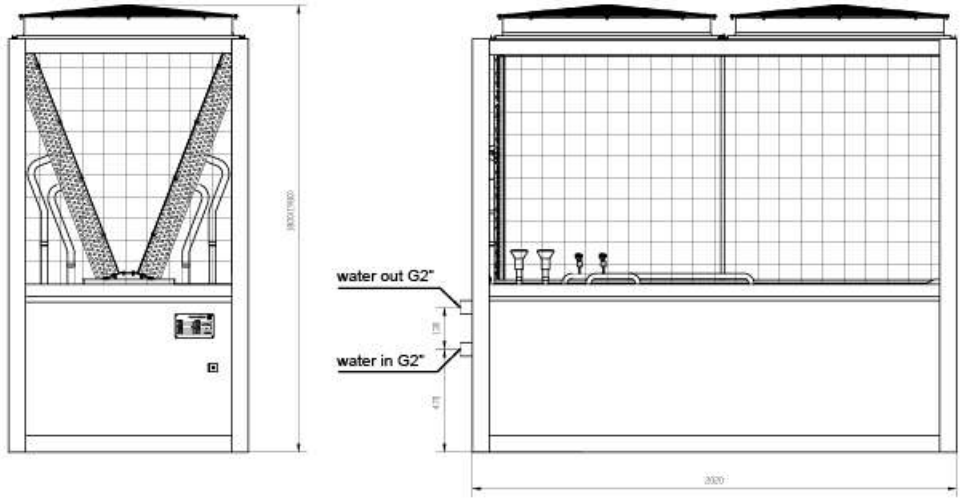
Water source & ground source & water cooled unit



Air cooled unit

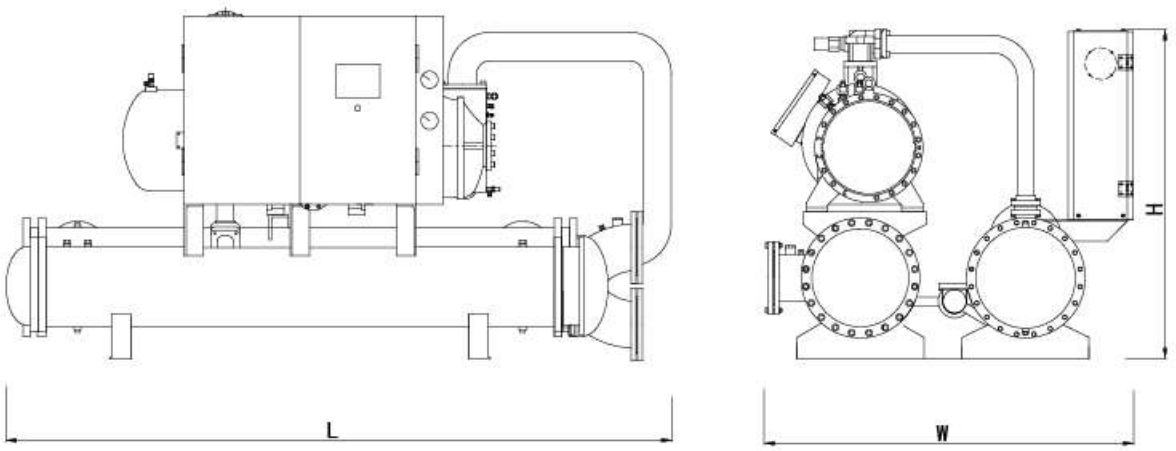


Centralized cold and heat source unit

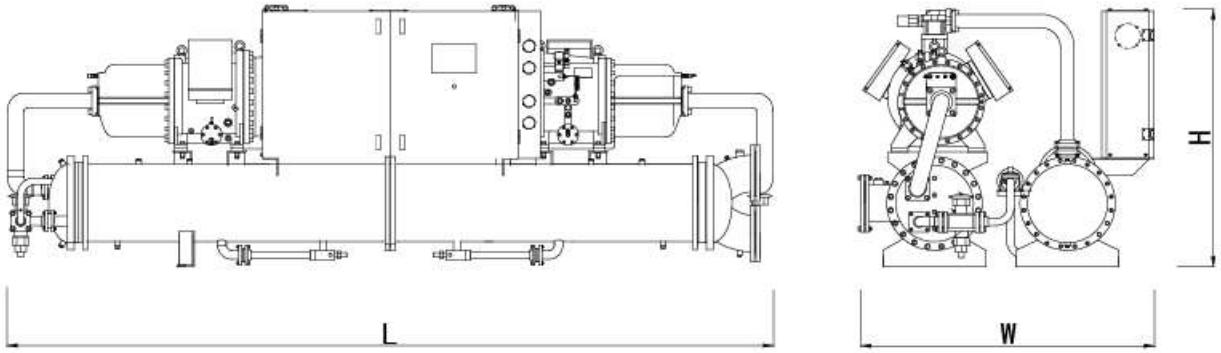


Air cooled cold & hot water unit

Single compressor unit



Double compressor unit



Centralized cold and heat source unit

6.Specification

water source unit

Model			Z30GR	Z40GR	Z55GR	Z75GR	Z85GR
Cooling	Cooling capacity	kW	32	41	57	75	85
	Input power	kW	7.9	10.2	15.9	18.2	18.9
	Running current	A	15.0	19.4	30.3	34.6	36
Heating	Heating capacity	kW	31	39	60	71	80
	Input power	kW	10	13	19.7	22.1	23.3
	Running current	A	18.8	24.4	37	41.6	43.8
Start mode			Directly start				
Adjustment ability			0-50-100%				
Refrigerant			R407C/R22				
Refrigerant charge		kg	2.5 × 2	3.2 × 2	6.5 × 2	7.5 × 2	7.5 × 2
Refrigerant control device			TXV				
Compressor	Type		Hermetic scroll compressor				
	Qty		2	2	2	2	2
	Power supply		380V/3N/50HZ				
Groundwater flow		m^3/h	3.30	4.22	6.10	7.73	8.76
Fan	Air flow	m^3/h	6000	8000	12000	15000	15000
	Power	kW	1.5	2.2	4	5.5	5.5
	ESP	Pa	200	250	350	400	400
Application area		m^2	200	250	350	450	550
Dimension	L	mm	2080	2080	2400	2400	2400
	W	mm	1180	1180	1410	1410	1410
	H	mm	2050	2050	2200	2200	2200
Air outlet	A	mm	500	500	630	630	630
	B	mm	500	500	630	630	630
Return air	C	mm	510	510	740	740	740
	D	mm	810	810	1110	1110	1110
Fresh air	E	mm	510	510	740	740	740
	F	mm	810	810	1110	1110	1110
Weight		kg	620	660	910	950	980

Note:Cooling: Well water in/out temperature 18/29℃. Heating: Well water in/out temperature 15℃/ --.

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Ground source unit

Model			Z30GR	Z40GR	Z55GR	Z75GR	Z85GR
Cooling	Cooling capacity	kW	32	41	57	75	85
	Input power	kW	7.9	10.2	15.9	18.2	18.9
	Running current	A	15.0	19.4	30.3	34.6	36
Heating	Heating capacity	kW	31	39	60	71	80
	Input power	kW	10	13	19.7	22.1	23.3
	Running current	A	18.8	24.4	37	41.6	43.8
Start mode			Directly start				
Adjustment ability			0-50-100%				
Refrigerant			R407C/R22				
Refrigerant charge		kg	2.5 × 2	3.2 × 2	6.5 × 2	7.5 × 2	7.5 × 2
Refrigerant control device			TXV				
Compressor	Type		Hermetic scroll compressor				
	Qty		2	2	2	2	2
	Power supply		380V/3N/50HZ				
Buried pipe water flow		m^3/h	7.25	9.29	13.42	17.00	19.26
Fan	Air flow	m^3/h	6000	8000	12000	15000	15000
	Power	kW	1.5	2.2	4	5.5	5.5
	ESP	Pa	200	250	350	400	400
Application area		m^2	200	250	350	450	550
Dimension	L	mm	2080	2080	2400	2400	2400
	W	mm	1180	1180	1410	1410	1410
	H	mm	2050	2050	2200	2200	2200
Air outlet	A	mm	500	500	630	630	630
	B	mm	500	500	630	630	630
Return air	C	mm	510	510	740	740	740
	D	mm	810	810	1110	1110	1110
Fresh air	E	mm	510	510	740	740	740
	F	mm	810	810	1110	1110	1110
Weight		kg	620	660	910	950	980

Note:Cooling: Ground source water in/out temperature 25/30℃. Heating: Ground source water in/out temperature 10℃/ --.

Cooling tower condition unit

Model			Z30W	Z40W	Z55W	Z75W	Z85W
Cooling	Cooling capacity	KW	31	39	54	71	80
	Input power	KW	8.5	13	16.9	19.4	20.2
	Running current	A	16.2	24.7	32	36.9	36
Start mode			Directly start				
Adjustment ability			0-50-100%				
Refrigerant			R407C/R22				
Refrigerant charge		kg	2.5 × 2	3.2 × 2	6.5 × 2	7.5 × 2	7.5 × 2
Refrigerant control device			TXV				
Compressor		m^3/h	6.67	8.39	11.61	15.27	17.20
Compressor	Type		Hermetic scroll compressor				
	Qty		2	2	2	2	2
	Power supply		380V/3N/50HZ				
Heating capacity		kW	30	40	50	70	80
Hot water flow		m^3/h	2.58	3.44	4.3	6.02	6.88
Cooling water flow		m^3/h	6.67	8.39	12.90	15.27	17.20
Fan	Air flow	m^3/h	6000	8000	12000	15000	15000
	Power	kW	1.5	2.2	4	5.5	5.5
	ESP	Pa	200	250	350	400	400
Application area		m^2	200	250	350	450	550
Dimension	L	mm	2080	2080	2400	2400	2400
	W	mm	1180	1180	1410	1410	1410
	H	mm	2050	2050	2200	2200	2200
Air outlet	A	mm	500	500	630	630	630
	B	mm	500	500	630	630	630
Return air	C	mm	510	510	740	740	740
	D	mm	810	810	1110	1110	1110
Fresh air	E	mm	510	510	740	740	740
	F	mm	810	810	1110	1110	1110
Weight		kg	620	660	910	950	980

Note:Cooling: Cooling water in/out temperature 30/35℃. Heating: Hot water in temperature 60/50℃.

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Air cooled unit

Model			Z30FR	Z40FR	Z55FR	Z75FR	Z85FR
Cooling	Cooling capacity	kW	26	34	47	62	70
	Input power	kW	10.1	13.1	17	20.8	23.4
	Running current	A	19.1	24.8	32.2	39.5	44.5
Heating	Heating capacity	kW	24	29	40	55	62
	Input power	kW	9.9	12.9	16.8	20.4	23.2
	Running current	A	18.6	24.2	31.5	38.3	43.7
Start mode			Directly start				
Adjustment ability			0-50-100%				
Refrigerant			R407C/R22				
Refrigerant charge		kg	8	10	14	18	22
Refrigerant control device			TXV				
Compressor	Type		Hermetic scroll compressor				
	Qty		2	2	2	2	2
	Power supply		380V/3N/50HZ				
Electric heating capacity		kW	10	20	20	20	20
Fan	Air flow	m^3/h	6000	8000	12000	15000	15000
	Power	kW	1.5	2.2	3	4	4
	ESP	Pa	200	250	300	350	350
Application area		m^2	150	220	300	450	550
Dimension	L	mm	2086	2086	2440	2640	2640
	W	mm	1170	1170	1370	1370	1370
	H	mm	2150	2150	2150	2384	2384
Air outlet	A	mm	500	500	630	630	630
	B	mm	500	500	630	630	630
Return air	C	mm	735	735	910	1030	1030
	D	mm	1110	1110	1110	1310	1310
Fresh air	E	mm	358	358	460	460	460
	F	mm	1110	1110	1110	1110	1110
Weight		kg	540	540	790	830	980

Note:Cooling: Ambient temperature DB 35℃, indoor temperature 21℃. Heating: Ambient temperature DB 7℃, WB 6℃.

Centralized cold and heat source unit

Model			Z30	Z40	Z55	Z75	Z85
Cooling capacity		kW	31	42	58	75	85
Heating capacity		kW	51	68	103	100	115
Chilled water flow		m^3/h	5.3	7.2	11.7	12.9	14.6
Hot water flow		m^3/h	4.4	5.8	8.9	8.6	9.9
Fan	Air flow	m^3/h	6000	8000	12000	15000	15000
	Power	kW	1.5	2.2	3	4	4
	ESP	Pa	200	250	300	350	350
Application area		m^2	150	220	300	450	550
Power supply			3N~380V~50Hz				
Dimension	L	mm	2086	2086	2440	2640	2640
	W	mm	1170	1170	1370	1370	1370
	H	mm	2150	2150	2150	2384	2384
Air outlet	A	mm	500	500	630	630	630
	B	mm	500	500	630	630	630
Return air	C	mm	735	735	910	1030	1030
	D	mm	1110	1110	1110	1310	1310
Fresh air	E	mm	358	358	460	460	460
	F	mm	1110	1110	1110	1110	1110
Weight		Kg	249	261	287	385	522

Note:Cooling: In/out temperature 7/12℃. Heating: In/out temperature 60/50℃.

Screw type ground source/water source heat pump

Scroll type ground source/water source heat pump

Air cooled water chiller and heat pump

7. Installation and Notice

7.1 The check after opening the box

Before opening the box, the relevant personal should check the box damaged or not. If the box is in good condition, check and accept the equipment.

Acceptance inspection are as follows:

7.1.1 check the following random file is complete or not:

(1) certificate (2) operation instruction (3) packing list

7.1.2 according to the above documents to check the equipment model, specifications and accessories;

7.1.3 check whether the unit damaged and parts are complete;

7.1.4 fill in the acceptance list.

7.2 The placement

Strictly prohibited brutal handling for the safety of equipment. It should be carried out using a forklift or crane in accordance with the signs on the box for safe operation. As the compressor is installed inside the unit, it should be kept upright as far as possible to ensure the safety of the compressor. If the inclination is required, the maximum shall not exceed 45 degrees and the unit shall be placed smoothly. if necessary, the bottom can be added rubber shock pad to reduce vibration and noise, . (If the bottom has the concrete foundation, it can be fixed.) making enough room around the equipment for maintenance.

Air-cooled unit should be left ventilated space in order to condenser dissipation and future maintenance.

7.3 Installation

The connection of water pipes, ducts and power lines on the basis of ensuring that the unit is properly seated.

7.3.1 The connection of water pipes

Pipeline layout should ensure that the pipeline straight to avoid the "air bag", affecting the cooling result. At the same time, ensuring that the pipeline leakproofness and the unit protection measures. All pipes connected to the unit must use soft connector parts. The unit shall not bear the weight of water pipes. Water pipes should be installed the drain valve at the lowest point in order to use in winter. The top of the water pipe should be installed the exhaust valve in order to eliminate the air inside the pipeline. Water pipe installation should be carried out after the enclosed test. It will be qualified when no reduction in pressure within 5 minutes. The qualified piping after the enclosed tests should be washed. It will be qualified when the water in the final pipe has no impurities and the color is white. During the washing process, the circulating water should not flow through the air conditioning equipment.

7.3.2The connection of air duct

The outlet is used to connect the unit and the air duct in mushroom house.In order to ensure the air supply effect, the wind speed in the wind tunnel should not be too high. It should be controlled within 10m/s to avoid excessive wind loss.The new air outlet may not be connected to the air duct. If necessary, the air duct should be connected to the outside.The air duct and the unit shall be connected with the soft material between the unit and the air dust. The unit shall not bear the weight of the air dust. In order to reduce the heat loss, the air duct needs to be insulated. with tnsulation thickness≥20mm..

7.3.3 Power line

The air conditioning unit must be equipped with an independent power supply system and can not be shared with other equipment.

The total power line load of the air conditioning unit shall be calculated according to the total installed capacity. The branch power line capacity should meet the needs of a single unit operation. See the "Product Specification" for specific parameters.

The total power cable of the air conditioning equipment must be used comply with the related national standard. (please use the copper cable instead of aluminum cable)

8. Equipment Testing

Check before operation

After the device is properly installed and connected, it is ready for operation.

8.1 Electrical inspection

The total power protection switch capacity must meet the equipment requirements and wiring in good condition;

Equipment power control box power supply terminal wiring is intact;

Weather there is a loose phenomenon of the wiring in electric control box;

External fault lock, water failure and equipment failure alarm output connection is intact.

8.2 System inspection

- Whether the cut-off valve is opened
- Whether the pipeline is connected and is rinsed.
- Whether the refrigerant quantity meets the requirements
- The air cooler is well ventilated.

8.3 Water system inspection

Condensate drainage is smooth

Cooling water as required connect well. Pumps, cooling towers and so on operation normally.

8.4 Electricity inspection

Power supply voltage and frequency meet the requirements

Three-phase power supply voltage is balanced. There is no lacking phase and reverse phase situation

Check the air direction of the blower, compressor and condensing fan.

Check each screen of the operation.

8.5 Equipment testing

Ensure the above checks correctness. The device power on after 8 hours to be allowed to turn on and testing;

Equipment testing must be operated by our company's professional technicians. The technician conducts on-site training for the user manager.

The user start their own debugging without my company agreed means give up the warranty service;

For water-cooled models, after ensuring that the operation of user's pumps, cooling towers for 3 minutes and remove the condenser air, it can be tested.

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9. Equipment Failure Analysis and Troubleshooting Methods

Fault phenomenon	Possible causes	Handling method
No response when unit is turned on	● Electricity failure 1 The power supply voltage deviates too much from the standard value 2 Phase sequence error 3 Power supply phase loss ● Program failure ● Historical faults have not been eliminated	● Adjust voltage ● Adjust the phase sequence ● Check and fix ● Reinstall the program ● Exclude all alarms
High pressure protection	● The condenser is dirty and blocked ● Condenser fan stopped ● There is non-condensable gas in the condenser ● The suction pressure is too high ● Too much refrigerant ● Insufficient cooling water ● Cooling water pump failure ● The cooling water temperature is too high	● Clean the condenser ● Find the reason, repair or replace ● Exclude non-condensable gas ● Adjust the throttling device or reduce the load ● Exhaust excess refrigerant ● Check the cooling water system or clean the filter ● Overhaul or replace ● Cooling fan failure or insufficient water
Low pressure protection	● Less refrigerant ● The throttle valve opening is too small ● Improper adjustment of pressure controller ● Clogged evaporator ● Filter clogged	● Find the reason and add refrigerant ● readjust ● readjust ● Clean the evaporator ● Clean or replace the filter
Evaporator frosting	● The suction pressure is reduced ● Expansion valve action failure ● The air flow is too low ● The filter is too dirty or the air valve opening is insufficient	● Find out the reason and deal with it ● Adjust expansion valve or replace ● Adjust the air volume ● Clean the filter screen or adjust the openingof the air valve
Supply air flow decrease	● Dirty filter ● Loose belt ● Power/motor failure	● Clean up ● Adjust or replace ● Inspect/repair

10、Wire Specification

1、Water source unit

Model		Z30SR	Z40SR	Z55SR	Z75SR	Z85SR
Conductor cross section	mm²	4	6	10	10	10

2、Ground source unit

Model		Z30GR	Z40GR	Z55GR	Z75GR	Z85GR
Conductor cross section	mm²	4	6	10	10	10

3、Cooling tower condition unit

Model		Z30W	Z40W	Z55W	Z75W	Z85W
Conductor cross section	mm²	4	6	10	10	10

4、Air cooled unit

Model		Z30FR	Z40FR	Z55FR	Z75FR	Z85FR
Conductor cross section	mm²	10	16	25	25	25

5、Centralized cold and heat source unit

Model		Z30	Z40	Z55	Z75	Z85
Conductor cross section	mm²	1.5	2.5	4	4	4

11. Projects

Project in Argentina

Project in China

Project in Korea

Project in Korea

TESTING CENTER

Testing center covers an area of 6500 square meters; total investment of 50 million RMB, is the largest and most complete detection device in the north of China , the testing range is from household air conditioner to the centrifuge chillers.

Testing center adopt internationally renowned brand measuring instruments, including the United States Agilent data acquisition, Japan Yokogawa power meter, Saibi Ling platinum thermal resistance, to ensure the test accuracy.

Testing center can test multi-unit, air-cooled unit, fan coil unit, ceiling air handling unit, modular air handling unit,purifyiing air conditioning unit, water loop heat unit, air-cooled module chiller and air-cooled screw chiller.

MAIN PROJECTS

High school building in Brazil

Presidential palace of Kazakhstan

Shanxi Dingxiang County People 's Court

Shanxi Yuncheng odd Star Technology Co., Ltd

Beijing Grand Oriental Hotel

Shanxi Linfen High Speed Rail Station

Beijing Sihui building materials city

Shanxi Tongmei Group Zhangze Power Puzhou Power Generation Branch

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