RUIDONG

CABINET TYPE AIR CONDITIONING UNIT

RUIDONG GROUP

www.ruidonggroup.com

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.

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Indoor unit

Outdoor unit

2. BRIEF INTRODUCTION

Ruidong water-cooled RL and air-cooled RLF series unit air conditioners are beautiful in appearance and compact in structure.
The water-cooled unit need connect to the power supply and cooling system when use. The air-cooled type only need to connect the indoor unit and the outdoor unit, can achieve the effect of improving the air quality and regulating the indoor air environment without a cooling water system. The unit can be used in medical, chemical, electric power, shopping malls, catering, machinery and other industries.

1. Compressor

Ruidong water-cooled RL and air-cooled RLF series unit air conditioners are beautiful in appearance and compact in structure.
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2. Shell and tube condenser

The water-cooled unit adopts a bright tube condenser, the refrigerant condenses in the shell and tube to remove heat, and the condensed water flows through the tube to absorb heat.

- Steel shell: The cover plates at both ends of the shell are detachable for easy cleaning and maintenance.
- Copper pipe: high-efficiency outer scale steel pipe.

3. Finned condenser and evaporator

Aluminum fins are cascaded outside the copper tube, matched with a large torsion angle fan and a special motor, with large air volume and low noise.

- Copper tube: Use high-efficiency internally threaded copper tube.
- Aluminum fins: The use of secondary stamping and flanging technology and double corrugated sheet design, processed by mechanical tube expansion technology, ensure that the aluminum fin and the copper tube are closely combined to obtain the best heat exchange effect.

4. Control system

Including power protector and microcomputer controller. Microcomputer controller adopts well-known brand wide temperature type

Electrical components and microcomputer controllers can operate stably and reliably at ambient temperatures from −15℃ to 65℃, and have complete automatic control functions that can realize remote control.

5. Operation and safety equipment

- High and low voltage switch:Protects the compressor from damage caused by high pressure or low pressure.
- Oil heating belt: Each compressor is equipped with an electric heating belt. When the compressor stops, the oil heating

belt heats up. Prevent the refrigerant from mixing and diluting with oil.

Note: When the unit is shut down, do not cut off the power supply to ensure that the oil heater of the unit continues to work.

After the power is cut off and before restarting, make sure that the oil heating belt has been heated for 8 hours or the oil temperature has reached 23°C or higher.

- Temperature control: Using microcomputer controller.
- Filter drier: Filters out impurities, acids and oily particles in the refrigerant in the system, and absorbs moisture in the refrigerant system. The filter drier has a large effective area and extremely low pressure drop.
- Thermal expansion valve: Control the flow of refrigerant to meet the capacity requirements of the unit.
- Overload protector: When the motor load current exceeds the rated value, stop the motor to protect the motor from burning.
- Power protector: Prevents the compressor from operating in reverse or under-phase due to over-high or under-voltage.
- Unit base: The sheet metal structure is reliable and corrosion-resistant.
- Assembly: All are assembled on the unit base in the factory, and all refrigerant pipeline piping and necessary power cord and control line wiring work for the unit are completed.
- Painting: All the units are galvanized and sprayed with plastic, suitable for indoor and outdoor units, beautiful and corrosion-resistant.

3.SPECIFICATION

Water cooled type unit-1

Specification \ Model				RL30		RL40		RL50		RL65	
				Side discharge	Top discharge	Side discharge	Top discharge	Side discharge	Top discharge	Side discharge	Top discharge
Performance	Cooling capacity	kW		32		38		51		66	
	Power supply			3N~380V~50Hz							
	Control range and accuracy			18℃~30℃±2℃							
	Electric heater	kW		18		14		24		36	
	Air flow	m^3/h		5400		6500		8000		10000	
	ESP	Pa		0	80/150/300	0	80/150/300	0	100/200/350	0	100/250/400
	Noise	dB (A)		64	66/67/68	64	66/67/68	64	65/67/69	68	69/71/73
Refrigerant system	Compressor	Type		Hermetic scroll							
		Qty		1		1		2		2	
		Rated power	kW	8.5		9		12		18.4	
	Refrigerant	Type		R407C/R22							
		Charging	kg	6.4		7.6		10.2		13.1	
	Control device			TXV							
	Evaporator			Copper pipe with aluminium fins type							
Condenser	Condenser			Shell & tube type							
	Water flow	m^3/h		7.0		8.1		10.8		14.5	
	Water P.D.	kPa		35		35		35		40	
	Pipe size	DN		50		50		50		65	
Air supply system	Supply fan			Centrifugal fan							
	Power	kW		0.75	0.75/1.5/2.2	0.75	0.75/1.5/2.2	1.5	1.5/2.2/3	1.5	1.5/3/4
	Filter			Nylon							
Dimension	L	mm		1400		1700		1900		1900	
	W	mm		680		680		680		850	
	H	mm		1980	1750	1980	1750	2230	1900	2230	1900
Weight		kg		360	350	470	460	585	570	650	630

Remarks: Cooling conditions: inlet air dry and wet bulb temperature 27℃/19℃, cooling water inlet and outlet temperature 30℃/35℃.

Water cooled type unit-2

Specification \ Model				RL80	RL100	RL110	RL130	RL150	RL190	RL220
				Top discharge	Top discharge	Top discharge	Top discharge	Top discharge	Top discharge	Top discharge
Performance	Cooling capacity	kW		78	97	112	129	150	188	218
	Power supply			3N~380V~50Hz						
	Control range and accuracy			18℃ ~ 30℃ ± 2℃						
	Electric heater	kW		48	48	48	54	72	90	108
	Air flow	m^3/h		13000	16000	18000	20000	22000	25000	35000
	ESP	Pa		100/250/400	120/300/450	120/300/450	150/350/450	200/400/500	450/550	500/600
	Noise	dB (A)		69/71/72	70/72/75	70/72/75	72/74/77	75/77/79	80/82	81/82
Refrigerant system	Compressor	Type		Hermetic scroll						
		Qty		2	3	3	3	2	3	3
		Rated power	kW	21	29.6	32	37.2	42.4	55.2	59.2
	Refrigerant	Type		R407C/R22						
		Charging	kg	15.5	19.3	22.3	25.7	29.9	37.4	43.4
	Control device			TXV						
	Evaporator			Copper pipe with aluminium fins type						
Condenser	Condenser			Shell & tube type						
	Water flow	m^3/h		17.0	21.8	24.8	28.6	33.1	41.8	47.7
	Water P.D.	kPa		35	35	35	35	42	45	45
	Pipe size	DN		65	65	65	80	80	100	100
Air supply system	Supply fan			Centrifugal fan						
	Power	kW		2.2/4/5.5	4/5.5/7.5	4/5.5/7.5	5.5/7.5	7.5/11	11/15	15/18.5
	Filter			Nylon						
Dimension	L	mm		1900	2200	2200	2200	2200	2350	3344
	W	mm		925	1025	1025	1300	1300	1590	1541
	H	mm		2125	1800	1800	1950	1950	2050	2050
Weight		kg		1055	1170	1400	1590	1650	1800	2150

Remarks: Cooling conditions: inlet air dry and wet bulb temperature 27℃/19℃, cooling water inlet and outlet temperature 30℃/35℃.

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Air cooled type unit-1

Specification \ Model				RLF30		RLF35		RLF40		RLF60		RLF70
				Side discharge	Top discharge	Side discharge	Top discharge	Side discharge	Top discharge	Side discharge	Top discharge	Top discharge
Performance	Cooling capacity		kW	28		34		39		58		68
	Power supply			3N~380V~50Hz								
	Control range and accuracy			18℃ ~ 30℃ ± 2℃								
	Electric heater		kW	18		24		24		36		48
	Air flow		m³/h	5400		6500		7200		10000		13000
	ESP		Pa	0	80/150/300	0	80/150/300	0	100/200/350	0	100/250/400	100/200/400
	Noise		dB(A)	64	66/67/68	64	66/67/68	64	65/67/69	68	69/71/73	81/82/83
Indoor unit	Compressor	Type		Hermetic scroll								
		Qty		1		1		1		2		2
		Power	kW	11.2		13.6		17.6		23.2		27.2
	Refrigerant	Type		R407C/R22								
		Charging	kg	4.8		5.8		7.5		9.9		11.6
	Control device			TXV								
	Evaporator			Copper pipe with aluminium fins type								
Condenser				Copper pipe with aluminium fins type								
Air supply system	Supply fan			Centrifugal fan								
	Power		kW	0.75	0.75/1.5/2.2	0.75	0.75/1.5/2.2	1.5	1.5/2.2/3	1.5	1.5/3/4	2.2/4/5.5
	Filter			Nylon								
Dimension	L		mm	1400		1700		1700		1900		1900
	W		mm	680		680		680		850		925
	H		mm	1980	1750	1980	1750	1980	1750	2230	1900	2000
Weight			kg	310	300	370	360	460	445	530	510	870
Outdoor unit x qty				RSW-30N × 1		RSW-35N × 1		RSW-40N × 1		RSW-30N × 2		RSW-35N × 2

Remarks: Cooling conditions: inlet air dry and wet bulb temperature 27℃/19℃, outdoor air dry and wet bulb temperature 35℃/24℃.

Air cooled type unit-2

Specification \ Model				RLF85	RLF100	RLF110	RLF125	RLF170	RLF190
				Top discharge	Top discharge	Top discharge	Top discharge	Top discharge	Top discharge
Performance	Cooling capacity		kW	85	100	112	124	164	183
	Power supply			3N~380V~50Hz					
	Control range and accuracy			18℃ ~ 30℃ ± 2℃					
	Electric heater		kW	48	48	54	72	90	108
	Air flow		m³/h	16000	18000	20000	22000	25000	35000
	ESP		Pa	120/300/450	120/300/450	150/350/450	200/400/500	450/550	500/600
	Noise		dB(A)	70/72/75	70/72/75	72/74/77	75/77/79	80/82	81/82
Indoor unit	Compressor	Type		Hermetic scroll					
		Qty		3	3	3	4	6	6
		Power	kW	34	40	44.8	49.6	65.6	73.2
	Refrigerant	Type		R407C/R22					
		Charging	kg	14.5	17.1	19.1	21.2	28.0	31.2
	Control device			TXV					
	Evaporator			Copper pipe with aluminium fins type					
Condenser				Copper pipe with aluminium fins type					
Air supply system	Supply fan			Centrifugal fan					
	Power		kW	4/5.5/7.5	5.5/7.5	5.5/7.5	7.5/11	11/15	15/18.5
	Filter			Nylon					
Dimension	L		mm	2200	2200	2200	2200	2350	3344
	W		mm	1025	1025	1300	1300	1590	1541
	H		mm	1800	1800	1950	1950	2050	2050
Weight			kg	990	1230	1590	1650	1700	2150
Outdoor unit x qty				RSW-30NC×3	RSW-40NC×3	RSW-40NC×3	RSW-40NC×4	RSW-60NC×3	RSW-60NC×3

Remarks: Cooling conditions: inlet air dry and wet bulb temperature 27℃/19℃, outdoor air dry and wet bulb temperature 35℃/24℃.

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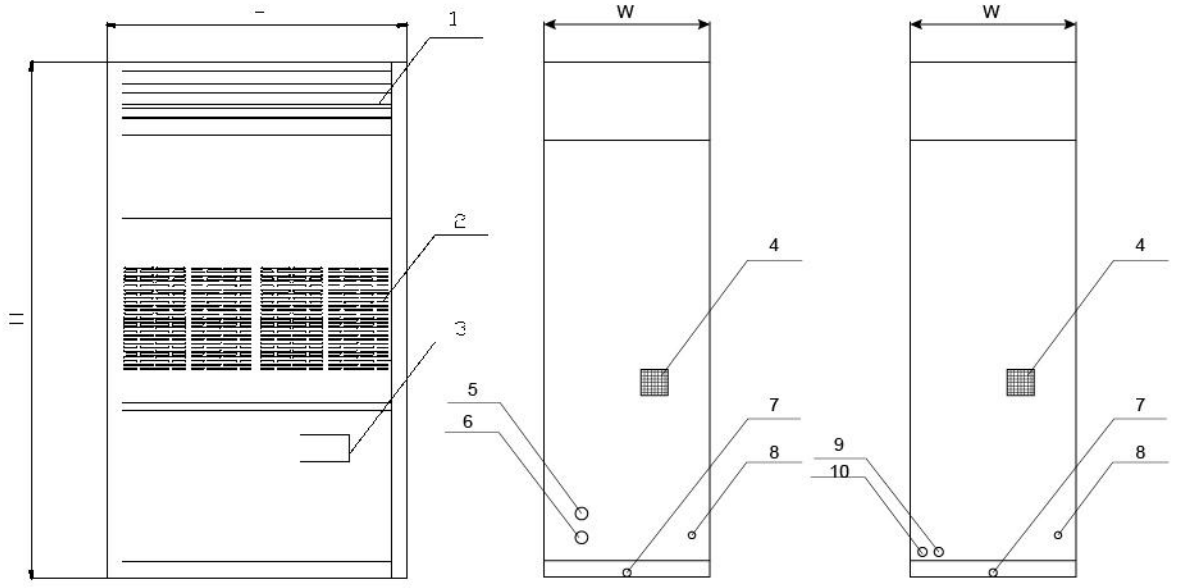
Outdoor unit

Specification \ Model			RSW-30N	RSW-35N	RSW-40N	RSW-60N
Motor power		kW	0.55	0.75	1.1	0.55 × 2
Qty			1	1	1	2
Noise		dB(A)	70	72	74	75
Heat exchanger			Copper pipe with aluminium fins type			
Power supply			3N-380V-50Hz			
Connection pipe	Gas pipe	ϕ × δ (mm)	19.1 × 1.0	19.1 × 1.0	19.1 × 1.0	19.1 × 1.0
	Qty		1	1	2	2
	Gas pipe	ϕ × δ (mm)	15.88 × 1.0	15.88 × 1.0	15.88 × 1.0	15.88 × 1.0
	Qty		1	1	2	2
	Connection type		Thread	Weld		
Dimensions	L	mm	905	1350	1350	1800
	W	mm	910	1000	1000	1000
	H	mm	1150	1080	1080	1080
Weight		kg	210	280	310	320

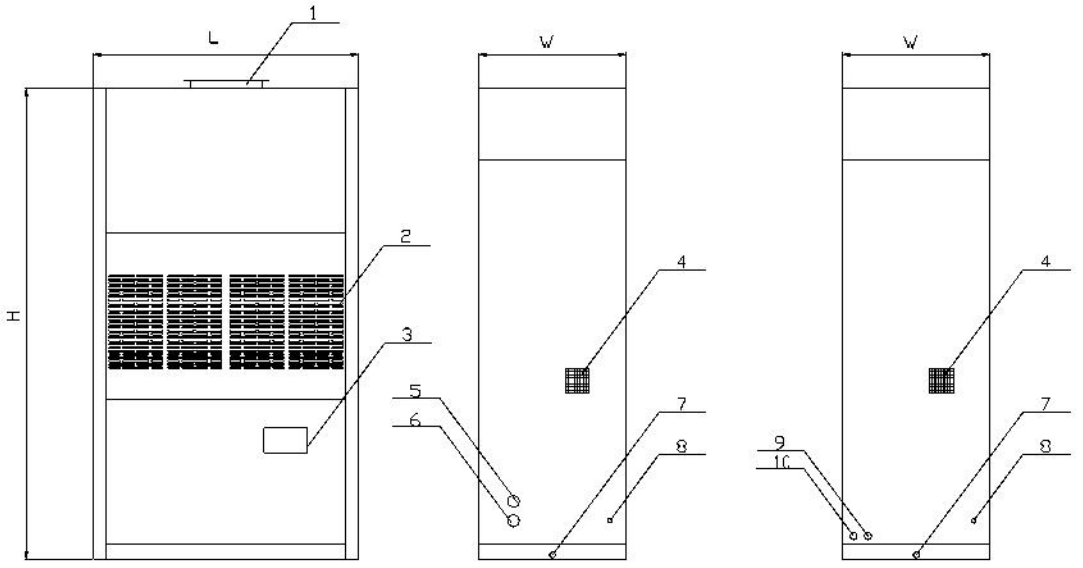
4.STRUCTURE DIAGRAM

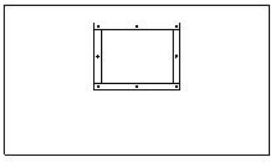
Side discharge unit diagram



No.	Name
1	Outlet air louver
2	Return air grille
3	Controller panel
4	Fresh air outlet (need to be specified when ordering)
5	Condenser outlet pipe (For water cooled type)
6	Condenser inlet pipe (For water cooled type)
7	Condensate drainage pipe
8	Power inlet
9	Refrigerant liquid pipe (For air cooled type)
10	Refrigerant gas pipe (For air cooled type)

Top discharge unit diagram





No.	Name
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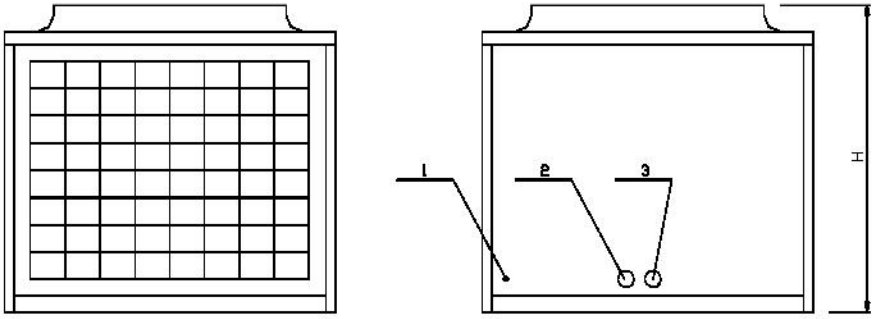
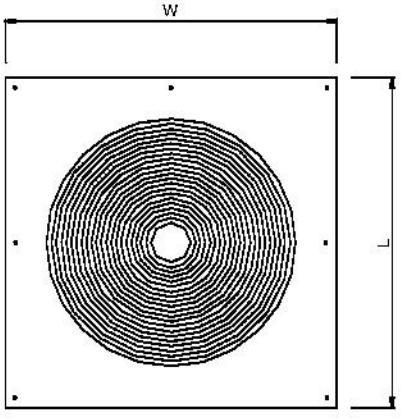
5	Condenser outlet pipe (For water cooled type)
6	Condenser inlet pipe (For water cooled type)
7	Condensate drainage pipe
8	Power inlet
9	Refrigerant liquid pipe (For air cooled type)
10	Refrigerant gas pipe (For air cooled type)

Outdoor unit diagram





No.	Name
1	Power inlet
2	Refrigerant liquid pipe
3	Refrigerant gas pipe

5.INSTALLATION

5.1 Indoor unit installation

5.1.1 Placement of the indoor unit

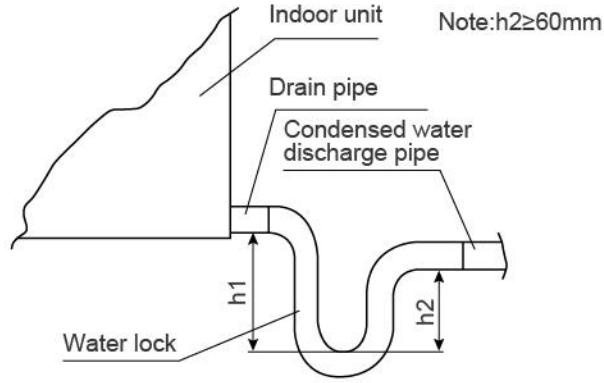
- Sufficient space should be left around and above the unit (1.0m space around) to facilitate air circulation and equipment maintenance.
- Places free from direct sunlight and other heat sources.
- Lay water supply and drainage pipes, refrigerant pipes and electrical wiring at a convenient place.
- When the unit is directly installed in a room where air-conditioning is required, to prevent vibration, a 10-20mm rubber cushion should be added between the mounting bracket and the foundation, and the anchor bolts should be tightened after the level is adjusted. At the same time, around the base of the unit Sealing measures must also be taken between other parts of the machine and the ground.

5.1.2 Connection of air duct

If there is a unit connected to a duct, the weight of the duct should not be borne by the unit

5.1.3 Installation of condensate pipe

The condensate water from the evaporator drain pan and the drain from the humidifier must be drained through the matching trap (connected during the unit engineering installation) to prevent the exhaust gas in the condensate pipe from being pumped back into the room; the trap is shown in Figure:.The vertical height difference (h1-h2) of the unit below 32kW is greater than 20mm, and the vertical height difference (h1-h2) of the unit above 32kW is greater than 50mm; the condensate discharge pipe should maintain an inclination of more than 1%; the condensate pipe should be insulated with an insulation sleeve.



Figure

5.1.4 Humidifier water pipe connection

- Connect the water inlet pipe and overflow pipe to the humidification tank securely. The water inlet pipe is a stainless steel metal hose, which is threadedly connected to the peripheral water supply pipe. The overflow pipe is a transparent plastic hose, which is sleeved with the surrounding metal or PVC drain pipe. The condensate drain pipe on the nozzle can be drained together with the overflow pipe through the pipeline or drained into the drain pan through the matching hole.
- The inlet water pressure is 0.1~1.0MPa. If the water supply pressure is greater than 1.0MPa, please install a pressure reducing valve and set it to 0.4~0.6MPa.
- The humidifier can be connected to the municipal water pipe. If the water impurities are too high, please use a water filter to filter it first.
- Do not use pure or distilled water with complete demineralization in the humidifier, otherwise the humidifier will not work properly.

5.2 Outdoor unit installation

5.2.1 Placement of the outdoor unit

- The foundation for installing the unit can be channel steel (designed by the user according to the external dimensions of the unit) or a concrete structure. The surface of the foundation should be flat and able to bear the weight of the unit.

● In order to ensure the maximum load performance of the unit, as well as the reliability of operation and the convenience
of maintenance, there must be enough space in the group of the unit. The unit is not allowed to have obstacles that affect the ventilation, and the surrounding walls cannot have more than one wall higher than the top of the unit. In order to ensure good ventilation conditions, the ground under the unit should be kept clean. Taking into account the influence of snow in winter, the unit should be higher than the ground at an appropriate height. -The plane layout of one or more units can be operated according to the following requirements:

1.When a single unit is arranged, the minimum distance between the unit and the obstacle is shown in the following table:

	Cooling capacity ≤15kw	Cooling capacity >15kw
Air inlet (mm)	500	800
Air outlet(mm)	2000	3000
Electric control box(mm)	1000	1000

2.When multiple units are arranged::

● A suitable location must be selected to prevent one unit from inhaling the gas discharged from the other unit.
● It must be ensured that they are in the same direction or back to back to avoid short-circuiting the air flow.
● The distance between the two units is more than 1500mm, so as not to affect the air intake effect.

6.MAINTAIN

● The unit has reached the best working condition after adjustment by the commissioning engineer of our company. Please do not change the set operating parameters at will.
● Records should be made during daily operation, especially the various phenomena, time and working conditions that occurred during abnormal operation, so as to facilitate the analysis and inspection of faults.
● Do not run with illness, stop the machine in time if abnormality is found, find out the cause, and eliminate the fault.
● It is strictly forbidden to frequently operate or play with the operation switches. The number of on and off of the compressor should be less than 6 times per hour, and the operation time should be more than 5 minutes each time. If the compressor is frequently turned on and off, it will cause certain damage to the compressor.
● The whole machine should be inspected once a month during the normal use period. The items are:
● Check whether the condensate drain pipe is blocked and whether the heat preservation is good.
● Check whether the return air filter is damaged. If it is damaged, please replace it with professional maintenance personnel.
● Cleaning the return air filter: Put it on a hard surface and tap it gently to remove the heavier particles. If necessary, wash it with detergent in warm water and dry it before loading. Back to the crew. Do not use the air conditioner without the return air filter installed.
● Air outside heat exchanger cleaning: after long-term use, ash and dust will occur, which will affect the heat exchange effect and may cause unit failure. The user should clean it at least once a month, either mechanically or chemically. This work should be done by professionals.
● Cleaning the indoor side heat exchanger: there is a return air filter before the indoor side heat exchanger, so the cleaning cycle can be appropriately extended. If necessary, the cleaning method can be the same as that of the outdoor side heat exchanger. Pay attention to the protection of the electrical part . This work should also be done by professionals.
● Operation inspection of electrode humidifier:
a. Check the tightness of the overflow pipe and steam pipe of the inlet pipe, and see if there is any leakage.
b. Check whether the steam humidification tank is working normally. If there is a spark in the tank, the water should be drained and replaced, and if the scale is serious, it should be considered for replacement.

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

RUIDONG

For more information,please visit our website www.ruidonggroup.com.

Export Office Add: No.129,Yingxiongshan Road,Jinan,Shandong,China
Factory Add: No.6555 Tianqu East Road,Economic Development Zone,Dezhou,Shandong,China
Tel: 0086-531-83199577 Mobile: 0086-15505347651 Mail: sales@ruidonggroup.com

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