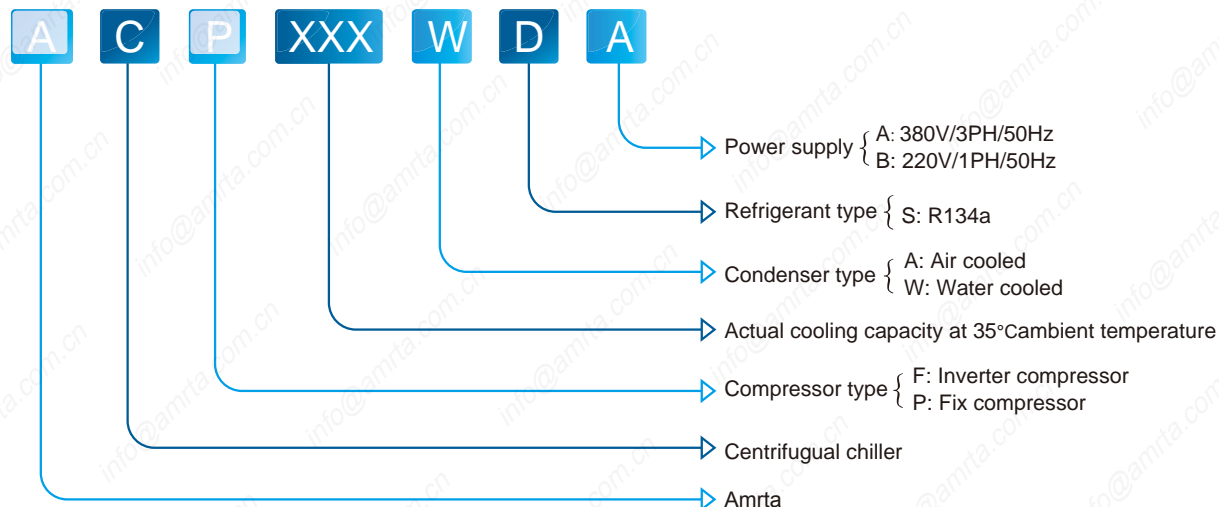




Centrifugal Chiller

I. Product introduction

Naming conventions for centrifugal water cooled cold water chiller

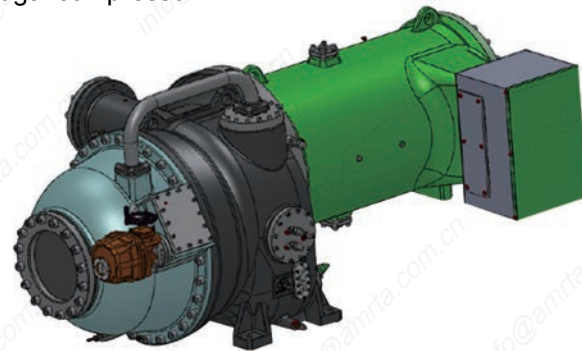


Layout of main components of product



(1) The compressor adopts imported famous brand two-stage centrifugal compressor

- Three-phase bipolar squirrel cage induction motor.
- Y- Δ start, direct start or soft start.
- Design of high efficiency two-stage compression and economizer.
- Protection level - IP54.
- High-strength aluminum enclosed impeller.
- High speed shaft is made of high strength alloy.
- Under normal operation, the bearing life is up to 50000 hours.
- It is the most efficient in HFC-134a centrifugal compressors.



(2) The evaporator is flooded or falling-film type, and the design pressure at refrigerant side is 0.9MPa. Adopt high efficiency heat exchange tube as well as external fin and internal thread to be fixed on end plate by mechanical piping expansion. When the standard configuration is 1.0MPa, the water side is 2-3 tube pass, and the test pressure at water side is 1.25 times of the maximum working pressure.



High efficiency heat exchanger tube

(3) The design pressure at refrigerant side is 1.3MPa. Adopt high-efficient heat exchange tube as well as external fin and internal thread to be fixed on end plate by mechanical piping expansion. The test pressure at water side is 1.25 times of the maximum working pressure.

(4) The high efficiency economizer has a carbon steel cylinder body, and the internal design is to prevent the liquid refrigerant from entering compressor, and it has also improved the efficiency of the unit by adding air in the course of compression.

(5) The oil cooler adopts high efficiency plate heat exchanger to control oil temperature, so as to achieve the purpose of cooling the compressor lubricating oil.



Advanced control

(1) Color display, simple touch screen

The touchscreen display control center belongs to an advanced microprocessor control system. It provides users with a convenient, efficient and visualized operation interface, as well as possesses functions such as real-time monitoring, data recording and safety protection, etc. The control center adopts 8" color display screen, and user can perform the corresponding function operation as long as the buttons on the screen are touched, and the picture is clear.

(2) More accurate control, more stable output

The unit control system not only can adjust the load according to cold water stability, but also can predict the change of air conditioning load according to the change rate of cold water inlet temperature. It can make the unit adjust load faster and the outlet temperature more stable to avoid the frequent change of load, thus improving the life of compressor.

(3) Set permission by level, keep secure by password

The control center improves security access passwords for operators to prevent changing parameter settings without permission. The access level is divided into user level and manufacturer level. Enter user password for starting and access to user parameter setting interface, and enter manufacturer password for access to manufacturer parameter setting interface. This manufacturer password is held by our company's project commissioning personnel to ensure the safe operation of the unit.

(4) Unit protection functions

The unit has various protection measures such as power protection, overheating and overload protection for compressor, high and low voltage protection for system and oil tank temperature protection for compressor.

(5) Multiple anti-surge function

The unit has advanced multiple anti-surge function, and adopts the combination of prevention, control and alarm, so that the unit can safely operate in a safe range and meet customers' demand for cooling capacity.

- **Prevention:** by accurate calculation on surge curve, the unit will adjust the load automatically when its working condition is close to surge curve.
- **Control:** when the unit is detected to be surged, timely control can effectively control the occurrence of surge.
- **Alarm:** when a surge occurs during the unit operation, alarm information will be displayed on the display screen to remind customer and stop the unit.

- **Interlock function**

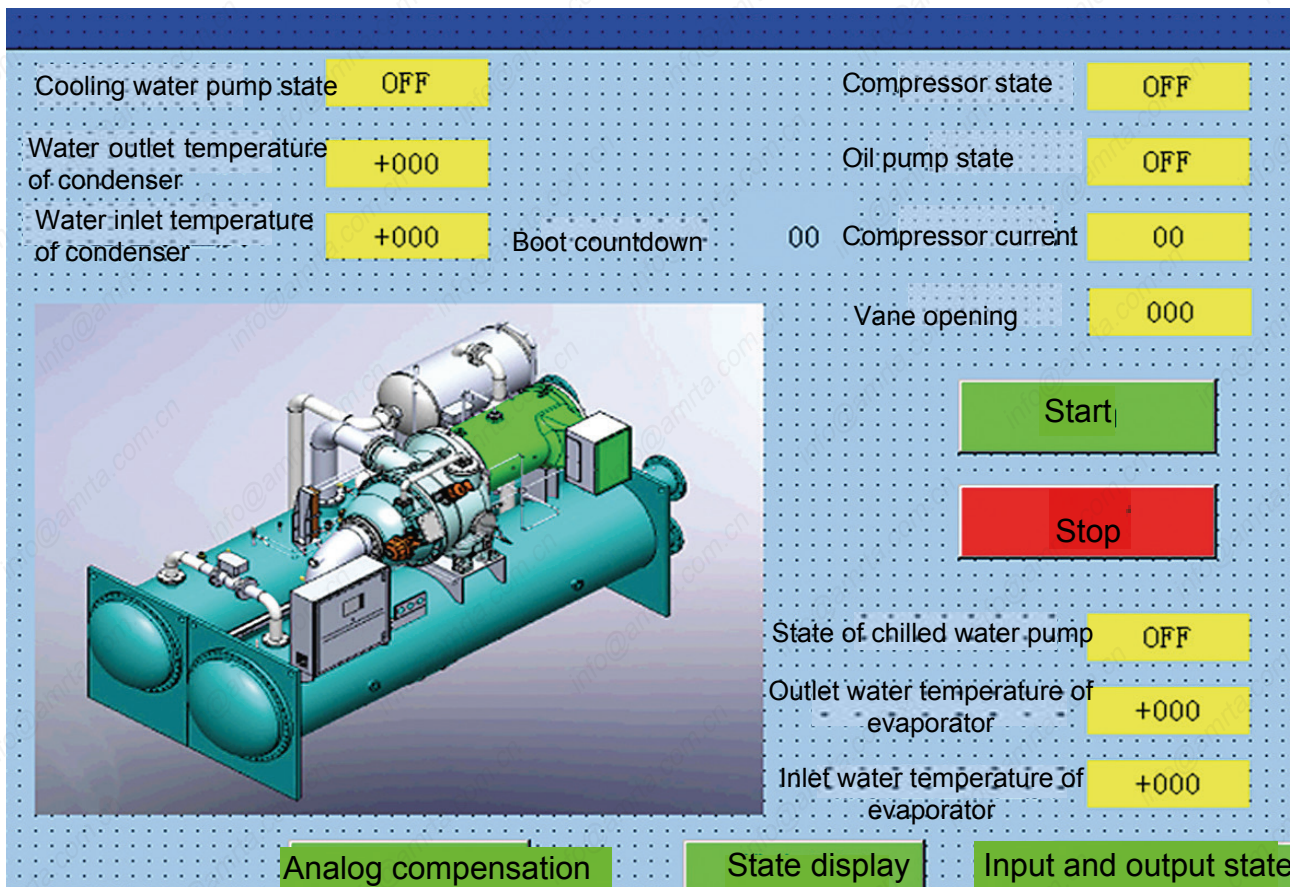
The unit has reserved control points for cooling tower fan, cooling water pump and air conditioning water pump.

The unit has reserved signal output points for remote starting, alarm and running, which will be convenient for customers' remote operation.

The controller reserves RS485 interface and standard MODbus-RTU communication protocol, so customer may conveniently incorporate the unit control into the building automation control system.

- **Display interface**

When centrifugal water-cooled unit is connected to power supply, wait 10 seconds to enter the main interface, which shows the unit appearance and parameters of working condition including: water outlet temperature of evaporator, water inlet temperature of evaporator, water outlet temperature of condenser, water inlet temperature of condenser, compressor running state, compressor running current, vane opening, refrigeration pump running state, cooling pump running state and pump running state.



The screenshot displays a control interface with the following elements:

- Top Left:** Cooling water pump state (OFF), Water outlet temperature of condenser (+000), Water inlet temperature of condenser (+000), and Boot countdown (00).
- Top Right:** Compressor state (OFF), Oil pump state (OFF), Compressor current (00), and Vane opening (000).
- Center:** A 3D CAD model of the centrifugal water-cooled unit.
- Bottom Right:** Start (green button), Stop (red button), State of chilled water pump (OFF), Outlet water temperature of evaporator (+000), and Inlet water temperature of evaporator (+000).
- Bottom:** Three green buttons labeled "Analog compensation", "State display", and "Input and output state".



Enter other interfaces by main interface, including: “analog full compensation”, “state display”, “input and output state”. Check the current unit operation states respectively.

(6) Other devices and safety protection

- Anti-freezing temperature protection: protects system from the freezing damage of heat exchanger caused by water system failure.
- Oil/refrigerant heater: when oil temperature is heated to above 40 °C, it will be allowed to start up, to ensure the best lubricating oil performance. In cold regions, before starting, turn on refrigerant heater to avoid the compression of compressor liquid after starting up.
- Oil temperature protection: set alarm point and protection point in case of too high or too low oil temperature, so as to ensure the normal lubrication of the compressor.
- Sight glass: set sight glasses on oil return pipeline, oil cooling pipeline, evaporator shell, condenser shell and flash tank shell to observe the actual situation of liquid/oil surface.
- Emergency stop switch: In case of emergency, stop urgently by manual
- Oil ejector: using injection pump to return oil to ensure the oil inside the system back to compressor oil tank.

Unit features

(1) Unit adopts two-stage centrifugal compressor with high energy efficiency

- Three-phase bipolar squirrel cage induction motor
- Y- Δ start, direct start or soft start.
- High efficiency two-stage compression and economizer design.
- Protection level - IP54.
- High-strength aluminum enclosed impeller. Enclosed impeller is more efficient than open type.



(2) The unit supply voltage is optional: 380V/6000V/10000V

Select high voltage to reduce initial investment; require no transformer; save cable cost; save electrical equipment installation cost and machine room investment.

(3) The unit adopts SIEMENS microcomputer intelligent control

- Simple operation, complete protection, Chinese interface, real-time monitoring, clear display of all running data, extremely convenient operation. Capacity adjustment is wide with 10~100% stepless capacity adjustment.
- It has perfect protection functions, such as power protection, high voltage protection, low voltage protection, oil temperature protection, etc., which makes the unit running more reliable.
- The unit has advanced multiple anti-surge function, and adopts the combination of prevention, control and alarm, so that the unit can meet customers' demand for cooling capacity in a safe range.
- Visually display switch state, analog state, input, alarm and fault, etc.

(4) Diversified unit throttling control programs

- According to different working conditions and requirements, three throttling programs are available: orifice plate, orifice plate and solenoid valve in parallel connection, orifice plate and electric control valve in parallel connection.
- Orifice plate+electric control valve in parallel connection is the most accurate for throttling control but the cost is higher, so it can be as an optional program.
- Each set of orifice plates is customized according to centrifuge and unit performance to achieve the best matching with unit performance.
- Since orifice plate has no any movable parts, its reliability is better than various throttle valves by mechanical transmission.

(5) The unit adopts liquid level intelligent control

Adopt static capacitance continuous liquid level meter or floating ball level meter to control the liquid level of condenser so as to make the unit running more reliable and accurate.

(6) Separate oil return system

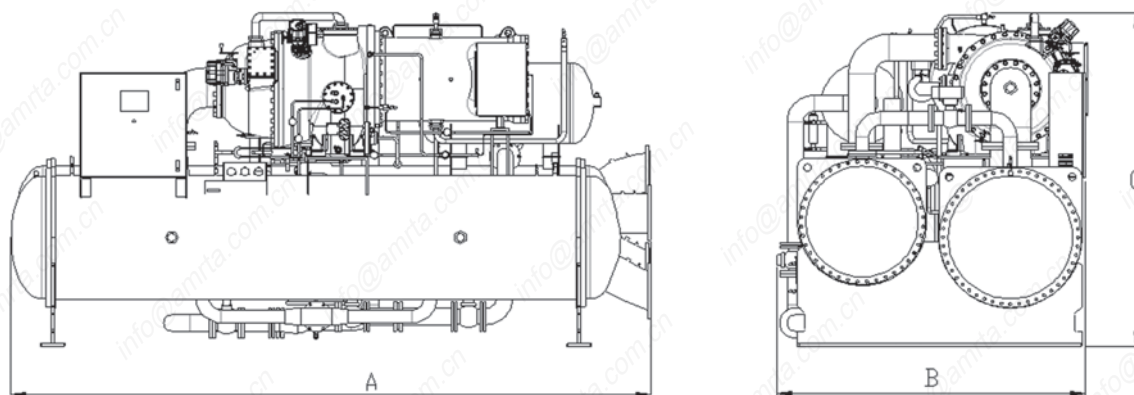
- The oil pump is built in compressor with separate oil return and cooling system, making the compressor lubrication more reliable.
- The unit adopts injection pump as oil return component, and uses high pressure gas as power to complete oil return function at low pressure side.

(7) The unit adopts environmental refrigerant R134a

R134a is HFC working medium, which is an internationally recognized environmental refrigerant.

(8) Compact design, small area, low noise

Product outline drawing





II. Parameters of centrifugal water cooled cold water chiller

Unit model			ACP350WDA	ACP400WDA	ACP450WDA	ACP500WDA	ACP550WDA
Cooling capacity	RT		350	400	450	500	550
	KW		1231	1407	1583	1759	1934
	10 ⁴ kca/h		106	121	136	151	166
Electric motor	Power	KW	208	242	277	306	334
	Power supply	/	380-3ph-50Hz				
	Cooling mode	/	Refrigerant spray cooling				
Performance factor COP		KW/KW	5.92	5.81	5.72	5.75	5.8
Refrigerant			R134a				
Evaporator	Cold water flow	m ³ /h	212	242	272	302	333
	Cold water pressure drop	kPa	65	84	82	86	87
	Number of pass	/	2				
	Cold water inlet and outlet temperature	°C	12/7				
	Connection diameter	DN	200	200	200	200	200
Condenser	Cooling water flow	m ³ /h	265	302	340	378	416
	Cooling water pressure drop	kPa	70	85	87	84	89
	Number of pass	/	2				
	Cooling water inlet and outlet temperature	°C	30/35				
	Connection diameter	DN	200	200	200	200	200
Weight	Transport weight of unit	kg	5700	7575	7850	8100	8850
	Operating weight of unit	kg	6200	8712	9027	9315	10188
Dimension of unit	Length (A)	mm	3850	4675	4675	4770	4770
	Width (B)	mm	1810	1850	1850	2270	2270
	Height (C)	mm	2000	2050	2050	2400	2400

Notes:

- 1.Nominal condition: chilled water inlet/outlet temperature of 12°C/7°C, and cooling water inlet/outlet temperature of 30°C/35°C.
- 2.Fouling factor of evaporator is 0.018m² C/kw, and fouling factor of condenser is 0.044m² C/kw.
- 3.This parameter is subject to change without notice.

Unit model			ACP600WDA	ACP650WDA	ACP700WDA	ACP750WDA	ACP800WDA
Cooling capacity	RT		600	650	700	750	800
	KW		2110	2286	2462	2638	2814
	10 ⁴ kca/h		181	197	212	227	242
Electric motor	Power	KW	340	369	400	425	452
	Power supply	/	380-3ph-50Hz		6000/10000V-3ph-50Hz		
	Cooling mode	/	Refrigerant spray cooling				
Performance factor COP		KW/KW	6.2	6.19	6.16	6.21	6.22
Refrigerant			R134a				
Evaporator	Cold water flow	m ³ /h	363	393	423	454	484
	Cold water pressure drop	kPa	84	81	81	87	88
	Number of pass	/	2				
	Cold water inlet and outlet temperature	°C	12/7				
	Connection diameter	DN	200	200	250	250	300
Condenser	Cooling water flow	m ³ /h	454	491	529	567	605
	Cooling water pressure drop	kPa	87	80	77	84	88
	Number of pass	/	2				
	Cooling water inlet and outlet temperature	°C	30/35				
	Connection diameter	DN	200	200	250	250	300
Weight	Transport weight of unit	kg	9150	11350	11400	11400	13650
	Operating weight of unit	kg	10605	13120	13250	13250	15700
Dimension of unit	Length (A)	mm	4770	4770	5100	5100	5100
	Width (B)	mm	2270	2270	2400	2400	2400
	Height (C)	mm	2400	2400	2600	2600	2600

Notes:

1. Nominal condition: chilled water inlet/outlet temperature of 12 °C/7 °C , and cooling water inlet/outlet temperature of 30 °C/35 °C .
2. Fouling factor of evaporator is 0.018m² C/kw, and fouling factor of condenser is 0.044m² C/kw.
3. This parameter is subject to change without notice.



Unit model			ACP850WDA	ACP900WDA	ACP950WDA	ACP1000WDA	ACP1100WDA
Cooling capacity	RT		850	900	950	1000	1100
	KW		2989	3165	3341	3517	3869
	10 ⁴ kca/h		257	272	287	302	333
Electric motor	Power	KW	483	513	536	568	626
	Power supply	/	6000/10000V-3ph-50Hz				
	Cooling mode	/	Refrigerant spray cooling				
Performance factor COP		KW/KW	6.19	6.17	6.23	6.19	6.18
Refrigerant			R134a				
Evaporator	Cold water flow	m ³ /h	514	544	575	605	665
	Cold water pressure drop	kPa	87	87	80	89	87
	Number of pass	/	2				
	Cold water inlet and outlet temperature	°C	12/7				
	Connection diameter	DN	300	300	300	300	350
Condenser	Cooling water flow	m ³ /h	643	681	718	756	832
	Cooling water pressure drop	kPa	85	84	82	94	89
	Number of pass	/	2				
	Cooling water inlet and outlet temperature	°C	30/35				
	Connection diameter	DN	300	300	300	300	350
Weight	Transport weight of unit	kg	13650	14950	14950	15050	15320
	Operating weight of unit	kg	15700	17580	17580	17750	18400
Dimension of unit	Length (A)	mm	5100	5100	5200	5200	5200
	Width (B)	mm	2400	2400	2650	2650	2650
	Height (C)	mm	2600	2600	2800	2800	2800

Notes:

- 1.Nominal condition: chilled water inlet/outlet temperature of 12 °C/7 °C, and cooling water inlet/outlet temperature of 30 °C/35 °C.
- 2.Fouling factor of evaporator is 0.018m² C/kw, and fouling factor of condenser is 0.044m² C/kw.
- 3.This parameter is subject to change without notice.

Unit model			ACP1200WDA	ACP1300WDA	ACP1400WDA	ACP1500WDA	ACP1600WDA
Cooling capacity	RT		1200	1300	1400	1500	1600
	KW		4220	4572	4924	5276	5627
	10 ⁴ kca/h		363	393	423	454	484
Electric motor	Power	KW	683	735	793	852	905
	Power supply	/	6000/10000V-3ph-50Hz				
	Cooling mode	/	Refrigerant spray cooling				
Performance factor COP		KW/KW	6.18	6.22	6.21	6.19	6.22
Refrigerant			R134a				
Evaporator	Cold water flow	m ³ /h	726	786	847	907	968
	Cold water pressure drop	kPa	95	100	103	98	100
	Number of pass	/	2				
	Cold water inlet and outlet temperature	°C	12/7				
	Connection diameter	DN	350	350	350	350	400
Condenser	Cooling water flow	m ³ /h	907	983	1059	1134	1210
	Cooling water pressure drop	kPa	95	92	95	96	92
	Number of pass	/	2				
	Cooling water inlet and outlet temperature	°C	30/35				
	Connection diameter	DN	350	350	350	350	400
Weight	Transport weight of unit	kg	15320	18800	18950	19250	24600
	Operating weight of unit	kg	18400	20660	21450	21550	27755
Dimension of unit	Length (A)	mm	5200	5200	5560	5560	5560
	Width (B)	mm	2650	2650	2950	2950	2950
	Height (C)	mm	2800	2800	2960	2960	2960

Notes:

1. Nominal condition: chilled water inlet/outlet temperature of 12 C/7 C, and cooling water inlet/outlet temperature of 30 C/35 C.
2. Fouling factor of evaporator is 0.018m² C/kw, and fouling factor of condenser is 0.044m² C/kw.
3. This parameter is subject to change without notice.



Unit model			ACP1700WDA	ACP1800WDA	ACP1900WDA	ACP2000WDA
Cooling capacity	RT		1700	1800	1900	2000
	KW		5979	6331	6682	7034
	10 ⁴ kca/h		514	544	575	605
Electric motor	Power	KW	963	1026	1074	1136
	Power supply	/	6000/10000V-3ph-50Hz			
	Cooling mode	/	Refrigerant spray cooling			
Performance factor COP		KW/KW	6.21	6.17	6.22	6.19
Refrigerant			R134a			
Evaporator	Cold water flow	m ³ /h	1028	1089	1149	1210
	Cold water pressure drop	kPa	103	105	105	102
	Number of pass	/	2			
	Cold water inlet and outlet temperature	°C	12/7			
	Connection diameter	DN	400	400	400	400
Condenser	Cooling water flow	m ³ /h	1285	1361	1437	1512
	Cooling water pressure drop	kPa	95	89	89	92
	Number of pass	/	2			
	Cooling water inlet and outlet temperature	°C	30/35			
	Connection diameter	DN	400	400	400	400
Weight	Transport weight of unit	kg	25655	28750	29450	29450
	Operating weight of unit	kg	29503	30700	32050	32050
Dimension of unit	Length (A)	mm	5560	5560	6150	6150
	Width (B)	mm	2950	2950	3100	3100
	Height (C)	mm	2960	2960	3150	3150

Notes:

1. Nominal condition: chilled water inlet/outlet temperature of 12°C/7°C, and cooling water inlet/outlet temperature of 30°C/35°C.
2. Fouling factor of evaporator is 0.018m² C/kw, and fouling factor of condenser is 0.044m² C/kw.
3. This parameter is subject to change without notice.

III. Product lifting

After the equipment arrives at site, first check whether the goods are in conformity with the order, whether the parts are missing or whether there is any damage caused by transportation. Contact with the delivery person or our company immediately in case of any discrepancy with the order, parts missing or damage.

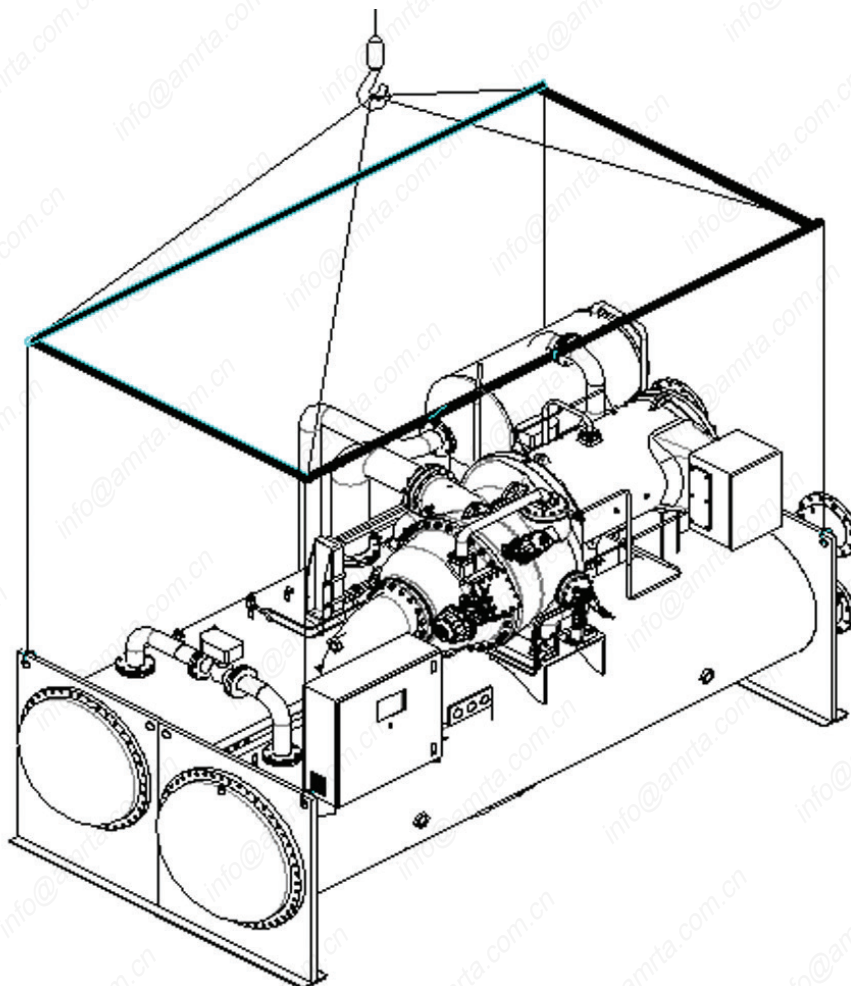
The fewer times the unit is handled, the less likely it is to be damaged. Parts for equipment (such as control box, pipeline and pipe fittings, etc.) shall not be used for lifting or treading.

When lifting, use crane for loading and unloading, hang the lifting holes on the end plates of evaporator and condenser, and use lifting bracket for lifting. Meanwhile, be careful not to damage control box, piping, pipe fittings and insulation material, etc. When lifting the unit, avoid appearance damage or deformation, and place protective pad on the contact surface between sling and unit body.

When lifting, keep the unit vertical, the inclination should be less than 30°, and avoid collision and slipping.

Please handle with care

Unit lifting



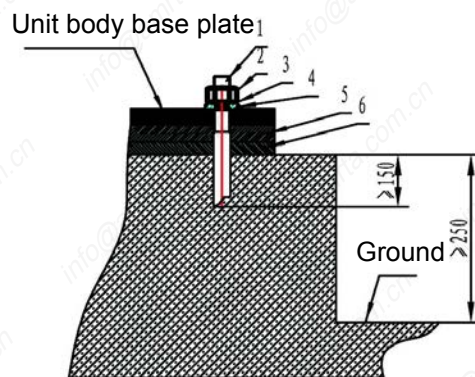
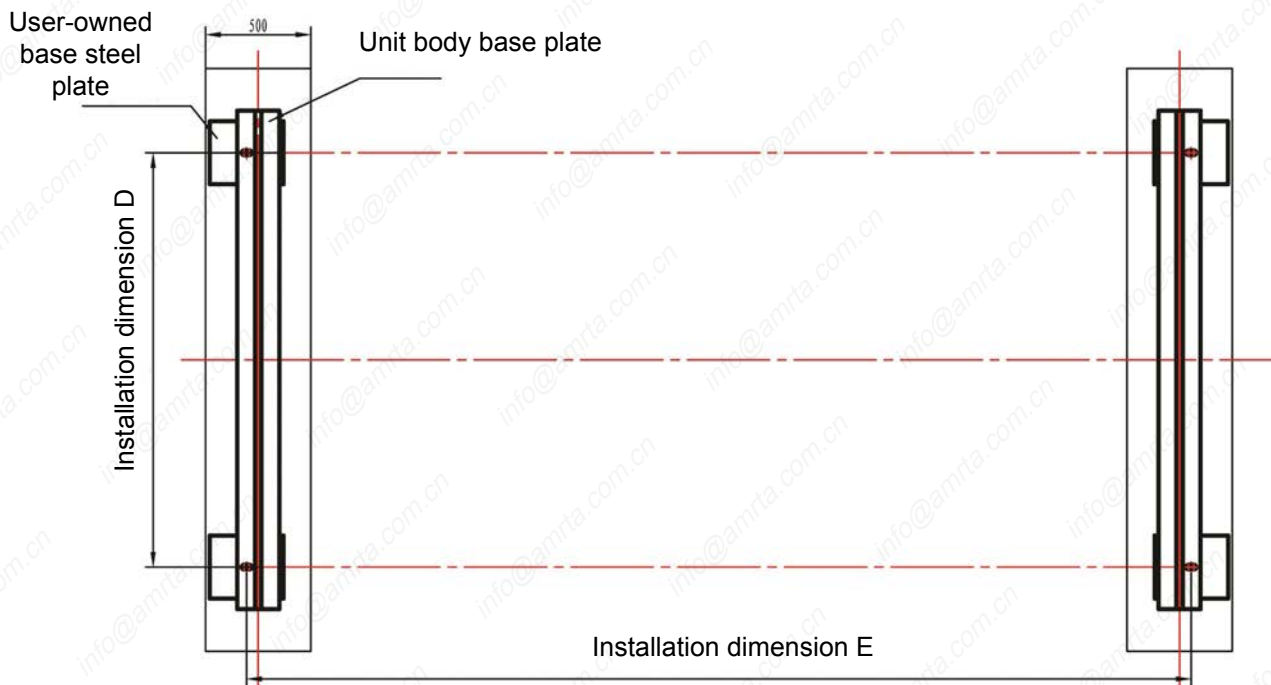
Unit installation

- (1) The installation site must be clean and dry, with no sundries stacked and having good lighting, so as to facilitate both control instrument check and operation and maintenance.
- (2) Pay attention to whether enough space is available for unit access at installation site.
- (3) Irrespective of the unit type, reserve sufficient maintenance space on each side. In addition, reserve sufficient space at both ends of the unit for cleaning and repairing of condenser and evaporator copper pipes afterwards.
- (4) The indoor machine room should have adequate ventilation, which is beneficial to the safe running and operation of machinery equipment.
- (5) For normal operation of electrical components, do not put the unit in places of dust and dirt, corrosive fumes and high humidity; otherwise, please correct it .

Unit foundation

The foundation can be made of cement or steel plate, which shall be able to fully withstand the operating weight of the unit and the levelness shall be within 3/1000.

In order to facilitate unit maintenance and inspection, the foundation height should be 250mm above the ground.



No.	Name
1	Foundation bolt
2	Nut
3	Spring washer
4	Flat washer
5	User-owned steel plate
6	Rubber shock pad

Shockproof

- (1) The foundation of the unit must be solid so as to minimize vibration transmission.
- (2) The unit should be added with shock absorber to prevent noise and vibration from spreading to the floor and reducing the vibration to unit.

Drainage

When setting the foundation, the floor shall be reserved with drainage ditch to discharge the water in water pipe or equipment during maintenance.

Waterproof

The unit cannot be installed under the water pipe with condensation or water leakage, and places where the water may be splashed. Water proofing is very important to the safety of electrical control equipment.

Water pipe piping of condenser and evaporator

- (1) The unit shall be corrected on horizontal position before the assembly of water pipes. The automatic exhaust valves shall be installed on the highest positions of all pipelines. The water pipe piping of evaporator shall be insulated to prevent sweating. While the water pipe of the condenser shall be handled according to local conditions and laws and shall be insulated if necessary.
- (2) Please install the inlet and outlet pipes that connect the condenser and evaporator of the chiller according to the unit identification, which is not allowed to connect wrongly.
- (3) The thermometer and hydraulic gauge shall be installed on the piping of the inlet and outlet water pipes of the condenser and evaporator for recording the running conditions of the unit.
- (4) A filter is required for the inlet side of the water pipe piping of cooling water and cold water pump. Because in the pipe piping construction, there may be some sundries left in water pipe, which cannot be cleaned up. These sundries may enter water pump, condenser, and evaporator as the machine runs, causing internal damage or the blocking of heat transfer tube. After the pipe piping running, be sure to clean the filter and keep water quality clean.
- (5) The stop valves shall be installed on the piping of the inlet and outlet water pipes of the condenser and evaporator, so that the water valve can be shut off to discharge the water in condenser and evaporator during maintenance.
- (6) The flexible shockproof hose shall be installed at the piping of the inlet and outlet water pipes of the condenser and evaporator to reduce the vibration transmission and protect the unit from bearing the weight of pipeline.
- (7) The flow control valve should be installed at the water pipe piping of the condenser inlet to control the water volume, so as to keep the condensing pressure of the unit properly.
- (8) The flow switch shall be installed at the outlet of the condenser and evaporator to ensure the normal amount of water when the unit runs. If not installed, the unit may be damaged seriously.
 - The flow switch must be installed on a section of straight pipe, with a straight line length of at least 5 times of pipe diameter on both sides.
 - The flow switch shall be installed in a horizontal pipe or a vertical pipe with upward flow direction, but it cannot be installed in the pipeline with downward flow direction.
 - To prevent damage to the flow switch during installation, it is not allowed to hold the switch shell to screw into three-way joint. Use a special wrench to tighten it at the hexagonal plane of the switch joint.
 - When the flow switch is screwed into three-way joint, make sure that the projection plane of the flow sheet is perpendicular to the fluid while tightening it, and make the arrow direction of the switch shell be consistent with the fluid direction.
 - The protection value of flow switch at user side of the unit should be set at 70% of the unit nominal flow capacity.
- (9) The circulating water pump shall be installed on the inlet of the condenser and evaporator, while it shall also be installed on the outlet if limited by space. When selecting water pump, the suction side of pump shall be considered as positive pressure. The water system must be equipped with water pump of suitable flow and lift to ensure the normal water supply of the unit. Apart from using shockproof flexible joints for connection, it is suggested to set up brackets between the water pump and unit and water system pipeline to avoid force on unit. Avoid damage to the unit during welding for installation.
- (10) Expansion tank shall be installed on the highest position of air conditioning equipment up to 1~1.5 meters, and the tank capacity shall be about 1/10 of the total water amount of the system. So that it can maintain exhaust function and have a role of expansion and shrinkage of water supply and cold water system.
- (11) The highest position of water distribution pipeline should be equipped with automatic exhaust device. Before starting cold water chiller, it is necessary to confirm that the air in pipeline has been eliminated to avoid damage caused by running without water.
- (12) The pressure test, flushing, sewage discharge and heat preservation for system water pipeline shall be carried out before connection with the unit to avoid damage of sewage to the unit.

Principle requirements of water system

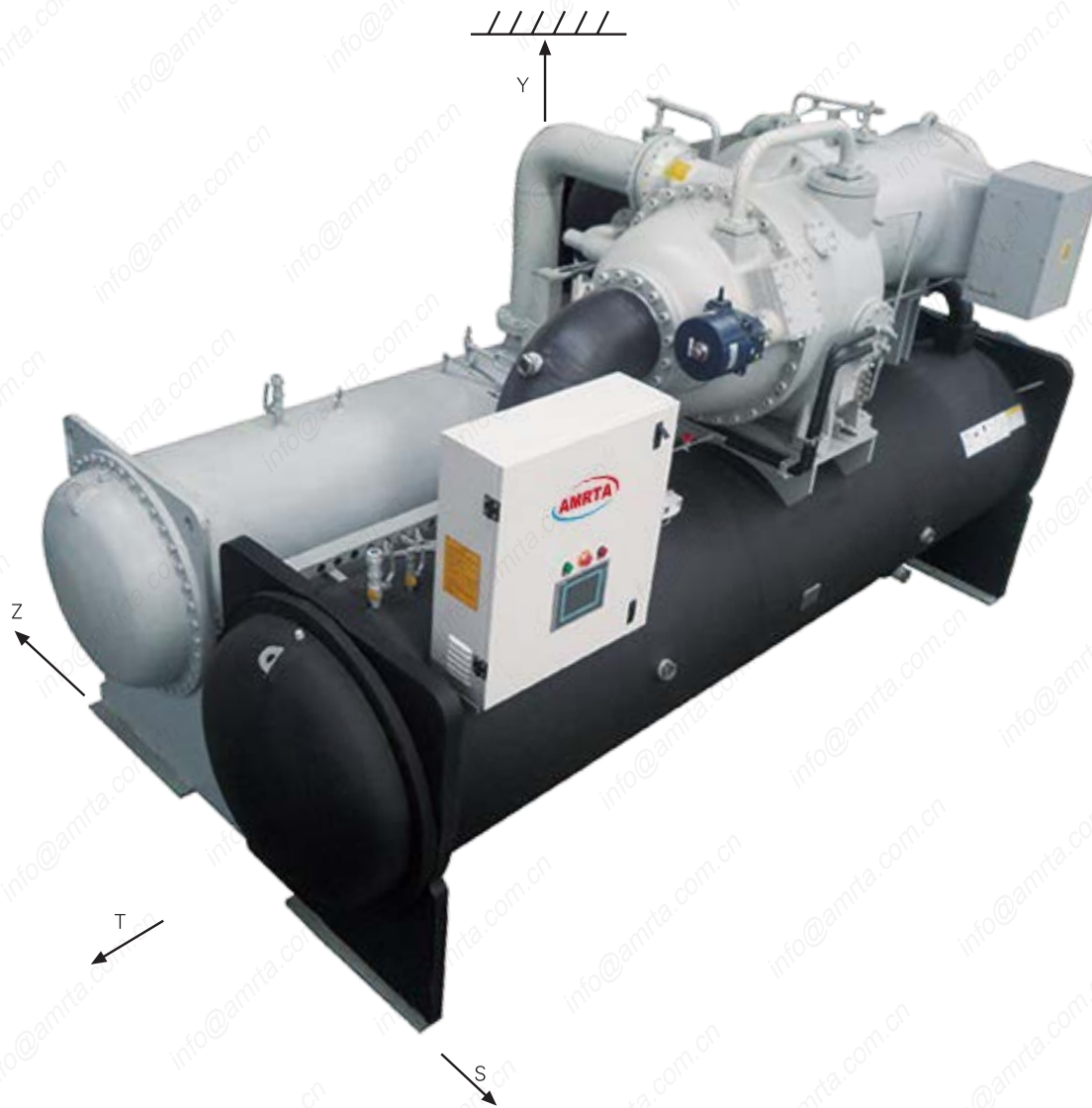
(1) **Water quality:** clean water or water that has been treated and meets the requirements of project. Poor quality of chilled water and cooling water will not only produce fouling inside the heat transfer tube, affect the efficiency of heat exchange and reduce the unit performance, but also corrode the heat transfer tube, resulting in a major failure of the unit. Customer should carry out water quality treatment according to the requirements of GB50050-1995 Code for Design of Industrial Recirculating Cooling Water Treatment. When chilled water system is a closed system, soft water should be used. During the operation of the unit, it is suggested to carry out regular sampling analysis for cooling water (chilled water in open system). The water quality should meet the requirements of the table below. If not, water quality should be treated.

	Item	Unit	Make-up water	Cooling (chilled)water	Tendency	
					Corrosion	Fouling
Basic item	PH (25 C)	6.5–8.0	6.5–8.0	6.5–8.0	0	0
	Conductivity (25T)	μ S/cm	<200	<800	0	0
	Chloride ion Cl-	mg Cl-/L	<50	<200	0	0
	Sulfate ion SO-2	mg SO-2/L	<50	<200	0	0
	Acid consumption (PH4.8)	mgCaCO ₃ /L	<50	<100	0	0
	Full hardness	mgCaCO ₃ /L	<50	<200	0	0
	Item	Ferrum (Fe)	mg Fe/L	<0.3	<1.0	0
Sulphur ion (S2-)		mgS ₂ -/L	Undetected	Undetected	0	0
Ammonium ion (NH ₄ ⁺)		mgNH ₄ ⁺ /L	<0.2	<1.0	0	0
Silicon dioxide (SiO ₂)		mgSiO ₂ /L	<30	<50	0	0

(2) **Water temperature:** The water temperature of water source should be moderate.

(3) **Water quantity:** The water quantity of water source should be sufficient to meet users' needs for heating load or cooling load.

Spatial arrangement

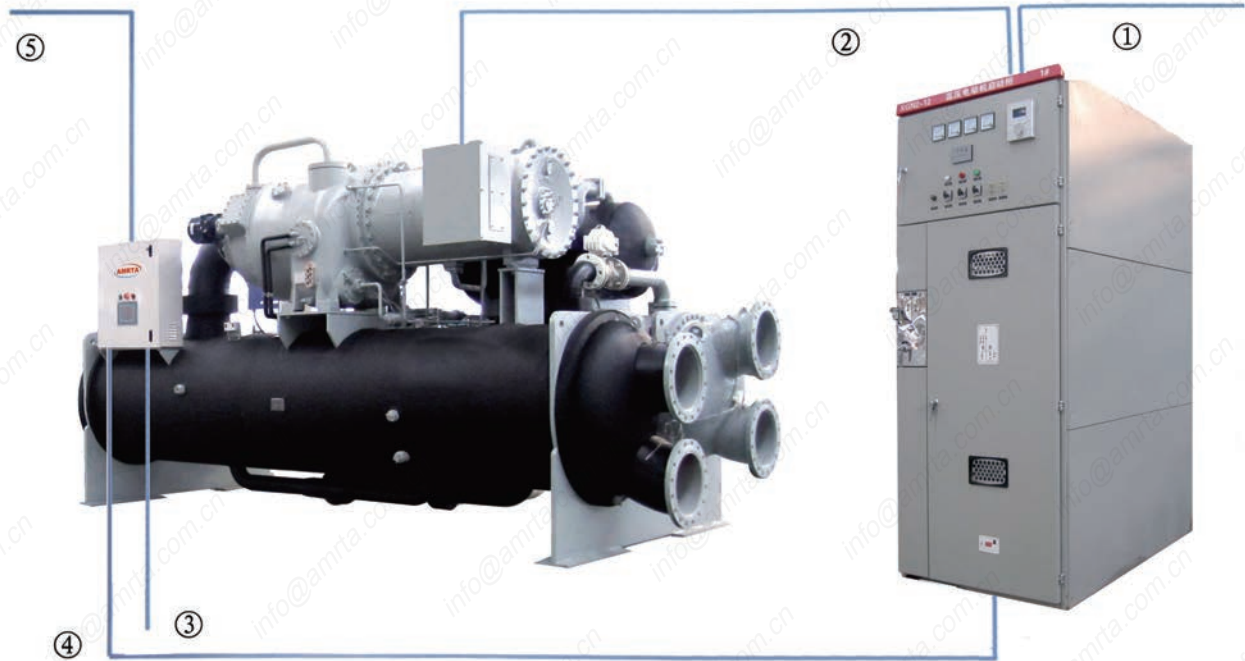


Unit model	Space dimension for maintenance (mm)			
	T	Y	S	Z
LC350A–LC600A	4200	1400	1200	1000
LC650A–LC1200A	4500	1400	1300	1000
LC1300A–LC1800A	5300	1500	1300	1000

IV. Electrical installation of product

High-voltage centrifuge unit project wiring diagram

Note: Due to design improvement, the unit shape may be updated slightly, which is subject to material object.



High-voltage wiring instructions

- Wire① is the power cord from customer's high voltage distribution cabinet to power cabinet, and the power specification required is 3N~50Hz 6000V/10000KV. Pass power cord from the upper end of power cabinet, and adjust the wire diameter according to the unit power.
- Wire② is the power line from power cabinet to the main motor of centrifuge unit. Power line comes out from the upper end of power cabinet, and adjust the wire diameter will be adjusted according to the unit power.
- Wire③ is the power cord from client side to the control cabinet of centrifuge unit, which needs 5 power cords (three phases with neutral line, earth wire). Wire diameter required is 2.5mm² or above, and the power specification is 3N~50Hz 380V. This power supply will be provided by customer independently.
- Wire④ is from power cabinet to the main control cabinet of centrifuge unit, which requires 12 signal control wires. The wire diameter is required to be 0.75mm² or above, in which the analog signal wire adopts shielding wire.
- Wire⑤ is the signal control wire from the main control cabinet of centrifuge to water pump control cabinet and remote switch machine, and the wire diameter required is 0.75mm² or above.
- **Note: Water pump control cabinet is provided by the customer.**
- Power line and control wire should be separately configured and cannot be placed in the same wire casing.

Low-voltage centrifuge unit project wiring diagram

Note: Due to design improvement, the unit shape may be updated slightly, which is subject to material object.



Low-voltage wiring instructions

- Wire① is the power cord (three phases with neutral line, earth wire) from customer's distribution cabinet to power cabinet, and the power specification required is 3N~ 50Hz 380V. Pass power cord from the upper end of power cabinet, and adjust the wire diameter according to the unit power.
- Wire② is the power wire from power cabinet to the main motor of centrifuge unit (star-delta start or soft start, 6 power lines with earth wire). Power line comes out from the upper end of power cabinet, and the wire diameter will be adjusted according to the unit power.
- Wire③ is from power cabinet to the oil pump control cabinet of centrifuge unit, which needs 5 power cords (three phases). Wire diameter required is 2.5mm² or above.
- Wire④ is from power cabinet to the main control cabinet of centrifuge unit, which requires 12 signal control wires. The wire diameter is required to be 0.75mm² or above, in which the analog signal wire adopts shielding wire.
- Wire⑤ is the signal control wire from the main control cabinet of centrifuge to water pump control cabinet and remote switch machine, and the wire diameter required is 0.75mm² or above.

Note: Water pump control cabinet is provided by the customer.

- Power line and control wire should be separately configured and cannot be placed in the same wire casing.

◎ Note: Please prepare control wires used between user's distribution cabinet and start-up cabinet as well as between control cabinet and start-up cabinet, and cables used between start-up cabinet and compressor. Please carry out installation and wiring according to the electronic control schematic diagram and wiring diagram. The high-voltage start-up cabinet provided by user must meet the technical requirements of our company.



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Office telephone: 0086-0531-88901036
For more information, contact info@amrta.com.cn

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