

THE WORLD'S OBAIR

In the vast global innovation landscape, "Obair" shines like a brilliant star, leading the wave of technological innovation.

We are not just a company, but also advocates and practitioners of the global upgrade in quality of life.

In the world of Obair, technological innovation is not only a driving force but also the soul.

We firmly believe that "Obair" will resonate in every corner of the world, representing excellence, quality, and dreams.

We cross mountains and seas, connecting the five continents, adding a bright color to the global stage of life, becoming a synonym for beauty in the hearts of people around the world, and together writing a glorious chapter in human civilization.



The product pictures of Obair have applied the above certification and the specific product certification is detailed in the relevant product certification certificate.

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Note: There may be discrepancies between all product descriptions, data, and actual products in this catalog. Please refer to the actual product. Changes will not be notified separately.



Official WeChat
Public Account

OBAIR

SL-LG |

Integrated Water-Cooled Screw Chiller



OBAIR
Control air conditioning

Version NO.: OB-202502A
Haojin Oubo Technology CO., LTD

COMPANY PROFILE

Haojin Oubo Technology Co., Ltd. is a large-scale purification central air conditioning national high-tech enterprise integrating research and development, production, sales, and service.

Obair has always adhered to technological innovation, participated in the formulation of national and industry standards as a member unit of China's "Cold Standard Committee", and has obtained multiple invention patents and utility model patents. It has established industry-university-research bases with Nanchang University and Jiangxi University of Science and Technology. It is a key demonstration enterprise for deep integration of informatization and industrialization in Jiangxi Province, a demonstration enterprise for service-oriented manufacturing in Jiangxi Province, and the company has successively won honors such as Jiangxi Province Technology Center, Ganzhou City Industrial Design Center, Jiangxi Famous Brand Product, national green factory, and national specialized and innovative "little giant" enterprise.

Obair currently has two phases in Ganzhou, Jiangxi, using digital park management, with over 120 digital production equipment, achieving an annual production capacity of 100,000 units.

Obair currently has more than 1000 models of high-quality air conditioning products independently developed, and the products have obtained energy-saving certification, CRAA, EU CE certification, American AHRI certification and other authoritative institutions' testing and certification, widely used in hospitals, dust-free workshops, pharmaceutical factories, electronics, tobacco, painting, photovoltaic, new energy, semiconductor, laboratory and other industries, and has the industry reputation of "King of Cleanliness" and "King of Constant Temperature and Humidity Non-standard".

Obair strictly implements the ISO9001/ISO14001/ISO45001 management system, always practices the purpose of "willing to explain the price for a while, but not to apologize for the quality for a lifetime", proposes the "6-hour" on-site service concept for all customers and for all customers, and provides the most professional and high-quality technical support and after-sales service.

From the mission, born for purification!
Obair, your regret-free choice!

170,000
cumulative models
of complete machine production since 1990

70+
National Service Contact Points

1000+
employees

100,000
Pilot Project Air Conditioning Solutions



HONORARY QUALIFICATIONS



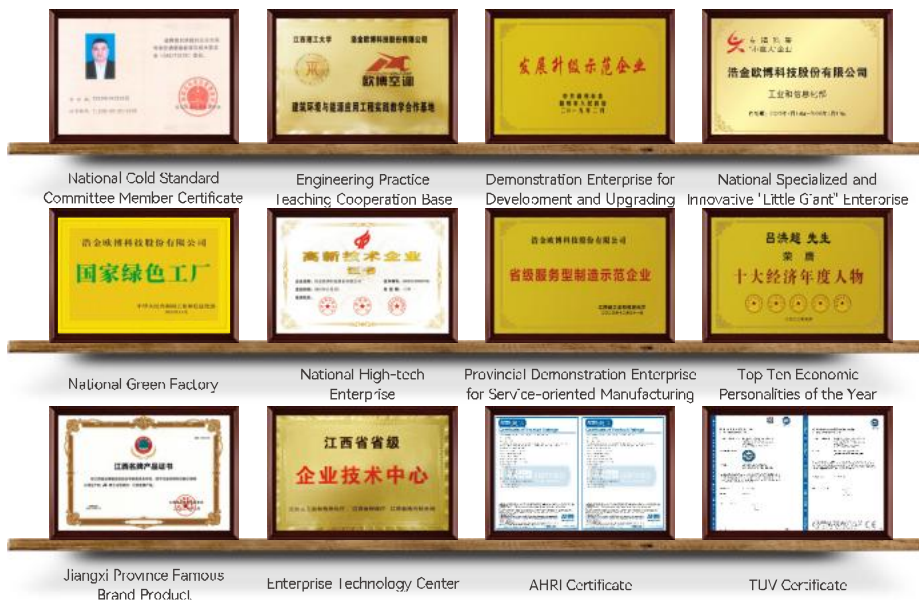
Advanced equipment, professional technology and strict management have created the high quality of "OBAIR" brand products.

It has successively won dozens of honors such as national high-tech enterprise, China's well-known brand, specialized and special new enterprise, cold standard committee enterprise, provincial service-oriented manufacturing demonstration enterprise, provincial enterprise technology center, Jiangxi famous brand product, etc.

"OBAIR" products are your reliable choice.



It has obtained more than 10 certifications and more than 100 patents.





Extreme Cold Source

The high-efficiency and low-noise square cross - flow cooling tower is used, which has an extended water flow heat exchange duration, excellent hydrophilicity, and continuously provides high - quality cooling sources for the host system.



Safe and Reliable

The unit is equipped with a large number of status monitoring instruments and protection devices to perform protection operations on the unit, and it is also possible to manually perform protection operations through manual monitoring, achieving intelligent control and comprehensive protection of the unit.



Highly Efficient and Energy - Saving

Adopting advanced highly efficient full - liquid evaporation technology and highly efficient cooling technology maximizes refrigeration efficiency and energy utilization rate, and also minimizes energy consumption to the greatest extent.

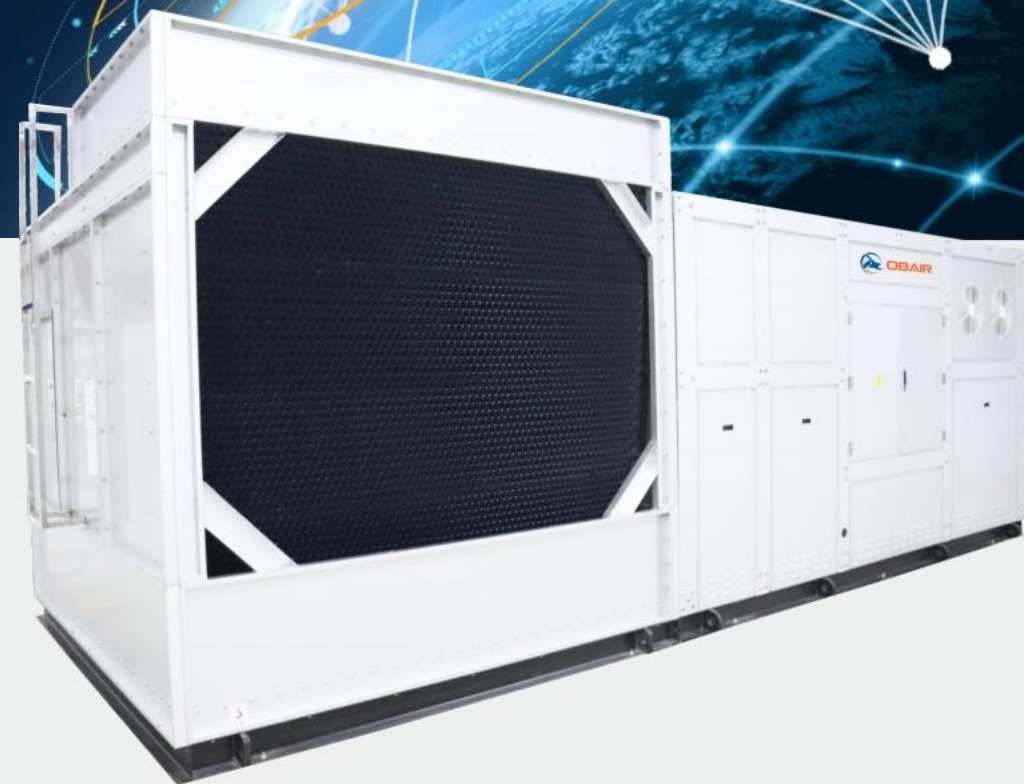


Intelligent and Comfortable

Adopting a PLC intelligent control system, and paired with an LCD touch screen as the local operation Human - Machine Interface (HMI), ensures highly automated operation, making user operation simple and quick, and significantly enhancing the user experience.

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» Product Overview

The integrated water - cooled screw chiller unit is a modular machine room system that organically combines various devices such as water - cooled screw chiller units, cooling equipment, cooling water pumps, chilled water pumps, water - side piping, valves, water system accessories, sound - proofing devices (optional), expansion tanks, and control systems within a modular frame. It can replace conventional machine rooms and can be placed outdoors as a new type of refrigeration system.

The new - generation OBAIR integrated water - cooled screw chiller unit, which integrates high efficiency, energy - saving, reliability, high comfort, and intelligent precise control, features no need for a dedicated machine room, compact structure, energy - saving and high efficiency, low noise, low vibration, and long life cycle. After simple on - site connection of the water system and the required power supply, the unit can be put into centralized cooling. All the water - side components of the cooling water system and most of the key components of the chilled water system are concentrated in a limited area. The system is highly integrated, which can effectively save the initial investment and is a product with extremely high cost - performance.

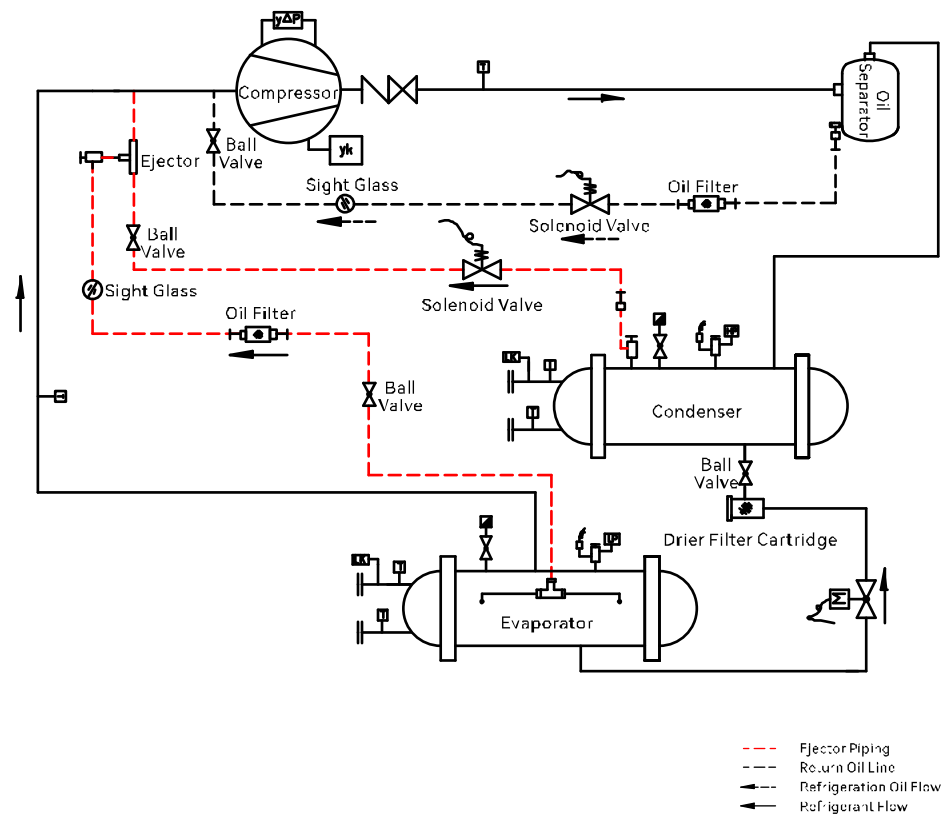


» Model Description

SL-LG	2 - 1080	M	B - A	Y	
					Is it an integrated unit: Y: Integrated
					Function Codes: A: Standard Type; Q: Full Heat Recovery; H: Partial Heat Recovery; V: Variable Frequency Compressor; QV: Variable Frequency Full Heat Recovery; HV: Variable Frequency Partial Heat Recovery
					Refrigerant Type: A: R134a, B: R22, F: R513A, I: R1234ze
					Evaporator Type: M: Full - liquid Type; J: Falling - film Type; G: Dry Type
					Nominal Cooling Capacity: kW (positions 3 - 4)
					Number of Compressors: 1, 2, 3, 4
					Model Code: Water - cooled Screw Chiller Unit

» Fluorine System Schematic

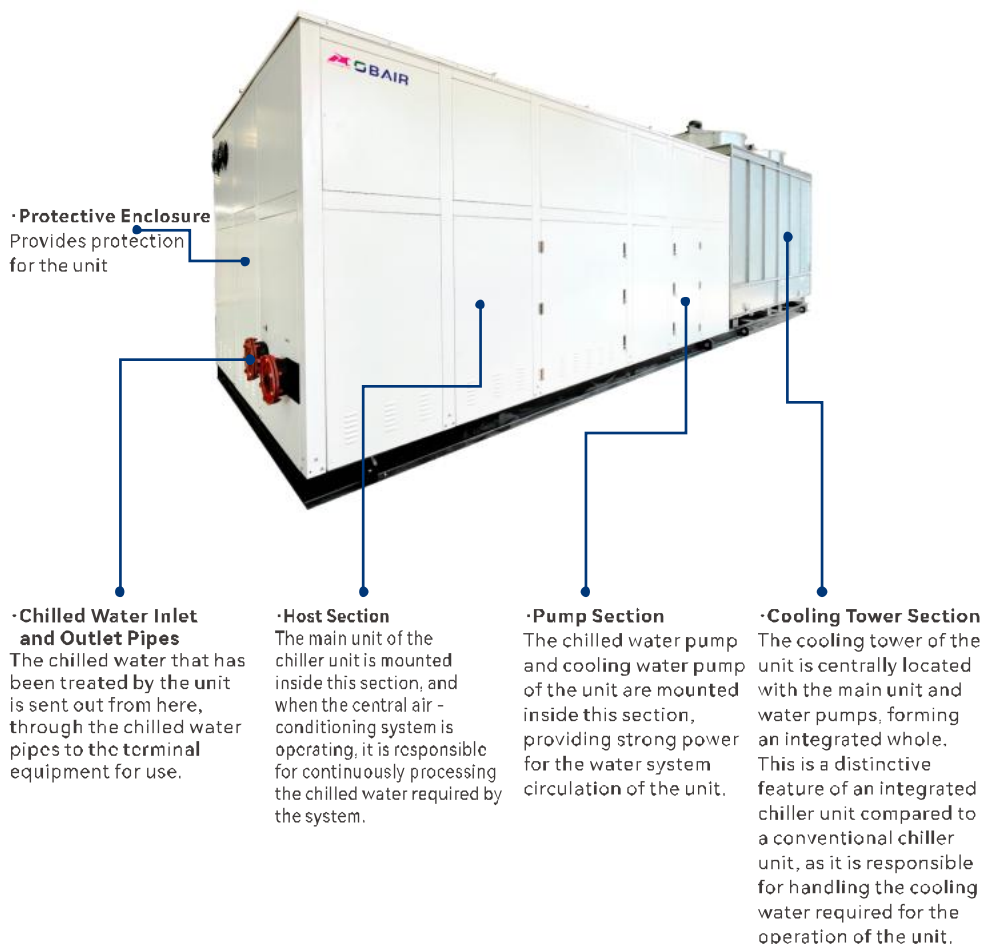
When the unit is operating, the compressor sucks in the low-temperature, low-pressure refrigerant gas from the evaporator into the cylinder. After the compressor does work, the refrigerant becomes high-temperature, high-pressure superheated steam, which is sent to the oil separator via the exhaust pipe. After separation in the oil separator, it enters the condenser. The high-temperature, high-pressure superheated steam undergoes heat exchange with the cooling water in the condenser, transferring heat to the cooling water, which carries it away. The refrigerant gas then condenses into high-pressure liquid. The high-pressure liquid coming out of the condenser is throttled and depressurized by the expansion valve before entering the evaporator. Inside the evaporator, the low-pressure liquid refrigerant absorbs heat from the chilled water and vaporizes, cooling the chilled water to the desired low temperature. The vaporized refrigerant gas is re-sucked in by the compressor, compressed, and sent back to the condenser. This cycle repeats continuously, achieving the purpose of cooling. The oil return line from the oil separator and the ejector return oil line can send the refrigerant oil that is carried out of the compressor during the refrigeration cycle back into the system.



» Unit Structure

This series of units is mainly composed of a full - liquid type water - cooled screw chiller, a protective enclosure for the chiller, cooling water pumps, cooling towers, chilled water pumps, and related valves and electrical control systems. All components are concentrated within a modular frame.

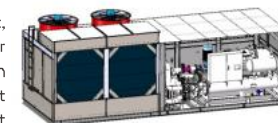
The unit is protected by a protective enclosure, which is sufficient to withstand environmental factors such as wind, rain, and sun exposure. Therefore, it can be installed outdoors, directly saving the cost of constructing a dedicated machine room. Moreover, during the installation process, only the connection of the chilled water pipes and the power supply is required, without any other complicated operations. After a simple commissioning, it can be put into use, significantly shortening the construction period.



» Product Features

Highly Integrated and Compact Structure

The OBAIR integrated water - cooled screw chiller unit integrates the main unit, chilled water pump, cooling water pump, cooling tower, control system, water piping components, and various valve components into a complete machine room system. The unit operates fully automatically, with each system component automatically coordinating its operation based on changes in the indoor load. At the customer site, only the connection of the chilled water piping and electrical circuit is required to put it into operation, significantly reducing the on - site installation and commissioning time.



Premium Water Pump with Stable Performance

Selected TD - type single - stage pipeline centrifugal pumps, equipped with standard motors and mechanical seals. Compared with other types of water pumps, the structure of this kind of water pump is less affected by impurities in the pumped liquid. Moreover, it adopts a separable structure of motor and pump. The pump part is designed as a top - pull - out assembly form, which allows the pump to be repaired without affecting the piping system, making maintenance convenient and quick.



Dedicated Compressor, High - Efficiency Refrigeration

A full - liquid - type dedicated semi - enclosed twin - screw compressor is used, whose key component, the rotor, is processed by a new - type high - precision dedicated rotor grinding machine, resulting in high precision and stable quality. Moreover, the new - generation rotor has a high rigidity and low leakage, which can maintain the optimal clearance under long - term continuous operation, thus achieving the highest volumetric efficiency. When operating at partial load and full load, it can maintain the optimal power consumption. The compressor uses precise slide - valve stepless energy regulation, which effectively ensures the precision of the unit's water - outlet temperature, providing reliable protection for occasions with high precision requirements.



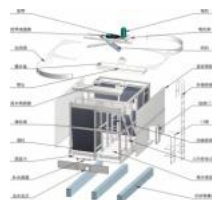
Highly Efficient Heat Exchangers, Advanced and Energy - Saving

The heat exchangers used in this series of units utilize ultra - efficient double - side enhanced heat exchange tubes. The special heat exchange surfaces, designed with cutting - edge technology targeting different heat transfer mechanisms and fluid media, optimize heat transfer efficiency while reducing the pressure loss along the flow path. Advanced highly efficient full - liquid evaporation technology and highly efficient cooling technology are also adopted. The heat exchange between water and refrigerant has a small temperature difference and high heat transfer efficiency, maximizing refrigeration efficiency and energy utilization rate. This ensures the optimal refrigeration effect while also minimizing the user's energy consumption to the greatest extent.



High - End Cooling Tower, Ultimate Cold Source

The high - efficiency and low - noise square cross - flow cooling tower used in this series of units has its core materials vacuum - formed from high - quality modified PVC sheets. Equipped with advanced filling technology, it integrates three functions: air guidance, heat dissipation, and water collection. The air flow ventilation resistance is small, and the static pressure loss is also small. The filler surface has a fine - textured pattern, which allows more water to form a thin film instead of splashing. This ensures more sufficient contact between water and air, a longer heat exchange time for the water flow, and good hydrophilicity, thus continuously providing high - quality cold source for the host.



PLC Control, Intelligent and Comfortable

The unit is equipped with a PLC intelligent control system, and is paired with an LCD touch screen as the local operation Human - Machine Interface (HMI). Customers can monitor and control the entire machine through the operation of the local HMI, ensuring highly automated operation. This makes user operation simple and quick, greatly enhancing the user experience. The control core of the unit is composed of an industrial - grade microcomputer controller and an LCD touch screen. All electrical control components are from internationally renowned brands, which have extremely high reliability and excellent anti - interference capability, and can adapt to various complex and harsh working environments.



Comprehensive Protection, Safe and Reliable

The unit is equipped with a variety of status monitoring instruments and protective devices such as temperature sensors, flow switches, safety valves, solenoid valves, oil pressure differential controllers, and high - low pressure protection switches. Combined with the PLC intelligent control system, they form a precise automatic alarm and protection system. During equipment operation, it monitors various components in real - time. When abnormal conditions occur, it automatically alarms. When abnormal parameters reach the protection set values, the system will automatically protect the unit by controlling various protection switches. Manual monitoring and manual protection operations are also possible, achieving intelligent control and comprehensive protection of the unit.



Superior Performance, Wide Application Range

The unit features no need for a dedicated machine room, compact structure, energy - saving and high efficiency, low noise, low vibration, and long life cycle. It also has superior performance in refrigeration, energy - saving, and intelligent control. The unit can be widely used in various public buildings such as hotels, restaurants, hospitals, large entertainment venues, office buildings, and production workshops, for both comfort air - conditioning and industrial process air - conditioning.



» Performance Parameters (R134a Single Compressor)

Model SL-LG1-***MA-AY		300	350	390	420	460	500	560	620
Cooling Capacity	Ton	84	100	111	119	131	142	158	176
	kW	295	352	390	420	460	500	556	618
Total Input Power of the Unit		kW	63.7	76.2	84.7	89.7	99.5	108.5	117.5
Compressor	Type		Semi-hermetic Screw Type						
	Quantity	Unit	1	1	1	1	1	1	1
	Cooling Input Power	kW	50	59	66	71	79	84	91
	Energy Regulation		25%~100%						
Evaporator	Type		High - efficiency Flooded Evaporator						
	Water Flow Rate	m³/h	51	61	67	72	79	86	96
	Water Pressure Drop	kPa	38	42	54	57	57	55	54
	Pipe Diameter	DN	100	100	125	125	125	125	150
	Water Side Working Pressure	MPa	1.0						
Chilled Water Hydraulic Module	Pump Power	kW	7.5	11	11	11	11	15	15
	External Head	m	24.5	23.5	21	20	20	20	22
	Pressure Vessel Volume	L	50	80	80	80	80	80	100
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower						
	Number of Fans	Unit	1	1	1	1	1	2	2
	Single Cooling Tower Fan Power	kW	2.2	2.2	2.2	3	3	4	2.2
	Total Power of Cooling Tower Fans	kW	2.2	2.2	2.2	3	3	4	4.4
	Cooling Water Pump Power	kW	4	4	5.5	5.5	5.5	5.5	7.5
	Water Side Working Pressure	MPa	1.0						
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25
	Cooling Tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50
	Cooling Tower Overflow Pipe Diameter	DN	65	65	65	65	65	65	65
Refrigerant	Type		R134a						
Dimensions	L	mm	6400	6400	6400	6400	7050	7050	7050
	W	mm	2880	2880	2880	2880	2880	2880	2880
	H	mm	3000	3000	3000	3000	3000	3000	3000
Unit Weight		kg	6200	6300	6400	6500	7600	7750	8000
Operating Weight		kg	8900	9300	9700	10800	11700	12900	13000

Note:

- 1.Refrigeration Conditions: Ambient dry/wet - bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.
- 2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.
- 3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.
- 4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Performance Parameters (R134a Single Compressor)

Model SL LG1 ***MA AY			650	710	780	880	980	1050	1170
Cooling Capacity		Ton	185	205	222	250	279	300	332
		kW	650	720	780	880	980	1054	1166
Total Input Power of the Unit		kW	137.4	149.9	162.4	181.4	196.6	216.6	234.6
Compressor	Type		Semi-hermetic Screw Type						
	Quantity	Unit	1	1	1	1	1	1	1
	Cooling Input Power	kW	107	116	125	144	157	169	183
	Energy Regulation		25%~100%						
Evaporator	Type		High - efficiency Flooded Evaporator						
	Water Flow Rate	m³/h	112	124	134	151	169	181	201
	Water Pressure Drop	kPa	54	56	56	56	60	58	60
	Pipe Diameter	DN	150	150	150	200	200	200	200
	Water Side Working Pressure	MPa	1.0						
Chilled Water Hydraulic Module	Pump Power	kW	15	18.5	22	22	22	30	30
	External Head	m	20	20	22.5	22	20	22	21
	Pressure Vessel Volume	L	100	150	150	150	150	200	200
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower						
	Number of Fans	Unit	2	2	2	2	3	3	3
	Single Cooling Tower Fan Power	kW	2.2	2.2	3	3	2.2	2.2	2.2
	Total Power of Cooling Tower Fans	kW	4.4	4.4	6	6	6.6	6.6	6.6
	Cooling Water Pump Power	kW	11	11	11	11	11	15	15
	Water Side Working Pressure	MPa	1.0						
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25
	Cooling Tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50
	Cooling Tower Overflow Pipe Diameter	DN	65	65	65	65	65	65	65
Refrigerant	Type		R134a						
Dimensions	L	mm	8750	8750	8750	8750	10950	10950	10950
	W	mm	2880	2880	2880	2880	2880	2880	2880
	H	mm	3000	3000	3000	3000	3000	3000	3000
Unit Weight		kg	8800	9200	9600	10000	12800	13000	13200
Operating Weight		kg	14700	15300	16000	16600	21300	21700	22000

Note:

1.Refrigeration Conditions: Ambient dry/wet bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.

2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.

3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.

4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Performance Parameters (R134a Double Compressor)

Model SL LG2 ***MA AY			590	700	780	840	920	1000	1120	1250
Cooling Capacity		Ton	168	200	222	239	262	284	319	355
		kW	590	704	780	840	920	1000	1122	1250
Total Input Power of the Unit		kW	126	150.4	164.4	173.4	196.6	212.6	235.1	260.1
Compressor	Type		Semi-hermetic Screw Type							
	Quantity	Unit	2	2	2	2	2	2	2	2
	Cooling Input Power	kW	96	113	127	136	149	161	180	198
	Energy Regulation		12.5%~100%							
Evaporator	Type		High - efficiency Flooded Evaporator							
	Water Flow Rate	m³/h	101	121	134	144	158	172	193	215
	Water Pressure Drop	kPa	62	69	72	71	76	73	71	75
	Pipe Diameter	DN	125	150	150	150	200	200	200	200
	Water Side Working Pressure	MPa	1.0							
Chilled Water Hydraulic Module	Pump Power	kW	15	22	22	22	30	30	30	37
	External Head	m	21	22	22	21.5	25	25	21	25
	Pressure Vessel Volume	L	100	150	150	150	150	200	200	200
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower							
	Number of Fans	Unit	2	2	2	2	2	3	3	3
	Single Cooling Tower Fan Power	kW	2.2	2.2	2.2	3	3	2.2	2.2	3
	Total Power of Cooling Tower Fans	kW	4.4	4.4	4.4	6	6	6.6	6.6	6
	Cooling Water Pump Power	kW	7.5	11	11	11	6	11	15	15
	Water Side Working Pressure	MPa	1.0							
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25	25
	Cooling Tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50	50
	Cooling Tower Overflow Pipe Diameter	DN	65	65	65	65	65	65	65	65
Refrigerant	Type		R134a							
Dimensions	L	mm	8200	9500	9500	9500	12000	12000	12000	12300
	W	mm	2880	2880	2880	2880	2880	2880	2880	2880
	H	mm	3000	3000	3000	3000	3000	3000	3000	3000
Unit Weight		kg	9100	10900	11300	11700	13200	13700	14100	14700
Operating Weight		kg	14000	16700	17300	18000	20300	21000	21700	22650

Note:

1.Refrigeration Conditions: Ambient dry/wet bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.

2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.

3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.

4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Performance Parameters (R22 Single Compressor)

Model SL-LG1-***MB-AY			280	330	410	450	540	620	660	
Cooling Capacity		Ton	80	94	117	129	154	175	188	
		kW	280	331	410	452	540	616	660	
Total Input Power of the Unit			kW	62.7	75.2	89.7	95.7	117.5	128.5	142.9
Compressor	Type		Semi-hermetic Screw type							
	Quantity	Unit	1	1	1	1	1	1	1	
	Cooling Input Power	kW	49	58	71	77	91	102	109	
	Energy Regulation		25%~100%							
Evaporator	Type		High - efficiency Flooded Evaporator							
	Water Flow Rate	m³/h	48	57	71	78	79	106	114	
	Water Pressure Drop	kPa	50	52	55	55	57	57	65	
	Pipe Diameter	DN	100	100	125	125	125	150	150	
	Water Side Working Pressure	MPa	1.0							
Chilled Water Hydraulic Module	Pump Power	kW	7.5	11	11	11	15	15	18.5	
	External Head	m	24	23	21	20	22	21	25	
	Pressure Vessel Volume	L	50	50	80	80	100	100	100	
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower							
	Number of Fans	Unit	1	1	1	1	1	1	2	
	Single Cooling Tower Fan Power	kW	2.2	2.2	2.2	2.2	4	4	2.2	
	Total Power of Cooling Tower Fans	kW	2.2	2.2	2.2	2.2	4	4	4.4	
	Cooling Water Pump Power	kW	4	4	5.5	5.5	7.5	7.5	11	
	Water Side Working Pressure	MPa	1.0							
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25	
	Cooling Tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50	
	Cooling Tower Over flow Pipe Diameter	DN	65	65	65	65	65	65	65	
Refrigerant	Type		R22							
Dimensions	L	mm	6400	6400	6400	6400	7050	7050	8400	
	W	mm	2880	2880	2880	2880	2880	2880	2880	
	H	mm	3000	3000	3000	3000	3000	3000	3000	
Unit Weight		kg	6000	6250	6500	6800	7350	8000	8900	
Operating Weight		kg	9200	9600	10000	10450	11300	12300	13700	

Note:

1.Refrigeration Conditions: Ambient dry/wet bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.

2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.

3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.

4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Performance Parameters (R22 Single Compressor)

Model SL LG1 ***MB AY			720	750	830	950	1060	1180	1320
Cooling Capacity		Ton	204	213	236	270	300	336	375
		kW	719	750	830	950	1056	1180	1320
Total Input Power of the Unit		kW	150.9	163.4	173.4	207.6	220.6	244.1	271.1
Compressor	Type		Semi-hermetic Screw type						
	Quantity	Unit	1	1	1	1	1	1	1
	Cooling Input Power	kW	117	126	136	160	169	189	209
	Energy Regulation		25%~100%						
Evaporator	Type		High - efficiency Flooded Evaporator						
	Water Flow Rate	m³/h	124	129	143	163	182	203	227
	Water Pressure Drop	kPa	65	72	72	75	75	75	75
	Pipe Diameter	DN	150	150	150	200	200	200	200
	Water Side Working Pressure	MPa	1.0						
Chilled Water Hydraulic Module	Pump Power	kW	18.5	22	22	30	30	30	37
	External Head	m	22	21	20	24	22	21	22
	Pressure Vessel Volume	L	150	150	150	150	200	200	200
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower						
	Number of Fans	Unit	2	2	2	3	3	3	3
	Single Cooling Tower Fan Power	kW	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Total Power of Cooling Tower Fans	kW	4.4	4.4	4.4	6.6	6.6	6.6	6.5
	Cooling Water Pump Power	kW	11	11	11	11	15	18.5	18.5
	Water Side Working Pressure	MPa	1.0						
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25
	Cooling Tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50
	Cooling Tower Overflow Pipe Diameter	DN	65	65	65	65	65	65	65
Refrigerant	Type		R22						
Dimensions	L	mm	8750	8750	8750	10950	10950	10950	10950
	W	mm	2880	2880	2880	2880	2880	2880	2880
	H	mm	3000	3000	3000	3000	3000	3000	3000
Unit Weight		kg	9600	10000	10350	11050	11500	11900	12350
Operating Weight		kg	14800	15400	15950	17000	17700	18300	19000

Note:

1.Refrigeration Conditions: Ambient dry/wet bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.

2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.

3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.

4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Performance Parameters (R22 Double Compressor)

Model SL-LG2-***MB-AY			560	660	820	900	1080	1230	1320	1440
Cooling Capacity		Ton	159	188	233	257	307	350	375	409
		kW	560	662	820	904	1080	1232	1320	1438
Total Input Power of the Unit		kW	121.5	142.9	173.4	184.4	226.6	260.1	274.1	292.3
Compressor	Type		Semi-hermetic Screw Type							
	Quantity	Unit	2	2	2	2	2	2	2	2
	Cooling Input Power	kW	95	109	136	147	175	198	212	228
	Energy Regulation		12.5%~100%							
Evaporator	Type		High - efficiency Flooded Evaporator							
	Water Flow Rate	m³/h	96	114	141	155	186	212	227	247
	Water Pressure Drop	kPa	80	72	72	72	72	72	72	77
	Pipe Diameter	DN	125	150	150	200	200	200	200	200
	Water Side Working Pressure	MPa	1.0							
Chilled Water Hydraulic Module	Pump Power	kW	15	18.5	22	22	30	37	37	37
	External Head	m	21	25	22	20.5	22	20	20	20
	Pressure Vessel Volume	L	100	100	150	150	200	200	200	300
Cooling Water System	Cooling Tower Type		Low - noise Cross - flow Square Cooling Tower							
	Number of Fans	Unit	1	2	2	2	3	3	3	4
	Single Cooling Tower Fan Power	kW	4	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Total Power of Cooling Tower Fans	kW	4	4.4	4.4	4.4	6.6	6.6	6.6	8.8
	Cooling Water Pump Power	kW	7.5	11	11	11	15	18.5	18.5	18.5
	Water Side Working Pressure	MPa	1.0							
	Cooling Tower Makeup Pipe Diameter	DN	25	25	25	25	25	25	25	25
	Cooling tower Discharge Pipe Diameter	DN	50	50	50	50	50	50	50	50
	Cooling tower Overflow Pipe Diameter	DN	65	65	65	65	65	65	65	65
Refrigerant	Type		R22							
Dimensions	L	mm	7850	9200	9200	10120	12120	12120	12150	14150
	W	mm	2880	2880	2880	2880	2880	2880	2880	2880
	H	mm	3000	3000	3000	3000	3000	3000	3000	3000
Unit Weight		kg	8900	9800	10150	12200	12600	13100	13600	15000
Operating Weight		kg	14900	16300	16900	20300	21000	21800	22650	25000

Note:

1.Refrigeration Conditions: Ambient dry/wet bulb temperature of 35/24°C, chilled water inlet/outlet water temperature of 12/7°C.

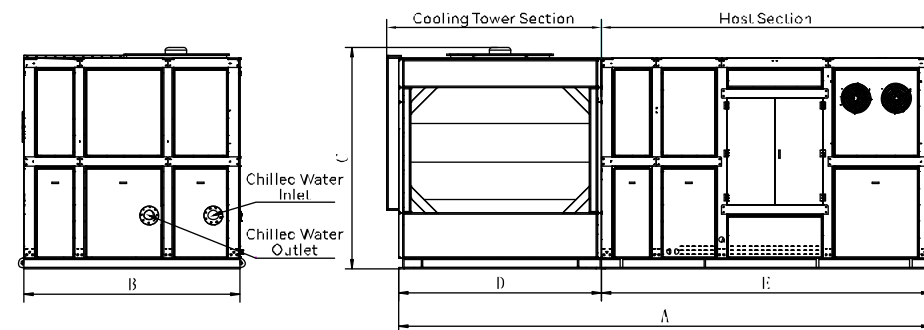
2.The external head on the chilled water side in the table is for reference only. The specific requirements should be based on the actual needs of the user.

3.The power supply for the unit is a three - phase five - wire system, 380V 50Hz, with an allowable voltage fluctuation of ±10%.

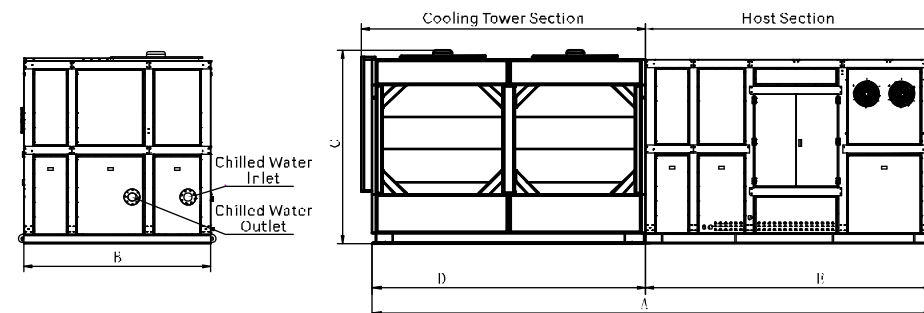
4.If there are any special requirements for the technical parameters, please contact our company to provide a specific technical solution.

» Outline Drawing

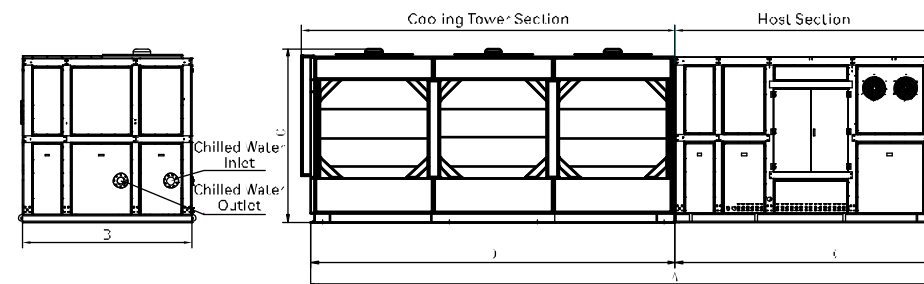
Single - Fan Series



Dual - Fan Series



Multi - Fan Series



» External Dimensions Table

R134a Series

· Single compressor

Model SL-LG1-***MA-AY	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
300~420 (Single Fan)	6400	2880	3000	2000	4400
460~620 (Single Fan)	7050	2880	3000	2650	4400
650~880 (Double Fan)	8750	2880	3000	4000	4750
980~1170 (Triple Fan)	10950	2880	3000	6000	4950

· Double Compressor

Model SL-LG2-***MA-AY	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
590 (Single Fan)	8200	2880	3000	2650	5550
700~840 (Double Fan)	9550	2880	3000	4000	5550
920~1120 (Triple Fan)	12000	2880	3000	6000	6000
1250 (Triple Fan)	12300	2880	3000	6000	6300

R22系列

· Single Compressor

Model SL-LG1-***MB-AY	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
280~450 (Single Fan)	6400	2880	3000	2000	4400
540~620 (Single Fan)	7050	2880	3000	2650	4400
660 (Double Fan)	8400	2880	3000	4000	4400
720~880 (Double Fan)	8750	2880	3000	4000	4750
950~1320 (Triple Fan)	10950	2880	3000	6000	4950

· Double Compressor

Model SL-LG2-***MB-AY	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
560 (Single Fan)	7850	2880	3000	2650	5200
660~820 (Double Fan)	9200	2880	3000	4000	5200
900 (Double Fan)	10120	2880	3000	4000	6120
950~1230 (Triple Fan)	12120	2880	3000	6000	6120
1320 (Triple Fan)	12150	2880	3000	6000	6150
1440 (Quadruple Fan)	14150	2880	3000	8000	6150

» Unit Hoisting

Pre-hoisting Inspection:

After the equipment arrives, carefully check all items against the packing list to ensure everything is present and that no parts have been damaged during transit. If any damage is found, notify the carrier and make a written claim for compensation.

Before hoisting, obtain the weight of the lifting components from the unit's nameplate or the technical specifications of the order. Make a preliminary judgment of the center of gravity and conduct a test lift off the ground to inspect and improve the lifting method. Ensure the center of gravity remains stable during lifting and move the unit to the designated location. Shock-absorption measures must be taken during transportation to prevent collisions and damage to the external coating of the unit. The unit should be kept in a vertical position, and it is strictly forbidden for the unit to tilt at an angle exceeding 30°. Do not stand under the machine during hoisting!

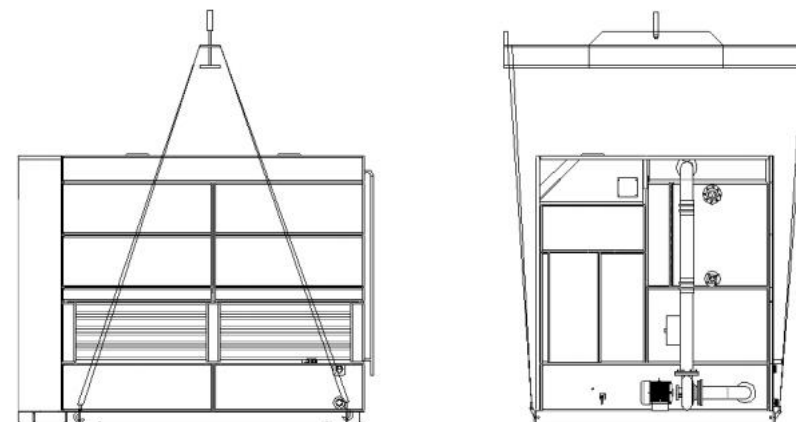
Unit Hoisting Must Be Carried Out By Professional Personnel Using Specialized Equipment And Following Standard Procedures.

The selection of cranes, slings, shackles, etc., should have a certain safety margin as required and must be able to fully support the overall weight of the lifted equipment. When hoisting the unit, the rope should be hooked into the lifting holes on the base. Above the top of the unit, use lifting equipment with sufficient strength to spread the lifting straps, avoiding direct contact between the rope and the equipment cover plate, which could damage the unit.

The lifting points should be kept balanced during the transportation and movement of the unit to maintain a level position. Do not tilt the unit, as there is a risk of it slipping.

During transportation, handle with care and avoid collisions with the ground to prevent excessive impact forces.

When hoisting the unit, prevent local deformation and damage to the thin steel plates of the outer shell. The rope must be spread out and not press directly on the box body sheet metal. Appropriate reinforcement measures should be taken during the operation. (Refer to the unit lifting diagram below for reference).



Unit Lifting Diagram

» Installation Requirements

Before installing the unit, it is necessary to check whether the local power supply voltage and frequency are suitable for the unit. OBAIR will not be liable for any damage that occurs after the goods have been inspected and accepted.

The unit is recommended to be installed outdoors, with an ambient temperature requirement of -15°C to 45°C . There should be at least 3 meters of unobstructed space above the unit's cooling tower outlet to avoid poor return air affecting the unit's performance. The unit is equipped with a protective enclosure that can withstand exposure to sun and rain. The unit can be installed on the ground, rooftops, or other well-ventilated locations. Maintenance and repair space should be left around and above the unit to facilitate its upkeep. (If the unit is installed indoors, although it helps prevent rain and snow damage, it should be equipped with a duct and a suitable fan to expel the high-humidity hot air generated during operation.)

There should be adequate drainage measures near the unit to allow for the discharge of water from the system when it is not in operation or during maintenance.

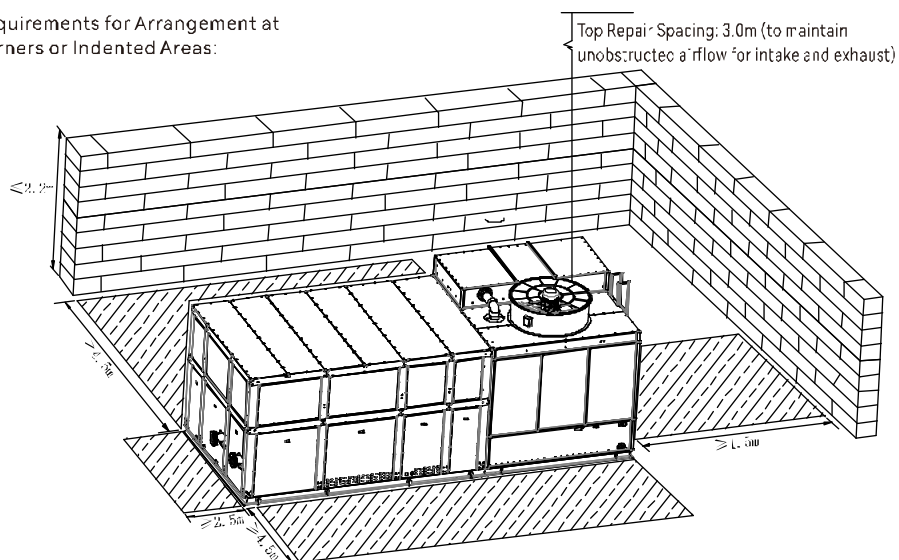
The unit should be installed on a solid, flat base with sufficient strength to support the weight of the unit and the vibrations during operation. When installed on a rooftop, it should be placed on load-bearing structural beams.

The unit's base and the foundation should be separated by vibration pads or dampers to ensure a level installation. To prevent displacement caused by earthquakes, typhoons, or long-term operation, which could lead to twisted and broken connections, the unit should be securely fastened to the foundation.

The power supply provided for the unit must have sufficient capacity, and the power lines should be configured according to the data provided in the equipment's power connection requirements. The unit should also be properly grounded as required.

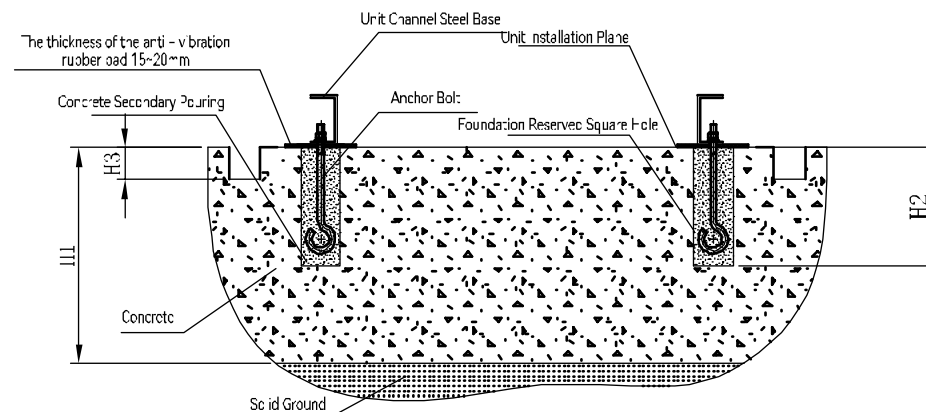
Below is the unit installation space diagram:

Requirements for Arrangement at Corners or Indented Areas:



» Installation Foundation

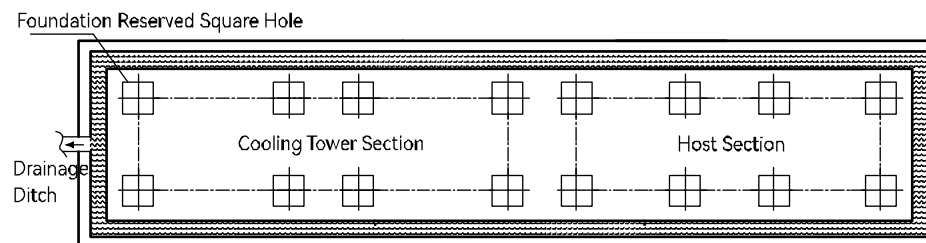
The following is a foundation design installation diagram (using a certain unit as an example). This foundation drawing is for reference only. Customers should make specific design modifications according to the concrete strength and local ground conditions. The foundation dimensions should be referred to the actual product's foundation drawing.



Recommended values for foundation design dimensions:

H1	H2	H3
$\geq 300\text{mm}$	300mm	80mm

The following is a foundation layout plan for a certain unit. This drawing is for reference only, and the specific arrangement of the foundation needs to be designed according to the actual unit.:



» Operating Range of the Unit (Under Rated Water Flow Rate)

unit type	Chilled Water Temperature		Ambient Temperature	
	Inlet Water Temperature °C	Outlet Water Temperature °C	Dry - bulb Temperature °C	Wet - bulb Temperature °C
standard type	10~20	5~15	20~43	15~29
Year - Round Cooling Type	10~20	5~15	-10~43	-11~29

Note: When the ambient temperature is below 2°C, attention should be paid to the freezing prevention of cooling towers and chilled water systems to avoid affecting the safety of the equipment.

» Water Quality Requirements

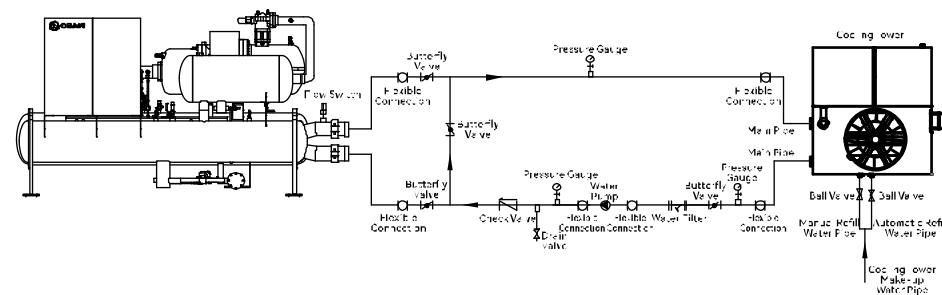
Due to the complex composition of water quality in different regions, the water quality should be checked before it enters the unit heat exchanger. If the water quality does not meet the requirements for air - conditioning water, water treatment should be carried out. The relevant water treatment can refer to the standard "Design Specifications for Industrial Circulating Cooling Water Treatment" or other related standards. The following table can be used as a reference indicator for air - conditioning water:

Project Name	Unit	Make - up Water	Circulating Water
Ph Value (25°C)	—	6.5~8.0	6.5~8.0
Electrical Conductivity (25°C)	uS/cm	<200	<800
Chloride Ion	mgCl /L	<50	<200
Sulfate Ion	mgSO ₄ ²⁻ /L	<50	<200
Acid Consumption (PH4.8)	mgCaCO ₃ /L	<50	<100
Total Hardness	mgCaCO ₃ /L	<50	<100
Iron	mgFe/L	<0.3	<1.0
Sulfide Ion	mgSO ₄ ²⁻ /L	Not be Detected	Not be Detected
Ammonium Ion	mgNH ₄ ⁺ /L	<0.2	<1.0
Silicon Dioxide	mgSiO ₂ /L	<0.3	<50

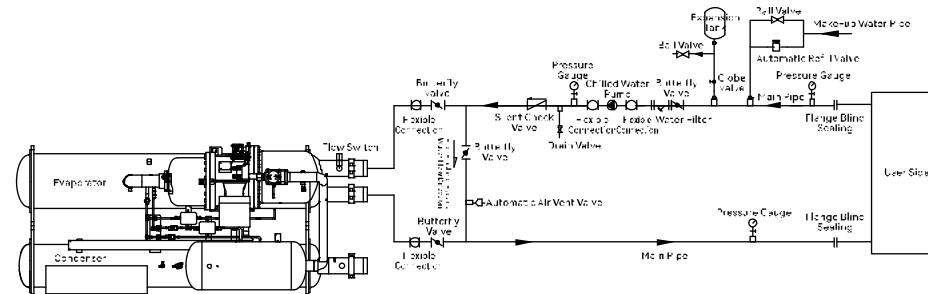
» Water System Schematic Diagram

The OBAIR all-in-one water-cooled screw chiller unit is designed with the best user experience in mind. It incorporates many cutting-edge technologies in its operation, ensuring the comfort of the user's working and living environment. In terms of the ease of installation of the unit, we have concentrated most of the key components of the chilled water and the entire cooling water system inside the unit. When users install the water system, they only need to connect the main pipes for the inflow and outflow of chilled water, which greatly enhances the ease of installation.

The following is the schematic diagram of the unit's cooling water system:



The following is the schematic diagram of the unit's chilled water system:



To prevent damage to the unit caused by water freezing due to excessively low ambient temperatures, antifreeze mixtures such as ethylene glycol or propylene glycol can also be added to the water. For units that are not used or operated for extended periods during winter, it is recommended to drain the water from the chilled water system and the cooling water system to prevent damage to the equipment from frozen water in the pipes during winter.

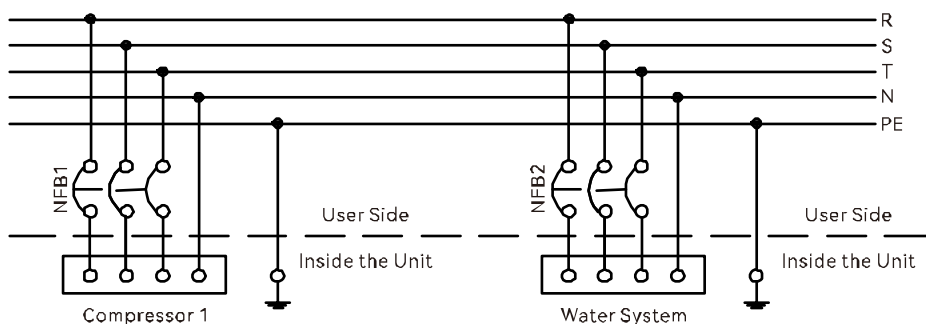
» Electrical Installation

The power supply must comply with the rated values on the unit's nameplate. The standard product is rated at 380V/3N ~ /50Hz, while non-standard products may have different requirements, which should be based on the indications on the unit's nameplate.

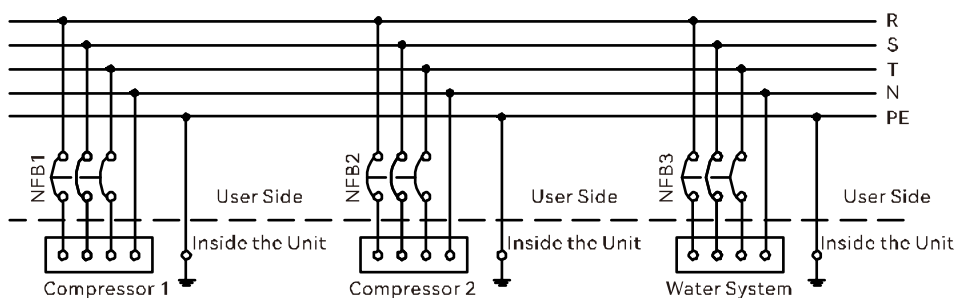
When the unit is operating, the power supply voltage must be stable, and the power supply frequency should be maintained within $\pm 2\%$ of the rated value on the unit's nameplate. The working voltage of the unit needs to be maintained within $\pm 10\%$ of the rated value, with the voltage difference between phases not exceeding $\pm 2\%$ of the rated value, and the difference between the maximum and minimum phase currents being less than 3% of the rated value.

For the power supply of the unit, copper-core wires should be selected, and the current-carrying capacity of the copper core should meet the requirements of the national standard.

To minimize the damage to electrical equipment such as transformers and wiring in the event of a short circuit, and to facilitate independent control of the start and stop of each compressor, each compressor requires a separate power supply line and a circuit breaker of appropriate capacity. The power wiring is shown in the diagram.



Single Compressor Unit Wiring Diagram



Dual Compressor Unit Wiring Diagram

» Recautions for the Design and Installation of External Water System Pipelines

1. The design of the water circulation system should be as simple as possible, avoiding excessive bends and keeping straight pipes on the same plane whenever possible.
2. When conducting a pressure test on the pipeline, please close the inlet and outlet stop valves on the water side of the unit's heat exchanger to isolate the heat exchanger from the water pipeline. This prevents damage to the water-side components of the container when the pressure in the user's water circuit exceeds the water-side pressure resistance of the two heat exchangers during the test.
3. Drain valves should be installed at the bottom of all local bends to allow the entire system's water to be drained; and during the shutdown season, ensure that the water in the pipeline and the host heat exchanger is completely drained.
4. Impurities in the water system can cause scaling in the heat exchanger. A filter should be installed at the unit's water inlet, preferably with a mesh size of 60 or higher.
5. To improve cooling (heating) efficiency and save energy, strict insulation of the pipeline is required.
6. To prevent the unit from frequently tripping due to a small load during operation, it is recommended that users install an energy storage water tank. Its function is to regulate energy, reduce the frequent start and stop of the compressor when the air conditioning system load changes, improve the system's operating efficiency, and extend the service life of the unit. Its capacity is calculated according to the following formula:

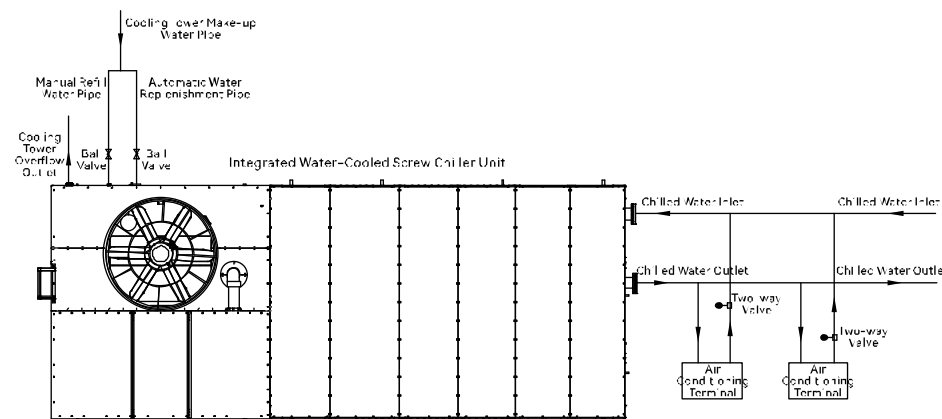
$$\text{Energy Storage Tank Volume } V(\text{m}^3) = (Q/27.9n) \cdot VS$$

Q—Cooling Capacity kW

n—Number of Compressor Heads

VS—Water Capacity of Pipelines and Heat Exchangers in the Chilled Water System m^3

The following is the schematic diagram of the external water pipe connection



» Pre-Start Checklist for the Unit

Water Piping Section:

Check all water system pipelines to confirm that the water connections of the unit are correct and the water flow direction is right. Carry out pipe pressure testing, cleaning, water replenishment and other operations to confirm that there is no problem with the water pipeline.

Check whether the system pipelines, makeup water pipelines, pressure gauges, and thermometers are installed correctly.

Check whether the net pressure at the unit's return water is normal (above 5.0mH₂O).

Check whether the system pipelines are clean, whether the refrigerant in the pipelines is full, and whether the air has been completely discharged.

Check whether all the valves that should be opened in the system have been fully opened, and all the valves that should be closed have been fully closed.

Check whether the insulation of the pipeline system and the measures for the discharge of condensate are good.

Electrical Section:

Disconnect the main isolating switch, and inspect all the starting circuits and control circuits in the control cabinet to confirm that all switches are in the off position.

Check the power supply to the unit, which should have a voltage fluctuation range not exceeding $\pm 10\%$ of the rated voltage shown on the compressor nameplate, and the phase voltage unbalance should not exceed 2%. Verify that there is sufficient power supply capacity to meet the requirements for the unit's starting and full-load operation.

Confirm that all wires and fuses are of the appropriate size to match the unit's operation, and complete all interlocking control circuits according to the relevant electrical control drawings.

Ensure that all air conditioning auxiliary equipment and control devices are operating normally, and that there is sufficient cooling capacity during the unit's first operation to meet the operational requirements.

Inspect all power supply and control circuits to ensure they are fully connected, correctly wired according to the wiring diagram, that the grounding is reliable, and that all terminal connections are properly tightened.

Terminal Equipment Part:

Check that all power connections for the indoor terminal equipment are correct and that the fan is rotating properly.

Ensure that all stop valves at the inlet and outlet of the indoor terminal equipment are fully open.

Make sure that all air has been purged from the water system of the indoor terminal equipment. If there is air in the coil, open the exhaust valve to release it.

Main Unit Part:

Ensure that the compressor oil heater has been powered on for more than 8 hours. Observe the oil level through the sight glass; if the oil level is not visible, oil should be added.

Fully open the exhaust stop valve, then turn it clockwise by 1/2 turn, fully open the liquid supply stop valve, start the air conditioning auxiliary equipment, condensate pump, and chilled water pump. Check whether all safety control devices are in their original state and whether their settings are correct.

The unit is equipped with safety protection devices to ensure safe operation. When a safety device operates, the fault indicator light comes on, and this part of the function will stop, while other parts still operate normally. We recommend that you should shut down the unit to investigate the cause even if only a part of it is abnormal, so as to avoid more serious accidents to the unit.



For specific operations regarding the installation, use, and maintenance of the unit, please refer to the **Installation and Operation Manual** and **Electrical Operation Instructions** provided with the unit.

Note: Since OBAIR products are subject to continuous improvement and innovation, any changes to the product models, specifications, and parameters shown in this material will not be notified separately. Your understanding is appreciated.