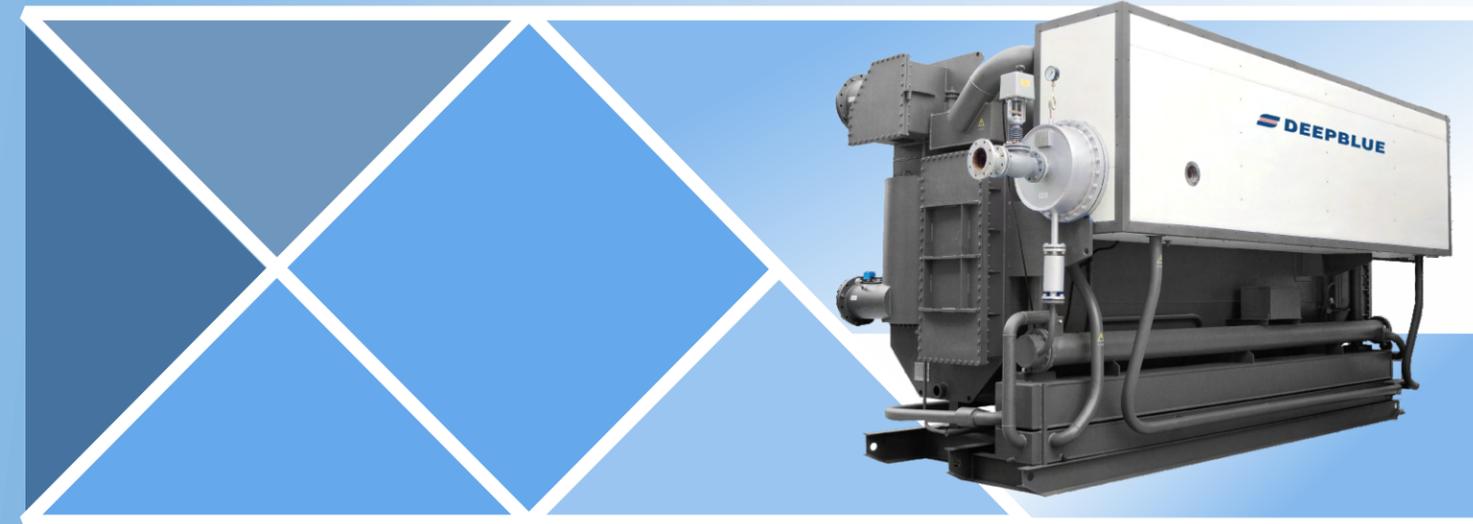


 HOPE DEEPBLUE

 DEEPBLUE

GREENER WORLD, BLUER SKY



 Hope Deepblue

Continental Hope Group

Hope Deepblue Air Conditioning Manufacture Corp.,Ltd

<http://www.slhvac.com>

Address : 20 Xixin Avenue, Western High-tech Zone,

Chengdu, China

Tel:+86 028 87827362

Fax: +86 028-87843334

E-mail:young@dlhope.com

NO. SL202104

**STEAM FIRED
LiBr ABSORPTION CHILLER**



CONTENTS

Company Profile

Group Profile	1
Company Profile	4
Qualification/Honor/Equipment	5

Products Introduction

Model Identification/General Description&Working principle/Performance Curve	7
Features	9
Intelligent Control System	13
Nominal Parameter	15
Performance Curve&Outside Drawing	21
Outside Drawing&Foundation Dimension&Sheet	23
Outside Drawing Dimension Sheet	25
Model Selection	27
Machine Room Design and Construction&Civil Engineering	29
Handling and Water Quality Management	31
Control System	33
Model Selection	35



CONTINENTAL HOPE GROUP

Dream Achieves Wonderfulness, Hope Creates Excellence!

Continental CHG (CHG) was founded in 1982. After years of steady development, CHG has now developed into a diversified comprehensive group focusing on four major industrial sections: Mechanical&Electronic, Energy&Chemical, Tourism&Real Estate, and Construction&Contract. The industry involves transmission control, HVAC&R, construction engineering, network engineering, sodium chlorate, hydroelectric development, sapphire, tourism, hotel, real estate, feed, food, financial investment and other fields.

The Mechanical&Electronic section takes energy conservation and environmental protection as its own responsibility. The Senlan Inverter and Deepblue HVAC&R equipment developed by our own intellectual property rights are widely used in the fields of transmission control, energy conservation, HVAC&R, waste heat utilization in China and abroad, which shows the Road of Chinese Brand. The Energy&Chemical sector builds a green circular economy industrial chain integrating "power generation, transmission, power distribution, salt chemicals, and new materials", transforming water conservancy and power resources into sodium chlorate chemical products, as well as gems. Hope Cultural and

Tourism sector devotes to creating an ideal life of living, travel and business, created China's Eight Luxury Real Estate. The Construction&Contract section has several special professional qualifications, using strength to build assured projects and build city dreams.

Hope Group takes high technology as the core, comprehensive utilization of resources as the link, and carries out industrial layout around "energy saving, environmental protection, circular economy, quality life, city music", and initially forms a close and three-dimensional upstream and downstream industries.

Business philosophy---- Excellence Beyond Boarder

Vision----Greener World Bluer Sky Better Life

Mission----Create higher value for customers with excellent products and services.

Values-----Sincere and trustworthy, achieving customers, contributing to the human.



Based on China
Service all over the world

HOPE DEEPBLUE AIR CONDITIONING MANUFACTURE CORP., LTD

Hope Deepblue Air Conditioning Manufacture Corp.,Ltd (Deepblue) was founded with an investment of 20 million USD by Continental Hope Group (CHG) in 1997. It is located in national high-tech zone Chengdu, China, covering an area of 170 acres, which is the largest LiBr absorption equipment manufacture base in West China. Deepblue is engaged in the fields of refrigeration, heat pump, and industrial waste heat utilization product R&D, manufacture, sales, service, and providing one-stop energy system solutions to customers. Deepblue product includes LiBr absorption chiller, absorption heat pump, central vacuum hot water unit, which have been exported to many countries and regions. Deepblue has developed Deepblue Green Energy Center project (DGEC), which is the first CCHP project (Tri-generation) with independent intellectual property right in China. DGEC has been operating stably since 2003, which is known as the longest running time distributed energy project in China.

Thanks to strong technology and manufacture ability, Deepblue has established marketing and service network in China, involving in thousands projects and well known as expert of heat recovery in coking, textile, pharmaceutical, chemical, food, metallurgy, solar energy, rubber tires, power plants, petroleum, urban central heating and other industrial fields. Now Deepblue is paying more and more attention on developing oversea market and is open to cooperate with partners all over the world.

Deepblue products have obtained the National Industrial Product Production License, and have passed the ISO9001, ISO14001, OHSAS18001, CE, CRAA, CSC certification, etc. Deepblue won the Gold Award of China Science and Technology Expo, Gold Award of China Patent Technology Expo. Listed in the National Torch Plan Project, National Key New Product Project, Key Recommendation Unit for China Energy Conservation Project Construction, Top Ten Brands in China's HVAC and Refrigeration Industry, Top Ten Most Trusted Brands by Chinese Designers, China Model Enterprise for Building Energy Conservation and Emission Reduction, China Waste Heat leading company in the recycling field, Special Contribution Award for China's Building Environment and Equipment Industry, and the China Distributed Energy Outstanding Project Award etc.



Certificates



Business License



National Industry Products Production License



High-tech Enterprise Certificate



Disinfection Product Hygienic License



Chinese Top 10 Trusted Brands



Chinese Construction Energy Conservation and Emission Reduction Enterprise



CE Certificate



ISO9001 Certificate



ISO14001 Certificate



18001 Certificate



Chinese Energy Conservation Product Certificate



National Torch Program Project Certificate



Chinese Best Patent Program Certificate



CRAA Certificate

Manufacturing Equipment



CNC Processing Center



CNC Drilling Machine



Submerge-Arc Auto Welding Machine



CNC Cutting Machine



Auto Welding Robot



Sheet Metal Processing Center



Hydraulic Plate Shear



Painting Room



Hydraulic Cutting Machine

Testing Equipment



Helium Leakage Detector



X-Ray Detector



Welding Seam Inspector



Flue Gas Analyzer



Electric Testing Device

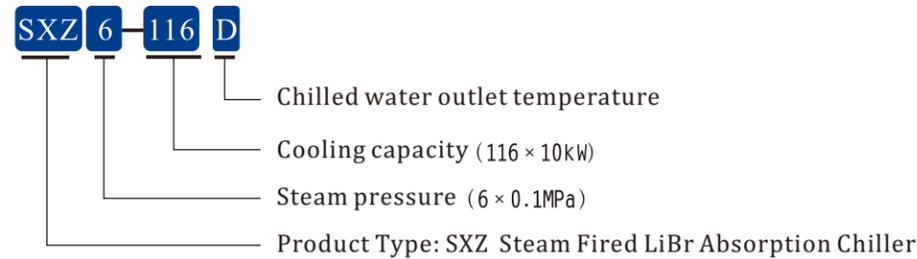


Whole Unit Performance Testing Center



Ultrasonic Pipe Flaw Detector

Products Model



General Description

Steam fire LiBr absorption chiller is a type of refrigeration equipment powered by steam heat. LiBr solution is used as the circulating working fluid, in which the LiBr solution is used as the absorbent and water is the refrigerant. Unit is main composed of the HTG, LTG, condenser, evaporator, absorber, high temperature HX, low temp. HX, condensate water HX, auto purge device, vacuum pump, canned pump, etc.

Working Principle

The diluted solution from absorber is delivered by solution pump (1), and divided into two parallel ways to be heated by the low temperature heat exchanger and the condensate heat exchanger B and then enters the LTG. In LTG, the diluted solution is heated and boiled by the flowing high pressure and high temperature refrigerant vapor generated in HTG, and the solution is concentrated into an intermediate solution.

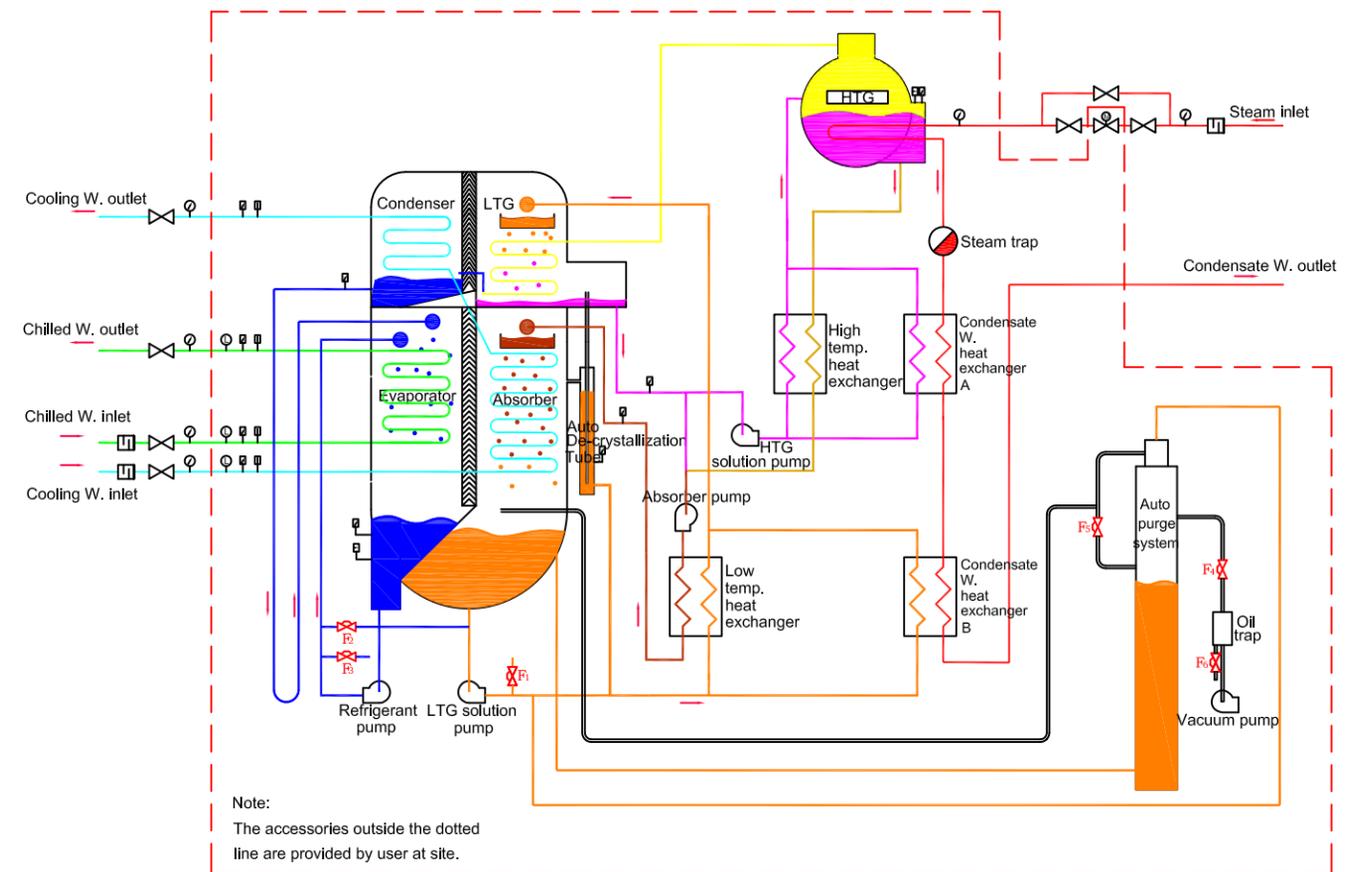
Part of the intermediate solution is delivered by the solution pump (2) into two ways, respectively heated by the high temperature heat exchanger and condensate heat exchanger A, and then enters the HTG. In HTG, the intermediate solution is heated by driven steam to produce high pressure and high temperature refrigerant vapor, and the solution is further concentrated into a concentrated solution.

The high pressure and high temperature refrigerant vapor generated in HTG heats the dilute solution of the LTG and condenses into refrigerant water, after throttling, the pressure is reduced, and the refrigerant vapor generated in LTG enters the condenser, and then is cooled by the cooling water in condenser and becomes refrigerant water corresponding to the condenser pressure.

The refrigerant water generated in the condenser enters the evaporator after being throttled by the U tube. Because the pressure in evaporator is very low, part of the refrigerant water evaporates, and most of the refrigerant water is delivered by the refrigerant pump, sprayed on the evaporator tube cluster, absorbing the heat of chilled water flowing in the tube and evaporating, and then the temperature of the chilled water is reduced, so as to achieve the purpose of refrigeration.

The concentrated solution from HTG flows through the high temperature heat exchanger and the other part of the intermediate solution from LTG is mixed and delivered to absorber by the absorption pump, sprayed on the absorber tube cluster, and cooled by the cooling water flowing in the tube. After cooling, the temperature is lowered, the mixed solution absorbs the refrigerant vapor from the evaporator and becomes a dilute solution. In this way, the mixed solution continuously absorbs the refrigerant vapor from evaporator, so that the evaporation process in the evaporator continues. The LiBr solution diluted by absorbing the refrigerant vapor from evaporator is delivered to LTG by solution pump (1), thus completing a refrigeration cycle. The process is repeated so that the evaporator can continuously produce low temperature chilled water for air conditioning or manufacturing process.

Principle Flow Chart



- | | | |
|----------------------|----------------------|--|
| Cooling W. | LTG thick solution | F ₁ Solution sampling valve |
| Chilled W. | HTG thick solution | F ₂ Refrigerant re-generation valve |
| Driven steam | Refrigerant water | F ₃ Refrigerant W. sampling valve |
| Diluted solution | Refrigerant vapor | F ₄ Master purge valve |
| Mixed thick solution | HP refrigerant vapor | F ₅ Absorber purge valve |
| | | F ₆ Extreme vacuum purge valve |

Motor valve	Diaphragm valve	Check valve	Filter	Target flow switch	Pressure gauge	Temp. sensor	Thermometer	Liquid level indicator

● **“Pre-stressed” HTG, to avoid pull-off of heat exchange tube: easy to maintain**

The unique technology not only achieves the purpose of achieving thermal expansion reserve stress without heating, avoids the occurrence of heat exchange tube pull-out accidents when the HTG is out of liquid; but also facilitates maintenance.

● **Solution reverse series and parallel circulation technology: more full use of heat sources, higher unit efficiency (COP)**

The solution reverse series and parallel circulation technology makes the solution concentration of LTG in the middle position, and the concentration of the concentrated solution in HTG is the highest. Before entering the low temperature heat exchanger, solution concentration will reduce after the intermediate solution mixing with concentrated solution. Then unit will obtain a large range for steam discharge and higher efficiency, also be far away from the crystallization, which is safe and reliable.

● **Interlock mechanical & electrical anti-freezing system: multi anti-freezing protection**

A lowered primary sprayer design for the evaporator, an interlock mechanism which links the secondary sprayer of evaporator with the supply of chilled water and cooling water, a pipe blockage prevention device, a two-hierarchy chilled water flow switch, an interlock mechanism designed for the chilled water pump and cooling water pump. Six grade anti-freezing design ensures timely detection of break, underflow, low temperature of chilled water, automatic actions will be taken to prevent tube freezing.



● **Auto purge system combining multi-ejector & fall-head technology: Speedy vacuum pumping and high vacuum degree maintenance**

This is a new, high efficiency automatic air purge system. The ejector functions as a small air extraction pump. DEEPBLUE automatic air purge system adopts multiple ejectors to increase the air extraction and purge rate of unit. Water head design can help to evaluate vacuum limits and maintain a high vacuum degree. This design can provide a high vacuum degree for every part of unit at any time. Therefore, oxygen corrosion is precluded, service life time is prolonged and optimal operating status is maintained for unit.

● **Viable structure design: easy to maintain**

Both the absorber solution spray tray and the evaporator refrigerant water spray nozzle can be disassembled and replaced, to ensure the cooling capacity during the lifespan.

● **Automatic anti-crystallization system combining level difference dilution and crystal dissolution: eliminate crystallization.**

A self-contained temperature&level difference detection system enables unit to monitor excessively high concentration of the concentrated solution. On the one hand upon detecting an overly high concentration the unit will bypass refrigerant water to concentrated solution for dilution. On the other hand, the chiller utilizes HT LiBr solution in generator to heat concentrated solution to a higher temperature. In the event of a sudden power failure or abnormal shutdown, level difference dilution system will start rapidly to dilute LiBr solution and to ensure rapid dilution after power supply recovers.

● **Fine separation device: eradicate refrigerant water pollution**

The concentration of the LiBr solution in the generator is divided into two stages, the flash generation stage and the generation stage. The real cause of pollution is in the flash generation phase. The fine separation device finely separates the refrigerant vapor with solution in the flash process, so that the pure refrigerant vapor can enter the next step of the refrigeration cycle, eliminating the source of pollution and eradicating the pollution of the refrigerant water.

- **Fine flash evaporation device: refrigerant waste heat recovery**

The waste heat of the refrigerant water inside the unit is used to heat the diluted LiBr solution to reduce the heat load of the absorber and achieve the purpose of waste heat recovery, energy saving and consumption reduction.

- **Economizer: energy output boosting**

Isooctanol with a conventional chemical structure as an energy boosting agent added to LiBr solution, is normally an insoluble chemical that has only a limited energy boosting effect. The economizer can prepare mixture of isooctanol and LiBr solution in a special way to guide isooctanol into generation and absorption process, therefore enhancing energy boosting effect, effectively reducing energy consumption and realizing energy efficiency.

- **Unique surface treatment for heat exchange tubes: high performance in heat exchanging & less energy consumption**

The evaporator and absorber have been hydrophilic treated to ensure even liquid film distribution on tube surface. This design can improve heat exchange effect and lower energy consumption.

- **Self-adaptive refrigerant storage unit: improving part load performance and shortening startup/shutdown time**

The refrigerant water storage capacity can be automatically adjusted according to external load changes, particularly when unit works under partial load. The adoption of refrigerant storage device can shorten startup/shutdown time substantially and reduce idle work.

- **Plate heat exchanger: saving more than 10% energy**

A stainless corrugated steel plate heat exchanger is adopted. This type of plate heat exchanger has a very sound effect, a high heat recovery rate and remarkable energy saving performance. Meanwhile, the stainless steel plate has a service life of over 20 years.

- **Integral sintered sight glass: a powerful guarantee for high vacuum performance**

The leakage rate of the whole unit is lower than $2.03 \times 10^{-10} \text{Pa} \cdot \text{m}^3 / \text{s}$, and three grade of magnitude better than the national standard which ensures the life of the unit.

- **Li_2MoO_4 Corrosion inhibitor: an environment-friendly corrosion inhibitor**

Lithium Molybdate (Li_2MoO_4), an environment-friendly corrosion inhibitor, is used to replace Li_2CrO_4 (Containing heavy metals) during the preparation of LiBr solution.

- **Frequency control operation: an energy-saving technology**

Unit can adjust its operation automatically and maintain optimal working condition according to different cooling load.

- **Tube broken alarm device**

When the heat exchange tubes broke in unit at abnormal condition, control system send out an alarm to remind operator to take actions, reduce damage.

- **Extra long lifetime design**

The designed service life of the whole unit is ≥ 25 years, reasonable structure design, material selection, high vacuum maintenance and other measures, guarantees the long service life of unit.

Fully-automatic control functions

The control system (AI, V5.0) is featured by powerful and complete functions, such as one-key startup/shutdown, timed startup/shutdown, mature safety protection system, multiple automatic adjustment, system interlock, expert system, human machine dialogue(multi languages), building automation interfaces, etc.

Complete chiller abnormality self-diagnosis and protection function

The control system (AI, V5.0) features 34 abnormality self-diagnosis & protection functions. Automatic steps will be taken by system according to level of an abnormality. This is intended to prevent accidents, minimize human labor and ensures a sustained, safe and stable operation of unit.

Unique Load Adjustment Function

The control system (AI, V5.0) has a unique load adjustment function, which enables automatic adjustment of unit output according to actual load. This function not only helps to reduce startup/shutdown time and dilution time, but also contributes to less idle work and energy consumption.

Unique solution circulation volume control technology

The control system (AI, V5.0) employs an innovative ternary control technology to adjust solution circulation volume. Traditionally, only parameters of generator liquid level are used to control of solution circulation volume. This new technology combines merits of concentration&temperature of concentrated solution and liquid level in generator. Meanwhile, an advanced frequency-variable control technology is applied to solution pump to enable unit to achieve an optimal circulated solution volume. This technology improves operating efficiency and reduces startup time and energy consumption.

Cooling water temperature control technology

The control system (AI, V5.0) can control and adapt the heat source input according to cooling water inlet temperature changes. By maintaining cooling water inlet temperature within 15-34°C, unit operates safely and efficiently.

Solution concentration control technology

The control system (AI, V5.0) uses a unique concentration control technology to enable real-time monitoring/control of concentration and volume of concentrated solution as well as heat source input. This system can maintain unit under safe and stable at high concentration condition, improve unit operating efficiency and prevent crystallization.

Intelligent automatic air extraction function

The control system (AI, V5.0) can realize real-time monitoring of vacuum condition and purge out the non-condensable air automatically.

Unique shutdown dilution control

This control system (AI, V5.0) can control operation time of different pumps required for dilution operation, according to the concentration of concentrated solution, ambient temperature and remaining refrigerant water volume. Therefore, an optimal concentration can be maintained for the unit after shutdown. Crystallization is precluded and unit re-start time is shortened.

Working parameter management system

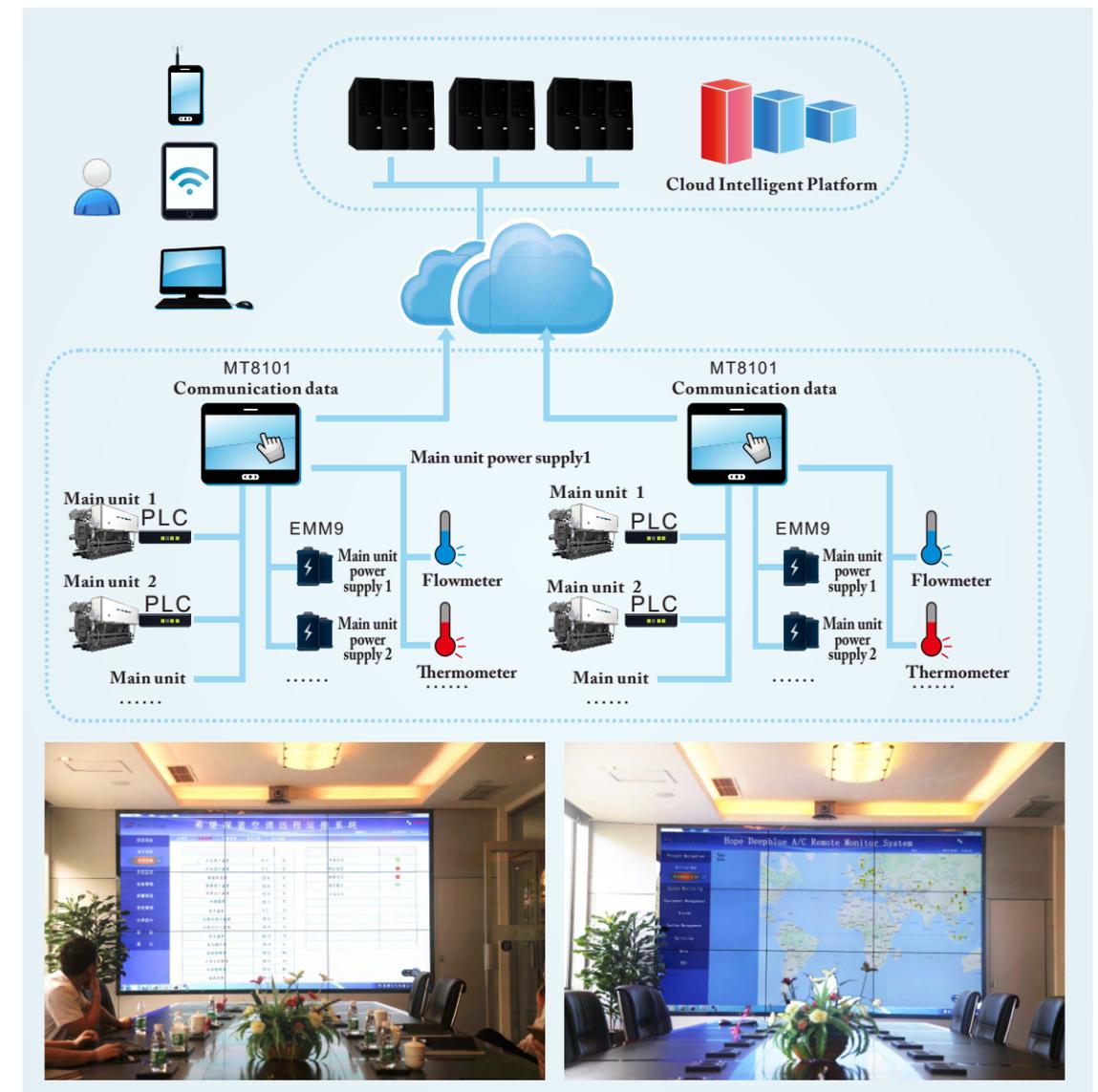
Through interface of this control system (AI, V5.0), operator can perform any of following operations for 12 critical parameters relating to unit performance: real-time display, correction, setting. Records can be kept for historical operation events.

Unit fault management system

If any prompt of occasional fault is displayed on operation interface, this control system (AI, V5.0) can locate and detail fault, propose a solution or trouble shooting guidance. Classification and statistical analyses of historical faults can be conducted to facilitate maintenance service provided by operators.

Remote Operation&Maintenance System

Deepblue Remote Monitoring Center collects the data of the units distributed around the world. Through the classification, statistics, and analysis of real-time data, it displays in the form of reports, curves, and histograms to achieve an overall overview of equipment operating status and fault information control. Through a series of collection, calculation, control, alarm, early warning, equipment ledger, equipment operation and maintenance information and other functions, as well as customized special analysis and display functions, the remote operation, maintenance, and management needs of the unit are finally realized. The authorized client can browse the WEB or APP, which is convenient and fast.



Nominal Parameter (Steam Pressure 0.4MPa)

Model		SXZ-4	23	35	47	58	70	81	93	105
Cooling Capacity		kW	233	350	470	580	700	810	930	1050
		×10 ⁴ kcal/h	20	30	40	50	60	70	80	90
		USRt	66	99	132	165	198	231	265	299
Chilled water	Inlet/Outlet Temp.	°C	12→7							
	Flow rate	m ³ /h	40	60	80	100	120	140	160	180
	Pressure drop	kPa	33	33	33	36	36	52	52	52
	Joint connection	mm	100	125	125	125	150	150	150	150
Cooling Water	Inlet/Outlet Temp.	°C	32→38							
	Flow rate	m ³ /h	59	88	117	145	174	202	232	261
	Pressure drop	kPa	82	82	82	62	62	62	91	91
	Joint connection	DN	125	125	150	150	150	200	200	200
Steam	Steam consumption	kg/h	256	385	517	638	770	891	1023	1155
	Steam inlet	mm	50	50	65	65	65	65	80	80
	Condensate water outlet	mm	25	25	25	25	25	25	25	40
Electric	Total power	kW	2.8	2.8	2.8	3.8	3.8	3.8	7	7
	Power supply	3ph\380V\AC\50Hz								
Dimension	Length	mm	3050	3200	3150	4140	4250	4290	4400	5400
	Width	mm	1910	1980	2000	2130	2030	2300	2330	2450
	Height	mm	2030	2180	2330	2660	2380	2500	2570	2600
Transportation Status		In one piece								
Transportation Weight (including solution)		t	4.4	5.5	6.7	7.8	8.9	9.8	10.7	11.7
Operation weight		t	4.9	5.9	7.2	8.5	9.9	11.1	12	13.3

116	145	174	204	233	262	291	349	407	465	523	582
1163	1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820
100	125	150	175	200	225	250	300	350	400	450	500
331	413	496	579	661	744	827	992	1157	1323	1488	1653
12→7											
200	250	300	350	400	450	500	600	700	800	900	1000
52	29	29	29	29	29	48	48	48	48	44	68
200	200	200	250	250	250	250	300	300	350	350	400
32→38											
289	361	433	506	578	650	722	866	1010	1154	1299	1444
91	58	58.0	58.0	58.0	58.0	51.0	51.0	51.0	63	63	76
250	250	250	300	300	350	350	350	400	400	400	500
1279	1595	1914	2244	2563	2882	3201	3839	4477	5115	5753	6402
80	100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	40	50	50	50	50	65
7.4	8	11.8	13.8	13.8	14.8	15.1	23.2	23.7	24.7	27.2	28.2
3ph\380V\AC\50Hz											
5350	5450	6200	6350	6400	6400	6600	7300	7600	7600	8700	8400
2560	2680	3150	3250	3310	3350	3350	3350	3650	3690	3850	4150
2620	2700	3000	3180	3350	3600	3730	3530	3680	3700	3900	3920
In one piece											
14.1	16.6	19	21.3	23.5	25.9	29.9	34.1	38.4	45.8	52.4	59.8
15.7	18.6	21	23.8	26.3	28.8	33.7	38.4	43	52.3	59.4	68.8

1. Minimum chilled water outlet temp. -5°C, minimum cooling water inlet temp. 15°C.
2. Chilled water and cooling water fouling factor: 0.086m²°C/kW. Maximum working pressure: 0.8MPa. Special notice required when the working pressure > 0.8MPa.
3. Machine room environment: relative humidity≤85%, temp.5~43°C.
4. Chilled water flow adjustable range 60%-120%, cooling water flow adjustable range 50%-120%.
5. Cooling capacity regulation range 5% ~ 115%.
6. Saturated vapor, overheating≤20°C, condensate water temp. ≤90°C, pressure≤0.005MPa.
7. Hope Deepblue reserves the right of interpretation, the parameters maybe amended at final design.

Nominal Parameter (Steam Pressure 0.6MPa)

Model		SXZ-6	23	35	47	58	70	81	93	105
Cooling Capacity		kW	233	350	470	580	700	810	930	1050
		×10 ⁴ kcal/h	20	30	40	50	60	70	80	90
		USRt	66	99	132	165	198	231	265	299
Chilled water	Inlet/Outlet Temp.	°C	12→7							
	Flow rate	m ³ /h	40	60	80	100	120	140	160	180
	Pressure drop	kPa	33	33	33	33	36	36	52	52
	Joint connection	mm	100	125	125	125	150	150	150	150
Cooling Water	Inlet/Outlet Temp.	°C	32→38							
	Flow rate	m ³ /h	58	86	114	142	171	198	227	256
	Pressure drop	kPa	82	82	82	82	62	62	62	91
	Joint connection	DN	125	125	150	150	150	200	200	200
Steam	Steam consumption	kg/h	242	364	489	603	728	842	967	1092
	Steam inlet	mm	40	50	50	65	65	65	65	80
	Condensate water outlet	mm	25	25	25	25	25	25	25	40
Electric	Total power	kW	2.8	2.8	2.8	2.8	3.8	3.8	6.2	7
	Power supply		3ph\380V\AC\50Hz							
Dimension	Length	mm	3050	3200	3150	4140	4250	4290	4400	5400
	Width	mm	1710	1780	1800	1930	1830	2100	2126	2250
	Height	mm	1950	2100	2250	2560	2280	2400	2450	2480
Transportation Status			In one piece							
Transportation Weight (including solution)		t	3.2	4.4	5.5	6.7	7.8	8.9	9.8	10.7
Operation weight		t	3.6	4.9	5.9	7.2	8.5	9.9	11.1	12

116	145	174	204	233	262	291	349	407	465	523	582	698
1163	1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820	6980
100	125	150	175	200	225	250	300	350	400	450	500	600
331	413	496	579	661	744	827	992	1157	1323	1488	1653	1984
12→7												
200	250	300	350	400	450	500	600	700	800	900	1000	1200
52	52	29	29	29	29	29	48	48	48	44	44	65
200	200	200	250	250	250	250	300	300	350	350	350	400
32→38												
283	354	424	496	566	637	707	849	990	1131	1272	1414	1696
91	91	58	58.0	58.0	58.0	58.0	51.0	51.0	51.0	63	63	76
250	250	250	300	300	350	350	350	400	400	400	500	500
1210	1508	1810	2122	2423	2725	3026	3630	4233	4836	5439	6053	7259
80	80	100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	40	50	50	50	50	65	65
7	7.4	11.4	11.8	13.8	13.8	14.8	15.1	23.2	23.7	24.7	27.2	28.2
3ph\380V\AC\50Hz												
5350	5450	6200	6350	6400	6400	6600	7300	7600	7600	8700	8400	9400
2360	2480	3000	3040	3110	3150	3150	3150	3400	3490	3650	3950	3880
2500	2580	2850	3030	3200	3450	3550	3350	3500	3500	3700	3700	4000
In one piece												
11.7	14.1	16.6	19	21.3	23.5	25.9	29.9	34.1	38.4	45.8	52.4	59.8
13.3	15.7	18.6	21	23.8	26.3	28.8	33.7	38.4	43	52.3	59.4	68.8

1. Minimum chilled water outlet temp. -5°C, minimum cooling water inlet temp. 15°C.
2. Chilled water and cooling water fouling factor: 0.086m²°C/kW. Maximum working pressure: 0.8MPa. Special notice required when the working pressure > 0.8MPa.
3. Machine room environment: relative humidity≤85%, temp.5~43°C.
4. Chilled water flow adjustable range 60%-120%, cooling water flow adjustable range 50%-120%.
5. Cooling capacity regulation range 5% ~ 115%.
6. Saturated vapor, overheating≤20°C, condensate water temp. ≤90°C, pressure≤0.005MPa.
7. Hope Deepblue reserves the right of interpretation, the parameters maybe amended at final design.

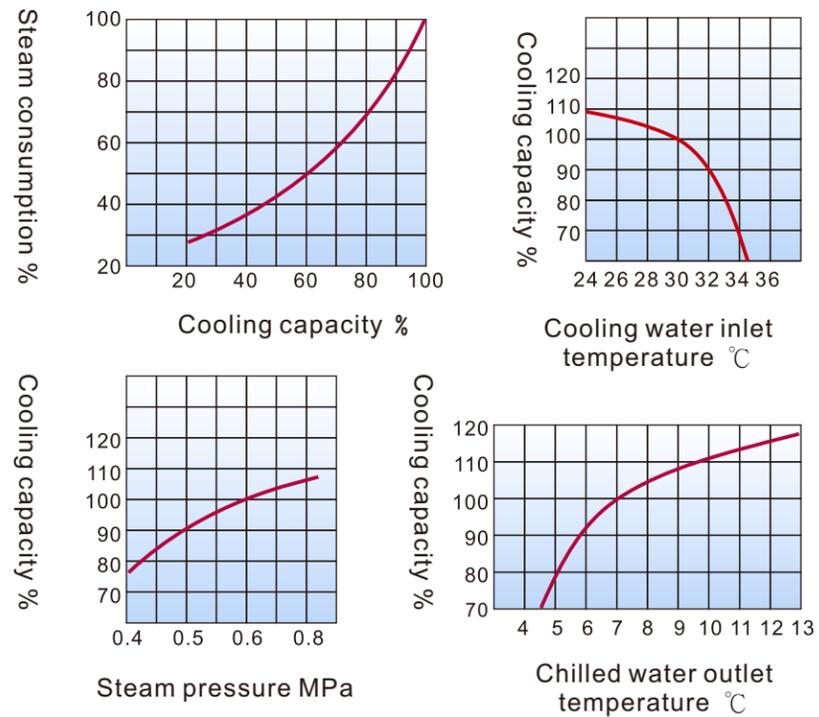
Nominal Parameter (Steam Pressure 0.8MPa)

Model		SXZ8-	23	35	47	58	70	81	93	105
Cooling Capacity		kW	233	350	470	580	700	810	930	1050
		×10 ⁴ kcal/h	20	30	40	50	60	70	80	90
		USRt	66	99	132	165	198	231	265	299
Chilled water	Inlet/Outlet Temp.	°C	12→7							
	Flow rate	m ³ /h	40	60	80	100	120	140	160	180
	Pressure drop	kPa	33	33	33	33	36	36	52	52
	Joint connection	mm	100	125	125	125	150	150	150	150
Cooling Water	Inlet/Outlet Temp.	°C	32→38							
	Flow rate	m ³ /h	57	85	113	141	169	196	225	253
	Pressure drop	kPa	82	82	82	82	62	62	62	91
	Joint connection	DN	125	125	150	150	150	200	200	200
Steam	Steam consumption	kg/h	235	354	475	586	707	818	939	1061
	Steam inlet	mm	40	50	50	65	65	65	65	80
	Condensate water outlet	mm	25	25	25	25	25	25	25	40
Electric	Total power	kW	2.8	2.8	2.8	2.8	3.8	3.8	6.2	7
	Power supply		3ph\380V\AC\50Hz							
Dimension	Length	mm	3050	3200	3150	4140	4250	4290	4400	5400
	Width	mm	1710	1780	1800	1930	1830	2100	2126	2250
	Height	mm	1950	2100	2250	2560	2280	2400	2450	2480
Transportation Status			In one piece							
Transportation Weight (including solution)		t	3.1	4.4	5.5	6.6	7.7	8.7	9.7	10.5
Operation weight		t	3.5	4.8	5.9	7.1	8.3	9.7	10.7	11.8

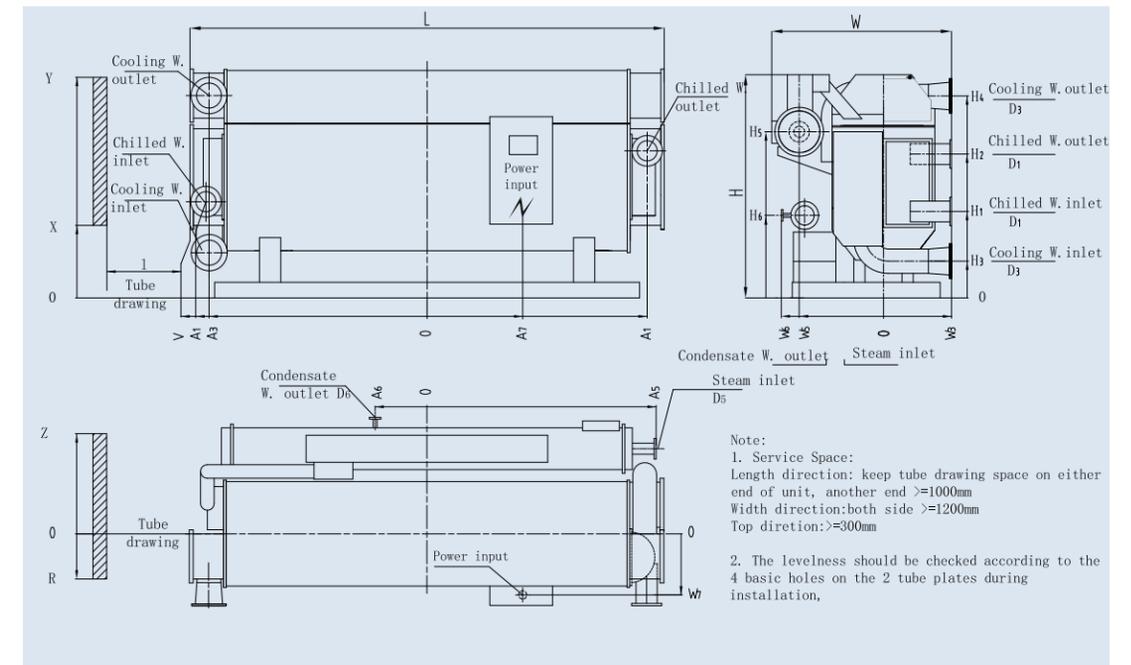
116	145	174	204	233	262	291	349	407	465	523	582	698
1163	1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820	6980
100	125	150	175	200	225	250	300	350	400	450	500	600
331	413	496	579	661	744	827	992	1157	1323	1488	1653	1984
12→7												
200	250	300	350	400	450	500	600	700	800	900	1000	1200
52	52	29	29	29	29	29	48	48	48	44	44	65
200	200	200	250	250	250	250	300	300	350	350	350	400
32→38												
281	350	420	491	561	630	700	840	980	1119	1259	1400	1679
91	91	58	58.0	58.0	58.0	58.0	51.0	51.0	51.0	63	63	76
250	250	250	300	300	350	350	350	400	400	400	500	500
1175	1465	1757	2060	2353	2646	2939	3525	4111	4697	5282	5878	7050
80	80	100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	40	50	50	50	50	65	65
7	7.4	11.4	11.8	13.8	13.8	14.8	15.1	23.2	23.7	24.7	27.2	28.2
3ph\380V\AC\50Hz												
5350	5450	6200	6350	6400	6400	6600	7100	7600	7600	8700	8400	9400
2360	2480	3000	3040	3110	3150	3150	3150	3400	3490	3650	3950	3880
2500	2580	2850	3030	3200	3450	3550	3350	3500	3500	3700	3700	4000
In one piece												
11.5	13.9	16.4	18.8	21.1	23.2	25.6	29.6	33.7	38.1	45.6	52.2	59.5
13	15.4	18.3	20.7	23.5	26	28.6	33.3	38	42.7	51.9	59	68.4

1. Minimum chilled water outlet temp. -5°C, minimum cooling water inlet temp. 15°C.
2. Chilled water and cooling water fouling factor: 0.086m²/kW. Maximum working pressure: 0.8MPa. Special notice required when the working pressure > 0.8MPa.
3. Machine room environment: relative humidity≤85%, temp.5~43°C.
4. Chilled water flow adjustable range 60%-120%, cooling water flow adjustable range 50%-120%.
5. Cooling capacity regulation range 5% ~ 115%.
6. Saturated vapor, overheating≤20°C, condensate water temp. ≤90°C, pressure≤0.005MPa.
7. Hope Deepblue reserves the right of interpretation, the parameters maybe amended at final design.

Performance Curve

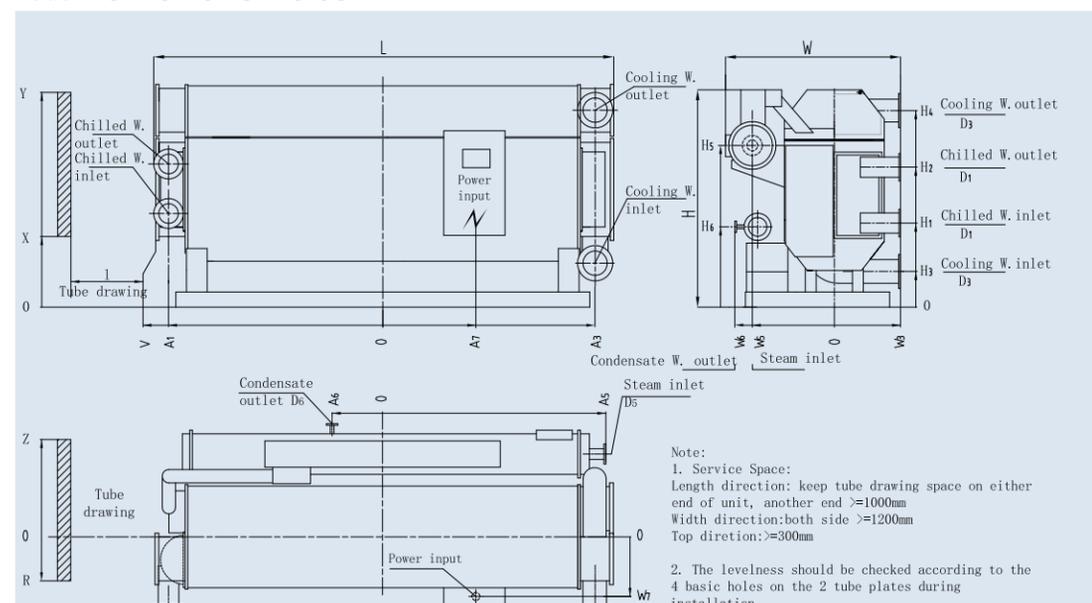


Model : SXZ8-70--SXZ8-145

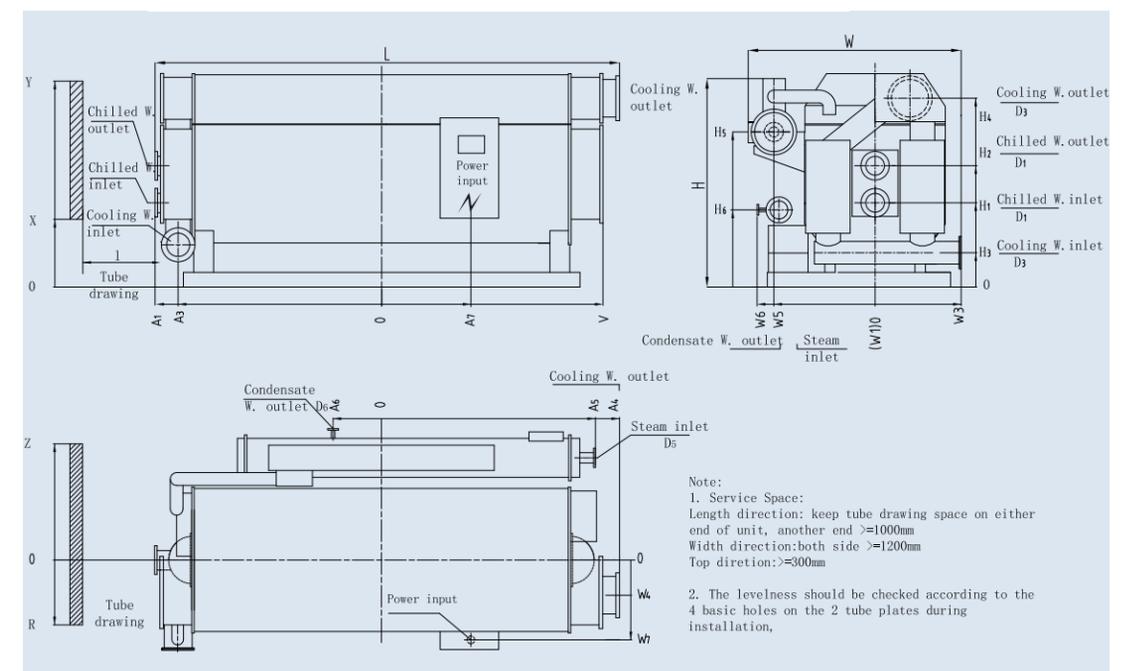


Outside Drawing

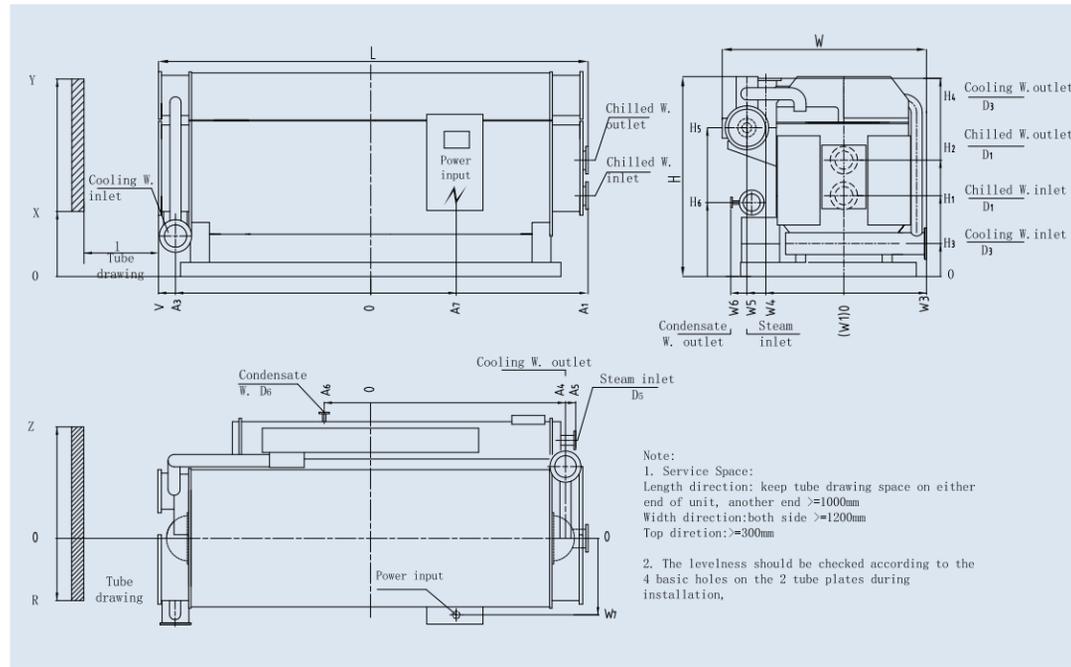
Model : SXZ8-23 --SXZ8-58



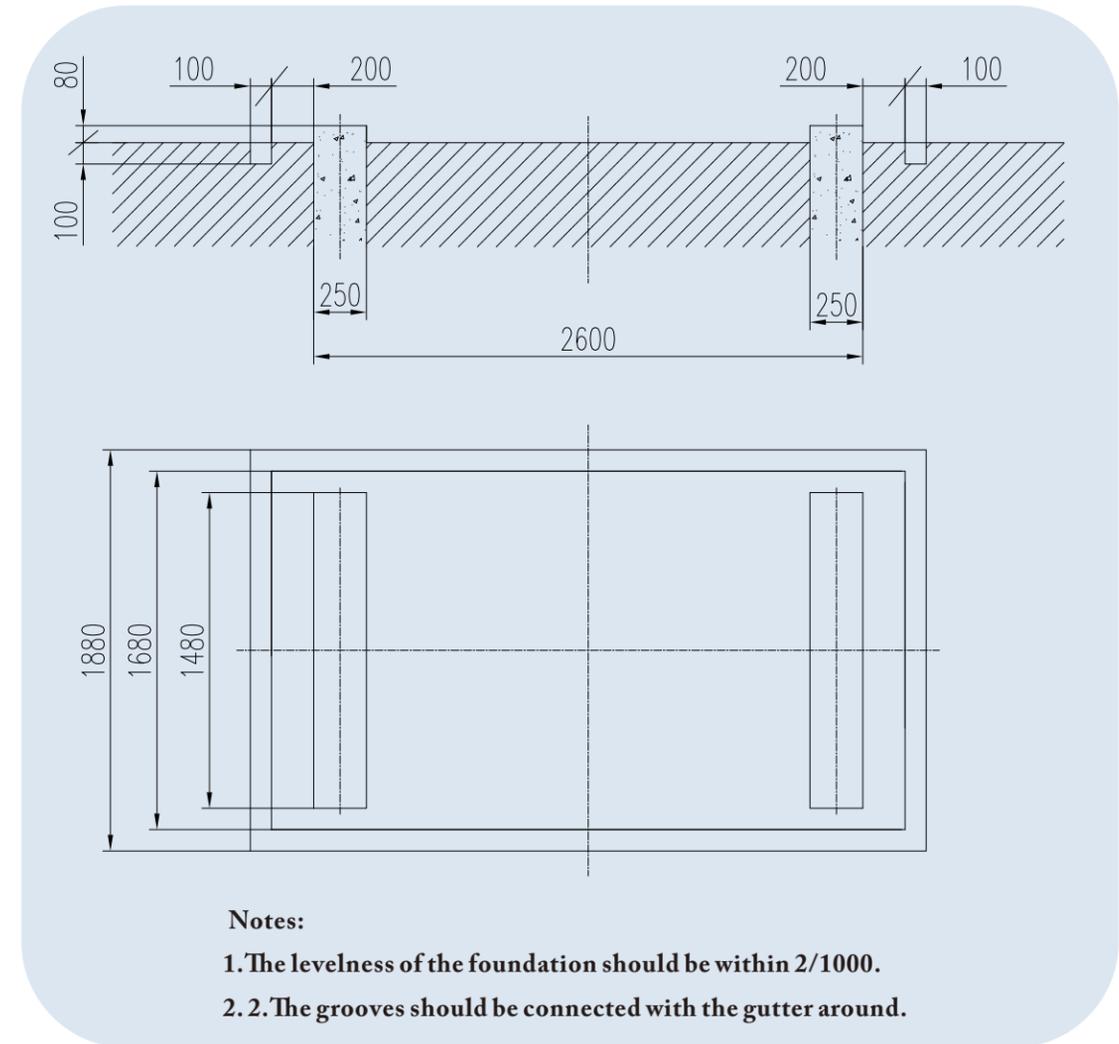
Model : SXZ8-174--SXZ8-291



Model : SXZ8-349--SXZ8-465



Foundation Drawing



Foundation Dimension Sheet

unit : mm

Model	SXZ8-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	SXZ6-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	SXZ4-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	/
	A	2600	2600	2600	3700	3700	3700	3700	4600	4600	4600	5100	5100	5100	5100	5100	6200	6200	6200	7200	7200	8200
	B	1480	1570	1690	1780	1780	2200	2200	2600	2600	2600	3400	3400	3400	3400	3400	3400	3900	3400	4100	4100	4100
	C	250	250	250	250	300	300	300	400	400	400	500	500	500	600	600	600	600	600	700	700	700
	D	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	600	600	700	700	700
	E	200	200	200	200	200	200	200	200	200	400	400	400	400	400	400	400	200	200	200	200	200

Model	SXZ4-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	
Chiller	L	3050	3200	3150	4140	4250	4290	4400	5400	5350	5450	6200	6350	6400	6400	6600	7300	7600	7600	8700	8400	
	W	1910	1980	2000	2130	2030	2300	2330	2450	2560	2680	3150	3250	3310	3350	3350	3350	3650	3650	3850	4150	
	H	2030	2180	2330	2660	2380	2500	2570	2600	2620	2700	3000	3180	3350	3600	3730	3530	3680	3700	3900	3920	
	V	1458	1483	1510	1450	2063	2020	2090	2270	2330	2406	2850	2900	2900	2900	2976	2976	3430	3433	3480	3919	4050
	R	358	358	390	420	390	420	450	450	469	520	730	560	600	620	650	800	800	900	900	960	
	Z	655	715	960	970	1030	1030	1100	1100	1100	1190	1600	1280	1410	1410	1560	1680	1775	1950	2010	2085	
	X	628	628	628	628	628	728	760	728	720	650	1100	810	800	780	910	910	910	910	910	910	
	Y	1760	1810	1955	1945	1955	1980	2250	2135	2160	2440	2650	2500	2700	2830	3070	3200	3250	3250	3250	3250	
	I	2440	2440	2440	2440	3440	3440	3440	3440	3940	3940	3940	4930	4930	4930	4930	4930	5930	5930	5930	6930	
	A1	1340	1350	1360	1379	1890	1880	1880	1880	2160	2160	2206	3110	2960	2960	2960	3080	3650	3512	3510	4208	3880
Chilled water	W1	628	628	667	667	592	690	720	719	739	739	0	0	0	0	0	0	0	0	0		
	H1	956	956	915	917	941	968	1010	1092	1058	1169	1310	1170	1218	1310	1390	1490	1315	1395	1593	1410	
	H2	1365	1365	1410	1350	1321	1420	1500	1542	1535	1749	1760	1775	1911	2060	2130	2130	2058	2100	2193	2270	
	D1	100	125	125	125	150	150	150	150	200	200	200	200	250	250	250	300	300	350	350	400	
	A3	1338	1338	1345	1345	1880	1845	1895	2125	2125	2180	2680	2680	2700	2715	2715	3215	3200	3305	3730	3805	
	A4	/	/	/	/	/	/	/	/	/	/	/	2990	2990	3000	3050	3050	3200	3175	3730	3800	
	W3	/	/	/	/	/	/	/	/	/	/	1060	1100	1100	1150	1150	1260	1264	1120	1399	1180	
	W4	/	/	/	/	/	/	/	/	/	/	465	490	515	525	525	1050	1158	1130	929	1176	
	H3	488	488	560	425	510	465	530	529	529	505	820	820	820	820	830	830	647	560	888	560	
	H4	1853	1853	1980	1973	1922	1980	2110	2160	2160	2505	2485	2490	2530	2550	2550	2730	3215	3400	3476	3400	
Steam	D3	125	125	150	150	150	200	200	200	250	250	300	300	300	350	350	400	400	400	500		
	A5	1400	1400	1400	1533	2050	1980	2086	2230	2230	2211	3025	2740	2740	2740	2790	3320	3465	3300	3858	3790	
	W5	575	575	660	830	805	687	890	745	744	1000	1315	1310	1310	1320	1310	1350	1650	1250	1619	1266	
	H5	1495	1495	1495	1600	1581	1770	1700	1770	1770	1900	1940	2154	2154	2150	2200	2430	2270	2360	2400	2360	
	D5	40	50	50	65	65	65	80	80	80	80	100	100	100	125	125	125	150	150	150		
	A6	400	400	400	400	400	300	300	300	300	300	300	300	250	250	250	550	255	255	255	255	
	W6	588	588	665	711	665	711	760	760	792	890	900	924	866	972	955	955	975	1590	1590	1630	
	H6	532	532	630	530	560	530	630	650	650	900	900	800	764	775	890	795	650	1000	1020	1020	
	D6	25	25	25	25	25	25	25	40	40	40	40	40	40	40	40	50	50	50	50	65	
	A7	550	920	920	600	1000	1000	806	1000	1000	1172	1100	1500	1500	1500	1500	1600	1600	1800	1800	1195	1800
W7	600	600	600	676	645	660	706	670	680	776	1015	1100	1100	1100	1100	1150	1150	1171	1025	1171	1085	

Model	SXZ8-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
Chiller	L	3050	3200	3150	4140	4250	4290	4400	5400	5350	5450	6200	6350	6400	6400	6600	7300	7600	7600	8700	8400	
	W	1710	1780	1800	1930	1830	2100	2126	2250	2360	2480	3000	3040	3110	3150	3150	3150	3400	3490	3650	3950	3880
	H	1950	2100	2250	2560	2280	2400	2450	2480	2500	2580	2850	3030	3200	3450	3550	3350	3500	3500	3700	4000	
	V	1458	1483	1510	1450	2063	2020	2090	2270	2330	2406	2850	2900	2900	2900	2976	2976	3430	3433	3480	3919	4050
	R	358	358	390	420	390	420	450	450	469	520	730	560	600	620	650	800	800	900	900	960	
	Z	655	715	960	970	1030	1030	1100	1100	1100	1190	1600	1280	1410	1410	1560	1680	1775	1950	2010	2085	
	X	628	628	628	628	628	728	760	728	720	650	1100	810	800	780	910	910	910	910	910	910	
	Y	1760	1810	1955	1945	1955	1980	2250	2135	2160	2440	2650	2500	2700	2830	3070	3200	3250	3250	3250	3250	
	I	2440	2440	2440	2440	3440	3440	3440	3440	3940	3940	3940	4930	4930	4930	4930	4930	5930	5930	5930	6930	
	A1	1340	1350	1360	1379	1890	1880	1880	1880	2160	2160	2206	3110	2960	2960	2960	3080	3650	3512	3510	4208	3880
Chilled water	W1	628	628	667	667	592	690	720	719	739	739	0	0	0	0	0	0	0	0	0		
	H1	956	956	915	917	941	968	1010	1092	1058	1169	1310	1170	1218	1310	1390	1490	1315	1395	1593	1410	
	H2	1365	1365	1410	1350	1321	1420	1500	1542	1535	1749	1760	1775	1911	2060	2130	2130	2058	2100	2193	2270	
	D1	80	100	100	125	125	150	150	150	150	200	200	200	250	250	250	300	300	350	350	400	
	A3	1338	1338	1345	1345	1880	1845	1895	2125	2125	2180	2680	2680	2700	2715	2715	3215	3200	3305	3730	3805	
	A4	/	/	/	/	/	/	/	/	/	/	/	2990	2990	3000	3050	3050	3200	3175	3730	3800	
	W3	/	/	/	/	/	/	/	/	/	/	1060	1100	1100	1150	1150	1260	1264	1120	1399	1180	
	W4	/	/	/	/	/	/	/	/	/	/	465	490	515	525	525	1050	1158	1130	929	1176	
	H3	488	488	560	425	510	465	530	529	529	505	820	820	820	820	830	830	647	560	888	560	
	H4	1853	1853	1980	1973	1922	1980	2110	2160	2160	2505	2485	2490	2530	2550	2550	2730	3215	3400	3476	3400	
Steam	D3	125	125	150	150	150	200	200	200	250	250	300	300	300	350	350	400	400	400	500		
	A5	1400	1400	1400	1533	2050	1980	2086	2230	2230	2211	3025	2740	2740	2740	2790	3320	3465	3300	3858	3790	
	W5	575	575	660	830	805	687	890	745	744	1000	1315	1310	1310	1320	1310	1350	1650	1250	1619	1266	
	H5	1495	1495	1495	1600	1581	1770	1700	1770	1770	1900	1940	2154	2154	2150	2200	2430	2270	2360	2400	2360	
	D5	40	50	50	65	65	65	80	80	80	80	100	100	100	125	125	125	150	150	150		
	A6	400	400	400	400	400	300	300	300	300	300	300	300	250	250	250	550	255	255	255	255	
	W6	588	588	665	711	665	711	760	760	792	890	900	924	866	972	955	955	975	1590	1590	1630	
	H6	532	532	630																		

Chilled Water Outlet Temperature

Besides the specified chilled water outlet temperature of a standard chiller, other outlet temperature values may also be selected, but the min temp. should be no lower than -5°C.

Steam Parameter

Please specify the relevant parameters of the steam when ordering, such as pressure, flow rate, steam overheating etc.

Pressure Bearing Requirements

The maximum pressure of chilled water/cooling water system is 0.8MPa. If the actual pressure of the water system exceeds this standard value, a HP unit chiller should be used.

Unit Qty

Based on the demand for A/C cooling or industrial process cooling, if there's more than 1 unit required, the unit capacity and QTY should be comprehensively considered according to maximum operation load and partial load.

Control Mode

The standard steam fired absorption unit is equipped with an AI (artificial intelligence) control system that enables automatic operation. Meanwhile, there are a number of options available for the customers, such as control interfaces for the chilled water pump, cooling water pump, cooling tower fan, building control, centralized control system and IoT access.

Notice

Please refer the "Model Selection Sheet" when ordering. Hope Deepblue will assist you to make the reasonable choice.



Scope of Supply

Item	Qty	Remarks
Main unit	1 set	HTG, LTG, condenser, evaporator, absorber, solution heat exchanger, and auto purge device
Steam regulation valve	1 set	
Canned pump	2/4 set	Different quantity according to difference figuration
Vacuum pump	1 set	
LiBr solution	Adequate	
Control system	1 kit	Including sensor&control elements (liquid level, pressure, flow rate and temperature), PLC and touchscreen
Frequency converter	1 set	
Commissioning tools	1 kit	Thermometer and common tools
Accessories	1 set	Refer to Packing List, which can meet the demand for 5 years maintenance.
Documents	1 set	Including Quality Certificate, Packing List, User Manual, Accessories' User Manual, etc.

Model Selection Sheet

Item	Type	Features	Remarks
Heat sources	Steam	When placing an order, please specify the steam pressure. If the steam is overheated, please specify the overheating temperature.	
Special order	HP type	When the chilled water/cooling water $\geq 0.8\text{MPa}$, a HP water chamber may be adopted. The pressure bearing capacity can be 0.8-1.6MPa or 1.6-2.0MPa.	When place an order, please specify the following details in the contract or annexes: QTY, parameters and any other requirement of a special order.
	Big Delta T type	Chilled water inlet/outlet Delta T is 7-10°C.	
	LT type	The chilled water outlet temperature can be -5°C to meet the requirements of special processes.	
	Split type	Limited by the size of the user's site, the main body and the HTG can be transported separately.	
	Vessel-applied type	This type applies to occasions with slight wobbling. Seawater can be used as cooling water.	

Machine Room Design and Construction

Scope of Delivery and Construction

Items	Description	Scope of Delivery and Construction		Remarks
		Deepblue	User	
Unit	Chiller and accessories	●		Please refer to Scope of Supply.
Performance test	Ex-factory performance test	●		
	Site commissioning	●		Depends on Sales Contract
Transportation to the site	From the factory to the worksite		●	Depends on Sales Contract
	From the worksite to the mounting		●	Depends on Sales Contract
	Installation in place		●	Depends on Sales Contract
	Chiller assembly (separate delivery)	●		The user must provide welding equipment, nitrogen and other necessary tools.
Electrical engineering	Sensors and meters	●		The user must be responsible for laying remote control cables.
	External electrical wiring engineering		●	The wires extend till the outlet of the wiring terminal of the control cabinet.
Other engineering	Foundation construction		●	
	External tubing engineering		●	
	Air extraction system		●	
	Tubing system anti-freezing measures		●	During winter shutdowns, please adopt anti-freezing measures for the water tubing.
	Cooling water quality management		●	Please set the cooling water discharge valve or other unit to enable proper water quality.
	Insulation engineering		●	Optional, depends on Sales Contract
Other	LiBr solution	●		
	Operation training & instructions	●		

Civil Works for the Machine Room

Site Selection of the Machine Room

The hot water absorption chiller can operate stably, safely and reliably with very little noise, so it may be installed in the basement or on the first floor, middle floors or rooftop or in independent machine rooms.

Ambient Temperature in the Machine Room

The temperature should be controlled within the range of 5-43°C.

Machine Room Ventilation

The machine room should have a good ventilation environment.

Drainage

The machine room should be equipped with good drainage facilities:

- ★ Drains covered by cast iron grates should be available around the chiller. Water in the drains can flow out of the machine room without difficulty.
- ★ All the discharge pipes and signal pipes in the machine room should be installed at a visible place above the drains. They should not be installed in the drains.
- ★ Sump pits and submerged pumps should be available in a machine room located in the basement. Automatic control devices should be provided to enable automatic drainage.

Machine Room Arrangement

The installation location of the machine room should ensure handy operation and adequate maintenance space. A 1-meter-wide operation space (minimum) should be left at the front of the electrical control cabinet, a 0.3m distance (minimum) should be reserved between the top of the chiller and the bottom of the beam of the machine room, a 1.2-meter-wide space (minimum) should be left for the other sides of the chiller. A space for drawing heat conducting tubes (length: no less than the tube length) should be reserved at any end of the lengthwise direction of the chiller. If this space can not be reserved, a window or door may be designed for tube drawing.

Unit Foundation

The unit's foundation may be designed on the basis of the dead load of the unit. The design should ensure stable, firm and unsinkable, otherwise the unit may suffer damage or a shortened service life.

Tubing System

The tubing system should be designed and planned as a whole in compliance with the requirements of the applicable standards and regulations. The tubes should be arranged in an orderly and neat way. Try to adopt overhead installation. The tubes should be firmly supported. The gravity of external tubing must not be applied to the chiller.

Water Supply System

Flexible joints must be fitted for chilled water/cooling water supply to the chiller. A filter must be fitted for the inlet end at a place easy for disassembly. If the hydrostatic pressure of the water is more than 30mH₂O, it is recommended that the water pump be installed on the outlet side so as to relieve unnecessary pressure load. Tubes at both inlet and outlet ends should be easy to uninstall. This is intended to facilitate the cleaning of heat conducting tubes by opening the watertight cover.

Electric System

The design of the electrical system in the machine room must match the control system of the unit to achieve full automation.



Handling and Installation in Place

Delivery Status

Delivery usually takes the form of whole-unit delivery. Transportation suggestion: During the lifting process of the unit, it should be carried out in accordance with the "Lifting Instruction" provided by Hope Deepblue. Lifting ropes and fastening devices can only be placed at the indicated marks on the unit.

Installation in Place:

A layer of steel plate and rubber sheet should be laid on the foundation of the unit. After the unit is in place, the length direction and width should be corrected with the small holes ($\phi 4$) on both sides as the reference point, and the levelness of the unit should be controlled within 1/1000. There should be no gap between the bracket of the unit and the foundation to ensure the uniform pressure.

During the lifting, installation and construction of the unit, protective measures should be taken and strictly forbid to hit the unit with heavy objects and to screw the valve to prevent it from being damaged.

Water Quality Management

The cooling water evaporates continuously through the cooling tower, in which the salt is concentrated, and the water quality deteriorates, causing corrosion and fouling in the heat transfer tube of the chiller. The high temperature in summer causes algae to grow, dirt and scale increase the thermal resistance of the heat exchange tube, which greatly reduces the cooling capacity of the chiller.

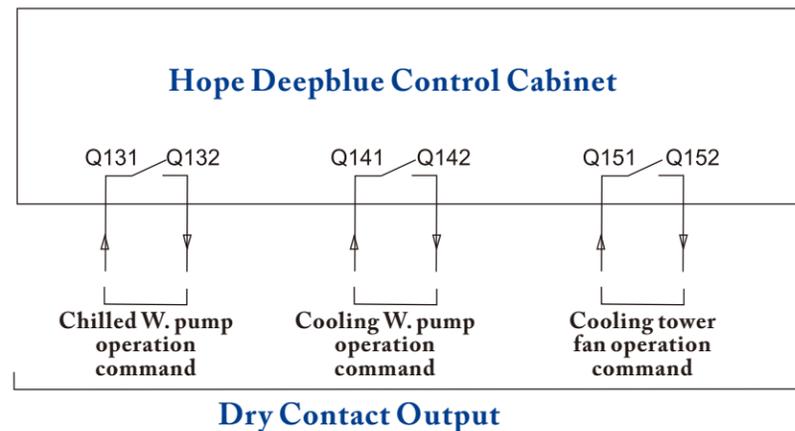
Refer to the following table for the water quality requirements on cooling water

Item	Unit	Makeup Water	Cooling Water Requirements	Tendency	
				Corrosion	Scaling
pH value(25°C)		6.5-8.0	6.5-8.0	△	△
Conductivity (25 °C)	$\mu S / cm$	<200	<800	△	
Chloride ion Cl^-	$mgCl^- / L$	<50	<200	△	
Sulfate ion SO_4^{2-}	$mgSO_4^{2-} / L$	<50	<200	△	
Acid consumption (pH:4.8)	$mgCaCO_3 / L$	<50	<100		△
Total hardness	$mgCaCO_3 / L$	<50	<200		△
Ferric ion (Fe)	$mgFe / L$	<0.3	<1.0	△	△
Sulfide ion S^{2-}	mgS^{2-} / L	Undetectable	Undetectable	△	
Ammonium ion NH_4^+	$mgNH_4^+ / L$	<0.3	<1.0	△	
Silicon dioxide SiO_2	$mgSiO_2 / L$	<30	<50		△

Control System

The electrical system in the machine room must match the control system of the LiBr absorption unit to achieve full automation. Otherwise, the advanced nature, reliability, safety and high efficiency of the Hope Deepblue LiBr absorption unit cannot be realized.

Interlock Control Diagram for User Water System



Note:

1. The capacity of the output relays for the interlock control terminals of above water pumps is AC250V,5A (resistance load).
2. Q131,Q132,Q141,Q142,Q151,Q152 are numbers of wirings inside the control cabinet. Please connect them accordingly.
3. The chilled W. pump and cooling W. pump must be interlocked control during operation of the unit.

Hope Deepblue LiBr Absorption Unit Control System

Point to point interface----PPI protocol

Multi-point --MPI protocol

PROFIBUS ----PROFIBUS protocol

Free interface-----User defined protocol



Communication interface pins are assigned as follows

Pin (9 pin female connector)	PROFIBUS Name	System communication interface
1	RS-485 Signal A	RS-485 Signal A
2	RS-485 Signal B	RS-485 Signal B

Control System Site Construction Project

Item	Installation place & Requirement	Material source	Deepblue construction	User construction
Power supply	In control cabinet	User	In-cabinet connection	Lay 5×6mm ² cables (wires) under the control cabinet
Ground connection	Ground resistance ≤10Ω	User	Connection	Lay the grounding grid and connect the wire to the bottom of the unit control cabinet
IoT	Interface in control cabinet	Users provide Internet	In-cabinet plug-in line	Lay the network cable under the control cabinet
PC Monitor < (1200m)	In user's monitoring room, in control cabinet	Deepblue (Optional accessories)	On-site installation	Lay the seven-core cable from the monitoring room to the bottom of the unit control cabinet
Domestic hot water temperature probe base (three-purpose unit)	In user's mixing tank domestic hot water outlet, in control cabinet	Deepblue	Instructed installation	Weld the probe base, the 3 control wires are laid from the bottom of it to the bottom of the unit control cabinet
Domestic hot water circulating pump start-stop control (three-purpose unit)	Domestic hot water circulating pump control panel, in control cabinet	User	Instructed installation	Lay the 4 control wires from the domestic hot water circulating pump control panel to the bottom of the unit control cabinet
Oil level sensor (fuel type unit)	Daily fuel tank/ storage tank	Deepblue (Optional)	Instructed installation	Lay the 4 control wires and the oil pump control panel under the control cabinet of the unit
Gas leak detector (Gas-fired unit)	Installed at poorly ventilated place and close to gas pipe line	User	In-cabinet connection	Install the detector, and lay the 2 control wires from the detector to the bottom of the unit control cabinet
Fire detector	According to the requirements of Fire Dept	User	In-cabinet connection	Lay the 2 control wires from the detector to the bottom of the unit control cabinet
Building interface	In control cabinet	Deepblue (Optional)	In-cabinet connection	Lay the control wires under the control cabinet of the unit
Chilled/hot water pump	Frequency conversion linkage control	Inside or near the power distribution panel in the machine room	User	In-cabinet connection
Cooling water pump				
Cooling tower fan	Frequency conversion linkage control	In control cabinet	User	In-cabinet connection
Domestic hot water circulating pump				

Note: The control wire is 0.75mm² multi-strand soft copper wire.

Project Background				
Project Name				
Chiller Application		<input type="checkbox"/> Comfort A/C <input type="checkbox"/> Industrial process cooling/heating		
Chiller Installation Environment		<input type="checkbox"/> Safe <input type="checkbox"/> Combustible <input type="checkbox"/> Corrosive air <input type="checkbox"/> Dusty		
NOTE: Safe means the environment is not harmful to human being and chiller operation.				
Chiller				
Chiller Type		<input type="checkbox"/> Hot water <input type="checkbox"/> Steam		
		<input type="checkbox"/> Direct fired <input type="checkbox"/> Multi-energy		
Unit Cooling(Capacity)		-----Kw		
Unit Heating(Capacity)		-----Kw		
QTY				
Heat Source	<input type="checkbox"/> Steam	Source	<input type="checkbox"/> Boiler <input type="checkbox"/> District heating	
		Pressure	<input type="checkbox"/> 0.4Mpa <input type="checkbox"/> 0.6Mpa <input type="checkbox"/> 0.8Mpa <input type="checkbox"/> Others	
	<input type="checkbox"/> Direct fire	Type	<input type="checkbox"/> NG <input type="checkbox"/> Coal gas <input type="checkbox"/> LGP	
		Species	Heat value	Kcal/Nm ³
	<input type="checkbox"/> Fuel	Type	<input type="checkbox"/> Heavy Oil <input type="checkbox"/> Waste Oil	
		Viscosity	-----	
	<input type="checkbox"/> Hot water	Inlet/Outlet	<input type="checkbox"/> 95-85°C <input type="checkbox"/> Other _____°C	
		Pressure	_____ to _____ Mpa	
	<input type="checkbox"/> Exhaust	Temperature	_____ to _____ °C	
		Pressure	Allowable	Pressure Mpa
Water Temp.	Chilled water	Inlet/Outlet	<input type="checkbox"/> 12-7°C <input type="checkbox"/> 23-16°C <input type="checkbox"/> Other _____ to _____ °C	
		Pressure	<input type="checkbox"/> 0.8Mpa <input type="checkbox"/> 1.0Mpa <input type="checkbox"/> Other _____	
	Domestic hot water	Inlet/Outlet	<input type="checkbox"/> 55.8-60°C <input type="checkbox"/> Other _____ to _____ °C	
		Pressure	<input type="checkbox"/> 0.8Mpa <input type="checkbox"/> 1.0Mpa <input type="checkbox"/> Other _____ Mpa	
	Cooling water	Inlet/Outlet	<input type="checkbox"/> 30-36°C <input type="checkbox"/> 32-37°C <input type="checkbox"/> Other _____ to _____ °C	
		Pressure	<input type="checkbox"/> 0.8Mpa <input type="checkbox"/> 1.0Mpa <input type="checkbox"/> Other _____ Mpa	
Water Quality	Chilled water	<input type="checkbox"/> Standard <input type="checkbox"/> Special		
	Domestic hot water	<input type="checkbox"/> Standard <input type="checkbox"/> Special		
	Cooling water	<input type="checkbox"/> Standard <input type="checkbox"/> Special		
	Hot water	Standard <input type="checkbox"/> Special		
Operation Condition	Operation Time/Day	<input type="checkbox"/> 24hours <input type="checkbox"/> 8-10hours <input type="checkbox"/> _____ hours		
	Operation Time/Year	<input type="checkbox"/> All Year <input type="checkbox"/> Summer <input type="checkbox"/> Winter <input type="checkbox"/> Other _____		
	Average Load	<input type="checkbox"/> >=90% <input type="checkbox"/> 75-90% <input type="checkbox"/> 60-75% <input type="checkbox"/> Other _____		
Lead Time	_____ days			
Other	_____			
NOTE:Please full fill as much as possible.				



GREENER WORLD, BLUER SKY