

CW Series

Open Type Screw Brine Units

FUJIAN SNOWMAN CO., LTD

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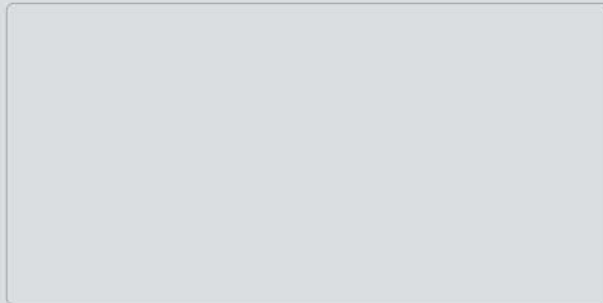
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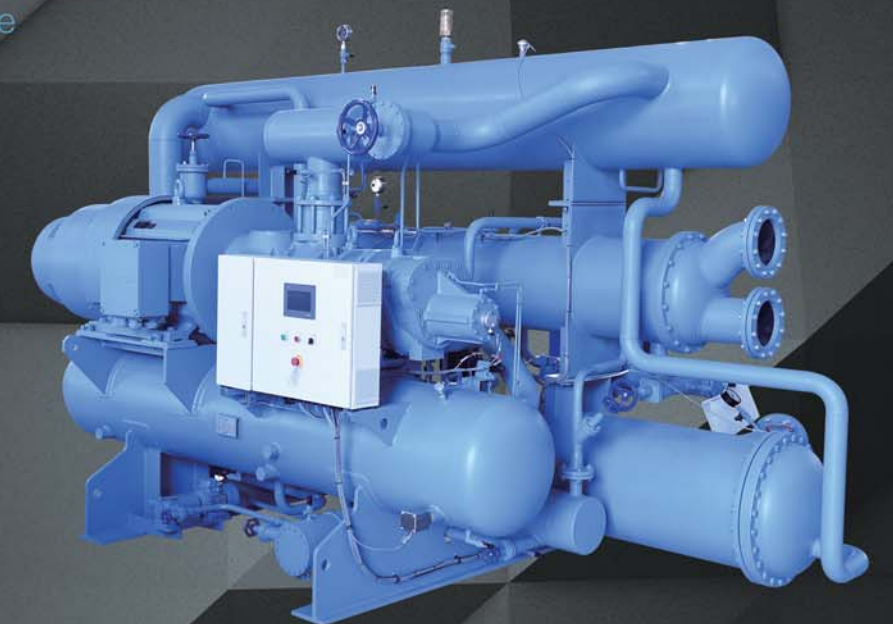
SRM Sweden

Subsidiary 100% owned by Snowman

The inventor and leader of screw compressor
100-year legacy of technical quality & energy efficiency

Secondary refrigerant system solution
for multiple working conditions

Unified compressor and compressor
unit guarantee and best choice
of industrial refrigeration



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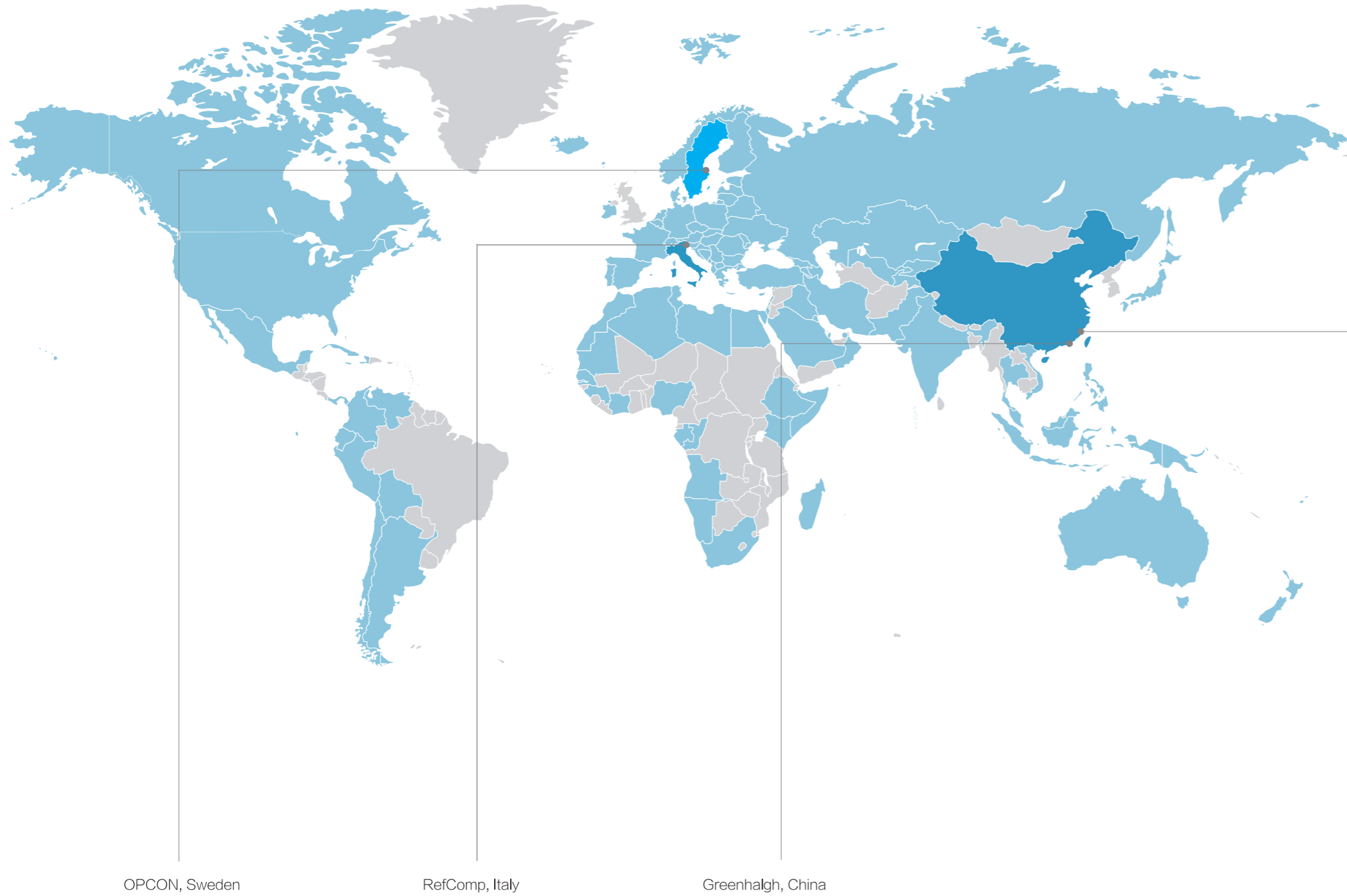
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Snowman Co., Ltd, China

Snowman Co., Ltd uses its most advanced SRMTEC open-type screw compressors and launches full series of standard open-type screw brine units through optimized design. Brine unit is a general name for the units that use secondary coolant. The common secondary coolants include: solutions of ethylene glycol, propylene glycol, calcium chloride, sodium chloride and other special secondary coolants. The selected secondary coolants cannot be allowed to freeze under the evaporating temperature of refrigeration units and should have relatively good fluidity. When you consult Snowman Co., Ltd. for units, please tell us the secondary coolants to be used. We will make an optimized design for your application to ensure that the system can run safely and stably under correct designed working conditions in the future.

Snowman's open-type screw brine units can produce refrigeration power in various conditions like high, medium or low temperature to provide economical, energy saving, high efficiency and safe solutions to clients. The units can run safely and reliably with easy control. They can be extensively used in such fields as petroleum, chemical industry, coal, textile, medicine, aquatic product, business, food, shipbuilding, national defense and scientific research and others that need artificial refrigeration.

CW series open type screw brine units

Fully automatic control, excellent energy efficiency performance, reliable and safe design, wide temperature range and highly integrated design.



Adapters attached, and stable operation



Innovative oil injection system



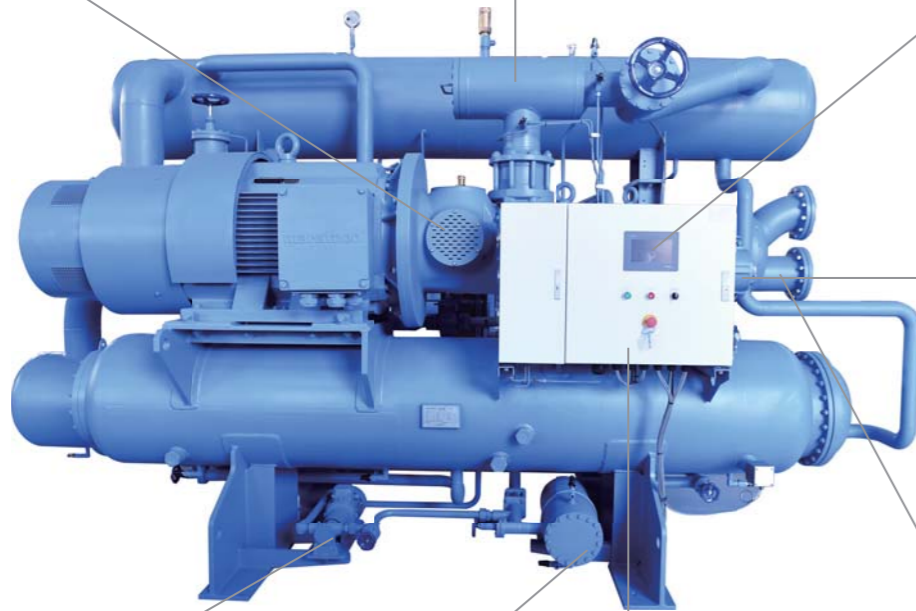
Intelligent control panel



High quality forged steel rotor "i" profile with optimal 5+7 tooth mesh



High strength ductile iron machine body



Pre-lubrication oil pump

Large capacity oil filter

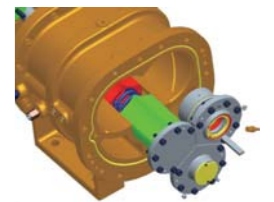
Intelligent control center

Efficient heat exchanger

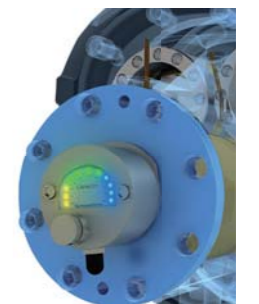
Efficient refrigeration compressor

High precision, high wear resistance roller bearing

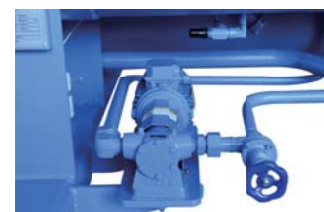
Super wear-resistant shaft seal



Variable Vi control



10%~100% step-less capacity control



Features

Advanced intelligent control center

- User-friendly interface, startup with the press of a button, easy operation and intelligent control;
- Real-time monitoring, the touch screen can indicate real-time system pressure, load capacity, running time, operation mode and running status. Historical data will be recorded and saved ;
- The center is equipped with a preventive safety device system which allows unattended operation to be safe and reliable;
- Automatic energy regulation allows the unit to operate effectively under different conditions;
- Automatic control over secondary coolants, to provide customers with required temperature range;
- Automatic management of oil temperature limits the oil temperature in a certain range, ensuring the efficient and stable operation of the unit;
- Automatic control of pressure ensuring the exhaust pressure, intake pressure, etc. are within the setting range;
- With vector frequency conversion control, the unit is capable of adjusting the rotational speed according to the conditions and properly distribute motor rotational torque, allowing energy-saving efficient operation and low cost;
- Remote operation, local operation and other operation modes are available for the system to turn on and turn off the equipment, it can also be linked to the monitoring center by reserved bus protocol in real time.

Excellent performance in energy efficiency

- The package is equipped with international leading SRMTEC open screw compressor. Use “i” patent screw rotor profile, efficient and energy-saving;
- Highly sensitive capacity control system with 10%-100% step-less capacity control and VI control allows package operating independently to allow the unit operate at high energy efficiency in different working conditions.
- Use small oil pump for pre-lubrication first, and then use differential pressure to supply oil, saving energy.
- Absorb sensible heat of high pressure liquid cooled in economizer through injecting gas into the middle of compression to give larger subcooling degree to the high pressure liquid from condenser. This method improves system COP.
- Advanced energy-saving technology allows package to have quite high energy efficiency and excellent partial load performance.

Safe and reliable design

- High standard safety design, such as high pressure resistance compressor design, high standard pressure vessel design, safety valve design and preventive safety protection design;
- SRMTEC compressors fully conform to European industrial product standard and GB/T19410 design standard, ensuring stable and reliable running for all day long, with maximum designed pressure up to 6.3 MPa.

Wide applicable temperature range

CW series open type screw brine units, featuring wide applicable temperature range:

High temperature application: $-10^{\circ}\text{C} < \text{outlet brine water temperature} \leq 3^{\circ}\text{C}$;

Medium temperature application: $-25^{\circ}\text{C} < \text{outlet brine water temperature} \leq -10^{\circ}\text{C}$;

Low temperature application: $-35^{\circ}\text{C} < \text{outlet brine water temperature} \leq -25^{\circ}\text{C}$.

Temperature is subject to special design required by customers.

Highly integrated design

The optimal structural design, high integration, small occupation, convenient transportation and installation, short engineering installation period.

Efficient oil separation system

Adopt 4-stage oil separation system. Oil separation by collision, gravity, packing, efficient molecular sieve increase oil separation efficiency to 3-5 ppm, effectively reducing lubrication oil enter refrigeration system and improving system running efficiency.

Efficient heat exchanger

- Optimized heat exchange design, which ensures efficient heat exchange and improves the efficiency of unit;
- High scaling factor design, which allows for long-period running without cleaning.

Fine and removable filter

To ensure the cleanness of system, the package is equipped with precision large capacity oil filter, suction filter to stop foreign matters which might occur during installation and keep package running efficiently and stably. Filters are easy to use and can be removed for clean.

Anti-reverse flow design

In order to prevent the reverse flow during machine shut down, the package is equipped with check valves on discharge side and suction side. The check valve on discharge side locates on the discharge port of oil separator, and it can also prevent the liquid refrigerant of evaporating condenser from flowing back to oil separator during shut down.

Stable product quality

- Swedish hundred years' technology of SRM has been proved by global applications;
- Full performance test before delivery ensures product stability.

Control center

The system adopts international famous brand PLC as control core, equipped with 64 k true color touch screen, the whole operation process can be controlled, historical data can be saved.

Easy Operation

Friendly interactive interface, multiple languages to choose from. One-button operation mode simplifies the boot process.

Dynamic tracking

Real-time monitoring of the unit, touch panel capable of displaying system pressure, energy regulation load position, run time, operation mode, and operating condition in real time.

Unit automatically records all fault messages, the fault messages include the detailed description of the abnormal situation and the corresponding solution, makes it convenient for maintenance staff to do rapid diagnosis and troubleshooting.

Safety protection

Equipped with preventive safety protection system, unattended operation is also safe..

Hierarchical password access

Provide the operator with hierarchical security access passwords; in case non-professionals input incorrect parameters. There are 3 levels of access, and each level has its own password.

Inverter control

Frequency conversion control can be used. It can properly distribute motor rotational torque, and enhance the unit efficiency.

Various communication modes

The system adopts remote/local control mode to start or stop; it can also be linked to the monitoring center by reserved bus protocol in real time.

Compressor

Rotor

- SRM " i" patented screw rotor profile, the optimal 5+7 tooth mesh combination, high efficiency, low vibration, running stably;
- Use high quality forged steel material, high wear resistance, high strength, strong liquid impact resistance, applicable to all kinds of refrigerants;
- Big shaft dimension, large torque.

Housing

- Use ductile cast iron material for high strength housing design, working pressure can be up to 2.8MPa;
- Can change the economizer port according to real conditions.

Bearing

Precision high wear resistant composition rolling bearings can apply to high density refrigerant load; the design lifetime is 100,000 hours.

Shaft seal

- Innovative shaft seal structure, even stress distribution, stable running, low wear, high sealing, prevent leakage effectively.
- SiC wear-resistant sealing surface, applicable to the rotation speed of 10,000 rpm.

VI control

- VI control can help achieve the optimal pressure ratio, high efficiency and energy-saving.
- Compressor is equipped with manual VI control function, which is independent from capacity control to ensure efficient running under different working conditions. The automatic VI control also can be selected to realize the switch between different working conditions.

Capacity control

- 10%–100% step-less capacity control and intelligent controller with accurate positioning;
- Capacity control system is highly sensitive, the load changes can be achieved in 30 s.
- When without electricity, slide valve design can realize the unloading control
- World unique explosion-proof device for capacity regulation cylinder.

Multi-points oil injection cooling

Multi-points oil injection cooling can ensure efficient and stable running of compressor.

Sealing for whole package

- Adopt high quality O-ring, super sealing, safe with no leakage;
- Highly precise alignment, the compressor can run smoothly.

Motor

- Open type synchronous motor is used. The motor design is safe and reliable, with high efficiency, low vibration and low noise;
- The unit is equipped with 380V motor, 6 KV, 10 KV motors or other special electrical motors are optional.
- For start-up methods, it can select star-delta start-up, soft start-up or variable frequency start-up;
- Motor installation type can be B35 or B3;
- Customers can select motors of different IP grades or explosion-proof motors according to actual working environment.

Adapter

Adaptors are provided to integrate the compressor and motor, achieving good center alignment and more stable operation of compressor and motor.

Heat Exchanger

Optimized heat exchange design, which greatly improves the efficiency of heat exchange and ensures the efficient running of unit. Condenser—Evaporative, water cooled, air cooled and other types of condensers can be selected based on the customers' requirements to meet the demands in different regions.

Evaporator—Dry, flooded, thermosyphon and other types of heat exchangers can be selected according to the different physical properties of secondary coolants, to ensure efficient running of the unit.

Economizer—unit is equipped with economizer under low-temperature working condition, which increases the liquid subcooling before it goes through the throttling valve before the evaporator, thus greatly increasing the Refrigeration capacity and refrigerationcoefficient of the unit.

Others

Refrigerant

Suitable for R507A, R22, R717, etc.

Accessories

All the parts in the system are produced by well-known manufacturers and of high reliability and quality assurance.

Design standard

The pressure vessel is designed as per ASME code.

Variable-frequency motor

Variable-frequency motor can be selected.

Explosion protection design

The unit can be designed with explosion protection according to customers' requirements.

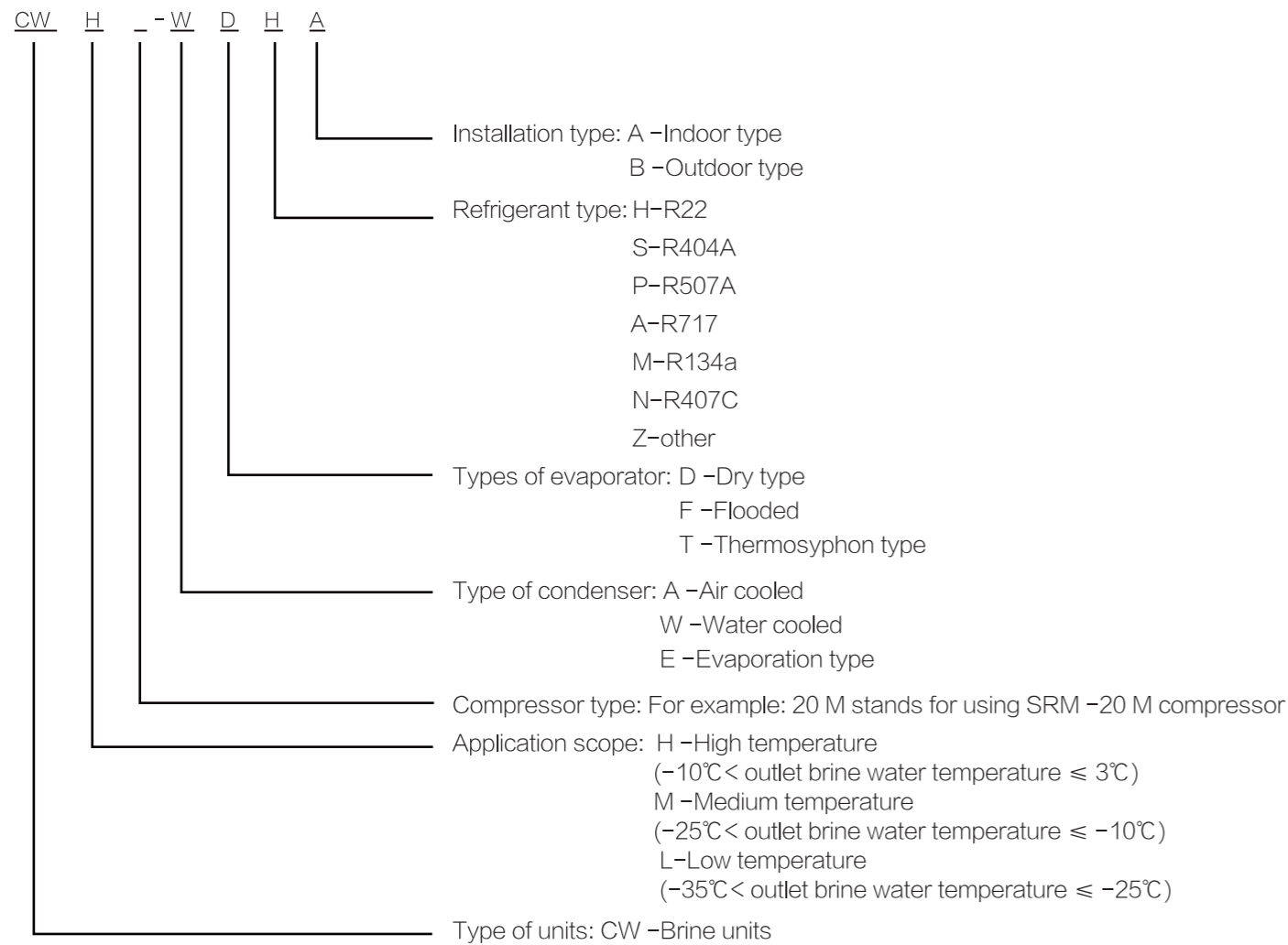
Preventive protection

- An exhaust non-return valve is configured to prevent the backflow during shut-down so as to protect the compressor;
- Function of high-low pressure protection can protect the compressor and system to run in severe working conditions;
- Function of water flow protection can prevent the units from running in the case of lack of water to ensure the system in safety;
- Function of water temperature protection can prevent heat exchangers from being damaged by freezing;
- With oil level protection function, compressors can be prevented from being damaged by lack of oil;
- Safety valves are configured to prevent the system pressure from rising too high;
- High and low pressure side can be automatically isolated during sudden power failure.

Specifications and standards

- TSGR004-2009 Fixed Pressure Vessels Safety and Technical Supervision;
- GB/T 18430.1-2007 Water Chilling (Heat Pump) Units Using the Vapor Compression Cycle—Water Chilling (Heat Pump) Units for Industrial & Commercial and Similar Usage;
- GB19577-2004 Energy Efficiency Limit and Grade of Water Chilling Units;
- GB/T10870-2014 Performance Testing Methods for Water Chilling (Heat Pump) Units Using the Vapor Cycle;
- GB25131-2010 Safety Requirements Cold Water Chiller (Heat Pump) Units Using the Vapor Cycle;
- GB5226.1-2008 Safety of Machinery -Electrical Equipment of Machines -Part 1: General Requirements;
- JB/T4330-1999 Determination of Noise Emitted by Refrigeration and Air Conditioning Equipments.

Models and parameters



High-temperature water cooled dry-typebrine units (R22)

Models	CWH12L-WDHA	CWH16S-WDHA	CWH16M-WDHA	CWH16L-WDHA	CWH20S-WDHA	CWH20M-WDHA	CWH20L-WDHA	CWH26S-WDHA	CWH26M-WDHA	CWH26L-WDHA	CWH26LL-WDHA
Refrigeration capacity in cooling condition	228.0	330.0	412.9	496.5	671.2	874.7	1022.1	1292.7	1629.7	1951.8	2299.8
Compressor	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Start method	Stepless adjustment: 10 - 100%										
Main motor	75	110	132	160	200	250	315	400	450	560	630
Oil pump motor	380V/50Hz/3P										
Evaporator	Shell-and-tube dry-type evaporator										
Condenser	Shell-and-tube water cooled condenser										
Overall dimension	380V/50Hz/3P										
Mounting dimensions	-2										
Unit weight	8/3										
	Brine										
	40										
	32/37										
	60	86	107	128	173	224	260	331	415	497	586
	108	133	159	159	219	219	219	273	273	325	325
	3200	3300	3300	3350	3600	3700	3700	4550	4600	4650	4700
	2250	2300	2350	2400	2600	2650	2750	3100	3200	3300	3400
	2300	2350	2350	2550	2700	2800	2800	3600	3650	3700	3800
	1800	1900	1900	1900	2050	2100	2100	2350	2400	2400	2400
	2000	2100	2100	2100	2250	2300	2300	2550	2600	2600	2600
	2000	2050	2100	2150	2350	2400	2500	2850	2950	3050	3150
	2200	2250	2300	2350	2550	2600	2700	3050	3150	3250	3350
	22	22	22	22	24	24	24	26	26	26	26
	5000	5500	5700	6400	7500	8700	9800	16600	18000	18900	21000
	6000	6600	6850	7700	9000	10450	11800	20000	22000	22700	25200

Notes: 1. Voltage fluctuation range: $\pm 10\%$;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user's requirements.

High-temperature water cooled dry-typebrine units(R507A)

Models	CWH12L-WDPA	CWH16S-WDPA	CWH16M-WDPA	CWH16L-WDPA	CWH20S-WDPA	CWH20M-WDPA	CWH20L-WDPA	CWH26S-WDPA	CWH26M-WDPA	CWH26L-WDPA	CWH26LL-WDPA
Rated Refrigeration capacity (cooling capacity)	254.1	364.3	456.5	548.0	723.0	941.3	1099.4	1446.0	1814.8	2170.4	2589.2
	218526	313298	392590	471280	621780	809518	945484	1243560	1560728	1866544	2226712
Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Capacity control	Stepless adjustment: 10 ~100%										
Start method	Y/ Δ										
Power	90	132	160	200	250	315	355	450	560	710	800
Power supply	380V/50Hz/3P										
Power	0.75										
Power supply	380V/50Hz/3P										
Type	Shell-and-tube dry-type evaporator										
Evaporating temperature	-2										
Inlet and outlet water temperature	8/3										
Secondary coolant	Brine										
Water flow	45	65	81	97	128	167	195	256	322	385	459
Water inlet and outlet pipes	89	108	133	133	159	159	219	219	219	273	273
Type	Shell-and-tube water cooled condenser										
Condensing temperature	40										
Inlet and outlet water temperature	32/37										
Water flow	67	96	119	143	189	245	285	375	468	560	668
Water inlet and outlet pipes	108	133	159	219	219	273	219	273	273	325	325
Length (L)	3200	3300	3300	3350	3600	3700	3700	4550	4600	4650	4700
Width (W)	2250	2300	2350	2400	2600	2650	2750	3100	3200	3300	3400
Height (H)	2300	2350	2350	2550	2700	2800	2800	3600	3650	3700	3800
A	1800	1900	1900	1900	2050	2100	2100	2350	2400	2400	2400
A1	2000	2100	2100	2100	2250	2300	2300	2550	2600	2600	2600
B	2000	2050	2100	2150	2350	2400	2500	2850	2950	3050	3150
B1	2200	2250	2300	2350	2550	2600	2700	3050	3150	3250	3350
do	22	22	22	22	24	24	24	26	26	26	26
Net weight	5000	5500	5700	6400	7500	8700	9800	16600	18000	18900	21000
Operation weight	6000	6600	6850	7700	9000	10450	11800	20000	22000	22700	25200

- Notes: 1. Voltage fluctuation range: $\pm 10\%$;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

High-temperature water cooled floodedbrine units (R22)

Models	CWH12L-WFHA	CWH16S-WFHA	CWH16M-WFHA	CWH16L-WFHA	CWH20S-WFHA	CWH20M-WFHA	CWH20L-WFHA	CWH26S-WFHA	CWH26M-WFHA	CWH26L-WFHA	CWH26LL-WFHA
Rated Refrigeration capacity (cooling capacity)	244.4	353.7	442.4	531.9	694.3	904.7	1057	1384.1	1744.9	2089.6	2461.8
	210184	304182	380464	457434	597098	778042	909020	1190326	1500614	1797056	2117148
Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Capacity control	Stepless adjustment: 10 ~100%										
Start method	Y/ Δ										
Power	75	110	132	160	200	250	280	315	450	560	630
Power supply	380V/50Hz/3P										
Power	0.75										
Power supply	380V/50Hz/3P										
Type	Shell-and-tube flooded evaporator										
Evaporating temperature	0										
Inlet and outlet water temperature	8/3										
Secondary coolant	Brine										
Water flow	43	62	78	94	123	160	187	245	309	370	436
Water inlet and outlet pipes	108	108	133	133	159	219	219	219	273	273	273
Type	Shell-and-tube water cooled condenser										
Condensing temperature	40										
Inlet and outlet water temperature	32/37										
Water flow	63	91	115	135	180	230	270	350	440	525	619
Water inlet and outlet pipes	108	133	159	159	219	219	219	279	325	325	325
Length (L)	3300	3400	3500	3500	3600	3700	3700	4550	4600	4650	4700
Width (W)	2100	2300	2300	2400	2500	2600	2700	3450	3550	3750	3950
Height (H)	2250	2350	2450	2460	2500	2800	2800	3500	3550	3600	3700
A	1900	1950	2000	2000	2050	2100	2100	2350	2400	2400	2400
A1	2100	2150	2200	2200	2250	2300	2300	2550	2600	2600	2600
B	1850	2050	2050	2150	2250	2350	2450	3200	3300	3500	3700
B1	2050	2250	2250	2350	2450	2550	2650	3400	3500	3700	3900
do	22	22	22	22	24	24	24	26	26	26	26
Net weight	5000	5500	5900	6600	6700	9100	10300	17000	18000	19400	22000
Operation weight	6000	6800	7300	8050	9350	11000	12700	20400	21600	23300	26400

- Notes: 1. Voltage fluctuation range: $\pm 10\%$;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

High-temperature water cooled flooded brine units (R507A)

Models	CWH12L-WFPA	CWH16S-WFPA	CWH16M-WFPA	CWH16L-WFPA	CWH20S-WFPA	CWH20M-WFPA	CWH20L-WFPA	CWH26S-WFPA	CWH26M-WFPA	CWH26L-WFPA	CWH26LL-WFPA
Normal Refrigerant capacity (working condition)	272.9	391.3	490.2	588.4	776.1	1010.4	1180.3	1551.8	1947.6	2328.9	2778.3
	234694	336518	421572	506024	667446	868944	1015058	1334548	1674936	2002854	2389338
Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Theoretical displacement, m³/h	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Compressor Capacity control	Stepless adjustment: 10 ~100%										
Start method	Y/ Δ										
Power, kW	90	132	160	185	250	315	315	500	550	710	800
Power supply	380V/50Hz/3P										
Power, kW	0.75										
Power supply	380V/50Hz/3P										
Type	Shell-and-tube flooded evaporator										
Evaporator	0										
Evaporating temperature, °C	8/3										
Inlet and outlet water temperature, °C	Brine										
Secondary coolant	Brine										
Water flow, m³/h	48	69	87	104	138	179	209	275	345	413	493
Water inlet and outlet pipes, mm	89	108	133	133	159	219	219	219	273	273	273
Type	Shell-and-tube water cooled condenser										
Condensing temperature, °C	40										
Inlet and outlet water temperature, °C	32/37										
Water flow, m³/h	71	102	126	151	201	259	302	397	496	593	707
Water inlet and outlet pipes, mm	105	133	159	159	219	219	273	325	325	325	325
Length (L), mm	3300	3400	3500	3500	3600	3700	3700	4550	4600	4650	4700
Width (W), mm	2100	2300	2300	2400	2500	2600	2700	3450	3550	3750	3950
Height (H), mm	2250	2350	2450	2460	2500	2800	2800	3500	3550	3600	3700
A, mm	1900	1950	2000	2000	2050	2100	2100	2350	2400	2400	2400
A1, mm	2100	2150	2200	2200	2250	2300	2300	2550	2600	2600	2600
B, mm	1850	2050	2050	2150	2250	2350	2450	3200	3300	3500	3700
B1, mm	2050	2250	2250	2350	2450	2550	2650	3400	3500	3700	3900
do, mm	22	22	22	22	24	24	24	26	26	26	26
Net weight, kg	5000	5500	5900	6600	6700	9100	10300	17000	18000	19400	22000
Operation weight, kg	6000	6800	7300	8050	9350	11000	12700	20400	21600	23300	26400

Notes: 1. Voltage fluctuation range: $\pm 10\%$;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Medium-temperature water cooled dry-type brine units (R22)

Models	CWM12L-WDHA	CWM16S-WDHA	CWM16M-WDHA	CWM16L-WDHA	CWM20S-WDHA	CWM20M-WDHA	CWM20L-WDHA	CWM26S-WDHA	CWM26M-WDHA	CWM26L-WDHA	CWM26LL-WDHA
Normal Refrigerant capacity (working condition)	137.5	193.3	249.7	300.7	393.2	512.8	599.6	786.4	991.9	1188.9	1393.8
	118216	171372	214742	258602	338152	441008	515656	676304	853034	1022454	1198668
Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Theoretical displacement, m³/h	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Compressor Capacity control	Stepless adjustment: 10 ~100%										
Start method	Y/ Δ										
Power, kW	75	110	132	160	200	280	280	355	450	500	630
Power supply	380V/50Hz/3P										
Power, kW	0.75										
Power supply	380V/50Hz/3P										
Type	Shell-and-tube dry-type evaporator										
Evaporator	-15										
Evaporating temperature, °C	-5/-10										
Inlet and outlet water temperature, °C	Brine										
Secondary coolant	Brine										
Water flow, m³/h	26	38	47	55	75	95	114	149	190	225	265
Water inlet and outlet pipes, mm	89	89	108	108	133	133	159	159	219	219	219
Type	Shell-and-tube water cooled condenser										
Condensing temperature, °C	40										
Inlet and outlet water temperature, °C	32/37										
Water flow, m³/h	40	75	90	110	145	185	215	285	350	420	495
Water inlet and outlet pipes, mm	89	133	133	159	159	219	219	219	273	273	325
Length (L), mm	3200	3300	3300	3350	3600	3700	3700	4550	4600	4650	4700
Width (W), mm	2400	2450	2500	2550	2850	2900	2950	3650	3950	4150	4300
Height (H), mm	2250	2350	2350	2550	2700	2800	2800	3600	3650	3700	3780
A, mm	1850	1900	1900	1900	2050	2100	2100	2350	2400	2400	2400
A1, mm	2050	2100	2100	2100	2250	2300	2300	2550	2600	2600	2600
B, mm	2150	2200	2250	2300	2600	2650	2700	3400	3700	3900	4100
B1, mm	2350	2400	2450	2500	2800	2850	2900	3600	3900	4100	4300
do, mm	22	22	22	22	24	24	24	26	26	26	26
Net weight, kg	4500	4800	5400	5800	6800	7900	8800	15200	16200	17400	20000
Operation weight, kg	5400	5800	6500	7000	8200	9500	10600	18200	19500	20800	24000

Notes: 1. Voltage fluctuation range: $\pm 10\%$;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Medium-temperature water cooled dry-type brine units (R507A)

Nominal Refrigerant capacity (working condition)	Models											
	CWM12L-WDPA	CWM16S-WDPA	CWM16M-WDPA	CWM16L-WDPA	CWM20S-WDPA	CWM20M-WDPA	CWM20L-WDPA	CWM26S-WDPA	CWM26M-WDPA	CWM26L-WDPA	CWM26LL-WDPA	
Compressor	kW	151.1	216.6	271.9	326.6	431.9	562.5	656.5	865.3	1087.0	1300.4	1551.4
	kcal/h	129946	186276	233834	280876	371434	483750	564590	744158	934820	1118344	1334204
Compressor	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
	Theoretical displacement, m ³ /h	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Main motor	Capacity control	Stepless adjustment: 10 ~ 100%										
	Start method	Y/Δ										
Oil pump motor	Power, kW	90	132	160	200	250	315	355	450	560	630	710
	Power supply	380V/50Hz/3P										
Evaporator	Power, kW	0.75										
	Power supply	1.5										
Condenser	Type	Shell-and-tube dry-type evaporator										
	Evaporating temperature (inlet and outlet water temperature), °C	-15 -5/-10										
Overall dimension	Secondary coolant	Brine										
	Water flow, m ³ /h	29	41	52	62	82	107	125	165	207	248	296
Mounting dimensions	Water inlet and outlet pipes, mm	89	89	108	108	133	133	159	159	219	219	219
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature (inlet and outlet water temperature), °C	40										
	Water flow, m ³ /h	45	65	80	96	128	165	191	252	314	375	447
Overall dimension	Water inlet and outlet pipes, mm	108	108	133	133	159	159	219	219	273	273	273
	Length (L), mm	3200	3300	3300	3350	3600	3700	3700	4550	4600	4650	4700
Mounting dimensions	Width (W), mm	2400	2450	2500	2550	2850	2900	2950	3650	3950	4150	4300
	Height (H), mm	2250	2350	2350	2550	2700	2800	2800	3600	3650	3700	3780
Unit weight	A, mm	1850	1900	1900	2050	2100	2100	2100	2350	2400	2400	2400
	A1, mm	2050	2100	2100	2250	2300	2300	2300	2550	2600	2600	2600
Unit weight	B, mm	2150	2200	2250	2300	2600	2650	2700	3400	3700	3900	4100
	B1, mm	2350	2400	2450	2500	2800	2850	2900	3600	3900	4100	4300
Unit weight	do, mm	22	22	22	22	24	24	24	26	26	26	26
	Net weight, kg	4500	4800	5400	5800	6800	7900	8800	15200	16200	17400	20000
Unit weight	Operation weight, kg	5400	5800	6500	7000	8200	9500	10600	18200	19500	20800	24000

- Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Medium-temperature water cooled flooded brine units (R22)

Nominal Refrigerant capacity (working condition)	Models											
	CWM12L-WFHA	CWM16S-WFHA	CWM16M-WFHA	CWM16L-WFHA	CWM20S-WFHA	CWM20M-WFHA	CWM20L-WFHA	CWM26S-WFHA	CWM26M-WFHA	CWM26L-WFHA	CWM26LL-WFHA	
Compressor	kW	149.6	216.8	271.6	327.0	427.4	557.3	651.7	854.3	1077.6	1291.3	1424.7
	kcal/h	128656	186448	233576	281220	367564	479278	560462	734598	926736	1110518	1225242
Compressor	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
	Theoretical displacement, m ³ /h	310	435	544	652	850	1100	1270	1659	2075	2478	2940
Main motor	Capacity control	Stepless adjustment: 10 ~ 100%										
	Start method	Y/Δ										
Oil pump motor	Power, kW	75	110	160	200	250	280	280	355	450	560	800
	Power supply	380V/50Hz/3P										
Evaporator	Power, kW	0.75										
	Power supply	1.5										
Condenser	Type	Shell-and-tube flooded evaporator										
	Evaporating temperature (inlet and outlet water temperature), °C	-13 -5/-10										
Overall dimension	Secondary coolant	Brine										
	Water flow, m ³ /h	24	42	50	65	80	105	124	162	205	245	270
Mounting dimensions	Water inlet and outlet pipes, mm	89	108	108	133	133	159	159	219	219	219	219
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature (inlet and outlet water temperature), °C	40										
	Water flow, m ³ /h	50	88	111	135	167	220	220	300	360	430	430
Overall dimension	Water inlet and outlet pipes, mm	108	133	159	159	219	219	273	273	273	273	273
	Length (L), mm	3300	3400	3500	3500	3600	3700	3700	4550	4600	4650	4700
Mounting dimensions	Width (W), mm	2450	2500	2550	2600	2900	3100	3100	3650	3800	4050	4400
	Height (H), mm	2300	2350	2450	2500	2500	2800	2800	3550	3600	3600	3750
Unit weight	A, mm	1900	1950	2000	2000	2050	2100	2100	2400	2400	2400	2400
	A1, mm	2100	2150	2200	2200	2250	2300	2300	2550	2600	2600	2600
Unit weight	B, mm	2100	2150	2200	2350	2650	2850	2850	3250	3550	3800	4150
	B1, mm	2400	2400	2400	2550	2850	3050	3050	3450	3750	4000	4350
Unit weight	do, mm	22	22	22	22	24	24	24	26	26	26	26
	Net weight, kg	4800	5250	6000	6600	7100	8200	9150	15500	16500	17800	20000
Unit weight	Operation weight, kg	5800	6400	7200	7950	8500	9850	11000	19800	21000	24000	24000

- Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Medium-temperature water cooled flooded brine units (R507A)

Nominal refrigerant capacity (working conditions)	Models	CWM12L-WFFA	CWM16S-WFFA	CWM16M-WFFA	CWM16L-WFFA	CWM20S-WFFA	CWM20M-WFFA	CWM20L-WFFA	CWM26S-WFFA	CWM26M-WFFA	CWM26L-WFFA	CWM26LL-WFFA
	kW	164.5	236.4	296.6	356.2	470.9	613.2	715.7	943.1	1184.5	1417.0	1690.5
Compressor	kcal/h	141814	203304	255076	306332	404974	527352	615502	811066	1018670	1218620	1453830
	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Main motor	Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075	2478	2940
	Capacity control	Stepless adjustment: 10 ~100%										
Oil pump motor	Start method	Y/Δ										
	Power	90	132	160	200	250	315	355	450	560	630	630
Evaporator	Power supply	380V/50Hz/3P										
	Type	Shell-and-tube flooded evaporator										
Condenser	Evaporating temperature	-13										
	Condensing temperature	-5/-10										
Overall dimension	Secondary coolant	Brine										
	Water flow	31	45	57	68	90	117	136	180	226	270	270
Mounting dimensions	Water inlet and outlet pipes	89	89	108	108	133	133	159	159	219	219	273
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature	40										
	Net weight	4800	5250	6000	6600	7100	8200	9150	11000	15500	18600	17800
Capacity control	Operation weight	5800	6400	7200	7950	8500	9850	11000	18600	19800	21000	24000

Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Low-temperature water cooled dry-type brine units (R22)

Nominal refrigerant capacity (working conditions)	Models	CWL12L-WDHA	CWL16S-WDHA	CWL16M-WDHA	CWL16L-WDHA	CWL20S-WDHA	CWL20M-WDHA	CWL20L-WDHA	CWL26S-WDHA	CWL26M-WDHA	CWL26L-WDHA	CWL26LL-WDHA
	kW	89.3	132.2	164.2	196.9	213.1	338.5	394.6	528.4	659.0	785.6	210.3
Compressor	kcal/h	76798	113692	141212	169334	183266	291110	339356	454424	566740	675616	180858
	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26M	SRM-26L	SRM-26LL
Main motor	Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075	2478	2940
	Capacity control	Stepless adjustment: 10 ~100%										
Oil pump motor	Start method	Y/Δ										
	Power	75	110	132	160	200	250	280	355	450	500	630
Evaporator	Power supply	380V/50Hz/3P										
	Type	Shell-and-tube dry-type evaporator										
Condenser	Evaporating temperature	-30										
	Condensing temperature	-20/-25										
Overall dimension	Secondary coolant	Brine										
	Water flow	18	27	33	40	43	69	80	108	135	160	185
Mounting dimensions	Water inlet and outlet pipes	76	89	89	89	108	133	133	159	159	219	219
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature	40										
	Net weight	30	40	50	60	70	100	115	150	185	220	255
Capacity control	Operation weight	89	89	108	108	133	159	159	219	219	270	280
	Type	Shell-and-tube dry-type evaporator										
Overall dimension	Secondary coolant	Brine										
	Water flow	3000	3100	3200	3200	3500	3500	3500	4800	4900	5000	5100
Mounting dimensions	Water inlet and outlet pipes	2300	2350	2450	2450	2700	2850	3000	3600	3750	3850	3900
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature	40										
	Net weight	2300	2350	2350	2350	2600	2750	2700	3000	3100	3200	3400
Capacity control	Operation weight	1600	1700	1800	1800	2000	2000	2000	2450	2500	2550	2600
	Type	Shell-and-tube dry-type evaporator										
Overall dimension	Secondary coolant	Brine										
	Water flow	2050	2150	2250	2250	2500	2650	2750	3350	3500	3600	3650
Mounting dimensions	Water inlet and outlet pipes	2250	2350	2450	2450	2700	2850	2950	3500	3700	3800	3850
	Type	Shell-and-tube water cooled condenser										
Unit weight	Condensing temperature	40										
	Net weight	4400	4600	5000	5500	6500	7500	8500	14000	15000	16000	17500
Capacity control	Operation weight	5300	5500	6000	6600	7800	9000	10200	17000	18000	19200	21000

Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Low-temperature water cooled dry-type brine units (R507A)

Nominal Refrigeration capacity (working conditions)	Models	CWL12L-WDPA	CWL16S-WDPA	CWL16M-WDPA	CWL16L-WDPA	CWL20M-WDPA	CWL20L-WDPA	CWL26M-WDPA	CWL26L-WDPA	CWL26LL-WDPA
	kW	114.0	165.2	206.6	248.7	330.6	433.9	505.8	667.9	840.0
Compressor	kcal/h	98040	142072	177676	213882	284316	373154	434988	574394	722400
	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26L
Main motor	Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075
	Capacity control	Stepless adjustment: 10 ~ 100%								
Oil pump motor	Start method	Y/Δ								
	Power	90	132	160	200	250	315	355	450	560
Evaporator	Power supply	380V/50Hz/3P								
	Power	0.75								
Condenser	Type	Shell-and-tube dry-type evaporator								
	Evaporating temperature	-30								
Overall dimension	Water flow	24	34	43	51	68	89	104	138	173
	Water inlet and outlet pipes	76	89	89	108	108	133	133	159	159
Mounting dimensions	Secondary coolant	Brine								
	Water flow	32	46	57	69	93	117	136	182	226
Unit weight	Water inlet and outlet pipes	89	108	108	133	133	159	219	219	219
	Length (L)	3000	3100	3200	3200	3500	3500	3500	4800	4900
Compressor	Width (W)	2300	2350	2450	2450	2700	2850	3000	3600	3750
	Height (H)	2300	2350	2350	2350	2600	2750	2700	3000	3100
Main motor	A	1600	1700	1800	1800	2000	2000	2000	2450	2500
	A1	1800	1900	2000	2000	2200	2200	2200	2650	2700
Oil pump motor	B	2050	2150	2250	2250	2500	2650	2750	3500	3600
	B1	2250	2350	2450	2450	2700	2850	2950	3550	3700
Evaporator	do	22	22	22	22	24	24	24	26	26
	Net weight	4400	4600	5000	5500	6500	7500	8500	14000	15000
Condenser	Operation weight	5300	5500	6000	6600	7800	9000	10200	17000	18000
	Capacity control	Stepless adjustment: 10 ~ 100%								
Mounting dimensions	Start method	Y/Δ								
	Power	75	110	132	160	200	250	280	355	450
Unit weight	Power supply	380V/50Hz/3P								
	Power	0.75								

Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Low-temperature water cooled thermosyphon-type brine units (R22)

Nominal Refrigeration capacity (working conditions)	Models	CWL12L-WTHA	CWL16S-WTHA	CWL16M-WTHA	CWL16L-WTHA	CWL20M-WTHA	CWL20L-WTHA	CWL26M-WTHA	CWL26L-WTHA	CWL26LL-WTHA
	kW	89.3	132.2	164.2	196.9	213.1	338.5	394.6	528.4	785.6
Compressor	kcal/h	76798	113692	141212	169334	183266	291110	339356	454424	566740
	Model	SRM-12L	SRM-16S	SRM-16M	SRM-16L	SRM-20S	SRM-20M	SRM-20L	SRM-26S	SRM-26L
Main motor	Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075
	Capacity control	Stepless adjustment: 10 ~ 100%								
Oil pump motor	Start method	Y/Δ								
	Power	75	110	132	160	200	250	280	355	450
Evaporator	Power supply	380V/50Hz/3P								
	Power	0.75								
Condenser	Type	Thermosyphon-type evaporator								
	Evaporating temperature	-30								
Overall dimension	Water flow	18	27	33	40	43	69	80	108	135
	Water inlet and outlet pipes	76	89	89	89	108	133	133	159	159
Mounting dimensions	Secondary coolant	海水								
	Water flow	30	40	50	60	70	100	115	150	185
Unit weight	Water inlet and outlet pipes	89	89	108	108	133	159	159	219	219
	Length (L)	3000	3100	3200	3200	3500	3500	3500	4800	5000
Compressor	Width (W)	2400	2450	2550	2550	2750	2900	3100	3650	3750
	Height (H)	2300	2350	2350	2350	2600	2650	2700	3000	3100
Main motor	A	1600	1700	1800	1800	2000	2000	2000	2450	2550
	A1	1800	1900	2000	2000	2200	2200	2200	2650	2750
Oil pump motor	B	2050	2100	2300	2300	2500	2650	2850	3400	3600
	B1	2350	2300	2500	2500	2700	2850	3050	3600	3700
Evaporator	do	22	22	22	22	24	24	24	26	26
	Net weight	4400	4600	5000	5500	6500	7500	8500	14000	15000
Condenser	Operation weight	5300	5500	6000	6600	7800	9000	10200	17000	18000
	Capacity control	Stepless adjustment: 10 ~ 100%								
Mounting dimensions	Start method	Y/Δ								
	Power	75	110	132	160	200	250	280	355	450
Unit weight	Power supply	380V/50Hz/3P								
	Power	0.75								

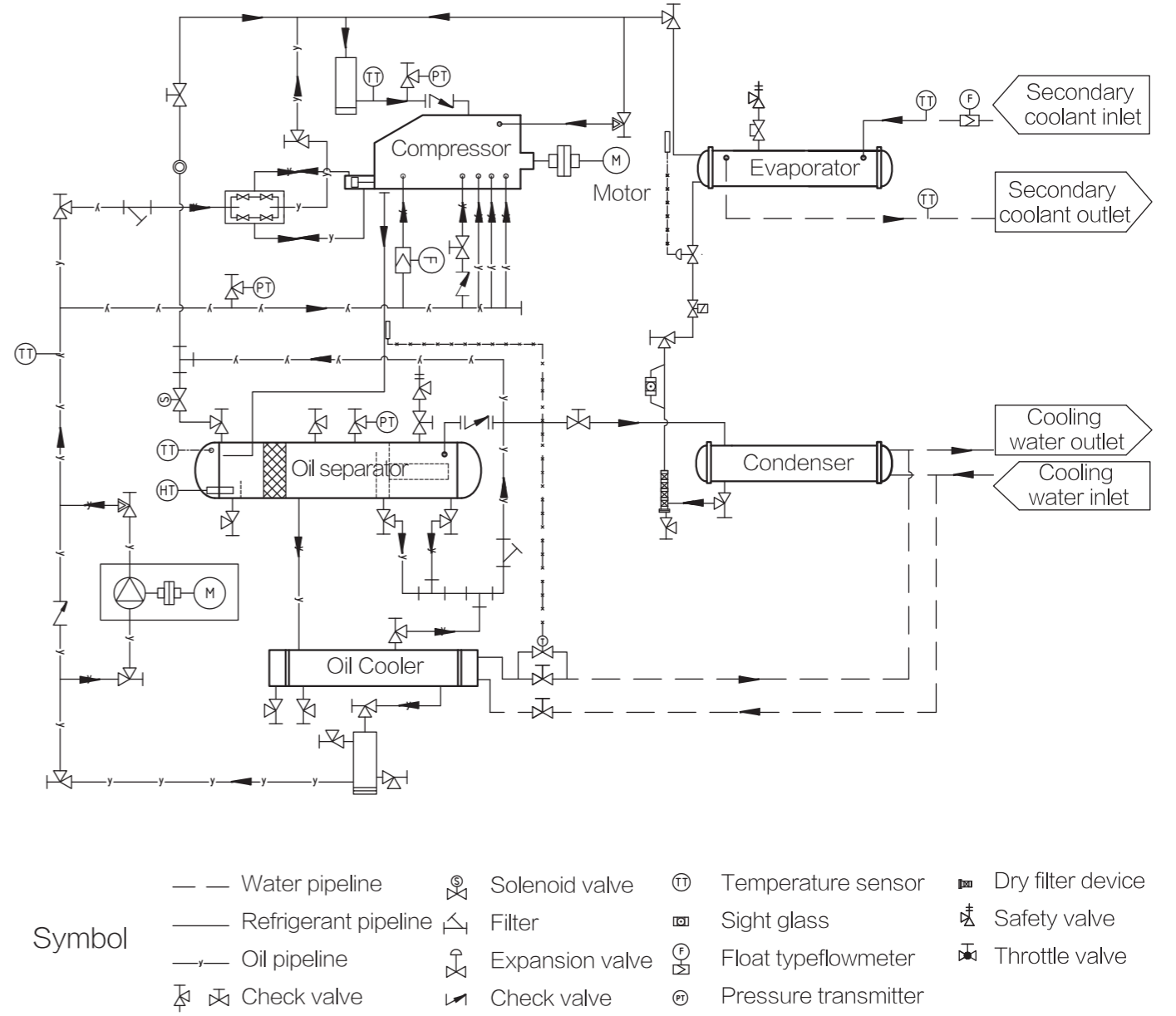
Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user' s requirements.

Low-temperature water cooled thermosyphon-type brine units (R507A)

Models	CWL12L-WTPA	CWL16S-WTPA	CWL16M-WTPA	CWL16L-WTPA	CWL20S-WTPA	CWL20M-WTPA	CWL20L-WTPA	CWL26S-WTPA	CWL26M-WTPA	CWL26L-WTPA	CWL26LL-WTPA	
Normal refrigerant capacity (working conditions)	114.0	165.2	206.6	248.7	330.6	433.9	505.8	667.9	840.0	1010.0	1253.7	
Compressor	98040 SRM-12L	142072 SRM-16S	177676 SRM-16M	213882 SRM-16L	284316 SRM-20S	373154 SRM-20M	434988 SRM-20L	574394 SRM-26S	722400 SRM-26M	868600 SRM-26L	1078182 SRM-26LL	
Theoretical displacement	310	435	544	652	850	1100	1270	1659	2075	2478	2940	
Capacity control	Stepless adjustment: 10 ~100%											
Main motor	90	132	160	200	250	315	355	450	560	630	800	
Oil pump motor	380V/50Hz/3P 0.75											
Evaporator	Thermosyphon-type evaporator -30 Brine -20/-25 Shell-and-tube water cooled condenser 40											
Condenser	32/37											
Overall dimension	Water flow	24	34	43	51	69	93	108	133	159	219	271
Mounting dimensions	Water inlet and outlet pipes	76	89	89	108	108	108	108	108	133	133	159
	Water inlet and outlet pipes	32	46	57	69	89	93	108	133	159	219	271
Unit weight	Length (L)	3000	3100	3200	3200	3200	3500	3500	3500	3500	4800	4900
	Width (W)	2350	2400	2500	2500	2500	2750	2750	2750	2750	3000	3000
Unit weight	Height (H)	2300	2350	2350	2350	2350	2600	2600	2600	2750	3150	3150
	Weight	1600	1700	1800	1800	2000	2000	2000	2000	2200	2450	2550
Unit weight	Weight	1800	1900	2000	2000	2200	2200	2200	2200	2650	2700	2750
	Weight	2050	2150	2250	2250	2500	2500	2500	2500	3350	3500	3600
Unit weight	Weight	2250	2350	2450	2450	2700	2700	2700	2700	3700	3700	3850
	Weight	22	22	22	22	24	24	24	24	26	26	26
Unit weight	Weight	4400	4600	5000	5500	6000	6500	6500	6500	7500	8500	10200
	Weight	5300	5500	6000	6600	7800	8000	8500	8500	10000	11000	12000

Notes: 1. Voltage fluctuation range: ± 10%;
 2. The inlet and outlet of units are connected by flanges. Details should be given in the order if other connections are required;
 3. Due to technology improvement, the parameters, overall dimension and weight of the units may differs, and the actual design shall prevail;
 4. If technical parameters of R717 unit are required, please contact with our company;
 5. The units mentioned above are the standard ones which can be customized based on user's requirements.

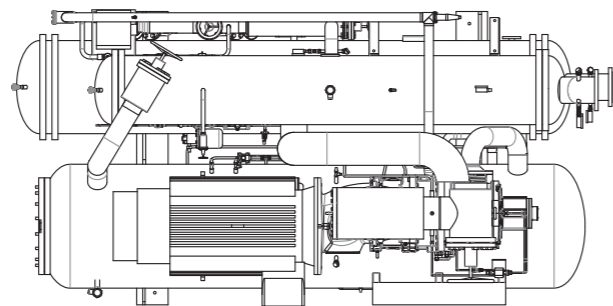
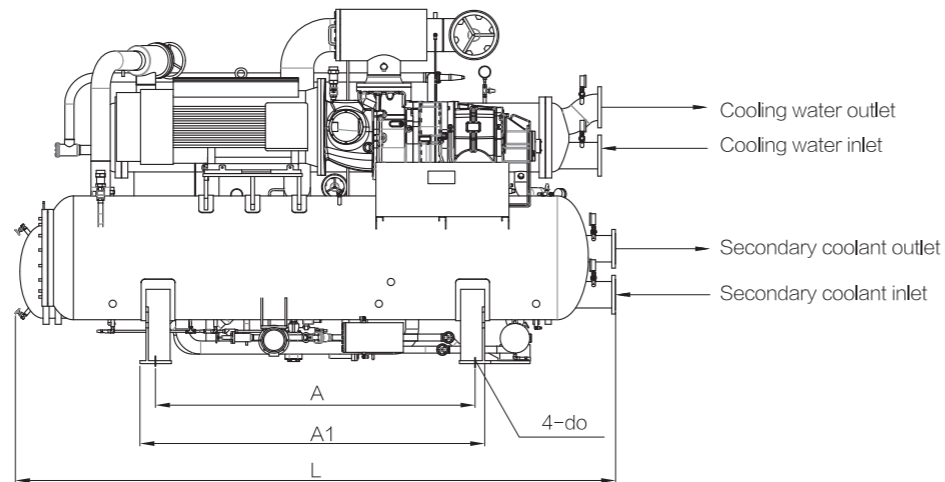
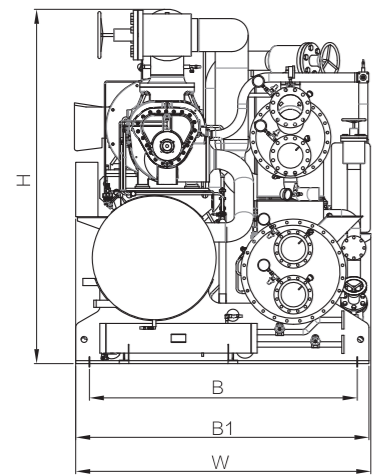
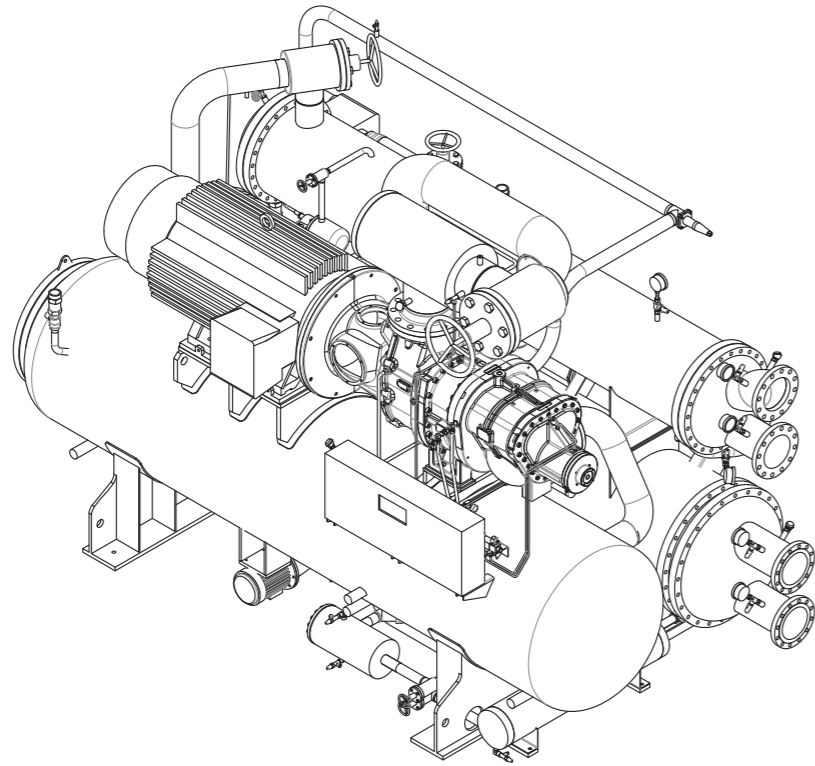
Typical brine units system diagram



Symbol

- — Water pipeline
- Refrigerant pipeline
- Oil pipeline
- ⊗ Check valve
- ⊗ Solenoid valve
- ⊗ Filter
- ⊗ Expansion valve
- ⊗ Check valve
- ⊗ Temperature sensor
- ⊗ Sight glass
- ⊗ Float type flowmeter
- ⊗ Pressure transmitter
- ⊗ Dry filter device
- ⊗ Safety valve
- ⊗ Throttle valve

Typical brine units outline drawing



Application area of units



Air conditioning in workshop
5°C - 12°C



Pharmaceutical - 25°C



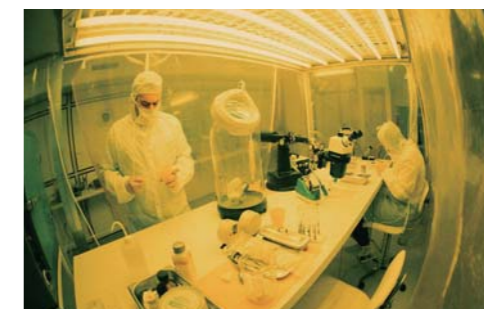
Textile - 7°C



Chemical industry - 40°C



Snowmaking - 15°C



Scientific research - 40°C