Water-cooled Central Water Chiller

SICC-450WD-R3

Refer carefully to this manual before operation.

SICC-W Series

Coding Principle

SICC - xxxWx - R3

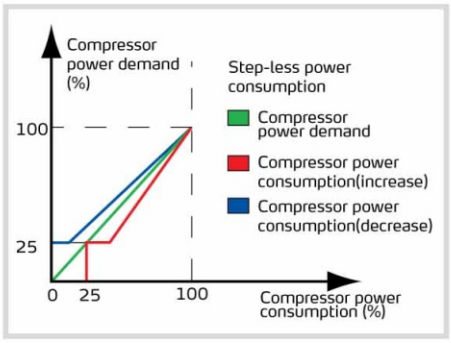
R3=R134a

First Three Codes: Refrigerating Capacity (kW)
Fourth Code: W=Water Cooled
Fifth Code: S=Single Compressor D=Double Compressors

Shini Central Water Chiller

Features

- Brand semi-close double-screw compressor and long service-life of bearing ensure long time operation, and it is equipped with high-efficient motor that gives compressor high efficiency.
- Step-less load compressor can achieve refrigerating output continuously kept within 25%-100% to reach stable energy output control.
- The condenser and evaporator both can meet the requirement of national standard, with high-efficient heat transfer effect, convenient service and maintenance.
- Standard equipped RS485 communication function that can achieve machine unit's real-time control and monitor.
- Equipped with programmable logical controller to control via panel for convenient adjustment;
- The fault check function and fault recording function can analyze the causes for improvement.
- Standard equipped with high and low pressure switch, fusible plug, overload protector, coil overheat protector, exhaust air overheat protection, cooling water overheat and large temperature deviation protection.



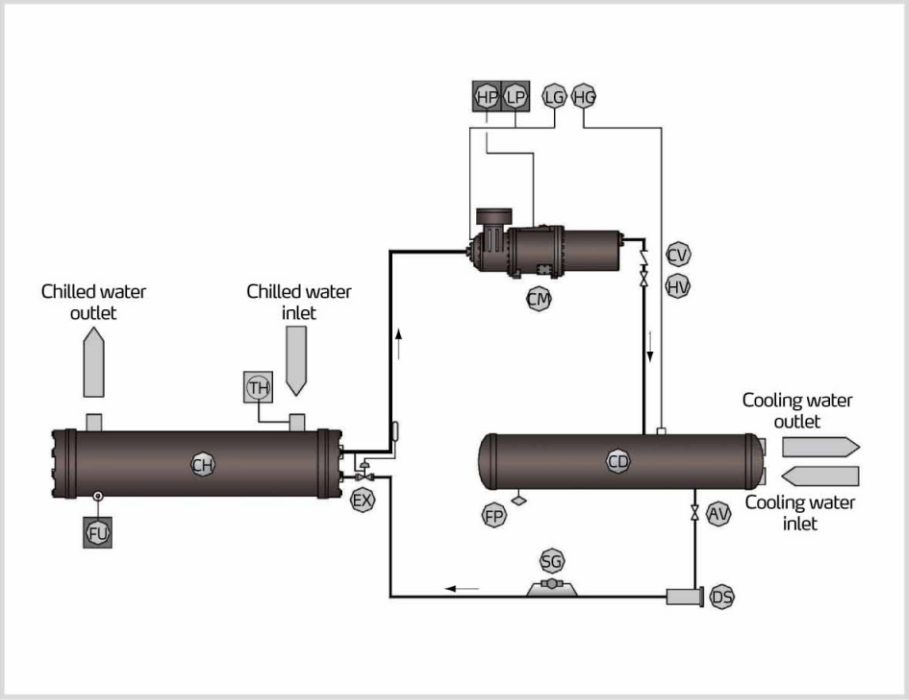
Step-less loading capacity

Application

It is used for mould's cooling to reduce product's molding cycle, and it's applicable to cooling devices to ensure the temperature maintained under normal value, or other industrial areas need cooling.

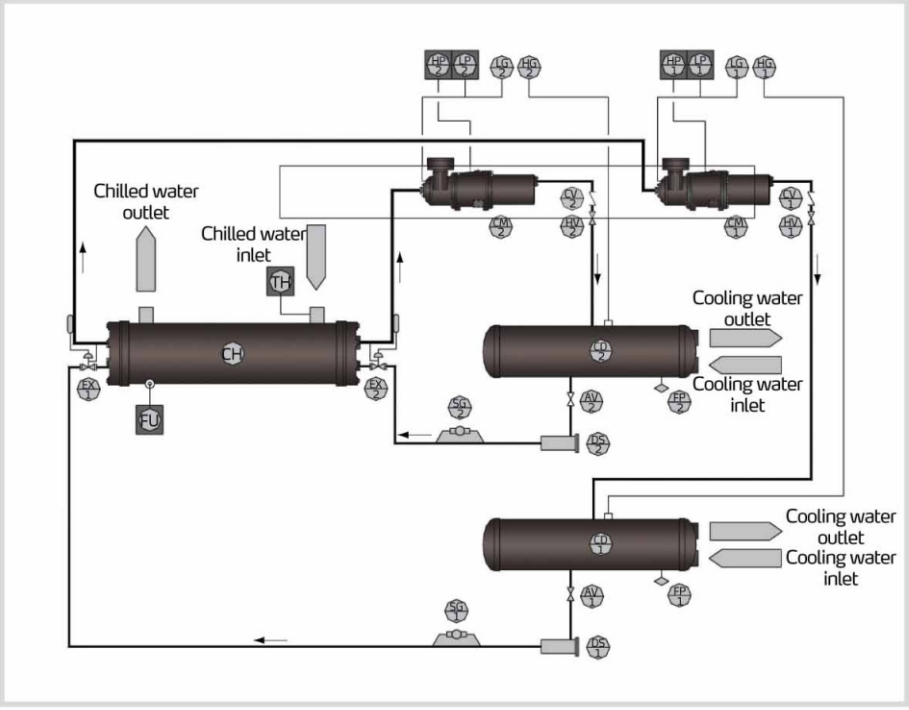
Working Principle

The SICC-W water-cooled central water chiller is mainly made up of four components which are compressor, condenser, thermostatic expansion valve and evaporator. It uses single stage vapor compression refrigeration system, and takes advantage of the mechanism of transformation between air and liquid status for absorbing and releasing heat by using of refrigerant to achieve the effectiveness of refrigeration.



One Compressor

Sign	Name	Amount Remark
CM	Compressor	1
CD	Condenser	1
CH	Evaporator	1
EX	Expansion valve	1
FP	Fusible plug	1
AV	Angle valve	1
DS	Drier filter	1
SG	Refrigerant indicator	1
CV	Contrary stop value	1
HV	High pressure valve	1
HG	High pressure gauge	1
LG	low pressure gauge	1
HP	High pressure switch	1
LP	Low pressure switch	1
TH	Thermo switch	1
FU	Anti-freezing switch	1



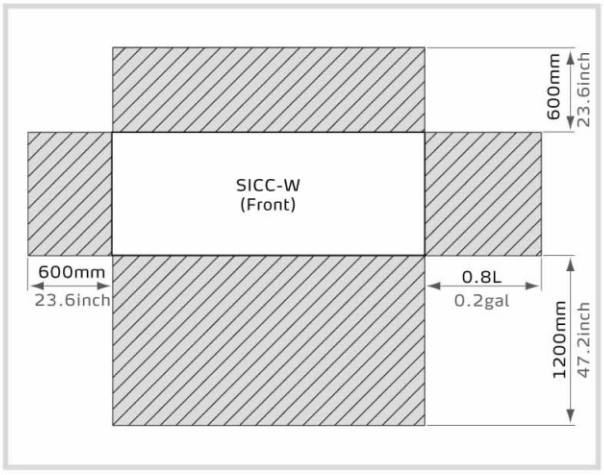
Two Compressors

Sign	Name	Amount Remark
CM1-2	Compressor	2
CD1-2	Condenser	2
CH	Evaporator	1
EX1-2	Expansion valve	2
FP1-2	Fusible plug	2
AV1-2	Angle valve	2
DS1-2	Drier filter	2
SG1-2	Refrigerant indicator	2
CV1-2	Contrary stop value	2
HV1-2	High pressure valve	2
HG1-2	High pressure gauge	2
LG1-2	low pressure gauge	2
HP1-2	High pressure switch	2
LP1-2	Low pressure switch	2
TH	Thermo switch	1
FU	Anti-freezing switch	1

■ Fundation and Installation

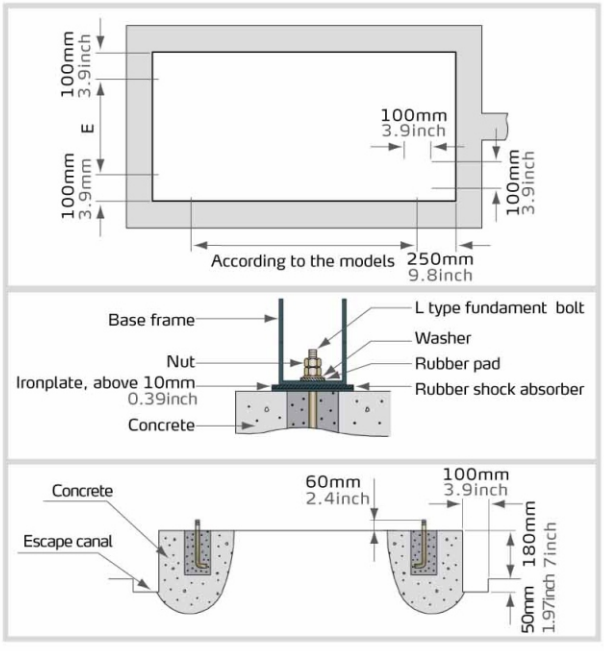
Selection of Installation Environment

1) Please select a firm and solid ground which can fully support machine when running. The ground selection has also to avoid any happens of vibration and noisy environment.
2) The machine should be installed in a place without any exposures from wind, rain, sunlight, or any heat source occurrence.
3) Ambient temperature is within 0~40°C/0~104°F, relative humidity (RH) is 75%, good ventilation and with less dust and sand.
4) Installation should be carried through in a place with easy access to electrical power and convenient construction.
5) When install, please preserve a maintenance space, as shown on the right. For the cleaning of the condenser, please reserve space of 0.8L/0.2gal on either left or right side of the machine.

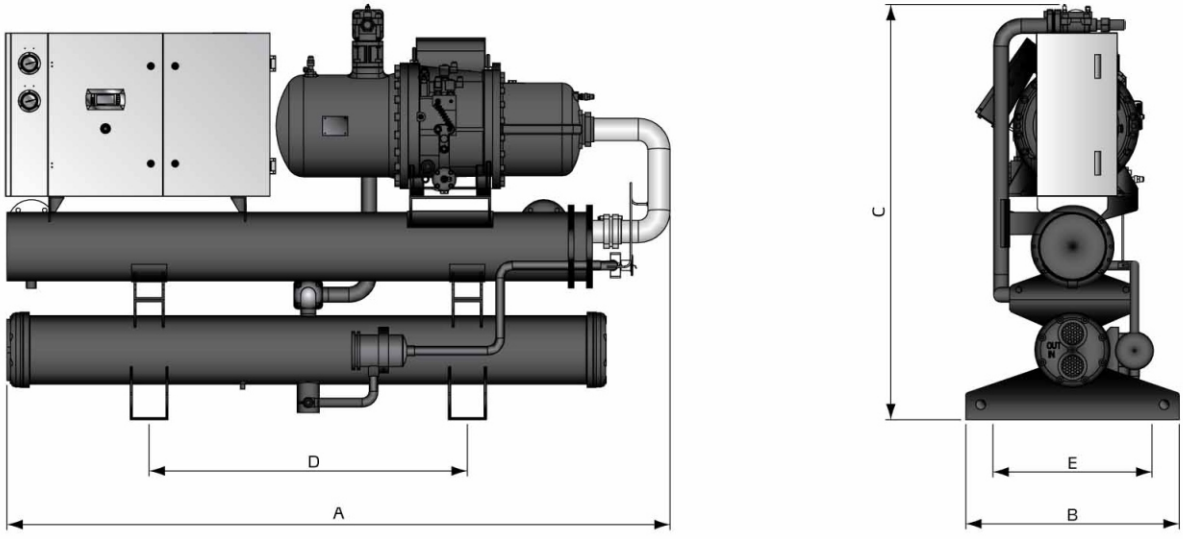


Foundation Base

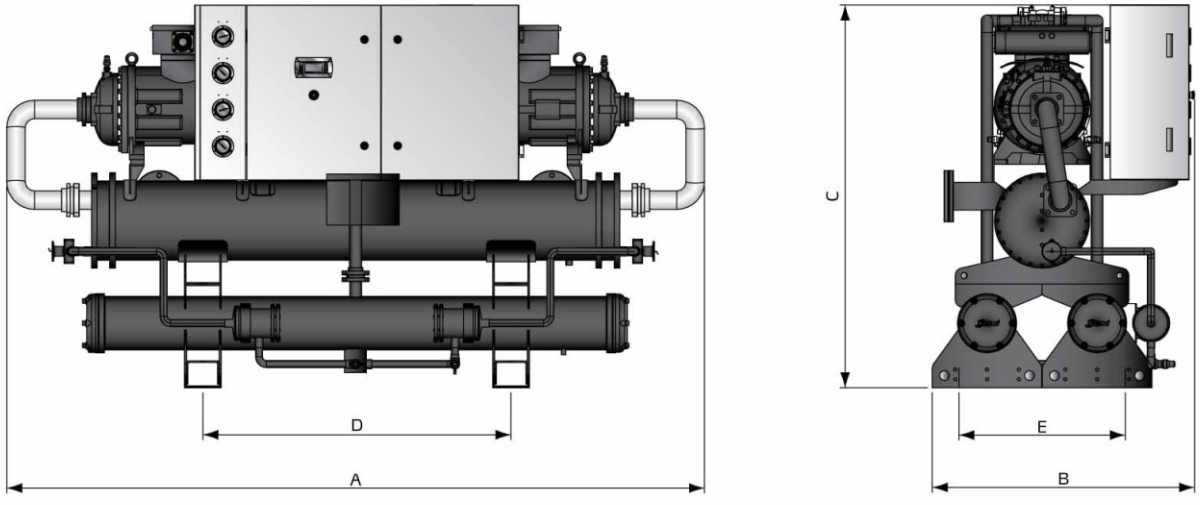
1) The foundation of the concrete base, according to the operation weight of the machines, will put on steel bars, diameter above 9.5mm/3/8" , and are clustered together on the upper and lower layer of the base, interspaced about 100mm/4" .
2) When making concrete floor to be foundation, it is necessary to rough the surface. Clean the floor before installation.
3) The concrete base has to be rigid; the mixing proportion of concrete is 1: 2: 4. Put required anchor bolts into base, according to the request. Polishing and flat the surface of the base when finished.
4) Put the machine on the base when it is fully dried out and rigid.
5) It has to be a well drainage works around the base to prevent water remaining.



Outline Drawings



SICC-130WS-R3~SICC-220WS-R3



SICC-260WD-R3~SICC-450WD-R3

SICC-W Series

Specifications (Single Compressor R134A)

Item \ Model			SICC-130WS-R3	SICC-188WS-R3	SICC-220WS-R3
Refrigeration Capacity		kW	130	188	220
		kcal/hr	111,800	161,680	189,200
Power Source		—	3Φ 400V 50Hz		
Power Consumption		kW	24	35. 8	40. 9
Operation Current		A	41.5	60	69
Start-up Current		A	310	480	600
Power Adjustment		—	Step-less loading capacity control		
Refrigeration Oil	Filling Quantity	L	7	14	16
		gal	1.85	3.7	4.2
	Type	—	HBR-B08		
Refrigerant Filling Quantity		kg	22	26	32
		lb	48.5	57.3	70.5
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	22	32	37. 5
	Pressure Loss	kPa	46	50	52
	Pipe Coupler		Φ3"Clamp	Φ3"Clamp	Φ3"Clamp
Condenser	Type	—	Tube-in-shell style		
	Cooling Flow	m^3/hr	26.5	38. 5	45
	Pressure Loss	kPa	20	20	30
	Pipe Outlet		2.5"PT Famale	3.0"PT Famale	3.0"PT Famale
Unit Dimensions	A	mm	2490	2650	2780
		inch	98	104.3	109.5
	B	mm	750	850	850
		inch	29.5	33.5	33.5
	C	mm	1525	1655	1670
		inch	60	65.2	65.7
Installing Dimensions	D	mm	1100	1266	1327
		inch	43.3	49.8	52.2
	E	mm	540	640	640
		inch	21.3	25.2	25.2
Net Weight		kg	940	1200	1260
		lb	2072	2646	2778
Operating Weight		kg	1040	1300	1360
		lb	2293	2866	2998
Measures Exchange			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

Notes:
1) Parameter test condition: chilled water flow 0.172m^3/(h·kW);chilled water outlet temperature 15℃/59°F; cooling water inlet temperature 30℃/86°F; cooling water flow 0.215m^3/(h.kW).
2) Machine operation conditions: outlet chilling water temperature is at 8~25℃(46.4~77°F), inlet chilling water temperature is at 19~33℃(66.2~91.4°F), For special require ments, the machine can be customized.
3) The noise level is tested at 1m/40" in front of and 1.5m/59" above the machine.
4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

Specifications (Single Compressor R134A)

Item \ Model			SICC-260WD-R3	SICC-380WD-R3	SICC-450WD-R3
Refrigeration Capacity		kW	260	380	450
		kcal/hr	223,600	326,800	382,2700
Power Source		—	3Φ 400V 50Hz		
Power Consumption		kW	48	71. 6	81. 8
Operation Current		A	83	120	138
Start-up Current		A	351.5	540	669
Power Adjustment		—	Step-less loading capacity control		
Refrigeration Oil	Filling Quantity	L	14	28	32
		gal	3.7	7.3	8.5
	Type	—	HBR-B08		
Refrigerant Filling Quantity		kg	44	52	64
		lb	97	115	141
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	44	64	75
	Pressure Loss	kPa	58	63	63
	Pipe Coupler		Φ4"Clamp	Φ4"Clamp	Φ5"Clamp
Condenser	Type	—	Tube-in-shell style		
	Cooling Flow	m^3/hr	53	77	90
	Pressure Loss	kPa	40	40	60
	Pipe Outlet		2.5"PT Famale	3.0"PT Famale	3.0"PT Famale
Unit Dimensions	A	mm	2850	3110	3250
		inch	112.2	122.4	128
	B	mm	1075	1125	1125
		inch	42.3	44.3	44.3
	C	mm	1570	1750	1750
		inch	61.8	68.9	68.9
Installing Dimensions	D	mm	1260	1467	1467
		inch	49.6	57.8	57.8
	E	mm	798	878	878
		inch	31.4	34.6	34.6
Net Weight		kg	1860	2340	2530
		lb	4101	5159	5578
Operating Weight		kg	2060	2590	2800
		lb	4542	5710	6173
Measures Exchange			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

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