Water-cooled Central Water Chiller

SICC-450WD-R3

Refer carefully to this manual before operation.

SICC-W Series

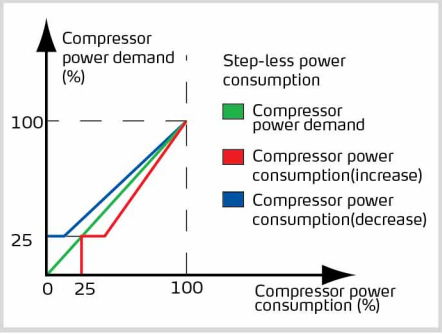
Coding Principle

SICC - xxxWx - R3

- R3 → R3=R134a
- xxx → First Three Codes: Refrigerating Capacity (kW)
- W → Fourth Code: W=Water Cooled
- x → Fifth Code: S=Single Compressor D=Double Compressors
- SICC → 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 compressor can achieve a cooling output range of 50~100% with each compressor and realize stable cooling output.
- 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 error check function and error 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.

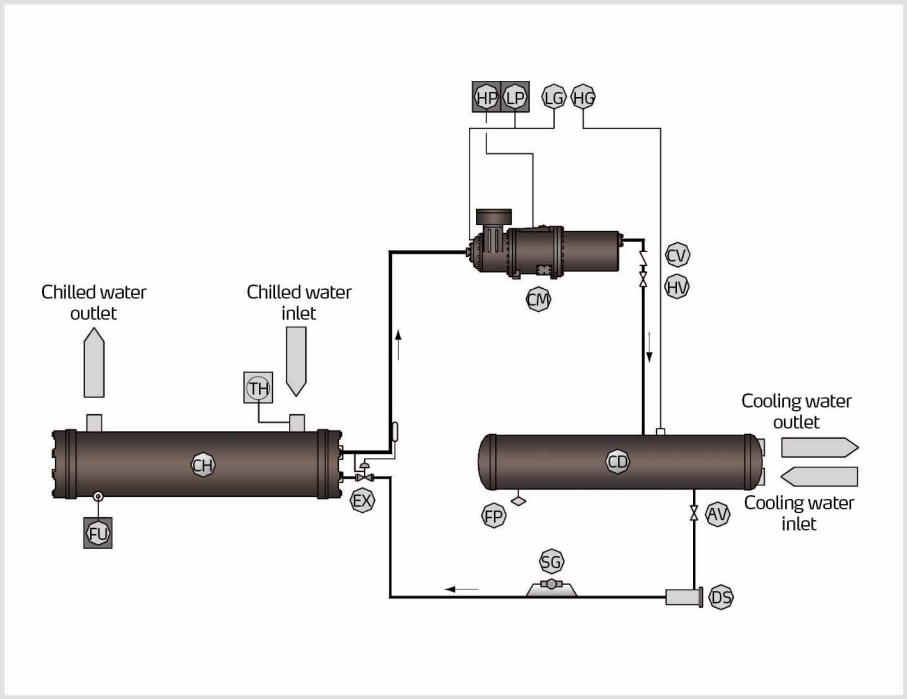


Step-less loading capacity

Application

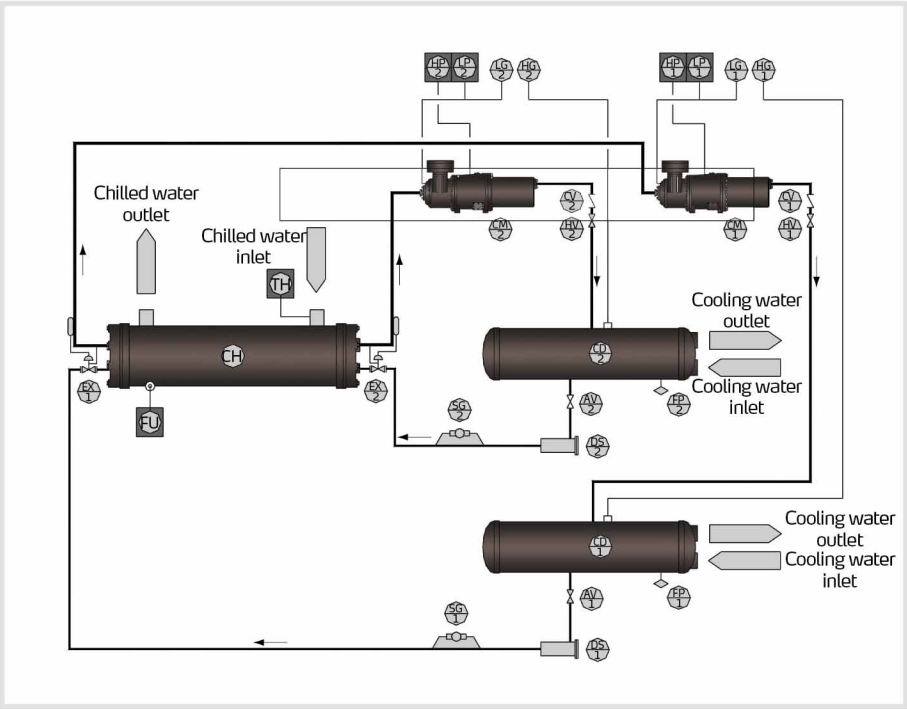
It is used for mould's cooling to reduce product's molding cycle, and it's applicable to cooling devices to ensure the temperature maintained under normal value, or other industrial areas need cooling.

■ Working Principle



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

One Compressor



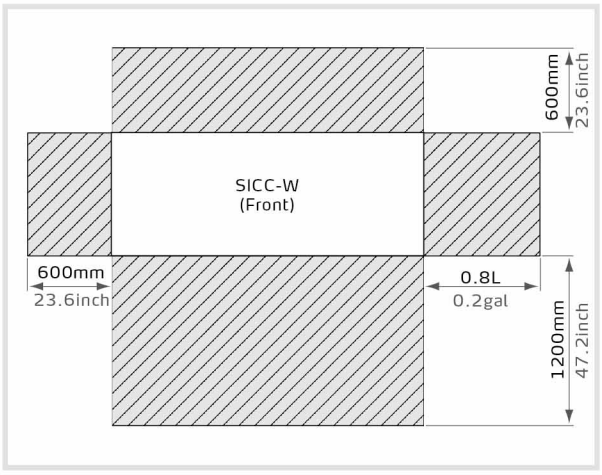
Sign	Name	Amount Remark
CM1-2	Compressor	2
CD1-2	Condenser	2
CH	Evaporator	1
EX1-2	Expansion valve	2
FP1-2	Fusible plug	2
AV1-2	Angle valve	2
DS1-2	Drier filter	2
SG1-2	Refrigerant indicator	2
CV1-2	Contrary stop value	2
HV1-2	High pressure valve	2
HG1-2	High pressure gauge	2
LG1-2	low pressure gauge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

Two Compressors

Fundation and Installation

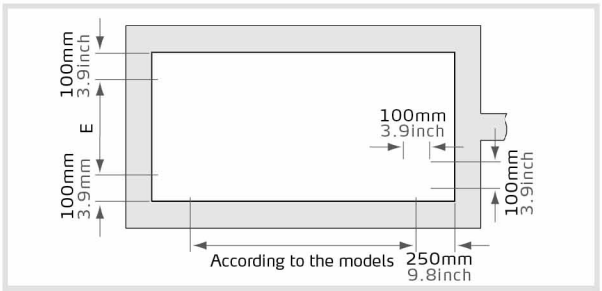
Selection of Installation Environment

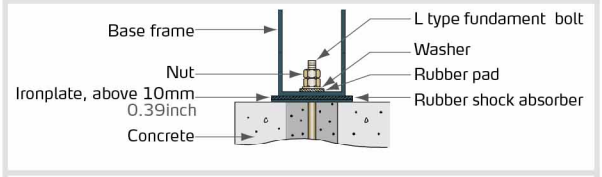
1) Please select a firm and solid ground which can fully support machine when running. The ground selection has also to avoid any happens of vibration and noisy environment.
2) The machine should be installed in a place without any exposures from wind, rain, sunlight, or any heat source occurrence.
3) 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.

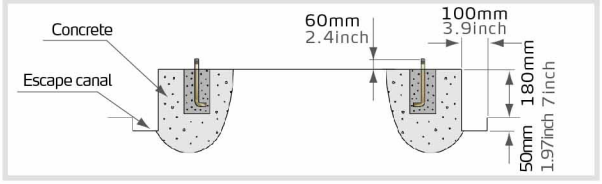


Foundation Base

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.

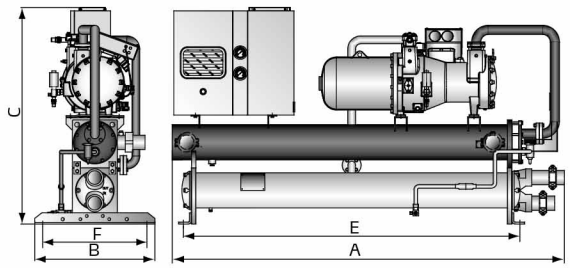




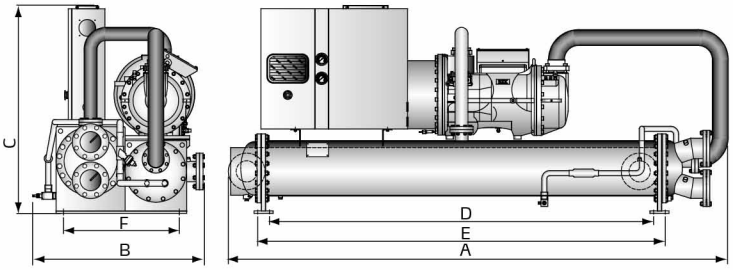


SICC-W Series

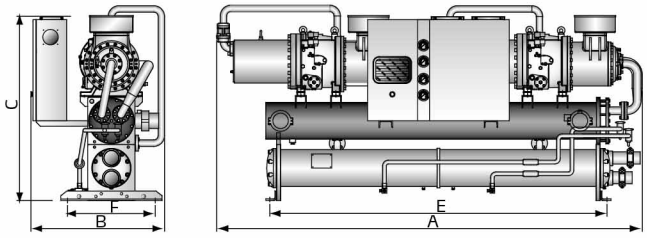
■ Outline Drawings



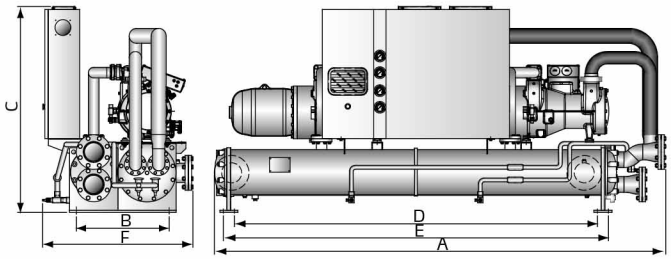
SICC-157WS
&
SICC-130WS-R3~ SICC-220WS-R3



SICC-319WS~SICC-767WS



SICC-314WD
&
SICC-260WD-R3~ SICC-450WD-R3



SICC-518WD~SICC-1076WD

■ Specification (single unit R22) 7℃ outlet water

Item \ Model			SICC-157WS	SICC-319WS	SICC-413WS	SICC-538WS	SICC-611WS	SICC-767WS
Cooling Capacity		kW	157	319	413	538	611	767
		kcal/hr	110,080	215,860	283,800	369,800	419,680	524,600
Power Source		–	3Φ 380V 50Hz					
Power Consumption		kW	35.4	63.5	82	99.6	112.5	140
Operation Current		A	63	122	179	216	225	280
Start-up Current		A	269	516	579	757	586	805
Power Adjustment		–	Capacity level 4 control					
Refrigerant Oil	Filling Quantity	L	11	17	17	21	21	25
	Type	–	KL320SH					
Refrigerant capacity		kg	23	46	59	85	98	109
Evaporator	Type	–	U type tube-in-shell style				Tube-in-shell style	
	Process Flow	m^3/hr	27.0	54.9	71.0	92.5	105.0	131.9
	Pressure Loss	kPa	48	52	54	63	66	70
	Pipe Coupler		DN80	DN100	DN125	DN150	DN150	DN150
Condenser	Type	–	Tube-in-shell style					
	Cooling Flow	m^3/hr	33.1	65.8	85.1	109.7	124.4	156
	Pressure Loss	kPa	20	30	30	45	45	45
	Pipe Coupler		DN80	DN100	DN125	DN150	DN150	DN150
Unit Dimensions	A	mm	2550	3000	3250	3450	3400	3700
	B	mm	750	1050	1100	1250	1350	1350
	C	mm	1450	1200	1400	1500	1500	1600
Installing Dimensions	D	mm	–	2390	2620	2620	2620	2920
	E	mm	2100	2550	2780	2780	2780	3080
	F	mm	650	600	670	790	870	920
Net Weight		kg	1200	1600	1850	2300	2650	2850
Operating Weight		kg	1300	1750	2000	2500	2850	3100
Unit Conversion			1 kW = 860 kcal/hr		1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr	

Specification (single unit R22) 15℃ outlet water

Item \ Model			SICC-157WS	SICC-319WS	SICC-413WS	SICC-538WS	SICC-611WS	SICC-767WS
Cooling Capacity		kW	157	319	413	538	611	767
		kcal/hr	130,020	274,529	355,180	462,594	525,056	659,680
Power Source		–	3Φ 380V 50Hz					
Power Consumption		kW	35.4	68	100.3	120.9	125.9	156.7
Operation Current		A	63	122	179	216	225	280
Start-up Current		A	269	516	579	757	586	805
Power Adjustment		–	Capacity level 4 control					
Refrigerant Oil	Filling Quantity	L	11	17	17	21	21	25
	Type	–	KL320SH					
Refrigerant capacity		kg	26	46	61	76	91	111
Evaporator	Type	–	U type tube-in-shell style				Tube-in-shell style	
	Process Flow	m^3/hr	27.0	54.9	71.0	92.5	105.0	131.9
	Pressure Loss	kPa	48	54	63	63	66	80
	Pipe Coupler		DN80	DN100	DN125	DN150	DN150	DN150
Condenser	Type	–	Tube-in-shell style					
	Cooling Flow	m^3/hr	35.1	71.3	92.3	120.3	136.6	171.5
	Pressure Loss	kPa	20	30	45	45	45	58
	Pipe Coupler		DN80	DN100	DN125	DN150	DN150	DN150
Unit Dimensions	A	mm	2600	3050	3350	3450	3400	3800
	B	mm	750	1150	1250	1250	1350	1400
	C	mm	1500	1370	1450	1500	1650	1700
Installing Dimensions	D	mm	–	2390	2620	2620	2620	2920
	E	mm	2100	2550	2780	2780	2780	3080
	F	mm	650	600	670	790	870	920
Net Weight		kg	1220	1770	1900	2350	2600	3130
Operating Weight		kg	1370	1970	2150	2650	2900	3480
Unit Conversion			1 kW = 860 kcal/hr		1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr	

Notes: 1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 15℃/59℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.

2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special require ments, the machine can be customized.

3) The noise level is tested at 1m in front of and 1.5m above the machine.

4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

SICC-W Series

■ Specification(dual-units R22) 7℃ outlet water

Item \ Model			SICC-314WD	SICC-518WD	SICC-638WD	SICC-706WD	SICC-826WD	SICC-1076WD
Refrigeration Capacity		kW	314	518	638	706	826	1076
		kcal/hr	220,160	350,880	431,720	497,080	567,600	739,600
Power Source		–	3Φ 380V 50Hz					
Power Consumption		kW	62.8	100	118	130	152	197.1
Operation Current		A	126	213	243	291	359	432
Start-up Current		A	332	530	638	707	758	973
Power Adjustment		–	Capacity level 8control					
Refrigerant Oil	Filling Quantity	L	22	26	34	34	34	42
	Type	–	KL320SH					
Refrigerant capacity		kg	45	73	92	108	117	159
Evaporator	Type	–	U type tube-in-shell style			Tube-in-shell style		
	Process Flow	m^3/hr	54.0	89.1	109.8	121.4	142.1	185.0
	Pressure Loss	kPa	60	63	66	66	66	66
	Pipe Coupler		DN100	DN125	DN150	DN150	DN150	DN200
Condenser	Type	–	Tube-in-shell style					
	Cooling Flow	m^3/hr	64.8	106.3	130	143.8	168.2	219
	Pressure Loss	M	40	40	50	57	57	57
	Pipe Coupler		DN100	DN125	DN150	DN150	DN150	DN200
Dimensions	A	mm	3100	3450	3600	3900	3950	4100
	B	mm	950	1250	1350	1350	1350	1500
	C	mm	1700	1450	1450	1450	1500	1600
Installing Dimensions	D	mm	–	2620	2920	2920	2920	3190
	E	mm	2700	2780	3080	3080	3080	3350
	F	mm	650	670	870	920	980	1030
Net Weight		kg	2050	2750	2950	3100	3600	4000
Operating Weight		kg	2200	2950	3150	3400	3900	4350
Unit Conversion			1 kW = 860 kcal/hr		1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr	

Notes: 1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 7℃/44.6℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.
2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special requirements, the machine can be customized.
3) The noise level is tested at 1m in front of and 1.5m above the machine.
4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

Specification(dual-units R22) 15℃ outlet water

Item \ Model			SICC-314WD	SICC-518WD	SICC-638WD	SICC-706WD	SICC-826WD	SICC-1076WD
Refrigeration Capacity		kW	314	518	638	706	826	1076
		kcal/hr	270,040	445,480	549,058	607,160	710,360	925,188
Power Source		—	3Φ 380V 50Hz					
Power Consumption		kW	58	119.2	136.0	162.6	200.6	241.8
Operation Current		A	126	213	243	291	359	432
Start-up Current		A	332	530	638	707	758	973
Power Adjustment		—	Capacity level 8control					
Refrigerant Oil	Filling Quantity	L	22	26	34	34	34	42
	Type	—	KL320SH					
Refrigerant capacity		kg	51	71	91	111	121	151
Evaporator	Type	—	U type tube-in-shell style			Tube-in-shell style		
	Process Flow	m^3/hr	54.0	89.1	109.8	121.4	142.1	185.0
	Pressure Loss	kPa	60	63	66	66	66	80
	Pipe Coupler		DN100	DN125	DN150	DN150	DN150	DN200
Condenser	Type	—	Tube-in-shell style					
	Cooling Flow	m^3/hr	64	115.8	142.7	157.9	184.7	240.6
	Pressure Loss	M	40	40	57	57	57	64
	Pipe Coupler		DN100	DN125	DN150	DN150	DN150	DN200
Dimensions	A	mm	3180	3300	3900	3950	4000	4300
	B	mm	1050	1150	1300	1350	1450	1500
	C	mm	1700	1550	1600	1650	1650	1700
Installing Dimensions	D	mm	—	2620	2920	2920	2920	3190
	E	mm	2700	2780	3080	3080	3080	3350
	F	mm	650	670	870	920	980	1030
Net Weight		kg	2010	2610	3300	3700	3880	4350
Operating Weight		kg	2210	2910	3600	4200	4380	4900
Unit Conversion			1 kW = 860 kcal/hr		1 RT = 3,024 kcal/hr		10,000 Btu/hr = 2,520 kcal/hr	

Notes: 1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 15℃/59℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.

2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special requirements, the machine can be customized.

3) The noise level is tested at 1m in front of and 1.5m above the machine.

4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

SICC-W Series

■ Specification (single unit R134a)7℃ outlet water

Item \ SICC-			130WS-R3	188WS-R3	220WS-R3
Refrigeration Capacity		kW	130	188	220
		kcal/hr	89,440	129,000	151,360
Power Source		—	3Φ 400V 50Hz		
Power Consumption		kW	24	35. 1	44.7
Operation Current		A	41.5	60	69
Start-up Current		A	310	480	600
Power Adjustment		—	Step-less capacity control		
Refrigerant Oil	Filling Quantity	L	7	14	16
	Type	—	HBR-B08		
Refrigerant capacity		kg	22.4	29	42
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	22	32.3	37.8
	Pressure Loss	kPa	46	48	52
	Pipe Coupler		DN80	DN80	DN100
Condenser	Type		Tube-in-shell style		
	Cooling Flow	m^3/hr	26.5	38. 4	45.5
	Pressure Loss	kPa	20	20	30
	Pipe Coupler		DN80	DN80	DN100
Dimensions	A	mm	2500	2500	2850
	B	mm	750	850	850
	C	mm	1500	1600	1600
Installing Dimensions	D	mm	–	–	–
	E	mm	1100	1266	1327
	F	mm	540	640	640
Net Weight		kg	1150	1300	1400
Operating Weight		kg	1250	1400	1500
Unit Conversion			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 7℃/44.6℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.
2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special require ments, the machine can be customized.
3) The noise level is tested at 1m in front of and 1.5m above the machine.
4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

Specification (single unit R134a)15℃ outlet water

SICC-			130WS-R3	188WS-R3	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 capacity control		
Refrigerant Oil	Filling Quantity	L	7	14	16
	Type	—	HBR-B08		
Refrigerant capacity		kg	22	26	32
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	22	32	37. 5
	Pressure Loss	kPa	46	50	52
	Pipe Coupler		ND80	ND80	ND100
Condenser	Type		Tube-in-shell style		
	Cooling Flow	m^3/hr	26.5	38. 5	45
	Pressure Loss	kPa	20	20	30
	Pipe Coupler		ND80	ND80	ND100
Dimensions	A	mm	2490	2650	2780
	B	mm	750	850	850
	C	mm	1525	1655	1670
Installing Dimensions	D	mm	—	—	—
	E	mm	1100	1266	1327
	F	mm	540	640	640
Net Weight		kg	940	1200	1260
Operating Weight		kg	1040	1300	1360
Unit Conversion			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

Notes:
1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 15℃/59℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.
2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special require ments, the machine can be customized.
3) The noise level is tested at 1m in front of and 1.5m above the machine.
4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

SICC-W Series

■ Specification (dual-unit R134a)7℃ outlet water

Item		SICC-	260WD-R3	380WD-R3	450WD-R3
Refrigeration Capacity		kW	260	380	450
		kcal/hr	178,880	258,000	301,860
Power Source		—	3Φ 400V 50Hz		
Power Consumption		kW	51	71. 6	89.4
Operation Current		A	83	120	138
Start-up Current		A	351.5	540	669
Power Adjustment		—	Step-less capacity control		
Refrigerant Oil	Filling Quantity	L	14	28	32
	Type	—	HBR-B08		
Refrigerant capacity		kg	45	72	85
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	44.7	65.4	77.4
	Pressure Loss	kPa	58	58	63
	Pipe Coupler		DN100	DN125	DN125
Condenser	Type	—	Tube-in-shell style		
	Cooling Flow	m^3/hr	53.5	77.7	92.8
	Pressure Loss	kPa	40	40	40
	Pipe Coupler		DN100	DN125	DN125
Dimensions	A	mm	3400	3650	3650
	B	mm	950	1100	1300
	C	mm	1650	1800	1450
Installing Dimensions	D	mm	—	—	—
	E	mm	1260	1467	1467
	F	mm	798	878	878
Net Weight		kg	2100	2650	2750
Operating Weight		kg	2200	2800	3000
Unit Conversion			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 7℃/44.6℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.
2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special require ments, the machine can be customized.
3) The noise level is tested at 1m in front of and 1.5m above the machine.
4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

Specification (dual-unit R134a)15℃ outlet water

Item		SICC-	260WD-R3	380WD-R3	450WD-R3
Refrigeration Capacity		kW	260	380	450
		kcal/hr	223,600	326,800	387000
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 capacity control		
Refrigerant Oil	Filling Quantity	L	14	28	32
	Type	—	HBR-B08		
Refrigerant capacity		kg	44	52	64
Evaporator	Type	—	Tube-in-shell style		
	Process Flow	m^3/hr	44	64	75
	Pressure Loss	kPa	58	63	63
	Pipe Coupler		DN100	DN125	DN125
Condenser	Type	—	Tube-in-shell style		
	Cooling Flow	m^3/hr	53	77	90
	Pressure Loss	kPa	40	40	60
	Pipe Coupler		DN100	DN125	DN125
Dimensions	A	mm	2850	3110	3250
	B	mm	1075	1125	1125
	C	mm	1570	1750	1750
Installing Dimensions	D	mm	–	–	–
	E	mm	1260	1467	1467
	F	mm	798	878	878
Net Weight		kg	1860	2340	2530
Operating Weight		kg	2060	2590	2800
Unit Conversion			1 kW = 860 kcal/hr	1 RT = 3,024 kcal/hr	10,000 Btu/hr = 2,520 kcal/hr

Notes: 1) Cooling capacity is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 15℃/59℉ of chilled water under the temperature of 30℃/86℉ and flow of 0.215m³/(h.kW) of cooling water.

2) Machine operation conditions: outlet chilling water temperature is at 7~25℃, inlet chilling water temperature is at 19~33℃, For special require ments, the machine can be customized.

3) The noise level is tested at 1m in front of and 1.5m above the machine.

4) As per application needs, stepless compressor output capacity adjusting function can be optionally available.

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