CFC-free Refrigerant Water-cooled Water Chiller

SIC-17W-R2

Refer carefully to this manual before operation.

SIC-W-R2 Series

Coding Principle

SIC - xxW - R2 - xx - xx

- Options
- None=Medium Pressure Pump
HP=High Pressure Pump
- R2=R410A
- Cooling Capacity (kW)
W=Water Cooled
- Shini Industrial Water Chiller

Control Panel

Features

- The controller adopts 4.3" touch panel, with user-friendly HMI for easy operation.
- Adopt high precision temperature controller with a display precision of ±0.1℃.
- Cooling range: 7~25℃.
- R410A ozone-friendly refrigerant with good cooling effect.
- The inlet and outlet pipe adopt an adaptive bypass valve to ensure stable outlet water pressure.
- Plate heat exchanger ensures efficient heat exchanging; Equipped with an anti-freeze thermostat.
- Tube-in-shell condenser features excellent heat transfer effect and rapid heat dissipation.
- A well-known compressor that ensures low noise, energy-efficient, and long service life.
- Compact outline and small foot.
- Water loop with a return water filter that adopts galvanized water pipe to improve the service life effectively.
- The refrigerating system has high and low pressure transmitters that can read the system pressure accurately for better control and protection.
- Circular stainless steel thermal insulated water tank and unique cyclone design for even distribution of chill water.
- It has a hot-gas bypass valve with a control accuracy of up to ±1℃.
- Equipped with a flow switch to avoid the unit from operating without water flow.
- The standard water tank level indicator for visualizing check of the water level.
- RS485 communication interface to realize centralized monitoring.
- Standard flow display reference value.
- USB interface can realize real-time data record and local data backup.

Options

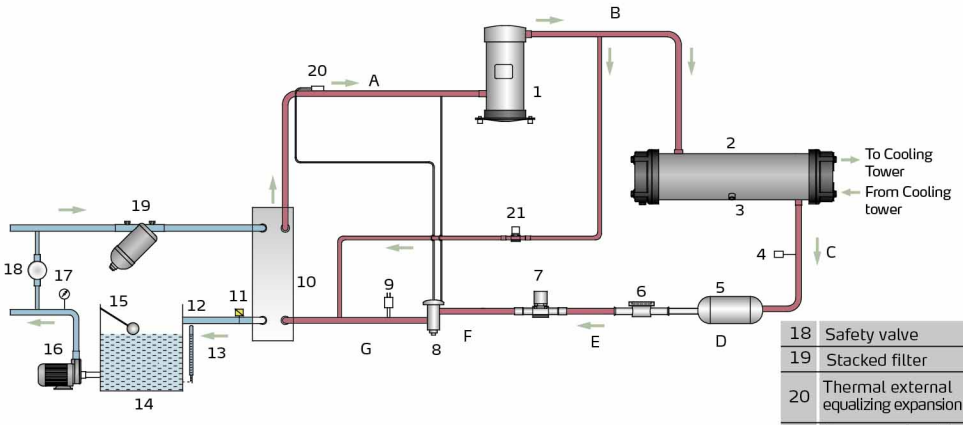
- For models optional with high-pressure pump (about 4kgf/cm²) to meet different water supply pressure demands, and add"HP"at the end of the model code.
- The level switch in the water tank is optional to check if the water level is normal, and add “LW” at the end of the model code.
- Liquid solenoid valve for pump down a refrigerant circuit to avoid liquid migration back to the compressor on the off-cycle, and it can potentially prevent liquid slug on startup. Add “LS” at the end of the model code;
- Optional refrigerant indicator for visual checking of refrigerant moisture content, and add “LSG” at the end of the model code.
- The stainless steel pipe is optional to extend the service life effectively, and add “SS” at the end of the model code.
- The high-precision flow sensor is optional to monitor the medium flow data precisely, and add "FW" at the end of the model code.
- The temperature thermocouple can be optional to collect on-site ambient temperature in real time, and add “TC” at the end of the model code.

- Ethernet communication interface can be optional to facilitate remote communication between devices, and add "ES" at the end of the model code.
- The water pressure sensor can be optional to monitor the pipeline water pressure in real time, and add “PS” at the end of the model code.

Application

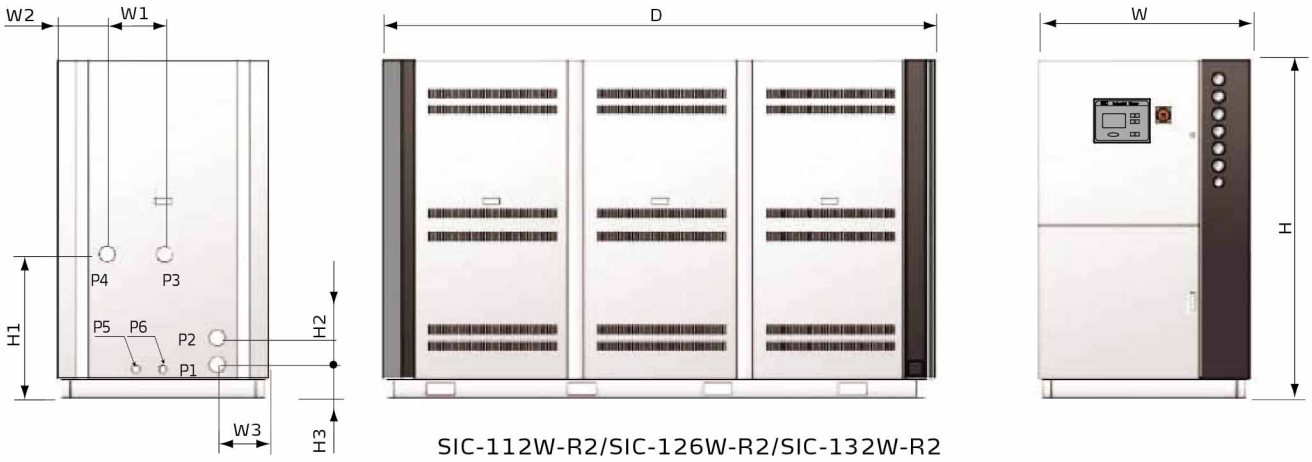
SIC-W-R2 series are applicable for cooling moulds to reduce the product moulding cycle; they are also available in the cooling of equipment to maintain a normal temperature. Besides, they are suitable for other industries with the need for water cooling.

Working Principle



No.	Name	Remarks
1	Compressor	
2	Tube-in-shell condenser	
3	Fusible plug	
4	Drier filter	
5	Liquid solenoid valve	Option
6	Refrigerant indicator	Option
7	High pressure sensor	
8	Expansion valve	
9	Low pressure sensor	
10	Evaporator	
11	Flow switch	
12	Flow control valve	
13	Level sensor of water tank	
14	Water tank	
15	Floating-ball switch	
16	Pump	
17	Water pressure gauge	
18	Safety valve	
19	Stacked filter	
20	Thermal external equalizing expansion valve	
21	By-pass solenoid valve	

Outline Drawings

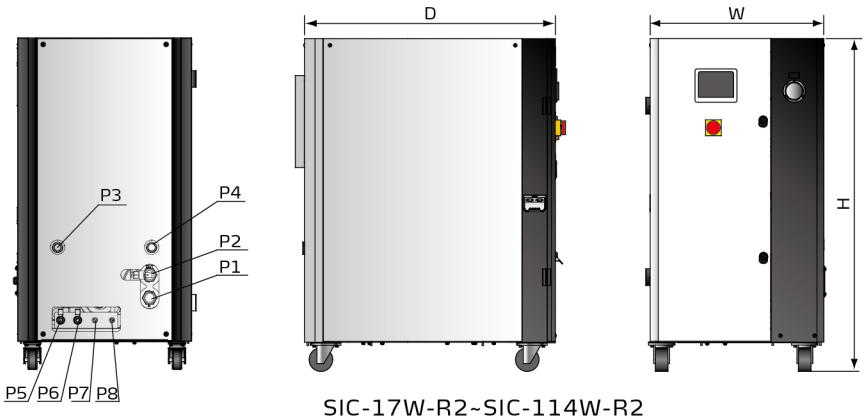


SIC-112W-R2/SIC-126W-R2/SIC-132W-R2

SIC-112W-R2/SIC-126W-R2/SIC-132W-R2

Model	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	W (mm)	W1 (mm)	W2 (mm)	W3 (mm)	D (mm)	P1 (inch) Cooling Water Inlet	P2 (inch) Cooling Water outlet	P3 (inch) Chilling Water Inlet	P4 (inch) Chilling Water outlet	P5 (inch) Water Tank Outlet Port	P6 (inch) Water Tank Overflow Port	Weight (kg)
SIC-112W-R2	1760	750	140	190	1100	300	260	267	2870	2 1/2	2 1/2	2 1/2	2 1/2	1	1	1200
SIC-126W-R2	1760	490	140	190	1100	300	230	250	3085	2 1/2	2 1/2	2 1/2	2 1/2	1	1	1450
SIC-132W-R2	1760	520	140	190	1100	205	325	505	3285	2×2 1/2	2×2 1/2	2 1/2	2 1/2	1	1	1750

SIC-W-R2 Series



SIC-17W-R2~SIC-114W-R2

SIC-17W-R2~SIC-114W-R2

Item \ Model	SIC-17W-R2	SIC-29W-R2	SIC-38W-R2	SIC-57W-R2	SIC-76W-R2	SIC-114W-R2
H(mm)	1266	1276	1276	1356	1645	1700
H1(mm)	468	1090	1090	1156	1253	1350
W(mm)	661	810	810	856	1044	1044
W1(mm)	358	364	364	324	557	503
W2(mm)	151.5	233	233	266.5	235.5	269
W3(mm)	159	623	623	650	622	577.5
D(mm)	955.5	1092	1092	1194	1826	1876
P1(inch) Cooling Water Inlet (female thread)	Rc1	Rc1.5			Rc2	
P2(inch) Cooling Water outlet (female thread)	Rc1	Rc1.5			Rc2	
P3(inch) Chilled water inlet (female thread)	Rc1	Rc1.25	Rc1.5		Rc2	
P4(inch) Chilled water outlet (female thread)	Rc1	Rc1.25	Rc1.5		Rc2	
P5(inch) Evaporator water drainage port (female thread)	G1/2					
P6(inch) Water tank outlet (female thread)	G1/2					
P7(inch) Water tank overflow port (male thread)	R1/2					
P8(inch) Water tank water refilling port (male thread)	R1/2					
Weight (kg)	250	330	350	440	720	882

SIC-W-R2 Series

Model Selection Reference

Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)
≤450	≤45	17
≤650	≤65	29
≤850	≤85	38
≤1800	≤180	57

Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)
≤2500	≤250	76
≤4000	≤400	114
≤5000	≤500	112(7℃出水)
≤6000	≤600	126(7℃出水)

Specifications (50Hz)

Item \ Model SIC- / Parameter		17W-R2	29W-R2	38W-R2	57W-R2	76W-R2	114W-R2	112W-R2	126W-R2	132W-R2
Cooling[1] Capacity	kW	17	29	38	57	76	114	148	166	174
Cooling[2] Capacity	kW	15	27	32	49	69	100	-	-	-
Cooling[3] Capacity	kW	14	24	29	45	62	91	112	126	132
Compressor	Type	Scroll								
	Quantity	1				2		3		4
	Power (kW)	3.18	4.98	6.79	10.15	6.79×2	10.15×2	28.35	31.5	33.4
Refrigerant	Filling quantity (kg)	2.85	6.8	5.6	9.8	6.5×2	11×2	8.6×2+5.7	6.5×3	6.5×4
	Control Mode	Thermostatic expansion valve								
	Type	R410A								
Evaporator	Type	Plate style						Tube-in-shell style		
	Cooling Water Flow(L/min)	48.7	83.1	108.9	163.4	217.9	326.8	321.1	361.2	378.4
Condenser	Type	Tube-in-shell style								
	In/out Pipe(inch)	Rc1.5	Rc2	Rc2	Rc2	Rc2	Rc2	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\times2\frac{1}{2}$
	Cooling Water Flow (L/min)	60.9	103.9	136.1	204	272.3	408.5	417.4	469.6	491.9
Water Tank Capacity (L)		80	150	150	150	150	150	400		
Pump[4] (50Hz)	Power (kW)	0.75/1.1	1.1/1.1	1.5/2.2	1.8/2.4	2.4/3	4/4.4	-/ 3.0 / 4.0	- / 4.0 / 5.5	
	Working Pressure[5] (kgf/cm²)	Medium pressure≥3, High pressure≥4								
Total Power (kW)[6]		3.93	5.95	8.3	11.95	16.58	24.3	-/31.4/32.4	-/35.5/37	-/37.4/38.9
Protective Device	Compressor	Overload relay								
	Pump	Overload relay								
	Refrigerant Circuit	High and low pressure transmitter/Anti-freezing switch								
	Cooling water Ciucuit	Flow switch(Option) /Water level switch (Option)) / By-pass valve								
Operation Noise dB(A)		67	67	71	71	67	71	81.4	79.6	86.5
Use environment[7]		Under the condition with good ventilation or ambient temperature not exceeding the service pressure								
Power[8]		3Φ, 400VAC, 50Hz								
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 1 is measured based on the flow of 0.172m^3/(h.kW) and the outlet temperature of 15℃ of chilled water under the environmental temperature of 30℃.
2) Cooling capacity 2 is measured based on the flow of 0.172m^3/(h.kW) and the outlet temperature 10℃of chilled water under the environmental temperature of 30℃.
3) Cooling capacity 3 is measured based on the flow of 0.172m^3/(h.kW) and the outlet temperature 7℃ of chilled water under the environmental temperature of 30℃.
4) Pump pressure of 3kgf/cm² is standard; customers can change for high-pressure pumps (use HP for short; e.g., SIC-W-R2-HP), specific parameters in turn as shown above.
5) The pressure value is the state when the pump inlet negative pressure is 0;
6) Pump power, fan power, and compressor power are included in total power.
7) The water-cooled water chiller applies to the environment temperature of 35℃ or below.
8) Special orders of machine voltage are available according to the request.

Specifications (60Hz)

Item / Parameter \ Model SIC-			17W-R2	29W-R2	38W-R2	57W-R2	76W-R2	114W-R2	112W-R2	126W-R2	132W-R2
Cooling Capacity[1]		kW	20	33	44	66	88	132	177.6	199.2	208.8
Cooling Capacity[2]		kW	17	31	37	56	80	116	-	-	-
Cooling Capacity[3]		kW	16	28	33	52	71	100	134.4	151.2	158.4
Compressor	Type		Scroll								
	Power(kW)		3.82	5.97	8.16	12.18	8.16×2	12.18×2	33.5	37.5	39
Refrigerant	Filling quantity (kg)		2.85	6.8	5.6	9.8	6.5×2	11×2	8.6×2	6.5×3	6.5×4
	Control Mode		Thermostatic expansion valve								
	Type		R410A								
Evaporator	Type		Plate style								
	Cooling Water Flow (L/min)		56	95.6	125.2	188	250.5	375.8	321.1	361.2	378.4
Condenser	Type		Tube-in-shell style								
	In/out Pipe (inch)		Rc1.5	Rc2	Rc2	Rc2	Rc2	Rc2	Rc2	Rc2	2×2 1/2
	Cooling Water Flow(L/min)		70.1	120.5	156.5	235	313.2	470	417.4	469.6	491.9
Water Tank Capacity (L)			80	150	150	150	150	150	400		
Pump[4] (50Hz)	Power (kW)		1.1/1.5	1.5/2.2	1.5/2.2	2.2/3	3/3	4/5.5	5/6.9		
	Working Pressure[5](kgf/cm)[2]		Medium pressure ≥3，High pressure≥4								
Total Power (kW)[6]			4.92/5.32	7.48/8.17	9.66/10.36	14.38/15.18	19.32	28.36/29.86	38.41/40.44	42.7/44.96	42.26/44.50
Protective Device	Compressor		Overload relay								
	Pump		Overload relay								
	Refrigerant Circuit		High and low pressure switches/Anti-freezing switch								
	Cooling water Ciucuit		High and low pressure transmitter/Anti-freezing switch								
Operation Noise dB(A)			67	67	71	71	67	71	81.4	79.6	86.5
Use environment[7]			Under the condition with good ventilation or ambient temperature not exceeding the service pressure								
Power[8]			3Φ，230/400/460/575VAC，60Hz								
Unit Conversion			1 kW = 860 kcal/hr　1 RT = 3,024 kcal/hr　10,000 Btu/hr = 2,520 kcal/hr								

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