



CFC-free Refrigerant Water-cooled Water Chiller

SIC-17W-R2



Refer carefully to this manual before operation.



JST ENGINEERING CO.,LTD.

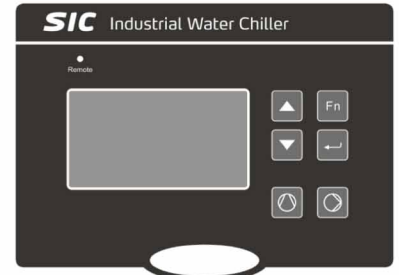
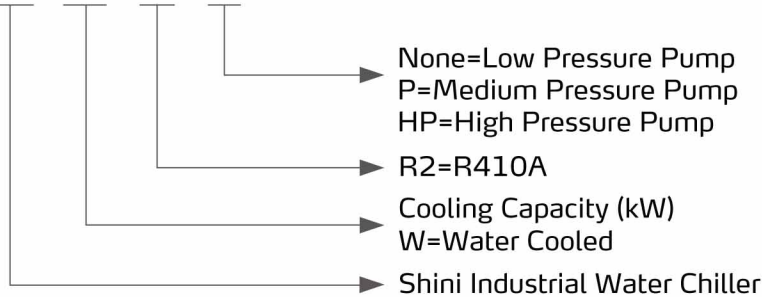
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SIC-W-R2 Series

Coding Principle

SIC - xW - R2 - xx



Control Panel

Features

- Cooling range: 7~25°C
- Stainless steel insulated water tank
- Equipped with an anti-freeze thermostat
- Tube-in-shell condenser that features rapid and well heat transfer
- R410A ozone-friendly refrigerant with a high efficient cooling result;
- The refrigerating system has high and low-pressure alarm protection;
- Compressor and pump overload protection
- High precision temperature controller with a display precision of $\pm 0.1^{\circ}\text{C}$
- Well-known compressor that ensures low noise, energy-efficient, and long service life;
- Hot-gas bypass valve with a control accuracy of up to $\pm 0.1^{\circ}\text{C}$
- RS485 communication interface to realize centralized monitoring;
- Circular stainless steel thermal insulated water tank and unique cyclone design for even distribution of chill water;
- Water loop with a return water filter that adopts PVC-U water pipe to ensure the cleanliness of the water quality (suitable for models in Spec. 1);
- Plate heat exchanger ensures efficient heat exchanging (suitable for models in Spec. 1);
- Equipped with safety valves for stable system pressure. The inlet and outlet pipe adopt an adaptive bypass valve to ensure stable outlet water pressure (suitable for models in Spec. 1).
- Equipped with a flow switch to avoid the unit from operating without water flow (suitable for models in Spec. 1);
- The standard water tank level indicator for visualizing check of the water level (suitable for models in Spec. 1);
- Compact outline structure and small foot (suitable for models in Spec. 1);

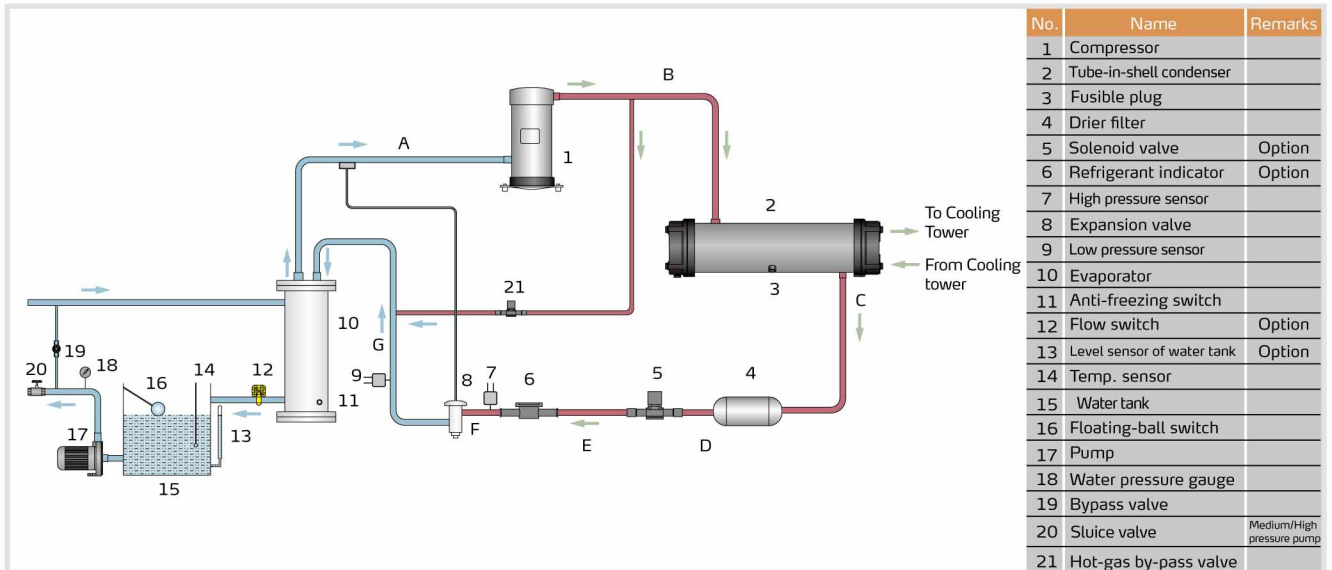
Options

- For models with a medium-pressure pump, add "P" at the end of the model code (suitable for models in Spec. 2), and for models optional with a high-pressure pump, add "HP" at the end of the model code.
- The level indicator in the water tank is optional to check whether the water level is within normal range and add "SG" at the end of the model code. (suitable for models in Spec. 2)
- The flow switch is optional to ensure that the unit is working under water flow, and add "FW" at the end of the model code (suitable for models in Spe.2);
- 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 (suitable for models in Spec.1);
- 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.

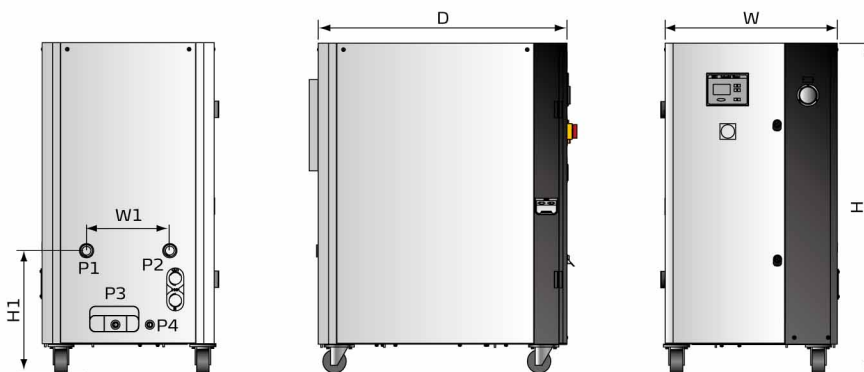
Application

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



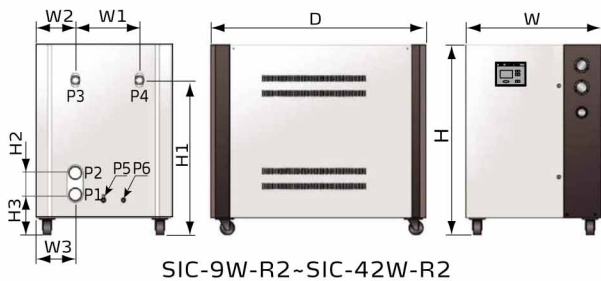
Outline Drawings I



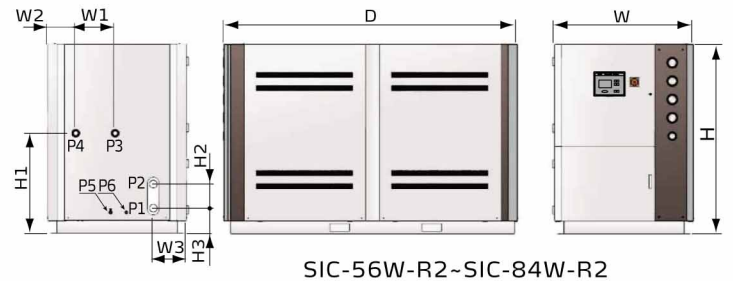
Model	H (mm)	H1 (mm)	W (mm)	W1 (mm)	D (mm)	P1 (inch) Cooling Water Inlet	P2 (inch) Cooling Water outlet	P3 (inch) Water Tank Outlet Port	P4 (inch) Water Tank Overflow Port	Weight (kg)
SIC-17W-R2	1266	468	661	358	955.5	Rc1	Rc1	Rc1/2	Rc1/2	250
SIC-29W-R2	1276	1090	810	364	1092	Rc1.25	Rc1.25	Rc1/2	Rc1/2	330
SIC-38W-R2	1276	1090	810	364	1092	Rc1.5	Rc1.5	Rc1/2	Rc1/2	350
SIC-57W-R2	1356	1156	856	324	1194	Rc1.5	Rc1.5	Rc1/2	Rc1/2	440
SIC-76W-R2	1645	1253	1044	557	1826	Rc2	Rc2	Rc1/2	Rc1/2	720
SIC-114W-R2	1700	1350	1044	503	1876	Rc2	Rc2	Rc1/2	Rc1/2	882

SIC-W-R2 Series

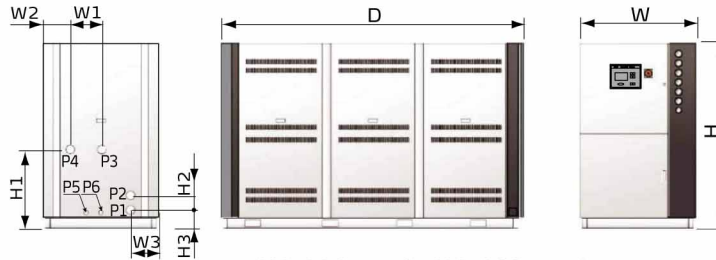
Outline Drawings II



SIC-9W-R2~SIC-42W-R2



SIC-56W-R2~SIC-84W-R2



SIC-112W-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) Chilled Water Inlet	P4 (inch) Chilled Water Outlet	P5 (inch) Water Tank Outlet Port	P6 (inch) Water Tank Overflow Port	Weight (kg)
SIC-9W-R2	970	790	91	207	605	273	164	164	1080	1 1/2"G	1 1/2"G	1"G	1"G	1/2"G	1/2"G	210
SIC-14W-R2	970	790	91	207	605	273	164	164	1080	1 1/2"G	1 1/2"G	1"G	1"G	1/2"G	1/2"G	240
SIC-28W-R2	1050	910	140	225	830	370	230	230	1200	1 1/2"G	1 1/2"G	1 1/2"G	1 1/2"G	1/2"G	1/2"G	340
SIC-33W-R2	1200	1078	140	308	865	459	202	162	1470	2"G	2"G	2"G	2"G	1/2"G	1/2"G	430
SIC-42W-R2	1200	1078	140	308	865	459	202	162	1470	2"G	2"G	2"G	2"G	1/2"G	1/2"G	495
SIC-56W-R2	1450	765	200	190	1055	300	295	205	2235	2 1/2"G	2 1/2"G	2"G	2"G	1/2"G	1/2"G	750
SIC-66W-R2	1450	765	200	190	1055	300	295	205	2235	2 1/2"G	2 1/2"G	2"G	2"G	1/2"G	1/2"G	760
SIC-84W-R2	1450	765	200	200	1055	300	215	205	2235	2 1/2"G	2 1/2"G	2 1/2"G	2 1/2"G	1/2"G	1/2"G	800
SIC-112W-R2	1760	750	140	190	1100	300	260	267	2870	2 1/2"G	2 1/2"G	2 1/2"G	2 1/2"G	1"G	1"G	1200
SIC-126W-R2	1760	490	140	190	1100	300	230	250	3085	2 1/2"G	2 1/2"G	2 1/2"G	2 1/2"G	1"G	1"G	1450
SIC-132W-R2	1760	520	140	190	1100	205	325	505	3285	2x2 1/2"G	2x2 1/2"G	2 1/2"G	2 1/2"G	1"G	1"G	1750

Model Selection Reference

Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)
≤250	≤25	9
≤450	≤45	14
≤650	≤65	21
≤850	≤85	28
≤1300	≤130	33
≤1800	≤180	42

Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)
≤2500	≤250	56
≤3000	≤300	66
≤4000	≤400	84
≤5000	≤500	112
≤6000	≤600	126



■ Specifications I(50Hz)

Item	Parameter	Model					
		SIC-17W-R2	SIC-29W-R2	SIC-38W-R2	SIC-57W-R2	SIC-76W-R2	SIC-114W-R2
Cooling Capacity ¹⁾	kW	17	29	38	57	76	114
Cooling Capacity ²⁾	kW	15	27	32	49	69	100
Cooling Capacity ³⁾	kW	14	24	29	45	62	91
Compressor	Type	Scroll					
	Power(kW)	3.18	4.98	6.8	10.15	6.79×2	10.152
Refrigerant	Filling quantity (kg)	2.85	6.8	5.6	9.8	6.5×2	11×2
	Control Mode	Thermostatic expansion valve					
	Type	R410A					
Evaporator	Type	Tube-in-shell style					
	Cooling Water Flow (L/min)	48.7	83.1	108.9	163.4	217.9	326.8
Condenser	Type	Plate style					
	In/out Pipe (inch)	Rc1.5	Rc2	Rc2	Rc2	Rc2	Rc2
	Cooling Water Flow (L/min)	60.9	103.9	136.1	204	272.3	408.5
Water Tank Capacity (L)		80	172	172	172	150	150
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
	Working Pressure ⁵⁾ (kgf/cm ²)	Medium pressure ≥3, High pressure≥4					
Total Power (kW) ⁶⁾		3.93	5.95	8.3	11.95	16.58	24.3
Pipe Coupling (female thread) (inch)	Chilled Water Outlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2
	Chilled Water Inlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2
	Drainage Port Of Water Tank	Rc1/2					
	Overflow Port Of Water Tank	Rc1/2					
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 switches/Anti-freezing switch					
Operation Noise dB(A)		67	67	71	71	67	71
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:

- Cooling capacity 1 is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature of 15°C of chilled water under the environmental temperature of 30°C.
- Cooling capacity 2 is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 10°C of chilled water under the environmental temperature of 30°C.
- Cooling capacity 3 is measured based on the flow of 0.172m³/(h.kW) and the outlet temperature 7°C of chilled water under the environmental temperature of 30°C.
- 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.
- The pressure value is the state when the pump inlet negative pressure is 0;
- Pump power, fan power, and compressor power are included in total power.
- The water-cooled water chiller applies to the environment temperature of 35°C or below.
- Special orders of machine voltage are available according to the request.

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