



CFC-free Refrigerant Water-cooled Water Chiller

SIC-17W-R2

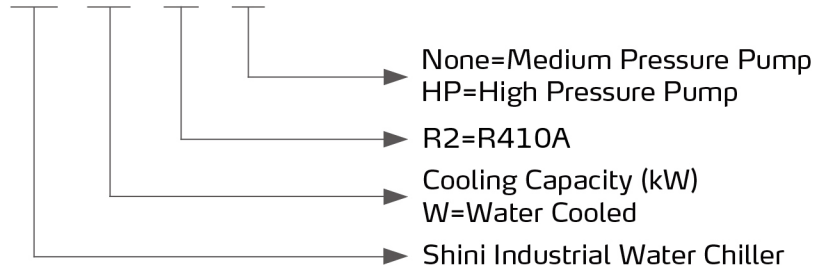


Refer carefully to this manual before operation.

SIC-W-R2 Series

Coding Principle

SIC - xW - R2 - xx



Control Panel

Features

- Cooling range: 7~25℃;
- 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 $\pm 1^{\circ}\text{C}$;
- RS485 communication interface to realize centralized monitoring.

The following features apply to models with one or two compressors.

- 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;
- Plate heat exchanger ensures efficient heat exchanging;
- Equipped with safety valves for stable system pressure. The inlet and outlet pipe adopt an adaptive bypass valve to ensure stable outlet water pressure;
- 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;
- Compact outline structure and small foot.

Options

- 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.

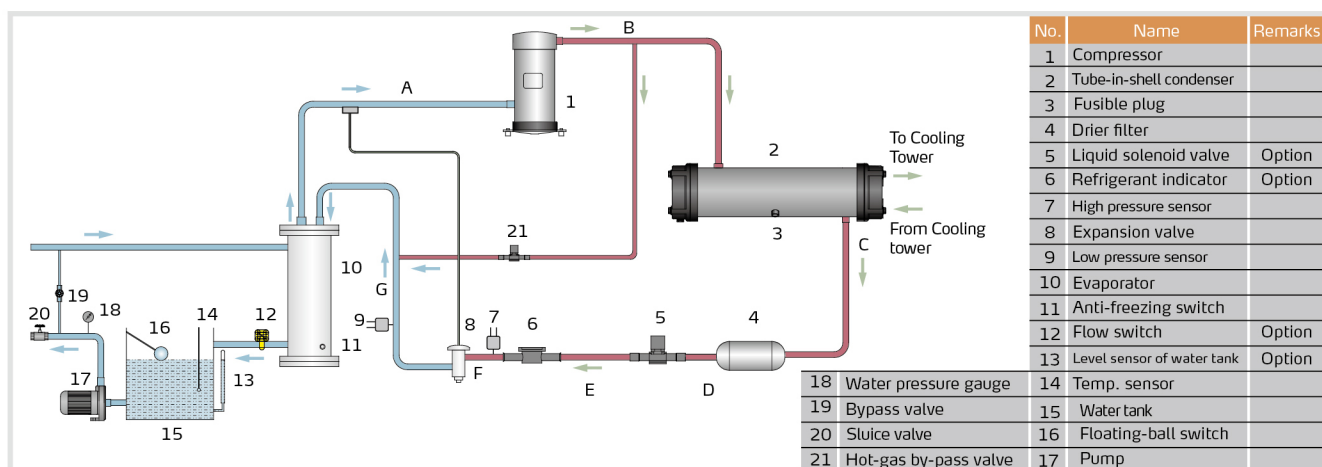
The following options apply to models with three or above compressor

- For models 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;
- 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;
- The level switch in the water tank is optional to check if the water level is normal, and add "LW" at the

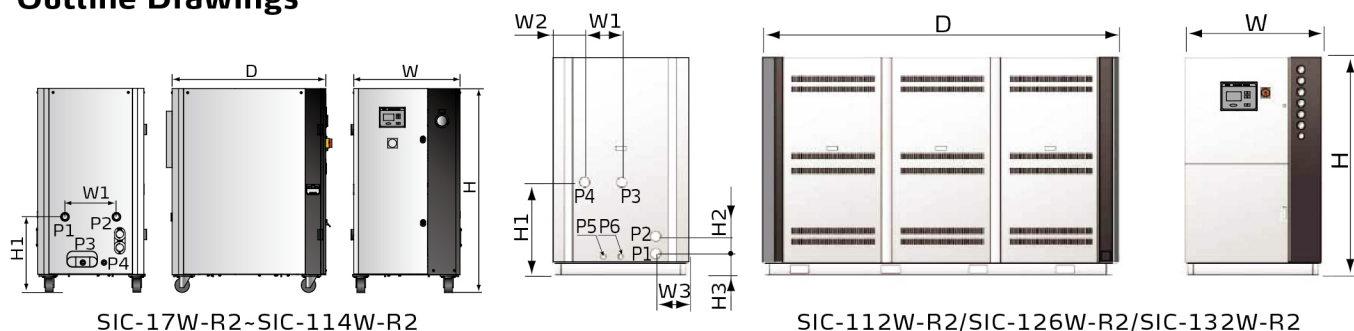
Application

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



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

Model	H (mm)	H1 (mm)	W (mm)	W1 (mm)	W2 (mm)	W3 (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	151.5	159	955.5	Rc1	Rc1	Rc1/2	Rc1/2	250
SIC-29W-R2	1276	1090	810	364	233	623	1092	Rc1.25	Rc1.25	Rc1/2	Rc1/2	330
SIC-38W-R2	1276	1090	810	364	233	623	1092	Rc1.5	Rc1.5	Rc1/2	Rc1/2	350
SIC-57W-R2	1356	1156	856	324	266.5	650	1194	Rc1.5	Rc1.5	Rc1/2	Rc1/2	440
SIC-76W-R2	1645	1253	1044	557	235.5	622	1826	Rc2	Rc2	Rc1/2	Rc1/2	720
SIC-114W-R2	1700	1350	1044	503	269	577.5	1876	Rc2	Rc2	Rc1/2	Rc1/2	882

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	2x2 1/2	2x2 1/2	2 1/2	2 1/2	1	1	1750

SIC-W-R2 Series

Model Selection Reference

Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)	Mould Clamping Force (T)	Moulding Capacity (kg/hr)	Model (kW)
≤450	≤45	17	≤2500	≤250	76
≤650	≤65	29	≤4000	≤400	114
≤850	≤85	38	≤5000	≤500	112(7℃出水)
≤1800	≤180	57	≤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 ¹ / ₂	2 ¹ / ₂	2×2 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 (kgf/cm ²)	Medium pressure≥3, High pressure≥4								
Total Power (kW) ⁵⁾		3.93	5.95	8.3	11.95	16.58	24.3	-/31.4/32.4	-/35.5/37	-/37.4/38.9
Pipe Coupling (female thread) (inch)	Chilled Water Outlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2	Rc2 ¹ / ₂		
	Chilled Water Inlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2	Rc2 ¹ / ₂		
	Drainage Port Of Water Tank	Rc1/2						Rc1		
	Overflow Port Of Water Tank	Rc1/2						Rc1		
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 0.172m³/(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 0.172m³/(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 0.172m³/(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)

Model SIC- Parameter		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
Pipe Coupling (female thread) (inch)	Chilled Water Outlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2	Rc2 ¹ /2		
	Chilled Water Inlet	Rc1	Rc1.25	Rc1.5	Rc1.5	Rc2	Rc2	2Rc1/2		
	Drainage Port Of Water Tank	Rc1/2						Rc1		
	Overflow Port Of Water Tank	Rc1/2						Rc1		
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			

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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