



## CFC-free Refrigerant Air-cooled Water Chiller

SIC-12A-R2

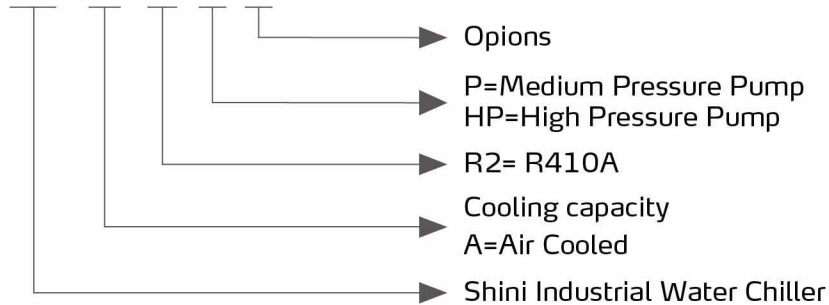


Refer carefully to the manual before operation.

# SIC-A-R2 Series

## ■ Coding Principle

SIC - xA - R2- xx- xx



## ■ Features

- Cooling range 7~25°C/44.6°F~77°F.
- Stainless steel insulated water tank.
- Equipped with anti-freeze thermostat.
- R410A ozone-friendly refrigerant.
- Refrigerant loop controlled by high and low pressure switches to ensure stable operation.
- Compressor and pump overload protection.
- Adopt high precision temperature controller with a max precision of +/- 1°C/1.8°F.
- All adopt quality compressors from major suppliers.
- Full-size air-cooled fin condenser for guaranty cooling capacity.
- Equipped with hot-gas bypass valve for precision temperature control without the need to frequent the ON/OFF cycle.
- Equipped with RS485 communication interface to realize centralized monitoring.



Control Panel

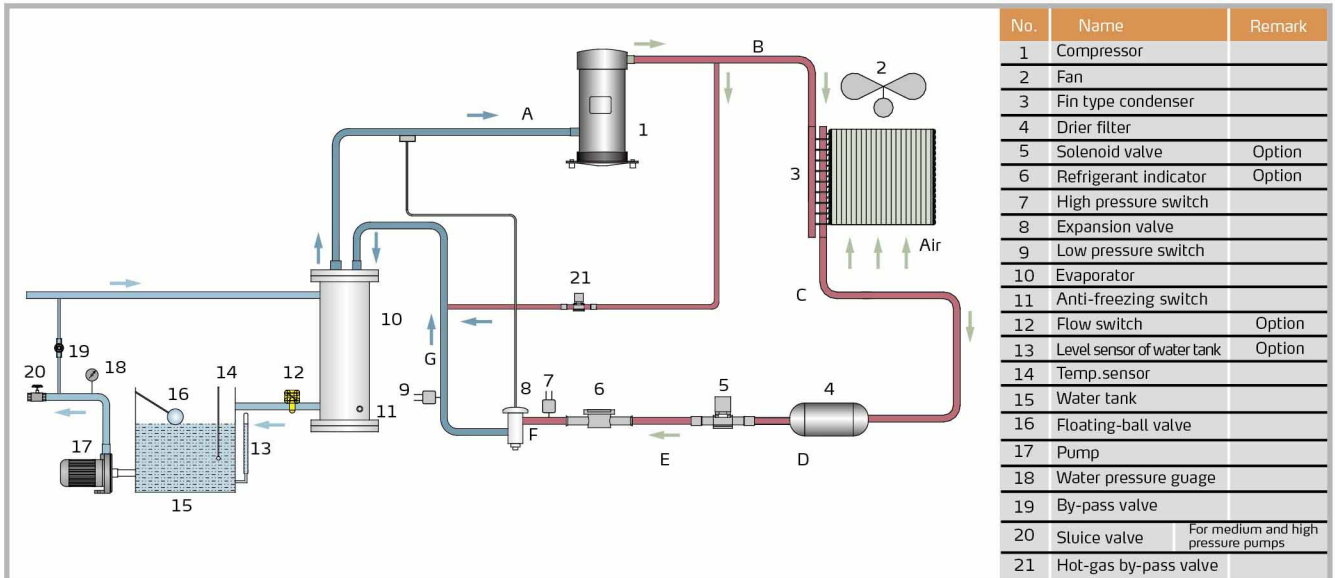
## ■ Options

- For models with a medium-pressure pump, add "P" at the end of the model code, and for models optional with a high-pressure pump, add "HP" at the end of the model code.
- The level indicator in water tank is optional to check whether the water level is within normal range, and add "SG" 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. It can potentially prevent liquid slug on startup. Add "LS" at the end of the model code.
- Optional refrigerant indicator the refrigerant moisture content, and add "LSG" at the end of the model code.
- The flow switch is optional to ensure that the unit runs under sufficient water, and add "FW" at the end of the model code.

## ■ Application

SIC-A-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

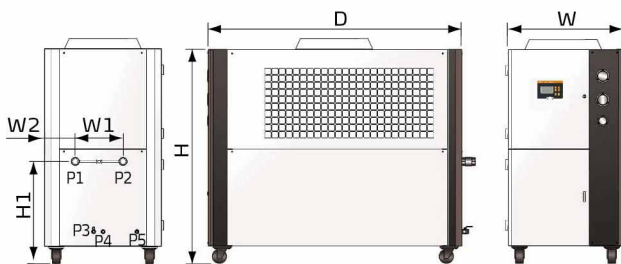


3D animation  
(Tencent)

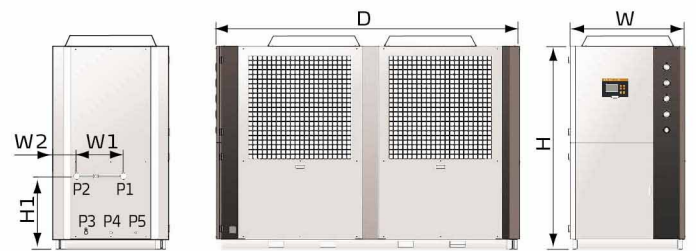


3D animation  
(Youtube)

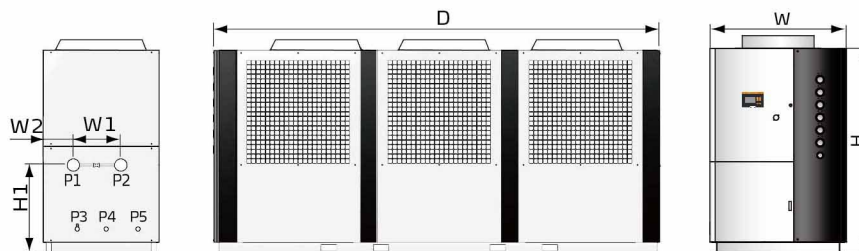
## Outline Drawings



SIC-7.5A-R2~SIC-38A-R2



SIC-48A-R2~SIC-75A-R2



SIC-100A-R2~SIC-114A-R2

# SIC-A-R2 Series

## Outline Drawings

Model		SIC-7.5A-R2	SIC-12A-R2	SIC-18A-R2	SIC-24A-R2	SIC-28A-R2	SIC-38A-R2	SIC-48A-R2	SIC-58A-R2	SIC-75A-R2	SIC-100A-R2	SIC-114A-R2
H	mm	1200	1490	1430	1440	1560			1942			
	inch	47.2	58.7	56.3	56.7	61.4			76.5			
H1	mm	625		640		726			755		641	
	inch	24.6		25.2		28.6			29.7		25.2	
W	mm	685		735		905			1208		1300	
	inch	27		28.9		35.6			47.6		51.1	
W1	mm	277	360	300		390		400	418	800	900	
	inch	10.9	14.1	11.8		15.4		15.7	16.5	31.5	35.4	
W2	mm	200	174	204		223		257		243	255	
	inch	7.9	6.9	8		8.8		10.1		9.6	10	
D	mm	1190	1320	1610		1782			2922		3475	
	inch	46.9	52	63.4		70.2			115		136.8	
P1 (inch) Cooling Water Inlet		1		1 <sup>1</sup> / <sub>2</sub>		2			2 <sup>1</sup> / <sub>2</sub>			
P2 (inch) Cooling Water Outlet		1		1 <sup>1</sup> / <sub>2</sub>		2			2 <sup>1</sup> / <sub>2</sub>			
P3 (inch) Water Tank Outlet Port				1/2		1						
P4 (inch) Water Tank Overflow Port						1/2					1	
P5 (inch) Water Tank Refill Port						1/2					1	
Weight	kg	305	315	400	420	530	540	775	800	840	1400	1600
	lb	672	695	882	926	1,168	1,191	1,709	1,764	1,852	3,087	3,527

## Structure of Air-cooled Models



- ① Stainless steel circulating water tank.
- ② Large flow 3-phase pump ensures no blockage and high torque.
- ③ High/low pressure gauges to display system pressure.
- ④ Main power switch.
- ⑤ Pump pressure gauge to display water pressure.
- ⑥ Scroll-type compressor(s) for high efficiency and low noise.



- ⑦ Expansion valve .
- ⑧ Tube-fin condenser .
- ⑨ Shell-and-tube type evaporator.
- ⑩ Powder coating coated frame and control box.



## Specifications (50Hz)

Item	Model Parameter	SIC-											
		7.5A-R2	12A-R2	18A-R2	24A-R2	28A-R2	38A-R2	48A-R2	58A-R2	75A-R2	100A-R2	114A-R2	
Cooling <sup>1)</sup> Capacity	kW	7.5	12	18	24	28	38	48	58	75	100	114	
Cooling <sup>2)</sup> Capacity	kW	9.5	14	24	32	38	45	64	76	90	121	135	
Compressor	Type	Scroll											
	Power(kW)	2.9	4.2	6.4	8.72	9.36	12.25	17.44	18.72	24.86	33.58	37.29	
Refrigerant	Filling volume	kg	3.5	5.0	5.5	9.0	12.5	7.5×2	8×2	7.8×2+6.8	8.7×3		
		lb	7.7	11	12.1	19.8	27.6	16.5×2	17.6×2	17×2+15	19.2×3		
	Control Mode	Thermostatic expansion valve											
	Type	R410A											
Evaporator	Type	Tube-in-shell style											
Condenser	Type	Fin style											
	Blower (kW)	0.19	0.55	2×0.23	2×0.385	2×0.6	2×0.78	2×1.03	2×0.85	2×1.92	2×2.2+1.5	3×2.2	
Water Tank Capacity	L	30	65	80	186	230	316						
	gal	7.9	17.2	21.1	49.1	60.8	83.5						
Pump <sup>4)</sup>	Power (kW)	0.75/0.75/1.1	1.1 / 1.1 / 1.1	1.1 / 1.5 / 2.2	- / 1.8 / 2.4	- / 3.0 / 4.0	-/4.0/5.5						
	Pump Flow	L/min	21.5	34.4	51.6	68.8	80.3	108.9	137.6	166.3	215.0	286.7	326.8
		gal/min	5.7	9.0	13.6	18.2	21.2	28.8	36.4	43.9	56.8	75.7	86.3
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>3)</sup>	3.3/3.7/4.5	3.2/3.5/4.4	2.8/4.1/4.9	2.7/3.85/4.5	3.1/3.9/4.9	2.4/3.8/4.6	-/3.4/4.5	-/3.2/4.3	-/3.5/4.1	-/3.1/3.9	-/3.7/4.9	
Total Power (kW) <sup>5)</sup>		3.8/3.8/4.2	5.5/5.5/5.9	7.8/7.8/7.8	10.6/10.6/10.6	11.7/12/12.8	14.9/15.3/16	-/21.3/21.9	-/22.2/22.8	-/31.7/32.7	-/42.5/43.5	-/47.9/49.4	
Pipe Coupling (female thread)	Chilled Water Outlet	1"G	1 1/2"G	2"G	2 1/2"G								
	Chilled Water Inlet	1"G	1 1/2"G	2"G	2 1/2"G								
	Water Tank Drainage Port	1/2"G				1"G							
	Water Tank Overflow Port	1/2"G				1"G							
Protective Devices	Compressor	Overload relay											
	Pump	Overload relay											
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch											
	Water Circuit	Flow switch Optional/Water level switch (Optional)/By-pass valve											
Operation Noise dB(A)		78	75	74	78	81	86	84	82	86	90	90	
Power(VAC) <sup>6)</sup>		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 is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C/44.6°F of chilled water under the environmental temperature of 35°C/95°F.

2) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 15°C/59°F of chilled water under the environmental temperature of 25°C/77°F.

3) It is the working pressure of water pump when negative pressure of inlet water is 0.

4) Low pressure pump is standard, customers can change for medium pressure pumps (use P for short; e.g.: SIC-and A-R2-P) or high pressure pumps (use HP for short; e.g.: SIC-and A-R2-HP), specific parameters in turn as shown above.

5) Pump power is included in total power.

6) Special orders of machine voltage can be acceptable according to customers's request.

7) The air-cooled water chiller is applicable to the conditions under the environment temperature of 43°C.

# SIC-A-R2 Series

## Specifications (60Hz)

Item	Model SIC-Parameter	12A-R2	24A-R2	28A-R2	38A-R2	48A-R2	58A-R2	75A-R2	100A-R2	114A-R2	
		Cooling <sup>1)</sup> Capacity	kW	15	30	35.5	45	60	70	90	122
Cooling <sup>2)</sup> Capacity	kW	17.5	37.5	41	48	75	82	96	133.5	144	
Compressor	Type	Scroll									
	Power(kW)	5.28	10.2	11.73	14.8	20.4	23.76	29.6	39.8	44.4	
Refrigerant	Filling Volume	kg	5.0	5.5	9.0	12.5	7.5×2	8×2	7.8×2+6.8	8.7×3	
		lb	11	12.4	19.8	27.6	16.5×2	17.6×2	17.2×2+15	19.2×3	
	Control Mode	Thermostatic expansion valve									
	Type	R410A									
Evaporator	Type	Plate style							Tube-in-shell style		
Condenser	Type	Fin style									
	Blower (kW)	0.91	2×0.57	2×0.91	2×1.1	2×2.2	2×2.2	2×2.2+2.2	3×2.2		
Water Tank Capacity	L	50	85	150	180	200	270	400			
	gal	13.2	22.5	39.6	47.6	52.8	71.3	105.7			
Pump <sup>4)</sup>	Power (kW)	0.75/1.5	1.1/1.5	2.2/3.0	3.0/3.0	5.5/5.5					
	Pump Flow	L/min	43.1	86.2	102	129.3	172.3	201.1	258.5	350.4	390.7
		gal/min	11.4	22.8	26.9	34.2	45.5	53.1	68.3	92.6	103.2
	Working Pressure (kgf/cm <sup>2</sup> ) <sup>3)</sup>	-/3.1/5.1	-/3.0/4.2	-/2.7/4.1	-/2.5/3.9	-/4.5/5.6	-/3.9/4.8	-/2.8/2.8	-/4.5/4.5	-/4.1/4.1	
Total Power (kW) <sup>5)</sup>	-/6.9/7.6	-/12.4/12.8	-/15.7/16.5	-/19.2/20	27.8	31.1	39.5	51.9	56.5		
Pipe Coupling (female thread)	Chilled Water Outlet	1"G	1 1/2"G	2"G	2.5"G						
	Chilled Water Inlet	1"G	1 1/2"G	2"G	2.5"G						
	Water Tank Drainage Port	1/2"G			1"G						
	Water Tank Overflow Port	1/2"G			1"G						
Protective Devices	Compressor	Overload relay									
	Pump	Overload relay									
	Cooling Water Circuit	High and low pressure switches/Anti-freeze switch									
	Water Circuit	Flow switch/Water level switch (Optional)/By-pass valve									
Operation Noise dB(A)	75	78	81	86	84	82	86	90	90		
Power(VAC) <sup>6)</sup>	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: 1) Cooling capacity is measured based on the flow of 0.172m<sup>3</sup>/(h.kW) and the outlet temperature 7°C/44.6°F of chilled water under the environmental temperature of 35°C/95°F.

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5) Pump power is included in total power.

6) Special orders of machine voltage can be acceptable according to customers's request.

7) The air-cooled water chiller is applicable to the conditions under the environment temperature of 43°C/109.5°F.

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