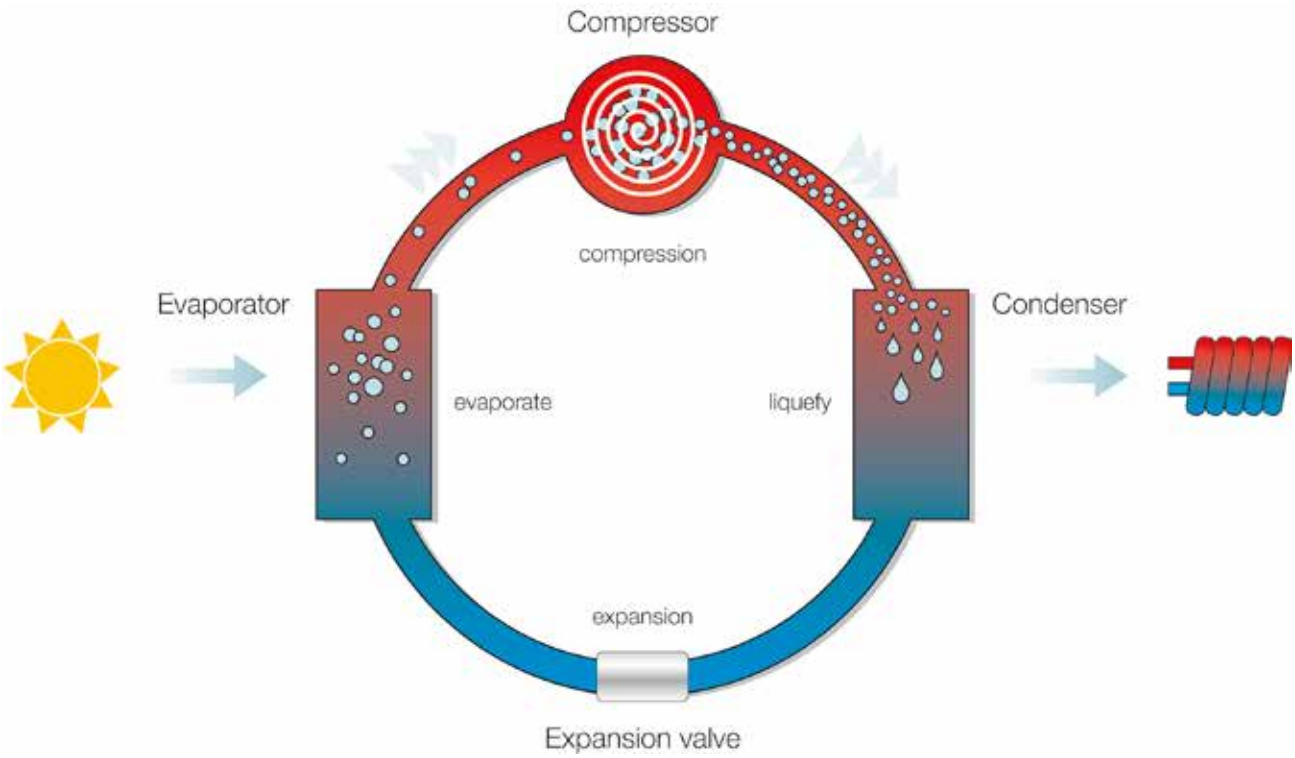
SWIMMING POOL HEAT PUMP
VERSOPUMP - SP SERIES

ECO

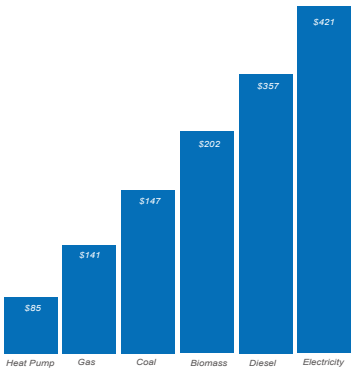
HEAT PUMP WORKING PRINCIPLE



Heat pump water heater extracts energy from the air or other heat source and uses it to heat water.It uses 1 time power to drive the compressor and brings 4.3 times heat to the water, this is what we called coefficient of performance(COP). With COP up to 4.3.

ENERGY RESOURCE COMPARISON

The data on the following drawing are calculated on the basis of 20hrs/day in 120 days.



Operating Cost Comparison

Items	Heat Pump	Gas	Diesel	Electricity	Coal	Biomass
Calorific Value	860kcal/kW	8600kcal/L	10200kcal/L	860kcal/kW	5000kcal/Kg	4000
Unit Price	$0.1/kWh	$0.3/$m^3$	$0.9/L	$0.10/kWh	$0.075/Kg	0.20
Heating Load			200kW			
η	468%	85%	85%	95%	35%	85%
Consumption Per Hour	43kW/h	24m^3/h	20L/h	211kW/h	98Kg/h	51
Operating Cost Per Day	$85	$141	$357	$421	$147	$202
Operating Cost Per Year	$10256	$16941	$42851	$50526	$17691	$24282
Energy-Saving	/	19.05%	68.00%	72.86%	22.48%	43.52%

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VERSOPUMP PRODUCT FEATURES

Use stainless steel 304 material for heat exchanger side cover, fastener and other important parts etc.. Not easy to rust and corrosion, more durable.

Environmental protection refrigerant for option: protect atmospheric ozone layer, small pressure loss, stronger heating capacity, better heat transfer performance.

Use “Large Flow” system design, increase the amount of swimming pool water circulation, achieve quick and constant water temperature, reduce regional temperature difference.

Use high quality industrial titanium tube heat exchanger, the purity can each 99.8 percent, strong corrosion resistance, no scale deposit, not easy to be blocked.

Unique flow structure design to make fluid backset heat exchange, water will whirled with high speed in the heat exchanger, carry off the inner dirt in heat exchanger, increase the self cleaning ability of heat exchanger.

Use heat pump water heater professional compressor, wider operation rage, enhance the reliability greatly.

High precision electronic expansion valve: use electronic expansion valve to control, reach 500 steps adjustment, adjust super heat degrees accurately, achieve high efficiency operation system.

High COP up to 5.6 at working condition 24℃/19℃(DB/WB), saving electricity means saving money and protecting our earth.

Water flow switch has been fixed inside the titanium tube heat exchanger, better protection for longer service time.

Wifi function for option(Smart Apps on mobile phone).

Large water flow design, increase the amount of swimming pool water circulation, achieve quick and constant water temperature, reduce regional temperature difference.

Large air volume, low noise fan motor: Use airfoil shape, large chord, space distortion alloy blade, efficient internal rotor motor; High efficiency and compact.

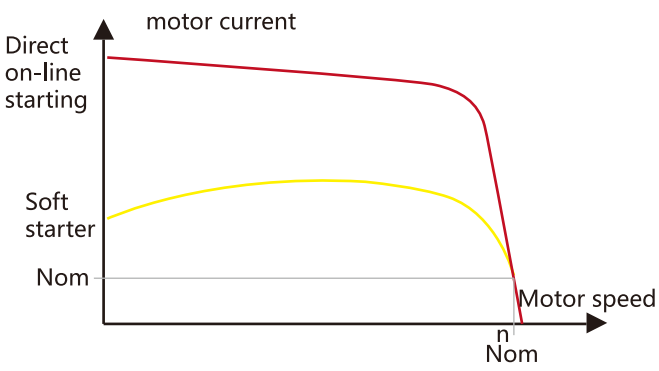
Centralized control: Modular combination control for at most 16 heat pumps, can be combined freely according to the required capacity.

Stainless steel 304 material for side cover of finned tube heat exchanger, for all fastener and other important parts, Do not rust or corrode easily, more durable.

Titanium tube heat exchanger: Adopt professional material of PVC for the shell, which meets the requirements of environmental protection ROHS. PPR material for option for pool temperature requirement higher than 45 deg C, long lifetime for the heat exchanger;One-step forming top cover and base cover, can work under pressure of 2.5Mpa;Pure titanium seamless tube, acid and alkali resistance, good corrosion resistance, can work under refrigeranpressure of 5.3Mpa.

The blue hydrophilic aluminum foil fin heat exchanger adopts cross-type multi-flow path design to make the heat exchange more uniform; the internal thread copper tube design has higher heat transfer efficiency; at the same time, the hydrophilic fins are not easy to form water droplets, Spreading into a uniform water film completely on the surface of fins, eliminates the generation of water bridges, which greatly improves the heat exchange capacity and heat exchange efficiency between the aluminum foil and the flowing air.

Low ODP refrigerant: R410a, other refrigerant for option.



Soft starter for option, reduce the starting current and starting stress, extend the service life of the motor and related equipment. Smooth start and soft stop avoid the surge problem and water hammer effect of traditional starting equipment.

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VERSOPUMP-SP SERIES (SWIMMING POOL HEAT PUMP)															
Model / Part No		SP11-H	SP13-H	SP24-H	SP13-H	SP24-H	SP31-H	SP47-H	SP63-H	SP92-H	SP112-H	SP143-H	SP190-H	SP230-H	SP280-H
Rated Heating Capacity	kW	11.8	13.8	24.1	13.8	24.1	31.5	47.5	63.3	92.8	112.6	143.3	190.0	230.0	280.0
Rated Power	kW	2.21	2.63	4.51	2.64	4.52	6.01	9.06	12.10	16.96	20.91	26.49	34.0	40.9	49.7
Rated Current	A	12.82	15.36	25.93	5.01	8.61	11.94	17.51	23.04	32.91	40.42	50.58	65.0	77.9	94.5
Max. Power	kW	2.87	3.42	5.86	3.43	5.88	7.81	11.78	15.73	22.05	27.18	34.44	44.19	53.11	64.55
Max. Current	A	14.05	16.33	27.60	5.92	10.13	14.20	20.32	28.88	40.19	48.65	62.67	81.8	99.0	120.2
Performance Coefficient	COP	5.34	5.25	5.34	5.23	5.33	5.24	5.24	5.23	5.47	5.38	5.41	5.6	5.6	5.6
Hot Water Temp Out	℃	28 (Adjustable to 40 Degree C)													
Rated Cooling Capacity	kW	8.74	11.65	19.42	11.65	19.42	24.27	38.83	50.49	77.67	92.23	116.50	155.35	184.47	220.25
Input Power	kW	2.33	3.08	5.06	3.04	5.08	6.34	10.25	13.25	20.39	24.21	30.66	40.98	48.92	58.27
Input Current	A	12.26	16.22	26.61	5.78	9.66	12.04	19.47	25.18	38.73	46.00	58.25	77.87	92.96	110.67
EER	/	3.75	3.78	3.84	3.83	3.82	3.83	3.79	3.81	3.81	3.81	3.80	3.79	3.77	3.78
Cooled Water Temp Out	℃	27 (Adjustable to 10 Degree C)													
Power Supply		1N 220V/50Hz			3N 380V/50Hz or 3N 380V 60Hz										
Compressor	Type	Rotor type	Hermetic scroll type												
	Quantity Set	1	1	1	1	1	1	2	2	4	4	4	4	4	4
	Start Mode	Directly start													
Application Side Heat Exchanger	Type	Titanium Tube Heat Exchanger													
	Water Flow m^3/h	5.07	6.02	10.32	6.02	10.32	13.76	20.64	28.38	40.85	49.45	62.35	81.70	98.90	124.70
	Pressure Drop KPa	≤50						≤75							
	Connection Size DN	Φ50	Φ50	Φ50	Φ50	Φ50	Φ50	Φ50	Φ50	Φ90	Φ90	Φ90	Φ110	Φ110	Φ110
	Connection type	PVC Union Connection													
Safety Interlocks		1. High Pressure and Low Pressure Protection, 2. Anti-freezing Protection, 3. High Temperature Protection, 4. High Temperature Diffrence Protection 5. Overload Protection, 6. Lack phase Protection, 7. Reverse phase Protection, 8. Water Flow Protection etc.													
Noise	DB(A)	≤50	≤55	≤63	≤55	≤63	≤63	≤65	≤68	≤70	≤70	≤70	≤76	≤78	≤80
Unit dimensions	m	1*0.3*0.6	0.7*0.7*0.9	0.8*0.7*1	0.7*0.7*0.9	0.8*0.7*1	0.8*0.7*1	1.5*0.7*1.1	1.5*0.7*1.1	2*1.1*1.1	2*1.1*1.1	2*1.1*1.1	2*2*2	2*2*2	2*2*2
Weight	KG	64	100	160	100	160	190	255	400	600	725	855	1225	1260	1310

Remark:

1. Heating Mode Standard Condition: Ambient temp.(DB/WB):24℃/19℃, Water temp.(In/Out):26℃/28℃

2. Cooling Mode Standard Condition: Ambient temp.(DB/WB): 35℃/24℃; Water temp.(In/Out):29℃/27℃

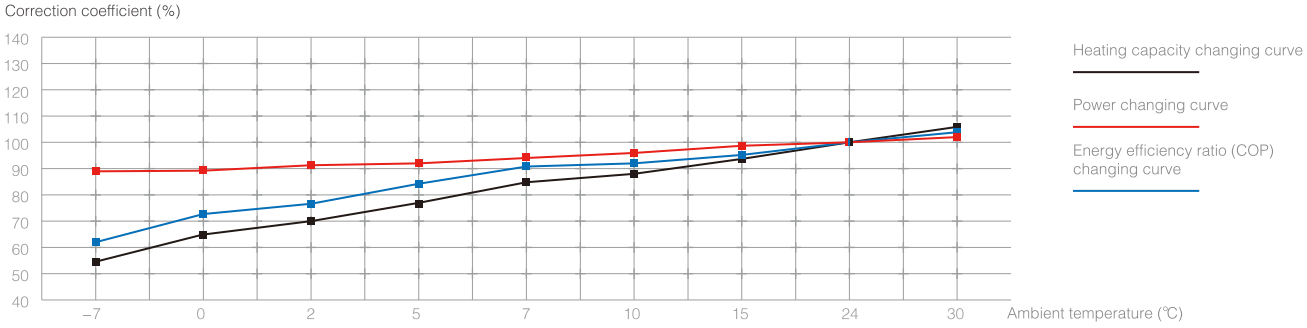
3. The above parameters are based on Refrigearnt R410A, for parameters based on other refrigerant please contact us.

4. The above models are standard version. Bespoke designed model avaialble upon request

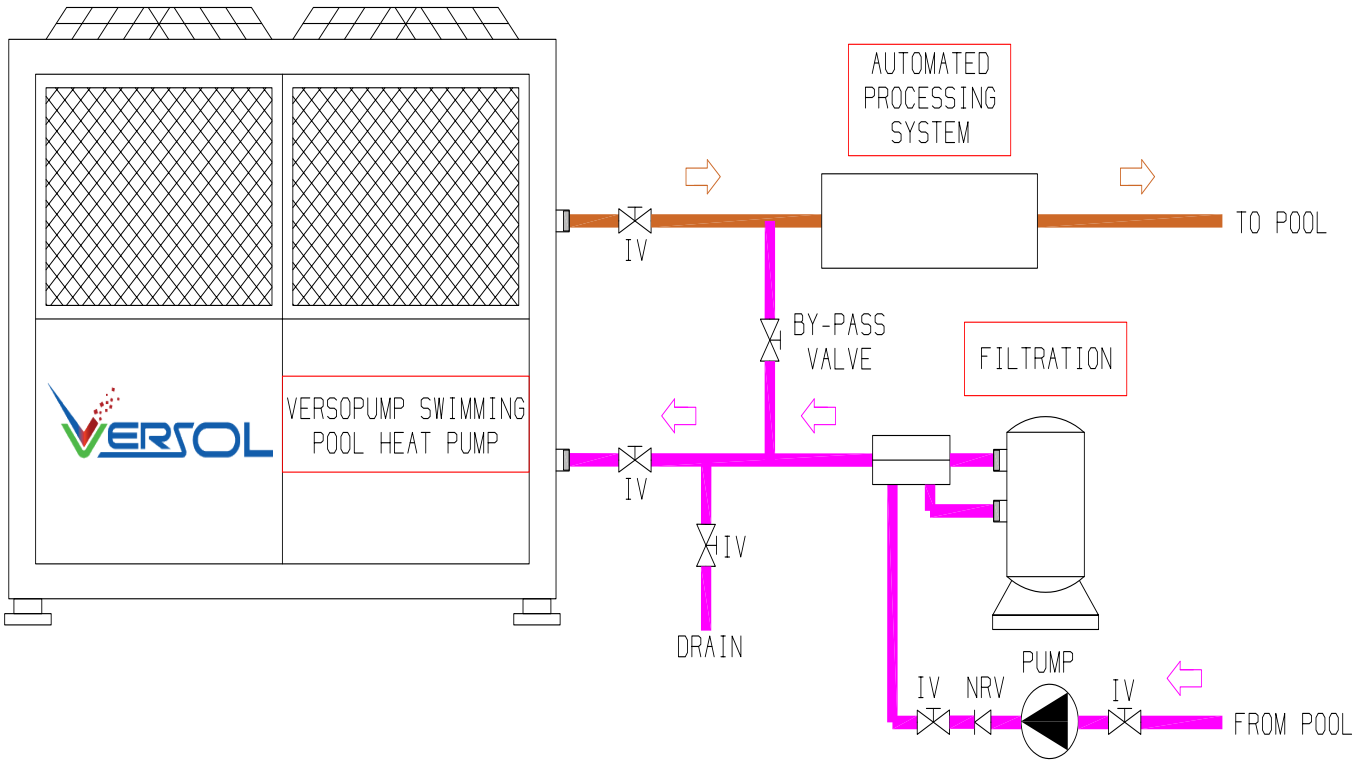
HEATING PERFORMANCE CORRECTION COEFFCIENT (%)

Ambient temperature (℃)	-7	0	2	5	7	10	15	24	30
Heating capacity (%)	55.0	65.0	70.0	78.0	85.0	88.0	93.0	100.0	105.0
Power (%)	89.5	89.6	91.0	92.0	93.8	95.6	98.8	100.0	102.0
Energy efficiency ratio (COP) (%)	61.5	72.5	76.9	84.8	90.6	92.1	94.1	100.0	102.9

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE



APPLICATIONS SKETCH



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