ESTECH
ENERGY

SWIMMING POOL HEAT PUMP - PCH SERIES

ESTECH ENERGY LLC

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ENERGY

ADVANTAGE

a. Copeland compressor and R134a refrigerant for best operation, low pressure but high water temperature.

b. Stainless steel 304 material for all fasteners, frame of evaporator and etc..

c. Low noise fan motor with metal fan blades, Durable and reliable.

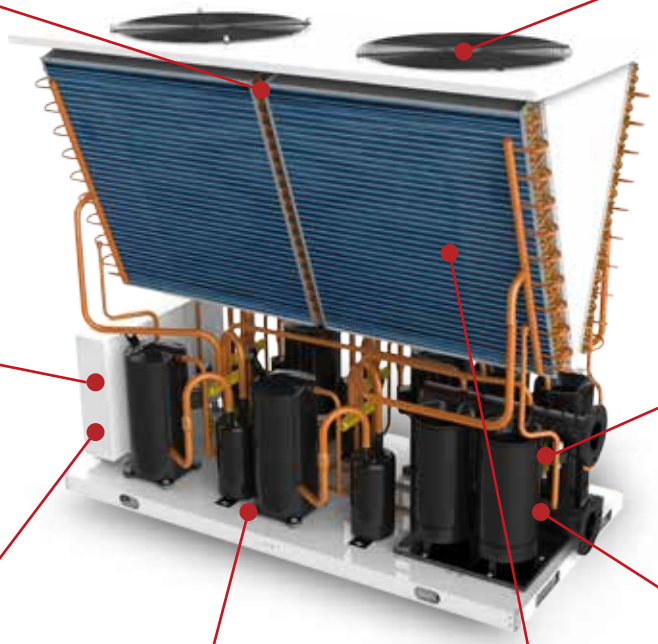
d. World famous brands of components, such as Saginomiya electronic expansion valves, SANHUA 4-way valves, Schneider AC contactor and etc.,

e. With complete testing for good quality and highest COP.

f. All copper material for water pipes.

g. Advanced control system for reaching all of your requirements, such as Rs485, Modbus for BMS.

h. Unique cabinet designing, for your better marketing.



1

Stainless steel 304 material for the frame of the finned tube heat exchanger, not easy to rust and corrosion, more durable.

2

Schneider AC Contactor and Relay, capacity selection 1.5 times according to the heat pump current, to ensure the stable operation for long time.

3

Locker with key, for safe of control for professional engineers

4

Stainless steel 304 for all fasteners and other important parts, not easy to rust and corrosion, more durable.

5

Good fixing for all the sensors and small components.

6

High quality water flow switch fixed in factory for big capacity heat pumps, safe working for the required water flow which is very helpful for the lifetime of the heat pump.

7

World sales No.1 SANHUA or Saginomiya electronic expansion valve, high precision, reach 500 steps adjustment, adjust the super heater degrees accurately, achieve high efficiency operation system.

8

Top quality fan motor and metal fan blades,large air volume, low noise.
Airfoil shape, large chord, space distortion alloy blade, efficient internal rotor motor; High efficiency and compact.

COPELAND SCROLL

Copeland or Panasonic high quality compressor specially for heat pump water heater, the best operation and last for longest running time:

1.Adopt scroll heating technology;

2.With much wider operation range for different ambient temperature;

3.Not only can produce hot water for daily life use, can also produce high water temperature up to 80 degrees C, it can reach the requirement for daily life and industrial use;

4.Special designing for the heat pump water heater of high suction exhaust temperature and system high condensing temperature and high condensing pressure, performance is stable and efficient, long service life.

V-SHAPE

V-shape finned tube heat exchanger for evaporator, the best design for high capacity and efficiency.

Open angle v-shaped coils achieve the maximum efficiency at all conditions. A specific design of the condensing modules allow a reduction in both unit footprint as well as clearances, thus facilitating service and maintenance procedures. The structure is also designed to allow the easiest access to all the components in order to simplify maintenance work.

SHELL & TUBE HEAT EXCHANGER

High quality and efficiency Shell & tube heat exchanger, , adopt high efficiency fin tube which heating area is 3.7 times than ordinary smooth tube, larger diameter waterway design to make water flow more smoothly, energy efficiency is more superior.

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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.

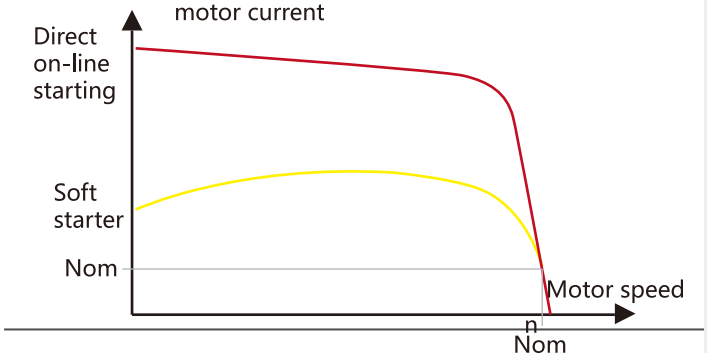
Stainless steel 304 material for side cover of finned tube heat exchanger, for all fastener and other important parts, Do not rust or corrode easily, more durable.

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.

R410A

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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ESTECH - PCH SERIES (SWIMMING POOL HEAT PUMP)																
Model / Part No			PCH11	PCH13	PCH24	PCH13	PCH24	PCH31	PCH47	PCH63	PCH92	PCH112	PCH143	PCH190	PCH230	PCH280
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℃

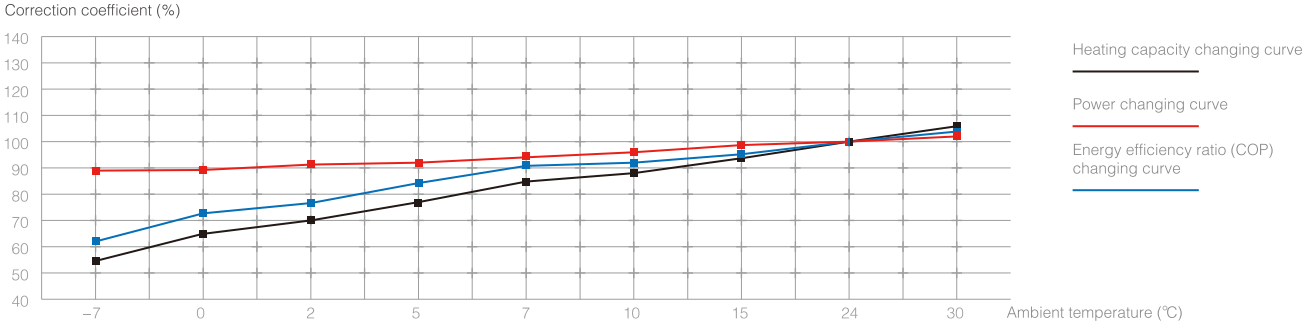
3. The above parameters are based on Refrigearnt R410A, for parameters based on other refrigerant please contact us.

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

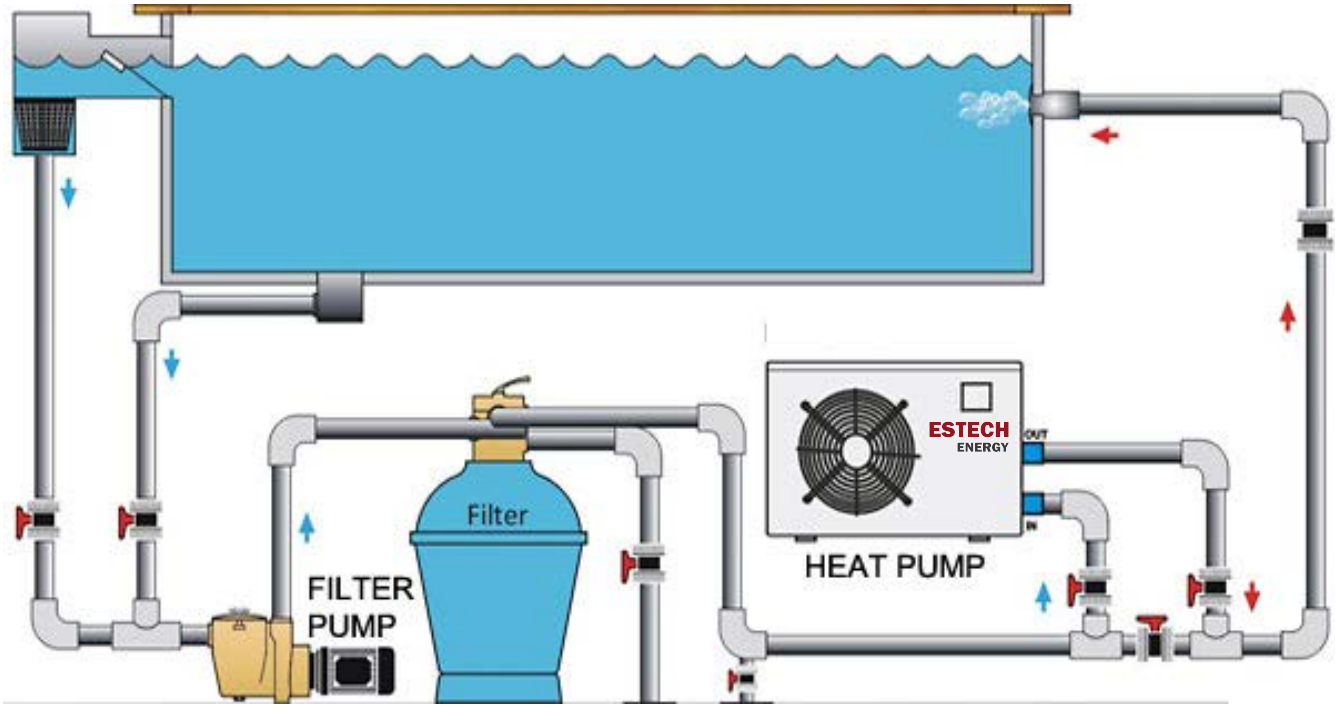
HEATING PERFORMANCE CORRECTION COEFFCIENT (%)

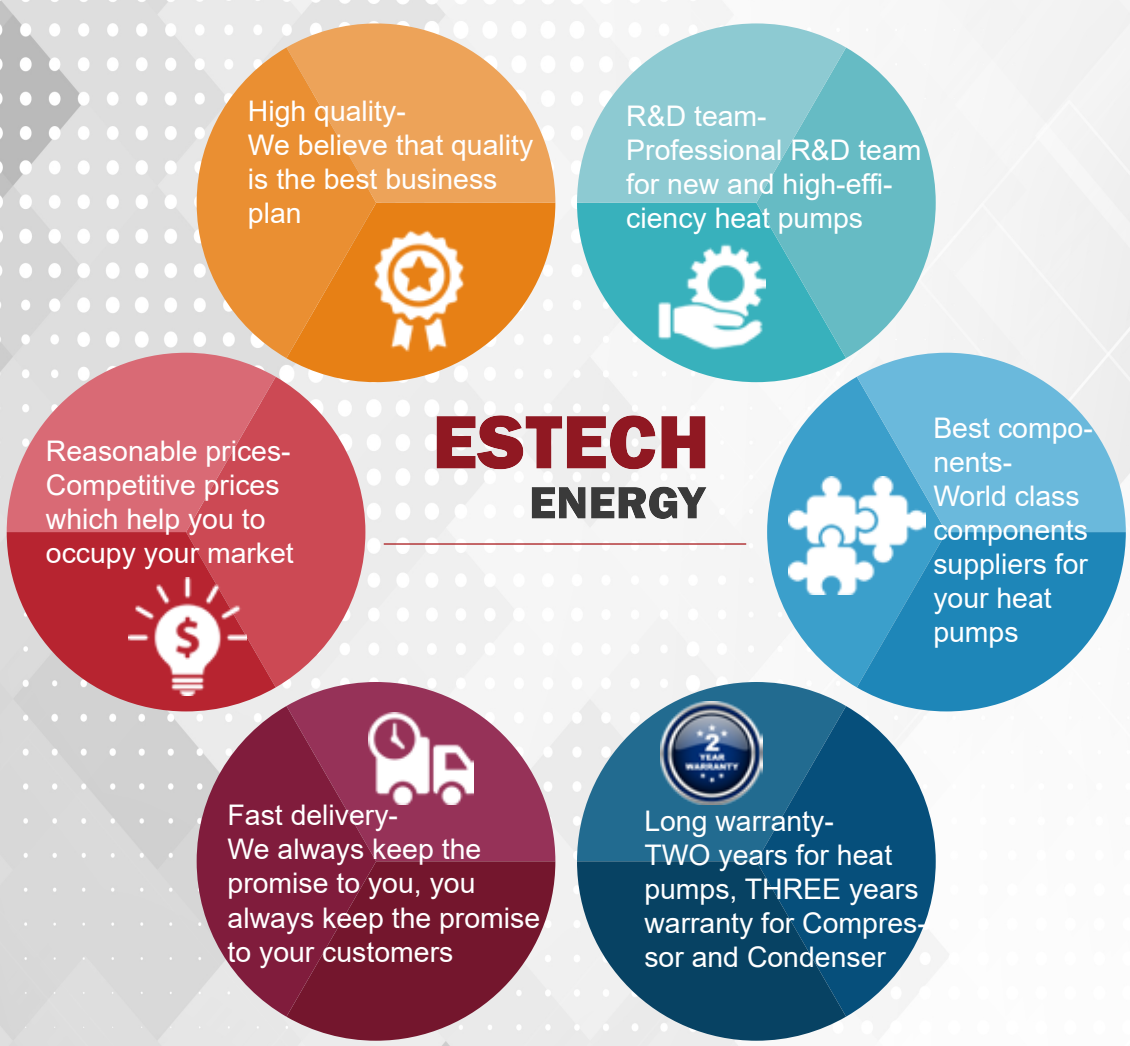
Ambient temperature (℃)	-7	0	2	5	7	10	15	24	30
Heating capacity (%)	55.0	65.0	70.0	78.0	85.0	88.0	93.0	100.0	105.0
Power (%)	89.5	89.6	91.0	92.0	93.8	95.6	98.8	100.0	102.0
Energy efficiency ratio (COP) (%)	61.5	72.5	76.9	84.8	90.6	92.1	94.1	100.0	102.9

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE



APPLICATIONS SKETCH





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