

**COMMERCIAL AIR SOURCE
HEAT PUMP WATER HEATER**





About Us

Zhejiang CEN New Energy Stock Co., Ltd. was established in year 2001, in the early time, the company mainly produces solar water heater controllers and other related products. In 2009, General Manager Xia Qing decided to transform the product, especially set up the heat pump department. The company began to focus on the production and sales of heat pump water heater products, and with the establishment of the water tank production workshop in 2013, formed a research and development, production and sales system of heat pump control system, heat pump water heater and water tank.

In the solar water heater control system, our company has maintained the top three level in China for a long time. In the field of heat pump water heaters, we started to enter the field of real estate engineering in 2017 and achieved remarkable results. In this field, our household heat pump water heaters Sales ranked second in the province.

In the international market, our products have passed the CE certification of the European Union by TUV, and the sales volume of our products is growing rapidly and steadily at a rate of 20%~30% per year.

In 2017, we successfully listed on the New Third Board and began to officially move into the capital market. And moved into a new factory in the same year, with a total plant area of about 50,000 square meters.

Our GMPI-certified heat pump laboratory can test the unit's capacity from 1HP to 30HP, the minimum test ambient temperature can reach -30 degrees Celsius, and the highest test ambient temperature is 52 degrees Celsius.

Looking forward to the future, we will continue to focus on the broad heat pump field, making our own contribution to energy conservation and environmental protection, providing comfortable hot water for thousands of families.



ISO9001-2015
Quality Management System for Quality Assurance
Certificate No.: ARES/CN/1701019Q



OHSAS18001:2007
Occupation Health Safety Management System
Certificate No.: 12816S20193ROS

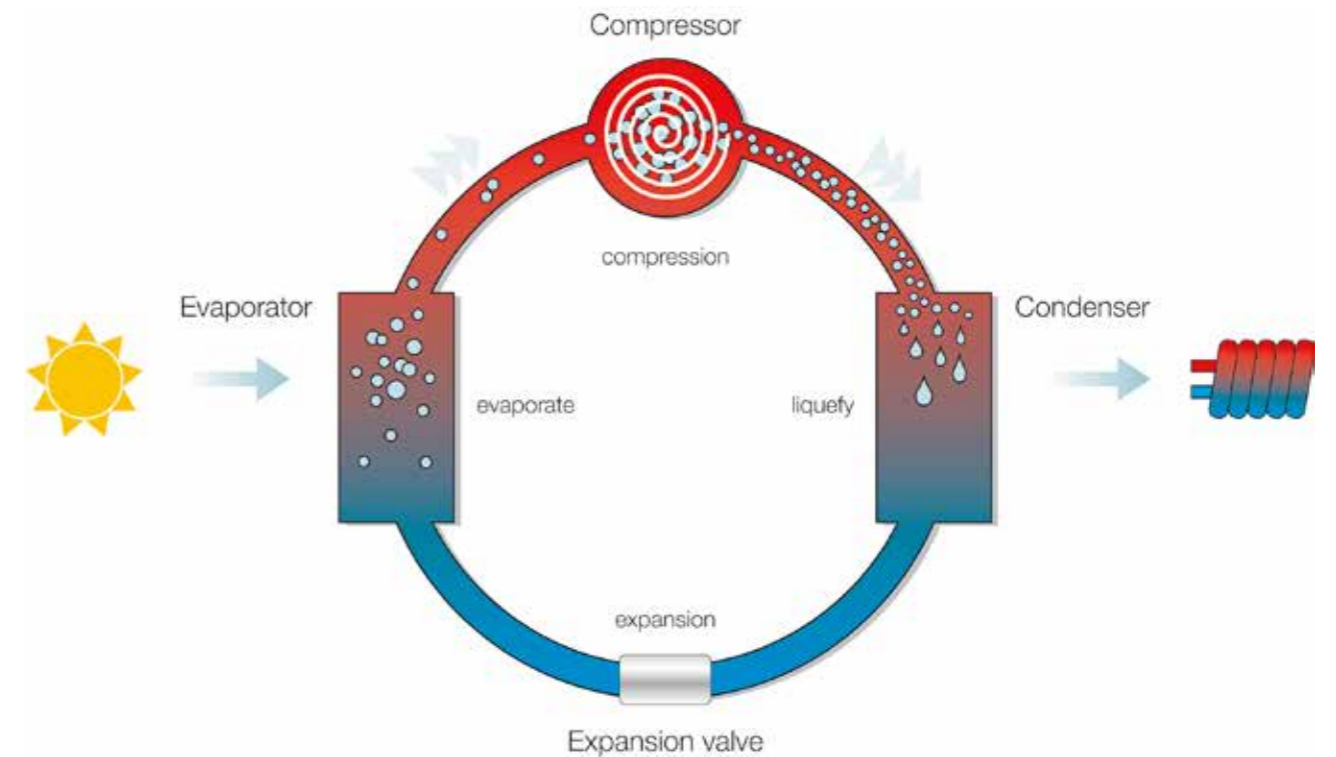


ISO14001-2015
Environmental Management System
Certificate No.: ARES/CN/1706042E



Laboratory issued by GMPI
Certificate No.: RZ-ZL-2017171

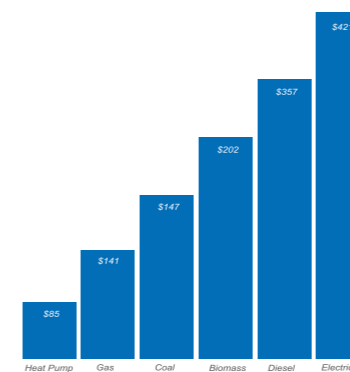
HEAT PUMP WORKING PRINCIPLE



Heat pump water heater extracts energy from the air 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.



Items	Operating Cost Comparison					
	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%

COMMERCIAL AIR SOURCE HEAT PUMP WATER HEATER



VOLCANO SERIES

PRODUCT FEATURES

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

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: protect atmospheric ozone layer, small pressure loss, stronger heating capacity, better heat transfer performance.



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.

Compact Structure: Use the structure of V shape up&down design, convenient maintenance, reduce the occupied area effectively.

High efficiency shell and coil heat exchanger : It uses high efficiency fin tube, which heating area is 3.6 times than ordinary smooth tube, large diameter waterway design to make water-flow more smoothly, energy efficiency is more superior.



Professional compressor for heat pump water heater: Adopt Copeland or Panasonic top quality scroll compressor specially for heat pump water heater, with much wider operation range for different ambient temperature. Special design for high suction & exhaust temperature, and system high condensing temperature & pressure, Higher efficiency, Lower noise, Higher reliability, Longer service life.



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



Wifi function for option(Control by Apps on mobile phone).



High efficiency shell & tube heat exchanger: Adopt high efficiency internal thread copper coil, which heating area is 3.6 times than ordinary smooth coil, larger diameter water loop design to make water flow smoothly, energy efficiency is superior.



Stainless steel 304 material for side cover of finned tube heat exchanger, for all fastener and other important parts, not easy to rust and corrosion, more durable.



Low ODP refrigerant: R410a for HotSpring series and R134a for Volcano series.



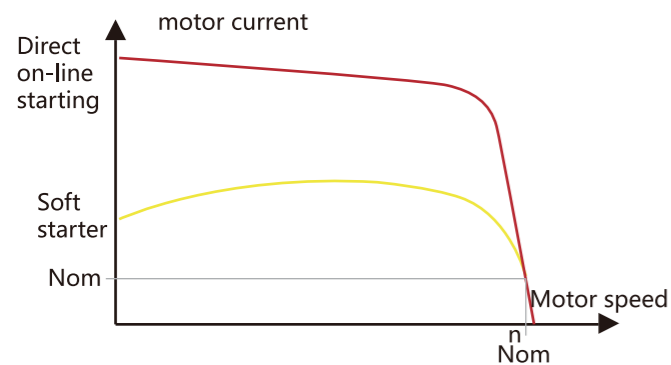
High precision electronic expansion valve: use electronic expansion valve for controlling, reach 500 steps adjustment, adjust super heat degrees accurately, achieve high efficiency operation system.



Controller: Adopt famous master chip, ensure stable running. With lot of protection functions: High & low pressure protection, anti-freezing protection, high temperature protection, overload protection, lack phase and reverse phase protection, and so on. Modular control for at most 16 heat pumps, can be combined freely according to the required capacity.



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.



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.

VOLCANO SERIES (COMMERCIAL HIGH TEMPERATURE AIR SOURCE HEAT PUMP WATER WATER HEATER CIRCULATION TYPE)

		HT3Ps -E3	HT5sP -E5	HT3P -E3	HT5P -E5	HT7P -E7	HT10P -E10	HT14P -E14	HT20P -E20	HT24P -E20	HT30P -E20	HT40P -C96	HT48P -C96	HT60P -C96
Rated heating capacity (kW)		8.2	13.5	8.2	13.5	17.8	26.1	34.7	55.2	64.3	78.5	108.8	129.5	153.7
Rated input power (kW)		2.42	3.98	2.42	3.95	5.26	7.65	10.21	16.32	19.13	23.56	31.91	38.09	45.88
Rated input current (A)		10.58	17.56	4.58	7.52	9.99	14.55	19.35	30.95	36.33	44.71	60.60	72.34	87.14
Maximum input power (kW)		3.14	5.17	3.14	5.13	6.84	9.95	13.27	21.22	24.88	30.63	39.88	47.62	57.36
Maximum input current (A)		14.01	23.23	5.95	9.75	13.02	19.13	24.98	40.25	46.88	57.96	75.75	90.44	108.94
Performance coefficient(COP)		3.39	3.39	3.39	3.42	3.38	3.41	3.40	3.38	3.36	3.33	3.41	3.40	3.35
Rated hot water output temp (°C)		75												
Max. hot water output temp (°C)		80												
Rated hot water	△t40	175.7	289.3	175.7	289.3	381.4	559.3	743.6	1182.9	1377.9	1682.1	2042.5	2795.0	3440.0
produce capacity (L/H)	△t60	117.1	192.9	117.1	192.9	254.3	372.9	495.7	788.6	918.6	1121.4	1361.7	1863.3	2293.4
Power supply		1N 220V~240V/50Hz						3N 380V~420V/50Hz						
Compressor	Type	Hermetic scroll type												
	Start Mode	Directly start(Soft start for option)												
	Quantity Set	1	1	1	1	1	2	2	4	4	4	4	4	4
Water side heat exchanger	Type	Shell & coil(tube) heat exchanger												
	Water flow (m³/h)	1.4	2.3	1.4	2.3	3.1	4.5	6.0	9.5	11.2	13.8	18.7	22.4	27.6
	Water Pressure Drop (kPa)	≤45	≤53	<50	<55	<57	<60	<70	<70	<72	<72	<75	<75	<75
	Pipe size (DN)	DN20	DN25	DN20	DN25	DN25	DN32	DN32	DN50	DN50	DN50	DN80	DN80	DN80
Protections		1. High pressure and low pressure protection, 2. Anti-freezing protection, 3. High temperature protection, 4. Too big of the water temperature difference for outlet and inlet protection, 5. Overload protection, 6. Lack phase protection, 7. Reverse phase protection, etc..												
Refrigerant	Type	R134a												
	Start Mode	Electronic expansion valve												
	Quantity Set	1.9	3.3	1.9	3.3	4.3	2.8×2	4.1×2	3.2×4	3.8×4	4.6×4	6.4×4	7.6×4	9.2×4
Noise DB(A)		≤55	≤63	≤55	≤63	≤65	≤68	≤68	≤70	≤70	≤72	≤74	≤74	≤75
length (mm)		700	820	700	820	820	1502	1502	1995	1995	1995	2074	2074	2074
width (mm)		680	695	680	695	695	750	750	1165	1165	1165	1920	1920	1920
height (mm)		875	1060	875	1060	1360	1060	1360	1105	1105	1105	2085	2085	2085
Net Weight (kg)		110	160	110	160	190	255	410	600	755	855	1050	1250	1620

Testing conditions:

1. Application side initial water temperature: 15°C, end temperature 75°C, max. temperature 80°C.

2. Ambient temperature dry bulb 20°C, wet bulb 15°C.

The above parameters are based on Refrigerant R134a, for parameters based on other refrigerant please contact us.

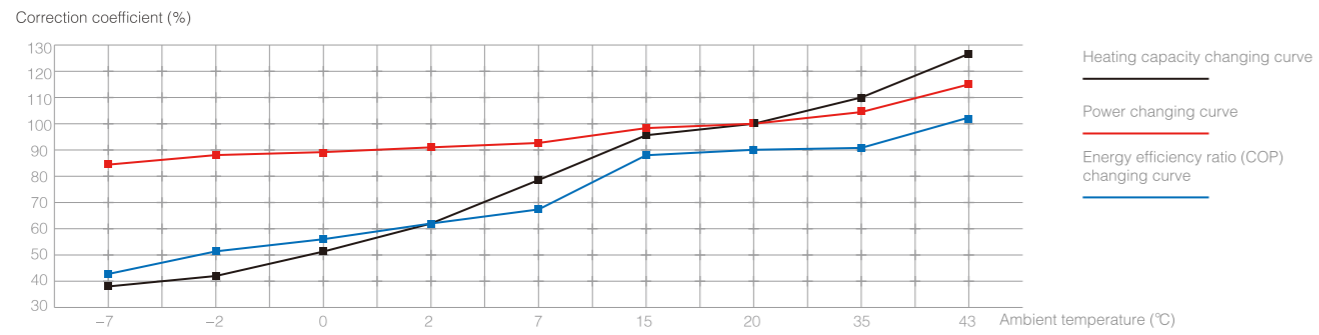
The above parameters may have some differences from the final product because of products updating, so above information is not the provision of any business contract. Please

refer to final product label when buy, or refer to us for any information. Our company keeps the right to interpret.

VOLCANO SERIES HEATING PERFORMANCE CORRECTION COEFFICIENT (%)

Ambient temperature (°C)	-7	-2	0	2	7	15	20	30	43
Heating capacity (%)	38.0	43.8	50.9	61.5	79.8	96.0	100.0	110.0	127.0
Power (%)	85.8	87.3	89.7	90.3	93.6	98.0	100.0	105.0	115.2
Energy efficiency ratio (COP) (%)	44.3	50.2	56.7	68.1	85.3	98.0	100.0	104.8	110.2

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE



APPLICATIONS SKETCH

