

WATER SOURCE HEAT PUMP





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

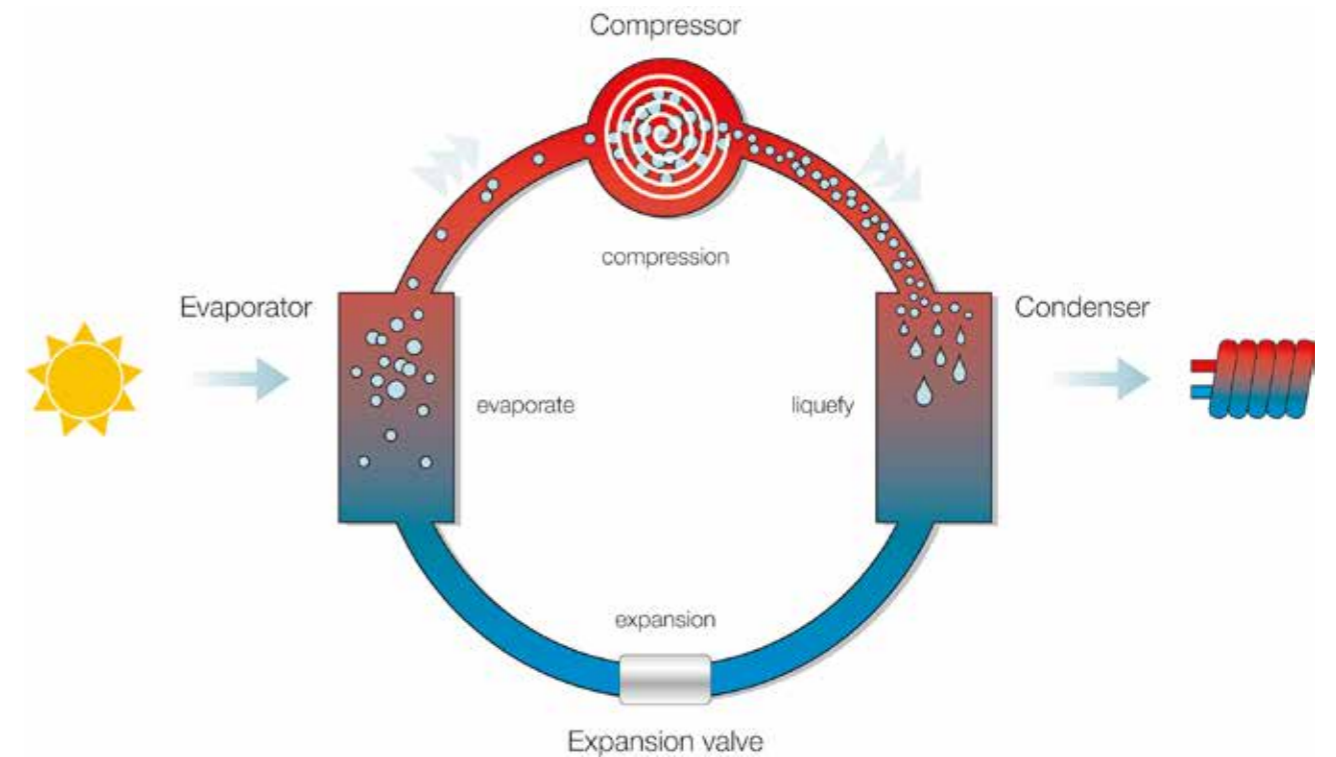


ISO14001-2015
Environmental Management System
Certificate No.: ARES/CN/1706042E



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

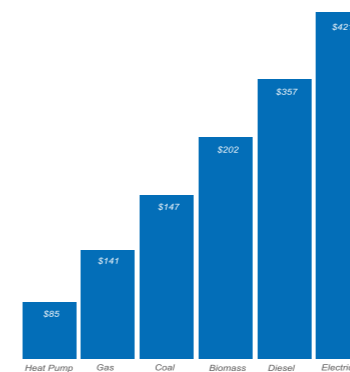
HEAT PUMP WORKING PRINCIPLE



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/kWh	8600kcal/L	10200kcal/L	860kcal/kWh	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%

WATER SOURCE HEAT PUMP



GEO THERMY SERIES



With CE certificate by TUV.



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.



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



High efficiency shell & tube heat exchanger and coaxial 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. Brazed plate type heat exchanger for option for brine to water type, higher efficiency.



Danfoss brand dryer filter will be adopted for big capacities.



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



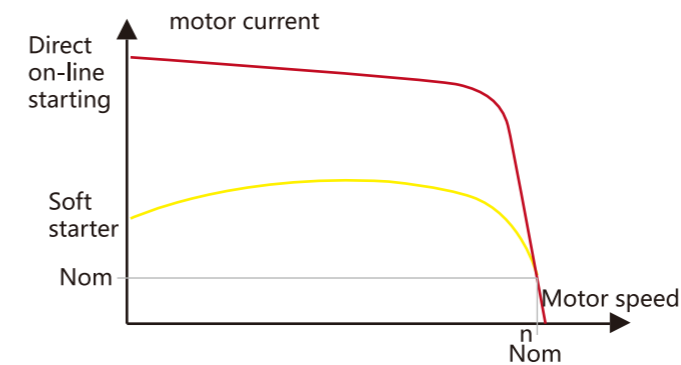
High precision electronic expansion valve: use electronic expansion valve for controlling, reach 500 steps adjustment, adjust super heat degrees accurately, achieve high efficiency operation system.



KÖNNEN brand self researched and produced control system. Adopt famous master chip, ensure stable running. With lot of protection functions: KÖNNEN engineer specially designed anti-freezing protection, High & low pressure protection, high temperature protection, overload protection, lack phase and reverse phase protection, and so on. Modular control for at most 32 heat pumps, can be combined freely according to the required capacity.



Low ODP refrigerant R410a.



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.

GEOHERMY SERIES (WATER / GROUND SOURCE HEAT PUMP WATER HEATER)																	
	CSFXRS -8 I	CSFXRS -10 I	CSFXRS -12 I	CSFXRS -20 I	CSFXRS -12 II	CSFXRS -20 II	CSFXRS -28 II	CSFXRS -40 II	CSFXRS -55 II	CSFXRS -80 II	CSFXRS -95 II	CSFXRS -120 II	CSFXRS -160 II	CSFXRS -190 II	CSFXRS -240 II		
Rated heating capacity (KW)	7.9	9.8	11.8	19.8	11.9	19.8	28.1	39.5	54.3	79.2	93.95	118.85	158.2	188.8	238.4		
Rated power (KW)	1.64	2.03	2.45	4.09	2.45	4.09	5.79	8.18	11.28	16.45	19.57	24.61	32.75	38.92	49.36		
Rated current (A)	8.77	11.53	13.92	23.24	4.62	7.77	10.99	15.54	21.97	31.12	37.16	46.74	62.19	73.92	93.75		
Maximum power (KW)	2.21	2.71	3.25	5.42	3.28	5.52	7.81	11.04	15.22	22.14	26.42	33.22	44.22	52.51	66.63		
Maximum current (A)	11.82	15.32	17.38	30.79	6.23	10.48	14.83	20.97	29.65	41.99	50.51	63.09	83.98	99.72	126.55		
Performance coefficient (COP)	4.82	4.83	4.82	4.84	4.86	4.84	4.85	4.83	4.81	4.81	4.80	4.83	4.83	4.85	4.83		
Rated hot water produce capacity (L/H)	172	215	258	430	258	430	602	860	1182	1720	2043	2580	3440	4085	5150		
Rated hot water output temperature (°C)	55																
Maximum hot water output temperature (°C)	60																
Power supply	1N 220V~240V/50Hz					3N 380V~420V/50Hz											
Compressor	Type	Rotor type					Hermetic scroll type										
	Start mode	Directly start(Soft start for option)															
Hot water side heat exchanger	Type	Shell & tube heat exchanger															
	Water flow (m³/h)	1.4	1.8	2.1	3.4	2.1	3.4	4.8	6.9	9.4	13.8	16.3	20.6	27.5	32.7	41.2	
	Water pressure drop (KPa)	≤50	≤50	≤50	≤50	≤50	≤50	≤50	≤50	≤60	≤60	≤70	≤70	≤70	≤70	≤70	
	Pipe size (DN)	DN20	DN20	DN20	DN25	DN20	DN25	DN25	DN32	DN50	DN50	DN50	DN65	DN80	DN80	DN80	
Pipe connection	Inner thread					Flange											
Heat source side heat exchanger	Type	Plate type heat exchanger					Tube in tube heat exchanger					Shell & tube heat exchanger					
	Water flow (m³/h)	1.1	1.4	1.6	2.7	1.6	2.7	3.8	5.4	7.3	10.7	12.7	16.1	21.5	25.5	32.3	
	Water pressure drop (KPa)	≤50	≤50	≤50	≤50	≤50	≤50	≤50	≤50	≤60	≤60	≤70	≤70	≤70	≤70	≤70	
	Pipe size (DN)	DN20	DN20	DN20	DN25	DN20	DN25	DN25	DN32	DN50	DN50	DN50	DN65	DN80	DN80	DN80	
Pipe connection	Inner thread					Flange											
Protections	1. High and low pressure protection, 2. Anti-freeze protection, 3. High temperature protection, 4. Overload protection, 5. Reverse of phase protection, Lack of phase protection, etc.																
Refrigerant	Type	R410A															
	Quantity(KG)	1.2	1.3	1.7	2.8	1.7	2.6	3.8	2.6x2	3.8x2	6x2	7.2x2	9x2	6x4	7.5x4	9x4	
Noise (≤DB(A))	51	51	52	55	52	55	58	58	62	64	65	68	71	72	73		
Unit dimensions	Length (MM)	706	706	956	956	956	956	956	1100	1100	1795	1795	1795	2752	2752	2752	
	Width (MM)	356	356	556	556	556	556	556	840	840	1116	1116	1116	1178	1178	1178	
	Height (MM)	591	591	680	680	680	680	680	800	800	1049	1049	1049	1201	1201	1201	
Weight (KG)	90	95	110	140	110	140	170	280	340	700	730	780	1300	1400	1500		

Note: 1. Hot water heating standard condition: Hot water side initial water temperature 15°C, final water temperature 55°C; heat source side water input temperature 15°C.

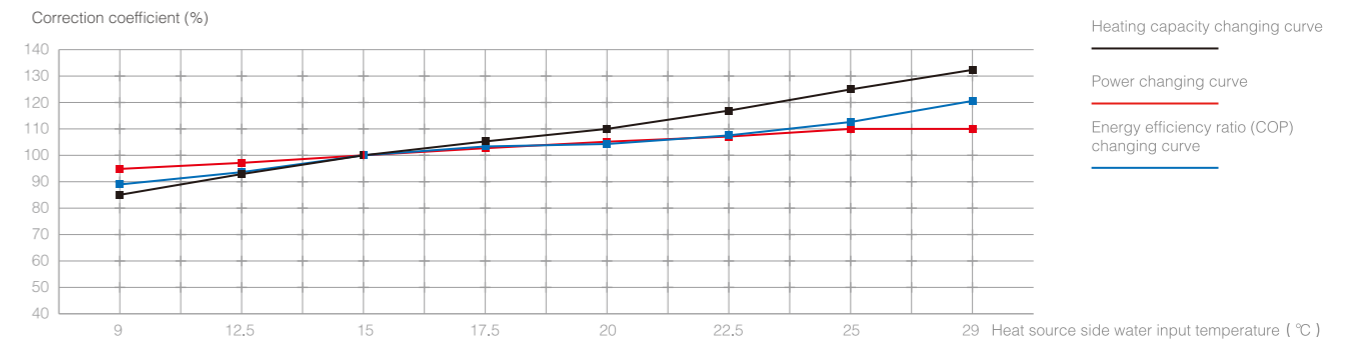
2. The above parameters are based on refrigerant R410A, for parameters based on other refrigerant please contact us.

3. 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.

HEATING PERFORMANCE CORRECTION COEFFICIENT (%)								
Heat source side water input temperature (°C)	9	12.5	15	17.5	20	22.5	25	29
Heating capacity (%)	85.0	92.0	100	105.0	110.0	117.0	125.0	133
Power (%)	95.0	98.0	100	102.0	105.0	108.0	110.0	110.0
Energy efficiency ratio (COP) (%)	89.5	93.9	100	102.9	104.8	108.3	113.6	120.9

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE



APPLICATIONS SKETCH

