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INTELLIGENT MANUFACTURING
FOR A BLUE SKY

Strive for becoming a global provider of multi-energy solutions
Contribute to development of the solar energy industry and the new energy industry



AN EXPERT IN SOLAR ENERGY INTELLIGENT PROJECTS

DEVELOP NEW ENERGY-SAVING TECHNOLOGIES · USHER IN A NEW ERA FOR ENGINEERING



Energy-saving



Eco-friendly



Low-carbon

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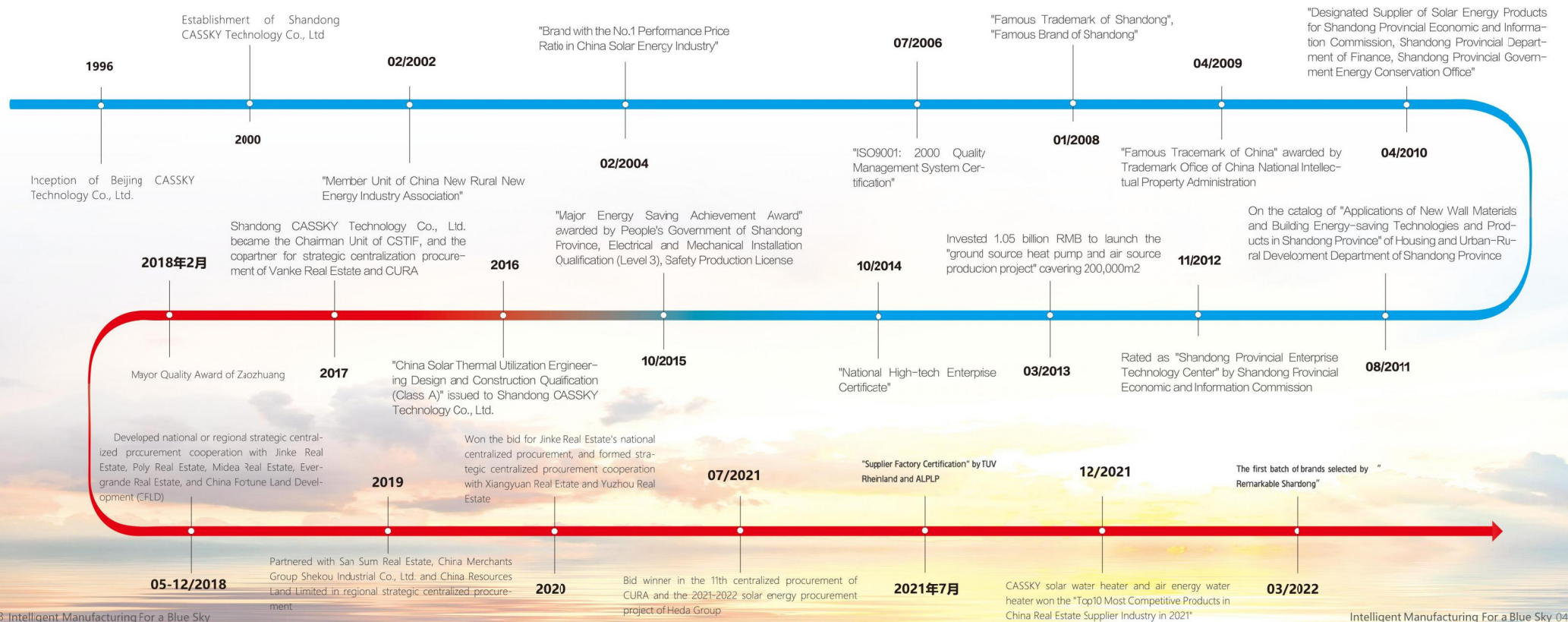
About CASSKY

Zhongke Lantian is a high-tech enterprise specializing in the research and development, production, sales and installation of products utilizing new energies such as the solar energy, air energy, PV power generation, and the ground source heat pumps in China. Established in 1996 in Tengzhou, Shandong Province, CASSKY has a registered capital of 108 million RMB and covers 200,000m². Leveraging the cutting-edge technology of Institute of Engineering Thermophysics, Chinese Academy of Sciences (CAS), and Aerospace Research Institute of Materials & Processing Technology, China Academy of Launch Vehicle Technology (CALT), we have pinpointed the clean energy industry, aiming to provide hot water, heating, cooling and photoelectric solutions to the household, commercial, industrial and agricultural application scenarios. After multi-year accumulation, we have developed more than 10 invention patents and more than 100 utility model patents. As such, we were invited to participate in the drafting of many national and industry standards.

Renowned for our industry-leading modern production lines, we are capable of delivering 600,000 sets of solar water heaters annually. As of today, our product portfolio has covered glass vacuum pipe compact solar water heater, pressurized split solar water heater, photovoltaic electric water heater, centralized heat collection solar water heating system, centralized heat collection-household heat storage solar water heating system, solar energy + multi-energy heating system, solar energy medium and high temperature industrial heat utilization system and so on.



MILESTONES



CERTIFICATES & HONORS



Zhongke Liantian actively implements total quality management (TQM), and takes the lead in passing ISO9001:2015 quality management system certification, China Compulsory Certification (CCC), ISO14001:2015 environmental management system certification, ISO45001:2018 occupational health and safety management system certification, after-sales service certification, China Energy Saving Product Certification, China Environmental Protection Product Certification, China Environmental Label Certification, and has won "Famous Brand of Shandong" and "Famous Trademark of Shandong". More than that, we have obtained a wide range of certificates covering National High-tech Enterprise, KCPC, Golden Sun Certificate, China Solar Thermal Utilization Engineering Design and Construction Qualification (Class A), Safety Production License, Electrical Power Engineering Construction General Contractor (Class III), Electromechanical Engineering Construction General Contractor (Class III), Building Electro-mechanical Installation Engineering Professional Contractor (Class III), Fire-fighting Equipment Engineering Professional Contractor (Class II), and National Industrial Product Production License.



National High-tech Enterprise



Class-A construction qualification in the solar energy industry



Building electromechanical installation qualification (class 3)



National Industrial Product Production License



"New Technology, New Products" promotion certificates filed in 20 provinces

Class-A construction qualification in the solar energy industry



National High-tech Enterprise



National Industrial Product Production License



Class-A construction qualification in the solar energy industry



"New Technology, New Products" promotion certificates filed in 20 provinces



Building electromechanical installation qualification (class 3)





COMPACT SINGLE-PRODUCT PRODUCTION LINE







LIGHT WAVE SERIES

LIGHT WAVE PRODUCTS PRESENTING A MORE COMFORTABLE BATHING EXPERIENCE

CAS energy concentrator represents a new generation in utilizing solar power, operates safely at low voltage to avoid the hidden electric shock danger of traditional solar water heaters. It is a perfect combination of solar power generation and solar hot water provision through making use of solar energy in a safe, clean and convenient manner.



CAS sterilizer - UVC sterilization, efficient and reliable

Innovative application of the principle of UVC sterilization, to destroy and change the DNA structure of microorganisms through the irradiation of UVC, thereby to cause immediate death of bacteria, featuring simple, convenient broad-spectrum and efficient.



Aerospace-grade thermal insulation tile to provide 3D thermal insulation and more durable hot water

Adopt the high-pressure particle foaming technology and achieve one-time overall molding, featuring high density, good toughness, high porosity by closed pore, better thermal insulation performance. Work with the unique aerospace-grade thermal insulation tile technology to realize 360° 3D thermal insulation, to provide powerful thermal insulation, greatly improve thermal insulation performance and ensure availability of hot water.



CAS electric auxiliary heater - photoelectric complementation to ensure hot water 24h/day

Integrate Incoloy 800 heater, which employs the aerospace-grade alloy with 55% nickel-chromium, thus boasting of super-strength, corrosion-resistance and dry-burning. It is safe and enables availability of hot water 24h/day thanks to photoelectric complementation.



Anti-drop module and anti-freeze blocking, to guarantee smooth running of hot water

The new thermal insulation module design can effectively prevent the water pipe, thermal insulation pipe and water tank from falling off, ensure the integrated connection between the thermal insulation pipe and the water tank, prevent the water pipe from freezing in winter, and guarantee



BLUE WAVE SERIES
UNLIMITED HOT WATER SUPPLY,
A CLEANER SOLUTION

-  **Constant pressure design for big water flow**
Adopt the unpowered circulating fast-heating operation, operate at the water pressure of the urban pipe network, to ensure constant water pressure and big water flow.
-  **Super heat storage capability, unlimited hot water supply**
The vacuum pipe adopts the advanced multi-target coating technology, featuring a higher heat absorption ratio and thus faster temperature rise. The thermal insulation water tank utilizes the high-pressure particle foaming, which has a high porosity by closed pore and hence better thermal insulation performance.
-  **Heat exchange operation to produce clean water**
Using the principle of heat exchange enables complete separation of domestic hot water and thermal storage hot water. The heat exchanger is made of SUS304 to ensure clean water.
-  **System composition**
This system consists of the vacuum pipe collector, hot water storage tank, heat exchanger, and adjustable bracket.
The blue wave series adopt the unpowered circulating fast-heating solar water heating system, which works like this: the temperature of the water in the vacuum pipe rises under solar radiation to gradually heat water in the water tank. The indoor cold water is heated by the heat exchange pipes in the water tank, to increase the temperature of the tap water with pressure to almost the same as that in the water tank, to get stable, pressurized and clean hot water.



FIRST-CLASS SERIES

Enjoy first-class hot water life



Aerospace-grade superconducting pipes---double-vacuum design, high energy and rapid heating

Innovative dual vacuum design features high-intensity light-sensitive response and performs well in fast one-way heating. The vacuum pipes have no heat dissipation, no scaling, no freezing and no explosion and are adaptable to different environments, climates and water quality requirements.



Aerospace-grade thermal insulation tile to provide 3D thermal insulation and more durable hot water

Adopt the high-pressure particle foaming technology and achieve one-time overall molding, featuring high density, good toughness, high porosity by closed pore, better thermal insulation performance. Work with the unique aerospace-grade thermal insulation tile technology to realize 360° 3D thermal insulation, to provide powerful thermal insulation, greatly improve thermal insulation performance and ensure availability of hot water.



Windproof, anti-corrosion and durable powder coating bracket

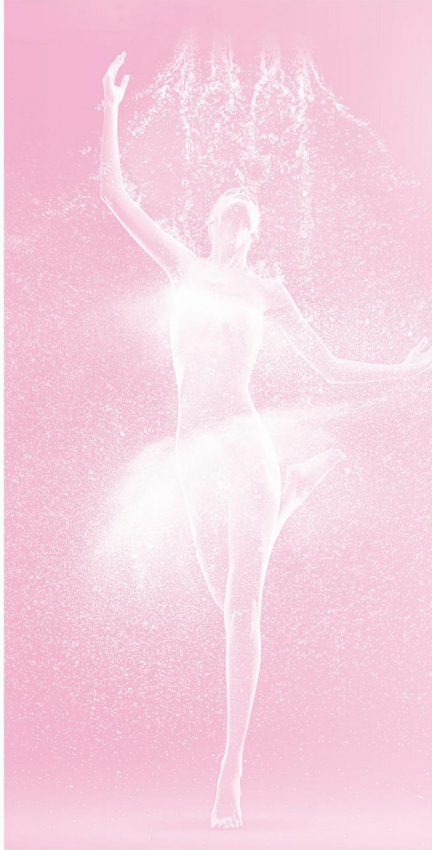
The bracket is made of hot-dip galvanized sheet with high strength and good compressive performance and is characterized with high mechanical strength, scratch resistance, wind-proofness and corrosion resistance after undergoing 14 processes including surface degreasing, rust removal, phosphating, passivation and electrostatic spraying. It can serve more than 15 years.



Pearlescent color coating outer barrel with smooth surface and longer life

The outer barrel of the water tank adopts a new type of pearlescent color coating, added with the flake-like mica particles, shining with pearl-like colors. It has high hardness, is able to resist minor scratches, and features good corrosion resistance, weather resistance, smooth and flat surface and a longer service life.





DOUBLE HAPPINESS SERIES

DESTINED TO ENJOY DOUBLE HAPPINESS

- 

Aerospace-grade premier pipes with high energy and rapid heating

Combination of the high-quality borosilicate glass 3.3 material and advanced multi-target coating technology enables the absorption ratio to rise by 12%. Under the same lighting conditions, it can perfectly achieve faster heating, more heat gain, longer life
- 

Aerospace-grade thermal insulation tile to provide 3D thermal insulation and more durable hot water

Adopt the high-pressure particle foaming technology and achieve one-time overall molding, featuring high density, good toughness, high porosity by closed pore, better thermal insulation performance. Work with the unique aerospace-grade thermal insulation tile technology to realize 360° 3D thermal insulation, to provide powerful thermal insulation, greatly improve thermal insulation performance and ensure availability of hot water.
- 

Anti-drop module and anti-freeze blocking, to guarantee smooth running of hot water

The new thermal insulation module design can effectively prevent the water pipe, thermal insulation pipe and water tank from falling off, ensure the integrated connection between the thermal insulation pipe and the water tank, prevent the water pipe from freezing in winter, and guarantee smooth running of hot water.

BLUE LIGHT SERIES

Solar+electric heating
efficient and energy saving

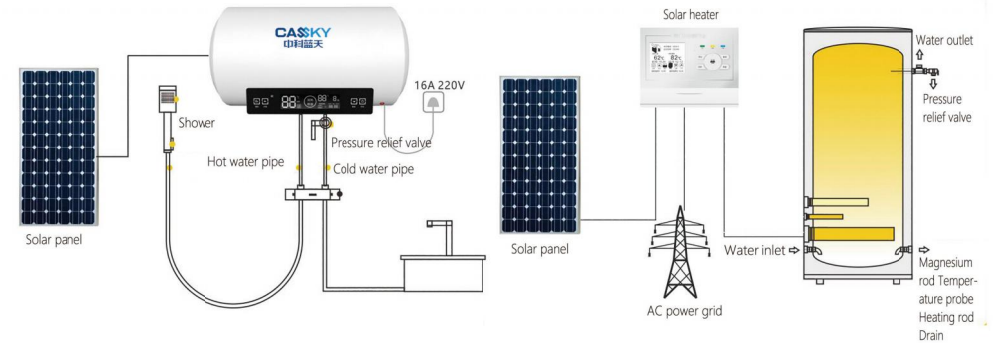
-  PV power generation, hardly affected by the environment, able to work at low temperature, and low energy consumption
 -  Intelligent switching between PV heating and electric heating, to maximize the use of solar energy and save electricity
 -  Electric wires connected between the solar panel and the water tank, free from freezing or water leakage
 -  Pressurized water tank, flexible installation, instant supply of hot water, no waste of cold water
 -  25-year service life of solar panels with low maintenance costs
 -  Short payback period
- Integrated pressurized water tank
- CASSKY**
中科蓝天



PV/electric heating, energy saving and high efficiency

Capacity	Power of PV panel	Average annual power generation	Electric charge saved for 1 year	Electric charge saved for 6 years	Electric charge saved for 10 years
50L	500W	730KWH	475 ¥	2850 ¥	4750 ¥
60L	600W	876KWH	570 ¥	3420 ¥	5700 ¥
80L	800W	1168KWH	760 ¥	4560 ¥	7600 ¥
100L	1000W	1460KWH	950 ¥	5700 ¥	9500 ¥
150L	1200W	1752KWH	1140 ¥	6840 ¥	11400 ¥
200L	1500W	2190KWH	1425 ¥	8550 ¥	14250 ¥
300L	2400W	3504KWH	2280 ¥	13680 ¥	22800 ¥

Household electric charge: 0.65 RMB/KWH



Operation diagram of the wall-mounted PV electric water heater system

Operation diagram of the vertical PV electric water heater system

Model	GFD-50L	GFD-60L	GFD-80L	GFD-100L	GFD-150L	GFD-200L	GFD-300L
Capacity	50L	60L	80L	100L	150L	200L	300L
PV characteristics	240W						
Max. output power of the controller							
Recommended PV plate power	500W	600W	800W	1000W	1200W	1500W	2400W
Time required for temperature rise to 40°C	4h	4h	4h	4h	5h	5.5h	5.5h
Annual generation capacity	730KWh	876KWh	1168KWh	1460KWh	1752KWh	2190KWh	3504KWh
Input voltage of PV panel	40V~10Vdc						
Voltage range	20V~145Vdc						
AC heating power	2000W						
AC rated voltage	220V						
Temperature adjustment range	30°C~70°C						
Material of the liner	Enamel liner/315 stainless steel						
Body size (mm)	Ø390×785	Ø390×900	Ø440×835	Ø470*1000	Ø470*1475	Ø560*1135	
Packaging size (mm)	530×440×915	530×440×1030	555×495×950				
Net weight	19kg	21.5kg	26kg	29kg	35kg	38kg	
Gross weight	20kg	23kg	28kg				

The appearance and parameters of products are subject to update without prior notice.



Compact single products PROJECTS



Compact solar energy project in Jingdu Garden Community, Zhangjiakou, Hebei Province



Compact solar energy project in Xihe Xinju Community, Tengzhou, Shandong Province



Compact solar energy project in Minheyuan & Minleyuan Affordable Housing Community, Lixin County, Bozhou, Anhui Province



Compact solar energy project of Nanxin Century City (Phase I), Linyi County, Dezhou, Shandong Province



Compact solar energy project in Vanke, Siji Huacheng, Qingdao, Shandong Province



Compact solar energy project, Siji Jiayuan, Haigang Development Zone, Tangshan, Hebei Province



FLAT PLATE SOLAR COLLECTOR PRODUCTION LINE





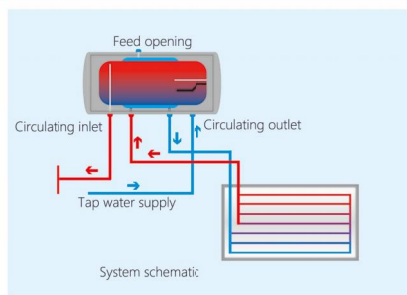
ENAMEL WATER
TANK AND LINER
PRODUCTION LINE



BALCONY WALL-MOUNTED FLAT PLATE SPLIT SERIES

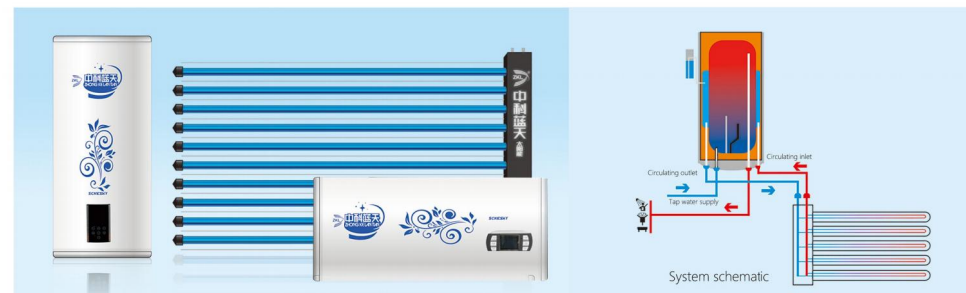


- **Under-pressure operation:**
Under-pressure operation, with a constant pressure; evenly mixed water thanks to the top water outlet to make bathing more comfortable.
- **Heat exchange principle:**
Jacketed heat exchange principle, healthy water quality, free from scaling or bacteria.
- **Photoelectric complementary:**
Photoelectric complementary, auxiliary heating, to meet the user's water demand 24h/day, 365 days/year.
- **Easy operation:**
Simple operation, touch screen buttons, one button to get hot water.
- **Crash resistance:**
Super impact resistance, impact resistance, compression resistance, long service life.

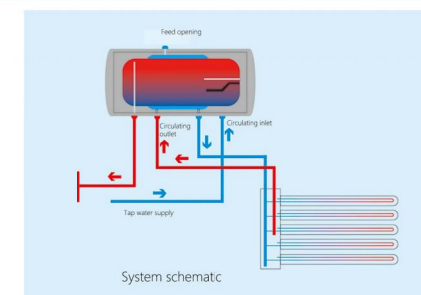


Model	Rated capacity	Dimension of water tank	Specifications of the solar collector	Rated voltage	Rated power for electric heating	Energy efficiency rating			
P-J-F-2-80/1.5/0.6-H	80L	Φ475*890	2000*830*80	220V	1500W	Class 1			
P-J-F-2-80/1.5/0.6-L			2400*830*80						
P-J-F-2-100/1.8/0.6-H	100L	Φ475*1060	2000*1030*80						
P-J-F-2-100/1.8/0.6-L			2500*800*80						
P-J-F-2-120/2.14/0.6-H	120L	Φ475*1240	2400*1030*80						
P-J-F-2-120/2.14/0.6-L									

BALCONY WALL-MOUNTED VACUUM PIPE SERIES



- **Under-pressure operation:**
Under-pressure operation, with a constant pressure; evenly mixed water thanks to the top water outlet to make bathing more comfortable.
- **Heat exchange principle:**
Jacketed heat exchange principle, healthy water quality, free from scaling or bacteria.
- **Photoelectric complementary:**
Photoelectric complementary, auxiliary heating, to meet the user's water demand 24h/day, 365 days/year.
- **Easy operation:**
Simple operation, touch screen buttons, one button to get hot water.
- **Crash resistance:**
Super impact resistance, impact resistance, compression resistance, long service life.



Model	Rated capacity	Dimension of water tank	Heat collection area (m2)	Rated voltage	Rated power for electric heating	Energy efficiency rating
Q-J-F-2-80/1.47/0.6-H	80L	Φ475*890	1.47	220v	1500W	Class 1
Q-J-F-2-100/1.75/0.6-H	100L	Φ475*1060	1.75			
Q-J-F-2-100/1.55/0.6-H			1.55			
Q-J-F-2-120/2.1/0.6-H	120L	Φ475*1240	2.1			

FLAT PLATE SOLAR COLLECTOR

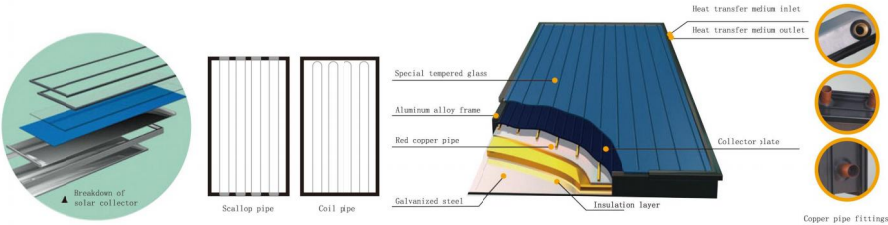


- Use marine-grade aluminum housing to ensure long service life for outdoor use. Materials like ultra-thick fiber insulation layer can effectively reduce heat loss;
- Red copper heat-collecting runner tubes and the international leading high-selectivity absorption coating blue film make the absorption rate $\alpha=0.97$. The coated absorbers in solar panels maintain 95% of their initial performance even after 25 years of service;
- Adopt the ultra-white low-iron tempered woven glass featuring high solar incidence rate but low reflectivity. It boasts of solar transmittance $\geq 95\%$ and high impact resistance. Its toughness conforms to AS2208--1978 and US federal standards;
- The collector glass has no contact with the working liquid, thus having no scaling problem. The flat glass is treated with a special coating, easy to be cleaned and maintained, thus to ensure clean glass surface and improve the solar incidence rate.



- The entire aluminum plate has a black chrome and blue titanium structure, with the heat absorption rate of 98%, making one of the most efficient heat absorption plates in the world;
- Laser welded entire board, with less heat dissipation but high heat absorpior efficiency;
- Horizontal heat conduction structure, having no block in circulation and featuring good circulation effect;
- High temperature, no attenuation;
- Longer lifespan, up to 30 years.

Technical characteristics



TECHNICAL PARAMETERS

Structure	Name and type	Parameters
Solar collector	Applicable standard	GB/T6424-2007
	Rated pressure	0.6MPa
	Efficiency intercept	$\alpha \geq 0.76$
	Load bearing	75kg/m ²
Plate core	Absorber plate	3003 anti-rust aluminum $\delta=0.4$
	Heat absorbing coating	Titanium oxynitride selective coating
	Absorptivity	$\alpha \geq 0.97$
	Emissivity	$\epsilon \leq 0.05$
	Copper collector	Red copper pipe
	Welding metho d	Red copper pipe
Outer layer	Cover plate material	Laser welding of the entire plate
	Cover plate thickness	Ultra-white low iron woven tempered glass
	Cover plate light transmittance	$\delta=3.2$
	Aluminum alloy	91.80%
	Frame color	6063 T5
	Anticorrosion treatment	Silver, black
Heat insulation	Seal	Spraying/anodizing
	Backplane material	Galvanized aluminum sheet $\delta=0.4\text{mm}$
	Insulation materials	High temperature resistant fiber cotton
	Material thickness	30mm
	Heat conductivity	0.048W/m*k



VACUUM PIPE COLLECTOR



Technical characteristics

- **Anti-freezing**
The freezing-resistant heat pipes are capable of enduring -50°C;
- **Fast start**
The heat pipes are capable of generating more heat than water heaters thanks to their large heat capacity;
- **No scaling**
Water channel blockage caused by scale won't happen since water doesn't flow directly through the vacuum pipes;
- **Good insulation property**
Heat pipes transfer heat unidirectionally, so that the heat will not dissipate down to the environment at night;
- **High pressure-bearing ability**
The glass pipes, after being connected to the collector, can work with the pressure of the heat transfer medium and the circulating pump and thus present unique
- **Easy installation and reliable operation**
The "dry connection" between the vacuum pipes and the solar collector will be free of the hot water leakage problem and require convenient installation. Maintenance of one failure heat pipe will not affect the normal use of the entire system.



PRESSURIZED WATER TANK



Structure	Name and type	Parameters
Water tank	Heat exchange method	Coil heat exchange/sandwich heat exchange
	Rated pressure	0.6MP
	Anti-corrosion measures	Anode magnesium rod 20mm*300mm
	Safety measures	Double leakage protection
Liner	Point auxiliary heater	Incoloy 840 material, 1500W
	Steel plate material	Baosteel special enamel plate BTC245R
	Steel plate thickness	2.0mm
	Enamel powder	Special powder for US Furro water heater
Housing	Welding technology	Automatic seamless welding
	Material thickness	0.5mm
	Housing material	Color-coated plate
	Surface treatment method	Electrostatic spray
Heat insulation	Color	Pearl white
	Insulation materials	PU integral foam, density ≥40kg/m3
	Insulation layer thickness	50mm
Installation fittings	Circulation pipe	Stainless steel bellows
	Pressure-relief valve	Nickel plated copper
	Thermal insulation pipe	25mm-thick rubber plastic insulation pipe
	Media	Glycol solution

- **Enamel liner**
Baosteel 2.0mm-thick enamel special steel plate BTC245R; with the German rolling enamel technology, American Furro enamel raw materials and the enamel special plates are sintered at 850°C to make them adhere to the liner, with the enamel and the steel plate infiltrated and fused with each other, so that the water and the steel plate are isolated, to function in corrosion resistance, water leakage prevention, electrical insulation and zero pollution.
- **Sandwich heat exchange**
The sandwich structure is used for heat exchange, and the connection between the "heat exchange compartment" and the "heat storage compartment" adopts the seamless welding technology and the enamel technology to achieve integrated fusion. The expansion space is left inside and maintenance-free. The unique sandwich design improves the heat exchange efficiency. It is characterized by pressure resistance, temperature resistance, corrosion resistance, no scaling and long service life. The sandwich steel plate uses the 1.5mm-thick Baosteel BTC245R.
- **Water tank housing**
0.5mm-thick color-coated board, presenting a high-end, beautiful and fashionable appearance.
- **Intelligent control**
The embedded wall-mounted instruments on the display can control timing heating and manual heating. It functions in high and low temperature protection, leakage protection, leakage self-test function, temperature sensor fault detection, and power failure memory.
- **Heat insulation**
The 50mm-thick fluorine-free PU is foamed at high pressure as a whole, and the foam insulation layer is fire and uniform, to better lock the heat and reduce heat loss.
- **Auxiliary heating**
The inside of the water tank is equipped with imported Incoloy heating pipes, with a heating efficiency of 97.9%, which solves the problem of insufficient solar radiation in winter and cloudy weather, and ensures that hot water is available 24h in all seasons.
- **Forced circulation**
The water tank has a built-in micro circulation pump, hence requiring no indoor installation space. The 12V circulating pump has extremely low energy consumption, safe and noise-free.



BLUE V FULL RUNNER 360° HEATING SERIES



AQUAMARINE ENAMEL LINER

Imported American Furro enamel raw materials, penetration fusion between enamel and steel plate, featuring corrosion resistance, water leakage, acid and alkali resistance.



SANDWICH HEAT EXCHANGE IN HEAT EXCHANGE COMPARTMENT

Unique sandwich design, seamless welding internal expansion space, maintenance-free, and higher heat exchange efficiency.



360° HEAT LOCK INSULATION LAYER

Use the 50mm high-density microcellular foaming process, to keep water hot for 48h.



FORCED CIRCULATION

The built-in micro circulation pump provides instant hot water, featuring low energy consumption, safe and quiet.



ELECTRIC AUXILIARY HEATING

Imported Incoloy heating pipes, to ensure all-weather availability of hot water



INTELLIGENT CONTROL

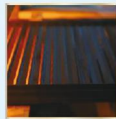
The embedded wall-mounted instruments on the display can control timing heating and function in high and low temperature protection, leakage protection and power failure memory.



CAS SKY's new generation of super solar blue film plate core and aquamarine liner tank are perfectly combined. The blue V series full runner flat plate solar heaters are upgraded to meet needs from buildings.



Runner welding



High temperature curing



Film adsorption



9H coating



Low pressure atomization



Flexible molding

Blue Shield Technology | regardless of bad water quality, durable for 15 years, 100% healthy



9H titanium-based ceramic blue V coating

Thermal efficiency up by 25%, strong weather resistance, stable operation @200 °C



V dynamic heat transfer medium

Self-developed special medium to expand service life by 25%, ecofriendly, no corrosion, no freezing under -35°C, with boiling point



Aerospace-grade aluminum profile frame

Powder coating outer frame, shaped with special mold, good sealing property, small expansion coefficient, thickened insulation layer.



Stainless steel thickened plate core

Ultra-pure ferritic stainless steel thickened plate core for corrosion resistance and long service life.



Submerged intermediate frequency pulse welding

The welding adopts submerged intermediate frequency pulse welding, firm, free from oxidation and deformation, and ensures no leakage of the plate core.



	Blue V-ZK2400	Blue V-ZK2000
Dimension of solar collector	2400*800*80mm	2000*800*80mm
Total area	1.92m ²	1.60m ²
Dimension of plate core	2350*750	1950*750
Rated pressure	0.2MPa	0.2MPa
Absorptivity	≥94%	≥94%
Emissivity	≤12%	≤12%
Absorber/ specification	Stainless steel plate core/ 96 runners	Stainless steel plate core/ 80 runners
Plate core absorber coating	9H titanium-based ceramic blue V coating	9H titanium-based ceramic blue V coating
Aluminum profile color	Black	Black
Glass cover	Ultra-white low iron woven tempered glass	Ultra-white low iron woven tempered glass
Copper joint	G 1/2 wire connector	G 1/2 wire connector
Packaging size	2450*820*80mm	050*820*80mm
Matching water tank	100L (enamel)	80L (enamel)

PROJECTS BALCONY WALL-MOUNTED FLAT PLATE SPLIT

Flat plate split project in Xinxiang Baolong City Plaza

Description of operation of the solar water heating system:

Heat collecting: the absorptor coating in the flat plate solar collector absorbs sunlight and converts it into heat energy to heat the heat transfer medium in the pipeline in the flat plate, forming a natural cycle that the cold medium runs from top to bottom and the heat medium from bottom to top in the pipeline. This continuous circulation enables the temperature of the medium in the interlayer of the entire water tank to rise gradually and then transfer the heat to water in the water storage tank, thereby to increase water temperature in the water storage tank.

Auxiliary electric heating of the water storage tank at the user's: the water tank temperature sensor T1 will trigger electric heating in the user's water tank if the water temperature is low for bathing until the temperature reaches the desired one.

Water supply method: top water, with constant water outlet pressure same as that of the tap water; open the shower so that the cold water will push hot water out.



1. Balcony wall-mounted flat plate split solar heaters of Boyu Jiayuan, Shangdang District, Changzhi City, Shanxi Province
2. Balcony wall-mounted flat plate split solar heaters of Qingdao Vanke Future City, Shandong Province
3. Balcony wall-mounted flat plate split solar heaters of Xinchao Shangshutai Community, Yantai, Shandong Province
4. Balcony wall-mounted flat plate split solar heaters of Xinyuan Shijia Mansion, Ji'nan, Shandong Province
5. Balcony wall-mounted flat plate split solar heaters of Huaxia Xingfu Kongquecheng Zeyaun Project Langfang, Hebei Province
6. Balcony wall-mounted flat plate split solar heaters of Wanda Plaza Project, Lu'an, Anhui Province
7. Balcony wall-mounted flat plate split solar heaters of Taohuayuan, Nancheng, Jiangxi Province
8. Balcony wall-mounted flat plate split solar heaters of, Xingbang Central Park, Yancheng, Jiangsu Province
9. Balcony wall-mounted flat plate split solar heaters of Midea Mantingfang Project, Handan, Hebei Province
10. Balcony wall-mounted flat plate split solar heaters of low-rent housing, Zhangba Road, Xi'an, Shaanxi Province
11. Balcony wall-mounted flat plate split solar heaters of Subway Times - Changqingcheng, Wuhan, Hubei Province
12. Balcony wall-mounted flat plate split solar heaters of CRC Wanxiang Mansion, Hefei, Anhui Province
13. Balcony wall-mounted flat plate split solar heaters of Biguiyuan, Xinxiang, Henan Province

PROJECTS

BALCONY WALL-MOUNTED VACUUM PIPE SPLIT



Description of operation of the solar water heating system:

Heat collecting: when the sun shines on the vacuum pipe, the selective absorption coating on the outer wall of the liner of the vacuum pipe converts the solar energy into heat energy and conducts it to the medium in the U-shaped type. The high density of cold medium and low density of heat medium enable to form a natural cycle that the cold medium runs from top to bottom and the heat medium from bottom to top in the pipeline. This continuous circulation enables the temperature of the medium in the interlayer of the entire water tank to rise gradually and then transfer the heat to water in the water storage tank, thereby to increase water temperature in the water storage tank.

Auxiliary electric heating of the water storage tank at the user's: the water tank temperature sensor T1 will trigger electric heating in the user's water tank if the water temperature is low for bathing until the temperature reaches the desired one.

Water supply method: top water, with constant water outlet pressure same as that of the tap water; open the shower so that the cold water will push hot water out.



PROJECTS

PLATE CENTRALIZED HEAT COLLECTION AND HOUSEHOLD-BASED HEAT STORAGE PROJECT

Description of operation of the solar water heating system:

The solar collectors are centrally placed on the roof of the building, allocating an independent hot water storage tank to each household. Within the hot water storage tank are installed with the heat exchange device and auxiliary heating device. The shared devices are centrally placed in the equipment room or on the roof. The heat energy collected by the solar collector is transported to the heat exchange device in the indoor hot water storage tank through the circulation pipeline for heat exchange to heat the water in the hot water storage tank. In case of insufficient sunshining or temperature lower than the set one in the hot water storage tank, the user may resort to the auxiliary heating device in the hot water storage tank to heat the water to the required temperature.

Plate centralized heat collection and household-based heat storage project of Longbao City Plaza, Xinxiang, Henan Province

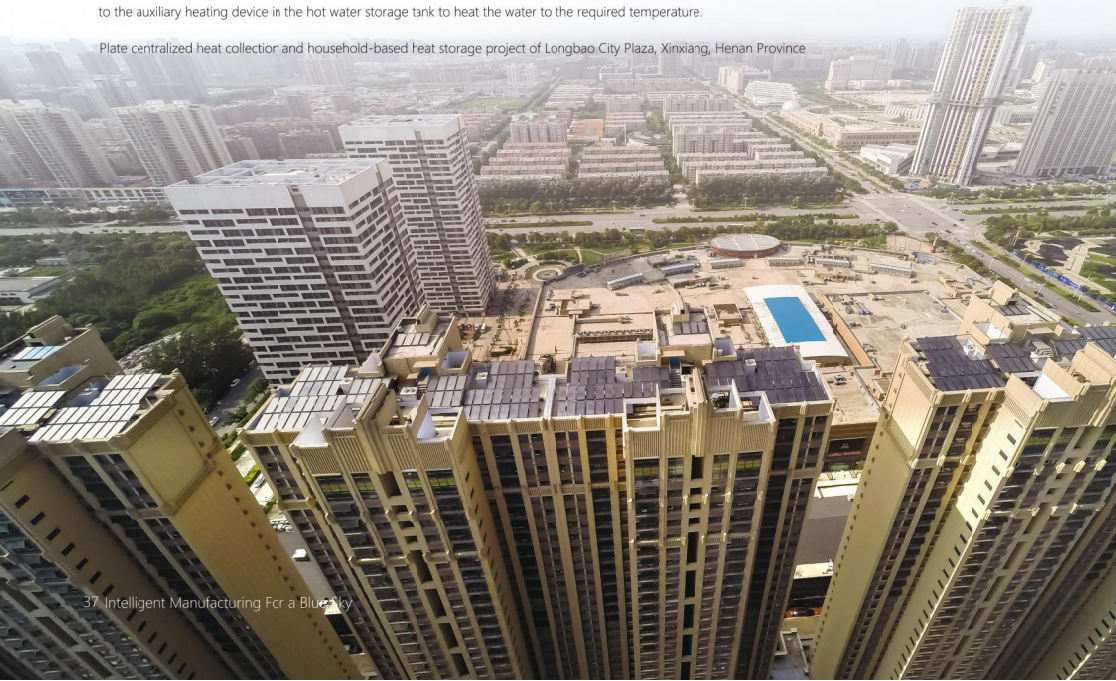


Plate centralized heat collection and household-based heat storage project of Jinke Jimai Yangguang (Phase II), Panzhihua, Sichuan Province



Plate centralized heat collection and household-based heat storage project of Changzhou University



Plate centralized heat collection and household-based heat storage project of Jinke Qingdao Yangguang Meizhen



Plate centralized heat collection and household-based heat storage project of Amber Holiday World, Sanya, Hainan Province



Plate centralized heat collection and household-based heat storage project of Westin Hotels & Resorts, CREC Qingdao Cosmopolitan Exposition, Shandong Province



Plate centralized heat collection and household-based heat storage project of Nanjing Special Police Camp

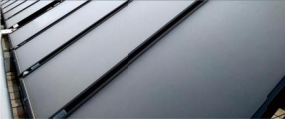
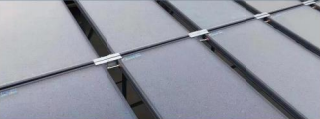


Plate centralized heat collection and household-based heat storage project of Jinke Tianhu Nanyuan, Jinghai, Tianjin



PROJECTS

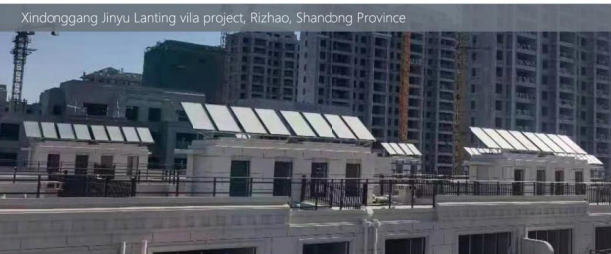
VILLA SPLIT PROJECT



Jinke Tian Peach Garden villa project



Qingdao Jinke Yangguang Meizhen villa project



Xindonggang Jinyu Lanting villa project, Rizhao, Shandong Province



Vanke Siji Duhui Garden villa project, Shanghai



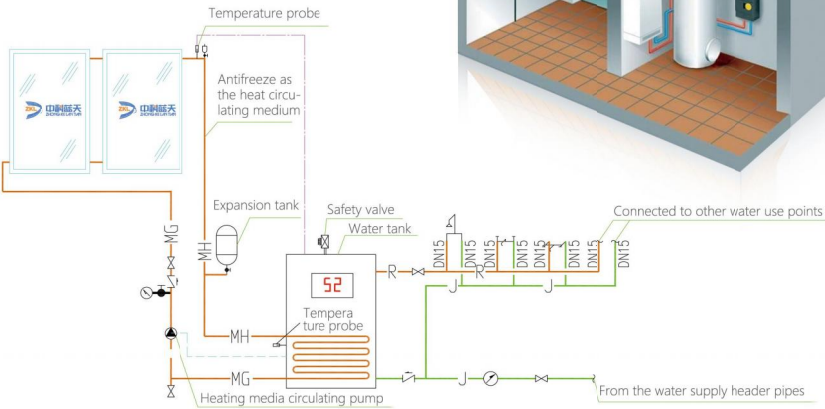
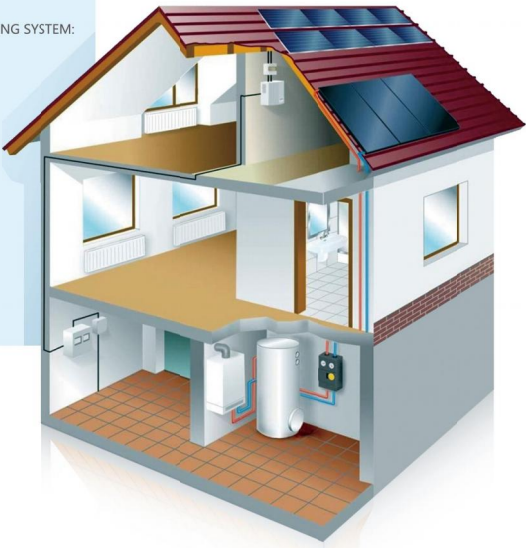
CFLD Xianghe England Palace villa project

DESCRIPTION OF OPERATION OF THE SOLAR WATER HEATING SYSTEM:

Solar temperature cycle: when the temperature difference at the outlet of the solar collector (T1-T2) is $\geq 6^{\circ}\text{C}$ (adjustable), the solar circulating pump starts, so that the heat medium in the solar collector enters the coil in the user's hot water storage tank to heat the water there. When $T1-T2 \leq 2^{\circ}\text{C}$ (adjustable), the solar circulating pump stops.

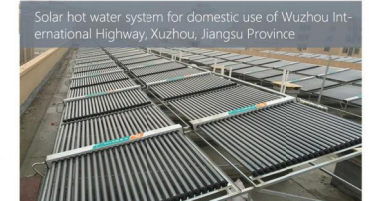
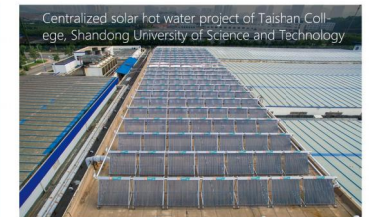
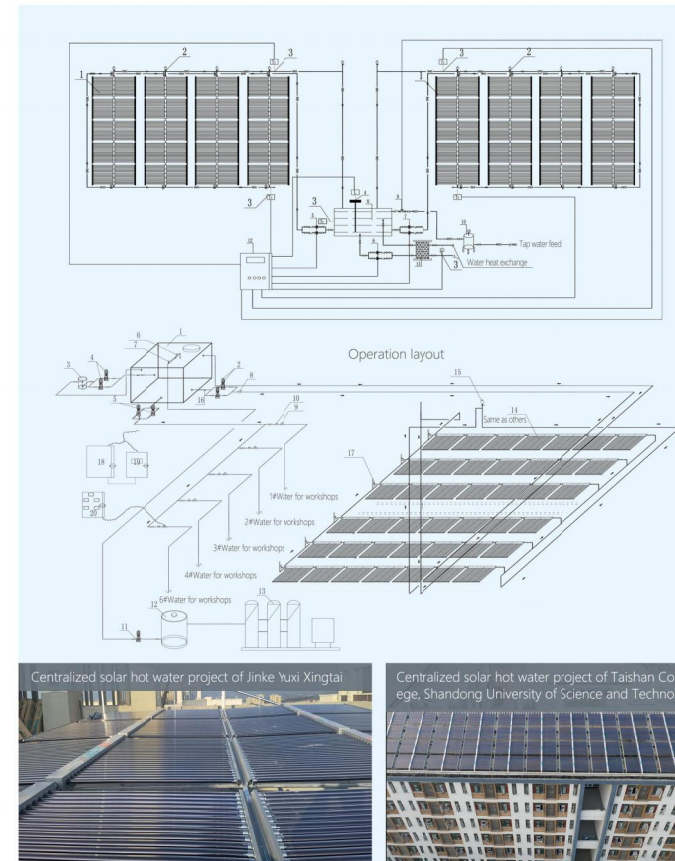
Over-temperature protection function: when $T2 \geq 60^{\circ}\text{C}$ (adjustable), the heat medium circulating pump stops working to prevent the user from being scalded due to the high temperature in the water tank.

Auxiliary timing heating function: within the set heating time period, if the temperature in the hot water storage tank is below 45°C (adjustable), the auxiliary electric heating starts to heat the water tank until reaching the set temperature of 50°C .



PROJECTS

CENTRALIZED HOT WATER PROJECT



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