

Photovoltaic-driven Balcony Water Heater

User Manual



Notice

We sincerely thank you for choosing this photovoltaic-driven balcony water heater system. To ensure a better performance of the system, please read this introduction before you operate it. This introduction will tell you how to operate and maintain the system correctly, if you still have any questions after reading, please contact technician or aftersales service commissioner, we will solve your problem in time. Please keep this introduction for reference.

When opening the box, please check the components and documents according to the packing list.

Only certain people ordered by our company can help you install this product. After installation and usage, user shall do routine maintenance according to conditions. If problem occurs, please contact technician or aftersales service commissioner, to ensure the operation of the system.

Any maintenance shall be done after the system is powered off. Only specialized people can maintain the system.

Please mix hot water and cold water before usage, to avoid scald problem. The safety relief valve shall be connected to water drain pipe, and be kept downward to the floor drain.

When the system is working, please turn off water inlet valve.

Hot water in solar water heater system can not be drunk directly.

The working condition is required that at least 6 hours solar illumination can be get without shadow.

Attention

If users operate the system ignoring the recommendations in this introduction, it may cause scald, fire, property and personal injury.

The power socket shall based on reliable grounding, or it may cause danger. Complete drainage facility is required to avoid damage in case that the water heater is leaking.

The product in your hand may be a little different from this instruction because of product improvement.

Product performance standards

Domestic Solar Water Heater Technical Conditions

GB/T19141-2011

All Glass Vacuum Tube for Solar Collector

GB/T17049-2005

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1 Company profile

Sunrain is a leading enterprise in solar thermal industry in the world, it specialized in research and services of solar thermal and air source compound use. As cooperative partner of Chinese Environmental Protection Project, and the first Chinese solar thermal manufacture to be listed (stock code: 603366), Sunrain has devoted to the research, manufacture and market promoting of solar and other new energy application products for over 10 years, and provides solar hot water solutions in more than 100 countries and regions in the world.

The business scope of Sunrain includes: solar water heaters, solar heater projects, solar heating appliance, solar air-conditions, and other solar and air source products. By taking advantages of its global leading heat collecting, preserving and utilizing technology, Sunrain provides solar water heating solutions for different customers in areas of civil use, commercial use, public use, industry and agriculture use.

In 1999, Mr. Xu Xinjian founded Sunrain Group based on market, and began a romaunt in Chinese solar thermal industry.

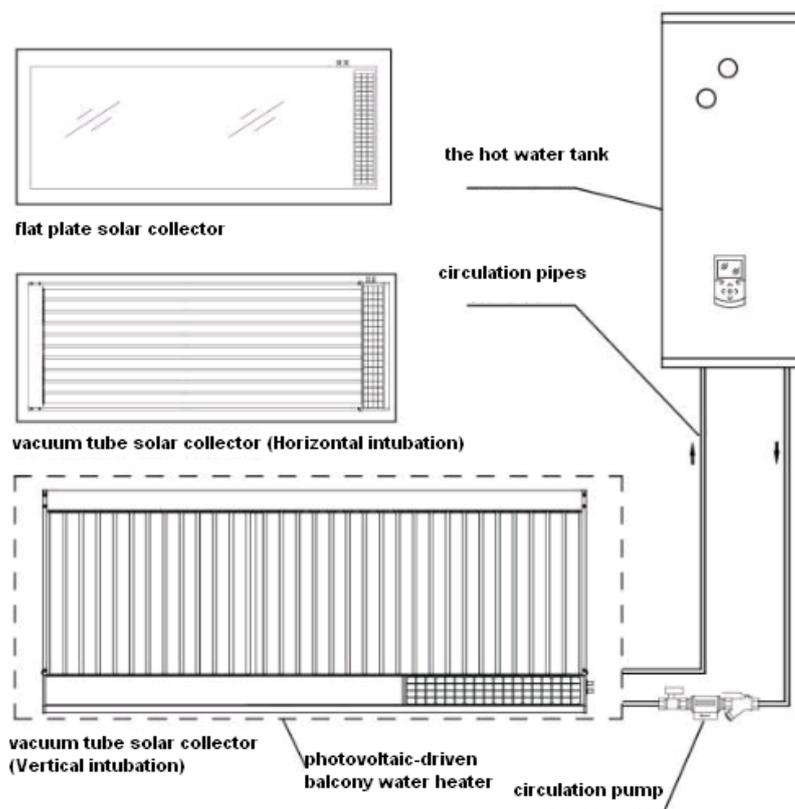
Since its foundation, Sunrain has focused on quality control and environmental management, and has owned the certificate of ISO9001:2008 and ISO14001, also achieved Chinese 3C certification, CCEL and KCPC certification. Sunrain has been awarded AAA grade credit enterprise, and owned more than 50 certification for different products in European, Germany, Korea, Australia, South Africa and other countries. Sunrain is the first to achieve Golden Sun Certification, Chinese Top-ten best aftersales service enterprises Award, and

UNIDO Market Development Special Award in Chinese solar thermal industry. During the past over 10 years, Sunrain not only promoted Chinese solar appliance going rural project, achieved the recognition from Chinese government, but also provide environmental-friendly energy solutions for more than 100 countries and regions in the world. Sunrain keeps providing better life for us, in the future, its plan is to expand solar water heaters for more than 100 million square meters, replace 20 million tons of coal, reduce 30 million carbon emission and 87.4 billion KWH electricity.

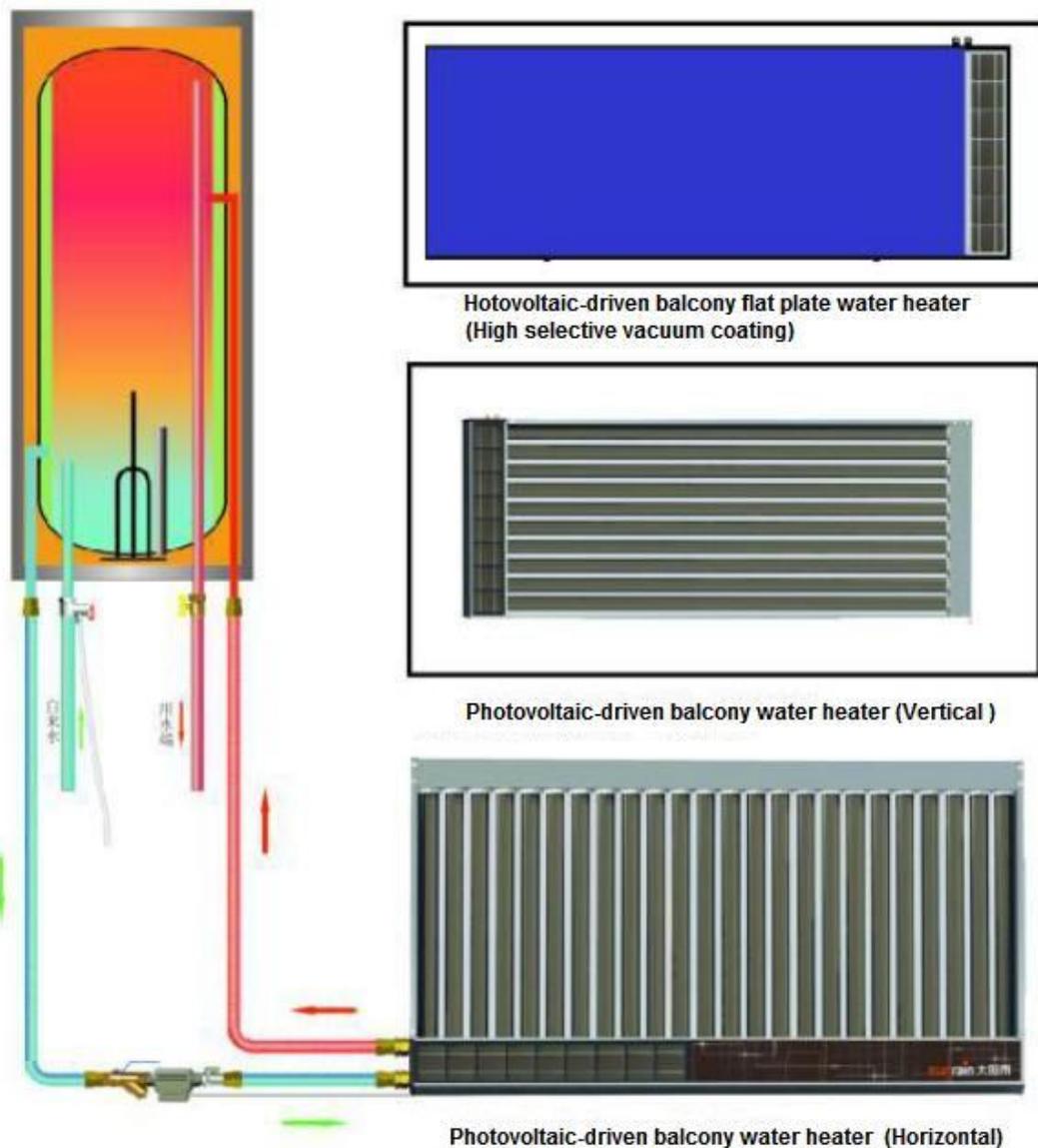
Sunrain has become a global brand in new energy utilization area, with the dream of becoming 100-year enterprise and achieving 10 billion sales amount, the core value of being honest, responsible and grateful, the business concept of creatively providing valuable service for customers, and the spirit of joy, enterprise and reality, Sunrain keeps devoting its products, technology and wisdom for sustainable human society.

2. System introduction

photovoltaic-driven balcony water heater is consist of a balcony collector, a water pump, a tank and circulation pipes. Among them, the collector is made of U-pipe collector/ flat panel and photovoltaic component, and installed on the balcony where sunshine can reach. The condition is required at least 6 hours solar illumination without shadow. Other components will be installed inside, the system can function safely under different solar condition.



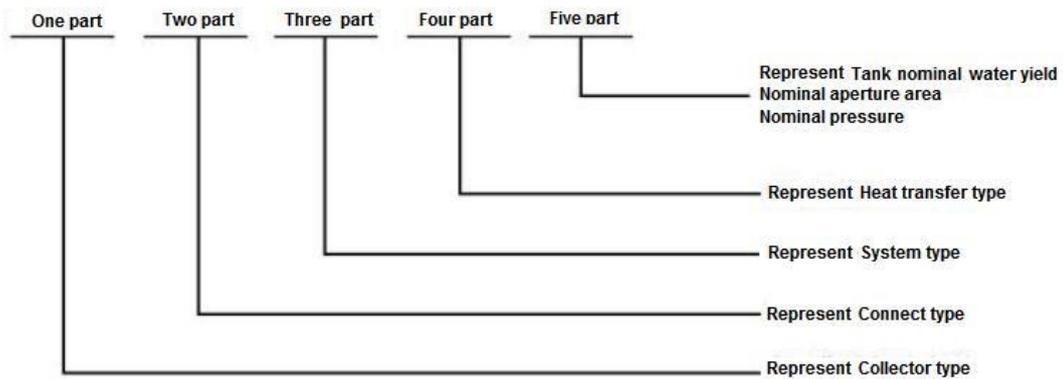
3. Operating Principle



Photovoltaic-driven balcony water heater combine the solar thermal technical and solar photoelectric technical. Solar thermal parts absorb solar energy to heat the liquid in the collector. Solar photoelectric parts absorb solar energy to produce dc drive to make dc motor run. Solar thermal parts and Solar photoelectric parts effecition is proportional to solar irradiance. When solar irradiance large solar-thermal part gain more heat quantity of heat. When the solar irradiance is higer, the collector get more heat so that it heat the liquid quickly in the collector. And loop dc pump rotating highly speed. The liquid rapidly cycle in the cycle pipe. It is good to transmit heat to the water in th e tank. If it is no sun, the cycle pump stop working. The liquid can not cycle in the pipe in case that the heat decrease in the cycling pipe.

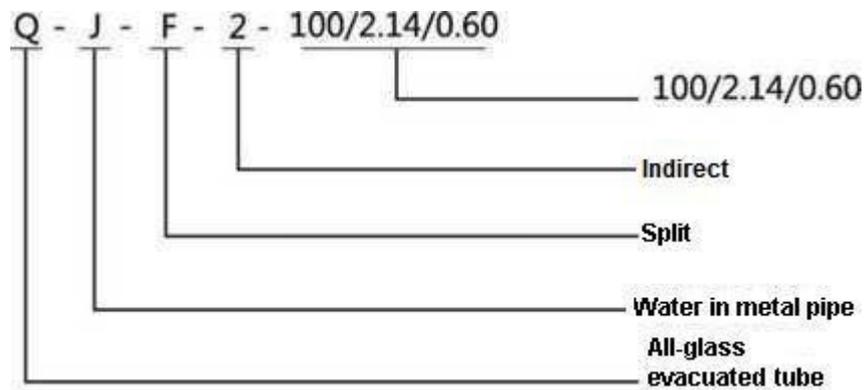
4. Product technical performance, parameters and specifications

1. System name mean



One part	Two part	Three part	Four part	Five part
P: Flat plate collector Q: All-glass evacuated tube B: Glass-ceramic pigtail tube M: Stagnation	B: Water in glass tube J: Water in metal pipe R: Heat pipe	J: Compact F: Split M: Stagnation	1: Direct 2: Indirect	Tank nominal water yield/Nominal aperture area/Nominal pressure L/m, /MPa

Giving a typical example:



2. Parameter and Specification

2.1 Photovoltaic-driven balcony water heater technical parameters (Flat plate collector with high selective vacuum coating)

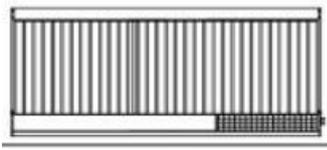
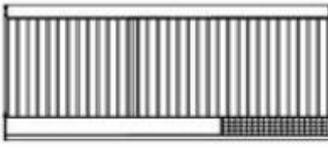
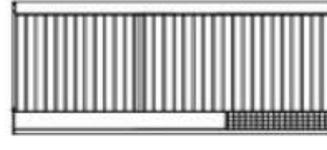
1. 120L system Parameter

Type	Tank Capacity	Tank Size	Tank pressure	Tank weight	PV power
P-J-F-2-120/1.9 3/0.6	120 L	Φ468*134 6	0.7 MPa	60 KG	18 W
PV voltage	Brushless dc pump head	Brushless dc pump flow	Collector size	Aperture area	Collector weight
18 V	3 M	1.2 L/min	2460*900	1.93 m ²	41 KG

2.100L system Parameter

Type	Tank Capacity	Tank Size	Tank pressure	Tank weight	PV power
P-J-F-2-120/1.9 3/0.6	100 L	Φ468*115 3	0.7 MPa	50 KG	18 W
PV voltage	Brushless dc pump head	Brushless dc pump flow	Collector size	Aperture area	Collector weight
18 V	3 M	1.2 L/min	2460*900	1.93 m ²	41 KG

2.2 Photovoltaic-driven balcony water heater technical parameters (Vertical U pipe)

Type	Q-J-F-2-80/1.39/.0.6	Q-J-F-2-100/1.57/.0.6	Q-J-F-2-100/1.57/.0.6
Vertical Tube			
Tank Capacity	80	100	120
Tank Size	Φ468*962	Φ468*1153	Φ468*1346
Tank pressure	0.7 MPa	0.7 MPa	0.7 MPa
Tank weight	40 KG	50 KG	60 KG
PV power	18 W		
PV voltage	18 V		
Brushless dc pump head	3 M		
Brushless	1.2 L/min		

dc pump flow			
Collector size	1985*1025*135	2225*1025*135	2465*1025*135
Vacuum tube Speciation	Φ47*800	Φ47*800	Φ47*800
Vacuum tube Qty	32	36	40
Pitch-row	60	60	60
Aperture area	1.39 m ²	1.57 m ²	1.74 m ²
Collector weight	60	68	75
Controller	Intelligent one-piece		
Electrical Heater Power	1500 W		
System Max Power	2000 W		

2.3 Photovoltaic-driven balcony water heater technical parameters (Horizontal U pipe)

Type	Q-J-F-2-80/1.50/.0.6	Q-J-F-2-100/1.65/.0.6	Q-J-F-2-100/1.80/.0.6
Vertical Tube			
Tank Capacity	80	100	120
Tank Size	Φ468*962	Φ468*1153	Φ468*1346
Tank pressure	0.7 MPa	0.7 MPa	0.7 MPa
Tank weight	40 KG	50 KG	60 KG
PV power	18 W		
PV voltage	18 V		
Brushless dc pump head	3 M		
Brushless	1.2 L/min		

dc pump flow			
Collector size	2310*855*135	2310*930*135	2310*1005*135
Vacuum tube Speciation	Φ58*2100	Φ58*2100	Φ58*2100
Vacuum tube Qty	10	11	12
Pitch-row	75	75	75
Aperture area	1.5 m ²	1.65 m ²	1.80 m ²
Collector weight	49	54	59
Controller	Intelligent one-piece		
Electrical Heater Power	1500 W		
System Max Power	2000 W		

Remark: 1.Pitch-row and Size Unit : mm

2.Collector weight is that it without Non-toxic liquid.

5. System installation.

I System installation requirements

- 1)Photovoltaic-driven balcony water heater installation shall be installed by professional and technical person.
- 2)Collector install on the breast board outside the balcony which bear more than 30 kg/RRF.The collector can not be installed on the Light weight filler wall and light weight balcony breast board .
- 3)The range angle of the breast board where install the collector toward Sun:By east 15 °-By west 15 °;
- 4)Do not bump against during installing collector, in order to avoid damaging the all-glass vacuum tube.
- 5)Hot water storage tank should be installed on the load-bearing wall.There must have be a drainage on the floor under the tank.
- 6)All pipe must seal,thermal pipe must support above 0.3MPa.Cold and hot water pipe must withstand 0,6MPa.

ⅡWhere the solar collector install

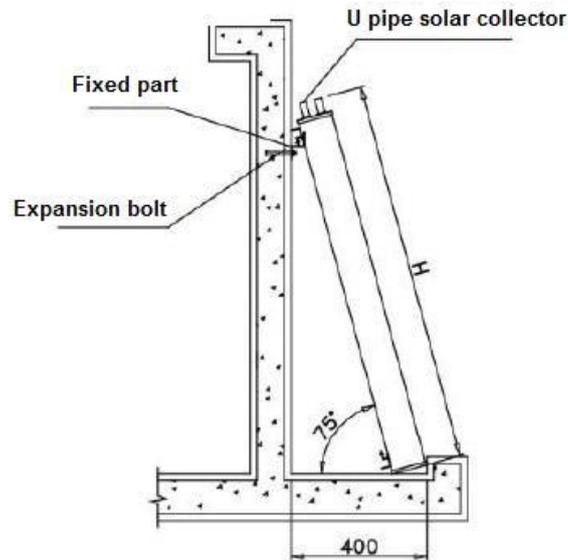
- 1)The collector should install greet the sun.Fixed to the outdoor part of the breast board
- 2)It do not affect the window open and close.
- 3)To increase the solar collector heat gain,suggested installation angle is 75 if

you under the condition.

III The collector installation (Take the 58X2100 U pipe collector as example)

1) Usually people make precast concrete unit for installing the solar collector on the balcony

As the following picture shows.

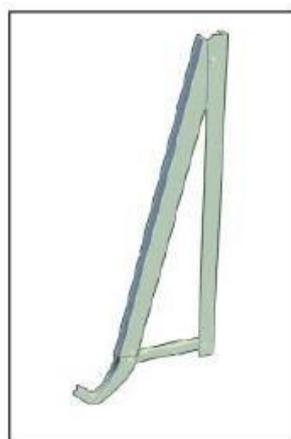


2) The balcony without prefabricated foundation, there must install the collector bracket, the fix the solar collector on the bracket.

Step 1 Please install frame as Picture 5-1. Please tighten bolt and nut. Do not tighten briquette upper the frame except the briquetting upper the frame. (Different collector use different bracket, everything in kind prevail)



Horizontal collector bracket
(3 unit)



Vertical collector bracket
(3 unit)

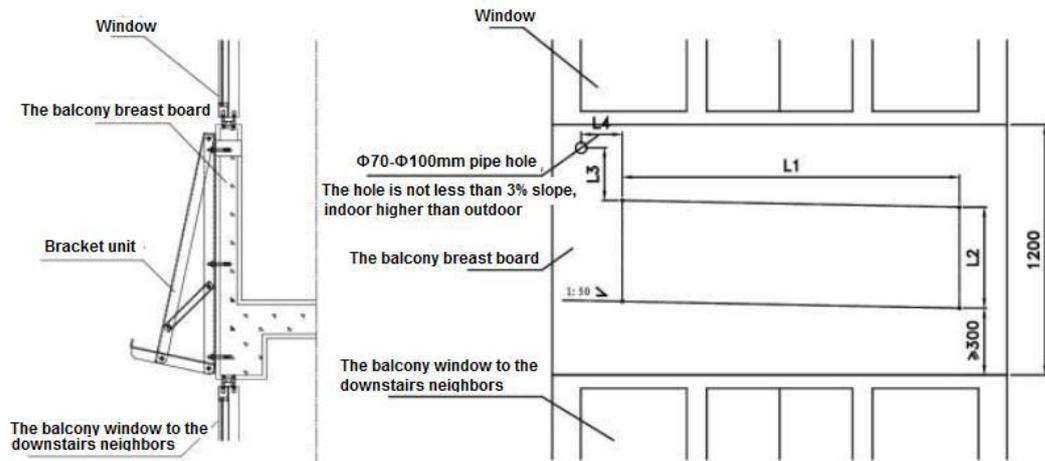


Flat collector bracket
(2 Unit)

Picture 5-1 Frame Type

Step 2 Please bore four $\Phi 12$ holes for installation the collector and one

Φ70-Φ100mm pipe hole. The user on the left side where bore the mounting holes as Picture 5-2. All mounting holes on the right side of users is opposite to Picture 5-2.

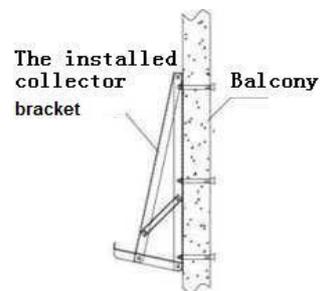


Picture 5-2 Collector bracket mounting holes size chart

Step 3 Use 9 piece M10 expansion screws to fix the installed collector hanger on the balcony railing. As Picture 5-3.



Picture 5-3



Picture 5-4

Non-situ concrete structure hanger installation

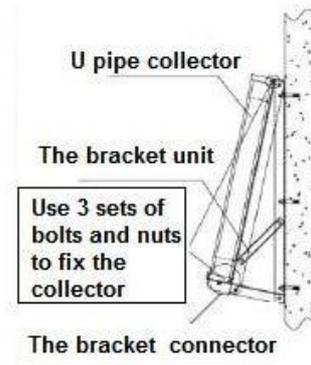
Remark: If the balcony is the non-situ concrete structure, please use split bolt with guard board. As Picture 5-4

Step 4: Collector fixed installation

- a) Please place the collector on the hanger. As Picture 5-5.
- b) Use 3 sets of bolts and nuts to fix the collector on the hanger (Total 3 hanger). As picture 5-6.



Picture 5-5

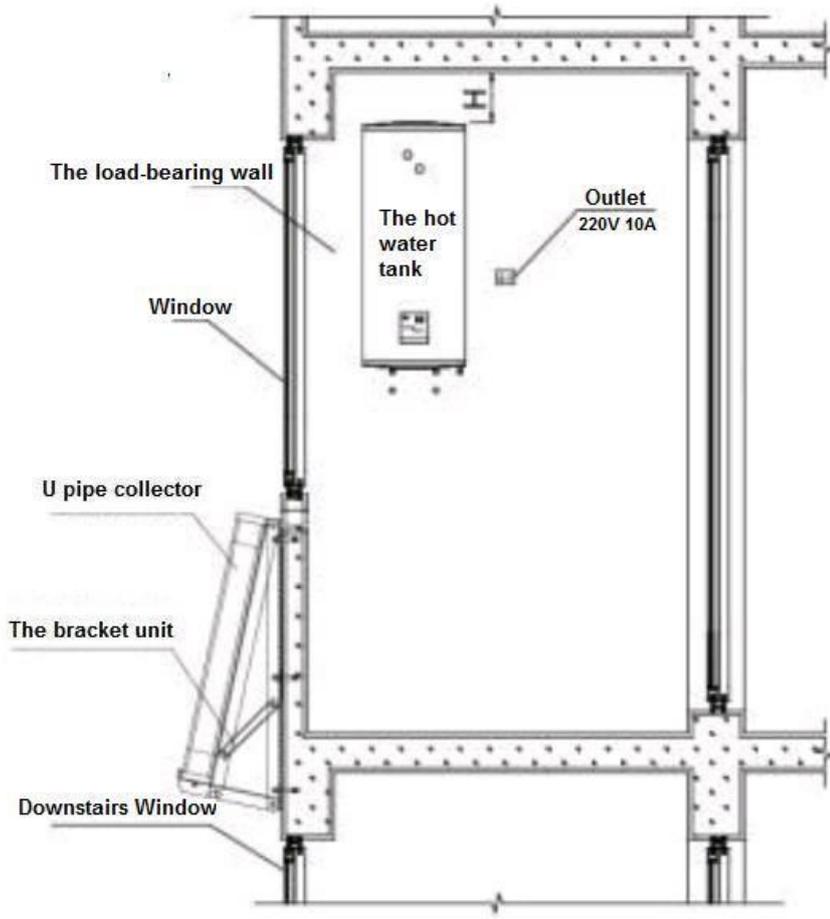


Picture 5-6

V The hot water tank installation

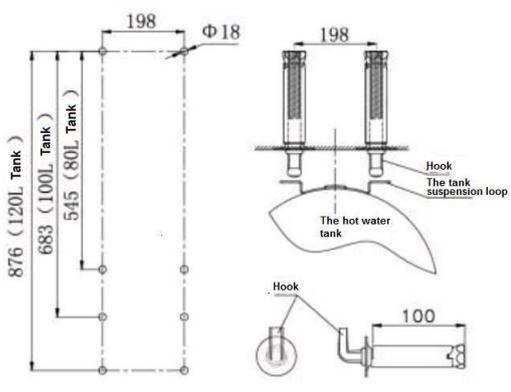
1. The installation place of the hot water tank (Take the U pipe collector as example)

- a) The hot water tank should be installed on the load-bearing wall inside the balcony that it is convenient to use and repair.
- b) There is a 220V/10A outlet around the tank. And there is a floor drain under the tank. Please do not put the inflammables and explosives. The height between the top of the tank and the top of the balcony should be 50mm-100mm so that it is easy for you to install the tank. As the following picture.

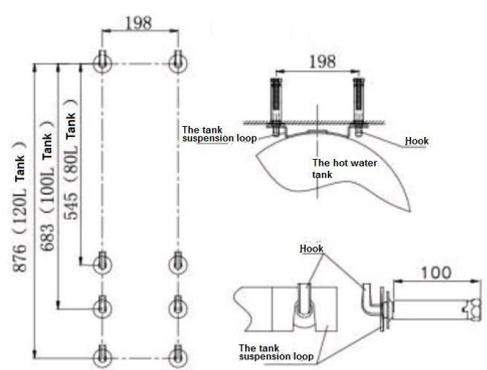


2)The tank fixed

- a)Please draw chalk line as Picture 5-7,drill 4 hole which size is $\Phi 18$ mm diameter, 100 mm deep.Install expansion bolts hook which is vertical up.
- b)Lift the tank horizontally,and make the suspension loop aim the hook mounting holes. Ensure the tank is installed securely.As Picture 5-8.



Picture 5-7

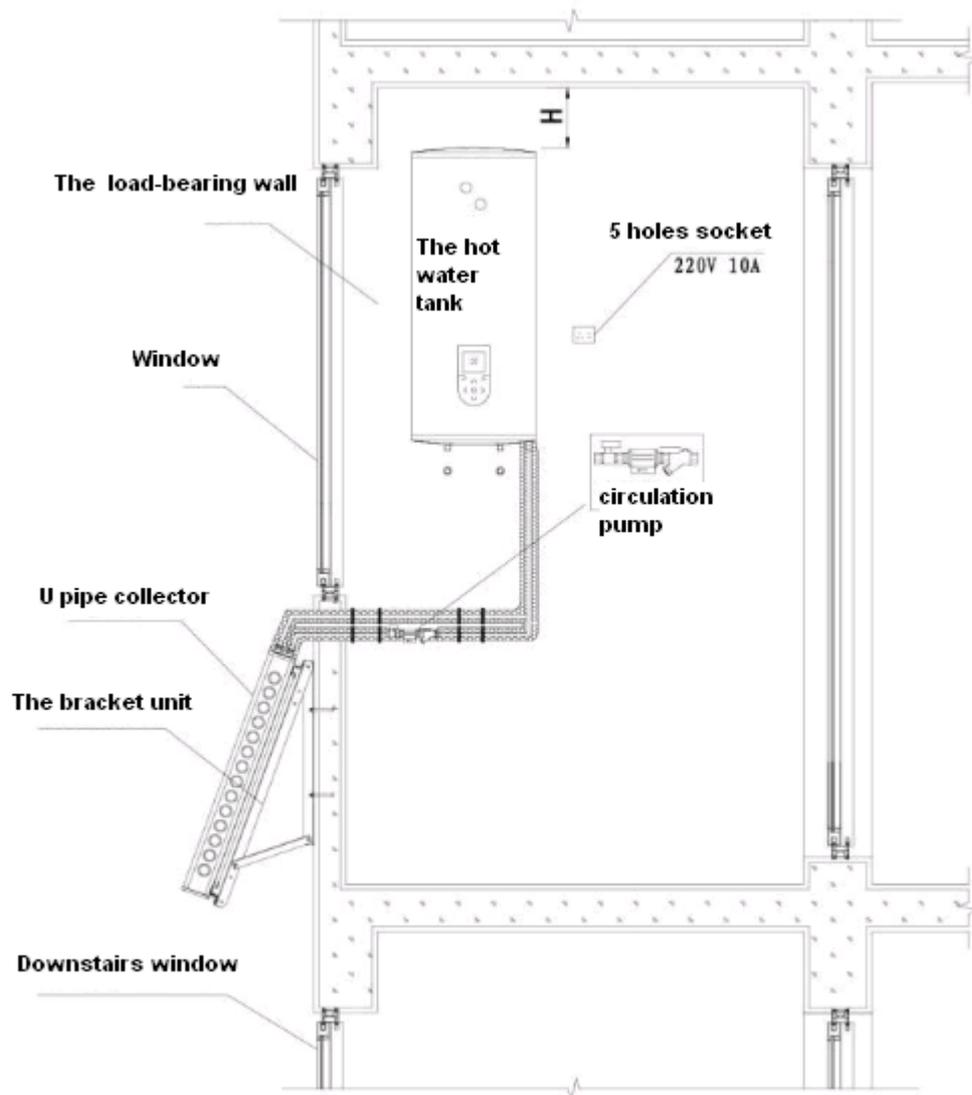


Picture 5-8

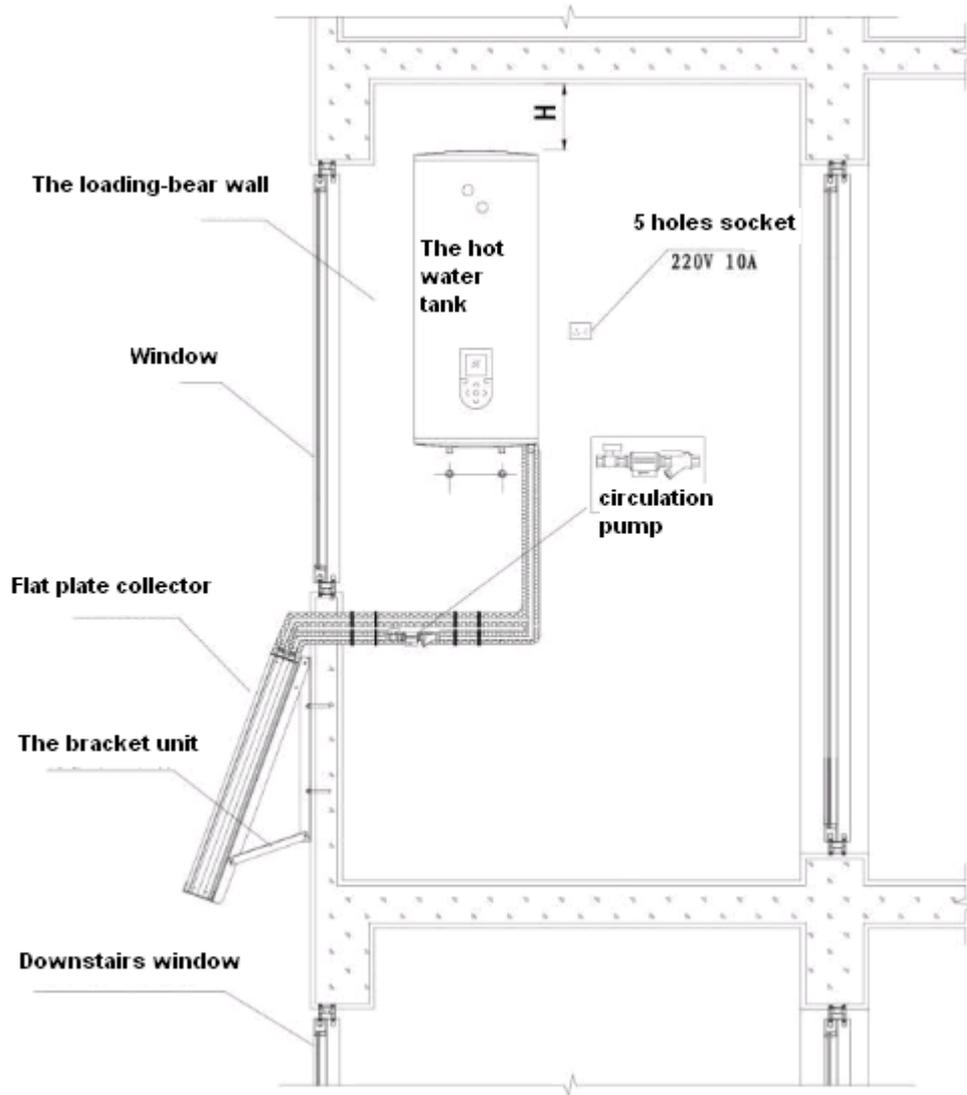
IV. Pipe system installation

1) Installation diagram

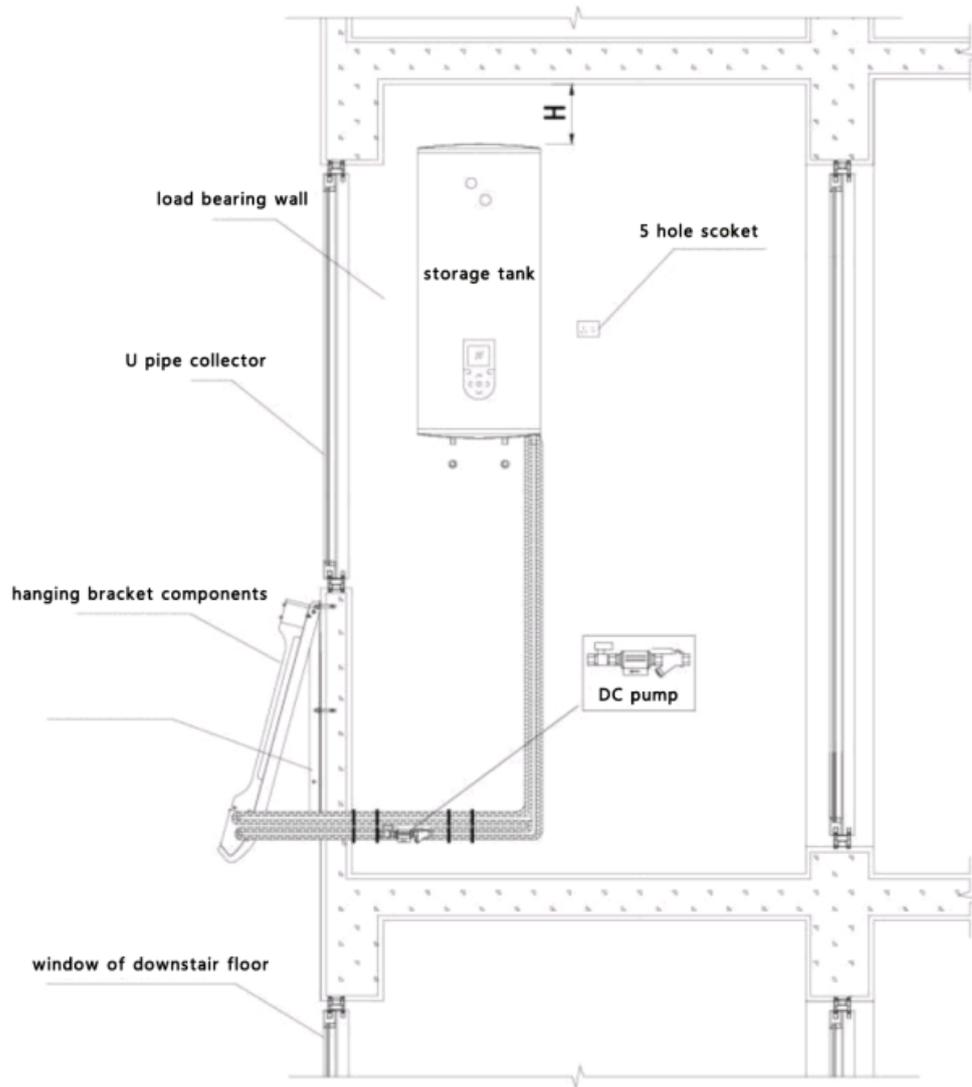
a) For $\Phi 58 \times 2100$ horizontal intubation collector



b) For flat plate collector



c) For $\Phi 47 \times 800$ vertical intubation collector



2). installation of pipes for tank

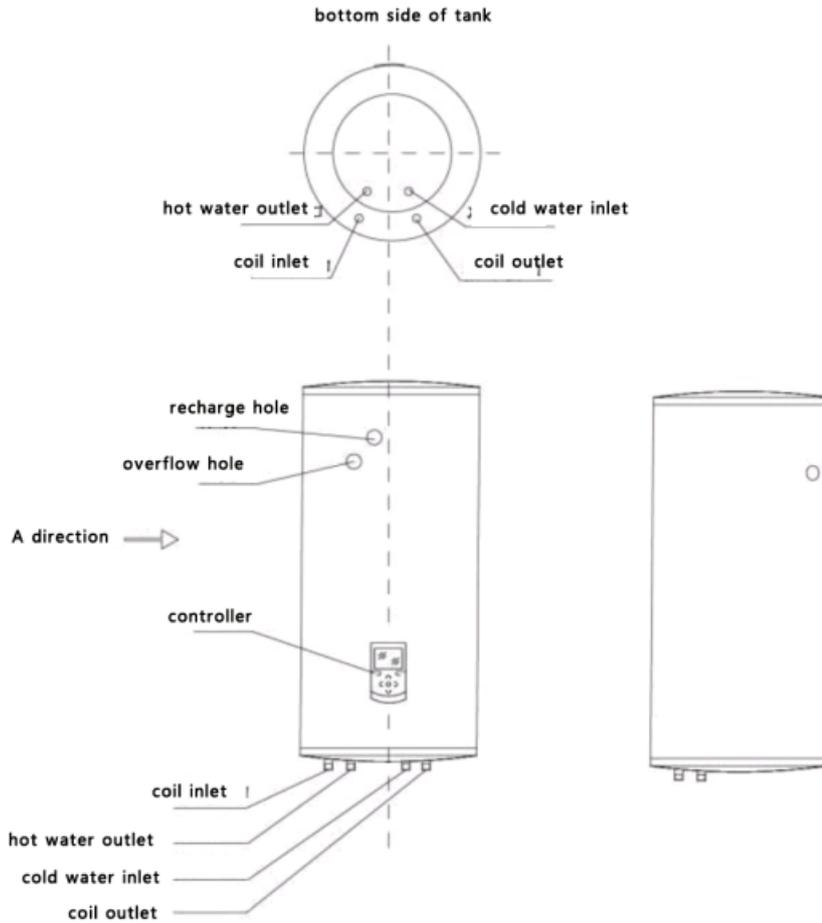
a) the connection nozzle of tank is showed as P5-9

b) cold water inlet is connected to tap water, hot water outlet supply hot water for user

c) coil inlet is connected to collector hot water outlet, coil outlet is connected to collector back water inlet

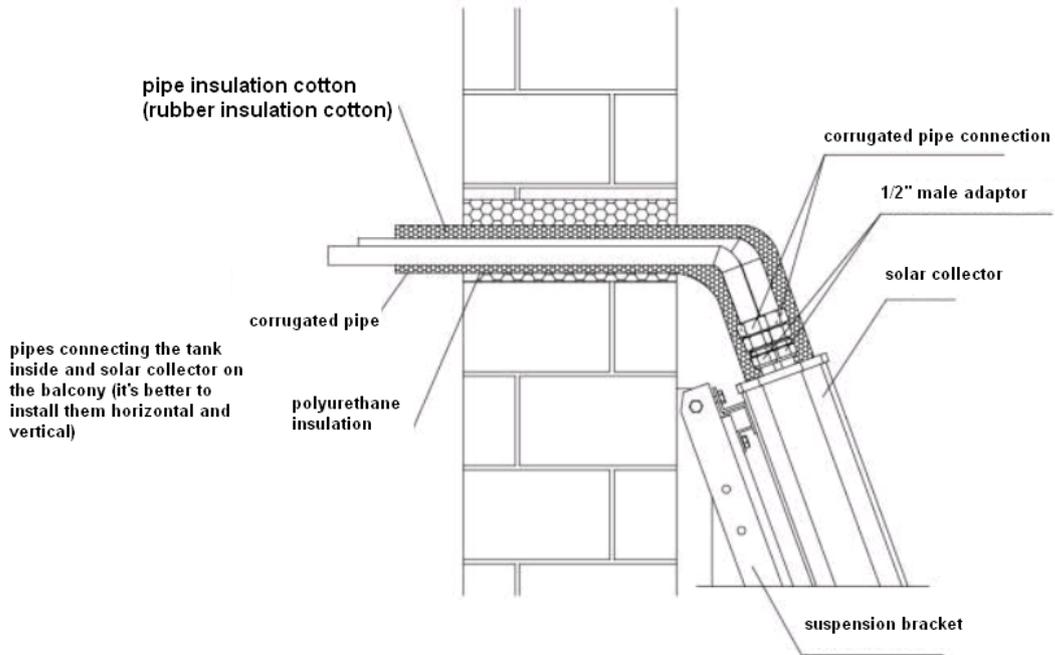
d) recharge nozzle is for medium recharge

e) the relief valve should be installed at the tank cold water inlet, its aqueduct should be face ground and connect to drain pipe or floor grain, and need to be fixed well.



Picture 5-9: diagram of tank connections

3). Pipe installation of collectors (take U pipe $\Phi 58*2100$ for example)

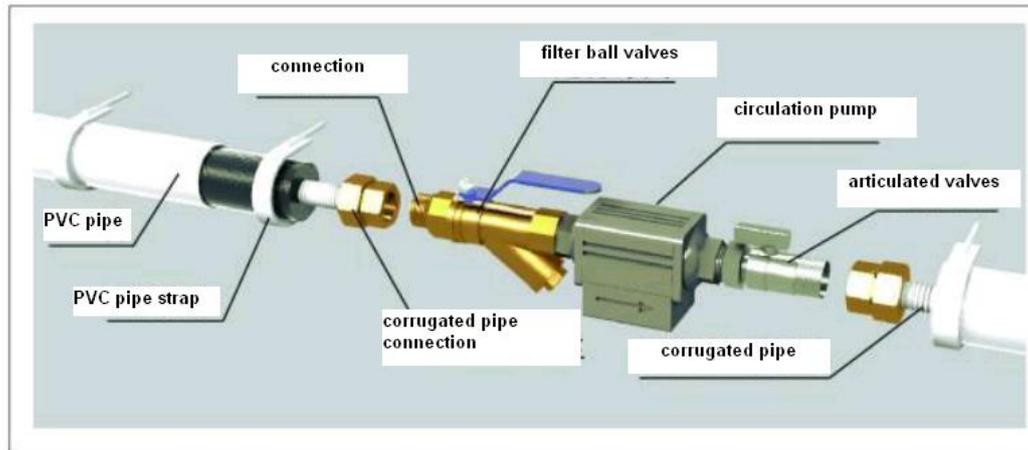


Installation steps for solar collector pipes

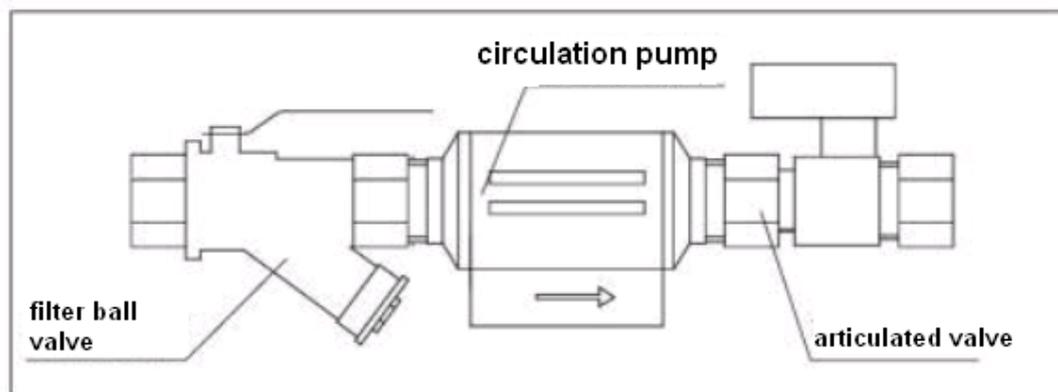
- a) Connect the corrugated pipe with the pipe, make sure no leaking occurs.

- b) Connect the two pipes with the water inlet and outlet pipe of tank, make sure no leaking occurs.
- c) After adjusting the system, put on rubber insulation cotton for heat preservation.
- d) Install the pipes on balcony, inject foaming materials, make it waterproof.

4). Installation Notes for Loop Pump



Installation Instruction, be aware of the direction of inlet/outlet pipe.



Please install in this order.

- a) The pump shall not be installed next to the wall, or you shall use some rubber insulation cotton between the pump and wall to avoid shaking.
- b) Pump outlet pipe shall be connected to collector inlet pipe.
- c) It is the best to install the pump paralleled to the horizontal plane.
- d) Keep away from strong magnetic environment.
- e) Power positive and negative pole shall be connected correctly.
- f) Pump inlet pipe shall be below water level when working.
- g) Pump shall not be operated at idling condition, it may reduce its lifetime and produce noise.

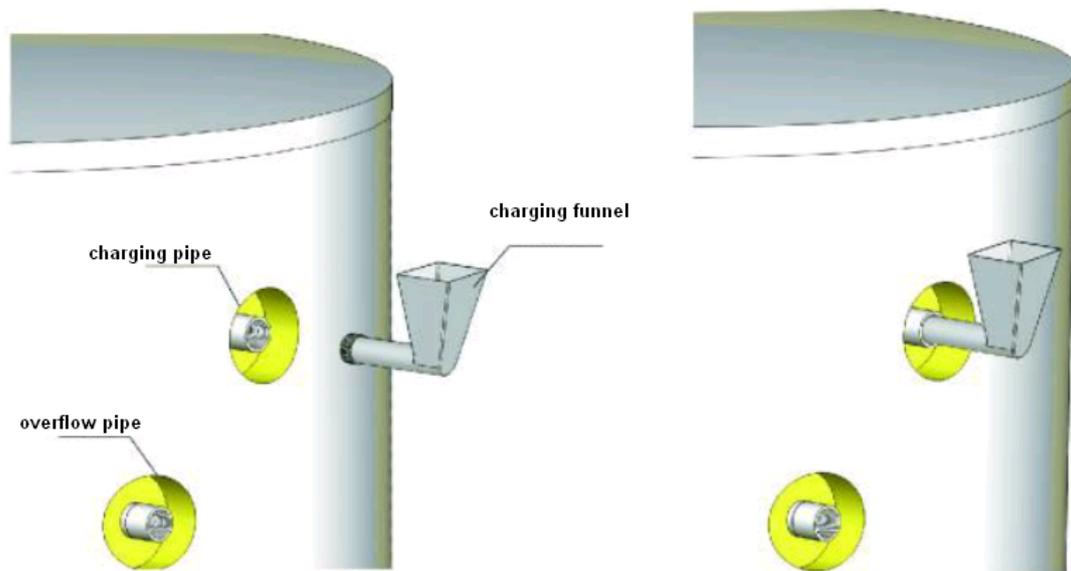
VII Filling in heat transfer fluid

- 1) Fill in the fluid

There are two ways to fill in the fluid, and can be chosen due to the conditions. Please adjust the freezing point of the fluid according to the local environment temperature before filling in the fluid.

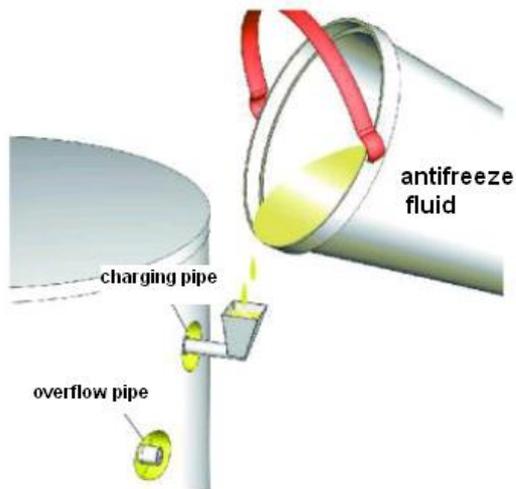
Method 1: use charging funnel to fill in the fluid. (this may takes a little time)

a) connect the charging funnel with the charging pipe of tank, as in picture 5-10;

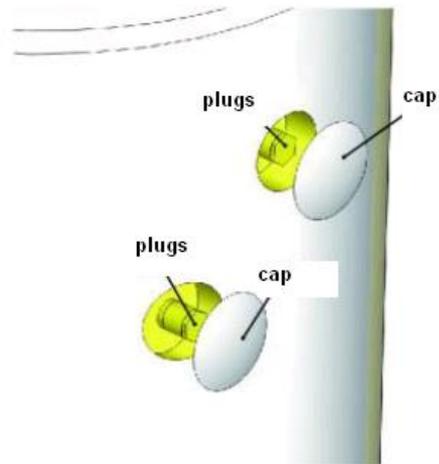


5-10 connect the charging funnel with the charging pipe

b) The liquid in the bucket is antifreeze fluid, put the antifreeze fluid into the pipes through a charging funnel, and make the U pipe, circulation loop and jacketed layer of tank be full of the fluid. Stop filling when the fluid is flowing out from the overflow pipe.



5-11 fill in the antifreeze fluid



5-12 finish the filling

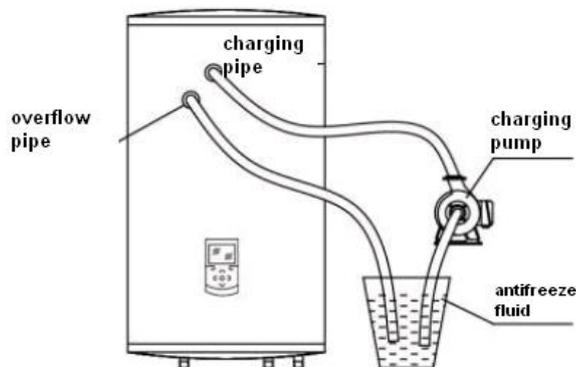
c) Move away the charging funnel from the charging pipe, use plugs to seal the pipe, then put caps on as in the picture 5-12.

Method 2: filling by charging pump

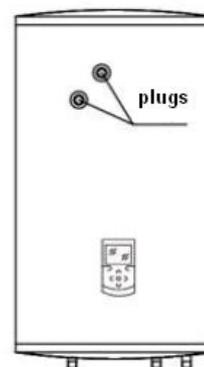
a) Use a pump with more than 3 meters delivery head, connect the inlet pipe and the antifreeze fluid bucket with a tube, and connect the outlet pipe and charging pipe with a tube, then connect the overflow pipe and the bucket with a tube, as in the picture 5-13.

b) Start the pump, make the U pipe, circulation loop and jacketed layer of tank be full of the fluid. After the fluid flow out from the overflow pipe, keep filling for a period (at least 10 minutes), then stop the pump.

c) Move away the tube which connects the charging pipe after there is no fluid flow from the pipe, use use plugs to seal the pipe, then put caps on as in the picture 5-14.



5-13 fill in the heat transfer fluid



5-14 finish the filling

2) Add fluid to the pipe

After the system is used for a period, more fluid is needed to be filled in. A

closed system shall be filled in fluid every year. Please contact the aftersales service team or agent for it.

6. Controller instructions

1. Buttons and content of display screen on control panel



1. Week (Default is Sunday)
2. Timing and cost cutting function
3. Temperature state
4. Temperature display
5. Time
6. Operation area

2. Controller operation

A. Turn on & off



1) Plug in the power plug ---- power supply is connected, the system begins

self-inspection, each display lamp will be shining, then the controller will be powered off.

2) Press the on/off button --- the press shall last for a period of 300ms to 3s, then the system will be powered on and begin self-inspection again. After self-inspection, time will be displayed as it is recorded last time, or displayed as default in case the system is first-time power-on or is power-off for a long time. Temperature will first be displayed as settled, then be displayed as actual result.

3) Press the on/off button again --- the press shall last for a period of 300ms to 3s, then the system will be powered off.

B. Temperature setting



The initial value is 50°C, setting value can range from 35°C to 80°C.

In conditions that the system is powered on,

1) Press '◀' or '▶' --- temperature setting mode is started, the *temperature setting* symbol will be shining, and the value will be twinkling.

2) Press '◀' or '▶' again --- increase or decrease the settled value. If press the button for 1.5s, the value changes consecutively. After setting, the value will twinkle for 4s, then be saved. If press other button when it is twinkling, the value will also be saved, and temperature setting mode is ended at the same time.

C. Time setting



In conditions that the system is powered on,

- 1) Press setting button --- *week* and *day* value begins twinkling, time setting mode is started.
- 2) Press '◀' or '▶' --- choose *week* value.
- 3) Press setting button again --- *hour* value twinkling, it means *week* value has been set, and *hour* value can be set.
- 4) Press '◀' or '▶' --- choose *hour* value.
- 5) Press setting button again --- *minute* value twinkling, it means *hour* value has been set, and *minute* value can be set.
- 6) Press '◀' or '▶' --- choose *minute* value.
- 7) Press setting button again --- time setting is saved and ended.

D. Booking setting



1) Default setting

Timing function has two default setting.

Setting one: system is powered on at 5 o'clock and powered off at 8 o'clock.
Temperature is 50°C.

Setting two: system is powered on at 17 o'clock and powered off at 23 o'clock.
Temperature is 50°C.

2) Free setting one

Set starting time:

Press booking button, wait until timing symbol appears, then press booking button for a long time (more than 3 seconds), then the timing one symbol twinkles, starting symbol twinkles, starting time setting begins.

a) Press '◀' or '▶' --- choose *hour* value.

b) Press setting button --- *minute* value twinkles

c) Press '◀' or '▶' --- choose *minute* value

Set ending time:

Press setting button again --- ending symbol twinkles, *hour* value twinkles, then set the ending time in the same way as above.

3) Free setting two

Press setting button again, then the timing two symbol twinkles, starting symbol twinkles, starting time setting begins. Then operate as above.

4) Booking setting selection

Press booking button for less than 3 seconds, the booking function will change

per press. You can choose free setting one, free setting two, free setting one and two, or exit.

E. Cost cutting function



This function is to cut the electric charge by set the working time of the electric heater on cheap charging period.

- 1) Default setting: the system will be powered on at 21 o'clock and be powered off on 8 o'clock the next day. The setted temperature is 50°C.
- 2) Free setting: press cost cutting button, after the symbol is shining, press the button again for more than 3 seconds, then the symbol will twinkle and free setting is beginning.

The way of setting is just the same as above.

F. Instant-heating function



When the system is powered on, press instant-heating button, the electric heater will start work, until the temperature is as high as the expected setted temperature.

- 1) Press instant-heating button, the symbol will be shining, and temperature value will twinkle, which means the setting begins.
 - 2) Press '◀' or '▶' --- set the temperature value.
- Press instant-heating button again, the symbol stops shining, the electric heater stops work.

G. Reset to defaults



When the system is powered on, press the on/off button for more than 3 seconds, the system will be reset to defaults, and begin self-inspection, then be powered off.

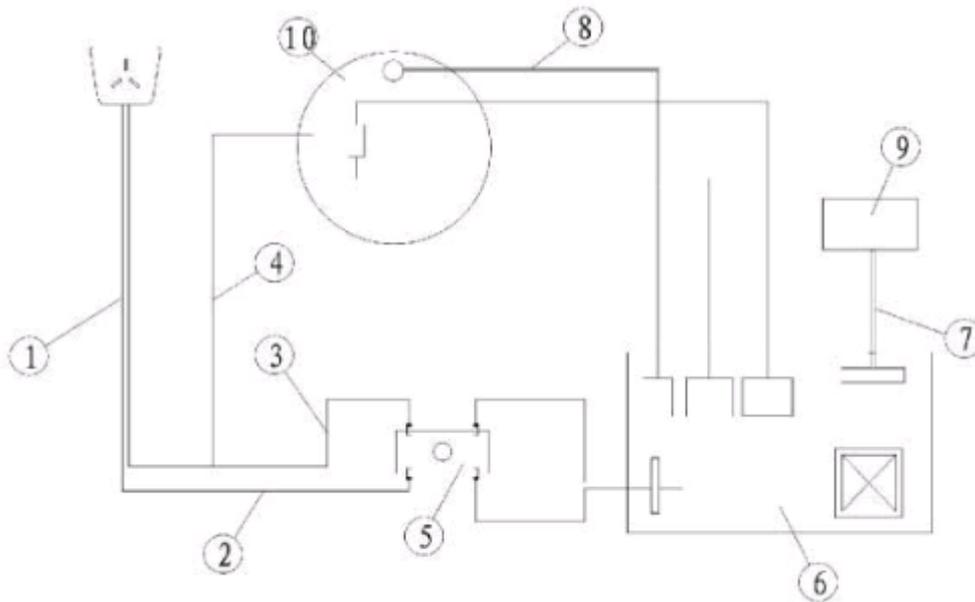
3.The display and handling of controller fault

When the system failure occurs,the fault code will show automatically at the place of water temperature display. After the fault occurred,the LCD will display the fault code and keep bright,closing all operations at the same time,the power supply shall be causeshuted and restart the controller after troubleshooting.

List of fault code

Fault code	Probable reason	Treating methods
E1	Electric leakage of water heater	Shut the power supply immediately and contact customer service personnel
E2	Fault of sensor	contact customer service personnel
E3	Over-heated	contact customer service personnel
E4	Fault of leakage detection circuit	contact customer service personnel
E0	The voltage is low (lower than 176V)	Use after voltage is normal

4.The electric circuit diagram of controller



- 1-Power Line
- 2-Blue line
- 3-Brown line
- 4-Yellow line
- 5-Bipolar thermostat
- 6-Strong current board
- 7-Signal line
- 8-Sensor
- 9-controller
- 10-Flange of heating pipe

5.Controller installation notes

1. The product provide electrical heating has power of 1500W. The power supply has to be 220V, 10A, and it has to match with reliable grounding single-phase three pole socket.

2. Do not put power on before inner tank full of water, otherwise water tank will be damaged.

3. Controller has 72 hours Power off memory function(only memories dates and hours), restart after 72 hours' power off, all data restore factory default.

4. If the supply cord is damaged, to avoid danger, it has to replaced by the professionals.

6. Warning

1. Turn off electrical heating before use water to ensure safety.

2. Do not open the controller if non-professional.

3. Lightning protection must be done, do not use hot water and electrical heating when lightning.

4. Leakage protector must be checked every month(located at the power supply plug), methods as follows:

5. When power is on, press the little white button, if the leakage protector tripped, it means the leakage protector is working well. Then press the long button to reconnect the electricity, leakage protector return to normal working condition

7. Operation Notice

1. Please make sure that the tank is full of water before the first operation of the solar system. Moreover, the circulating pipelines shall be filled with the media as well. If the solar system is not operated in a long time, please turn off the master water valve and switch off the power supply. At the same time, please cover the solar collector with sun cloth so as to prevent it from being stuffy.

2. Please do not self-transform the pipeline layout, otherwise the solar system may not run normally and safely.

3. Please ensure that the ball valve at the position of cold water inlet keeps open.

4. If the pressure of water inlet is too small to get the solar system abnormally running, please install a pressure boosting device.

5. Before operating the solar system, do not make the hot water outlet orient to people; meanwhile, adjust the water temperature to a comfortable degree to avoid being scalded (hot water over 50 degree will hurt people). After showering, please turn off the mixing valve, the handle of it shall be kept at the position of cold water end or hot water end, the middle position is forbidden.

6. In cloudy, raining or snowy days when there is not sufficient solar radiance, hot water generated may not meet the demand, the electric element can be set to heat the water.

7. The safety valve shall be inspected in a regular time. The method is as following; switch the handle of the valve to see if there is water flowing out, if yes, it proves that the valve is normal, if not, the valve is breakdown. Then please contact the local agent or the customer service for a solution.

8. The controller has a memory time of 72 hours (only storing date and time). When restarting after no power supply for 72 hours, all the data will be back to the factory settings.

9. If the solar system is not operated in winter, please drain the water tank empty before cutting off the power supply so as to avoid water frozen inside. When the outer earth wirings appear abnormal, immediately cut off any power supply to stop using the solar system, at the same time, contact the agent or the customer service.

10. When showering, the electric element shall be kept closed.

11. In case that the power lines are damaged, they must be replaced by professional staff to prevent dangers.

8、 Common faults and processing methods

	common faults		reason analysis	processing methods
1	system operation	Turn on the tap no hot water goes out	1.Hot water pipe valve did not open 2.No water in the tank 3.Inlet/outlet pipe jam 4.Inlet/outlet pipe may freeze in winter 5.Water supply cut off or water pressure is too low	1.turn on the hot water pipe valve 2.Open the inlet valve, fill water into the tank 3.Maintenance line or unclog 4.Turn on the electric heater or natural thawing 5.Wait for normal water supply or add a water supercharging device
2		Water temperature in the tank is low	1.The bad weather or low altitude of the sun in winter, the sunshine time is short, air quality is poor, The sun radiation energy shortage 2.Vacuum tubes with shelter in front, can not collect heat 3.Vacuum tube broken 4.Vacuum tube with too much dust on the surface	1.turn on the electric heater 2.Clean the shelter or install it in another place 3.Change the vacuum tube 4.Clean the vacuum tube
3		The relief valve always run water	High water pressure in the region or the relief valve damage	Install constant pressure reducing valve at the entrance of tap water
4		The water pump does not turn or roll back	1.the weather is bad or the air quality is poor, the battery component can not reach the pump start-up volage 2.Objects obscured the battery component	1.waiting for better weather, to reach the start-up volage 2.Clean the obscured property in time 3.Clean the pump

			3. Have impurities into the pump	
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9、Maintenance

1. In order to ensure the normal and effective work, the solar water heater shall regularly to maintain water heater, the dirt in the water tank platoon
2. Dust collector on the regular cleaning, prevent influence collector heat absorption efficiency, use clear water is rinsed clean
3. Pipe should be heat preservation, avoid pipeline exposed or exposure

10. After service

1. the tenet of after service: A phone call to solve everything, we will not have a rest if you are not satisfied.
2. the purpose of after service: for customer's convenience, to build a good brand figure of Sunrain's solar water heater.
3. The aim of after service: 100% satisfaction of customers and zero complain.
4. The standard of after service: provide star level service before, under and after selling, creating profile and review all customers.

Name	
Company	
Address	
Shop name of buying products	
Buying price	
Buying date	
Serial number	
Maintenance unit	
Product model	
Installation date	
Signature of installer	
Local after service phone number	
After service phone number of headquarter	

Maintenance records

Maintenance date	Maintenance Contents	Maintenance personnel

11. quality warranty card

Water heater quality warranty card

Warranty:

1. Please fill in this card when purchasing our products, no after-sales service special seal is invalid.
2. Host can enjoy 3 years warranty (host include: water tank, bracket, vacuum tube), to upgrade the bill on the date shown, in the factory designated agencies purchase products, does not belong to the warranty scope; (vacuum tube broken is beyond the scope of the warranty), accessories can enjoy 1 year warranty (accessory factory accessories) refers to the term host accident.
3. When users need to repair, can contact the local point-of-sale (pits), according to the instruction manual and the correct use of the users must know what was happening in the quality issue belong to the warranty scope.
4. If the product is not a point of sale or the factory designated professional, open, and changing the installation, repair or not according to the operating instructions operation and cause damage, does not belong to the warranty scope.
5. After the warranty expires, or outside the scope of the warranty repair, a moderate amount of charge parts cost and labor.
6. Users think local maintenance station installation and after-sales service job has shortcomings, can complain to the department after-sales service center.
7. Users should supervise installation personnel fixed water heater host, such as fixed rickety can temporarily refuse to pay money, after being fixed firmly, pay up.
8. Configuration standards will be subject to the actual purchased products

12. Water tank packing list

No	Name	Unit	Quantity	Remark
1	Water tank	pcs	1	
2	check and relief valve	pcs	1	0.7Mpa
3	Expansion bolt type hook	set	4	M10*120
4	operation instruction	pcs	1	Including warranty card
5	Drop of water hose	Meter	4	
6	hose clamp	pcs	1	
7	Packing list	pcs	1	
8	hose clamp	pcs	1	

Dear User,

Thanks for choosing photovoltaic-driven balcony water heater, please read this manual

Before you use this product, your operation should carefully follow the manual, so that you can enjoy the better service.

This manual includes two parts such as installation and utilization, the installation must be operated by our professional installer, and the user can make this manual as a reference.

If there is any problem occurred during the utilization, please call our local distributor, we will supply you an on time service.

Consider the improvement of product, your product might be not the same as this manual showed, please follow the actual product.

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Sunrain reserves the right to change the product and specification, and without further

notice. If any error in printing, we reserves the right to correct.

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