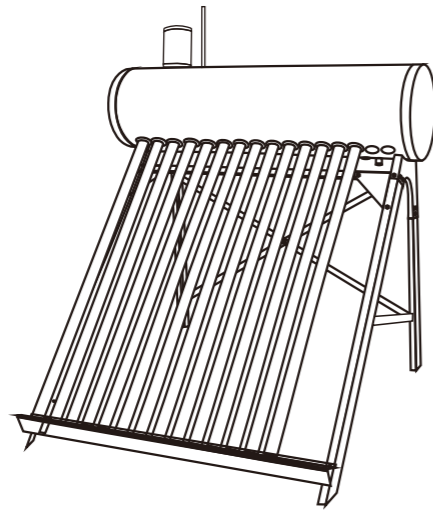


# non-pressure solar water heater

## ST150 ST180

- ST16-150 ST15-180
- ST20-150 ST18-180
- ST24-150 ST21-180
- ST30-150 ST24-180
- ST30-180
- ST36-180



### INSTALLATION MANUAL

## Artworks Feature

### Main performance feature

- A. Full year running regard less the season, weather and the time by solar solar water heater with electric heater back up.
- B. High resistance for wind, hail and severe temperature
- C. High efficiency heat absorb b evacuated solar collector tube with reflecting plates to increase the absorbing for the sunlight as much as possible.
- D. High temperature keeping by more thickness of polythene injection frothing, featured less heat losing and temperature keeping can be over 48 hours and after 100 hours, the tank water still warm.
- E. High quality stainless steel tank and total body are treated for anti-rust.
- F. Silicon rubber seal: no poison, no smell and can keep water clean and featured by long life, high temperature.

### Installation explanation

Dear customer:

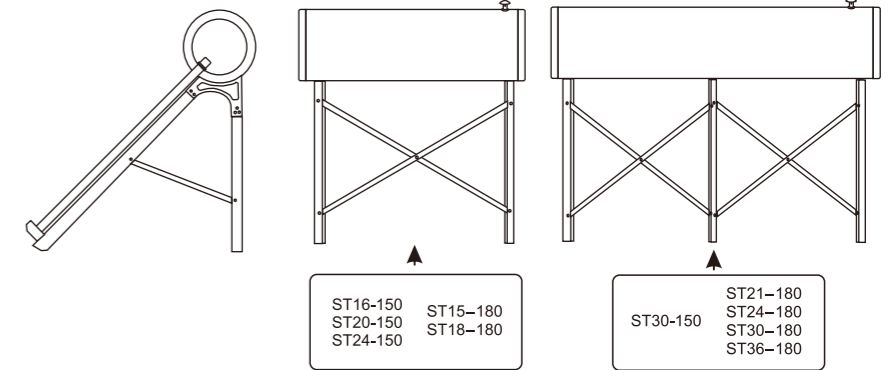
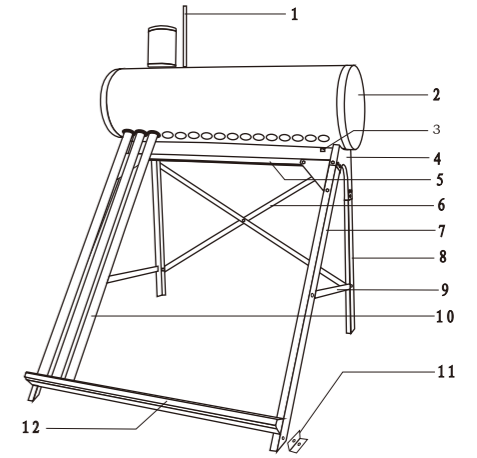
Congratulations on your purchase of solar water heater ST Installing for superior performance in order to operate reliably at optimal efficiency, it must be correctly installed. Please ensure that you employ the services of a certified installer who will ensure the installation follows the manufacturer's guidelines and meets all government and health regulations.

1. to install the solar water heater, it is operated on high location, please pay attention for the safety
2. Before installation, please read carefully the installation explanation and follow it as much as possible or invite the professional workers to install.
3. Before installation, please clean the inner water tank.



## Installation Structure

- Up & down water pipe
- 1, Exhaust, air hose pipe
- 2, Tank
- 3, outlet
- 4, Support Tank
- 5, Cross bar
- 6, Across rod
- 7, Frame
- 8, support leg
- 9, Bottom rod
- 10, Vacuum tube
- 11, Anti-wind leg
- 12, Bottom support



## Installation explanation

1. during the transportation, please move carefully
2. Solar water heater should be installed under the sun with full sunlight and fixed by steel rod or self-expanding screw or by cement with the roof and the frame should be supported by hard material
3. the air hose should not be stuck by anyway and it should be installed with three pass, the down are for over drop water and should not connect to any other pipe or the water tank will be damaged because of no exhaust air hose for the pressure.
4. the front and back frame should be connected by strengthening rod and put the water tank on the frame. Pay attention the water tank evacuated tube hole should be in symmetry with the frame tail holes and put the ABS plastic cover into the tail hole and also put the water tank bolts on to the frame seat for the tank and fix it late (not now). Take the evacuated solar collector tube and put the anti-dirt seal on to the tube and put some soap water as lubricating agent to give the possibility to plug into the tank holes with water already loaded into the tubes by rotating way. After fixed the solar collector tubes into the tank and adjust the tank position and then fix the bolts under the tank. And then take all solar collector tubes to put into the ABS tail support of tail holes (rotate in a hard way).
5. connect the down and up loading water pipe, please select special composed pipe to reduce the heat lose and the pipe should be back up by the warm keeping material, if with electric heater back up system, you can put the cable into the warm keeping material of the pipe. And fix the down and up loading water pipe onto the building and the frame, At the north area, it can install a exhaust valve for the down and up loading water pipe to let the pipe empty in order to receive the hot water immediately.
6. evacuated solar collector tubes can reach up to 270°C after absorb the sunlight with the empty tube. When loading the water, the tubes will be crack immediately. Therefore please pay special attention and in order to avoid such problem, you can follow the following ways.

- A. Load the tube full before plug into the tank hole and then load the water to the tank fully
- B. Cover the solar tubes after 3 hours to wait the temperature of the tube temperature dropdown and then load the water.

### Vacuum tubes installation steps :

1. slip over a dust ring in the vacuum tube .
2. use the detergent as a lubricant to put on the tube .
3. put the right position of the tube hole to tank and force insert toward .
4. after inserted, let the vacuum tube pulled down at the end of frame support hole .
5. cover the anti-rust seal .



Air vent tube

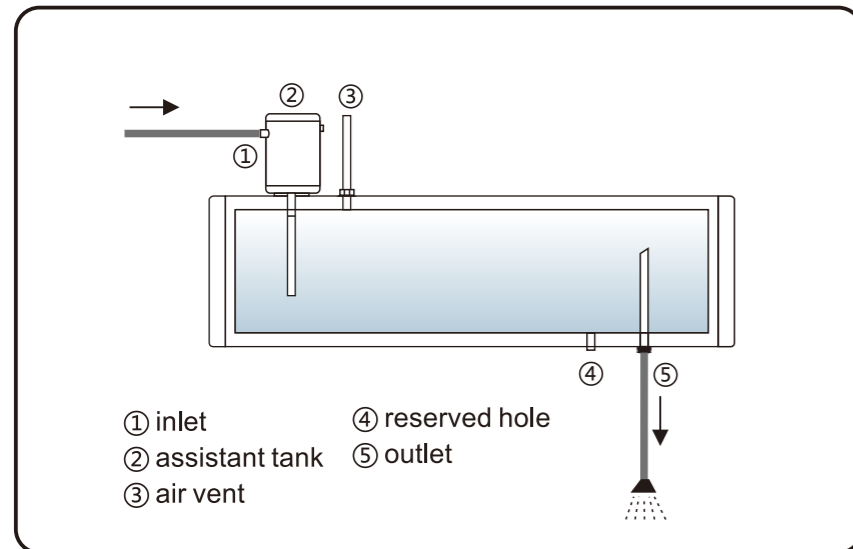
## All glass evacuated solar collector tube performance and specification

Structure	All glass concentric dual tube structure	
Glass material	Borosilicate glass	
Out tube diameter and thickness	Φ47±0.7mm/1.5mm; Φ58±0.7mm 1.6/ 2.0/2.3mm	
Inner tube diameter and thickness	Φ37±0.7mm; 1.5mm Φ47±0.7mm; 1.6mm	
Length of tube	1500(±5mm); 1800(±5mm); 2100(±5mm)	
Absorbing coating performance	constructure	Graded AL-N/AL Solar selective absorbing coating
	Method of deposition	DC reactive sputtering
	Absorbing rate	>93%
	Emittance	<6%(80°C)
Vacuum degree	P<5x10-3 Pa	
Get the calories	9.6MJ/M <sup>2</sup>	
Solar radiance exposure	≤2.8MJ/M <sup>2</sup>	
Average heat loss coefficient	≤8.6W/(M <sup>2</sup> .K)	
Life time	Over 15 years	

## Explanation:

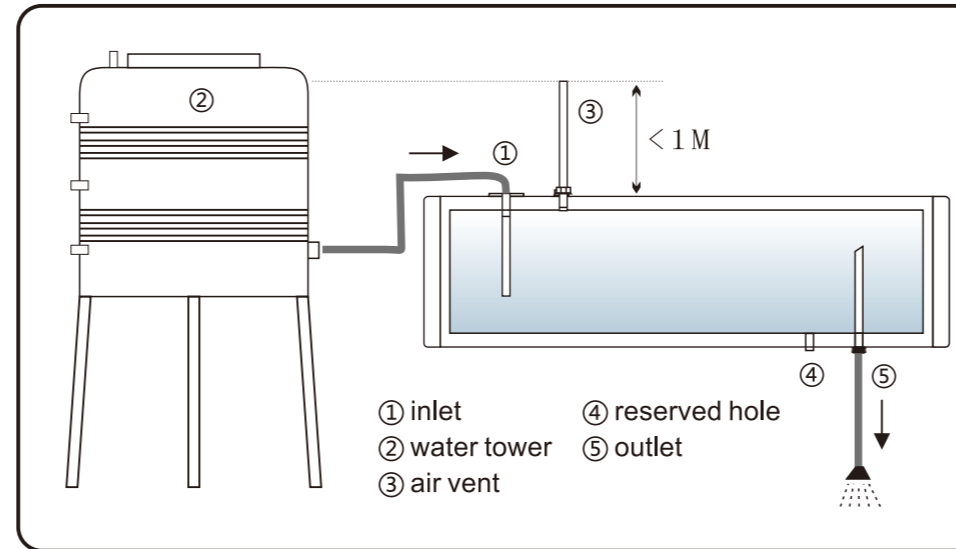
1. The data of the above column for reference only.
2. the tank size can be selected according to the area sunlight condition the products can be made to fit for flat and slope roof installation mode.

## 1. Installation with assistant tank model



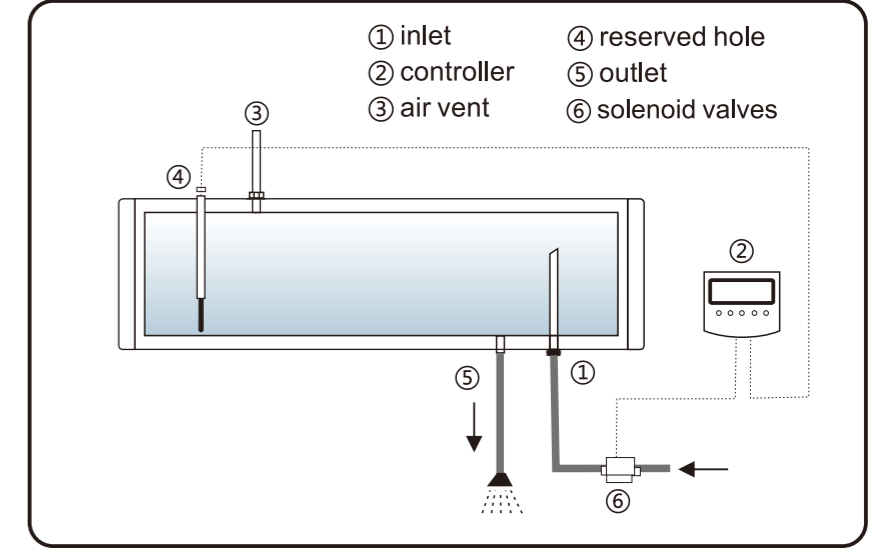
**!** Please be make sure the exhaust pipe is unobstructed, It needs pressure relief valve on the inlet pipe if the pressure is over high from the city water.

## 2. Installation with water tower model



**!** The height from solar system air vent to water level of water tower must be less than 1 meter. If it is exceed 1 meter, it must be used a assistant tank or use controller or a special valve to control fill the water to tank , otherwise the tank will be severely damaged . and be make sure the the exhaust pipe is unobstructed .

## 3. Installation with eletric controller model



**!** Please be make sure the exhaust pipe unobstructed, temperature sensor installed as number ④, without sealing , controller plate and solenoid valve should be installed in the room .

## SOLAR WATER HEATER TROUBLE SHOOT

Trouble	Sunny day, no hot water	Water tank unable to load full	Water tank leakage	When taking bath, the water hot and cold from time to time	No hot water come down during the winter time
reason1	1. above the water heater have covered objects 2. got vacuum leakage or damage 3. solenoid valve or assistant tank can not automatic close and always fill water	1.no pressure from the water supply system 2.up water loading pipe leaking 3.water tank leaking	1.rubber seal break or installed improperly 2.water tank inner pipe crack	The cold water supply pressure not stable	1.pie line freezes 2.it is too cold 3.the pipe no warm keeping material
solution1	1. check whether the tube can not get sunshine , move it . 2.change tube 3. check and repair valves	1.add a new micro pump. 2.change the up load pipe. 3.change water tank.	1.change the rubber seal or install it again to let the tank and. solar tube correctly 2.change the water tank.	Add an side storage water tank to store the cold water and make the water supply stable or change an automatic high temperature valve.	1.ask the dealer put warm keeping material(charged) 2.every night after use the solar tank and earlier morning load the water to the tank again 3.use electric heating belt(from the dealer) 4.for the coldest days, open the hot water valve to let the hot water come down a little bit but continuously

### Attention: How to identify the quality of the solar tubes

- 1.Check the color of the tube to be smooth
- 2.Check the button tip where the tube are vacuumed if it is well.
- 3.Check the button shining part, it can be an mirror, if it is dark, it mean less vacuum degree, if white, no vacuum
- 4.Put the solar tube under the sun after a few hour to feel the out side pipe, if good vacuum solar tube, you will feel cool and if it is hot, the solar tube is bad.

### The products can use in any season and the life is over 15 year with simple maintenance

#### ① clean the vacuum solar collector tube

If in lots of dust and no rain area, the solar tubes and the reflecting plate will catch by the dirt to reduce the efficiency of the solar tubes and reflecting rate. So according to the dirt condition, the solar tubes should be clean in half year or one year. First by soap water to clean it and then washed by water for the solar tubes and the reflecting plate. If more rain, no need to clean.

#### ② clean the incrustation scale

if the water quality are not good in some area or use the water directly from the ground with lots of impurity and it is easy to deposit scale in the tank and solar tubes and it will affect the efficiency of the solar water heater, it is according the situation, every one or two year, the tank and the tube should be clean by professional workers or by select the anti-dirt magnesium alloy pipe to clean the dirt.

## USER INSTRUCTURE

- 1.For the first time water loading, the vacuum tube must keep cool down.
- 2.When not use the product, please close the valve for hot water & cold water & the exhaust valve. If to load water to the storage tank, open the cold water valve and open the exhaust valve till the water down, when the storage tank is full, then you close the two valve.
- 3.If in cold winter time, you can use the bath lights or warm fan machine to keep the room temperature high.
- 4.To adjust the hot water temperature, should be according to the season, sunlight and water pressure to avoid hurt from the hot water.
- 5.In the serious area, please let the tank empty when not use in winter to avoid the pipe crackly freed .
- 6.In summer, after use the hot water, should load the water immediately or wait to the night, Otherwise the vacuum tube water will be dry up in high temperature. At the same time, when you load water, the solar tube will break.
- 7.In spring, summer, autumn, if need to load the water, please be careful about the tank to not be dry by these solar tube, should be at night.
- 8.Please avoid the solar water heater to be empty, for a long time, it will damage the rubber seal, and defect the performance of solar tube.
- 9.If use electric heater, please check the fuse position if it is ok and avoid the electric heater work without water.
10. During the storm with lightning, please don't use solar water heater and keep the tank full.
11. In summer, if hot water not much used or temperature too high, please take some shade to cover part of solar tube to reduce the heating.

**!** Please try the hot water by your hand before bathing, to avoid injured the skin.

