

Vacuum Tube Solar Water heater
(Non-pressure)
User manual



**Please read this manual carefully before
beginning installation**

Specification

- Tubes 12 --- 30 ϕ 58X1800
- Nominal volume tank capacity 100L --- 300L
- Frame material : Galvanized steel with powder coating /Aluminium Alloy
- Tank material : SUS 304 stainless steel / Titanium steel with enamel coating
- Insulation : 55 mm polyurethane foam
- Pipe fitting : 1/2" BSP of called 15 mm /3/4" BSP of called 22 mm
- Tank Color : white or polished stainless steel
- Frame color : you can choose as you need .

This solar water heater system consists of a horizontal stainless steel water cylinder with an external stainless steel casing insulated with 55mm polyurethane foam , the inner and outer cylinders have apertures to allow glass vacuum tubes to penetrate the inner cylinder .the silicon seal is triple edged to ensure they remain watertight and prevent leakage .

This solar water system is intended for non-pressure application and has a max pressure rating of 2 bar for the cylinder .

You can also use this system with an electric pump on the hot water side without pressuring the tank and glass tubes .

Safety first

A few careful preventative measures will ensure the safe operation of this solar hot water heating system .

- Always wear gloves and long sleeve overalls when working with glass tubes .
- Mount the system to ensure people / children can not inadvertently run/walk into the tubes .
- The system should be mounted in such a way as to deter accidents
- The system must be bolted down at the 6 feet position so that strong wind cannot blow it over

We appreciate you are keen to assemble your system and no doubt have assembled it on your front lawn full of boiling water .Do not do this – give a thought to the potential hazard , A child running into this system would be seriously cut and burnt with scolding hot water , do not let this happen, please ensure you erect this system in a safe place such that this will never occur.

Safety tips

- Wear gloves and overalls
- Erect in a suitable place out of reach of adults/children.
- Do not over pressurize the system .
- Read the instructions prior to assembling .
- If a tube breaks , please cut off the water supply & call your repairman to check it & replace the tubes .
- Ensure that if this system is using water that is not treated ,then the water heated to 60 °C to avoid the risk of legionnaires disease .
- Boiling water will cause serious burns ,make sure it is plumbed in correctly and secured correctly .
- Ensure the tank is full with water during sunlight hours .
- Do not fill the system with cold water if you have accidentally left it in the sun empty .cover the tubes and in the evening fill slowly with cold water to prevent possible breakage .

Safe temperatures

Water tank storage systems are currently required to reach 60 °C degree to ensure that the water is hot enough to kill unwanted organisms that might establish in your hot water tank , it is recommended that this temperature is reached everyday .but in practice , this is not possible in solar hot water system without electric backup , so now we suggest you turn on the electric backup and heating the water to 60 °C every week .

In situations where the system is preheating swimming pools , hot tubs and as preheater for an existing house/farm hot water system then the water be heated above 60 °C .

Intended use of this system

This system is a low cost system common in China , as such , it will generally capture sufficient energy to pay for it in 2 years , based on use electric heater cost (excluding all installation costs) .

The intended use is for :

- Hot tubes
- Swimming pool heating
- Domestic hot water heating in some cases where your council allows
- Kiwi outside bath

Glass tube direct low pressure system

In that system the water being heated by the sun inside the glass tubes , hence the system is not able to withstand much pressure . the tanks are made from very thin stainless steel , resulting in a very cost effective product .

The warmed water rises naturally into the tank by convection flow . these direct system are also very efficient as these are no heat exchange required .

Frame assemble :

- Galvanized steel with powder coating

With 2 holders



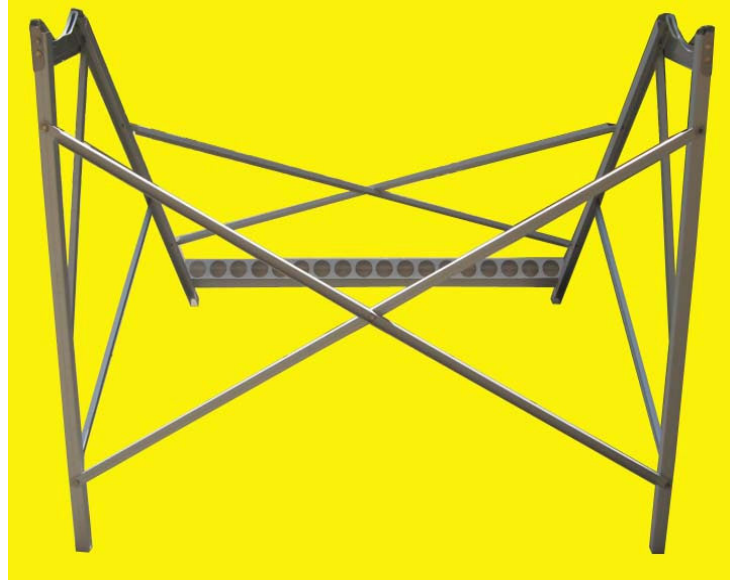
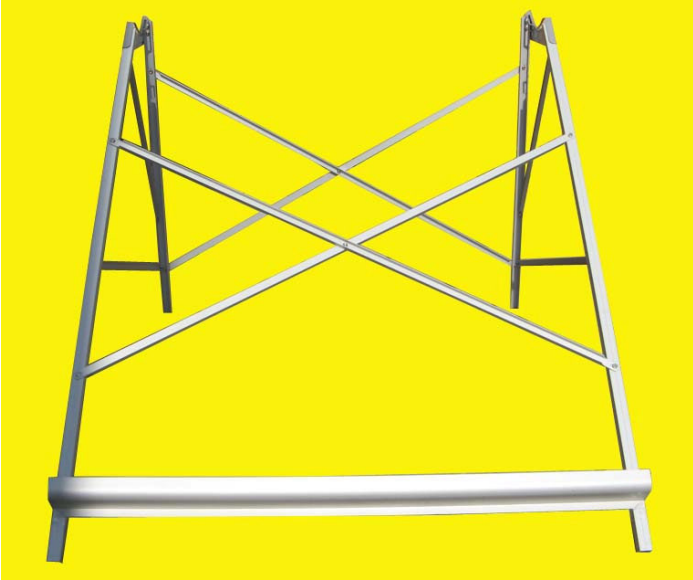
With 3 holders



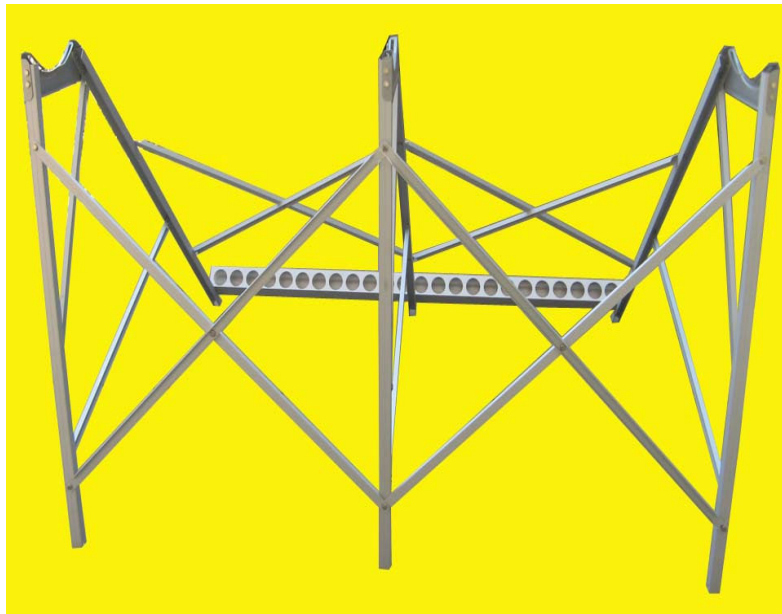
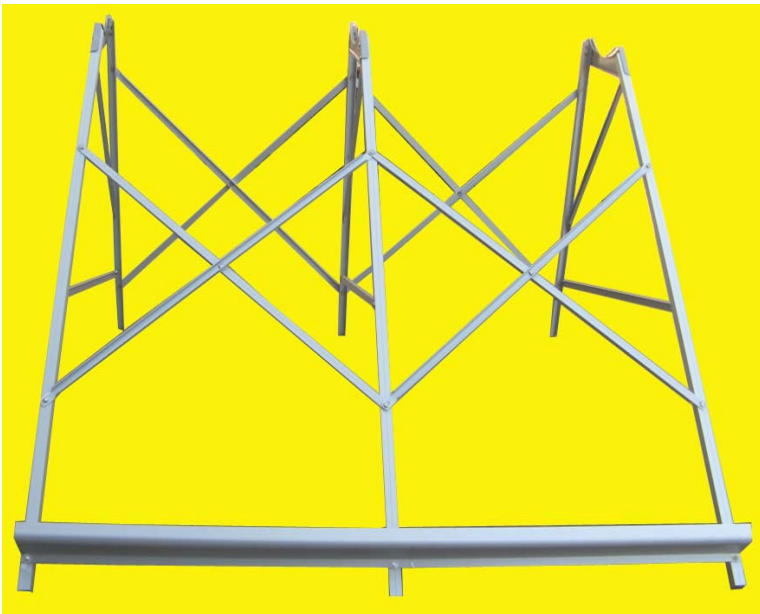
Frame assemble :

- **Aluminium Alloy Frame**

With 2 holders



With 3 holders



Place the plastic caps in the tube holder



Lubricate tank seals with soap .



Lubricate tube by spreading soap or detergent and put trim seal over tube, flat side is pointing towards tank .



Rotate tube carefully (wear gloves) while pushing tube upwards into the tank .be careful not to knock the other end of the tube on the frame .



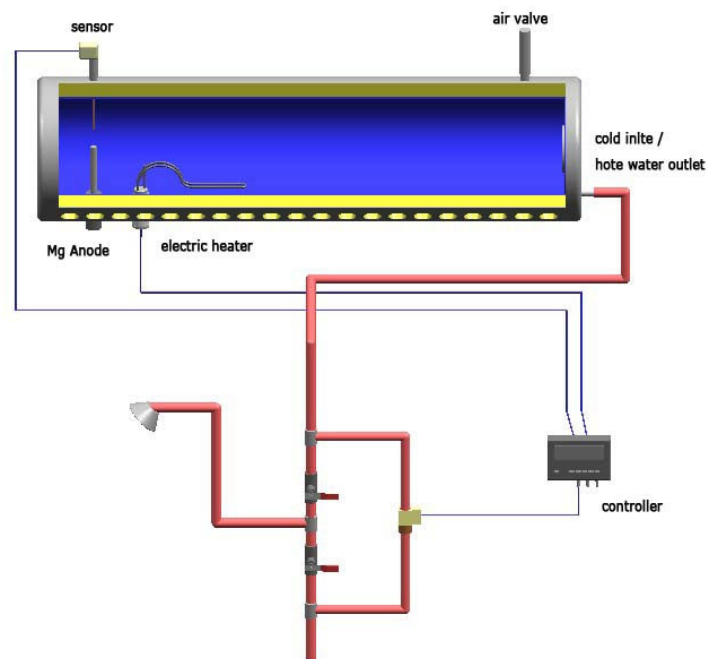
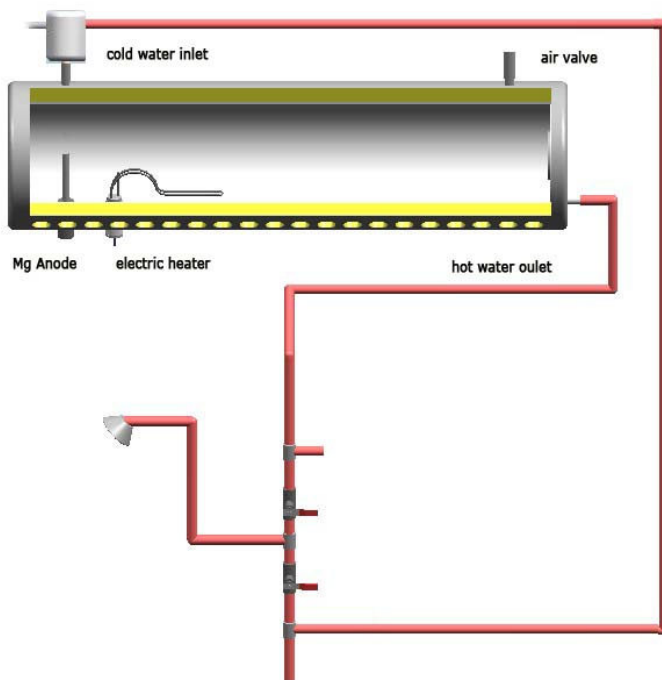
Place bottom end of tube into holder.
Add the next tube in the same way as described above .



Top riser vent

On the top of tank has a air vent ,so that the steam can vent from the system .

Connection the whole system



What do you do if you break a tube

- If you should accidentally break a tube after the system has been in service for some time , it can be difficult to remove the old broken tube , due to scale build up on the tube surface , the best way is to spray silicon lubricant on the top of tube with the trim removed , push the tube up, rotate slightly , then pull and twist the tube out, replace with a new one which supply by your dealer .

Cautions

- Gloves and eye protection must be used when handling glass tubes , Avoid scratching or any sudden shock to tubes
- No installation solar water tubes before other components assembly , once installation solar tubes , ensure the storage water tank was full of water (prevent high temperature to effect whole system)
- If the system stop operation long time , it is to shadow the solar tubes
- Please regularly change the Mg Anode (recommend to change every year)
- Do not install by hang to avoid drop and hurt human
- Product are packing in carton and do not be caught in the rain during the course of transportation and storage , pay attention to the moisture
- When the temperature is under 2 °C , please start the electric heater to avoid freeze (if install that part)
- Please clean up the snow accumulation to make this system to absorb the sun light after snow .
- Suggest to install a thermostatic mixing valve when to user , avoiding scald by hot water
- For system in which the temperature of the domestic hot water delivered to the user can exceed 60 °C :the assembly instruction shall mention the need for a thermostatic mixing valve which limits the draw-off temperature to 60°C (scald protection)
- The drinking water maybe drained from the system during high irradiation