

SFD Series Installation Manual

Preheating Solar Water Heater with Copper Coil

For our present, For their future.



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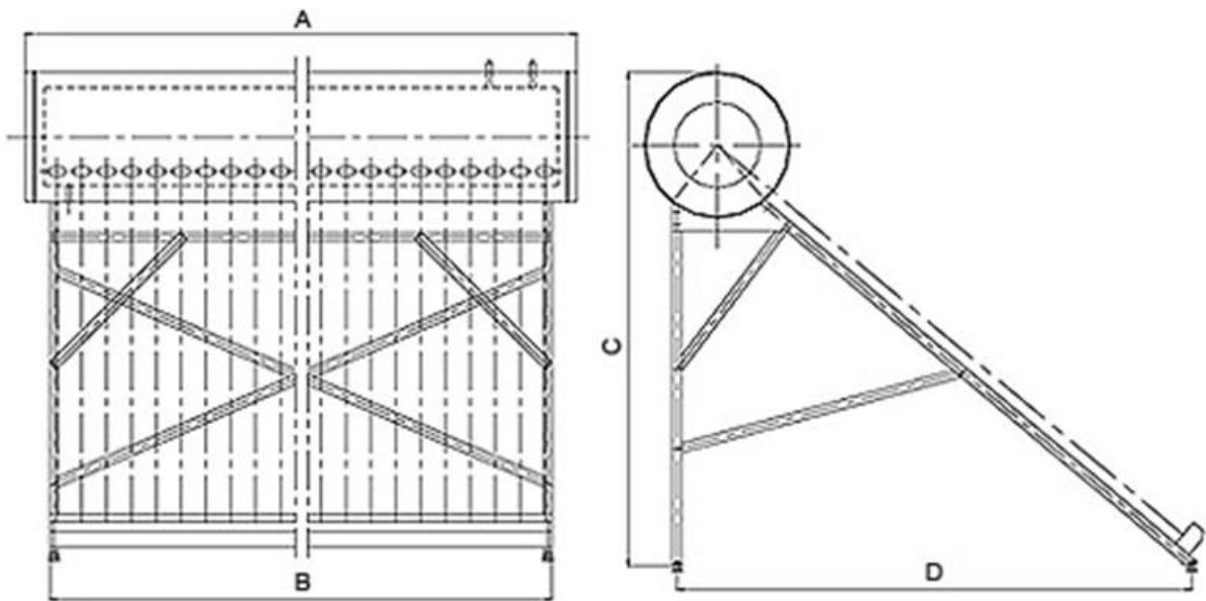
Preheating Solar Water Heater With Copper Coil

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**Please read the whole manuals carefully
before assemble!**

1. Solar Water Heater Size And Weight



Item No.	Specification					Size(mm)			
	Diameter of water tank	Qty. of solar tubes	Diameter of solar tube	Length of solar tube	Weight	A	B	C	D
SFD47155818	Ø 470mm	15pcs	Ø 58mm	1.8M	66KG	1348	1228	20° 1060 30° 1355 40° 1594	20° 2000 30° 1875 40° 1655
SFD47185818	Ø 470mm	18pcs	Ø 58mm	1.8M	76KG	1591	1471		
SFD47205818	Ø 470mm	20pcs	Ø 58mm	1.8M	84KG	1753	1633		
SFD47245818	Ø 470mm	24pcs	Ø 58mm	1.8M	100KG	2077	1957		
SFD47305818	Ø 470mm	30pcs	Ø 58mm	1.8M	123KG	2563	2443		

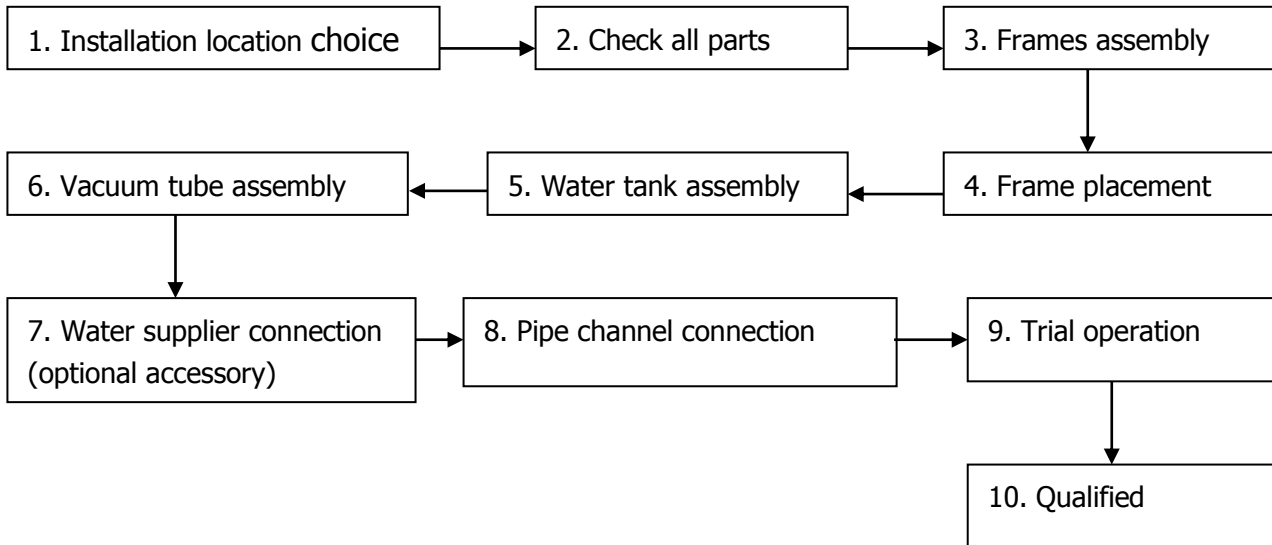
Fig 1.1

2. How To Transport And Carry It

The solar tube should be fixed during transportation to avoid displacement caused by vibration and bumps. The solar tube should be especially careful during the transportation, especially when it is put down, it is strictly forbidden to lose and shake.

3. Installation

Installation sequence:



3.1 Installation location choice

The choices of solar water heater installation location have several principles as follows:

- Solar water heater needs to face the Sun, make sure without any shadow in front;
- Try to use shortest pipe connection, try to reduce the turning, no dead angle;
- The installation location needs to bear the gravity of solar water heater, stable placement;
- Easy installation and maintenance;
- In areas with strong winds, the solar water heater and the roof (foundation) should maintain a fixed connection.

3.2 Unpack and inspection



Fig 3.1 (SFD47305818)

3.3 Fix the frames and tank

3.3.1 Steps of assembly

Use a pair of M8×12 bolts to connect the gantries, front bar, standing bar and tie bar-2, tiebar-3, forming the side piece.



Fig 3.2



Fig 3.3

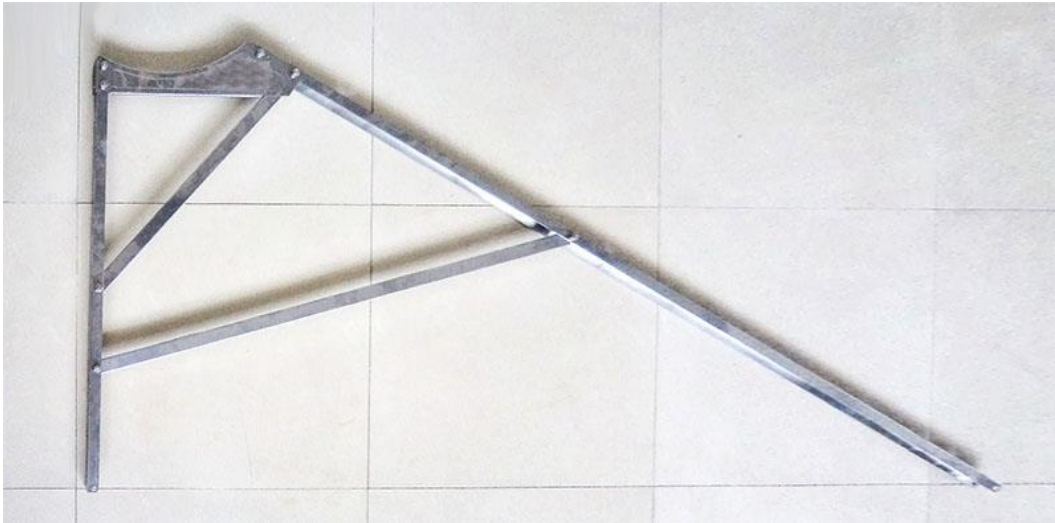


Fig 3.4



Fig 3.5 (SFD47305818)

3.3.2 Assemble the cross bars and connect them

Join two cross braces through their center hole with a pair of M8 × 20 bolts. Connect two teams of cross bars to 3 standing bars.

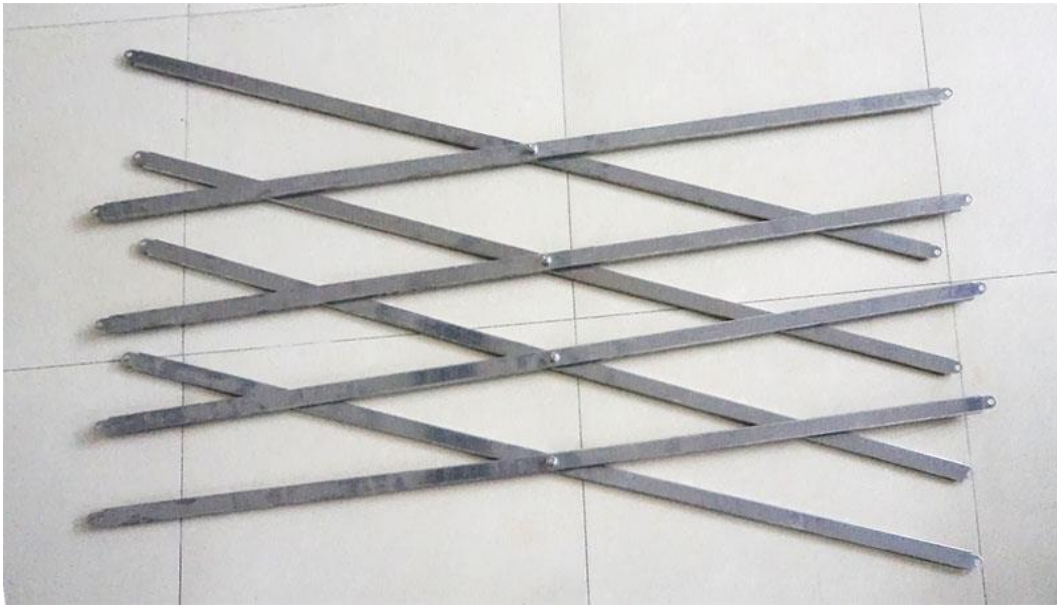


Fig 3.6

3.3.3 Assemble horizontal bars and tie bar-1

Please assemble them by the following steps (as shown).



Fig 3.7

3.3.4 Assemble tube holder

Join the tube holder to the front bars using M8 X 12 bolts.



Fig 3.8



Fig 3.9

3.3.5 Water tank assembly

First, check whether there is any foreign debris inside the water tank, if there is, please clean it up.

Second, before assembling the water tank, please confirm the connection of frames is tighten and the placement is stable.

Third, remove the nuts at the bottom of both ends of the water tank.

(If on roof, aerial work, please pay attention to safety).



Fig 3.10

Fourth, the installer holds the two ends of the water tank and slowly places it on the tank holder. Put the screws at the bottom of the two ends of the water tank through the slots of the holder, and try to rotate the water tank to the best position.

Finally, screw the nut back on the screw to fix the water tank on the bracket.

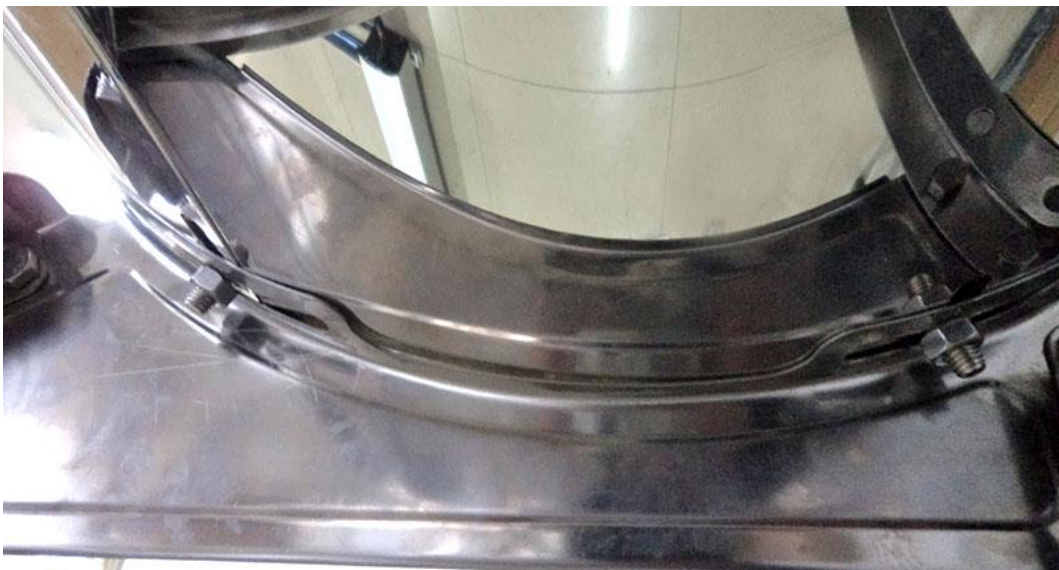


Fig 3.11

Note: "Do not tighten the bolts completely, Just make them snug. You may need to turn the tank so that the vacuum tubes line up with the bottom tube holders. Once the tubes are installed, then tighten the bolts completely so the tank is firmly connected to the stand."



Fig 3.12

3.4 All-glass vacuum tube assembly

- 1) Put the Dust ring on the opening part of the SFVA .Daub some lubricant referred(Or water) in the above item on the opening part of the SFVA tube.



Fig 3.13

- 2) Insert SFVA into one of the water tank's holes for evacuated tubes.

Please make sure the opening part of the SFVA tube also insert into the Seal Silicon ring and it's easily to insert if in the way of going round and slowly.



Fig 3.14

- 3) After you insert the opening part of the SFVA tube into the holes of the water tank, put the end of the tube into the cupping of the frame and make sure the course is going slowly.

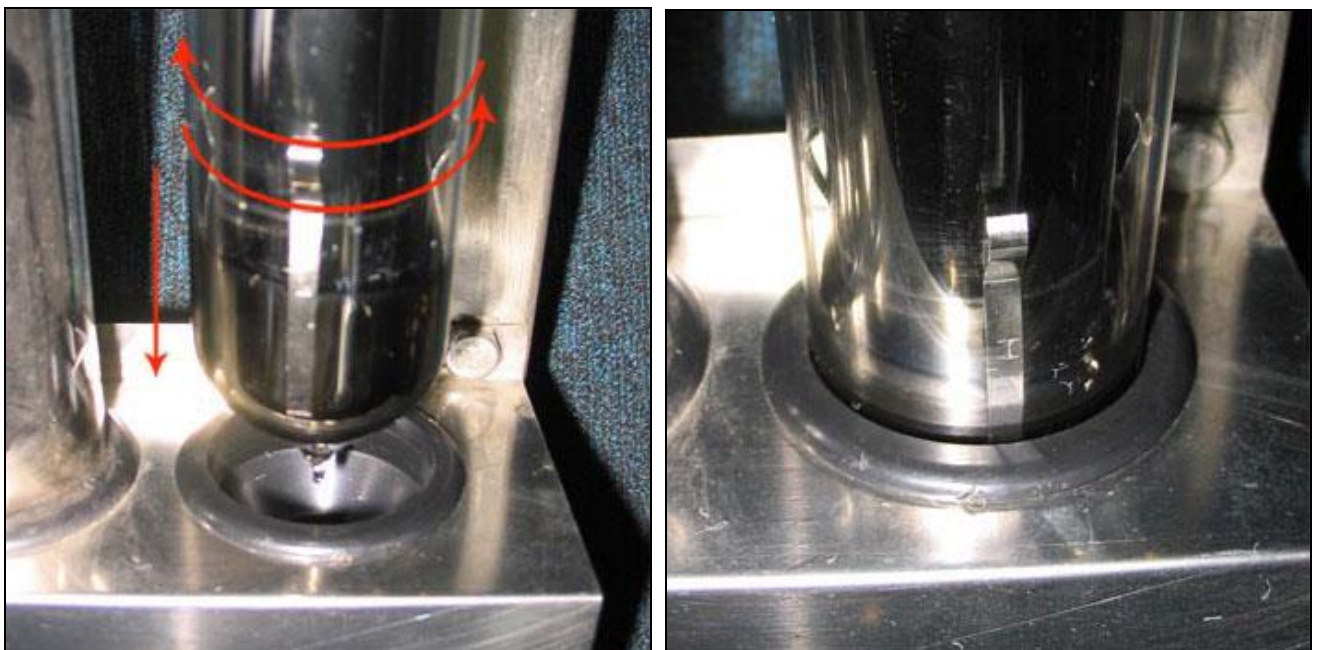


Fig 3.15

- 4) The dust ring does not need to be attached to the tank immediately. When the installation is completed, the tank has been tested for no leakage, and the dust ring is attached to the tank.



Fig 3.16

- 5) Finish all tubes.



Fig 3.17

3.5 Fix solar water supplier (optional accessory)

3.5.1 The diagram of the connectors of water supplier

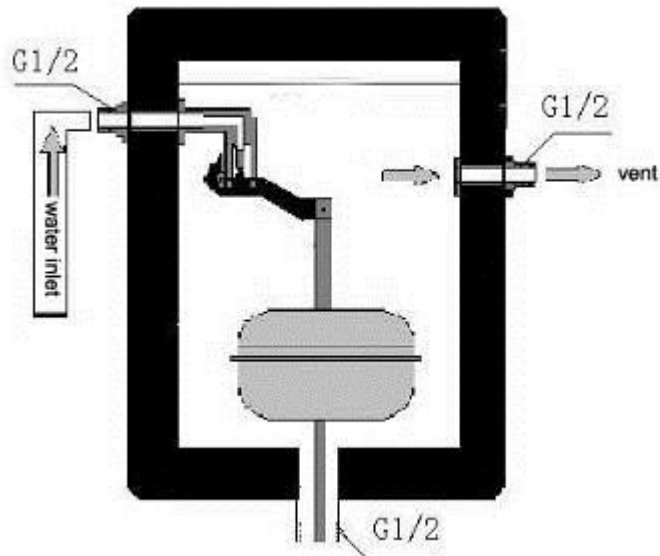


Fig 3.18

3.5.2 Water supplier assembly (optional accessory)

The connector on the bottom of water supplier is connected to the right connector on the water tank of solar water heater.

The air vent (the left connector) need to be connected with a long pipe, and the length of pipe must higher than the top position of water supplier. The air vent needs to be open all the time.



Fig 3.19

3.6 The water inlet and water outlet pipe channel connection of solar water heater

3.6.1 Use the water directly after heating exchange through the water tank. (suitable for torrid zone)

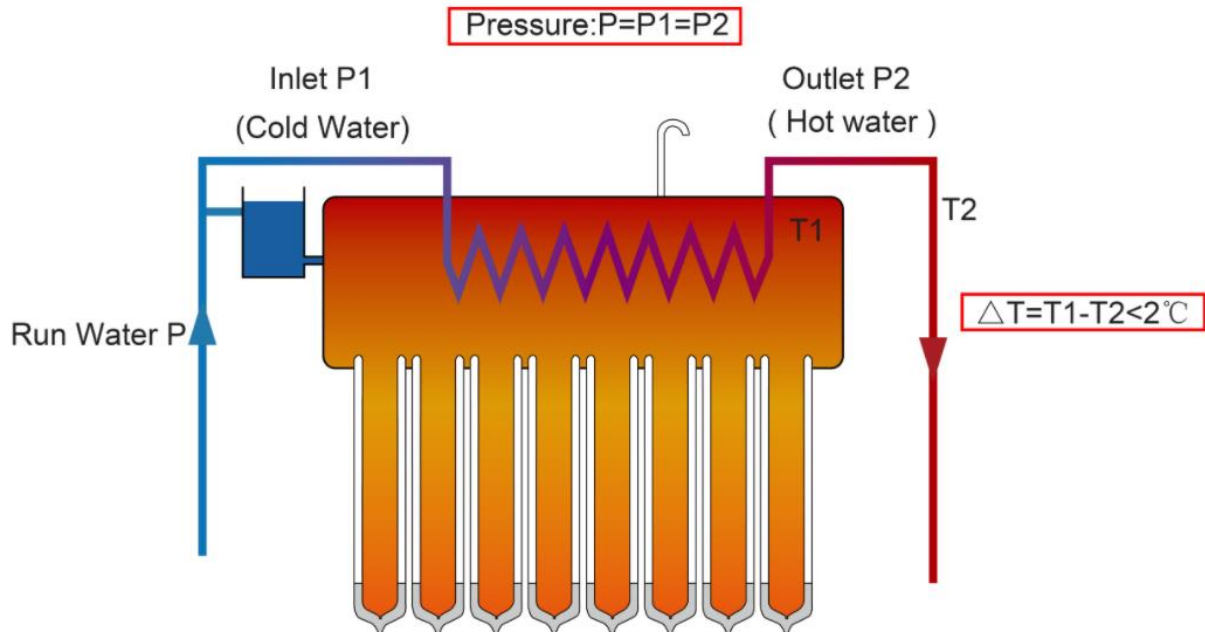


Fig 3.20

3.6.2 The connection of solar water heater and Wall-mounted gas water heater.

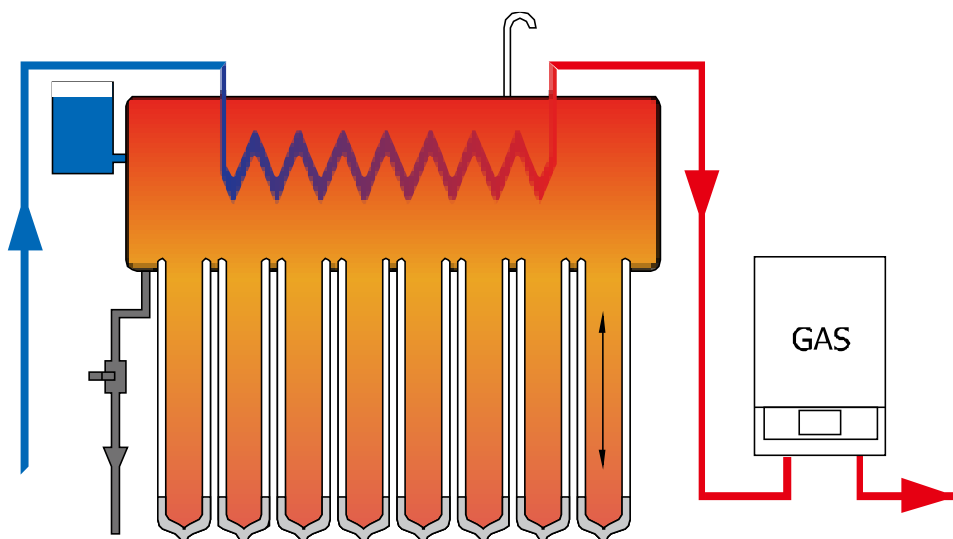


Fig 3.21

3.6.3 The connection of solar water heater with gas heating water tank or electrical heating water tank.

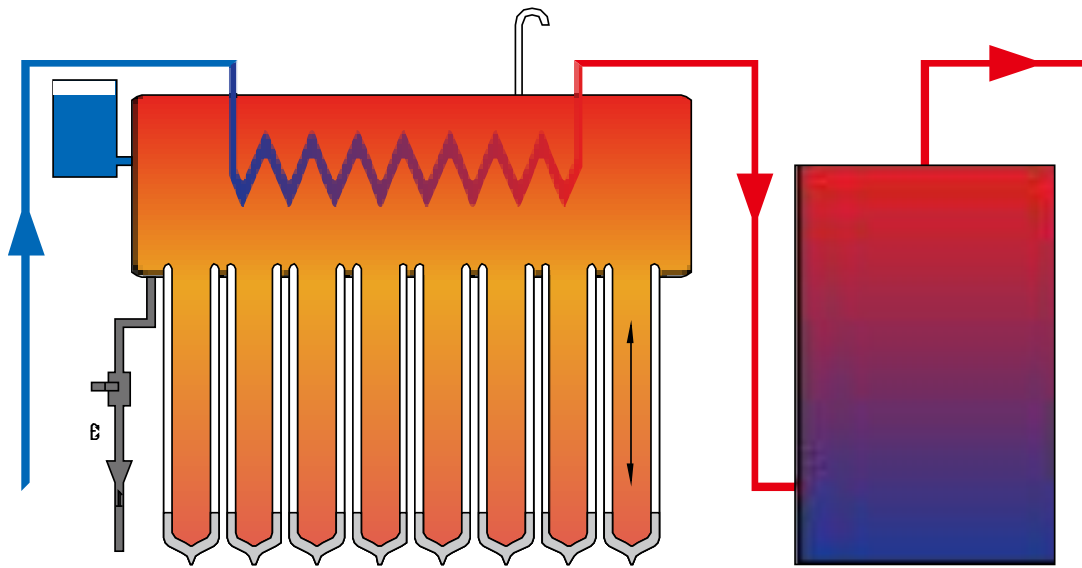


Fig 3.22

Warning:

- 1) When the sunlight is adequate during the installation, You can cover the solar tube with a carton to avoid sunlight and high temperature of the glass tube. Try to avoid thermal shock, it may lead to the broken of vacuum tube .
If it is unavoidable that the solar tube is exposed to high temperatures, please add water to the tank at night or in the morning.
This situation only occurs during the first installation or long-term shutdown, and there is no water in the tube. If the tubes are filled with water, even if you add cold water to the tank under the scorching sun, the tubes will not be damaged.
- 2) The air vent on the top of water tank needs to keep open. **At any time, air vent cannot be closed.** If adopt water supplier, please connect a long pipe to the air vent, and the height must higher than the top position of water supplier.
- 3) When connecting inlet and outlet pipes, a wrench must be used to fix the copper joint. It is strictly forbidden to rotate the copper joint directly to avoid the copper pipe from rotating and winding.
- 4) If you use electric heater, the person who install the electric heater must have electrician qualification. And you need to use electricity leakage protection plug and should connect with ground wire.
- 5) The pipeline must be insulated and protected to reduce heat loss and avoid aging of the pipeline caused by ultraviolet radiation.
- 6) In hard water areas, descaling should be done regularly.
- 7) Please pay attention to the weight capacity of roof.
- 8) Aerial work, please pay attention to safety.
- 9) If you use solar controller, please read the assembly manual of solar controller before you install the solar controller.

4. Common Faults And Solutions

4.1 Leakage at the contact part of vacuum tube and tank



【Fault】 The silicone ring is displaced, damaged or falling off.

【Solution】 Remove the solar tube, check the silicone ring and reinstall the tube.

4.2 The outlet water (hot water) has low pressure and low flow.

【Fault】 The outlet pipe is blocked; the pipe diameter is small; The tap water supply pressure is small.

【Solution】 Dredge the water outlet pipeline; increase the pipe diameter; use a booster pump.

4.3 The water supply cannot be shut down, and the water keeps flowing out.

【Fault】 The float is stuck. Or the valve is blocked by foreign matter such as particles and cannot be closed normally.

【Solution】 Disturb the floating ball, it can move up and down freely. Clean up foreign objects in the valve.

【Note】 If a very small amount of water overflows from the tank under sunlight, this is normal. The water temperature rises and the volume expands.

4.4 Water stains on the surface of the tank

【Fault】 Tank overflow caused.

【Solution】 Install overflow pipe to avoid contamination of tank surface.

4.5 The tube holder falls and deforms, and the tubes are sucked into the tank.



【Fault】 The vent of the tank is closed.

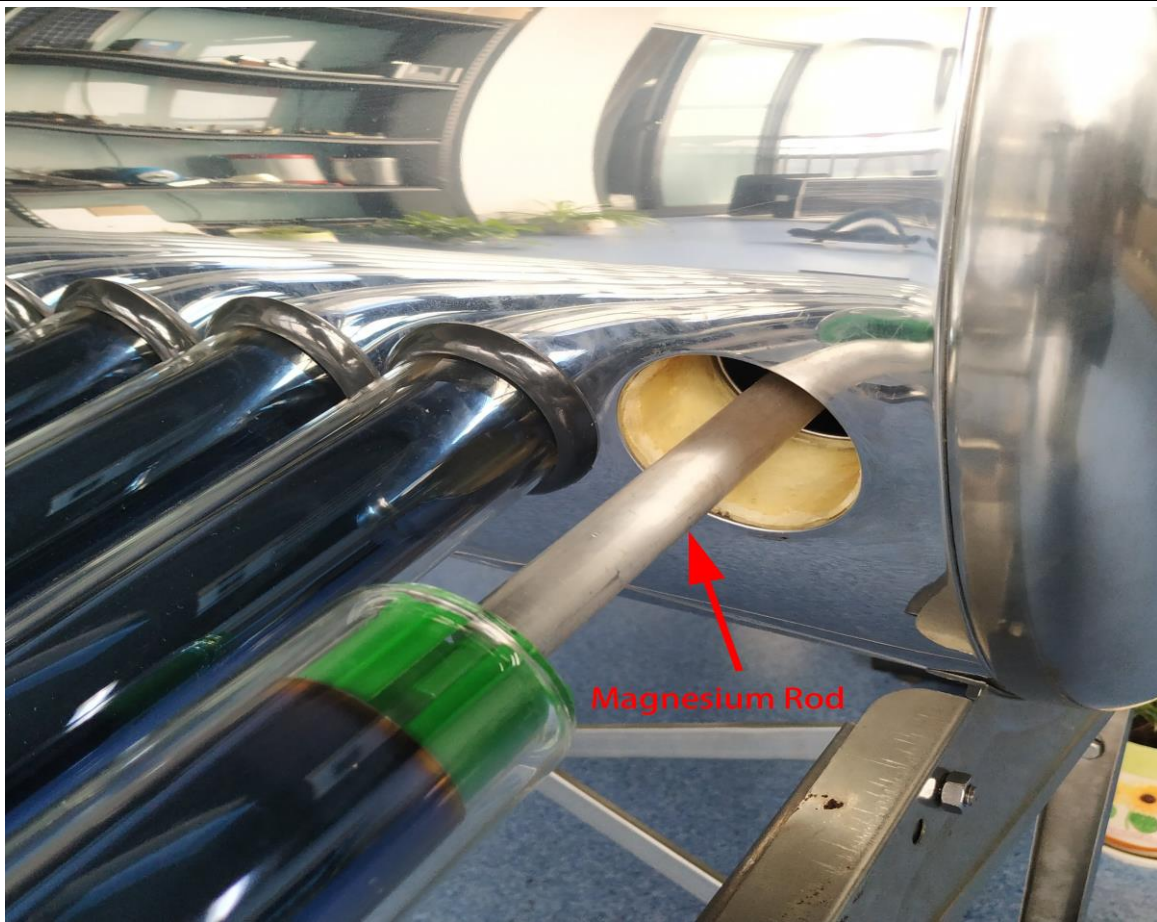
【Solution】 Check the vent, at any time, please keep the vent unobstructed and open to the atmosphere.

4.6 How to reduce the production of scale?

- 1) Choose a suitable model and use hot water in time to avoid excessively high water temperature in the tank.
- 2) When electric heating is used as a backup, the temperature setting of electric heating is preferably less than 60°C. It not only reduces the generation of scale, extends the service life of electric heating, but also saves electricity.
- 3) According to the hardness of the water quality, clean the tank every 2-3 years.

4.7 How often does the magnesium rod change?

According to the local water quality, it is generally replaced once a year. If the water quality is poor and the corrosion is serious, it is recommended to replace it every 6 months.



5. Lightning Protection

The solar water heater should have lightning protection to avoid lightning damage. A lightning rod is necessary which should be 1.5m higher and 3 m farther away from the solar water heater. For any problems that involve plumbing or electrical connections the services of a qualified professional must be employed.

6. Precautions

- 1) When installing your solar water heater in a cold climate where freezing is possible, please put an insulation layer around the pipes which are outside the building. [You may want to add additional protection in the form of a thermostatically controlled heat tape.](#)
- 2) If you use the optional electric immersion heater, the person who installs the electric heater must be a qualified electrician. You need to use an electricity leakage protection plug and everything should be grounded.

7. Max. Working Pressure

The tank is non-pressurized type. However, the copper coil can withstand 6.0 bar pressure and provide high-pressure hot water. The pressure of hot water is equal to the pressure of tap water.

8. Installation Angle

It is common for solar water heaters to be installed at an angle that is similar to the latitude of your location. Installing it with a tilt angle (as measured from horizontal) less than 20° is not recommended as the heat pipes perform best in the range of 20-70 degrees. While adhering to this guideline, an angle of your latitude +/-10° is acceptable, and will not greatly reduce the solar heater output.

Angles out of this range can also be used, but a decrease of heat output will result. When the angle is lower than the latitude, it will increase summer output, while a higher angle will enhance winter output.

9. Wind And Snow Accumulation

When installing the solar water heater, please consider the issue of wind resistance and the resultant stress on the fixed points. The standard frame is designed to withstand wind speeds of up to 100km/h (62 mph) and 30cm (about 11.8 inches) of snow accumulation without damage. For areas with the possibility for high winds, additional reinforcement of attachment points (e.g. into roof rafters, or ground anchors) may be required and can easily be supplied by your local installers.

10. Maintenance Requirements

10.1 Cleaning

Regularly raining could keep the heat pipe vacuum tube clean, but if it is particularly dirty then it may need to be cleaned with a soft cloth and warm, soapy water or other glass cleaning solutions. If the tubes are not easily and safely accessible, a water spray from a garden hose may also be used.

10.2 Leaves

During autumn, leaves may accumulate between or under the tubes. Please remove these leaves regularly to ensure optimal performance and to prevent any fire hazard. (The solar water heater will not cause the ignition of flammable materials).

10.3 Broken tube

When the vacuum tube is broken, please close the valve immediately, please open the valve after replace the vacuum tube, in order to save the water consumption. When replace the vacuum tubes, please [follow the instructions in step 3.4](#).

