ENERA Solar

A9 CPC pressurized solar water heater

(A9H8, A9H12, A9H15, A9H20)

INSTALLATION MANUAL

1. Foreword

Dear customer:

Congratulations on your purchase of Enera PRO A9 - high efficient solar water heaters.

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.

The Enera PRO A9 system has been designed with ease of installation as one of the key design features. This manual includes a clear step by step installation guide. If you come across any issues not covered by this manual during the installation, please contact with your Enera accredited installer or representative agent.

Please check the manual before installation

2. Product description

A9 new generation of integrated pressurized solar water heater, vacuum tube with high solar absorption and low emission to the coating will absorb solar radiation converted into heat, , quickly spread to the tank through the heat pipe inserted in the vacuum tube, so that the whole tank water temperature is gradually increased. The vacuum has a natural ability to track the sun as long as there is solar radiation, because of one direction conductive heat pipe let the vacuum tube could work well even if the extreme cold region throughout the year can be highly efficient operation.

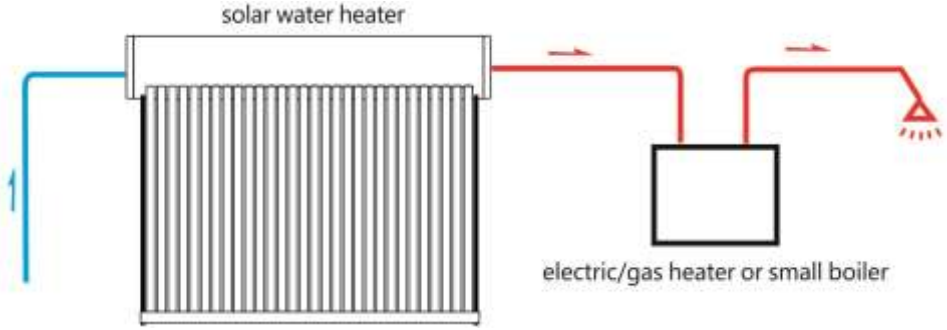


Diagram of family with gas water heaters, small boilers connection.

3. Specification characteristics:

Specification characteristics: New high pressurized solar water heater-PRO A9

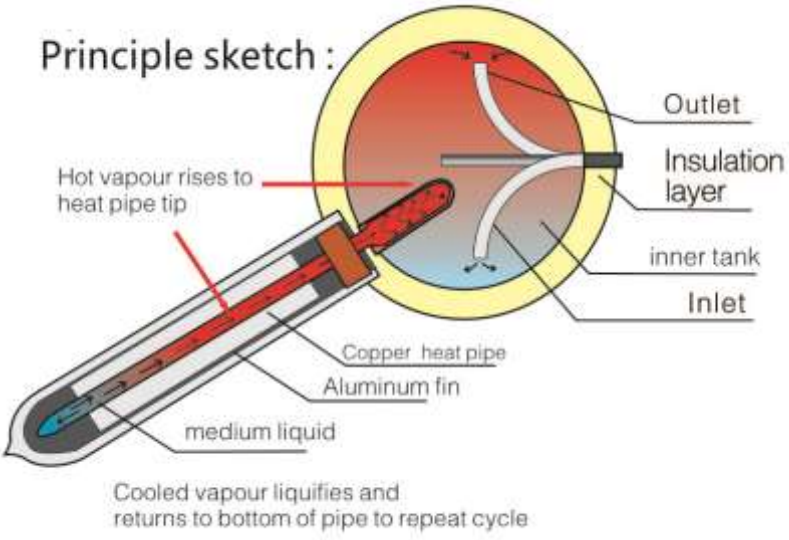
1. Start up quickly, heat pipe transfer the heat energy into the storage tank swiftly.
2. Withstand pressure of max 10bar, can be connected with city water directly, work automatically.
3. The storage tank and the heat pipe mechanical sealed, the solar water heater can still work even with several tubes breakage.
4. With reasonable design and choose excellent material, the inner tank is without any breakage after one hundred thousand times's high pressure testing.
5. High density polyurethane foam, well insulation.
6. Can be installed in series and parallel to be a solar hot water system.
7. Can be connected with gas water heater and small boiler, also can preheat the water in advance.
8. Can be installed in anywhere (for example, you can install the solar water heater on the ground of the garden, and use the hot water on the third floor).

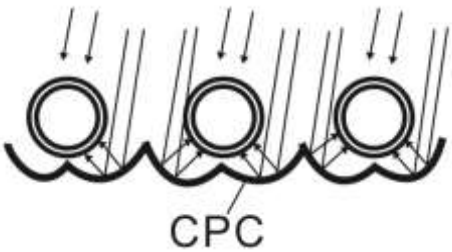
Heat pipe advantages:

1. Transfer the heat energy quickly, we use special medium in the heat pipe and it can transfer the heat energy more than 1000 times faster than copper.
2. Highly efficient absorber, it increase 20% or more than ordinary solar water heater.
3. No water and no water scale inside the evacuated tubes, the tubes will not be cracked even if during -40℃.
4. Withstand pressure of 0.6mpa, can be connected with the city water directly.
5. Can still work even with several tubes breakage. The water will not flow out from the storage tank.
6. Can be used in sunny days even if in the extreme cold climate.

4. Product principle

PRO A9 new generation integrated pressurized solar water heater's tank is similar to the electric water heater, so it can withstand the pressure of tap water and the swelling pressure of water after heating, the hot water will be push out by pressure of tap water. Evacuated tubes absorbs the solar thermal energy, then transfer the heat through the heat pipe to the pressure tank and raises the temperature of the water inside the tank. Evacuated tubes doesn't touch the water, the system can withstand the pressure.





Integrated pressurized solar water heaters advantages:

1. In the discharge from the solar water heater without pressure, withstands pressure.
2. Solving the problem of leakage caused by monitoring the water level, which the system without pressure is outside.
3. The ability to work in areas with colder climates, without the risk of freezing.

5. Technical data

Principal machine	Absorber
Inner tank material: SUS316L stainless steel	Vacuum degree: ≤5×10-3pa
Heat pipe vacuum tube size: Φ 58mm×1800mm	Absorbing coating property: ≥0.93
Working pressure: 6 Bar	Emission ratio: ≤0.08
Daily hot water temperature: 45-90℃	Transition temperature: ≤25℃
Daily hot water output:	Vacuum tube stagnation parameters: 230℃
A9-8H(100L),A9-12H(150L),A9-15H(200L),A9-20H(300L)	Freezing resistance: -40℃
Insulation: Polyurethane foam	Wind resistance: 30m/s(11 force)
Heat preservation: 72 hours	Lifetime : ≥15 year
Outer tank material: PVDF	Hail resistance: 35mm
Frame: Thicker galvanized steel	Glass material: High borosilicate 3.3 glass
	Heat pipe: TU1
	Condenser size: 14mm*65mm
	Vacuum tube size(mm): Φ 58×1800mm

6. Product installation

Special warning：

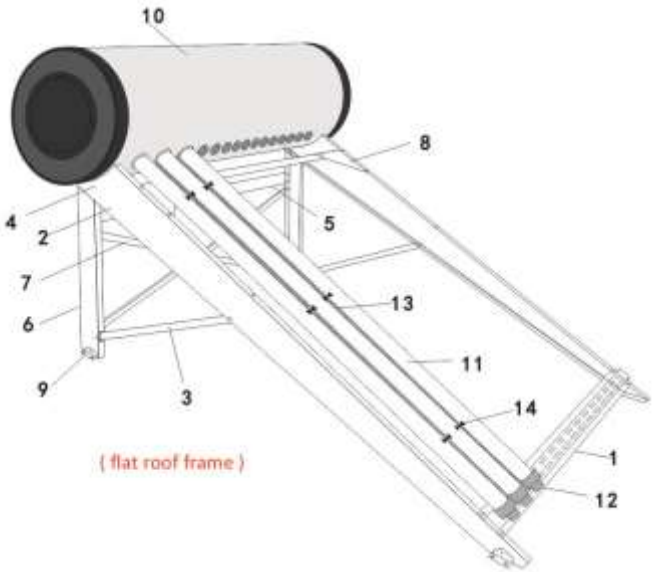
1. Installing the water heater must be caution of on the high position what required of a professional installer operation, pay attention to their personal safety!

2. Transportation and installation, gently especially for the fragile glass tubes

3. Before installation, please carefully read the installation instructions in strict accordance with the manual operation, and by the professional installation. Otherwise the improperly installed may lead to serious personal injury and property damage, the installation is divided into four parts: frame installation, tank installation and tubes installation and connection of the water heater piping.

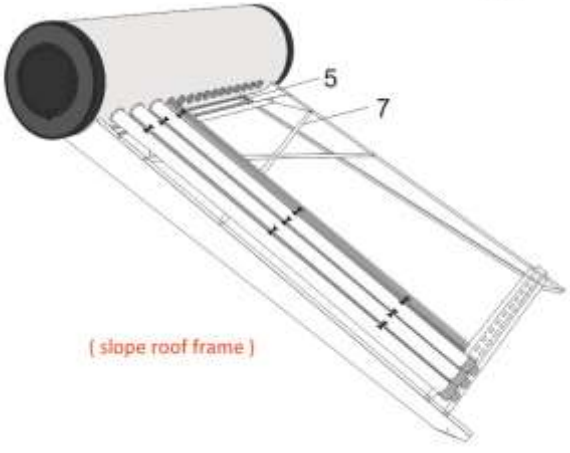
[Frame mounting]

Solar water heater should be in the sunny square, ideally correct location - facing south. Use galvanized iron wire or expansion screws or cement and fixed the roof pad bracket under hard objects

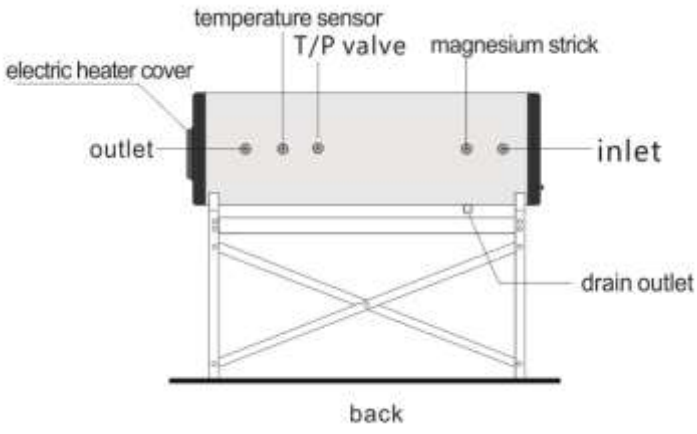


(flat roof frame)

Component
1. Bottom track (manifold)
2. Front track
3. Side rod
4. Tank support
5. Front tie rod
6. Support leg
7. Across rod
8. Fixed triangle
9. Anti-wind feet
10. Tank
11. Vacuum tube
12. Tube holder
13. CPC reflector
14. Reflector handle

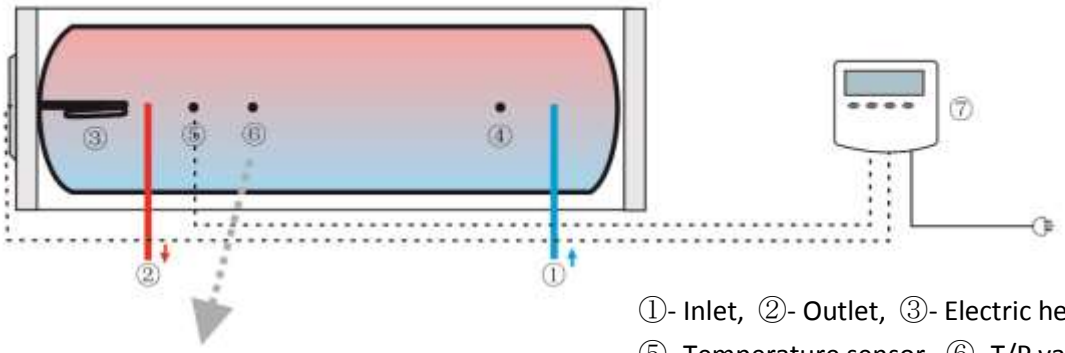


(slope roof frame)

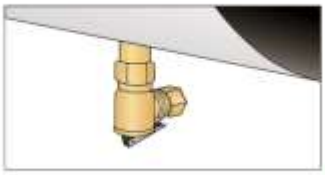


[Pipeline connections]

Connect the water pipe line , try to use the special composite pipe or cross-linked pipe, to reduce the water rust and heat loss, piping using insulation materials the better is fixed on the stand or building, if in the cold areas, drain valve can be added, so the emptying of the water in the pipe line.



①- Inlet, ②- Outlet, ③- Electric heater, ④- Magnisum bar,
⑤- Temperature sensor, ⑥- T/P valve, ⑦- Controller

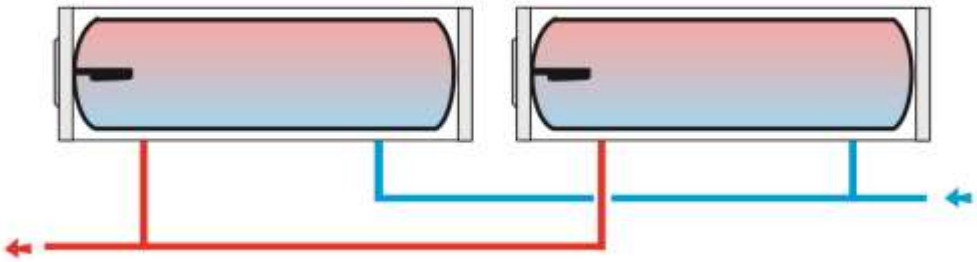


The T/P exhaust port stringent blockage. It should have received an additional exhaust pipe to prevent the tank internal pressure is too high splash hot water to cause damage to persons and property.

[Installation Options]

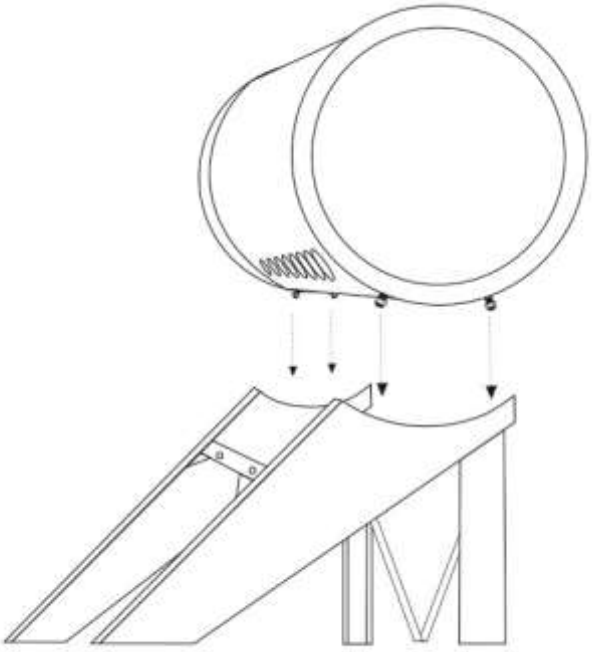
Placement of water heaters can be selected according to user requirements

Solar water heater can be connected more than in series, parallel way into the collective hot water system.

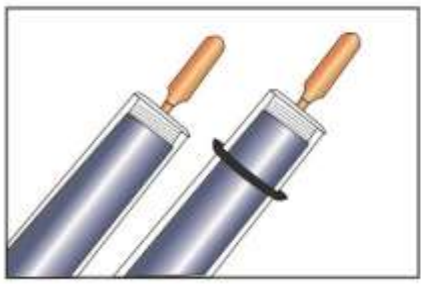


[Tank installation]

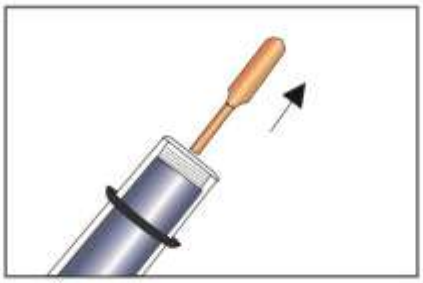
Put the tank on the tank support after the frame completed assembly. Place the four screw bolts on the tank into the tank support, but let the screws not to be turned tightly temporarily. Please pay attention to the direction of vacuum tube hole to be the same angle direction with the tube holder on the bottom track (manifold). Fix the tube holders on the bottom track then turn down its male part.



[Tubes installation]

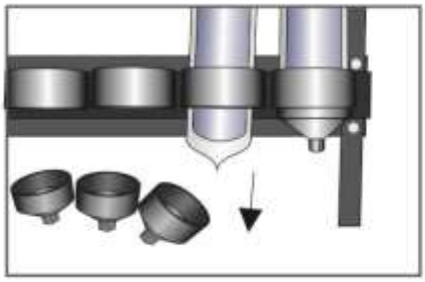


1. Dust ring with water jacket on the vacuum.

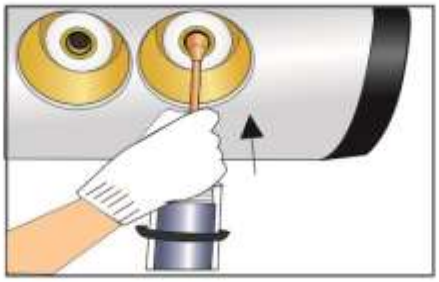


2. Removing the heat pipe header 20-30CM.

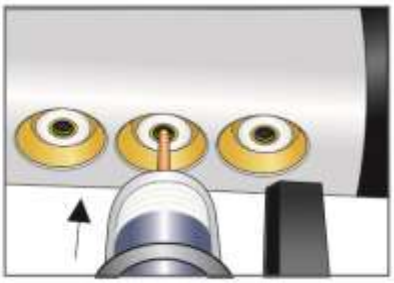
3. Evenly coated with thermal glue on the condenser.



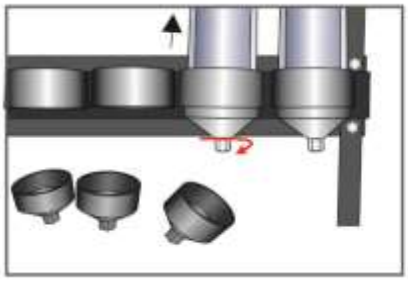
4. Vacuum tube tail into the pipe supports from top to bottom.



5. Holding the heat pipe forced into socket on the tank.



6. Vacuum tube inserted into the tank according with the heat pipe.



7. Turn the tube holder to be tightly (to keep vacuum tube could not be moved up and down)

8. The tank angle is fine-tuning, and screw fastening on the tank bottom.

9. Slide the dust ring on the proper position, then assemble the CPC reflectors.

7. Product Instruction

“PRO A9”:

The new pressurized solar water heater, the cold water inlet connect with city water directly, Can withstand high pressure when it works.(Means if the cold water supply pressure in stable, when open the outlet valve will have hot water in time with same pressure;)

Attention (importance):

1. During the storm with lightening, please DO NOT use solar water heater and keep the tank full of water during the typhoon/hurricane;
2. In the summer, if hot water not much used or water temperature is so high, please take some shade to cover part of vacuum tube to reduce the heating;

This solar water heater can be used around the clock throughout the year; service life over 15 years; During this period, you can perform some simple maintenance work:

1. Clean the vacuum tubes:

If dust or dirt on the vacuum tubes is too dense, it will reduce the reflection rate for a long time. Thus, you need to clean the vacuum tubes at least once every six months or a year, depending on the conditions of contamination. You can use soapy water or water with cleaning products to clean the vacuum tubes.

2. Monitor the condition of the solar water heater:

Poor water in some areas can lead to accumulation of scale in the tank or failure of safety valves, which will affect the efficiency of the solar heater or its breakage. Thus, you should visually inspect the system, check the operation of the valves and, if necessary, but not less than once every two years, ask a specialist to replace worn-out connections and parts, such as a magnesium anode, valves and an electric heater.

8. Warranty Ordinance

IberSunWind, S.L. ("ENERA") provides a guarantee for a period of 15 years for vacuum tubes, 5 years for storage tanks and 1 year for all other products, components and an additional 1 year subject to the installation of equipment by our specialists. The above warranties are minimal and universal. IberSunWind, S.L. ("ENERA") reserves the right to offer extensions of these guarantees, corresponding to the various characteristics of the product, region or destination. And also to restrict or not to provide the Warranty Rights if damages, malfunctions of operation or non-functionality of the Solar thermal products, were not caused by the seller. More information about the warranty can be found on our website www.enera-solar.com

9. Troubleshooting

Trouble	Trouble reasons	Solutions
Sunny day, no hot water	The front of solar water heaters have occluder, high tower, trees, tall buildings, fences or other water heaters, short sunshine ,causing the water temperature is low.	Remove the occluder or move the solar water heaters to the place without occluder.
	1. Vacuum tube surface have thick dust. 2. Hot outlet valves got leakage or can`t closed well. 3. Vacuum tube or heat pipe damaged. 4. The T/P valve on the main water tank can`t closed which cause the water keep flowing.	1. Cleaning the tube surface and reflector. 2. Check the valves. 3. Replace tube or heat pipe. 4. Check T/P valve.
No hot water during winter time	1. Pipelines freezes in winter time (Cold area winter is not normal; sometimes to freeze in the morning, after sun defrost in afternoon). 2. Weather is too cold	1. The whole pipeline use heat pipe preservation 2. Use electric heating belt together with water pipe lines, outside with heat pipe preservation.