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# Separated Tank for Solar System

## User's Manual

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*Read the instruction carefully please before operation.*

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# C a t a l o g u e

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## **1. Features**

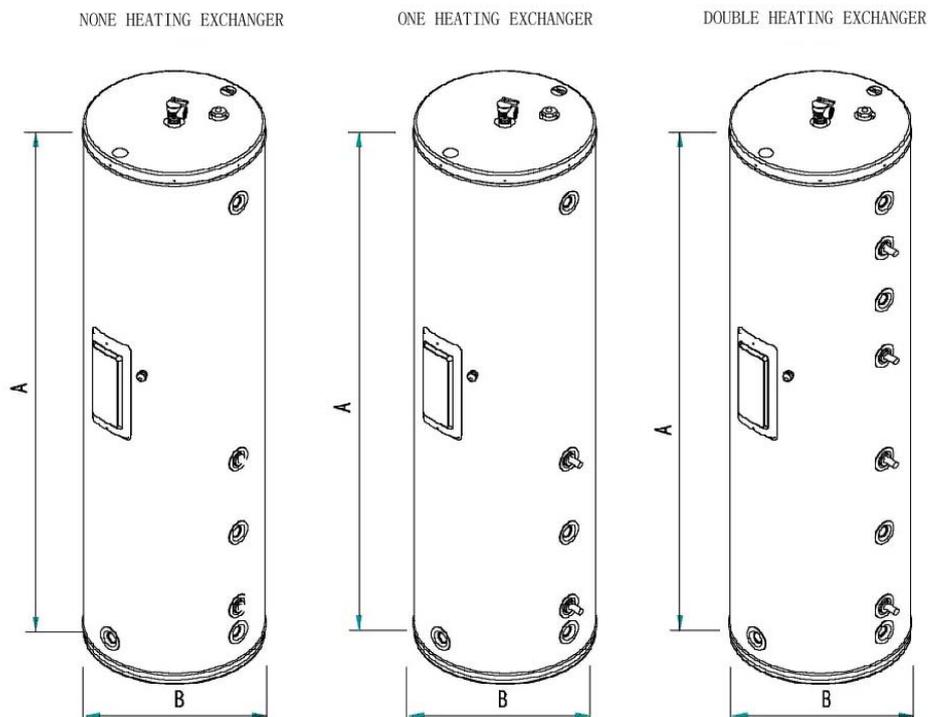
- Outlet obturates in design, cold water inlet connect with water pipe, supply the hot water by the pressure of tap water, with enough hydraulic pressure
- Equip temperature controller, P/T Valve, unilateral safety valve etc. automatic controller and protection
- Mild steel sheet coated with special porcelain enamel, install long anode magnesium rod, soften the water and lengthen the service life of inner vessel.
- Equip assistant electric element, safety and convenient.
- Can equip heating exchanger in tank based on requirement, bulky heating exchange; economize the running time of the whole system.
- Thickened high-density environment-friendly polyurethane thermal insulation layer, high efficiency and economize energy sources.
- High effect galvanized sheet shell, with outdoor coating technology, anticorrosive and rust-resistant, make the service life longer.
- Can connect multi-units in parallel, install total, and satisfy more hot water requirement.

## **2. Points for Attention**

- Make sure the drainage expedite when installing, prevent the product or sluicing of pipeline from damaging other establishment.
- Make sure the electric parts are away from wet and being soaked by rain when installing.

- The power supply should be connected with reliable grounding.
- Any electric connection and equipment should be chosen according to the demand of electricity and relevant safe norm.
- Forbid putting through the power if the water is not full in the tank
- If the hot temperature is higher than 50°C, please mix the cold water and hot water before using, so as not to be scalded.
- The product is settled with drain valve, please eliminate the furring in water tank; in cold areas, if you don't use the water heater for a long time in winter, please keep the bladder empty, in case the water inside will be frozen and damage the tank.
- Please operate the temperature / the operation pole of the pressure relief valve by hand frequently, in order to avoid the relief valve and the valve seat carding being blocked and cause danger.
- Please do not dismantle the electric parts yourself, installation and service should be done by professional, cut the electric power when servicing.
- Please connect the heating exchanger according to sketch map.

### 3. Technical Data



<b>Product model</b>	<b>100L</b>	<b>150L</b>	<b>200L</b>	<b>250L</b>	<b>300L</b>	<b>400L</b>	<b>500L</b>
<b>Water tank dimension(mm)</b>	φ450	φ450	φ520	φ620	φ620	φ710	φ710
<b>Height</b>	1105	1570	1530	1280	1530	1675	1800
<b>Inner vessel diameter(mm)</b>	φ368	φ368	φ438	φ542	φ542	φ613	φ613
<b>Material and thickness of the inner vessel</b>	BTC340R 1.8	BTC340R 1.8	BTC340 R 2.0	BTC340 R 2.0	BTC340 R 2.0	BTC340 R 2.5	BTC340 R 2.5
<b>Material and thickness of the shell</b>	galvanize d sheet <b>0.5</b>	galvanize d sheet <b>0.5</b>	galvaniz ed sheet <b>0.5</b>				
<b>Insulation thickness(mm)</b>	40	40	40	40	40	50	50
<b>Surface area heat exchanger top (m2)</b>	----	----	0.4	0.4	0.4	0.5	0.5
<b>Surface area heat exchanger bottom (m2)</b>	0.6	0.6	0.7	0.7	0.7	0.8	0.8
<b>Connection size of heating exchanger</b>	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
<b>installation size of water pipe</b>	NPT3/4"						
<b>rated heating power</b>	1.5KW	1.5KW	1.5KW	1.5KW	2.5KW	2.5KW	2.5KW
<b>Packing case size(mm)</b>	□480×120 0	□480×166 5	□550×16 25	□655×13 75	□655×16 25	□740×1 675	□740×18 00
<b>Weight(references) (Kg)</b>	46	58	68	75	95	112	122

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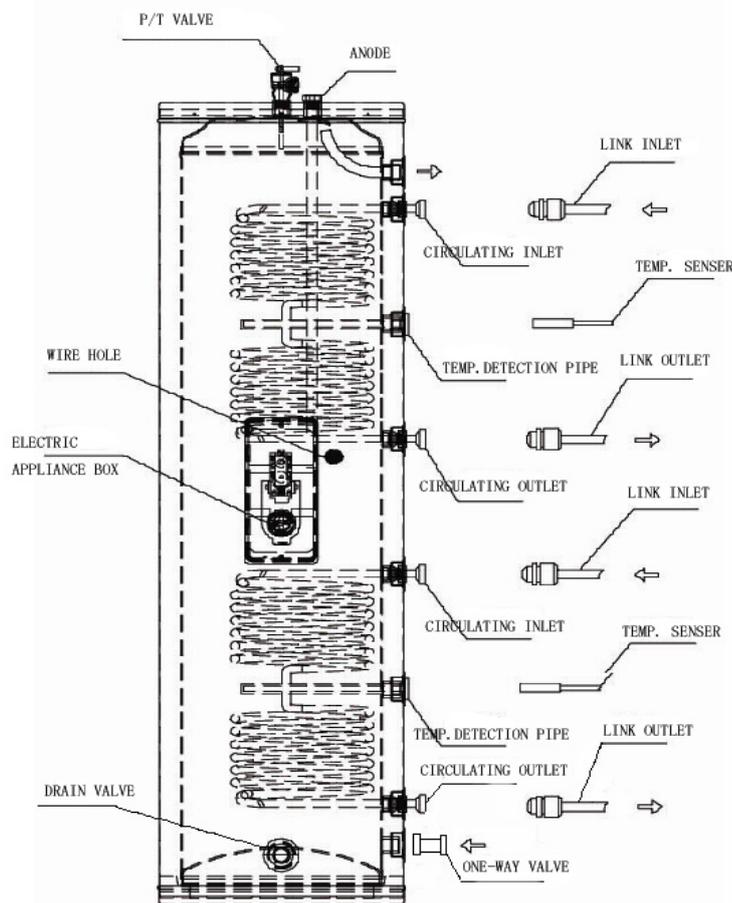
## 4. Installation and Connection

### A、 Confirm the installing position

- ◇ Product should be installed in place of dry and unable being drenched by rain, be sure not in freezing place.
- ◇ Product should be closed to the hot water point that is most frequently used.
- ◇ Round the product, there should be enough space for servicing and replacing.
- ◇ Electric junction box、 P/T valve should be faced to direction that is easy for servicing, in order to make read convenient.
- ◇ Product should be installed on ground, and the building should afford the total weight of the product with full water inside.
- ◇ Product should be put on fire-resistant seat (thickness more than 50mm), and the hole for drainage expedite around the product, prevent the product or sluicing of pipeline from damaging other establishment.
- ◇ Solar system should be installed according to the demand of the connection, collocate pump station, expansion case, solar controller etc., confirm the circulating way, installing position, insure the service of the whole system.

### B、 System connection

#### (1) sketch map of the system



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## (2) Hot water pipe connection

- Shown in sketch map, the size of cold/hot water pipe should adopt the same standard with the tie-in of the tank, all the resist-pressure of the water pipe should not less than 0.8Mpa, the resist-temperature should not less than 99°C
- We suggest you to install a mixing valve for cold and hot water when the temperature of the hot water is high. And also if the water tank is installed far from the using point, please cover the pipe by insulating material.
- Please install an one way valve under cold water inlet for safty, also if the cold water with too lower pressure, you could try to put a booster on the pipe under the cold water inlet, otherwise, please you put a valve to reduce the pressure. and if there is some special cases please you go to buy booster or pressure reducing vlave.
- In order to reduce furring and protract the using life of electric element, we advice you put a intenerate equipment under the cold water inlet.

## (3) Connection with solar system

- As the picture showed, circulation inlet and outlet is connected with solar collector, and you need to insure that the auto-exhaust equipment or expansion case, connect the pipes in term of tie-in fashion
- As a result of tank and solar collector are in a system, in order to assure the quality of water, heating exchanger should be made of copper/porcelain enamel pipe; all of the water pipes should take use of complex pipe which resist-pressure and resist-temperature. All the pump station and valve resist-pressure should not less than 0.8Mpa, resist-temperature should not less than 99°C
- The product remain one/two  $\phi 8$  hole for temperature senser, convenient for checking the water temperature in tank, wipe the transmit-heat silicon grease when installing temperature senser, avoiding un-exact of checking temperature, the wire of temperature senser should be fastened, avoiding falling off.

**Warning: Do not tear down the tie-in of temperature senser in any reason, otherwise, metrical temperature will not be exact or will leak from the tie-in of the temperature senser.**

- The water tank can install none, one or two heating exchangers, depending on the system collocation, if the heating efficiency is lowness, please change the circulating medium, or protract running time of the system.

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#### (4) Install P/T Valve

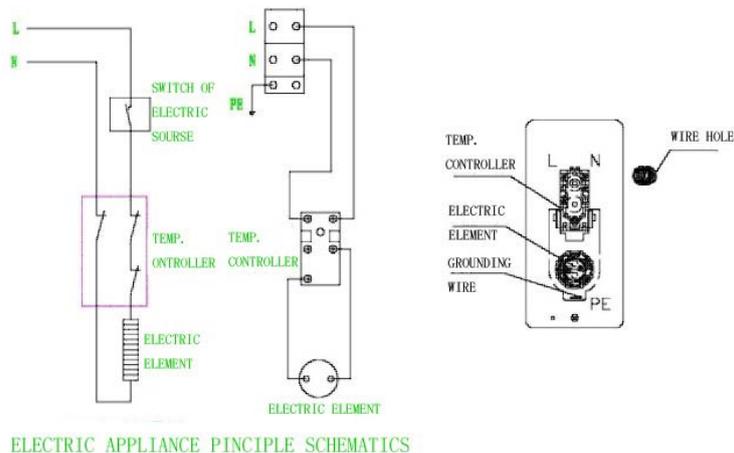
- Confirm the tip of the P/T valve is not bent, and check the handle if working agility or not.
- Twine the whorl well with the crude airproof strap, but it can't over the whorl terminal surface, then fasten temperature / pressure relief valve in the installation place, connect the drainpipe in pictures.
- Connect one 20mm length drainpipe with the scupper of P/T valve and insert the ground hole or connect to outdoor. Valve is not allowed for drainpipe, the total length of the drainpipe should not over 9m, and the right angle should not over 3 parts.

**Warning: Should not jam the drainpipe in any case! The outlet of the drainpipe should communicate with atmosphere, and confirm the discharged hot water will not damage the security of person and property.**

#### (5) Connection Fashion

- L、N and PE in electric source , should be connected with Temperature controller & Grounding wire reliably and separately. The grounding wire and the zero wire should be seperated strictly, and make sure the rounding wire is connected safely.
- Electric wire should transit the enter-line hole and be locked up, insure the wire will not be attained easily, pulled off or damaged by metal knife, and then cause accident, thrum of wire should use cold-pressure thrum, connection to thrum should deep-set.

**Warning: Electric connection should be done by professional! Any electric connection and equipment should be chosen according to the demand of electricity and relevant safe norm.**



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## 5. Operation and Usage

### A、Affusion

If the products connect to system, affusion should be finished by the detail and the demand of the system, the steps of affusion as follows:

- ◆ Open up all hot water and shower tap.
- ◆ Open up the one-way valve before cold water inlet of the water heater
- ◆ Close up all the taps of hot water and shower when water outflowing.
- ◆ Check the pipeline if leaking or not

**Warning: Strictly prohibit electrify before injecting full water of the water heater**

### B、Using of hot water

- ◆ Switch on electrical source after injecting water, this product install with constant temperature controller, automatism running.
- ◆ In natural complexion, the one-way valve should keep opening, cold water can automatic supply.
- ◆ In heating up process, the drainage of hot water is in gear.
- ◆ The temperature of hot water is high, for not being scald, please open cold water then open hot water, close the hot water tap before closing cold water.
- ◆ Use the hot water in storage when power off.
- ◆ We advice you to close up the one-way valve when the water supply are cutting off, prevent the water flow back.

### C、System control

- ◆ If product connects with system, after finishing affusion and first setting of the controller, the system start running, the system will be controlled by solar controller.
- ◆ If this product is used in heating system, the power of circulating pump is connected to solar controller, carry out the automatic control of heating by setting time or temperature in door.
- ◆ Using hot water heavily or frequently when heating will affect heating, Stop heating if need more hot water.

### D、Close up water heater

It is not necessary to close up water heater usually, close some units if hot water system when dosage of hot water reducing, Close up the water heater when maintaining, the steps as follow:

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- ◆ Cut off the electric power of water heater
  - ◆ Close up one-way valve of water heater.

**Advert: Please let the water heater empty before closing up the water heater in cold place, defending damage the inner tank by icing.**

#### **E、 Let the water heater empty**

**Just let the water heater empty when maintaining or stop using water heater in winter, the steps as follows:**

- ◆ Cut off the electric power
- ◆ Close up the cold water inlet
- ◆ Turn on one hot water tap
- ◆ Discharge the tie-in of cold water pipe, connect another pipe to the end of water heater, and leave another end of the pipe to cloacae.

**Advert: Fill in water of water heater before power supply when reusing.**

## **6. Maintain**

### **A、 Safety examination**

Check the performance of P/T valve each month.

**Method:** Uplift the handle of P/T valve, check if water flow from the drainpipe or not, please report repair if no water flowing out.

### **B、 Clean up crust**

- ◆ For keeping the beauty crust of water heater, clean up the crust in scheduled time, steps as follows:
- ◆ Cut off the electric power of water heater
- ◆ Clean the crust gently by wet fabric with soap fluid or scour, please not use benzene or other chemical reagent with causticity.
- ◆ Clean the crust with dry fabric again, keep dryness of the crust.
- ◆ Restart the water heater

### **C、 Drain**

Drain empty the water heater once/ year in place which is better quality of water, one/half year in place which is worse quality.

The steps are same as “**Let the water heater empty**”

## 7. Trouble Shooting

Malfunction	Possible reason	Dispose method
No hot water/deficiency of hot water	1) No electric source。 2) Long time using hot water, 。 3) Superfluous drainage from P/T valve。 4) Electric element damage, rate of electric element is not enough。 5) Matter of system running, or medium	1) Switch on electric source。 2) Pausing using hot water, waiting for heating up。 3) Please check “Drainage from P/T valve”。 4) Please report for repairing
System cannot circulate	1) No electric source of circulating pump。 2) Air in system, effect hot water circulate 3) Error in system connection, attaint from tip of temperature。 4) Surface of heating is too large。 5) Electric element damage, error in connection method。	1) Switch on electric source of circulating pump。 2) Please exhaust by professional。 3) Please report for repairing。
Drain from P/T valve	1) Normal in draining hot water when heating each time 2) If continuous dripping, maybe locked by impurity in P/T valve. 3) If continuous water flowing at night, maybe high pressure of water supply. 4) If drainage discontinuous, maybe the trouble of constant temperature	1) Natural。 2) Uplift handle, give out water for a few seconds, set down gently, repeat several times 3) Please add decompress valve 4) Please report for repairing
Noise from product/pipeline	1) Natural noise when electric heating 2) Fluctuating by water pressure sometimes, arouse sound by liberation of water pipe. 3) When noise in heating, maybe deposition in inner tank. 4) When big noise in heating, maybe kink dirty on electric element	1) Natural 2) Natural, can close up the one-way valve before cold water inlet 3) Drainage, please see “Drain” 4) Please clean dirty by professional