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# **DC48V Solar Water Heat pump**

## **Operation And Installation Manual**

Model: SHPW-35W/OF-N  
SHPW-72W/OF-N

**PLEASE KEEP THIS MANUAL PROPERLY**

**CAREFULLY READ THIS MANUAL BEFORE USING THE PRODUCT**

*Thank you for choosing our products.*

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## Safety Note

### **Please pay attention to the following notes for your safety use.**

1. The heat pump must be installed according to national routing rule
2. Power supply :DC48V
3. If power line is damaged, to avoid any danger, make sure the manufacturer or appointed serviceman to change the lines.
4. Attaching plug, socket must have reliability of contact and good of earth connection.
5. Wire controller has been setup according to water requirements, if it is necessary to reset, please refer to wire controller operation guide.
6. When normal use, please do not shut off the cool water valve, otherwise the unit can not let the water out correctly.
7. The unit should be clean at regular time, no less than twice per year.

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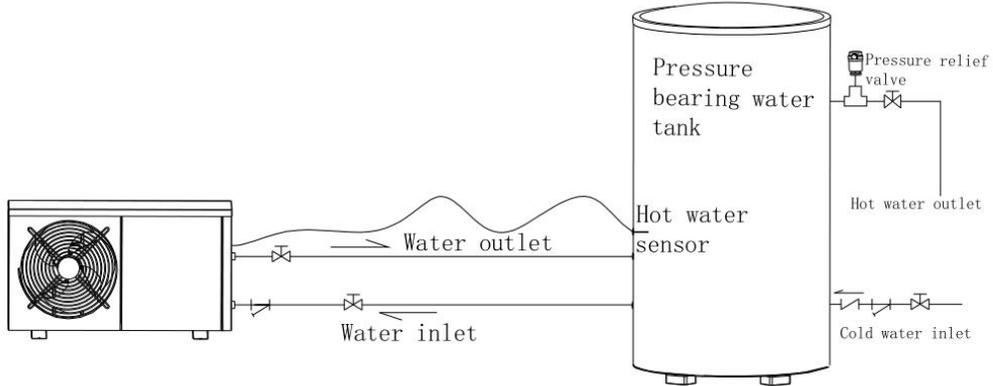
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**To use our product correctly, please read the manual before putting into use and keep the manual for reference afterwards.**

# Part 1 Operation Instruction

## 1、 Diagram



Magnetic valve  water flow direction  $\rightarrow$   
 ball valve  Y style filter  one-way valve 

## 1、 Specification sheet

Power Supply: DC48V				
Model No.			SHPW-35W/OF-N	SHPW-70W/OF-N
		Ton	1ton	2ton
		HP	1.5HP	3HP
Performance				
Capacity	Heating	Btu/h	12000	24000
		W	3500	7000
		dB(A)	≤55	≤58
Max energy saving			80-90%	80-90%
	EER	W/W	4.5	4.3
	SEER	Btu/h/w	34	32
	cop	W/W	4.9	4.8
	scop	Btu/h/w	37	36
	HSPF	Btu/h/w	13	122
	Water pump	Stainless steel	15L/MIN	20L/MIN
	Heat exchanger	Stainless steel	Plate type heat exchanger	Plate type heat exchanger
Refrigerant			R32	
	Compressor		Hitachi (ROTAY)	
	Water inlet/outlet		1"	1"
Power Consumption				
	Rated Power Input	W	950	1250
	Rated Current	A	20	28

### Test Condition:

- 1、 Dry bulb/ Wet bulb Temp: 35/24℃, Rate water outlet temp:20℃。
- 2、 Take the above data as the reference, please take the nameplate as the final parameter.

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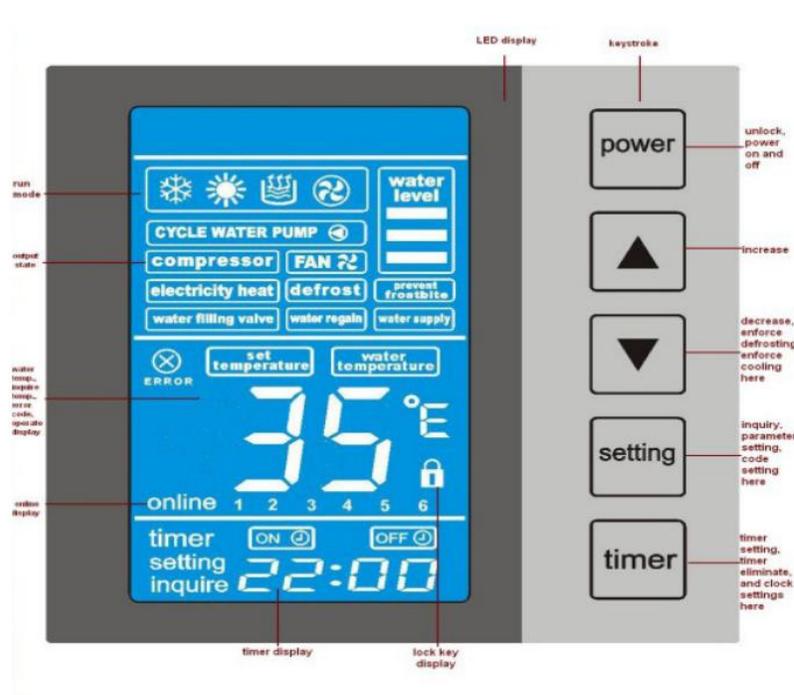
### **3、 Feature**

- 1) Choose international brand compressor and microcomputer chip control, with stable and reliable working performance.
- 2) Working cost is much less than traditional water cooler, electrical cost is 1/4 of electrical water cooler
- 3) No influence by weather, no need sunshine, supply hot water under any weather condition.
- 4) Energy from solar. The whole unit system use our own technique to prevent from shocking. No worry about the electric leakage, using the unit safety.
- 5) The unit is not limited by installation place, it can be installed at balcony, garage, basement, and so on, it is suitable for high building and villa using.

## 4. Function and Operation of wire controller

### Wiring controller

#### 1.1 Screen



When the power supply to the heat pump is switched on for the first time, an audible tone is heard from the controller. The LCD will be displayed in a dimming mode (no back light). At this time the touch keys are locked (see “lock key display” symbol).

Keys explanation:

Unlocking Keys: Press the “power” key for 3 seconds until you hear an audible tone, then release the key.

The back light of the LCD display will turn on and the key pad is unlocked with no “lock key display” symbol.

The keypad will automatically lock after 60 seconds, displaying the “lock key display” symbol.

“power” key: By pressing the “power” key, the unit can be switched ON or OFF.

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“▲” and “▼” keys: Press to Increase and Decrease values.

“setting” key: Press for Inquiry, Parameter and Password setting

“timer” key: Press for timer setting, timer eliminate and clock setting.

## Controller Set-Up

### 1. Temperature setting:

Make sure key-pad is unlocked. Press the “▲” key, “temperature setting” symbol is flashing and the set

temperature is displayed. Press the “▲” key again, the displayed temperature will increase. Press the

“▼” key, “temperature setting” symbol is flashing and the set temperature is displayed. Press the “▼” key

again, the displayed temperature will decrease. The range of water temperature can be set from 20° C to

60° C (default = 60° C).

## 5、 Maintenance and overhauling

### 5.1 Important issues in operation

①To check system water refilling device and air discharge device from time to time to make sure they are working normally to avoid water shortage or air getting into the system. Otherwise, it will affect the performance and stability of the equipment. The water filter should be cleaned from time to time to make sure the system water is clean to keep the equipment from being damaged by filter blockage or dirty system water.

②The place the machine is located in should be dry, clean and with good ventilation. Clean the side heat exchanger one time in 1-2 months to keep good heat exchanging, maintaining the system performance.

③To maintain the efficiency and safety of the equipment, please clean the water

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system with scale dissolver every 6 months.

④To check all parts of the equipment and the working pressure after using for one year. Maintenance or replacement should be necessary if any malfunctioning.

⑤If the equipment is to be stopped for a long time, water in the pipe system and water pump needs to be drained up. When it is to be restarted, full checking needs to be done and water system should be filled up before starting.

⑥When the equipment is not running continuously, power supply should be cut off. Otherwise, any parts damaged by freezing will be afforded by users.

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## 5.2 Common error and solution

Problem can be identified and solved by the error code of water tank controller, showing as below table.

Code	Name	Code	Name
05	Compressor high pressure switch	15	Water tank temperature sensor
06	Compressor low pressure switch	16	Evaporator or Condenser pipe sensor
09	Controller communication	18	Compressor discharge temperature sensor
11	Installer Password protection	21	Ambient temperature sensor
12	Compressor high discharge temperature		

## 6. Appendix 1

Code	Name	Range	Default
	Water tank temperature setting	30°C—99°C	55°C
L1	Temperature difference between hot water and indication	0°C—15°C	2°C
L2	Compressor restart & set temperature	3--18	4
L4	Maximal water tank temperature	30--99	60
L5	Electric heating start temperature	0°C—35°C	7 (No electric heating)
L9	NO	NO	NO
h1	Defrosting period	20—99minutes	45 minutes
h2	Defrosting start temperature	-15°C—1°C	-1°C
h3	Defrosting time	5-20minutes	8minutes
h4	Defrosting quit temperature	1°C—40°C	15°C
P1	Electronic expansion valve regulation cycle	20~180 seconds	60
P2	Degree of super heat	-8~15°C	2
P3	Allowed discharge	70~135°C	100
P4	Expansion valve opening degree in defrosting	6~55°	50
P5	Expansion valve minimum opening degree	6~30	15
P6	Super heat compensation	0~12	4

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## Part 2

### Installation Instruction

#### 1、Pre-Installation: Basic features

##### 1) Dimension

Dimension	LXHXD
Length (mm)	760
Width (mm)	260
Height (mm)	540

##### 2) Tank Selection

Please choose correct water tank in according to following principle. Solution selection for water tank.

people for using hot water	The volume of water tank
2-3	200L
4-5	250L
Above 6	300L

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## **2、 Pre-Installation: Instruction**

### **1) Installation Bases**

- 1). Power supply: DC48V with reliable grounding- wire.
  
- 2). To make sure the enough space for air inlet or outlet when the unit is running, and the air flow must be enough for water cooler.
  
- 3). The water tank is better to install in a convenient place where is closed to water source.
  
- 4). The water cooler unit mustn't be installed in the dirty place which is full of smeary, flammability, explosive and easy corrodent gas.

### **2) Installation Condition**

The water cooler unit is better to be installed in the place where the sunshine could not be point-blank or too hot or too many raining. Easy installation, easy maintain, as well as noise, hot gas, draining must be considered.

The water cooler is forbidden to be installed in the place where is smeary, flammability, explosive and corrodent.

If water cooler is installed on metal bracket or similar things, insulation must be very well, and the metal bracket must be grounded reliable.

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### **3) Installation Requirements**

- Water system must be clean. A filter in water inlet pipe is necessary to keep the water clean, the heat exchanger will be the most efficient.
- The inlet and outlet water pipe of water cooler must be fixed when connecting the pipe.
- When water system is connected, washing the pipe and testing pressure are needed.
- Don't connect the water cooler with other electronic equipment in a master power supply.
- Do empty the water tank if the water cooler is not in use for long term.

### **3、Pre-Installation: Transportation**

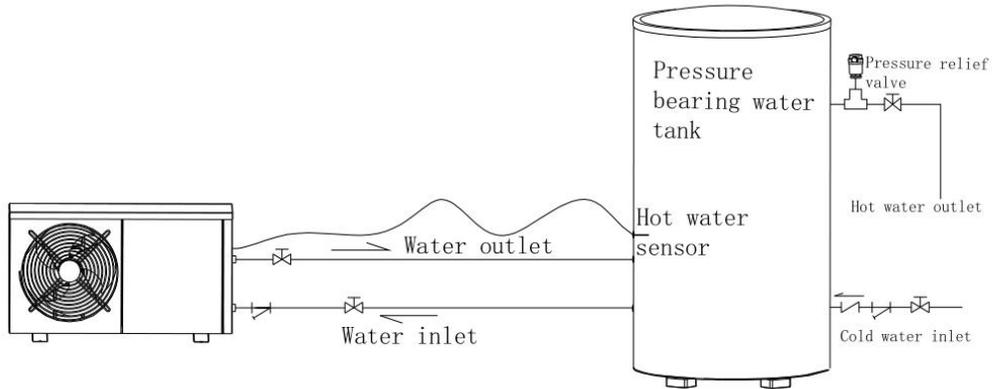
#### **1)Storage and shipping**

Usually water cooler container should be put in dry warehouse, for short transportation, allow the gradient( between the ground and machine) no less than 60 degrees, the temperature range from -20C-+70C when transportation and storage.

#### **2) Transportation by forklift.**

The unites should be put on the base as the water cooler transited by Forklift, the height hold up as low as possible, the unite should be put on smoothness place to prevent damage.

## 4、Pre-Installation: Installing place selection



Magnetic valve  water flow direction  $\rightarrow$   
ball valve  Y style filter  one-way valve 

### 4.1:Pipe connection

#### Note:

- ① Select a correct installation place.
- ② Move with original binding as possible
- ③ Make sure electric insulation if the unit will be installed at metal parts of building.  
It must accord with technical standard of electrical device.

## 5、Installation

### 1)、Piping connection.

Please note the following points before connecting the pipes.

- ◆ Reduce the resistances in the pipe.
- ◆ Please make sure the whole pipe system is clean, no rust and dirties, to avoid pipe

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blocking. After connecting the pipe please check if there is a leakage. Do make sure there is no leakage and then pack the isolation material.

- ◆ Please install inlet water valve

Compatible pipe for cleaning must be accordant with water pressure and piping system water loss pressure. Pipe installation must accord with the standard-DIN1933.

- ◆ All the water pipe must be stated rigidity and tenacity, anti-corrosion, and make sure all the pipe systems are compatible.
- ◆ Do make sure there is no dirties in the pipe when connecting the pipes.

## **2)、 Electronic wires.**

- ◆ There is a electronic wire with the heat pump, please connect it with power in a plug. The wire is 1.5mm<sup>2</sup>.
- ◆ All the fixed electronic circuit must be off if the heat pump is connected with other electronic circuit.

## **6、 Appendix 1: Running testing**

### **1) Running testing checking**

- ◆ Checking if the water tank is full or not. Pipe connection is well or not.
- ◆ Checking Power system. Check if the volt is right, if wire is connected well as well as grounding-wire.

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◆ Checking water cooler: Do make sure the screws and accessories are well.  
Checking if the indicate light, error light is well when turn on the power.

### **1) Running testing**

- ◆ Using the temperature controller to start the water cooler
- ◆ When the compressor is running, listen if the sound is all right. Or else, stop the unit and check the reasons.
- ◆ Check water temperature in the water tank to see it is all right.
- ◆ The parameter is set before delivery, if need to change, please ask a technician to set it.

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**Appendix 2: Packing list**

<b>Seq.</b>	<b>Name</b>	<b>Number</b>	<b>Remarks</b>
1	Solar water cooler unit	1 piece	ALL of them are packed in the carton box.
2	Instruction manual	1 book	
3	Connection Copper pipes	2 piece	
4	Copper coil	1 piece	