

Instruction Manual of Double-Loop Solar Workstation

Contents

I、Direction for Use.....	1
II、Product Introduction.....	2
III、Application Cases.....	3
IV、Installation and Commissioning....	4
V、Packing List	6

I、Direction for Use

1、Overview

This document describes how to install and operate the double loop solar station. When installing components of a solar water heater system such as solar collector, pump station, and water tank, installation guides from related manufacturers must be referred. Only well-trained personnel can install, commission, maintain, and connect circuit for the double-loop solar station by following instructions in this document.

2、Precautions

- ◆Connect the electric cable of the double-loop solar station through the slot at the underpart and keep it from touching the pipeline.
- ◆Ensure that no liquid is leaked before powering on the station.
- ◆Do not use the station in a thunderstorm.
- ◆Avoid moisture, inflammables and explosives when installing the station and related equipments.
- ◆Ground and leakage protection must be ensured.
- ◆Follow the proper user guide when using and operating the circulating pump and flow meter.

3、Liability Exemption

Incorrect installation and operation may destroy the product or hurt personnel around. Sunrain will not be responsible for the loss due to incorrect installation, operation, and maintenance. Besides, Sunrain is not responsible for product damage resulted from the third party (for example, transportation) and loss due to right violation.

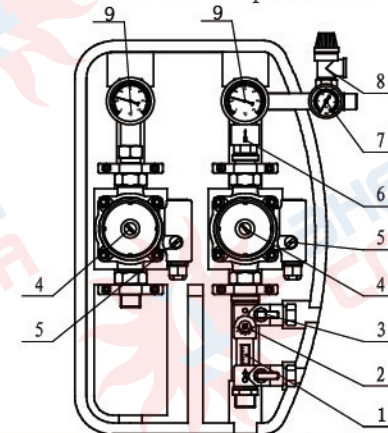
Sunrain reserves the right to upgrade the product and to modify the technical data and installation methods without in-advance notification.

II、Product Introduction

1、Technical Parameters

- ◆Voltage: Single-phase 220V (+6% ~-10%), 50HZ
- ◆Open pressure of safety valve: 8 bar
- ◆Measure range of pressure gauge: 0~10 bar
- ◆Measure range of thermometer: 0~120 °C
- ◆Wilo pump mode: RS15/6
- ◆Measure range of flowmeter: 4~12L/min
- ◆Threaded pipe: 3/4"
- ◆Heat-preserving material: EPP
- ◆Pipe material: Brass
- ◆Ambient temperature: -10~50°
- ◆Protection grade: IP40
- ◆Permitted media: Water, ethylene glycol mixture

2、Components and Functions of Pipelines

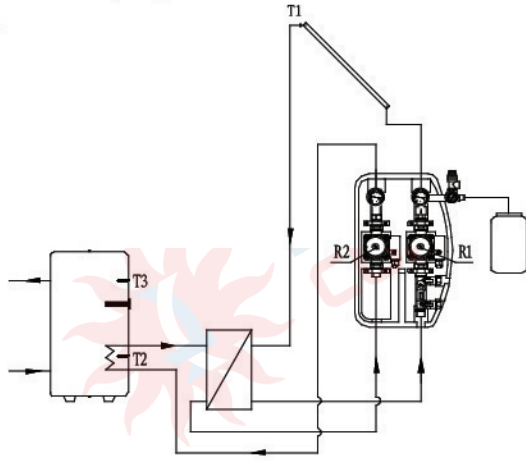


No.	Components	Function
1	Flowmeter G3/4"	Display the flow rate of the system
2	Flow regulating balancing valve	Regulate the flow rate of the system
3	Charging valve G1/2"	Fill in or drain the media in pipes
4	Wilo pump RS15/6	System temperature difference circulation
5	Pump speed adjustment switch	Three-speed adjustment switch
6	Check valve G3/4"	Prevent media backflow
7	Pressure gauge 0~10bar	Display pipes pressure
8	Safety valve R1/2" 8bar	Maintain system security pressure
9	Thermometer 0~120°C	Display pipeline medium temperature

III、Application Cases

1、Case One

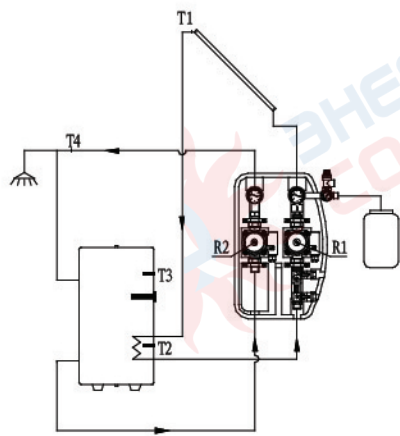
Double circulation solar system between solar collector and plate heat exchanger, between plate heat exchanger and a water tank. When is up to the set value, the pump R1 and pump R2 will be active and the water in water tank will be heated.



Control Output	Description	Sensor Input	Description
R1	Control Pump 1	T1	Temperature of Solar Collector
R2	Control Pump 2	T2	Temperature of bottom part of water tank
Auxiliary Heating	Control Electric Heater	T3	Temperature of upper part of water tank

2、Case Two

Double circulation solar system between solar collector and water tank, between water tank and water supply end. When the temperature difference between solar collector and water tank is up to the set value, the pump R1 will be active and the water in water tank will be heated.



When the temperature difference between water tank and water supply end is up to setted, the pump R2 will be active and the hot water will be on circulation.

-3-

2、Commissioning: Screw off the air vent screw on the pump motor before powering on the circulating pump. Use the screw driver to rotate the motor shaft and ensure that no motor rotation blockage happens before power-on. For details, see the pump instructions.

3、Pipeline Connection: Two wrenches are required when connecting the external pipelines with pipe fittings to avoid damaging the seal of the solar pump station.

4、Liquid Filling:

① Fully open the valve of the flow meter, and clear the liquid filling port and air vent port.

⑤ Continue the liquid filling and observe the manometer. When the pressure in the pipe reaches 2~2.2 bar, close the liquid filling valve and fully open the flow control valve.

② Connect the filling pipe to the filling port, connect the air return pipe to the air vent port, and keep the valve open.

⑥ Observe the manometer for three minutes. If the pressure is steady, disconnect the liquid filling pipe and related devices to end the liquid filling. If the pressure has obvious decline, check and repair the circulation pipes.

③ Use the screwdriver to close the flow control valve.

④ Start filling and observe the air return pipe until continuous and even media flows out. Then close the air vent valve.

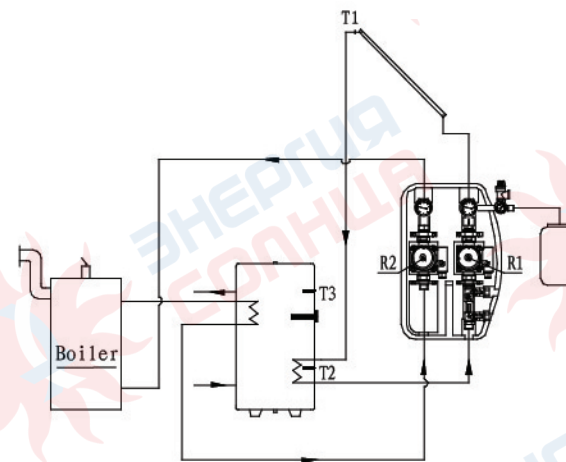
*About direct venting of the pump, please follow the instructions in chapter 6.1 of the WIL0 Pump Instructions

-5-

Control Outputs	Description	Sensors Inputs	Description
R1	Control Pump1	T1	Temperature of Solar Collector
R2	Control Pump2	T2	Temperature of bottom part of water tank
Auxiliary Heating	Control Electric Heater	T3	Temperature of upper part of water tank
		T4	Temperature of water supply end

3、Case Three

Split Pressurized system between solar collector and a water tank. Gas or electric boiler is used as an auxiliary heating way. When the temperature difference between solar collector and water tank is up to the set value, the pump R1 will be active and the water in water tank will be heated. The auxiliary heating will be on operation automatically when the condition meets setted.



Control Outputs	Description	Sensors Inputs	Description
R1	Control Pump1	T1	Temperature of Solar Collector
R2	Control Pump2	T2	Temperature of bottom part of water tank
Auxiliary Heating	Control Electric Heater	T3	Temperature of upper part of water tank

IV、Installation and Commissioning

1、In-wall Installation: The pump station should be wall-mounted vertically. Fix the tapping screw or other fixing tool in the reserved wall (Figure 1 shows the drill hole size). Then mount the pump station on the wall.

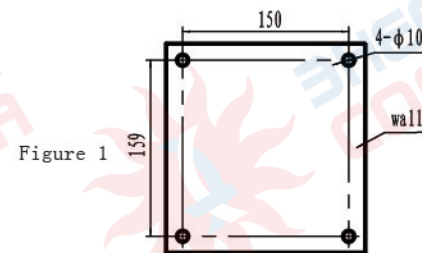


Figure 1

-4-

V、Packing List

No.	Name	Specification	Quantity
1	Workstation	516×330×154mm	1
2	Instruction manual		1
3	Tapping Screws, expansion plug	M6×35、φ9×41	4 pcs for each
4	Instruction of Wilo pump		1
5	Instruction of flowmeter components		1

-6-