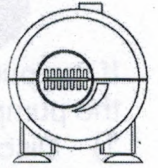


SOLAR PUMP KIT USER'S MANUAL

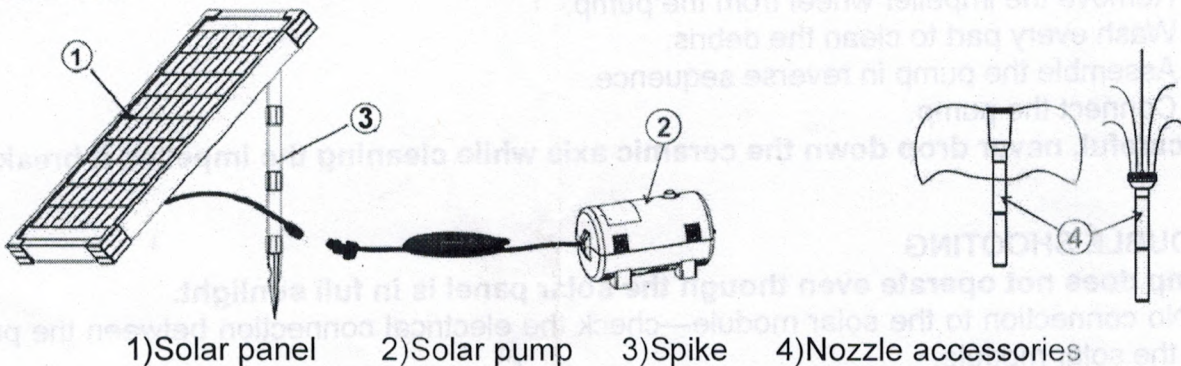
Design for fountain
Item No.: SP20-501210A

1. OVERVIEW

- 1) The solar pump is designed for outdoor or indoor fountain use, and is powered by a solar panel. In order to make the pump work by solar energy, the solar panel needs to be placed in the sunlight with its solar cells facing the sun as much as possible
- 2) The performance of the pump depends on the sunlight intensity and the incident angle at which sunlight strikes the panel surface.
- 3) The pump flow rate can be adjusted by the flow valve (referring to the right photo).
- 4) The latest DC brushless motor technology is introduced in the pump design and manufacturing, so that the pump has high efficiency and long service life.



2. COMPONENTS



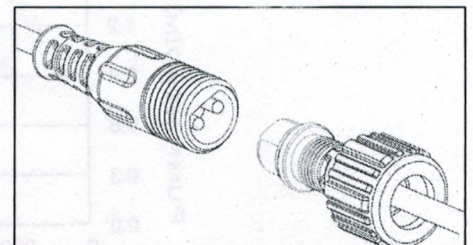
1)Solar panel 2)Solar pump 3)Spike 4)Nozzle accessories

3. ASSEMBLING

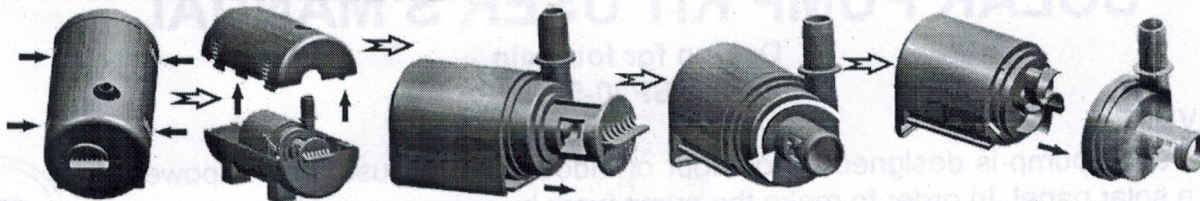
- 1) Unpack all components carefully.
- 2) For the application of producing a waterfall feature, fit the pump outlet to the water inlet of a small garden water decorations.
- 3) For the application of creating a small spraying up fountain, fix the pump at the bottom of a basin or small shallow pond etc. and fit the fountain nozzle on the top of the pump tube; the attached nozzle accessories can produce 2 different jet shapes. It is best to keep the pump off the pond base to avoid drawing the pond waste into the pump, which will lead to blockage in the pump. Use a brick or similar to elevate the pump.
To produce excellent fountain effect, please leave the fountain head above the water surface using the extension tubes. If these 4 pieces of extension tubes are all used and the pump head is still immersed in the water, please uplift the pump body somehow.
- 4) Electrically connect the pump to the solar panel, and tighten the protection screw.
- 5) Install the solar panel in garden lawn or soft ground by jabbing the spike into the ground. Adjust the orientation of the panel to face the panel towards the sun and then tighten the screw on the back of the panel.
- 6) Make sure to keep the pump fully submerged in water while the pump is in operation.
- 7) The solar pump is now ready to operate.

4. CAUTIONS

- 1) Any altering of the product itself or changing of the components voids warranty.
- 2) Do not connect the pump to any AC voltage power directly; it's ONLY for DC voltage power.
- 3) All the connectors are protected against reverse polarity as shown in the figure above. Don't insert the plug with reverse polarity by using unnecessary force.
- 4) Operate the pump in freshwater only (never above 40°C), especially keep it away from flammable liquids.
- 5) Do not strike the solar panel.



5. CLEANING AND MAINTENANCE



If the pump starts losing power or stops working after operating for a certain time, please clean the pump following the steps below (See the above photos for demonstration):

- 1) Disconnect the pump.
- 2) Press down the four fasteners on the side of the filter housing inward and open the filter housing.
- 3) Remove the pump from the filter housing
- 4) Pull the lower plastic sled apart from the pump.
- 5) Turn the front lid of the pump by 45° counterclockwise and then carefully pull the lid apart from the pump.
- 6) Remove the impeller wheel from the pump.
- 7) Wash every part to clean the debris.
- 8) Assemble the pump in reverse sequence.
- 9) Connect the pump.

***Be careful, never drop down the ceramic axis while cleaning the impeller, it breaks easily.**

6. TROUBLE SHOOTING

***Pump does not operate even though the solar panel is in full sunlight.**

- 1) No connection to the solar module—check the electrical connection between the pump and the solar module.
- 2) Impeller is blocked—to clean the pump as described in “CLEANING AND MAINTENANCE”.
- 3) To make sure the pump is totally submerged in water.

***Pump does operate but there is no water running through the tubes: clean the tube and the filter to make sure the tube is through completely.**

7. TECHNICAL DATA

Peak Power of Solar Panel	20 W
Operation Voltage	18 V
Maximum Water Lift Height	5 M (6.9FT)
Maximum Flow Rate	1360L/H (358.1GPH)
Cable Length	5 M (16.4FT)

