

SOLAR PUMP KIT USER'S MANUAL

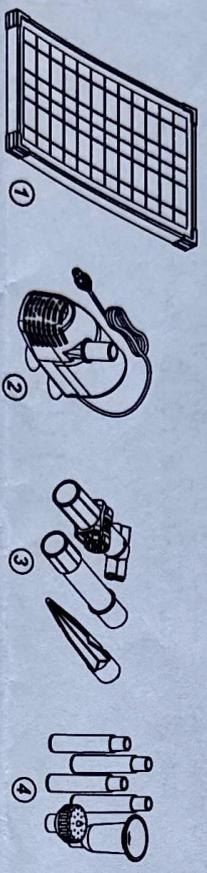
Designed for fountain
Item No.: XF-SOLAR-680

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 full use of 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 pump operates at its full performance when the solar panel generates more power than it demands, the output power of the solar panel depends on sunlight intensity and the incident angle at which sunlight strikes the panel surface.
- 3) The latest DC brushless motor technology such as locked rotor protection and overheat protection is introduced in the pump design and manufacturing, so that the pump has high efficiency and long service life.
- 4) The pump has a built-in function called dry-run protection. Whenever the pump is out of water, it stops automatically, and when it is submerged into water again, it will run again with a random delay time from 0 to 5 minutes.



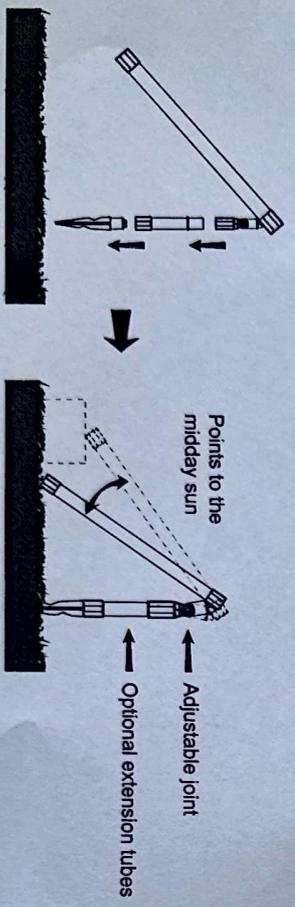
2. COMPONENTS



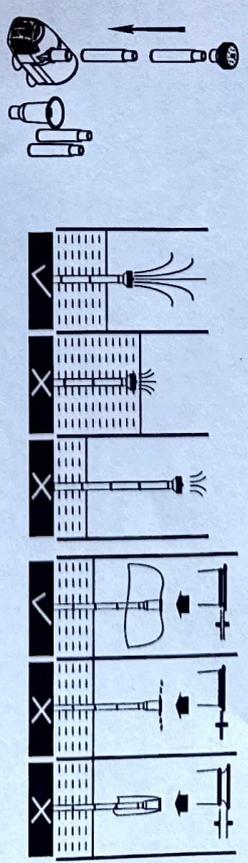
1) Solar panel 2) Pump 3) Ground spike 4) Fountain nozzle accessories

3. ASSEMBLING

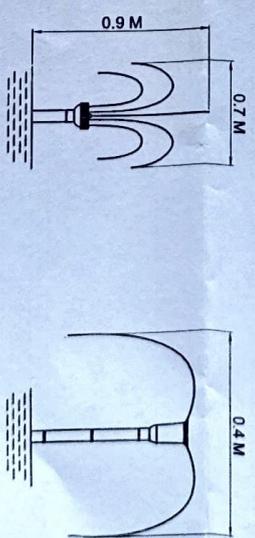
- 1) Unpack all components carefully.
- 2) To install the solar panel on the ground, find a sunny place that is shadow-free all day long and install the solar panel by the ground spike.



- 3) For the application of pumping a small water feature, install the pump as per the instruction given by the relevant party.
- 4) For the application of pumping a spray fountain, install the pump following the steps below:
 - a) Pick one of the 2 fountain nozzles and join it with a proper number of extension tubes. The nozzles available can produce 2 different spray patterns.
 - b) Install the extension tube supported fountain nozzle onto the pump outlet with the help of the tube adapter.
 - c) Fix the pump at the bottom of a small shallow pond or a feature pool etc. It is best to keep the pump off the pond base to avoid drawing the pond waste into the pump which will eventually develop into pump blockage. Use an underframe or similar to elevate the pump.
 - d) Install the fountain nozzles properly as per below instruction diagrams.



e) The sizes and shapes of different spray fountains are shown as below:



4. CAUTIONS

- 1) Do not connect the pump to any AC power supply directly; it's ONLY for DC power.
- 2) Operate the pump in water only (never above 40 °C), especially keep it away from flammable liquids.
- 3) Do not let the pump run dry, make sure to keep the pump fully underwater while the pump is operating.
- 4) Any altering of the product itself or changing of the components voids warranty.
- 5) When water starts to freeze in winter, take the pump out of water and store it in a frost-free room. The water frozen may cause damage to the plastic parts.

- 5) The solar pump is now ready to work. Please make sure to keep the pump fully underwater, then electrically connect the pump to the solar panel and tighten the screw for water protection.

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 figures for demonstration):

- 1) Electrically disconnect the pump.
- 2) Pull the filter housing apart from the pump.
- 3) Press on the bottom board and meanwhile slide it apart from the pump.
- 4) Turn the impeller cover counterclockwise to the end and then carefully pull the impeller cover apart from the pump.
- 5) Remove the impeller unit from the pump.
- 6) Wash every part to clean the debris.
- 7) Assemble the pump in reverse sequence.
- 8) Electrically connect the pump.

*Clean the surface of the solar panel when necessary to keep it working at full performance.

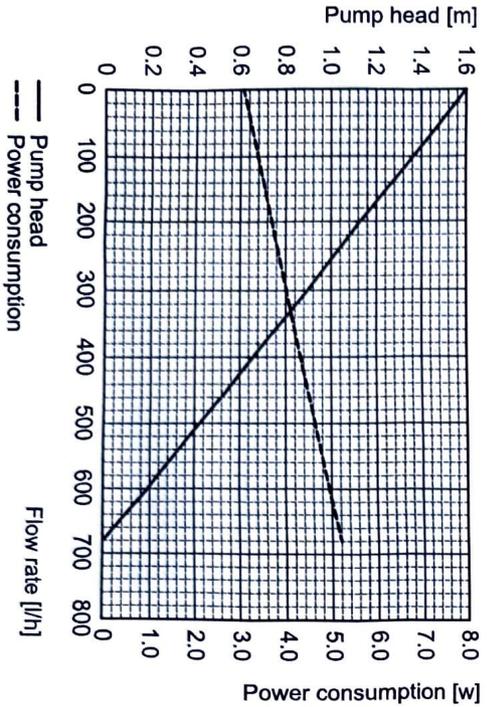
6. TROUBLE SHOOTING

- *Pump does not operate even though the solar panel is in full sunlight.
- 1) No or bad connection to the solar panel—check and reconfirm the connection to the solar panel.
- 2) Impeller is blocked—clean the pump as described in "CLEANING AND MAINTENANCE".
- *Pump does operate but there is no water running through the tubes: Clear the tubes, filter and pump filter housing to make sure they are through completely.

7. TECHNICAL DATA AND PUMP CURVE

Operating voltage	18 V
Power of solar panel	12 W
Max. pump power	5.3 W
Max. water lift height	1.6 M (5.2 FT)
Max. flow rate	680 L/H (180 GPH)
Cable length	5 M (16.4 FT)

Pump curve Operating voltage: 18V



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 South Africa
www.waterhouse.co.za
 Phone: +27 (0)11 466 8250
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