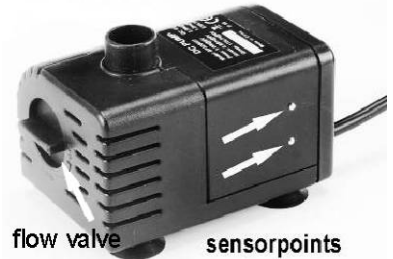


# SOLAR PUMP KIT USER'S MANUAL

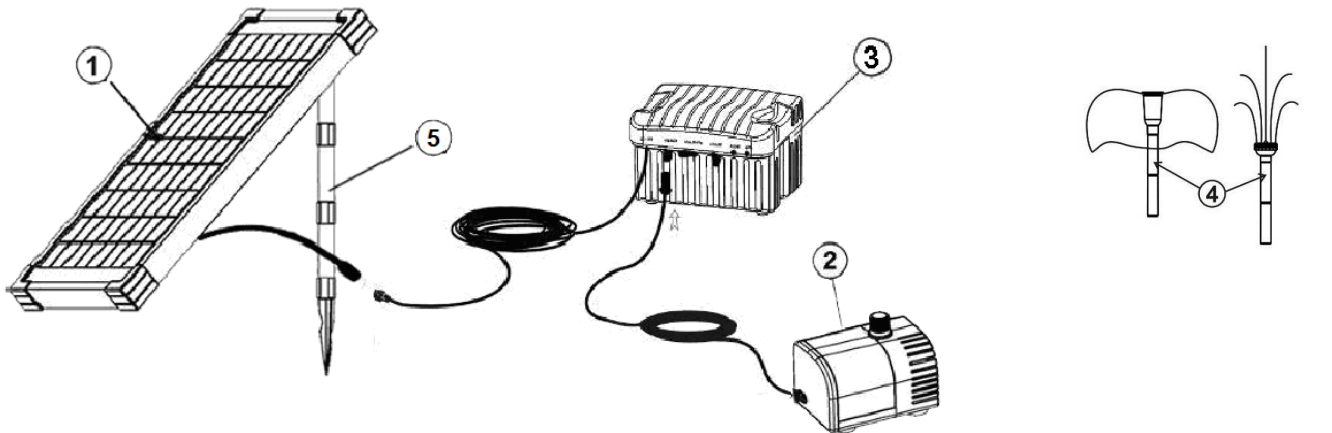
**AquaJet Solar Pump Kit**  
**SKU: AquaJet-Pro-Kit-24V-V1**

## 1. OVERVIEW

- 1) The solar pump is designed for outdoor or indoor fountain use, and is powered by a solar module. In order to make the pump work by solar energy, the solar module needs to be placed in the sunlight with its solar cells facing the sun as much as possible..
- 2) The power supply of the pump is provided by a battery which is charged by a solar module, so that the pump is capable of working at night and on overcast day.
- 3) The pump has the build-in function of dry-run protection. The dry-run protection function is provided by two sensor points on one side of the pump housing (see the right photo). The pump works if both of the points are submerged in water. If either or both points emerge out of water, the pump stops working.
- 4) The pump flow rate can be adjusted by the flow valve (referring to the right photo).
- 5) The performance of the pump depends on the sunlight intensity and the orientation of the solar module.
- 6) 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



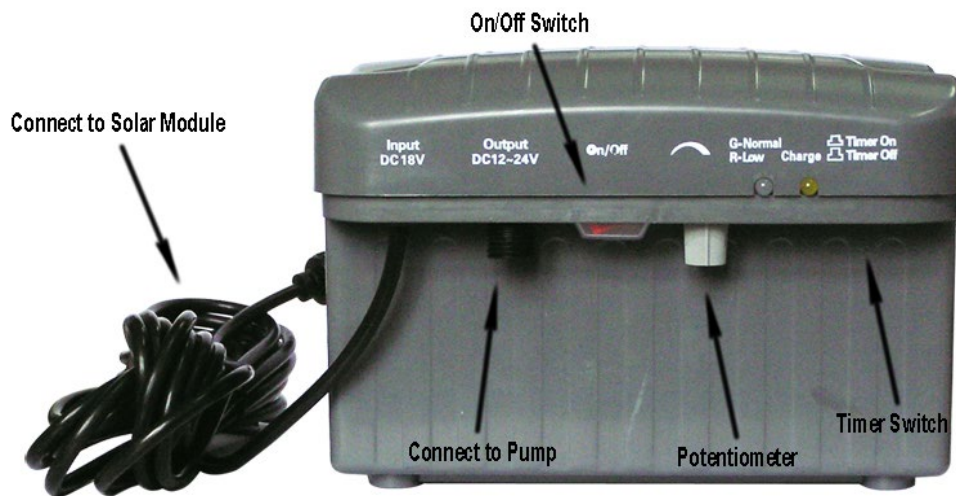
1) Solar panel 2) Solar pump 3) Battery back-up 4) Nozzle accessories 5) Spike

## 3. ASSEMBLING

- 1) Unpack all components carefully.
- 2) Insert the "Input" plug of the battery back-up to the socket on the back of the solar module, and tighten the protection screw. Install the solar module at a sunny place by the ground spike, adjust the angle to face the solar module toward the sun.
- 3) Insert the pump plug to the "Output" socket of the battery back-up, and also tighten the protection screw.
- 4) For the application of producing a waterfall feature, fit the pump outlet to the water inlet of a small garden water decorations.
- 5) For the application of creating a small spraying up fountain, just fix the pump at the bottom of a basin or a small shallow pond etc, and fit the nozzle on the top of the pump tube. The nozzle 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 by using the extension tubes. If these 4pcs of extension tubes are all used and the pump head is still immersed in the water, please uplift the pump body somehow.
- 6) Make sure to keep the pump fully underwater when the pump is in operation.
- 7) Turn the "On/Off" switch on the battery to the "On" position. The "G-normal/R-low" status LED on the battery shows green. The

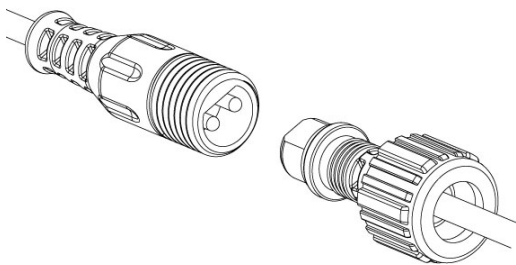
solar pump starts to operate. **The pump may not work and the “G-normal/R-low” status LED may show red when the battery operates for the first time, since the battery may lose its energy in the inventory. It just needs to be charged for 2 to 3 hours in the sunshine by facing the solar panel towards the sunlight, then the status LED shows green and the pump starts to work.**

- 8) The pump will automatically stop running when the battery is discharged to its low voltage limit, and the “G-normal/R-low” status LED shows red in the meantime.
- 9) The “G-normal/R-low” status LED stays in red before the battery is recharged to its starting voltage. After recharged to its starting voltage, the battery shall continue to be charged for an extra half hour with the status LED flashing red-green twice every 10 seconds. Then the pump automatically operates and the status LED shows green again.
- 10) To get different pump performance, the output voltage can be adjusted in the range of 12V-24V through the potentiometer knob.
- 11) The “Timer on/Timer off” switch switches the pump running mode between "intermittent mode" and "continuous mode" . In the “intermittent mode” (i.e., “Timer On”), a build-in timer is enabled to run the pump 15 minutes per hour to save the energy, and it is especially useful in winter or on cloudy days. In the "continuous mode" (i.e., “Timer Off”), the build-in timer is disabled and the pump shall run continuously.
- 12) The “Charge” yellow LED indicator lightens when the battery is being charged, otherwise the LED indicator shuts off.
- 13) If you want to have longer operating time in the evening, then turn the “On/Off” switch to “Off” position during the day time and turn it to “On” position whenever you need.



**Note: The battery will be always charged in the sunlight no matter whether the switch turns to “On” or “Off”! And the system will automatically cut off the charging current when the battery is charged to its high voltage limit (fully charged).**

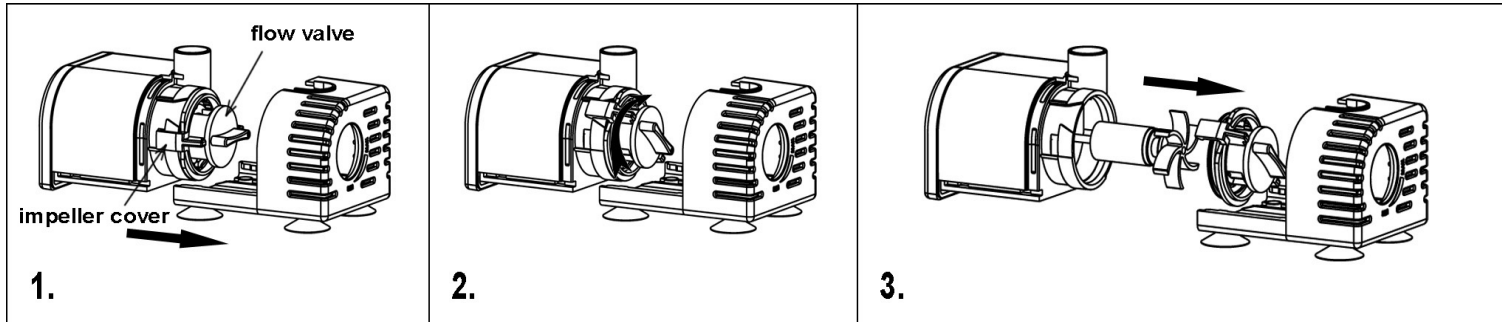
#### 4. CAUTION



- 1) Any altering of the product itself or changing of the components voids warranty.
- 2) Do not connect the pump and the battery back-up to any AC voltage power supply directly; it's designed 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 leave this battery back-up in bad ambient environment.

- 6) Do not leave the battery back-up in direct blazing sunlight; do not dip it into water; do not expose it to extremes of heat or cold which can affect its service life. If possible place the battery in the shadow of the solar panel or your house or even a tree etc.
- 7) Do not strike the solar panel.

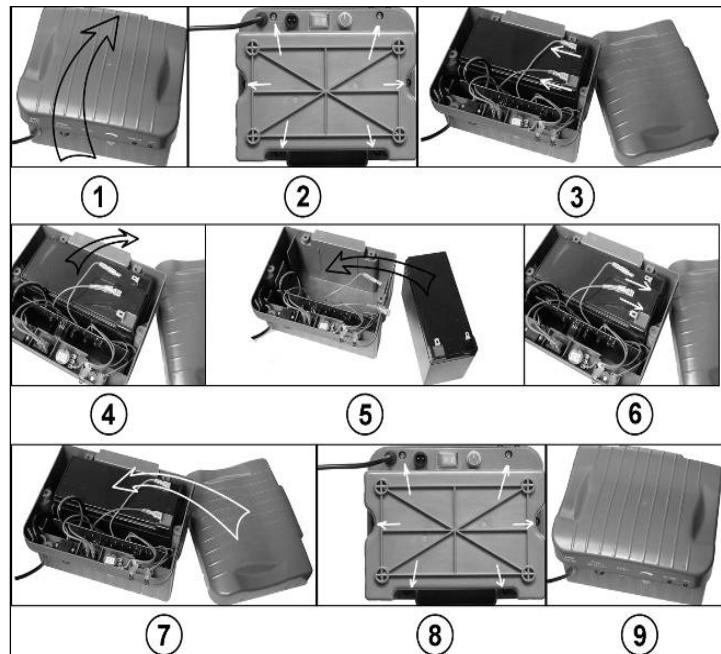
## 5. CLEANING AND MAINTENANCE



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 figures for demonstration):

- 1) Disconnect the pump.
- 2) Press on the bottom of the filter housing and meanwhile move the filter housing apart from the pump.
- 3) Turn the impeller cover together with flow valve clockwise to the end and then carefully pull the impeller cover together with flow valve apart from the pump.
- 4) Remove the impeller wheel from the pump.
- 5) Wash every part to clean the debris.
- 6) Assemble the pump in reverse sequence.
- 7) 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, please check the possible failures listed below:

- 1) The timer switch is at "ON" position.
- 2) In cloudy or rainy days, the battery cannot get sufficient power supply during the daytime. The status LED stays in red, which means the battery is in low voltage condition and needs to be charged in a sunny day.
- 3) No connection—check the electrical connection between the solar module and the battery station.
- 4) To make sure the pump is totally submerged in water.
- 5) Impeller is blocked—to clean the pump as described in "**CLEANING AND MAINTENANCE**".
- 6) The storage battery inside the box may lose efficiency after a year and a half and therefore needs to be replaced. Replace the battery following the steps shown by the photos on the right.

\*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 AND PUMP CURVE

Peak Power of Solar Panel	20 W
Operation Voltage	12V-24 V
Rechargeable Battery Back-up	3.2 M (10.5 FT)
Maximum Water Lift Height	12V/7Ah
Maximum Flow Rate	1560 L/H (412.1 GPH)
Cable Length	5 M (16.4 FT)



**WARNING: Discharged batteries are still explosive and contain toxic chemicals. NEVER DISPOSE OF A BATTERY BY THROWING IT INTO THE TRASH, LANDFILL, INCINERATOR OR TRASH COMPACTOR. Take it to a service station or recycling center.**



# AquaJet™ 24V Kit

## Pump Lift vs. Flow Rate

