

# PROTEGE PUMPS®



## Solar Powered Water Fountain Pumps

### User Manual

[Revision 3.0 May 2017]

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READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

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# Safety

- Any alteration to the product or changing of the components voids warranty.
- Do not connect the pump and/or battery unit to an AC power supply – it is designed ONLY for DC power.
- Operate the pump in water only.
- Maximum water temperature = 40°C (104°F).
- Keep the pump and all components away from flammable liquids.
- Do not leave the battery unit in poor or hazardous environments. This includes excessive heat or cold, heavy rain or direct sunlight.
- Do not strike the solar panel.
- Do not allow the pump to run dry.

## **Battery and Charging Safety - Battery Equipped Models**

- Use only with the batteries and battery charger specified by the manufacturer.
- Do not open the battery – danger of short-circuiting.
- Do not attempt to destroy or disassemble battery pack or remove any of its components.
- Do not touch the battery terminals with metal objects and/or body parts as short-circuit and/or personal injury may result.
- Explosion hazard – protect the battery against heat; for example, direct sunlight and fire.
- Explosion hazard – do not short-circuit the battery.
- Poison hazard – battery leakage (liquid ejection). Under abusive conditions, liquid may be ejected from the battery – avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, flush with clean water for at least 10 minutes, then seek immediate medical attention. Liquid ejected from the battery may cause irritation or burns.
- Battery recycling and disposing. All batteries must be recycled or disposed of properly.
- Dispose of non-serviceable batteries in an environmentally responsible manner.

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# Parts Identification and Installation

## B12



No.	Name
1	Solar Panel
2	Pump
3	Battery Unit

No.	Name
4	Fountain Nozzle
5	Extension Tube (4)
6	Mounting Stake

## B20



No.	Name
1	Solar Panel
2	Pump
3	Battery Unit

No.	Name
4	Fountain Nozzle
5	Extension Tube (4)
6	Mounting Stake

N03



No.	Name
1	Solar Panel
2	Pump
3	Fountain Nozzle

No.	Name
4	Extension Tube (4)
5	Mounting Stake

N10



No.	Name
1	Solar Panel
2	Pump
3	Fountain Nozzle

No.	Name
4	Extension Tube (4)
5	Mounting Stake



## N20



No.	Name
1	Solar Panel
2	Pump
3	Fountain Nozzle

No.	Name
4	Extension Tube (4)
5	Mounting Stake

## Installation

The solar powered fountain pump is designed for outdoor or indoor use. The solar module needs to be facing the sun as much as possible. The performance of the pump may be affected by sunlight intensity and the orientation of the solar module.

### For battery equipped models:

The solar module also charges the battery unit, which in turn powers the pump. Because a battery is used, the pump can operate without sunlight for as long as the battery has sufficient charge.

**NOTE:** Always keep the pump submerged when it is operating.

- Unpack all components.
- For battery equipped models, connect the "Input" cable of the battery unit to the socket on the back of solar module, and tighten the securing ring.
- Place the solar panel in a sunny area and use the ground spike to hold the solar panel in position. Adjust the angle of the solar panel to face the sun.
- Connect the pump cable to the solar panel and tighten the securing ring. For battery equipped models, connect the pump cable to the battery unit "Output" socket, and tighten the securing ring.
- Place the pump near the bottom of the pond etc. It is best to keep the pump off the pond base to avoid drawing pond waste or debris into it, which may lead to blockages. Use a brick or similar object to raise the pump off the bottom surface.
- For a "water fountain" feature:
  - Fit the extension tubes to the pump outlet. Use as many tubes as required so that the outlet just clears the water surface.
  - Attach a fountain nozzle to the top of the pump outlet tube. There may be several fountain nozzle types, each providing a different fountain effect.

For a "waterfall" feature:

- Using suitable tubing, connect the pump outlet to the inlet of a suitable water decoration (not supplied).
- For battery equipped models, place the "ON/OFF" switch on the battery unit in the "ON" position.

## Connecting the Battery – Battery Equipped Models

Before use, it is necessary to connect the battery inside the battery unit. The battery is not connected at the factory for shipping reasons.

- Open the cover of the battery box by removing the 4 screws on the underside of the unit.

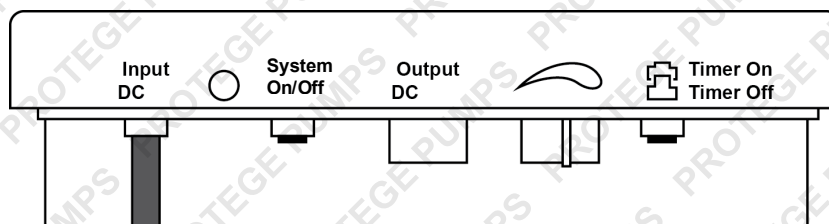



2. Connect the red or brown wire to the red (+) positive battery terminal.
3. Re-install the cover and tighten the screws.

## Controls – Battery Equipped Models

The battery unit contains the operating controls and system indicator.

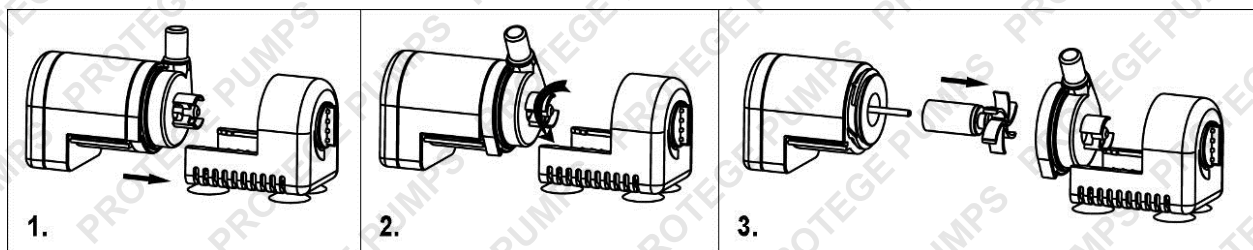
**NOTE:** The system indicator LED may show red and the pump may not work when first used, as the battery may have no charge. The battery will begin charging as soon as the solar panel is producing power. Once enough charge is available, the LED becomes green and the pump begins operating. • The battery is always being charged by the solar panel (when it requires charging), even when the system is switched OFF. • If the battery becomes fully discharged (for example, pump allowed to run overnight), switch the pump OFF and allow the battery to charge for at least 6 hours before using the pump again.



Control	Description
<b>System LED</b>	<p>The system indicator LED is next to the System ON/OFF switch, and shows the following status:</p> <ul style="list-style-type: none"> <li>• <b>Green</b> – Battery charged and the pump is operating.</li> <li>• <b>Red</b> – Battery requires charging. The pump automatically stops operating when the battery level reaches a low voltage.</li> <li>• <b>Flash Red / Green</b> – Battery charging and almost at a level where the pump can operate (approximately 2 hours more charging required).</li> </ul>
	<p>Used to adjust pump output. Lower outputs (rotate control left) produce gentler water effects and increased operating time. Higher outputs (rotate control right) produce stronger water effects, however, decreases operating time.</p>
<b>System ON/OFF</b>	<p>Used to switch the pump on and off:</p> <ul style="list-style-type: none"> <li>• <b>On</b> – (the System LED must be green to use this control) The pump begins operating.</li> <li>• <b>Off</b> – The pump stops operating.</li> </ul>
<b>Timer ON/OFF</b>	<p>Used to switch between operating modes (the System LED must be green to use this control):</p> <ul style="list-style-type: none"> <li>• <b>On</b> – The pump operates for 10 minutes per hour. This mode is designed for energy saving, such as cloudy days or at night.</li> <li>• <b>Off</b> – The pump operates continuously. The pump automatically stops operating when the battery level reaches a low voltage.</li> </ul>

# Cleaning and Maintenance

If the pump starts losing power or stops working, it may indicate a build-up of dirt. Clean the pump regularly to maintain best performance, as follows:



1. Disconnect the pump.
2. Press on the bottom of the filter housing and pull the filter housing from the pump.
3. Rotate the impeller cover left (anti-clockwise), then carefully pull it from the pump.
4. Remove the impeller from the pump.
5. Wash all parts, including tubing and fountain nozzle etc, to remove any dirt and debris.
6. Assemble the pump in reverse sequence.

## Replacing the Battery – Battery Equipped Models

1. Open the cover of the battery box by removing the 4 screws on the underside of the unit.
2. Disconnect the wires from the battery terminals.
3. Remove the old battery.
4. Install the new battery.
5. Connect the red or brown wire to the positive (+) battery terminal and the remaining wire to the negative (-) terminal.
6. Re-install the cover and tighten the screws.





# Troubleshooting

**The pump does not operate even though the solar panel is receiving direct sunlight.**

Possible Fault	Action
No connection	Ensure that the solar panel and pump are connected correctly to the battery unit.
↓	
Pump blocked	Clean the pump and all tubing.
↓	
Timer switch in ON position (battery equipped models)	Check that the system is not in "timer" mode – place the Timer switch to the OFF position.
↓	
Battery not charged (battery equipped models)	Check the system indicator LED – if it is red, the battery is in a low voltage state; if it is flashing red and green, the battery is charging but not yet able to run the pump. Switch the pump OFF and allow the battery to charge for at least 6 hours before using the pump again.
↓	
Battery no longer serviceable (battery equipped models)	Replace the battery. Battery life is approximately 1.5 years of average use.

## Specifications

<b>Operating Voltage</b>	B12: 6 to 9VDC B20: 12 to 24VDC N03: 6VDC N10: 12VDC N20: 24VDC
<b>Motor</b>	Brushless



**Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally, the information available at [www.datastreamserver.com/safety](http://www.datastreamserver.com/safety)**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.</li> <li>• Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use. Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).</li> <li>• Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.</li> <li>• Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.</li> </ul> | <ul style="list-style-type: none"> <li>• The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.</li> <li>• This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.</li> <li>• If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.</li> </ul> |
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