

# **EcoOnline™**

## **Water Tank Pressure Solar Booster Pump Manual**

**Installation & User Manual - Revised 03/12/2016**



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## 2 Key Terms

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Congratulations on the purchase of your EcoOnline™ Solar Pump. Please print this manual out and keep it for your reference. Please take the time to read the entire manual before starting any work. Particular attention should be given to text contained in the following key terms.

Please note EcoOnline has a strong product safety policy; do not install products without reading safety guidelines in the manual. Please report any product safety issues or near misses to [info@EcoOnline.com.au](mailto:info@EcoOnline.com.au) no matter how trivial.



DANGER

Indicates a **SAFETY** issue that **is likely to** cause injury or death if the user does not follow the instructions.



WARNING

Indicates a **SAFETY** issue that **may** cause injury or death if the user does not follow the instructions.



CAUTION

Indicates a **SAFETY** issue that **may** cause injury or property damage if the user does not follow the instructions



Read Carefully

Refers to **critically important** information related to the **correct functioning** of the system.



Tip

Refers to useful information for the **optimal operation** of the system

### 3 Warranties

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EcoOnline™ offers the following Warranties

- 1 year limited Warranty on pumps
- 20 year limited Warranty on all Motech Cell solar PV panels

See EcoOnline.com.au [Terms and Conditions](#) page for further details.

### 4 Safety Requirements

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WARNING

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



CAUTION

This pump is not recommended for potable water (drinking water) application. For applications involving fish we recommend the pump be run in a bucket of water to flush out any excess grease prior to installation.



CAUTION

Building regulations vary from state to state and **MUST** override any instructions supplied in this manual. It is the responsibility of the purchaser/installer to check that installations comply with any relevant state laws and regulations.



Read Carefully





The EcoOnline™ Solar Pump is not self-priming. The pump must be flood primed by installing below the waterline of the water to be pumped.



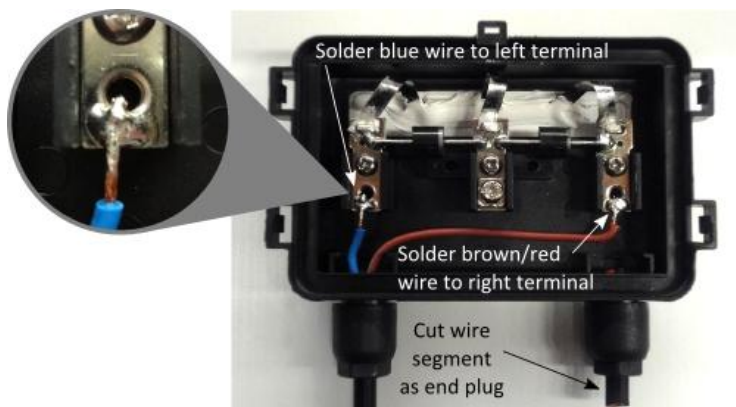
Read Carefully

An inline strainer/filter **MUST** be used where there is a chance of dirt or debris making its way into the pump. Suction inlet **MUST** not be installed in the sump on the tank.

## 5 Included System Components

			
Solar Pump	Solar Panel (if purchased)	Wire and connector set	PVC 316 Stainless Mesh Strainer (if purchased)

## 6 Solar PV Panel Mounting

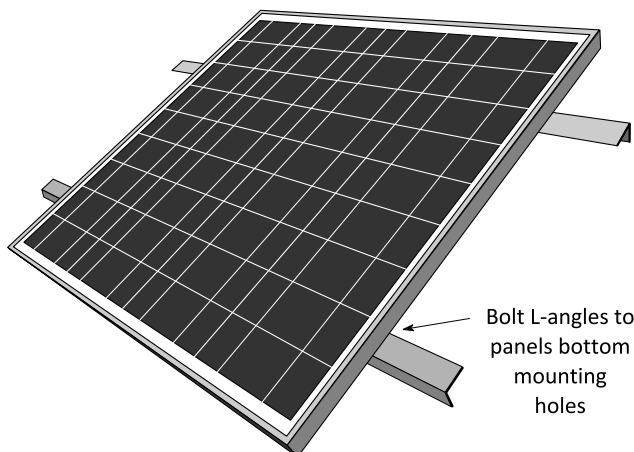


1) Before mounting the panel, you will need to thread the PVC wire into the junction box and solder the brown (or red) wire to the right-hand side, or positive terminal and the blue (or black) wire to the left hand side, or negative terminal. (Check for the **+** and **-** markers in the junction box). **We highly recommend** a plug (made from any cut wire) be used to weatherproof seal the other wire hole.



**WARNING**

Wires must be soldered to the terminal – if a loose or corroded connection develops over time it can create a resistive load which could melt or burn surrounding material, or cause a fire.



2) If mounting on a roof we recommend a 20-30mm air gap be used between the solar panel and roof structure. Aluminium angles (20-30mm) should be attached to the back of the solar panel for mounting purposes using the back mounting holes. **Important: Wind loading should be considered.**



WARNING

**NEVER screw clamp solder tinned wires to the junction box terminals.** Soft solder can corrode, arch, melt and/or soften resulting in the cables falling out.

## 7 Pump and Solar PV Panel Test



Read Carefully

During the following test **DO NOT** allow the pump to run completely dry as this may damage the pump.



- 1) On a sunny day, fully submerge the pump in a container of water (Note: pump is fully submersible).
- 2) Firstly, place the solar PV panel away from sunlight and connect it to the pump using the electrical connector. Then move the panel gradually toward the sun, the pump should start in a few seconds.
- 4) Check that the pump is working; you should see a strong stream of water at the outlet end.

- 5) Familiarize yourself with the noise characteristics of a fully primed and partly primed pump. You will need to diagnose potential air locks in your pump. The safest way to do this is to splash air bubbles into the inlet while the inlet is still submersed. (Note, pump can run partly primed for a few seconds without damage.)

### 7.1 What if the pump won't start?



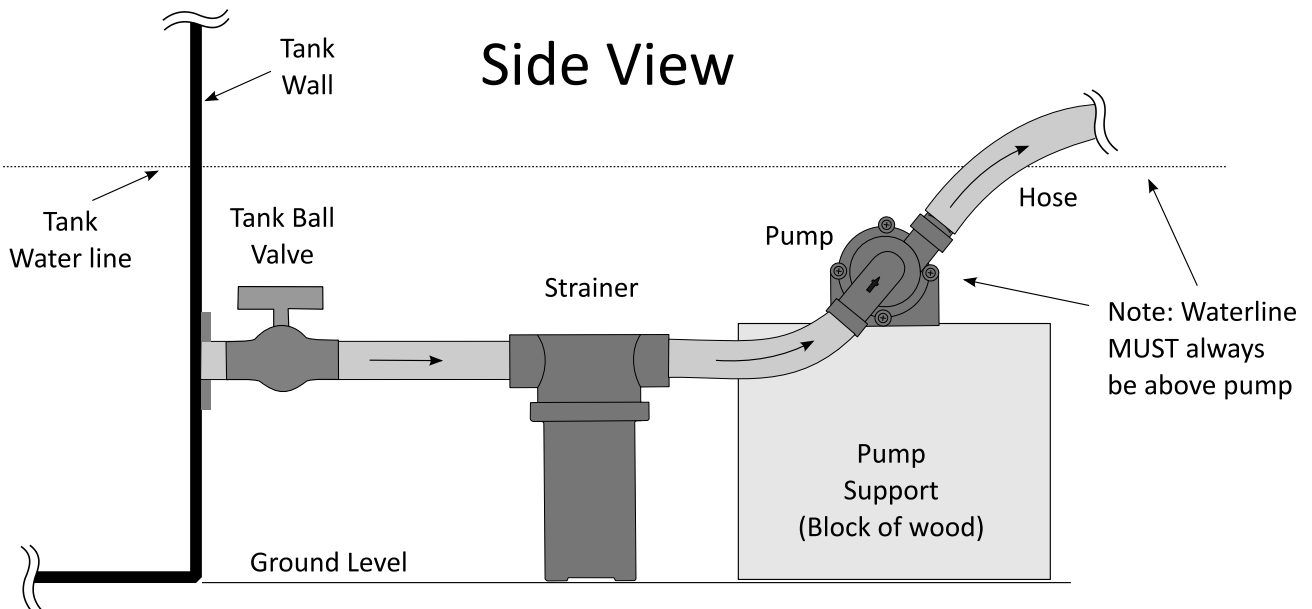
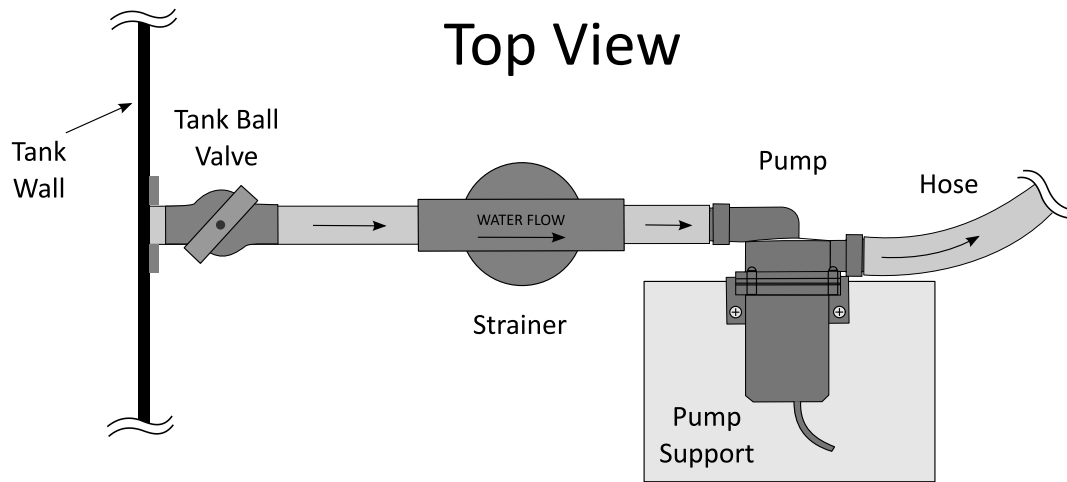
- 1) Check that there is sufficient sun and no shading on the panel.
- 2) Check that the panel is producing power (if a multimeter is not available, insert an old 50W halogen globe into the panels electrical connect – **do not do this in full sun, angle panel to sun to reduce power**).
- 3) Check that the wires in the connector aren't twisted internally and the positive and negative connections line up.
- 4) Check the polarity in the solar panel junction box, see section 6.
- 5) If it still won't start please contact us at [info@EcoOnline.com.au](mailto:info@EcoOnline.com.au) for a replacement pump.



Tip

Sometimes an **air locked mode** can arise in the pump when a sufficiently large air bubble makes its way into the inlet of a working pump. In this state water cannot be pushed higher, nor can the column of water above the pump make its way back through the spinning rotor. In this mode the pump can run for a significant length of time without damage.

## 8 External to Tank Pump Mounting



Read Carefully

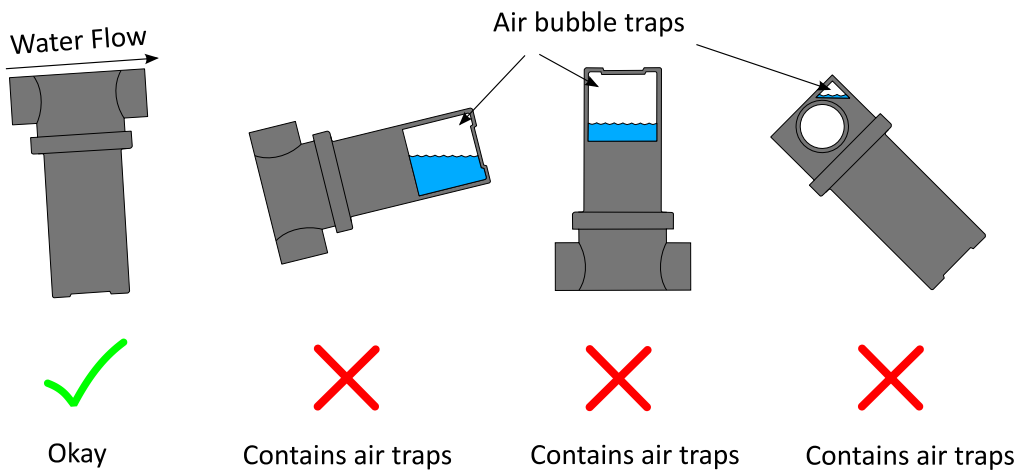
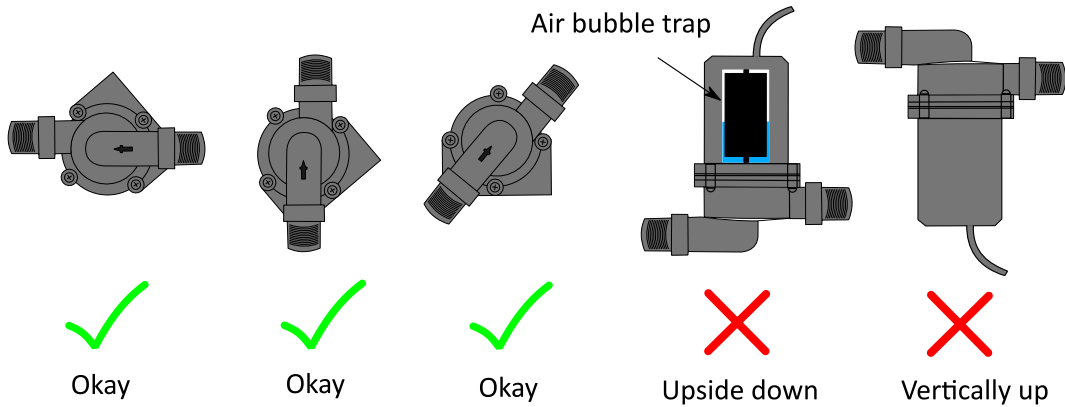
Make sure all lines are flushed clean with water before connecting pumps. If the water environment contains debris ALWAYS use an inline filter with a rating of 360 Microns or smaller.



CAUTION

Never carry the pump by the electric supply cable as this may damage the pump and make it unsafe.

## Side View



The pump and strainer must be mounted so that they both automatically flood prime without needing to force water through. This is critical as small ever present air bubbles can build up in air pockets. A pump can become air-locked and be damaged if a sufficiently large air bubble is released while the pump is working under pressure.



Do not over-tighten pump head thread fittings. Always use Teflon tape. Fittings should be hand tightened only until residence is felt, after an extra ½ turn will seal perfectly.

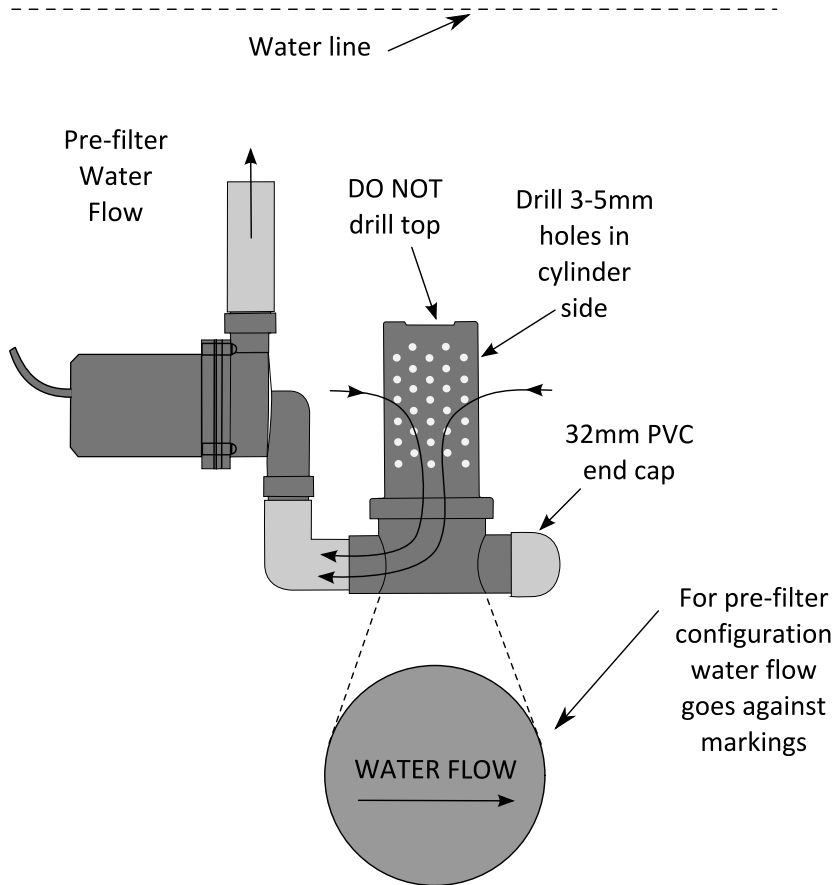


## 10 Tank Submersed Mounting Configuration



Read Carefully

The supplied inline strainer/filter can be used as a pre-strainer or as an in-line strainer. **Note when mounting the canister as a pre-strainer the water flow must be against the water flow arrow marked on the canister.**



Before mounting the filter canister as a pre-filter you need to drill 3-5mm holes in the side of the cylinder (DO NOT drill top). The size of and number of these holes will depend on the application. The internal mesh will form a secondary filter. You may also require a pond sponge wrapped around the cylinder depending on the application. **Note: water flow goes against the actual water flow markings on the filter for this configuration.**



Tip

Warm the filter cylinder in 35°C water to soften and prevent cracking during drilling.

A 25mm PVC end cap can be inserted on the end of the filter.

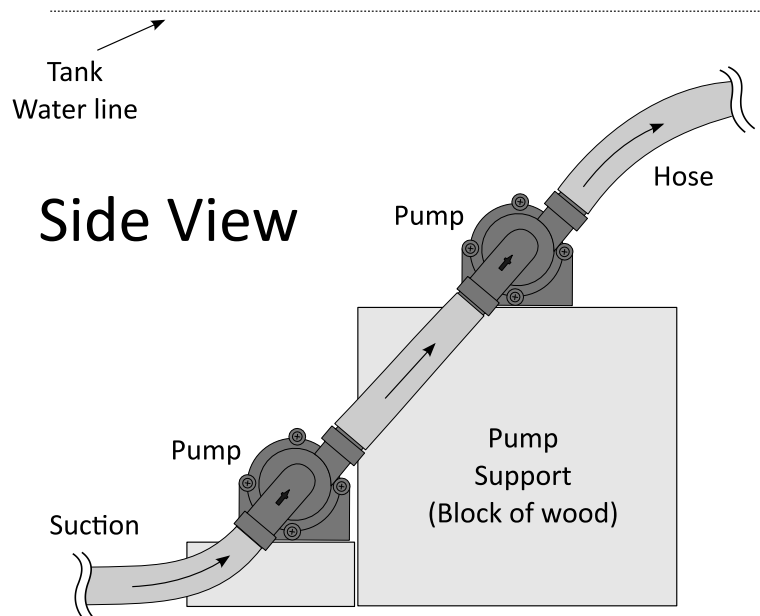


Read Carefully

Do not submerge pump more than 1 meter below the water level. High water pressures could force water inside the pumps electrical compartment destroying the pump.

## 11 Dual Pump Mounting Configuration

For applications where you need greater pumping power or stronger head pressure you can connect two pump together in booster configuration.



## 12 Maintenance and Operating Instructions



WARNING

Important: before carrying out any system maintenance you **MUST** check for any manual updates and download the latest installation manual from

[www.EcoOnline.com.au/downloads](http://www.EcoOnline.com.au/downloads)

The inline filter should be cleaned regularly. The pump can be dismantled and ceramic rotor shaft regreased once per year. Care should be taken during dismantling as the pump contains small polymer washers on the rotor shaft.



WARNING

Fatigued, weathered, loose and/or corroded wiring or electrical connections poses a fire risk even at low voltage. The systems wiring should be checked periodically for any wear, cracking resulting from UV damage of insulation on wiring and corrosion of any solder or controller connections. Any effected parts should be replaced at the first sign of damage.