React pump

Quick Start Guide

10 KEY POINTS

1. Measure your head (vertical height to tank) and pipe length.

2. To purchase the correct pressure rating of delivery pipe use the calculations provided in the User Manual to calculate the dynamic head. Check that the pressure rating of your pipe, at the maximum summer temperature, is more than the head you are pumping to.

3. Make sure your tank is large enough to buffer the demand due to changing sunlight conditions. A tank 2–3 times larger than your peak daily demand is normally large enough.

4. Fit a ball cock inside your tank, so the React pump can stop pumping when it is full.

5. A gravity fed intake is required if it is a viable option. A pontoon is the next best option. A suction lift is approved up to 1.5m if gravity feed and pontoon options are not viable.

6. Position your React pump above the maximum flood level and ensure it can be removed quickly in the event of a flood. Make sure your React pump is insured for flood events.

7. Document the date when frosts commence, to remind yourself when you need to disconnect your pump and move it to dry/warm storage for winter. If you need to use the React pump at times of the year when freezing temperatures occur then you need to ensure that you protect it from freezing.

8. Install your pump either in the shade or provide a cover/shed to reduce overheating in direct sun.

9. Measure the dry summer flow in your water resource. Is this sufficient to meet your needs?

10. Water quality has a direct impact on service intervals. Seal and valve life are reduced in dirty water. Investing in adequate filtering and/ or a settling tank will ensure you get the best life from your pump.
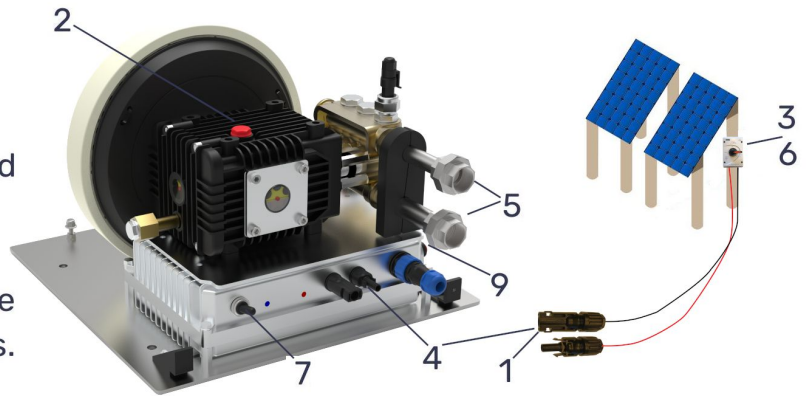
Commissioning

1. Before connecting the solar array to the React Pump check the polarity and voltage from the solar panels. You will need a voltmeter to do this.
2. Fill the pump with SAE 15W40 oil to the top edge of the oil level indicator glass.
3. Turn OFF the PV isolation switch.
4. Connect the solar array to the pump.
5. Connect the intake and outlet pipes. If the system uses a suction lift it is advised to pre-fill the suction line. *If re-commissioning and the delivery pipe is full you must open the bypass valve.
6. Turn ON the PV isolation switch.
7. Turn On the pump On/Off switch.
8. Check for water flow by observing the clear suction pipe or by opening the bypass valve.
9. Once the delivery pipe to the tank is full, and water is flowing into the tank, press and hold the red button until the STATUS LED changes from solid blue to flashing red and then finally to flashing blue (about 10 seconds). Then release the button.
10. Once the tank is full check to make sure the pump stops.
11. If using a suction lift intake turn the pump off and return the next day to ensure there are no leaks on the suction side.
12. Document your installation with pictures/videos and complete the product registration to extend the warranty from 12 to 24 months.

Link to product registration

Maintenance

Monitor oil level each time you visit the pump (ideally weekly) and top up when neccessary to the top of the oil level indicator glass. Change oil after 50 hours of run time and then every 500 hours after that. The pump will communicate when the pump is due for an oil change by flashing red 🔴 on the status LED once every 5 seconds.

Recommended Service Schedule

Service	Wet Side Seal Replacement	Small Oil Seal Replacement	Large Oil Seal Repalcement	Pressure Sensor Replacement	Valve Replacement	Ceramic Piston Liner Rotation
1	•	•				
2	•	•	•	•	•	
3	•	•				•
4	•	•	•	•	•	

Above service schedule is indicative only. Inspect all parts during a service.
Service interval is typically 12 months pumping clean water.
Water quality has a direct impact on service intervals. Seal & valve life are reduced in dirty water.
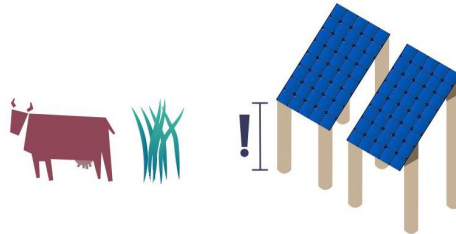
Solar PV installation

1. Check there is nothing shading your panels. If one corner of one panel is in shade this will affect the output of both panels.
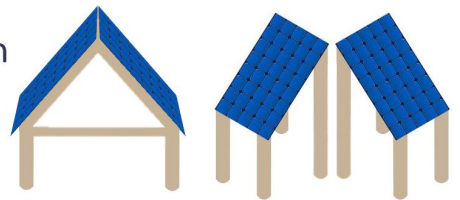
2. Make sure PV panels are protected from stock and high enough to avoid shading from tall grass.

3. Confirm PV panels meet the required specifications:

Voc <45V and Vmmp >30V

4. Consider an East-West (or NE-NW) panel orientation as this will give you a longer pumping day and likely a higher volume of water pumped per day.

5. Check polarity and voltage from solar panels before connecting to the React pump. This is to ensure that no wiring error has been made. You will need a voltmeter to do this.

MC4 Connector & Polarity Check Video

MC4 Connectors

Important

1. After crimping wire end into the connector barrel give it a pull. It should not move.

   Pull

2. When inserting connector barrel into the connector push it in until you hear and feel it click.

   Push until it clicks

3. When connecting a male and female connector ensure they are fully connected.

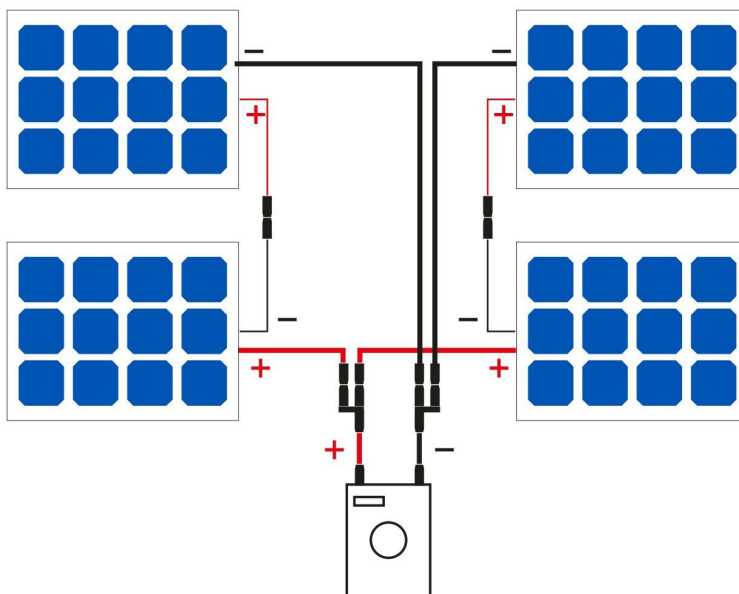4. All MC4 connectors that join must be of the same make.

Solar Panel Wiring Diagrams

2 Panels
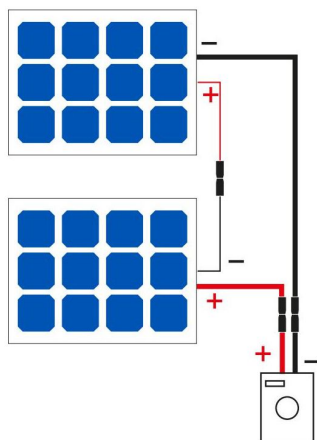
4 Panels

Note: We recommend that you apply red marker tape to all positive wires.

Communication LED Codes

STATUS LED

LED	Meaning
(solid green)	Pump is running
(slow flashing green)	Pump is waiting for sufficient power to pump
(solid blue)	The button has been pressed
(slow flashing blue)	Pressure sensor has detected the tank is full
(fast flashing blue)	Float switch has detected that the intake is low
(periodic blue)	Pressure sensor is active
(solid red)	Critical Error - Check Error LED
(slow flashing red)	Temperature out of bounds - Check Error LED
(periodic red)	Oil change due

ERROR LED

LED	Meaning
(solid green)	Pressure sensor has failed
(slow flashing green)	Internal temperature sensor has failed
(fast flashing green)	Pump head temperature sensor has failed
(solid blue)	Pump has stalled
(slow flashing blue)	Pump has experienced a sub 2°C temperature
(fast flashing blue)	Pump has experienced a sub 0°C temperature
(solid red)	Pump has an intake air leak
(slow flashing red)	Pump head has overheated
(fast flashing red)	Pump controller has overheated

Setting System Pressure

While the pump is running, and the delivery pipe to the tank is full, hold down the button until the Status LED changes from solid blue to flashing red and then finally to flashing blue (about 10 seconds). Then release the button.

Factory Reset System Pressure

Same procedure above but when the pump ignition switch is in the **off** position.

Clearing an Error

- Ensure you have noted the error in your logbook or phone so you have a record.
- Hold down the button until the Status LED changes from solid blue to flashing red (about 3 seconds). Then release the button.

LED Flash Key

Solid	Slow Flashing 1/second	Fast Flashing 5/second	Periodic Once/5 seconds