Solar Water Pumps

User Manual and Installation Guide

Benefits of Solar Water Pumping

- ✓ Save lots of $$$ - No fuel or electricity!
- ✓ Easy to install, with minimal labour and maintenance costs.

The SHERVEY Solar Pump Advantage

- ✓ All pumps are built right here in our modern QLD production facility.
- ✓ Backed by the SHERVEY Solar Pumps team who are readily available to share their knowledge, advice and support.
- ✓ Easy DIY install.
- ✓ Long standing company located in Central QLD.
- ✓3 Yr. Warranty with online registration.
- ✓ All parts and accessories are available in our store.

SHERVEY SOLAR PUMPS

simplifying Water Pumping

Distributed By

Solar N Sat Pty Ltd
Phone: 1300 408 980
Address: 4B Mulgrave St, Gin Gin QLD
www.sherveysolarpumps.com

Shervey Solar Pumps are online! Scan this code to go to our page.

Parts List:

1 x Pump
1 x Controller
1 x 40m pump cable
1 x Solar array to suit pump model purchased
1 x low well sensor with 40m cable
1 x Solar fly lead
2 x Solar Combination 3m lead for 72V pumps only
1 x User manual and installation guide

Optional Extras:

Ground mount frames for the solar array
Bore Cap - ¼" or ½"
Additional submersible cable in 10m lengths
Pressure switch kit
Dam float kit

Recommended extra items for installation:

6mm silver rope with clip as pump safety rope
Duct Tape, 4.5 x 200mm UV stable cable ties, poly fittings

How it works:

The solar pump controller uses the energy from the solar panel to directly drive the pump. This allows the pump to continuously pump water during daylight hours. Both the controller and pump motor are optimised for solar power and will even run the pump when the weather is cloudy.

Benefits and Features:

- MPPT solar pump controller, to get the maximum power from the available sunlight
- Highly efficient DC brushless motor
- Stainless steel construction
- Very low maintenance
- Variable speed control to adjust the water output
- Extra low voltage for safe and easy DIY installation
- No Electricity or fuel costs
- Local service and support for your pumps
- Environmentally friendly

Safety Precautions

- Do not disconnect solar cable while pump is running
- Do not short circuit panels as damage may occur to the panels
- Do not short circuit solar leads when panels are connected, as this may cause arcing and melting of the terminals
- Do not short circuit controller output leads as this may cause damage to the controller and or pump
- Do not attempt to touch any exposed moving parts, as this may result in severe injury
- Make sure that the panels are disconnected before attempting to work on your pump

Before You Begin:

- Read this manual thoroughly
- Open the box and make sure all parts are present
- Make sure you have the tools you will need
- Have a clear space to work in

Setting Up Your Pump:

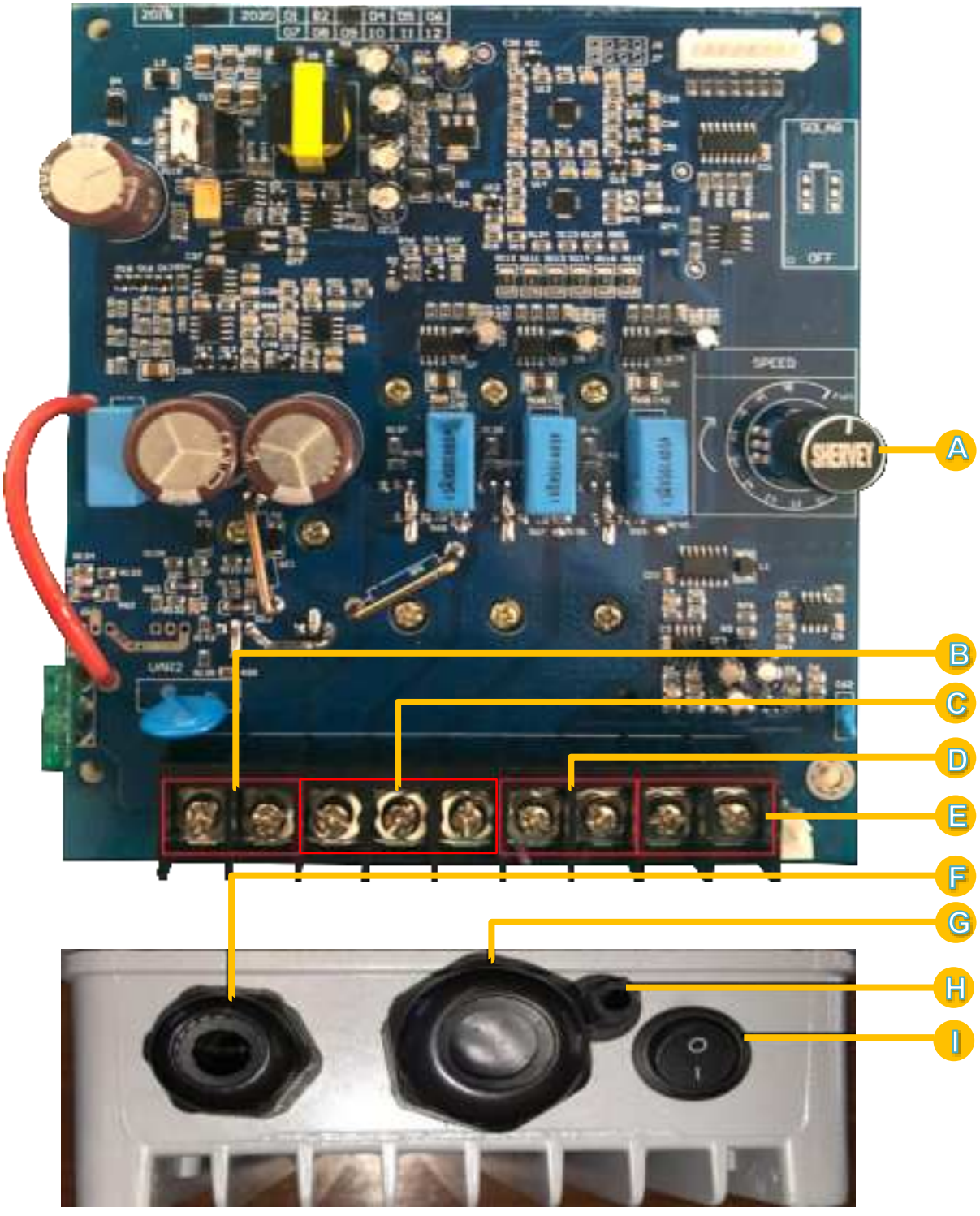
- Make sure that the poly fitting is the correct thread size for your pump
- Use plumbers thread tape when inserting your poly fitting for a good seal
- Screw the fitting into the pump outlet and attach the poly pipe
- Do not over tighten the fitting into the pump
- Make sure that the well low sensor is between 500mm and 1 metre above the pump then duct tape the sensor body to the poly pipe with cable exiting upwards
- Lay the poly pipe, pump cable and well low sensor cable straight along the ground
- Duct tape them in a neat bundle every metre making sure that there is no tension on the pump cable at the pump end
- Terminate your poly pipe at the bore cap (if you are using one) and make sure the cables are in the slot of the bore cap
- Attach your safety rope to the stainless-steel eye bolt and lay along the pipe and cable but not attached to it
- Lower the pump **into the water and commence wiring the controller**

Wiring the Controller:

1. Remove the front cover being careful not to pull on the cable to the indicator lights.
2. Look carefully at the picture of the controller mainboard and take note of lettering. (on next page)
3. Set the speed control (**A**) to the 'Full' speed position.
4. Feed the PV (Solar) Fly lead through the solar cable entry (**F**) making sure the solar panels are not connected yet.
5. Connect the solar positive cable to the terminal marked P+, and the negative to P- (**B**) and tighten screws.
6. Feed the 3 pump wires through the cable entry marked (**G**).
7. The pump cable wires are marked U, V and W. Make sure they are connected to their corresponding terminal. i.e.: Wire U to Terminal U as per (**C**) and tighten the screws
8. If using a Pressure Switch, remove the red bridging wire at the terminals marked TC and TH (**D**)
9. Feed the Pressure Switch cable through the entry marked (**G**) and connect the two wires to the two terminals (**D**) polarity is not important for the sensor.
10. If using a Low well Sensor (recommended) Remove the red bridging wire at the terminals marked WC and WH (**E**)

11. Feed the Low Well Sensor cable through the entry marked (**H**) and connect the two wire to the two terminals (**E**) polarity is not important for the sensor

Please Note! Pump Controller must be installed in a vertical position and at a height that will prevent inundation or submersion in water or other liquids. Controller must have adequate ventilation airflow. Incorrect installation may cause failure and as such is not covered under warranty. Ensure that the cable entries (**F**), (**G**) and (**H**) are well sealed to prevent ants and other insects from entering the controller.

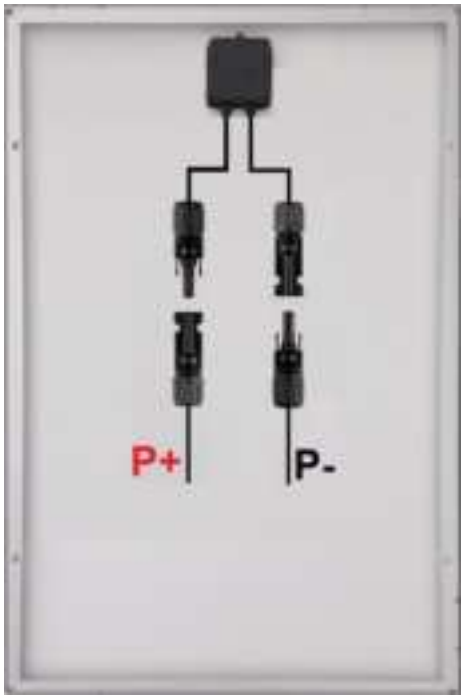


Wiring your Solar Panels:

(FAILURE TO FOLLOW PROCEDURE MAY CAUSE TERMINAL DAMAGE AND VOID WARRANTY)

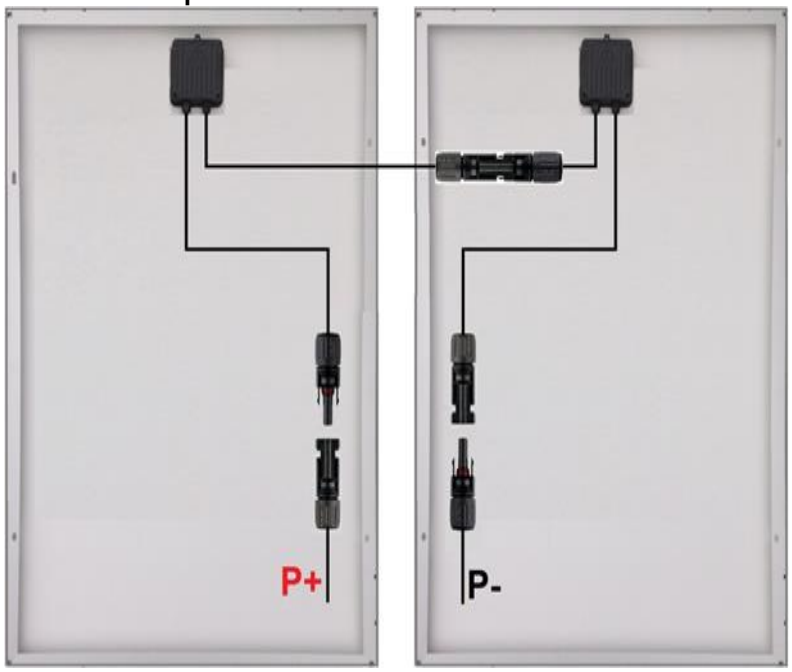
PMP5020 (24V)

1 x 300w panels are recommended. Wire them in series as shown.



PMP5040 (48V)

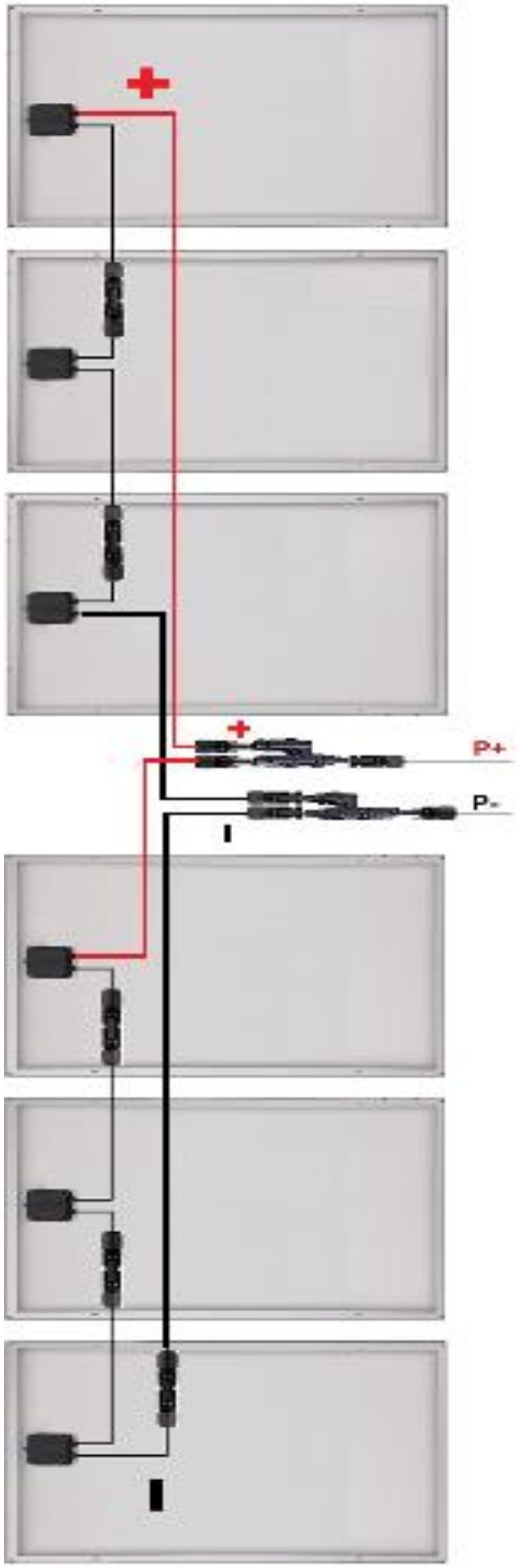
2 x 300w panels are recommended. Wire them in series as shown.



PMP5080, PMP5100, PMP6070 & PMP6090 (72V)

For a 72V Pump: 6 x 300w panels are recommended.

3 IN SERIES 2 IN PARALLEL



MAX 150V PV INPUT

WIRING TO SUIT ALL 72V PUMP RANGE

Solar panel	Rated voltage	72 Volts DC
	Rated current	12 Amps
	Max. open voltage	150 Volts DC
	Max. power	1800 Watts
Voltage	Under voltage	48V ± 0.2 volts DC
	Best voltage	86V ± 0.2 volts DC
Current	Overload	15 Amps
	Over current	18 Amps
Ambient temperature		-20°C ~ +50°C
	Vmp	17-18V, 35-36V
	Voc	21-22V, 43-44V

Technical parameters for controllers
72V Controller Maximum open circuit voltage is 150V DC
(MULTIMETER RECOMMENDED)

24V controller Maximum open circuit voltage is 63V DC

Rated voltage		24 Volts DC
Rated current		12 Amps
Max. open voltage		63 Volts DC
Max. power		360 Watts
Voltage	Under voltage	17V ± 0.2 volts DC
	Best voltage	29V ± 0.2 volts DC
Current	Overload	15 Amps
	Over current	18 Amps
Ambient temperature		-20°C ~ +50°C
Solar panel	Vmp	17-18V, 29-30V, 35-36V
	Voc	21-22V, 35-36V, 43-44V

48V Controller Maximum open circuit voltage is 100V DC

Rated voltage		48 Volts DC
Rated current		12 Amps
Max. open voltage		100 Volts DC
Max. power		900 Watts
Voltage	Under voltage	20V ± 0.2 volts DC
	Best voltage	58V ± 0.2 volts DC
Current	Overload	15 Amps
	Over current	18 Amps
Ambient temperature		-20°C ~ +50°C
Solar panel	Vmp	17-18V, 29-30V, 35-36V
	Voc	21-22V, 35-36V, 43-44V

Operating the Pump:

- Ensure that the pump has been submerged in water for at least 15 minutes prior to start-up
- Make sure the panels are in full sun with no shading
- Make sure the main switch inside the pump is in the **Solar** position and the switch under the controller body is in the on position
- The Power Available light and Motor Running Light should be on. The Optimising Solar light will flash intermittently
- The pump has a soft start function and will start after 6 seconds, it will then spin up to speed over the following 6 seconds
- If everything is set up correctly you should see water coming out of the delivery pipe soon.
- If there is no water output, please see the troubleshooting guide
- The Low Well Sensor will be on if there is insufficient water in the bore. Once the water level rises above the sensor the light will start blinking. This continues for 30 minutes and then the pump will restart. This allows the bore to recharge.
- Take careful note of the Do's and Don'ts below

- Make sure that water can flow over the motor for cooling. If you are unsure mount the pump in a pump shroud to guarantee proper motor cooling

Do's and Don'ts:

- Do keep the pump under water at all times when running
- Do be careful with wiring
- Do remove the pump from the water if it will be unused for a long period. Wipe the screw and the pump body down with vegetable oil for storage
- Do Install pump in a vertical position
- Do Keep your pump 1 to 1.5 meters off the bottom of bore if possible.
- Do Periodically inspect your pump and wiring
- Do Keep your pump running as long periods of inactivity can be detrimental to the rotor and stator
- Do make sure to keep the controller free from insects such as ants and wasps
- Do Keep your solar panels clean
- Don't run the pump out of the water even for a second as it will cause permanent damage and void your warranty.
- Don't submerge the pump any deeper than 35 metres from the surface of the water
- Don't bypass the well low sensor except for trouble shooting.
- Don't use the pump in excessively dirty water as it will cause premature rotor wear which is not covered by warranty. The maximum suspended particle size is 0.1mm and only up to 1% concentration of total water volume
- Don't use the pump in excessively salty or acidic water. Recommended PH is 6.5 – 8.5
- Don't disassemble the controller as there are no user serviceable parts inside.
- Don't open the bottom of the pump
- Don't attempt to disassemble the pump body
- Don't Remove the drain plug in the top of the pump body, doing so will void your warranty

Trouble Shooting

Please use the following guide to assess and solve any problems you may have, that were not previously discussed in this manual.

Problem	Solution
No lights on controller	Make sure Both Main switch inside and external switch are on Make sure solar panels are correctly connected Make sure that the cable from the LED strip in the lid is plugged into mainboard Check that you have correct voltage from the solar panels
Lights are on but pump does not run	Check that the pump cable wires are connected correctly and screwed down tight Make sure that the speed control is on **Full** speed
First three lights are green and Tank Full light is on and pump does not run	If there is a tank full sensor or pressure switch the tank may be full. Make sure the external switch is turned on
First three lights are green and Low Well light is on and pump does not run	Low well sensor has been activated and turned pump off due to insufficient water in bore Check that the Low Well Sensor wires are correctly connected, and terminals are tight Foreign matter may have entered the Low Well Sensor, pull up the pump and low well sensor and clean the sensor
First three lights are green and Low Well light is blinking and pump does not run	The Low Well Sensor has been activated and now the water is back above the sensor. The light will blink for 30 minutes and then the pump will restart.
Pump is running but no water comes out	If the pump appears to be sucking water down, open the controller and switch the **U** and **V** wires The rotor and stator may be worn, pull up pump and replace the rotor and stator with the correct replacement parts (the rotor and stator are wearable parts and the service life of the rotor and stator is heavily dependent on water quality)
Pump is working but output is decreased or not lifting water as high as previously	Make sure that the solar panels are not shaded at all Make sure the solar panels are clean Check the rotor and stator, if they are worn, replace them
First three lights are green and Low PV light is on and pump does not run	Very heavy cloud cover will cause low power Check that the speed controller is set to **Full** speed Make sure that the panels are not shaded even by a single branch Check rotor and stator. Sometimes the rubber of the stator can swell from long periods of inactivity or if the water is acidic.
You have checked the pump manual and are still not able to get the pump working	Contact Shervey Pumps for further information

Limited 12 Month Warranty or 3 Years with Online Registration

1. Shervey Solar Pumps extends only to original consumer purchase, a limited warranty against defects in material and workmanship for a period of 12months from the date of purchase. This warranty covers the pump, controller and sensors. Warranty can be upgraded to a longer period, free of charge with the completion of our online warranty registration. This free upgrade **must** be submitted within 30 days of purchase. Proof of purchase will be required for all warranty claims and a copy **must** be submitted with the item.

2. Shervey Solar Pumps or an authorised factory representative will repair, or at its option replace any defective part or parts of the product free of charge. In the event of a malfunction the purchaser must return the product to Shervey Solar Pumps at their expense. The warranty is limited to the repair or replacement of the product and the manufacturer or its dealers disclaim all liability for indirect and or consequential damages including any installation charges.

3. The warranty does not apply when the equipment has not been installed as per the instructions or damage has occurred through abuse, carelessness, improper voltage or it has been serviced by anyone other than an authorised factory representative.

4. A purchase receipt or invoice for proof of purchase must be presented to claim warranty.

5. All repairs not covered by warranty or outside the warranty period will be charged at normal rates.

6. Corrosion due to salty/acidic water supplies, or microbial induced corrosion is not covered under warranty.

6a. All corrosion claims must be accompanied by a water sample of at least a litre from the bore in question. Testing of the sample is at the owners' expense and at the present time costs approximately $350. If you wish to have independent testing done contact us for a list of things that must be tested for.

7. Helical screw rotors are considered a wearable part and are not covered under warranty.

8. Please contact Shervey Solar Pumps at www.sherveysolarpumps.com for a return authority before sending any goods.

SHERVEY SOLAR PUMPS

PMP5020 Helical Pump

PMP5040 Helical Pump

PMP5080 Helical Pump

PMP5100 Helical Pump

FOR PRICES AND MORE INFORMATION
VISIT OUR WEBSITE: www.sherveysolarpumps.com

SHERVEY SOLAR PUMPS

PMP6050 Centrifugal Pump

PMP6070 Centrifugal Pump

PMP6090 Centrifugal Pump

PMP 9030 Pool Pump

PMP 9070 Pool Pump

FOR PRICES AND MORE INFORMATION
VISIT OUR WEBSITE: www.sherveysolarpumps.com

SHERVEY SOLAR PUMPS

PARTS & ACCESSORIES

Safety Rope with Stainless Clip

Bore Cap

Pressure Switch Kit Including Non-Return

(PMP5020/ PMP5040) **(PMP5080)** **(PMP5100)**

Rotor & Stator Replacement

Anode - Zinc

Extra Pump Cable 10m Increments

Dam Float Kit

Generator Input

MMPT Pump Controller

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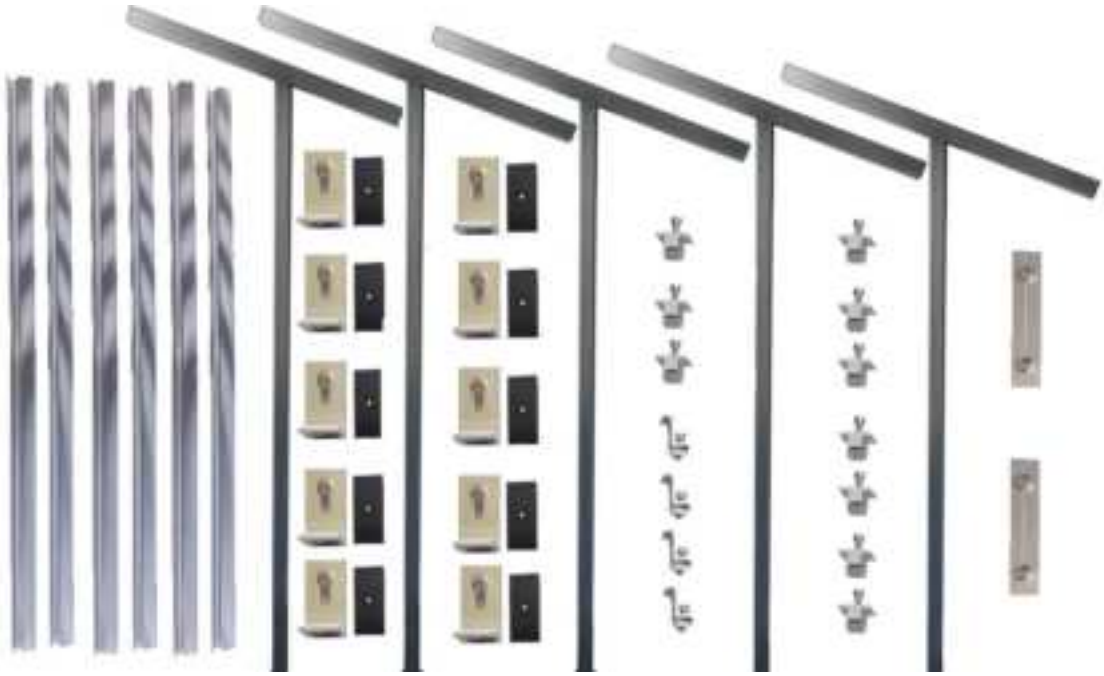
SHERVEY SOLAR PUMPS

PARTS & ACCESSORIES

1 Panel - Solar Panel Mounting Frame

2 Panel - Solar Panel Mounting Frame



2 Panel - Solar Panel Mounting Frame

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Pump Model: _____

Pump Serial Number: _____