



# GOL PUMPS TECHNOLOGY INC

## Information about Battery Connection



- You can Supply any models of Battery with lithium-ion or Lead Acid or other material,
- All is 6 DCV or 12 DCV (Normally 12 volts is used for all purposes)
- But the output is different (Amperes for one Hour printed on the labels of Battery)
- All range of Batteries is 7 A/H , 9 A/H , 12 A/H , 28, 40, 65, 100, 150 A/H and 200 A/H
- If you want supply the power for any DC pumps you must attention to power of your DC pumps
- You can reach any DC power By Formula of ( $V \cdot I = W$ )

### Example 1: you have one DC pump with 12 V - 400 W powers

1- you can use one battery 12 V , 100 A/H , it means 1200 W

now you can used this pump directly connection with this battery for full 3 Hours

2- you can use one battery 12 V , 40 A/H , it means 480 W

now you can used this pump directly connection with this battery for full 72 Minutes

### Example 2: you have one DC pump with 24 V - 600 W powers

1- You can use two batteries 12 V , 100 A/H , it means 2400 W , now you can used this pump directly connection with this battery for full 4 Hours

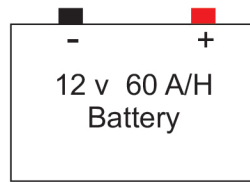
2- You can use two batteries 12 V 40 A/H, it means 960 W, now you can used this pump directly connection with this battery for full 96 Minutes

For More information about power supply with Batteries, please find the Connections Diagrams in Blew



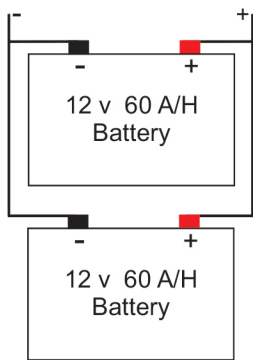
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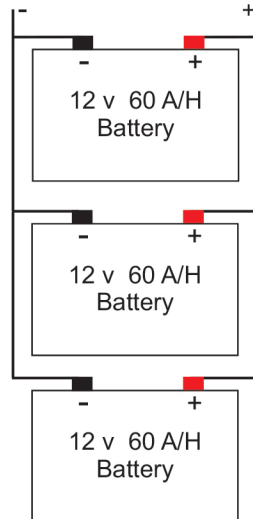


12v - 60 A/H = 720 w

## Parallel Circuit

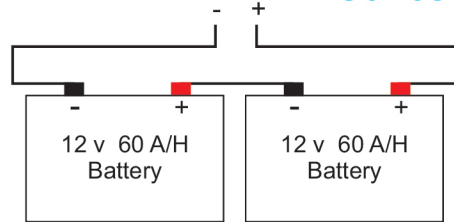


12v - 120 A/H = 1400 w

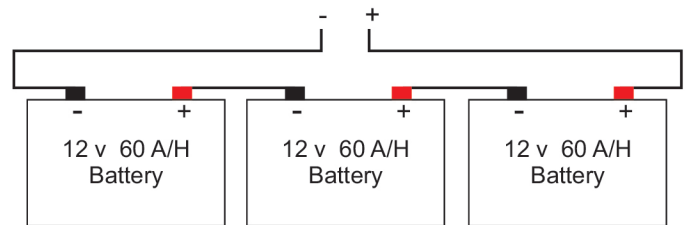


12v - 180 A/H = 2100 w

## Series Circuit

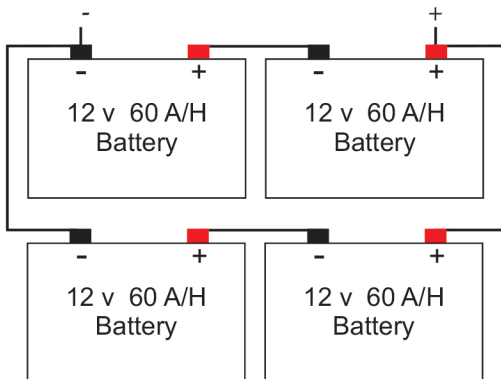


24v - 60 A/H = 1400 w

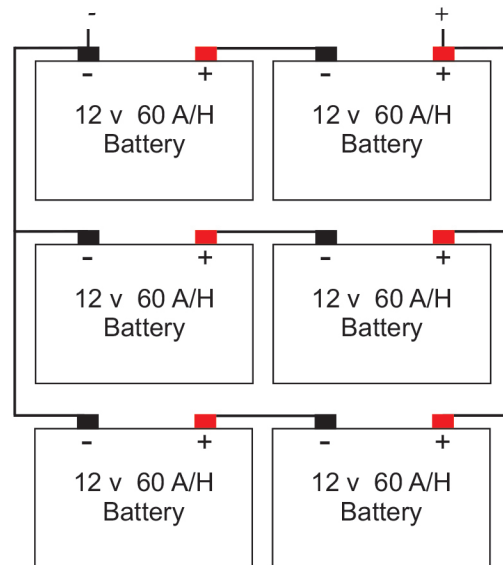


36v - 60 A/H = 2100 w

## Series , Parallel Connection



24v - 120 A/H = 2800 w



24v - 180 A/H = 4300 w



# **GOL PUMPS TECHNOLOGY INC**

## **A few tips on using solar panels**

You can find a lot of models of solar panel by different Voltage and different power. Usually the power of solar panels with output 12 Voltages start from 5W up to 160W, and for 24 V Start from 150 W up to 500 W, and more than 30 Voltages Start from 250 up to 500 W.

When connecting solar panels, it should be noted that the output voltages of each panel are equal to each other so that they can be connected in series or in parallel.

If we connect the solar panels in series, the maximum usable power will be the total power of the panels and the output voltage used is the sum of their voltages.

And if the solar panels are used in parallel, the maximum power can be the total power of the panels and the output voltage is only the voltage of one of them.

### **Example**

1- To turn on a pump with specifications of 12 volts and a maximum power of 150 watts, you can use a solar panel with specifications of 12 volts with a power of 150 watts directly, but if its power is higher, you must use two or three Solar Panels. Connected in parallel to provide the required voltages.

2- To turn on a 24-volt pump with 150-watt power, two panels with 150-watt specifications with a 12-volt output that are connected in series are used, or a larger panel, such as a 200-watt 24-volt, is used.

Take a look at some examples of series and parallel connections in the following diagrams to see what the connection results will be

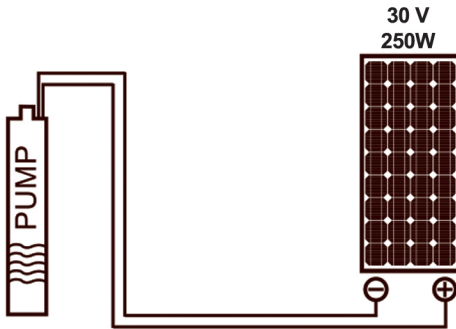
## **SOLAR PANEL CONNECTION FOR SERIES CONNECTION**



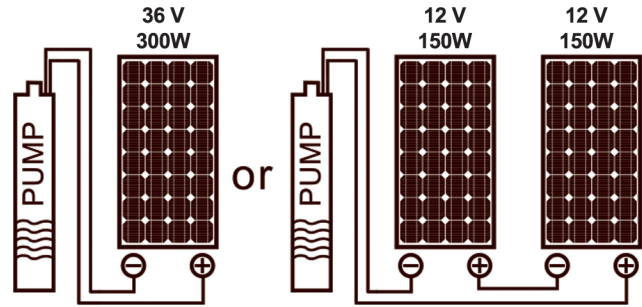
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## Series Connection

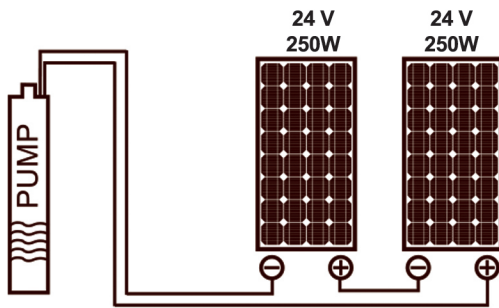


30 V - Max 250 W

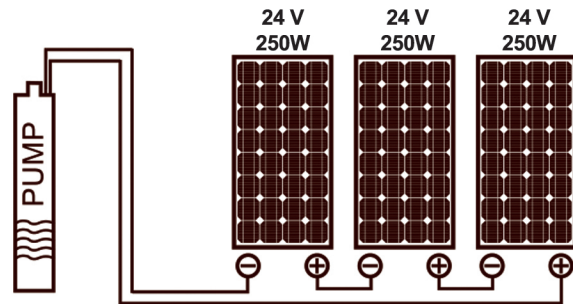


36 V - Max 300 W

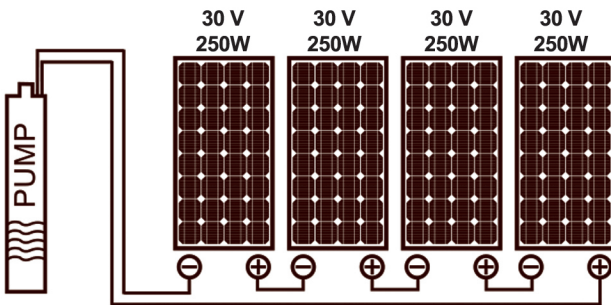
24 V - Max 300 W



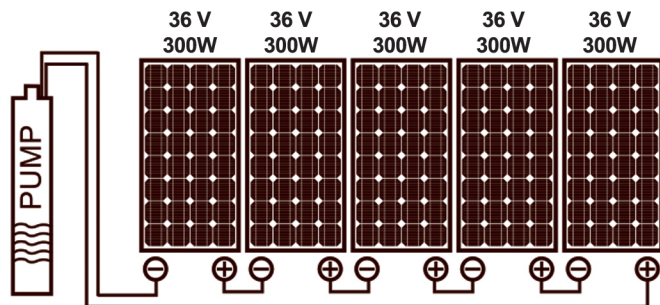
48 V - Max 500 W



72 V - Max 750 W



120 V - Max 1000 W



180 V - Max 1500 W

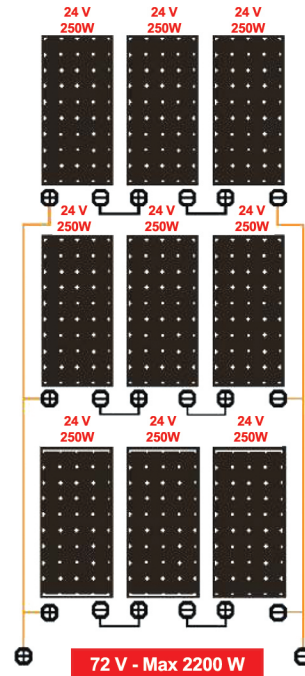
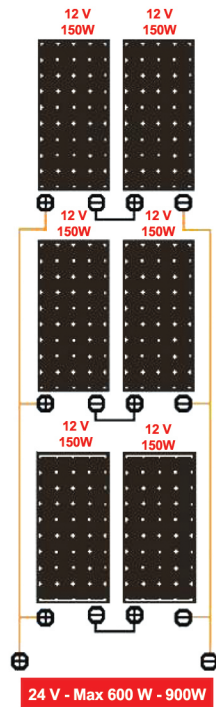
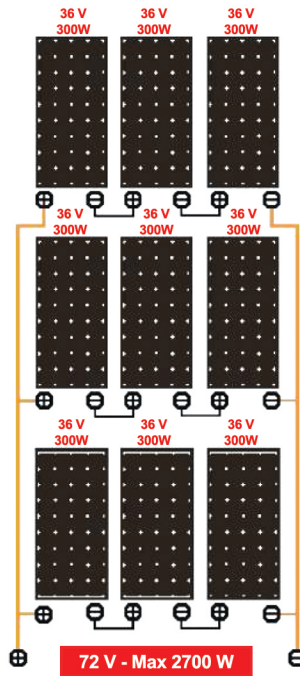
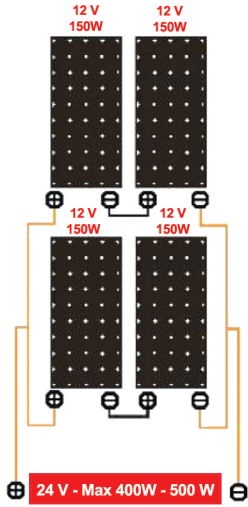




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## SOLAR PANEL CONNECTION FOR THE 1st GENERATION SOLAR PUMPS





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## A few tips on using solar panels

To start the pump through direct use with Solar panels, the following should be considered:

1- The voltage of the pump must be DC and its value must be less than the output voltage of the solar panel.

If the pump voltage is high, several solar panels should be used in series so that the voltage is equal to or higher than the pump.

2- The power of the pump used should not be less than the power of the solar panel

3- Solar panels are efficient during the day and in sunny weather, and cloudy weather is effective in its voltage and power, and they have no output in the dark situation.

4- If it is necessary that your electrical devices are still active on cloudy days and in the dark, a few batteries should be considered between the pump and solar panels in proportion to the consumer power.

The description of this set is that the solar panels charge the battery and the batteries power on the device, and usually according to the consumption hours, the number of batteries is chosen so that the ability to be meet the needs of electrical appliances in all dark hours and cloudy days.

