



Solar powered pump for water barrels

by [newuanda](#) on January 28, 2013

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Intro: Solar powered pump for water barrels

I have this posted on my blog with pictures here:

<http://sistersplayinghouse.blogspot.com/2012/07/solar-powered-water-pump.html>

I've finally found a chance to sit down and write this - I was waiting on the hose reel cart to get set up as well. So you see we have these water barrels. Last summer we had two that my husband set up. I thought it was awesome. To get the water to our plants and garden we had to fill up buckets and carry them all over - it ended up being quite a strenuous activity.

I'm notorious for giving my husband a task and assuming he can just do it. I had seen water pumps for water barrels and told him I wanted one. So we have been thinking about doing this for a while - well ever since we carried that first bucket of water up the hill of the garden in the sweltering heat last summer.

After adding a third water barrel this summer we decided to take the plunge and add a water pump. We had two criteria for this project.

Pump strong enough to force the water through a 125 foot hose (uphill) and enough pressure at the end to spray and not trickle out.

Pump had to be powered some how. We didn't want to mess with wires out by the water barrels, so it needed to be solar powered.

Supplies and Tools Needed:

Water Barrels (I assume you already have these hooked up)

Diaphragm Pump (flojet 3.0 g/p/m 12 V dc pump)

12 V battery

Battery box (we used a tool box)

Solar panel (5 watt)

Toggle switch

3/4 inch radiator hose

ring clamps

40 Mesh filter

16 gauge wiring (should be included with the battery and pump and solar panel). We bought extra for the toggle switch.

3/4 inch hose

I will do my best to explain how we did this and include enough pictures for explanation There was essentially two parts to this project - the electrical and the water part.

All parts except the 3/4 inch hose (which was purchased from Amazon) we found at Northern Tool, but most home stores should carry these items.

The Electrical

The length from water barrels to the place of watering will determine the size of pump you need. It's 125 feet to our garden from our water barrels. We decided a 3 gallon/minute diaphragm pump is what we needed. You might not need something as powerful if you are not going as far as we have to.

To power the pump a 12V DC battery with terminals on the top - this is like a lawn tractor battery.

A battery box - we used a tool box and drilled holes in the side for the radiator hose. The battery box holds the battery and the pump.

The battery is charged by a 5W solar panel. If you get a solar panel that produces more than 5W you will need a charge controller as it will overcharge your battery. A 5W panel is a trickle charger and will not over charge the battery.

Our battery has never gone dead. We have roughly 800 square feet of garden to water; this takes me about 30 minutes to water with the water barrels and about 50 gallons of water is used each time. I have never had a problem with low battery or loss of power during watering. We have not tested the battery to see if it would be able to drain 3 full barrels of water, but I'm sure it would not be a problem.

A toggle switch and 16 gauge wire for connecting everything as well.

The negative cord from pump goes to negative terminal on battery.

The positive cord from pump goes to one end of the toggle switch.

Another wire from toggle switch back to positive terminal on battery.

Solar panel with alligator clips - goes directly to terminal on batteries.

The Water Part

From the water barrel piping we added a 40 mesh filter so that water gunk will not hurt the water pump.

The radiator hose from filtered PVC pipe into pump (ring clamps used here).

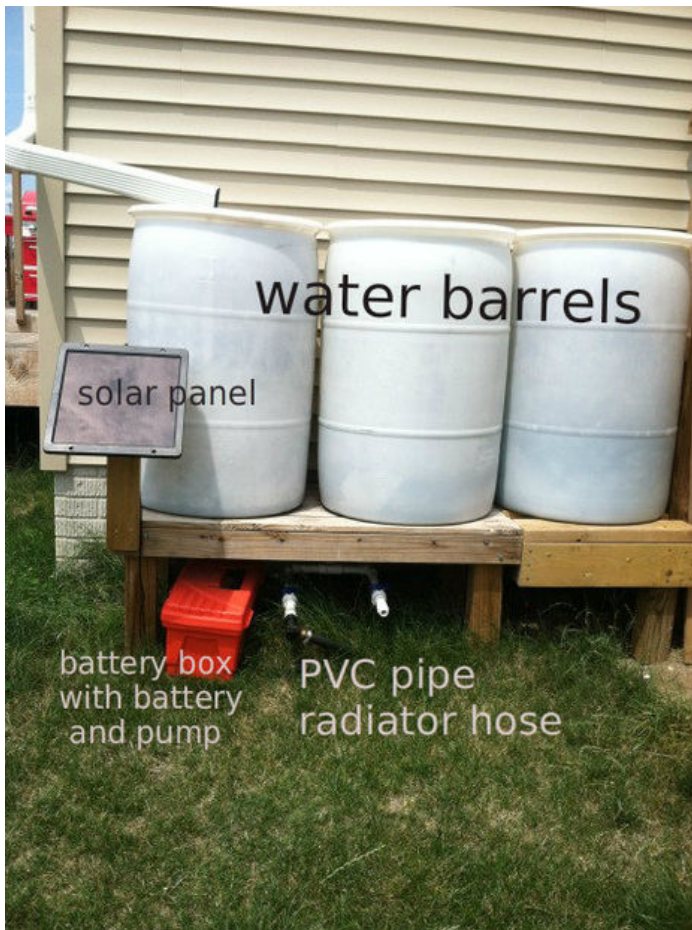
Another radiator hose coming out other side going into your garden hose. (there should be an arrow on pump showing the flow direction of the water)

Our pump connectors are a 3/4 inch size so we chose a 3/4 inch size of hose instead of 5/8. If you use a smaller pump than we did you may only need a 5/8 inch hose. Changing the diameter from the pump to the hose can make the pump work harder and give you improper water pressure.

So, now all we have to do is turn the flow from the water barrels on, flip the toggle switch, and then water away. The other great thing about the flojet pump is that it has an internal pressure switch. The pump runs until it builds up pressure in the line, then stops, then when you spray the pump starts again. It's pretty slick!

We have about 800 square feet of garden. I am able to water the garden three times with full water barrels - so 50 gallons each time. Now we are able to do this without using electricity and our house water. Here's my original post on our water barrels

If you have any questions, please post them - I'll do my best to answer them.



Related Instructables



Green Solar Powered Water Barrel by damoelld



Mini Greenhouse Irrigation System by jimthree



Solar-powered algae bioreactor by middlenamefrank



Low-Power Pump for Gravity Water Tank (Photos) by lifeisformakingthing



Multipurpose Solar Desalination Plant by girivs



Home made DIY Grey water system water recycling. by simon72post