

# DC Brushed Windmill

Steak Electronics

## 1 Overview

I would like to build a windmill. I want it as simple as possible, so DC Brushed Motor, and all parts replaceable. I'm building this with the expectation it might get stolen.

From what I can see, Windmills are not as efficient as solar (more moving parts which means maintenance, wind can be finicky so power output is not stable), but windmills are beautiful moving things, and a joy to behold. I must make one. They are just cool.

## 2 Requirements

I need the following items.

- DC Brushed motor, with easily accessible brushes (so they can be replaced).
- Easily sourceable Windmill Blades

In addition, since I have access to my companies resources, I can fiberglass the blades. I will 3d print a water resistant enclosure, and I will power something. Ideally, I will take current readings.

For the DC Motor, it's not easy to find ones with brush access panels, as the majority of hobby motors seem to require disassembly, but I did find one on ebay in the US for about \$10-20. For windmill

blades, there are a few options. I don't have easy access to wood-working equipment, so I can't yet make my own, but that would be viable (if I joined a hackerspace). Another option is to reuse existing fan blades. It turns out that ceiling fans are commonly available on craigslist where I live, so they can be obtained there either free, or for very cheap. Even if the fan is in parts, the blades are all I need.

Finally, I have dealt with windmills once before for work, so I know I will need the following other items:

- strong metal wire bracing to hold the windmill in place
- as large as possible tower to hold the blade in the air