Features

- Takes 30 seconds to install
- Charges phone in 1.5 hours
- Fits every bike frame
- Weather proof
- Generates 5 volts and .6 Amps

Builders

Christian Corcoran:

Christian is a freshman with the intended major of chemical engineering and hopes to obtain a summer internship in 2017. His interests are pharmaceuticals and petroleum engineering. He plans to minor in petroleum engineering alongside chemical engineering.

Saud Alfawaz:

Saud is a 2nd year Chemical Engineering major, and he will be seeking a summer internship on summer 2016. His interests are in manufacturing polymers, plastics, recycling. Outside of chemical engineering, he plans to get a minor of economics.

Connor Smith:

Connor is a senior Engineering Science and Mechanics major at Penn State University. He is interested in physical systems and the mechanics behind them. With his Engineering Science and Mechanics major, he will also earn a Physics degree and is planning to get a minor in Mechanical Engineering.

Eric Replogle:

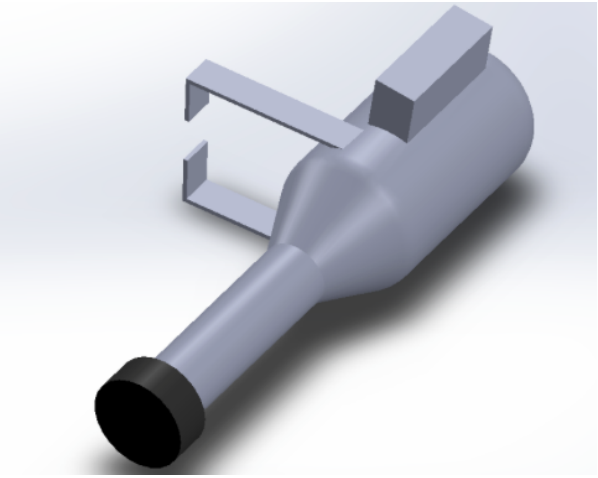
Eric is a 19 years old freshman enrolled at Penn State University. He is currently undecided but hopes to figure it out by the end of his sophomore year.

Cyclo-Charger

Created by,

Eric Replogle, Saud Alawaz, Christian Corocoran, Connor Smith

Engineering Design Section 014

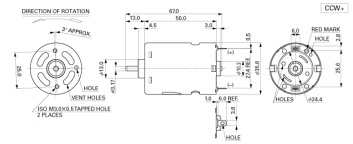


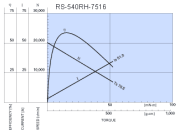
Objective

Our objective is to create a cheap, versatile phone charger that will be able to supply the citizens of Zimbabwe with a source of power to charge their cell phones. The charger needed to be able to charge a cell phone in under 1.5 hours and withstand any weather expected in the area. It also needed to be cheap enough for average citizens to be able to afford it.

How It Works

The idea behind out design is that there will be a rotating wheel protruding from the back end of the Cyclo-Charger and touch the back wheel of the bike. As the owner of the phone rides the bike, the bike wheel will rotate the Cyclo-Charger's wheel, spinning a motor located inside the center of the design. As the motor spins, electricity is generated and then the current is capped using a current limiter at roughly .6 Amps. This will be used to charge the phone.





Cyclo-Charger

Location

This design is mainly build to survive Zimbabwe. Zimbabwe is a small country in southern Africa surrounded by South Africa, Botswana, Zambia, and Mozambique. Because the country never gets cold enough to hinder the usability of the charger, we only had to worry about the monsoons that are common in eastern Zimbabwe. To make sure, we have encased the design in a metal casing that will protect the inner workings from rainfall. The metal casing will also protect the charger from breaking if it is dropped.