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Ribit Arm Base - 360 Continous Rotation

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VIEW IN BROWSER

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Summary

Base portion for the "Ribit" Robot Arm project. Servo driven 360 degree continuously rotating base.

Hobby & Makers > RC & Robotics

Tags: robot gear arduino electronics robotics servo robots ribit

This is the base for the **Ribit Arm** project.

The name comes from a typo while setting up my project directory and I decided to just roll with it. This is the first part to the Arduino controlled robot arm I am designing for fun. It is still a work in progress. Follow me if you want to stay up to date and build along.

This uses a 270 degree MG996R servo that has been modified to run continuous. The servo drives a 3:1 ratio planetary gear train with integrated bearings allowing the the top to rotate. The bearing race is designed for 3/8 steel bearing which can be purchased fairly cheap on Amazon ~$10. Im sure this is not the best way to do this, but I had the idea for the bearing and I wanted to try it out. My thought was that with the bearings this could support a substantial amount of weight and still be able to rotate freely.

As it this sits now the top surface can be user for mounting a device and have continuous 360 degree rotation control in both directions as well as variable speed. I suppose this could be used as turn table for 360 degree shots if you make content, or put a laser pointer on it and drive your cat crazy. The possibilities are endless.

Materials needed for assembly:

M3 x 10mm self tapping screws (4)
M3 x 16mm self tapping screws (4)
34 steel 3/8 ball bearings - 100 pack is inexpensive
MG996R Servo - Modified - Instructions can be found online easily and done in 5 mins.
Some way to control the servo, I use Arduino for now with a PCA9685 servo controller.

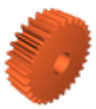
Print Quantities:

1 Base
1 RingGear (gear teeth facing up)
1 SunGear (recess facing up)
4 PlanetGears

Print Settings:
(This is still in design phase and being iterated on a lot, so my setting are minimal to decrease print time. I would definitely increase these if you want to put this into service)

PLA
0.4mm nozzle
2 walls
5% infill
No supports nessecary

Model files



planetgear.stl

Print 4

sungear.stl

Print 1

base.stl

Print 1

ring-gear.stl

Print 1

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