



## Powerful 3D Printed Brushless Motor Servo

 **Basement Creations**

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### Summary

Video about this servo: [https://youtu.be/bRsKDwj\\_J3o](https://youtu.be/bRsKDwj_J3o) This is my project of a Big 3D Printed 81:1 Herringbone Gearbox...

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Tags: [diy](#) [gears](#) [arduino](#) [3dprinted](#) [servo](#) [gearbox](#)  
[brushless](#) [herringbone](#)

Video about this servo: [https://youtu.be/bRsKDwj\\_J3o](https://youtu.be/bRsKDwj_J3o)

This is my project of a Big 3D Printed 81:1 Herringbone Gearbox that is designed to work like a servo. Gear ratio between gears is 3:1 and there are 4 levels of gears which gives a reduction of 81 to 1. To power this servo I used an electric motor from my skateboard and together with this gearbox it really is strong . On my tests I achieved about 15Nm of torque , but it should be able to easily do much more.Keep in mind that this servo has some backlash and isn't very precise but it is a great proof that you can make servo out of anything. Watch my video to learn more.

Here I am giving you all the files, including .step and .f3d so feel free to remix and use them as you want.

Parts to print:

1x Top Gear

3x Gear 39/13t

1x Motor Gear

1x Keyway

1x Bottom

1x Top

1x Case

1x Servo Arm

1x Potentiometer Gear

Parts list:

2x 8mm steel shaft 120mm long

1x Bearing 6908

3x Bearing 608

5x Bearing 688

4x Short M4 screws to mount the motor

6x Long M5 screws and nuts fto mount the servo arm

Some additional screws to hold the whole case together

1x Brushless Motor in my case Flipsky 6374 (You can use any motor you want but first check if it will fit correctly)

1x Vesc

1x 10S battery (you can use any battery that works with your motor)

Also to make it work like a servo you need:

1x Arduino

1x Rotary Potentiometer

1x RC transmitter and receiver or a servo tester

All the arduino codes that I used in my video can be downloaded as a zip file

If you have any questions feel free to ask me here, or on my Youtube channel or via email [basementcreationsemail@gmail.com](mailto:basementcreationsemail@gmail.com) . I am always glad to help somebody

## Print Settings

### Printer Brand:

Creality

### Printer:

Ender 3

### Rafts:

No

### Supports:

No

### Resolution:

200

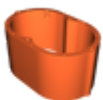
### Infill:

35

**Filament:** PlastSpaw PLA

Category: Hobby

## Model files



**case.stl**



**motor\_gear\_13t.stl**

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**bottom.stl**

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**big\_servo.f3d**

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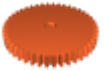
**top.stl**

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**servo\_arm.stl**

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**potentiometer\_gear.stl**

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**gear\_39t-13t.stl**

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**keyway.stl**

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**big\_servo.step**

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**top\_gear\_39t.stl**

## Other files



**arduino\_potentiometer\_test.ino**

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**arduino\_vesc\_potentiometer\_test.ino**

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**arduino\_rc\_test.ino**

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**arduino\_servo\_code.ino**

[Find source .stl files on Thingiverse.com](#)

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