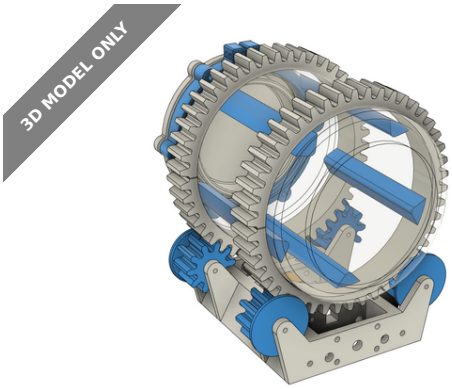


Rotary Tumbler Mk1

Ceez

VIEW IN BROWSER

updated 31. 7. 2023 | published 31. 7. 2023

Summary

A Re-use of empty coffee jar!

3D Printers > Accessories

Tags: rotarytumbler coffeejartumbler

Well, if you drink coffee a lot and have too many empty coffee jars laying around, then this is some use for those empty jars.

Part list:

- Empty coffee jar - 400gr version
- Micro Gear Motor - 100 RPM or 300 RPM
- M3x40mm - 4pcs
- M3x12mm - 2pcs
- M3 brass insert - 2pcs
- LM2596 DC-DC module
- DC jack female (panel mount)

Some note:

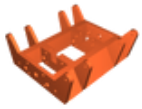
- The gear ring is splitted intentionally since the bottom and the top of the jar are larger than the middle section
- Buy the micro gear motor with the shaft as long as possible
- 2 M3 brass inserts are for retaining the motor to the main body

- Print all the parts first, assembly the gears and all on the main body
- Use that as reference for the distance of the gear rings (65mm or shorter)
- Glue the gear rings on the jar. You have 20mm of the thickness of the gear so nothing to worry about the exact distance
- I used B-7000 glue, you may use different one as long as it stick well
- You can have as many bumpers inside the jar as you like, I decided to go with 5
- Set the voltage around 5V output for LM2596. You can add a rocker switch at the front but I think unplug the DC barrel jack is just fine
- The jar won't rotate smoothly because the spur gear tooth profile in used wasn't designed for this, it was designed for stationary shafts. Hence, a little bumping up and down so be the noise from motor
- The hole for DC jack is 7mm, a bit small for the DC female jack, so heat up the hole to 150 degree C with hot air gun to make it soften enough then push the DC female jack through.
- You can reuse the original lid, but if you lost it or feel not secure enough, then use my design for the lid. My lid is not air-tight, so you can use a rubber O-ring ID84mm to make it air-tight, O-ring with ID80mm should be fine

I decided to go with this tiny motor to save the trouble of driving Nema 17. But this motor is too small to get good torque, so I'll make a mk2 in the future that uses Nema 17 instead.

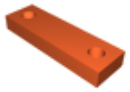
Model files

ring_gear.stl



main_body.stl

gear_flanged.stl



motor_retainer.stl

gear_id3.stl

bump.stl

jar_clamp.stl

jar_lid.stl

rotary-tumbler.f3z

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