



## Mechanical Iris - Fidget Toy



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### Summary

Restless fingers? Give them some fun with this mini mechanical wonder!



1.83 hrs



2 pcs



0.20 mm



0.40 mm



PLA



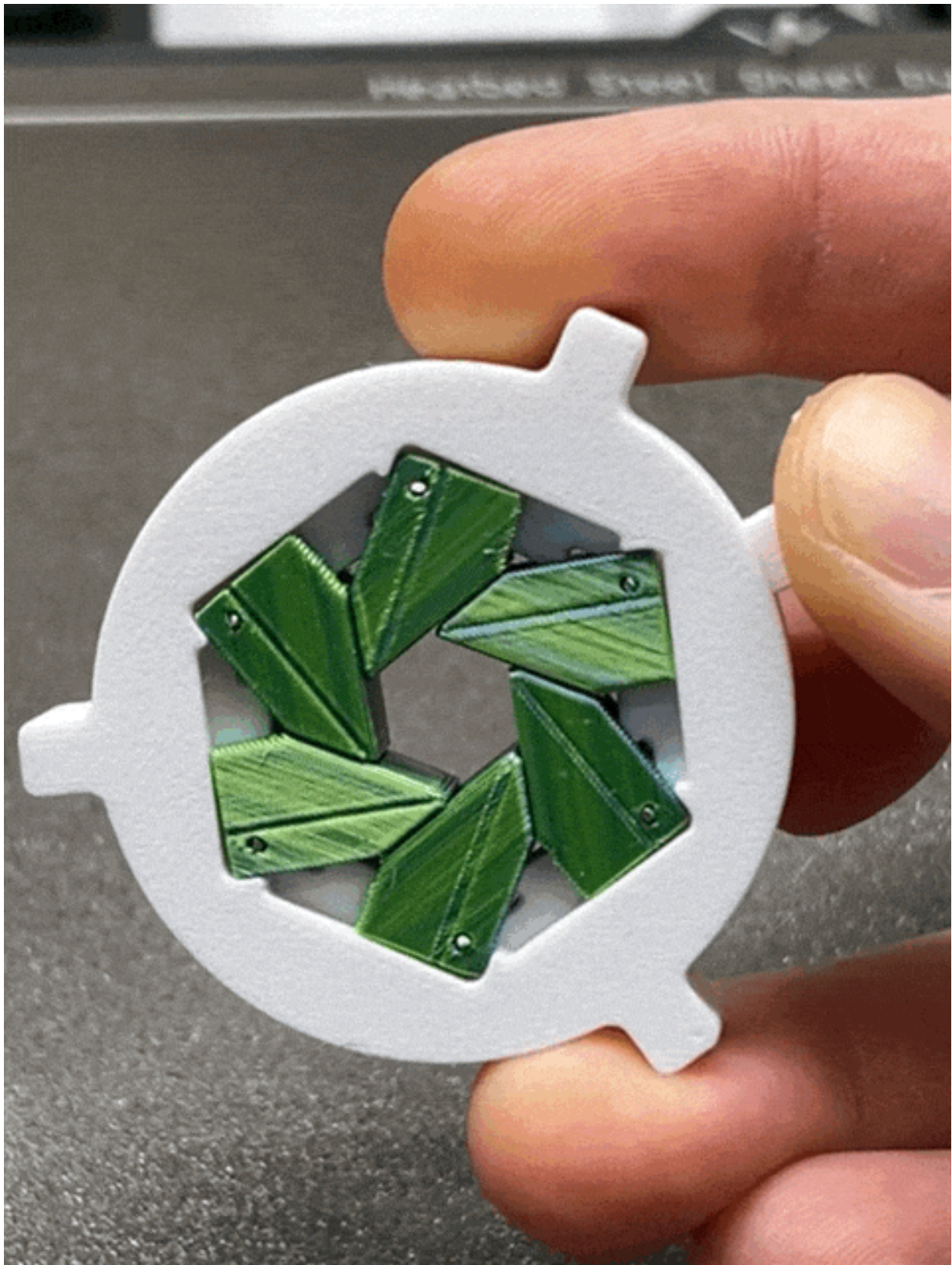
14 g



Prusa  
MK3/S/S+

[Learning](#) > [Engineering](#)

Tags: [fidget](#) [fidgettoy](#) [iris](#) [mechanism](#)  
[someassemblyrequired](#)



Stumbled across some CAD tutorials on how to design a mechanical iris and thought I would take a spin at making one 3D printable!

**Required materials:**

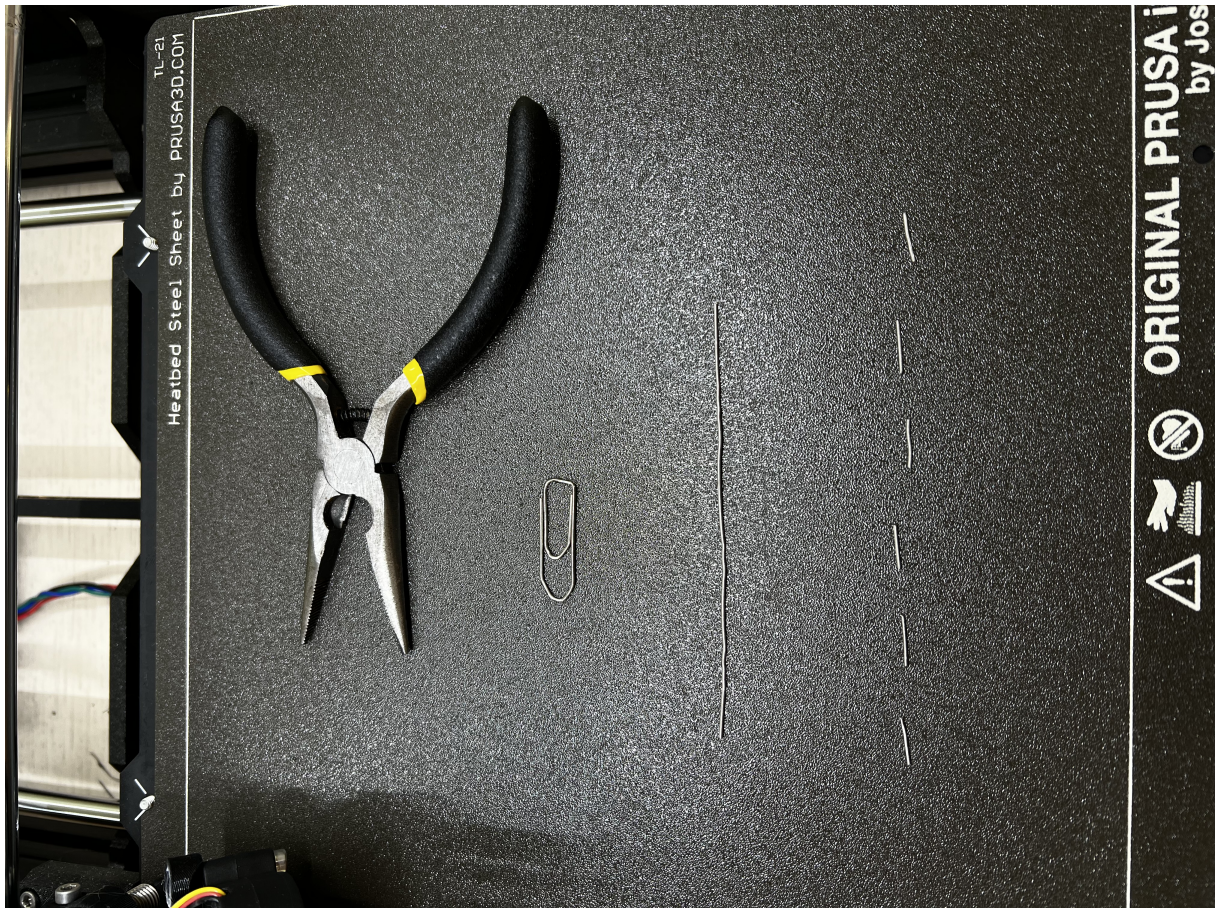
Needle nose pliers with side cutters (provided with every Prusa)



Paperclip (find one in that junk drawer that has loose batteries, rubber bands, cables, etc. lol)

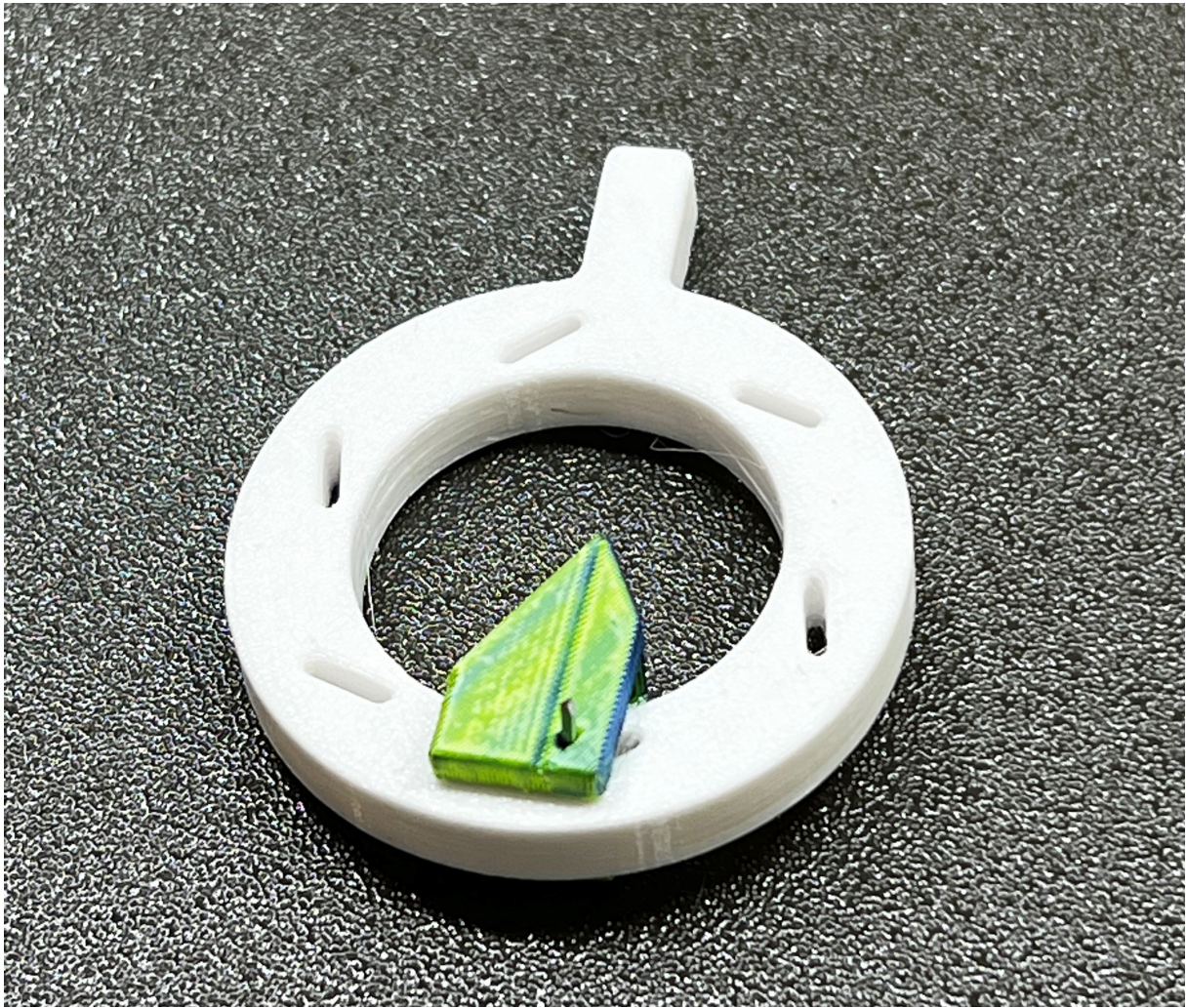
Sand paper / filer (not necessary, but helps smoothen mechanism)

First, un-bend the paperclip so it is straight. Then cut 6 pins with a length of ~10mm. The side cutters produce a sharp edge so file / deburr the pieces to make them safe for use.



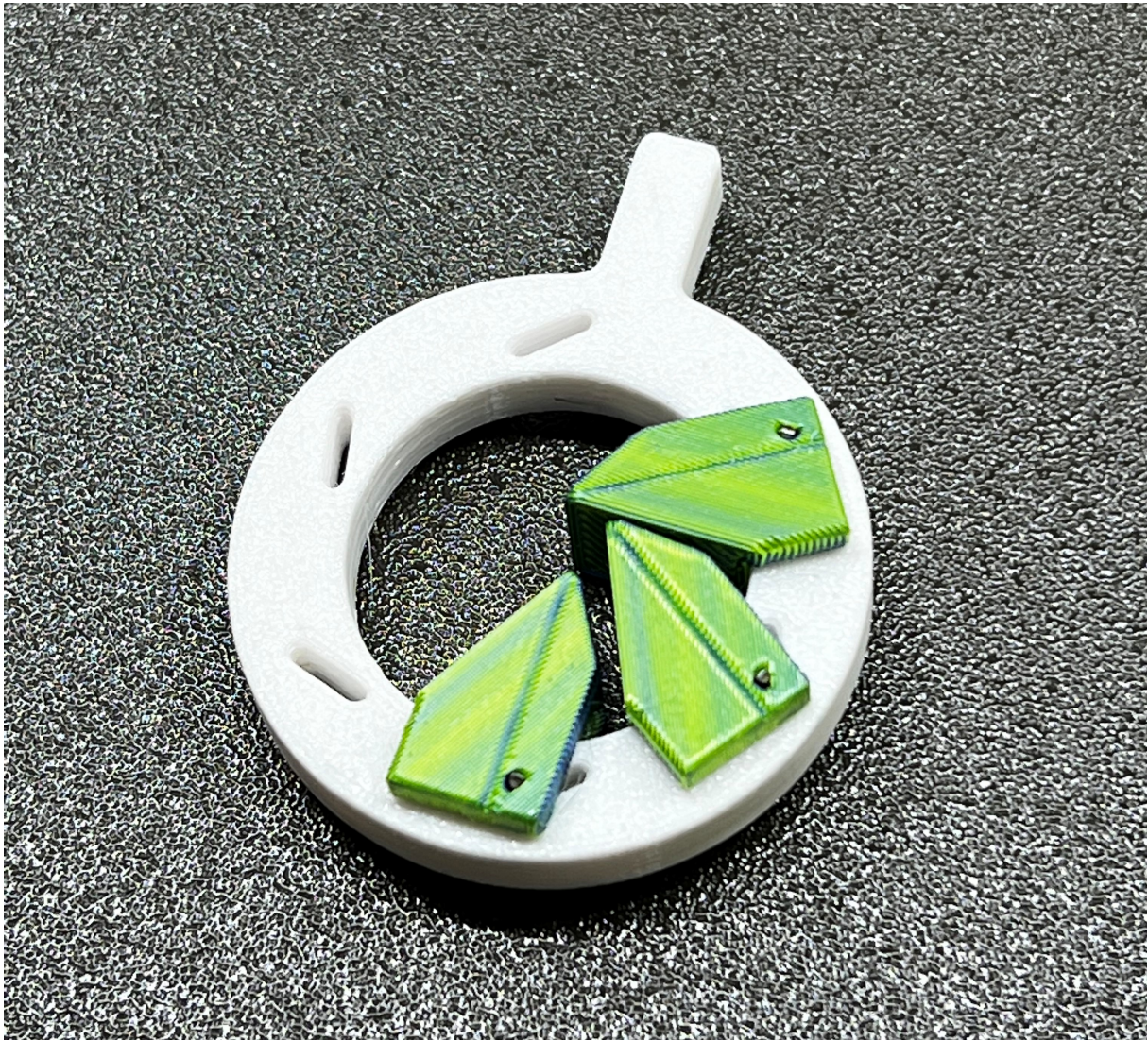
Next, you will add blades to the inner gear one by one. To help orient things correctly, the **bottom** side of the **inner gear** is labelled "**bot**" and the **blades** are inscribed with a **stripe** on the **top**. Slide a blade onto the gear from the inside and align its hole with one of the slots on the gear. Push a pin through the blade's hole & gear's slot so they are linked to one another.





Do this twice more until there are 3 blades secured to the gear.





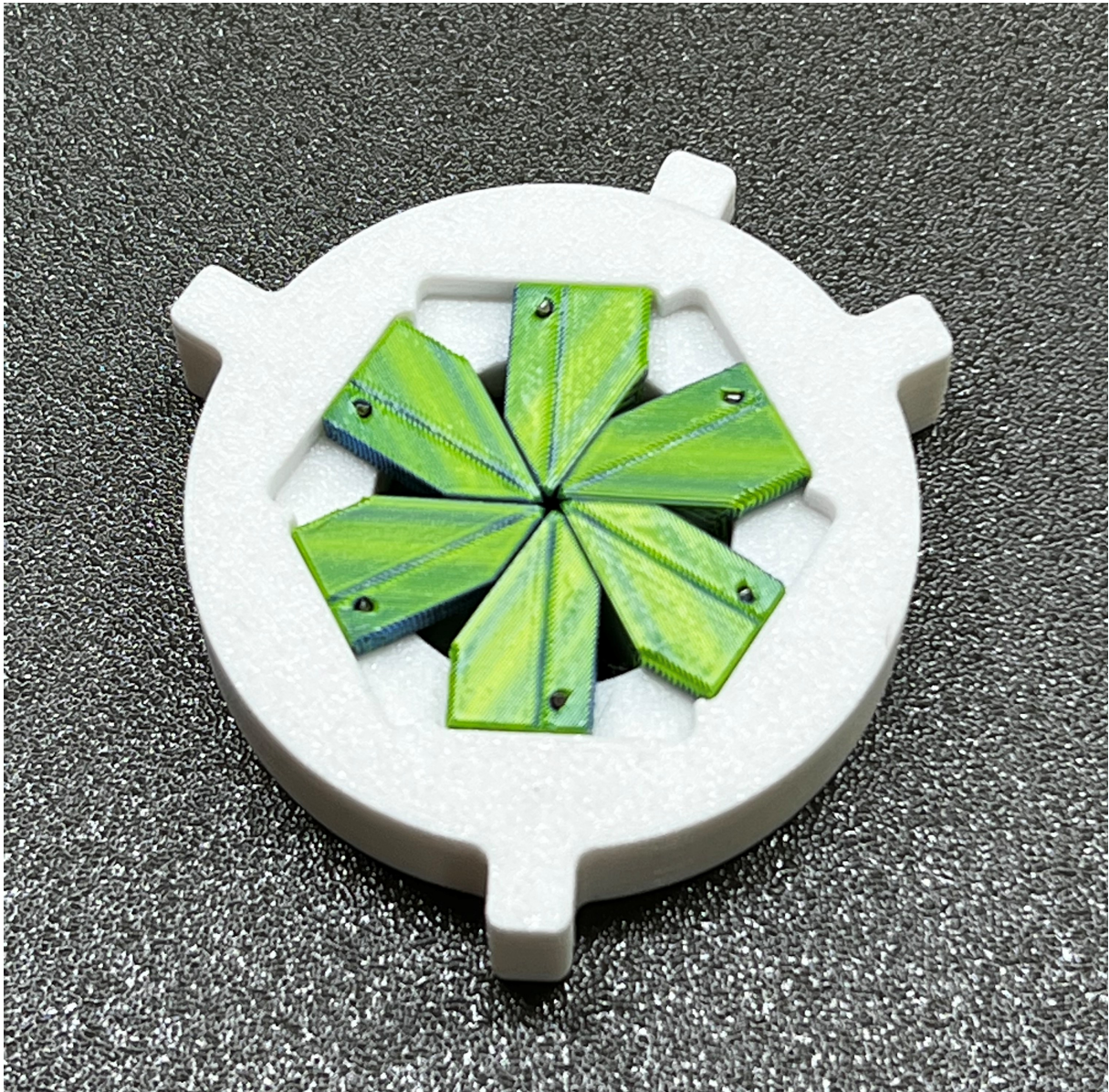
Next, you will slide the remaining 3 blades onto the gear **without** securing them with a pin. This gives you more freedom to move the blades around and place them in the required locations. With all blades in place, slide the remaining pins into the holes - slots and the inner gear assembly is complete!





Next you will push this assembly into the bottom frame making sure the flats of the blades are in contact with the edges of the frame's hexagon cutout. When everything is snug, slide the top frame over everything and the two frame pieces should snap into each other nicely. If the frame is not holding together tight you can add superglue to the 3 perimeter guiding lugs.





If your printer is nicely calibrated then no post processing on the blades is needed. But if you find that the inner gear assembly isn't fitting into the frame easily, sand / file the bottom edge of each blade until layer lines have smoothed out. This helps the mechanism slide more smoothly, but may reduce how "snappy" it is.

And that's it! Twist the lever arm of the inner gear to make the 6-blade iris open and close. Very satisfying toy to keep around the desk when you're zoned into work :D

## Model files



**fidget-iris-blades-pla.3mf**



**frame\_pla.3mf**



**fidget-iris-blade.stl**



**fidget-iris-inner-gear.stl**



**fidget-iris-top-frame.stl**



**fidget-iris-bottom-frame.stl**

## Print files



**fidget-iris-blades-pla\_02mm\_pla\_mk3s\_45m.gcode**

🌀 PLA 🌀 0.40 mm 🌀 0.20 mm 🕒 0.75 hrs 📊 5 g 🖨️ Prusa MK3/S/S+



**frame\_pla\_02mm\_pla\_mk3s\_1h5m.gcode**

🌀 PLA 🌀 0.40 mm 🌀 0.20 mm 🕒 1.08 hrs 📊 10 g 🖨️ Prusa MK3/S/S+



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