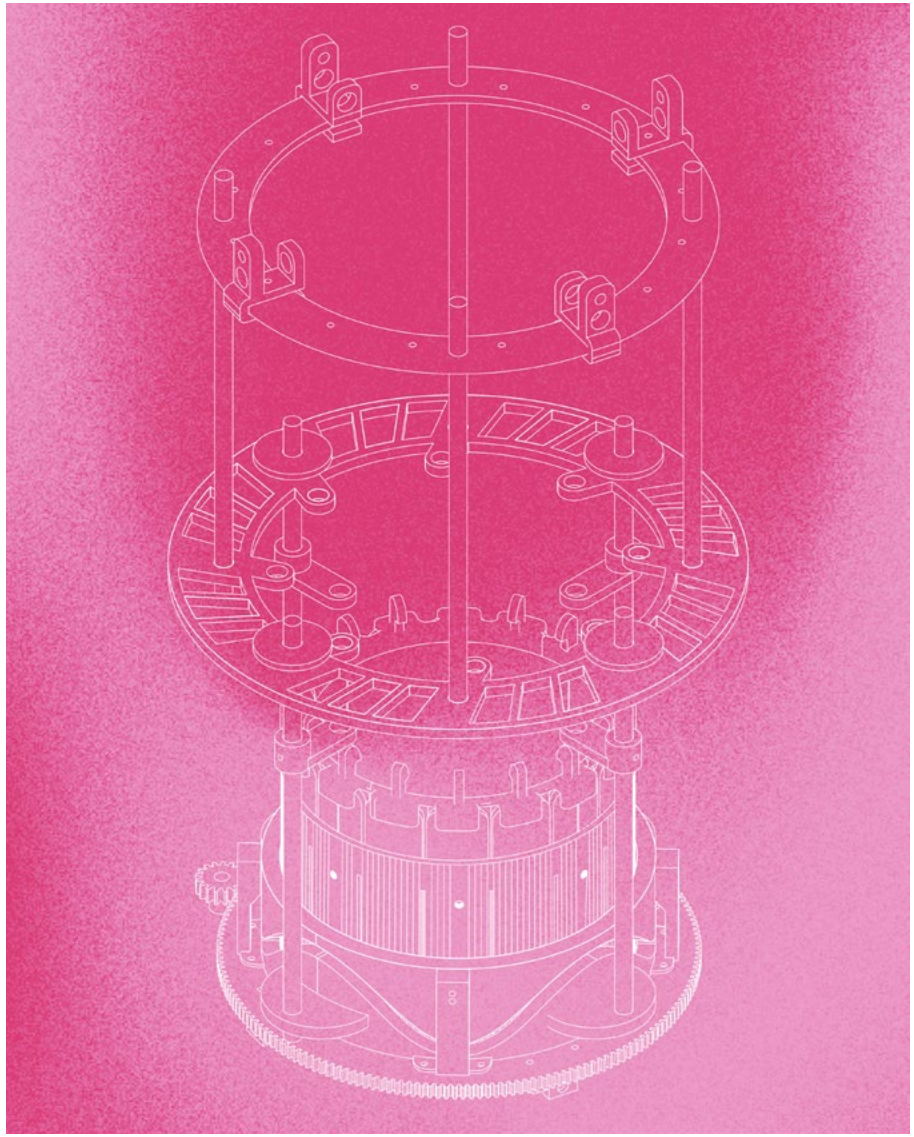


Macro Yarn Machine
Building Instructions

November 2024
Jasmin Martinez
studio.jasminmartinez@gmail.com

Hey!

How exciting you want to build the Macro Yarn Machine.
I have built this machine as part of my Master's project in 2024, and I would have never been able to build it without relying on published Open-Source Hardware projects and the community.

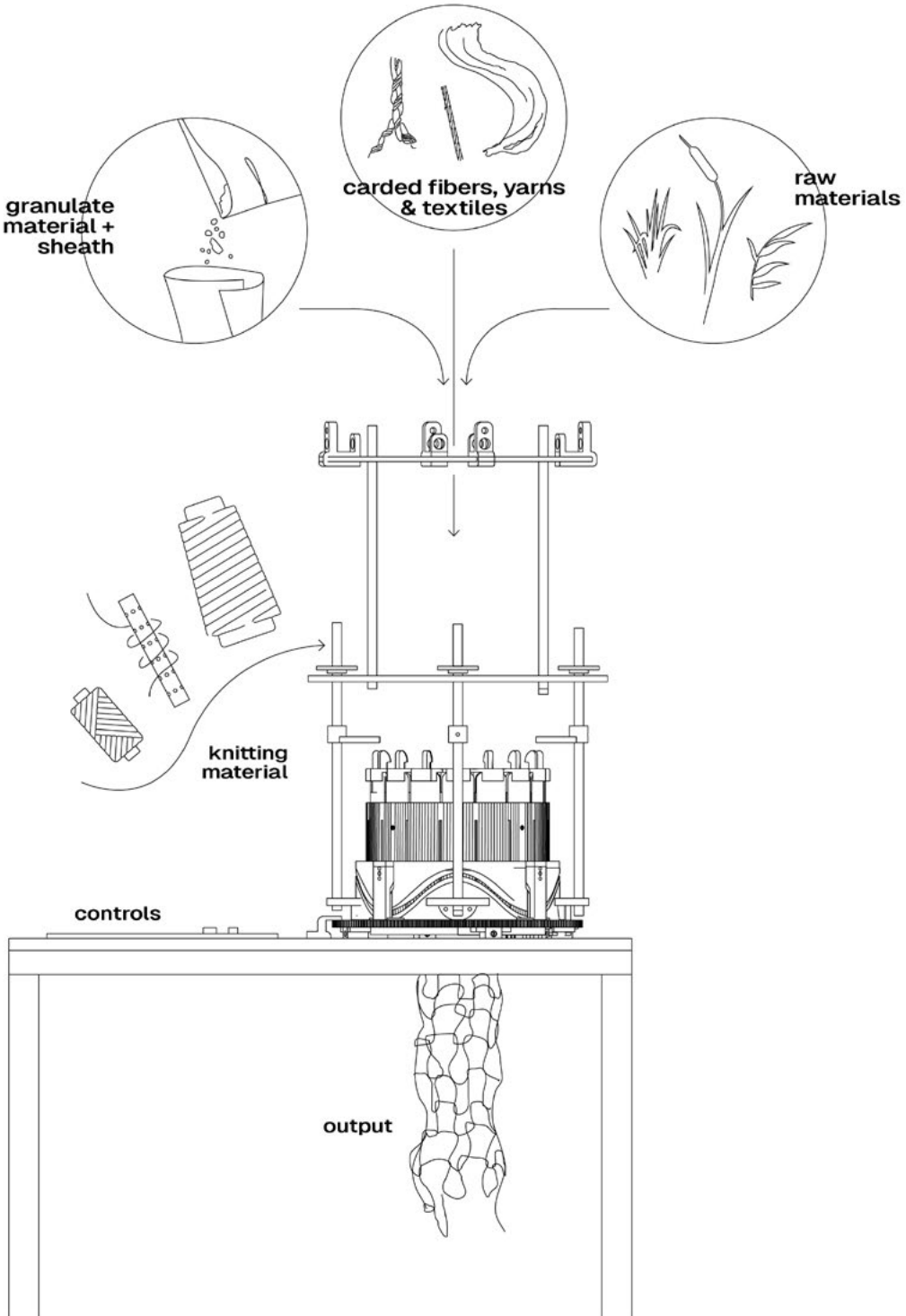
Therefor I want to credit:
1.) Circular Knitic by Varvara Guljajeva and Canet Sola, 2014.
https://github.com/var-mar/circular_knitic

2.) HILO Spinning Machine. As I have been working with Sara Diaz Rodriguez closely for the past 2 years and learned about Open Textile Hardware from her.
https://www.hilotextiles.com/

If you want to credit my machine, please use:
„Macro Yarn Machine" by Jasmin Martinez, 2024
further information:
Master Thesis: Martinez, Jasmin. Hacking Textile Tools. 2024. Kunsthochschule Weißensee (Weissensee Art Academy). Mentored by Prof. Christiane Sauer and Prof. Dr. Lucy Norris.

Note: I reverse-documented building the machine, which should explain why the parts are full of soil and grease. Please excuse this and let me know if it makes anything unclear to you.

Now – let's start building!



3D Printed Parts
(Machine Body)

Big Bottom Gear
3x Bottom Gear Fix
4x Bearings
Outer Cylinder

4x Holder for Threaded Rods
4x Inner Cylinder
Needle Guide Bottom
Needle Guide Top

Middle Layer
Lid Holes
Funnel
Needle Holder

4x Yarn Wing Guide
4x Yarn Tension Holder

4x Spool
4x Spool Holder
(Small Motor Gear)

Hardware
(Machine Body)

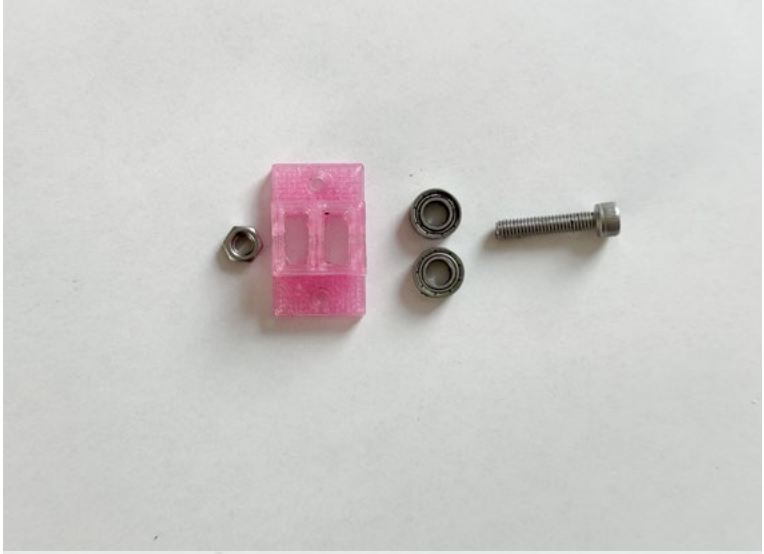
8x Threaded Rods M8
12x Wing Nuts M8
20x Flange Nuts M8

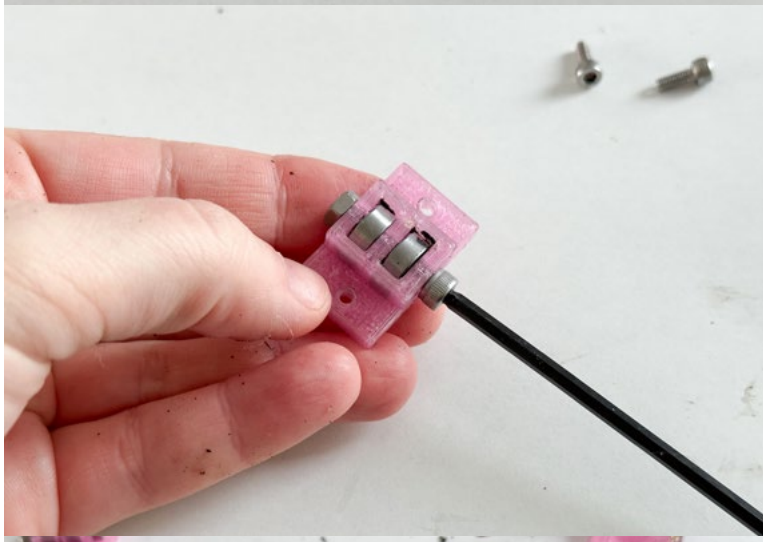
4-16 Brother KH230 Needles
4x Book Scews
16 Ceramic Eyelets 5mm
8x Deep Groove Ball Bearings 4x9x4mm

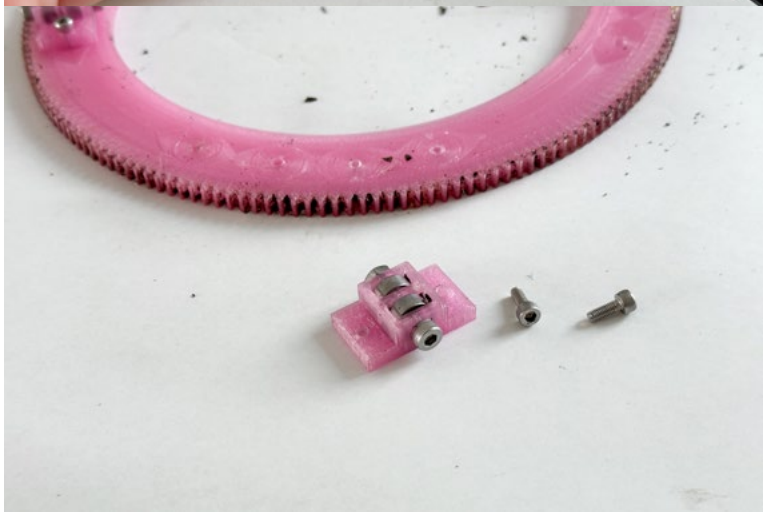
12x M3x6
12x M3x12
8x M3x8
4x Thrust Ball Bearings F8-16M 8x16x5

3x M4x12
4x M4x20
4x M4 Nut

Bottom Gear





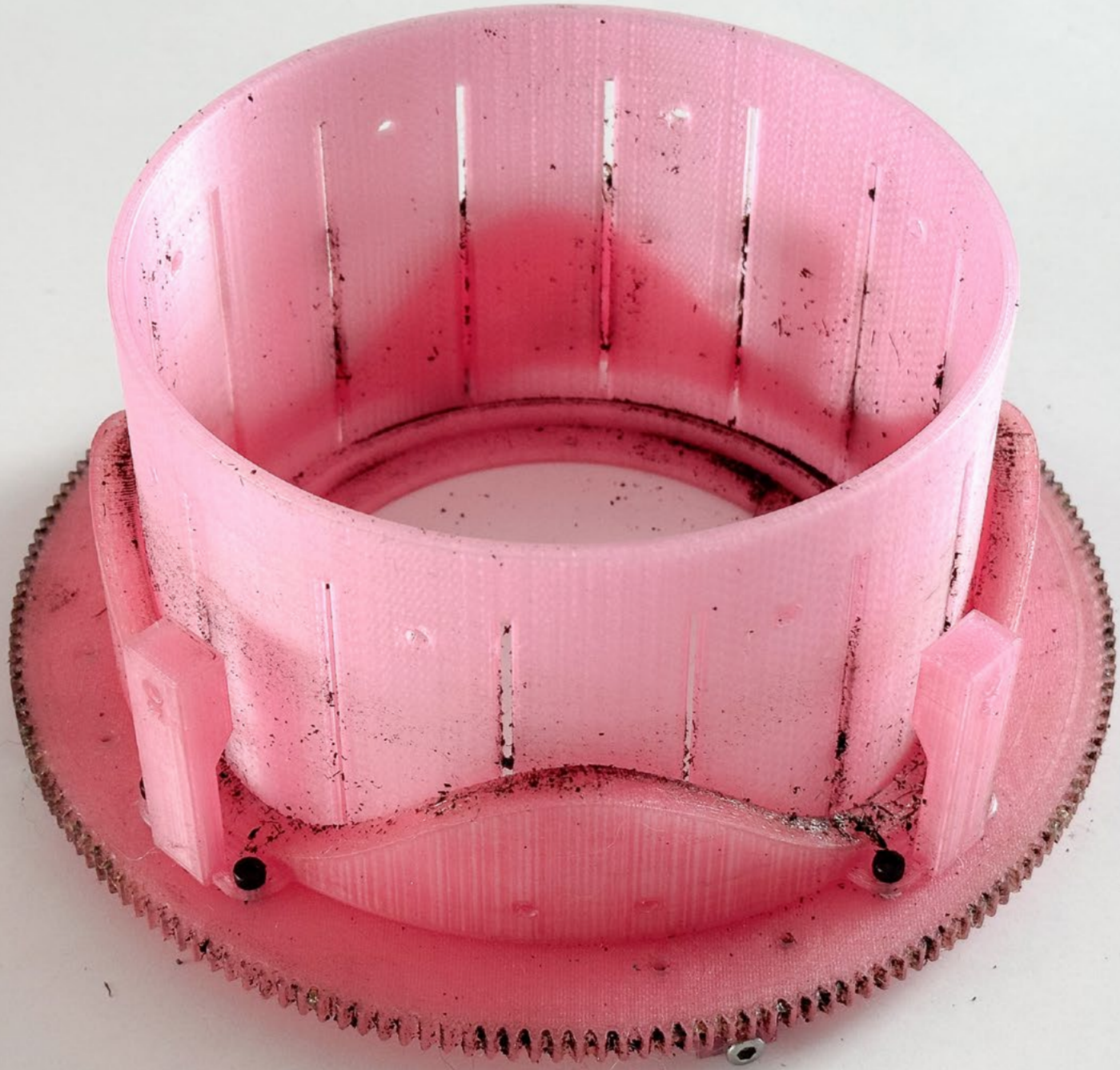


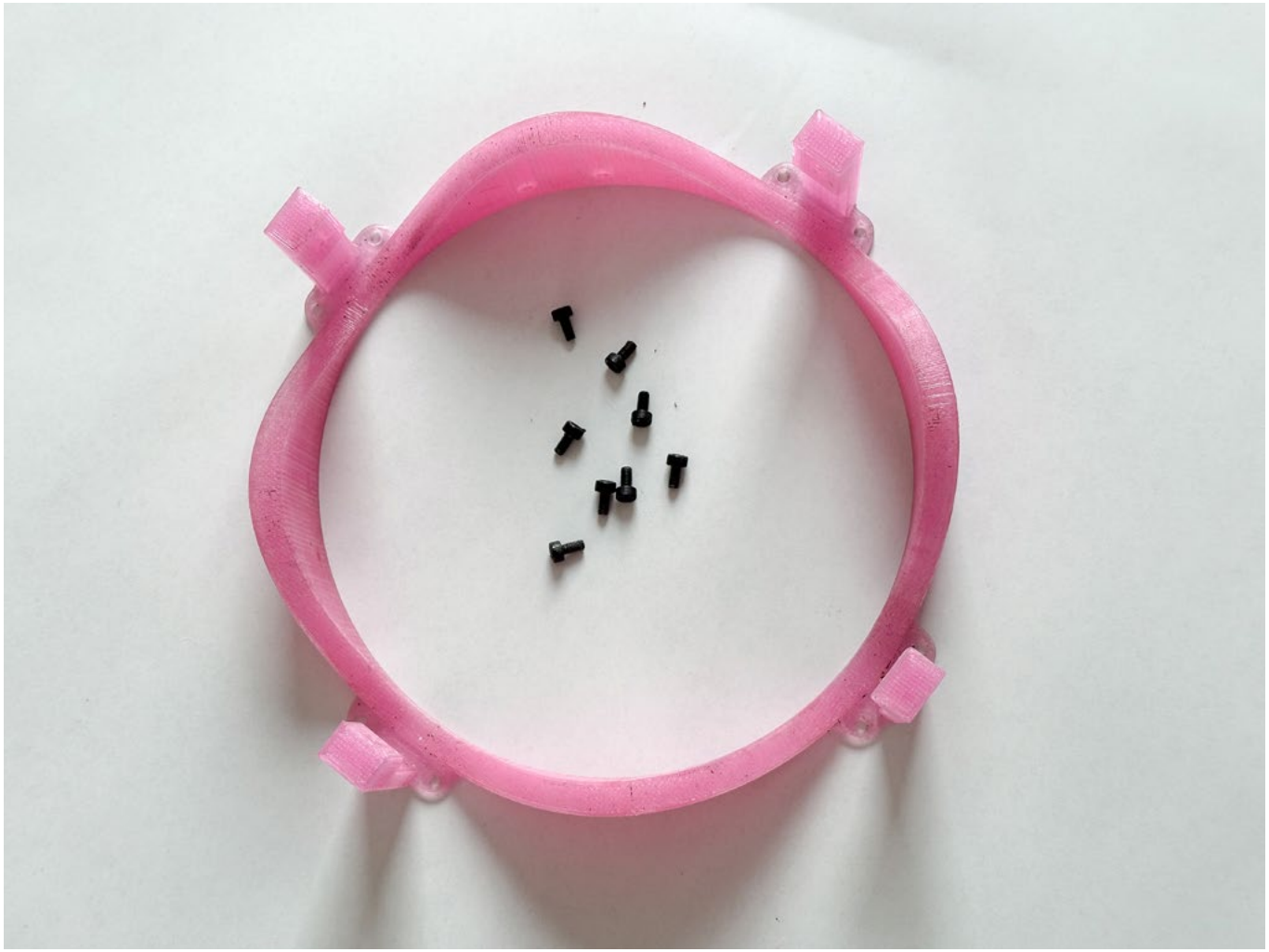
3D Printed Parts:
Bottom Gear
4x Bearings

Hardware:
4x M4 Screw
8x Deep Groove Ball Bearings
4x M4 Nut

Bottom Gear

Cylinder Bottom

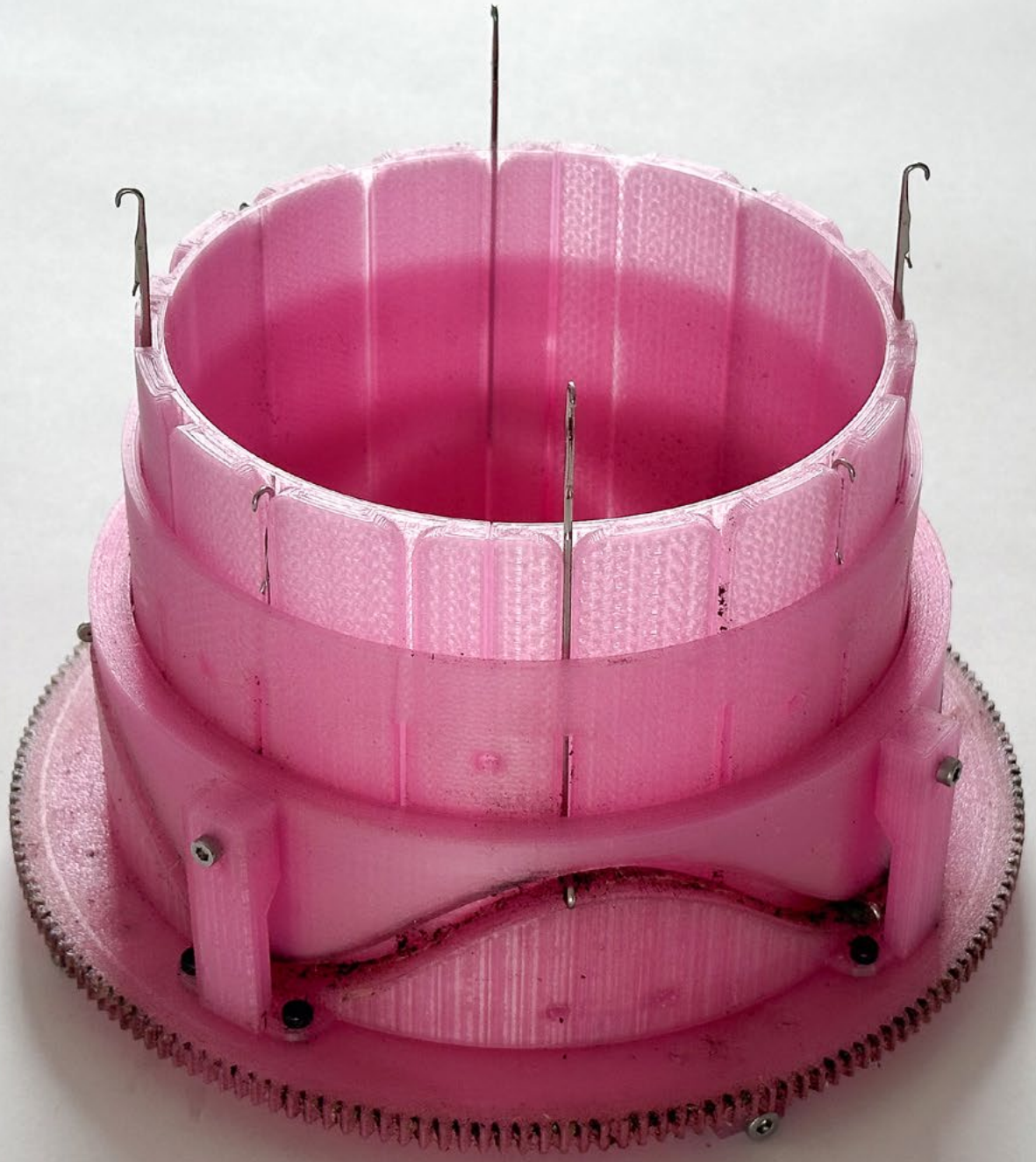


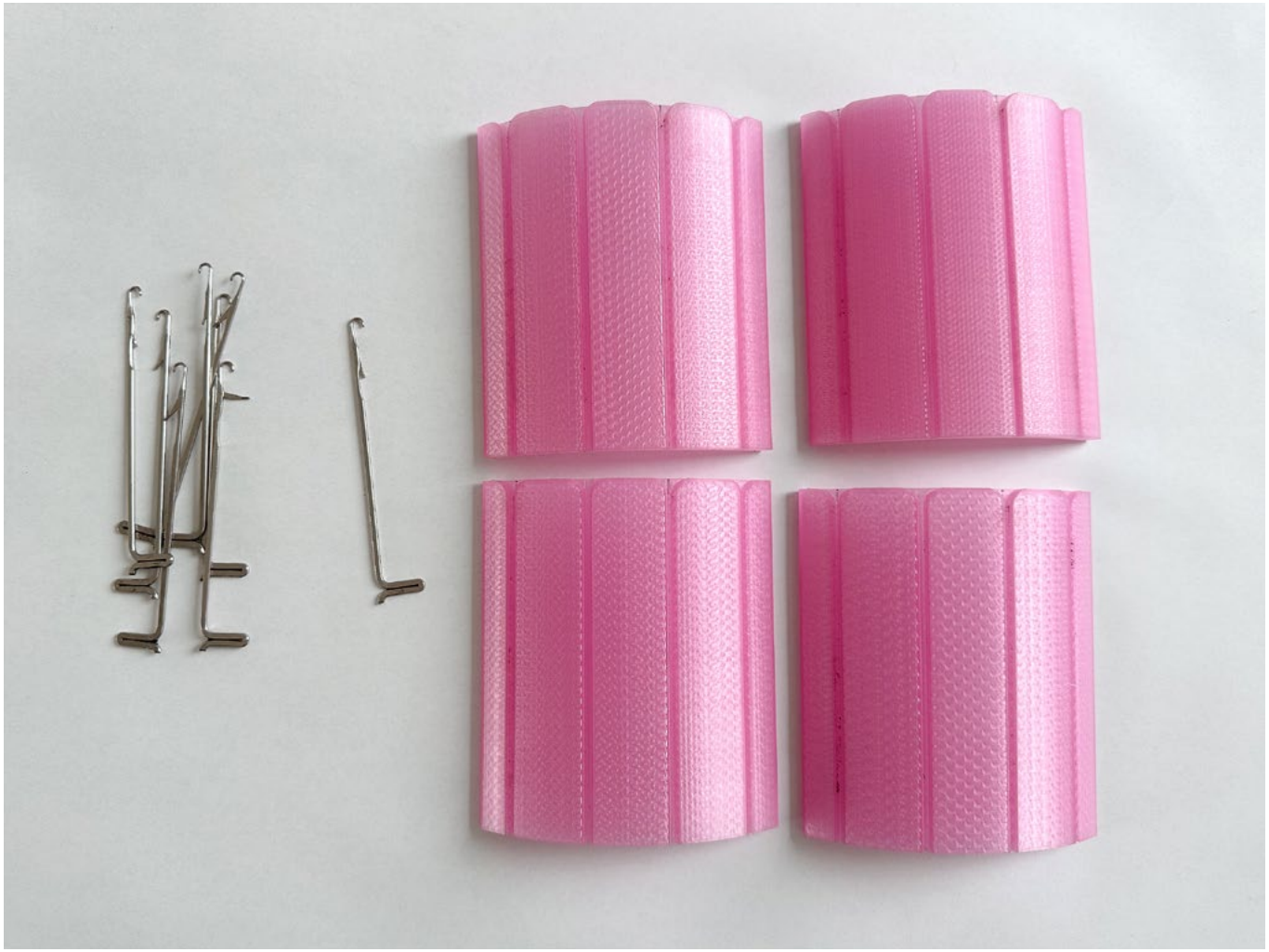


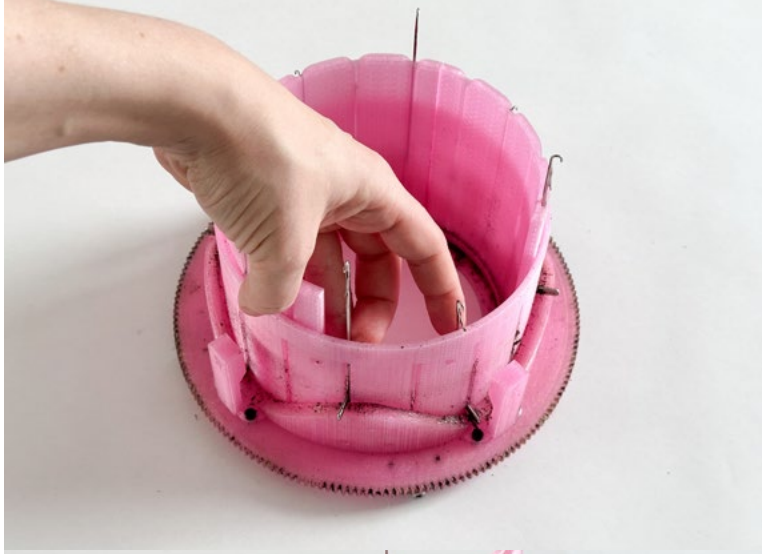
3D Printed Parts:
Needle Guide Bottom
Outer Cylinder

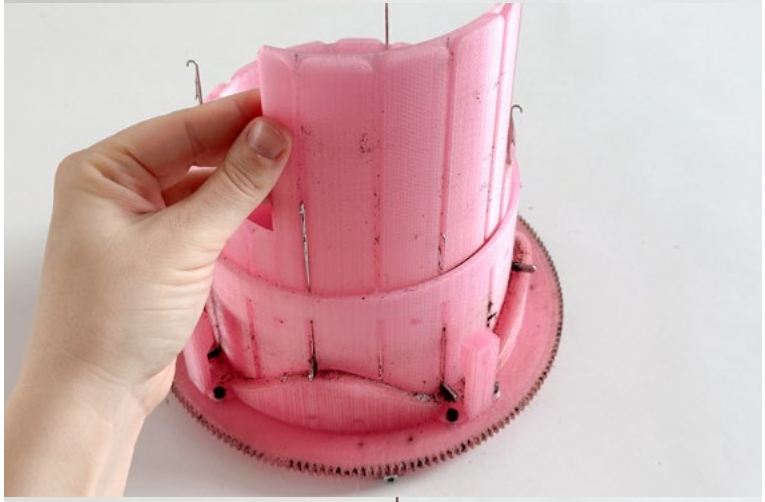
Hardware:
8x M3x6 Screws

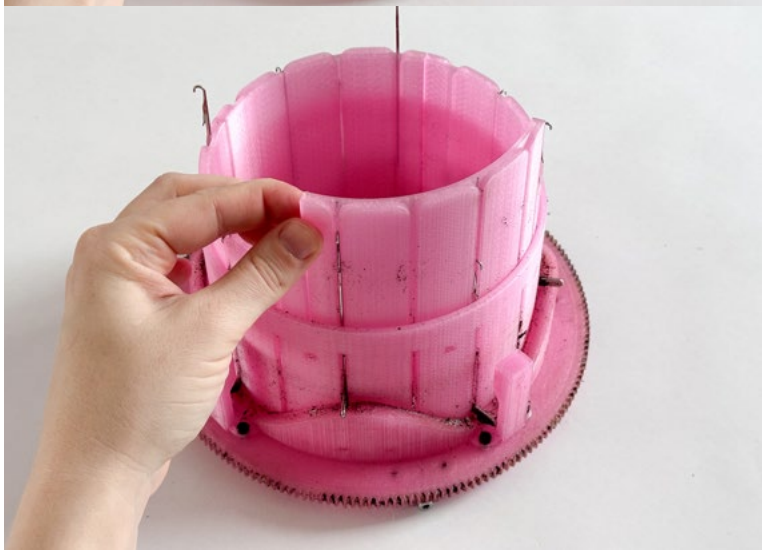
Bottom Gear
Cylinder Bottom
Cylinder Top





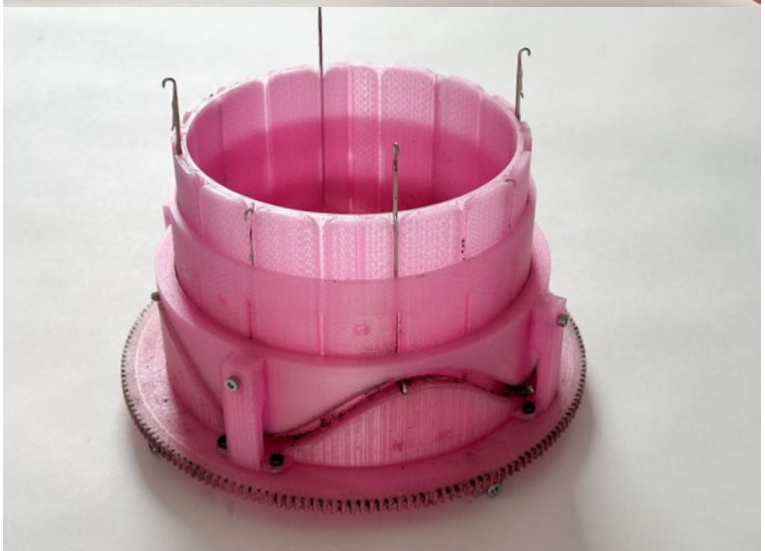






3D Printed Parts:
4x Inner Cylinder

Hardware:
4-16x Brother Needles KH360

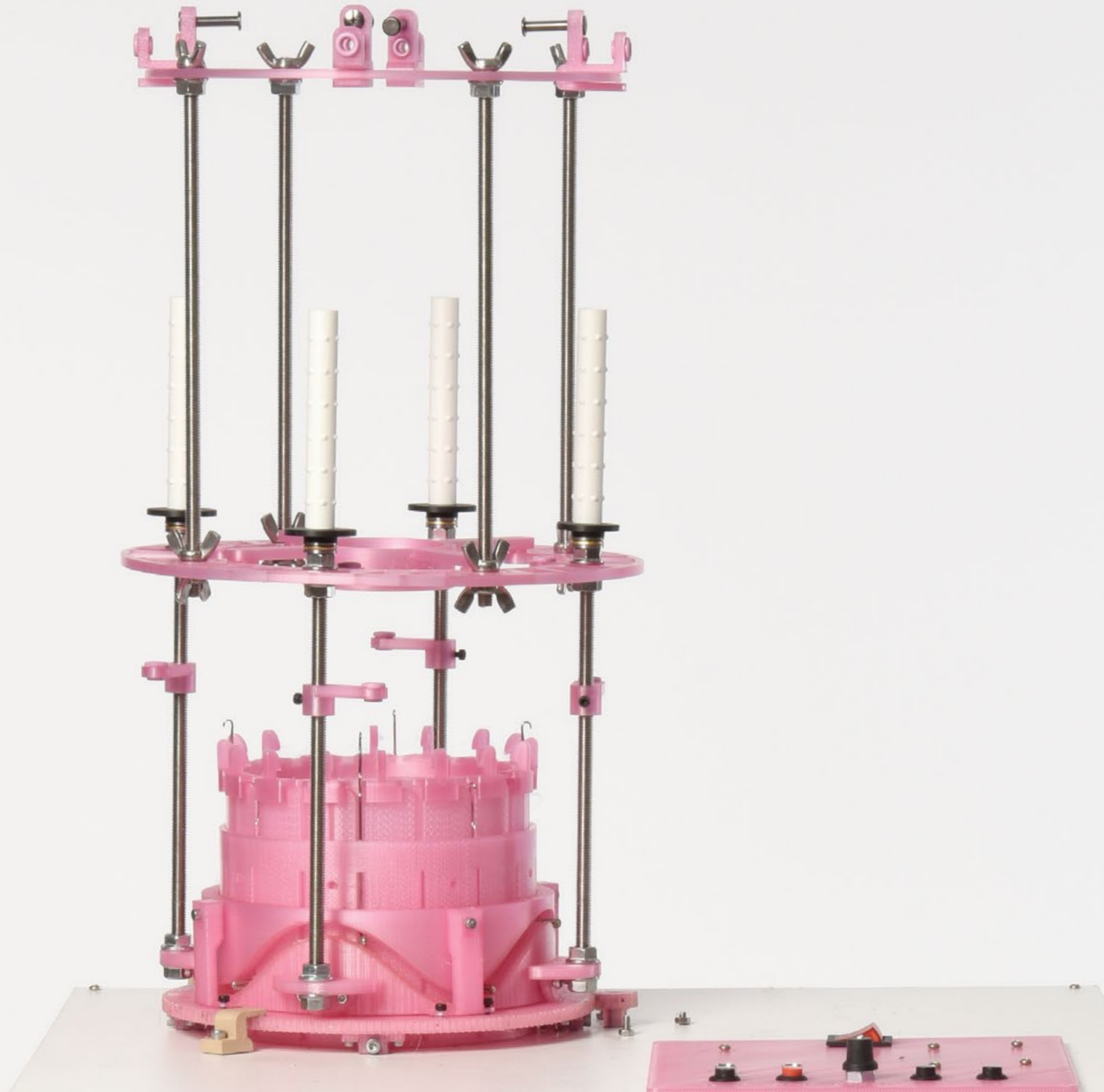


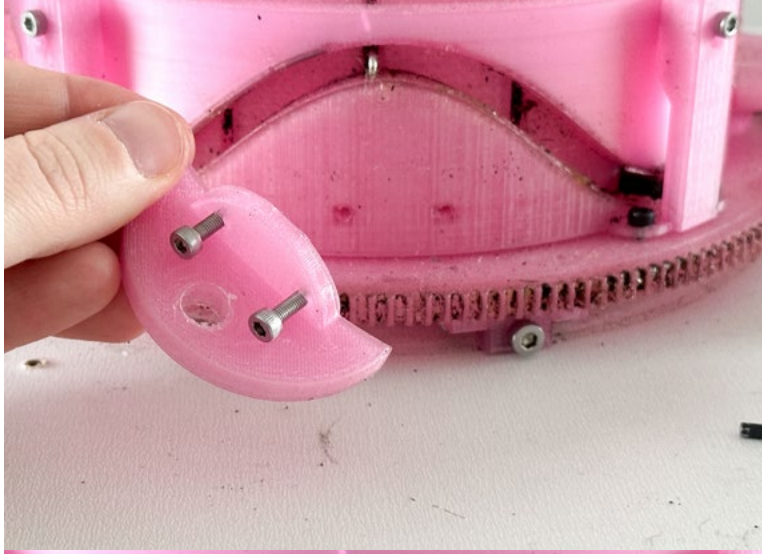
3D Printed Parts:
Needle Guide Top

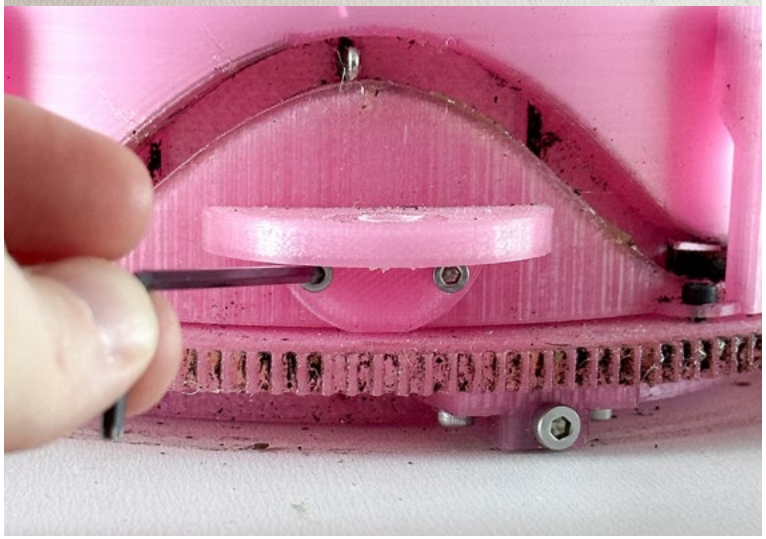
Hardware:
4x M3x12 Screws

Attach on table!
M3x12 Screws

Bottom Gear
Cylinder Bottom
Cylinder Top
Yarn System

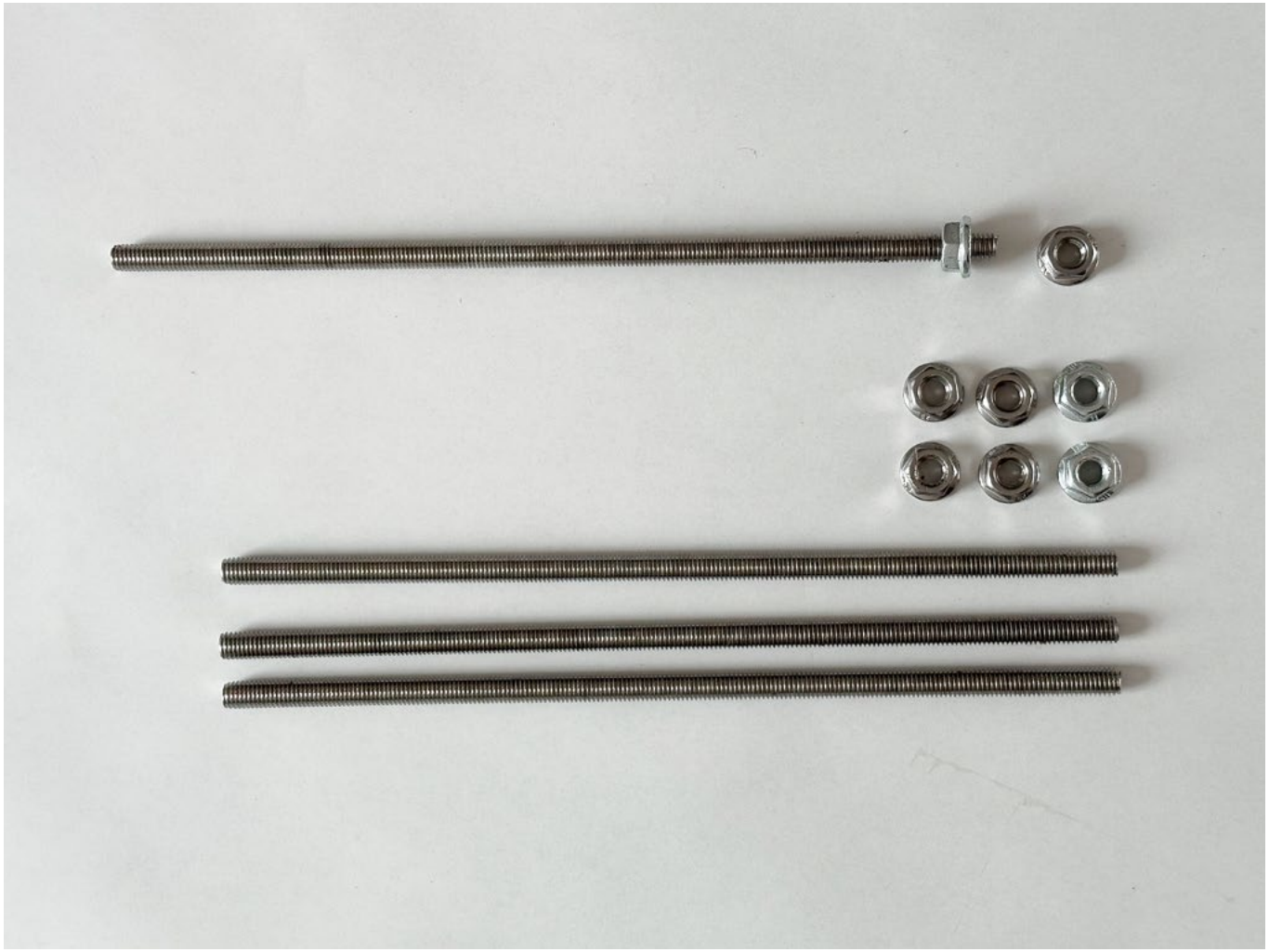


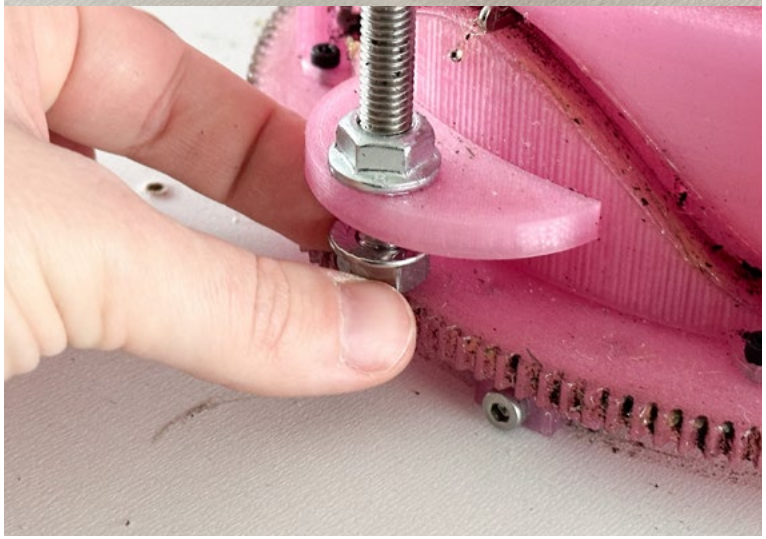




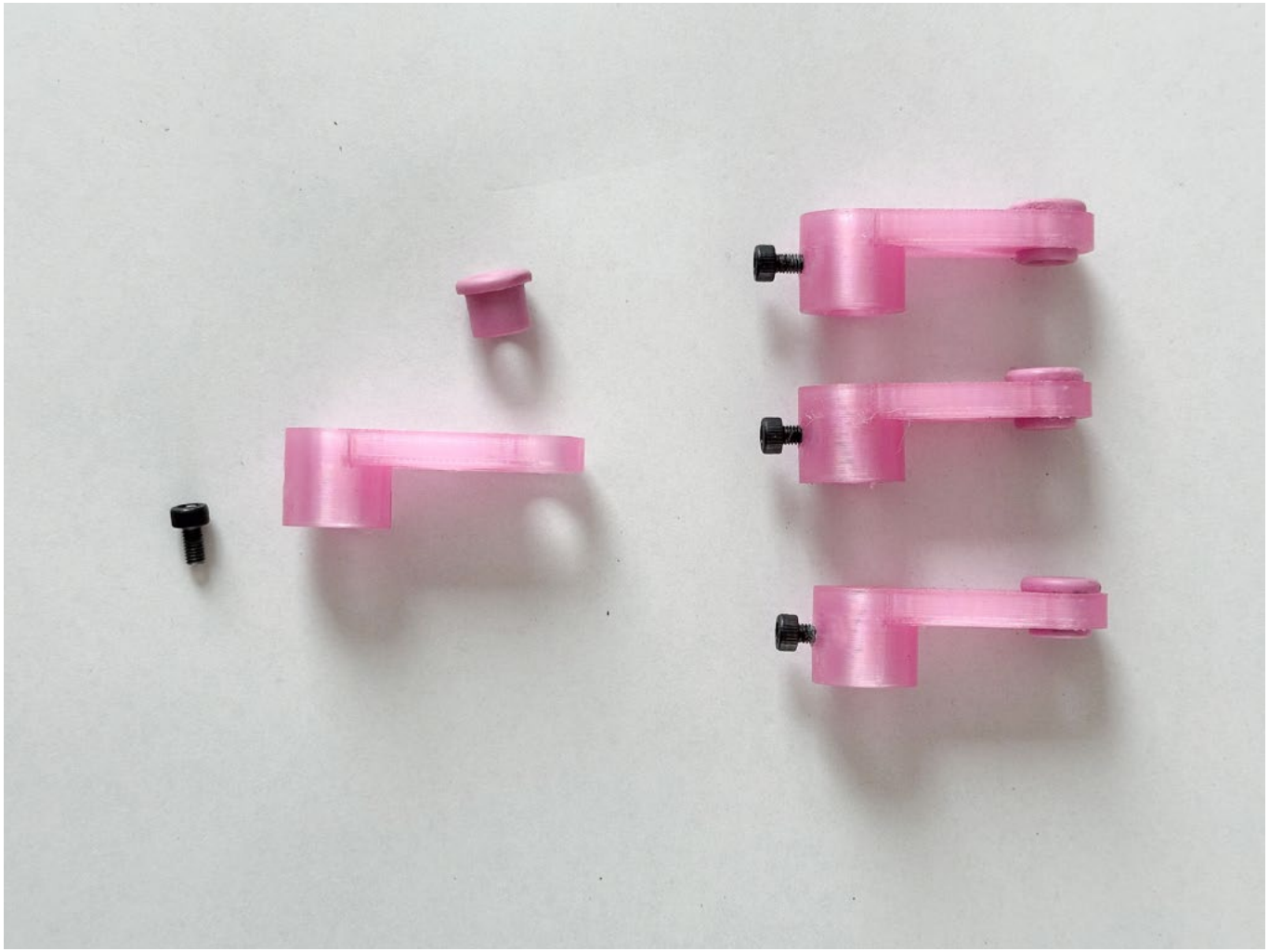
3D Printed Parts:
4x Threaded Rod Holder

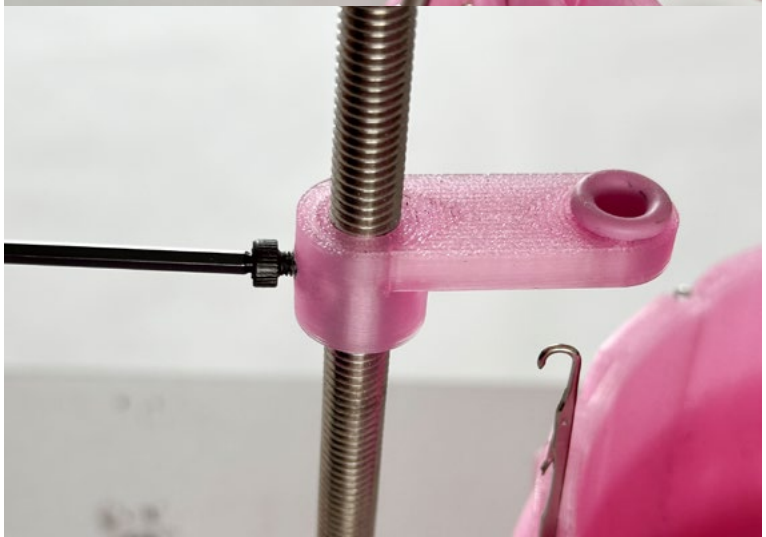
Hardware:
8x M3x8 Screws





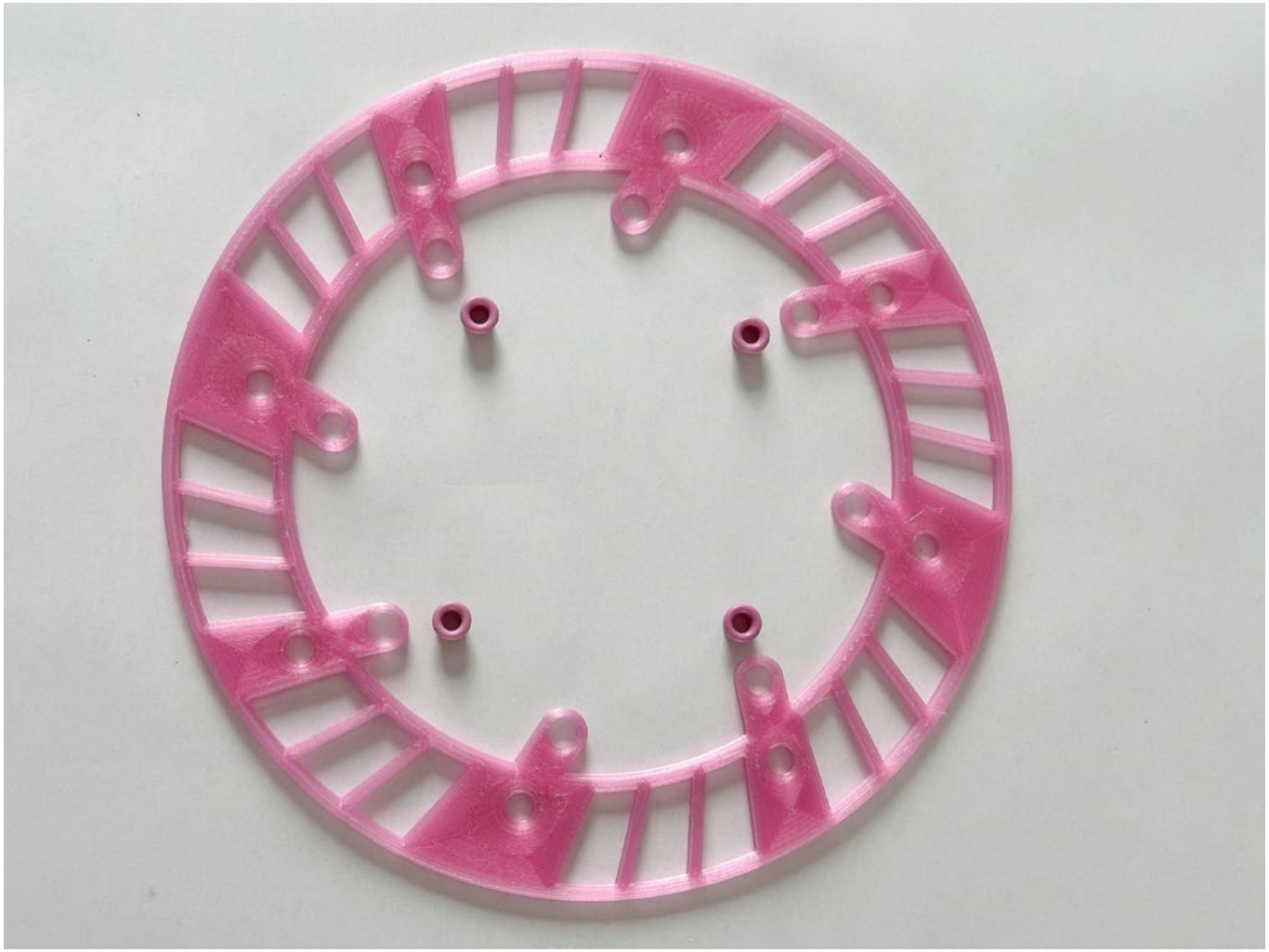
Hardware:
4x Threaded Rods M8
8x Flange Nuts M8

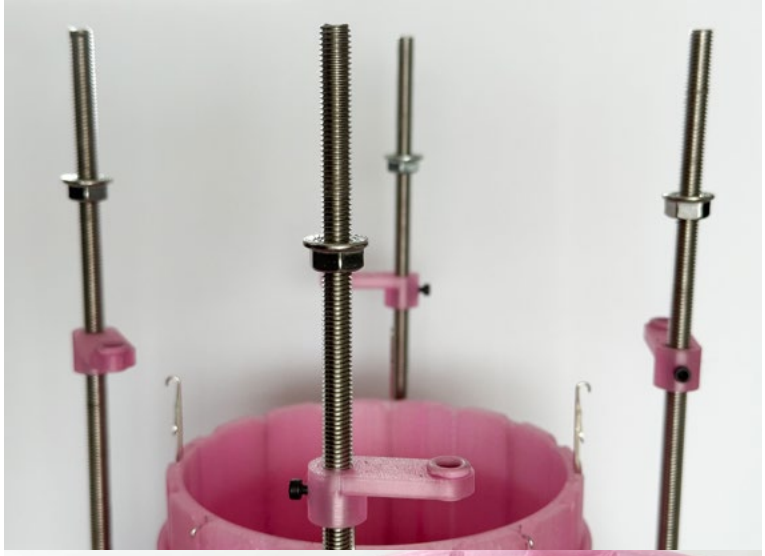




3D Printed Parts:
4x Yarn Wing Guide

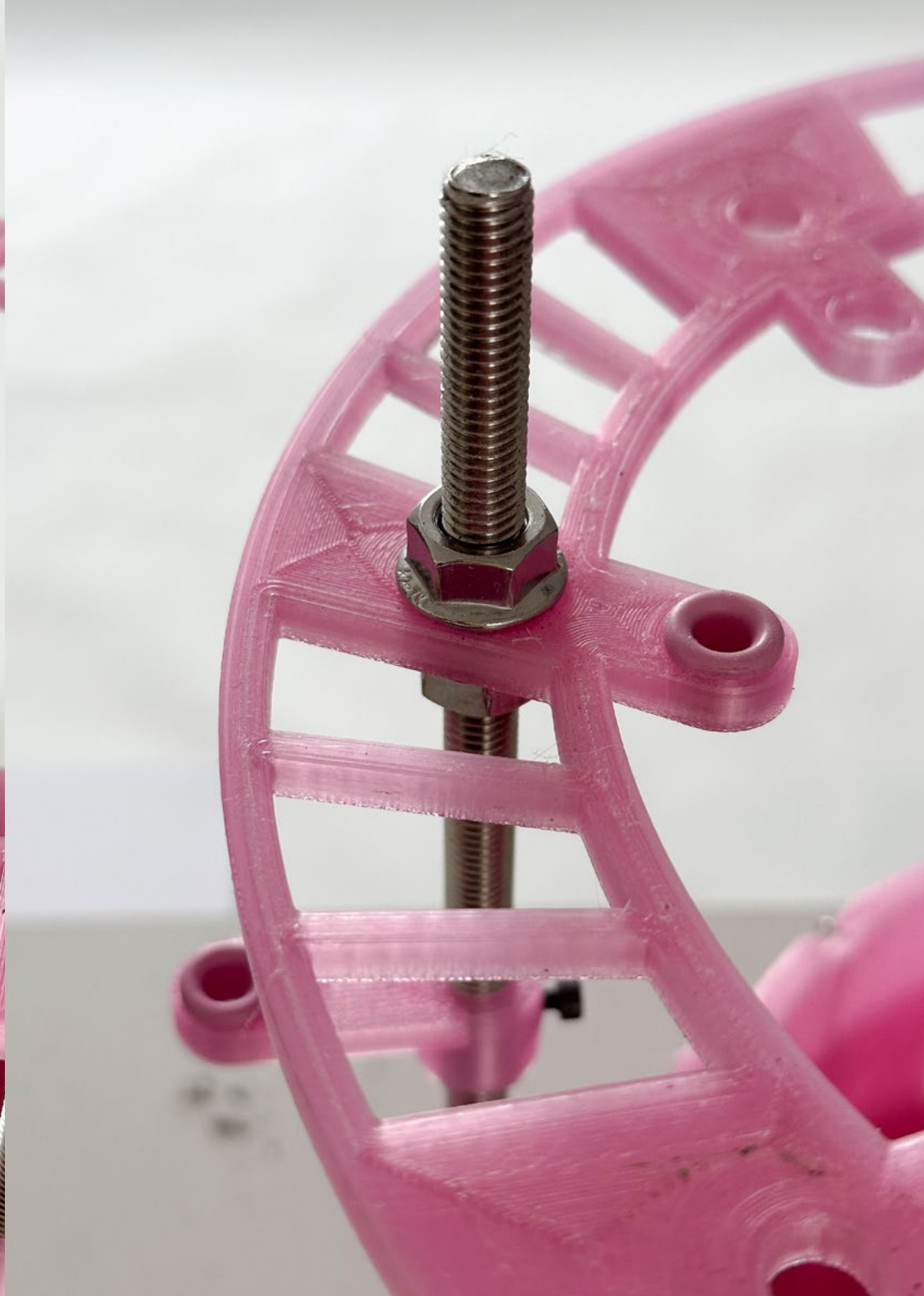
Hardware:
4x M3x6 Scews
4x Cermic Eyelets 5mm



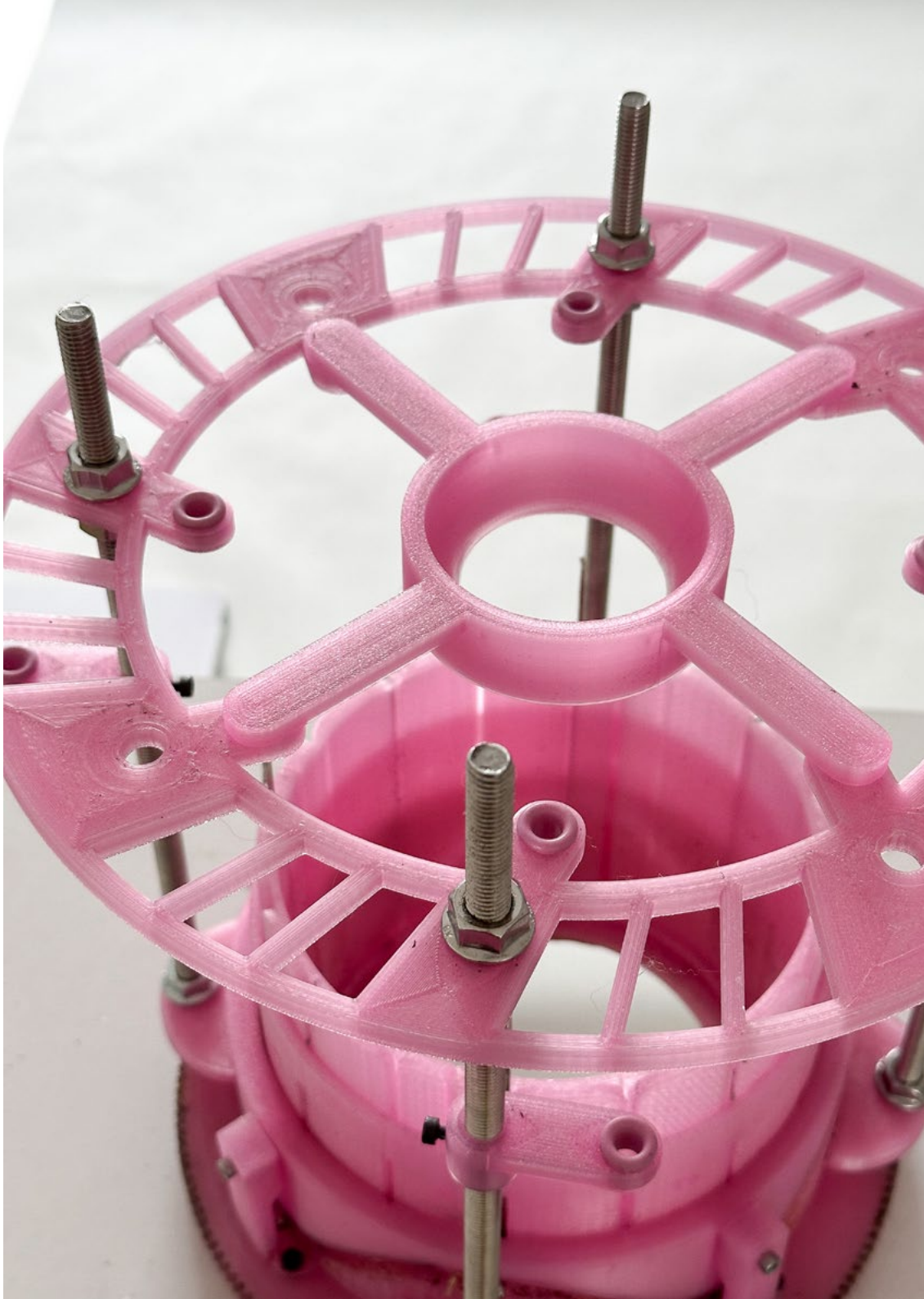


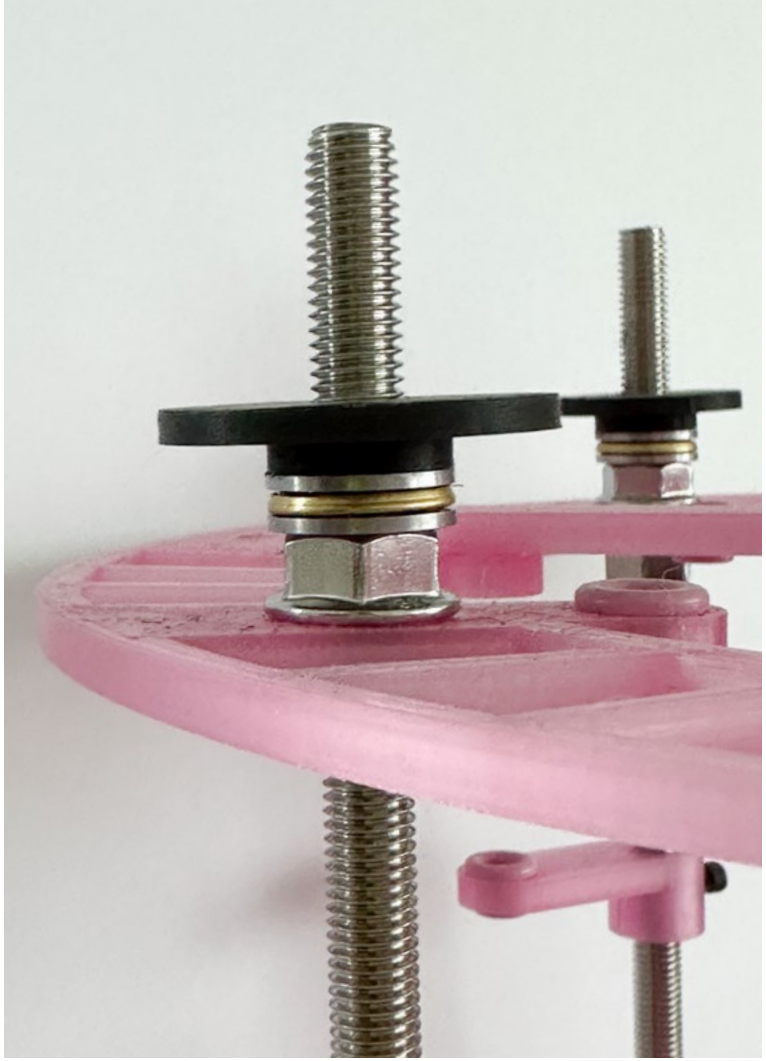
3D Printed Parts:
Middle Layer

Hardware:
4x Flange Nuts M8
4x Cermic Eyelets 5mm

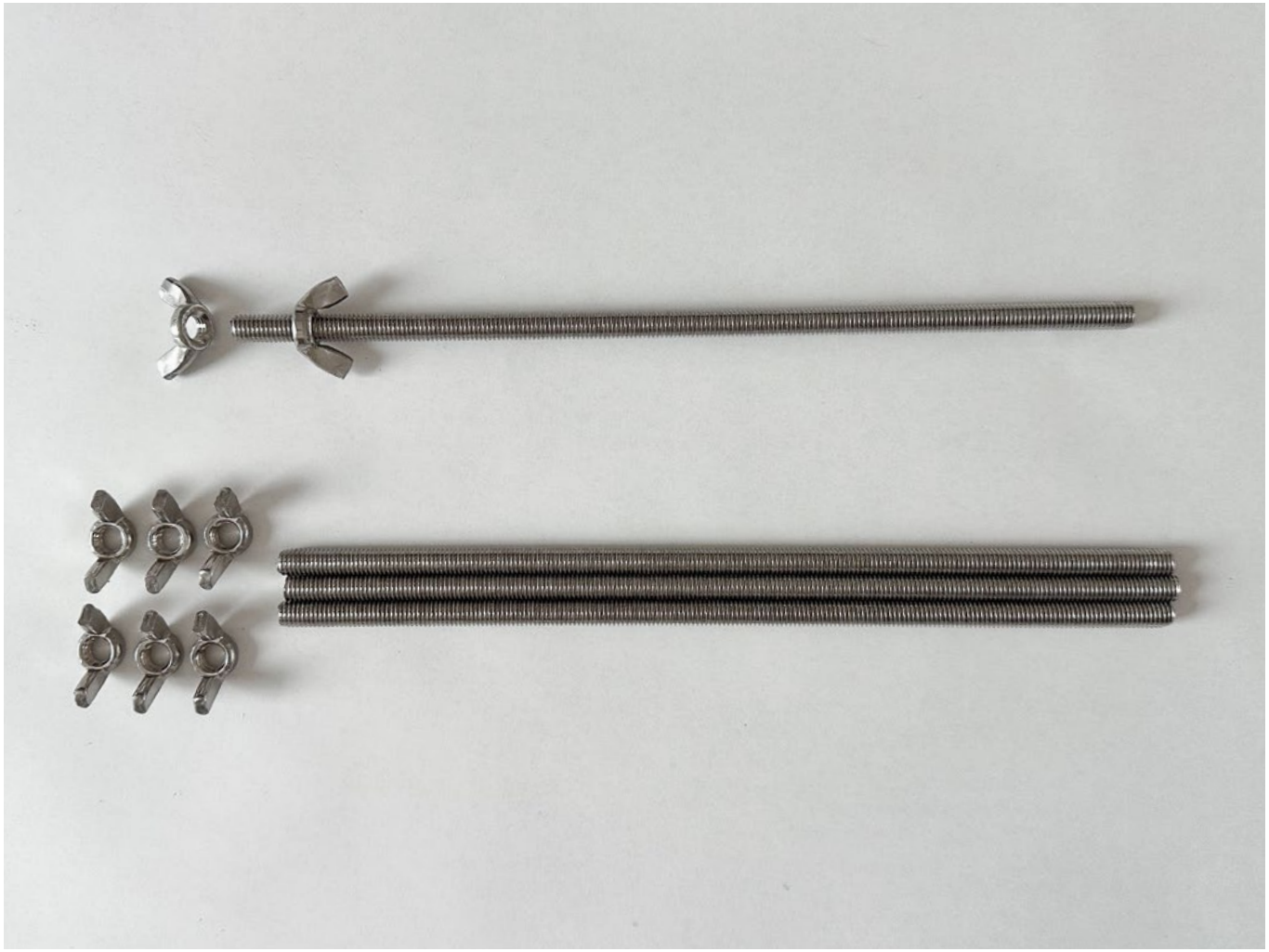
Funnel attachement

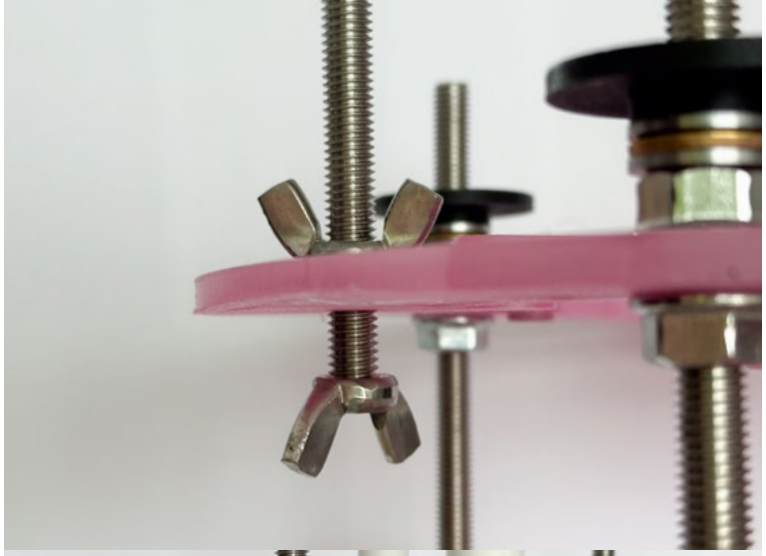




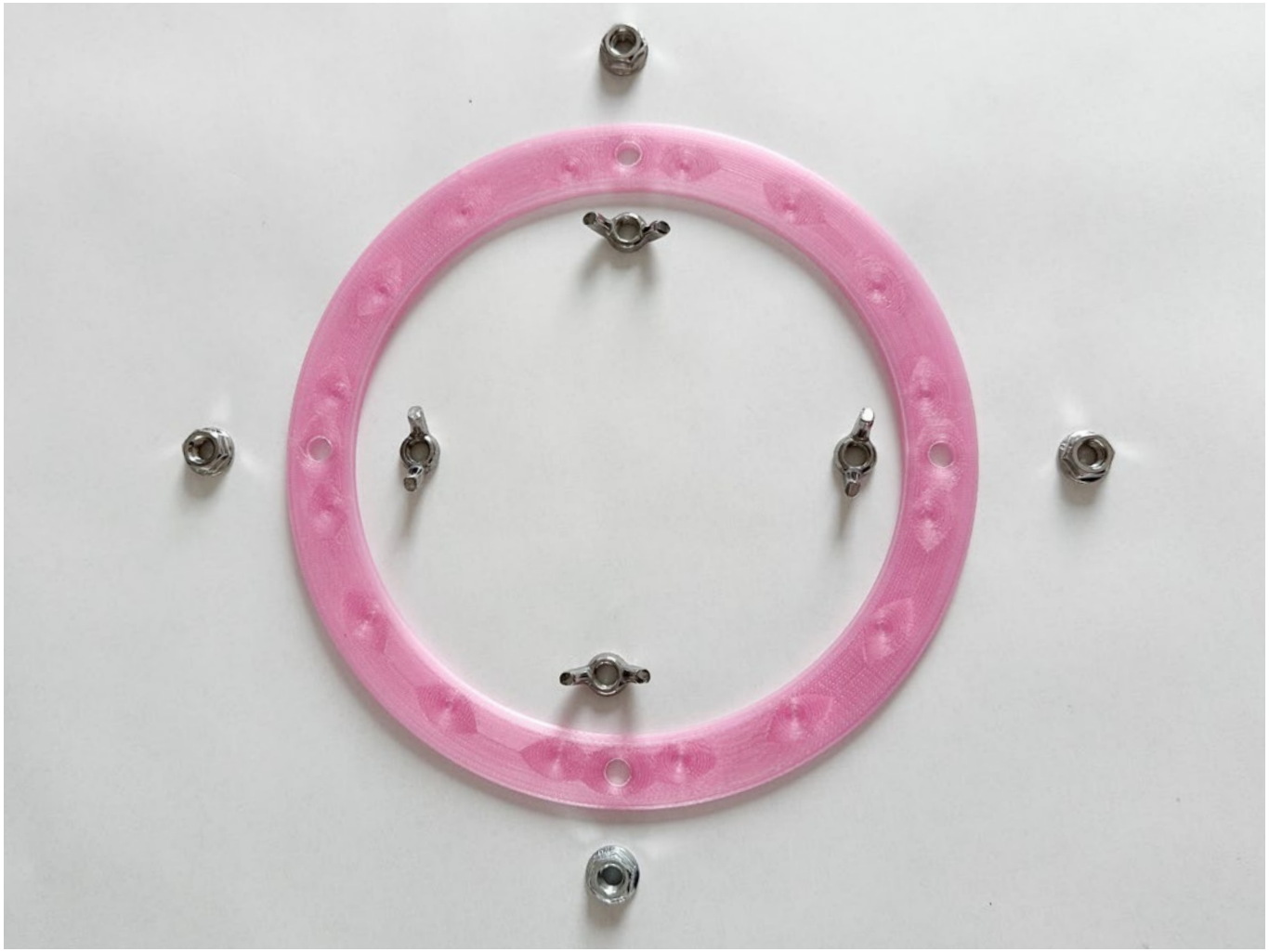
3D Printed Parts:
Spool Holder

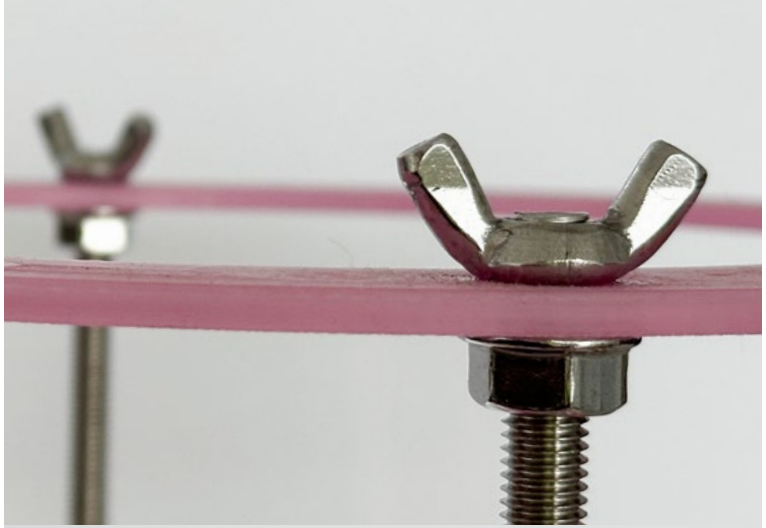
Hardware:
4x Thrust Ball Bearings





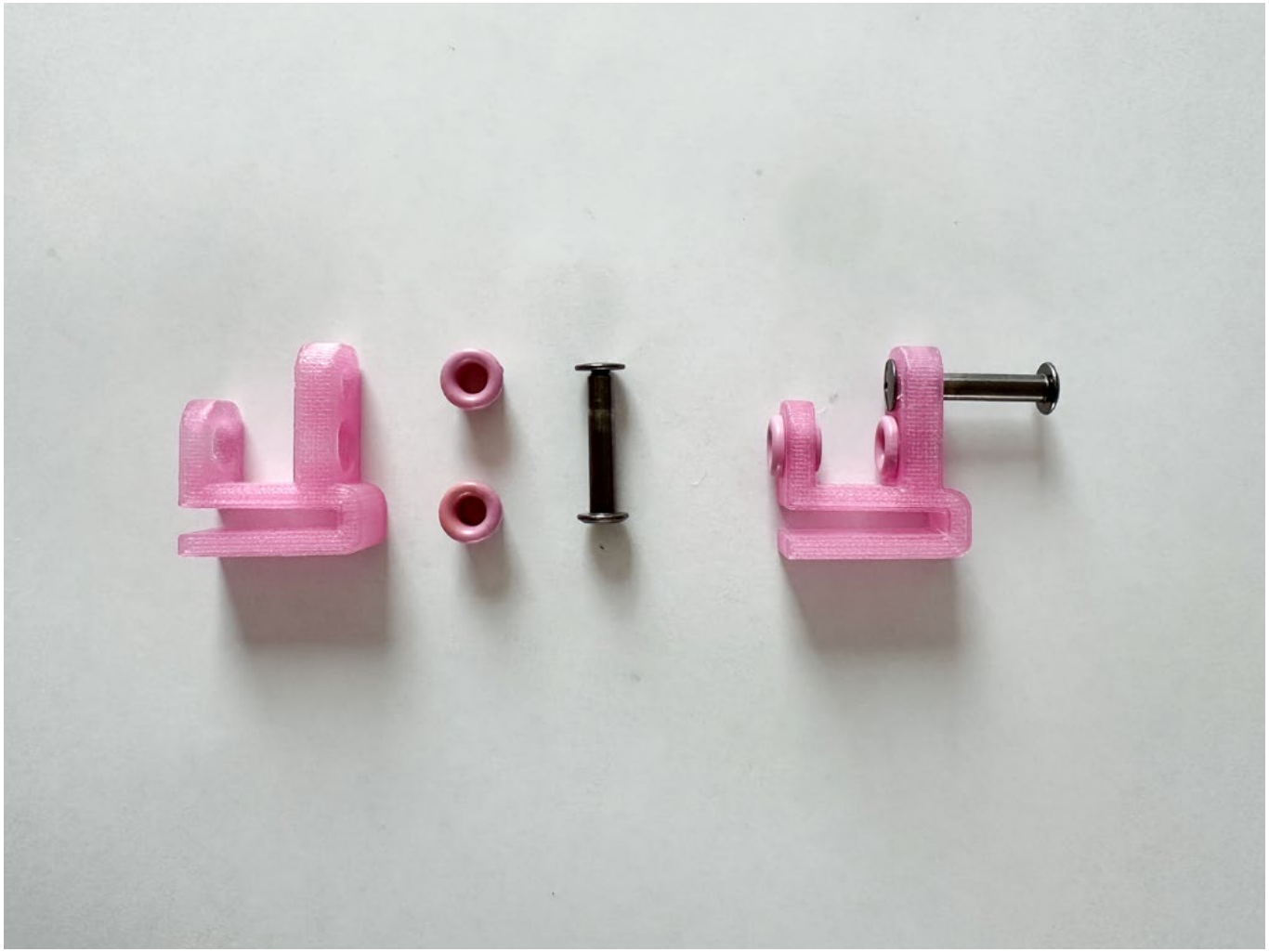
Hardware:
8x Wing Nuts M8
4x Threaded Rods M8

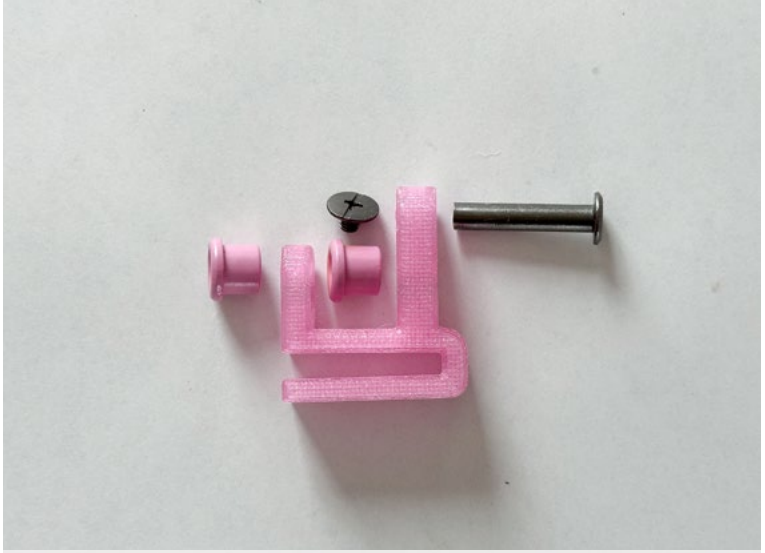


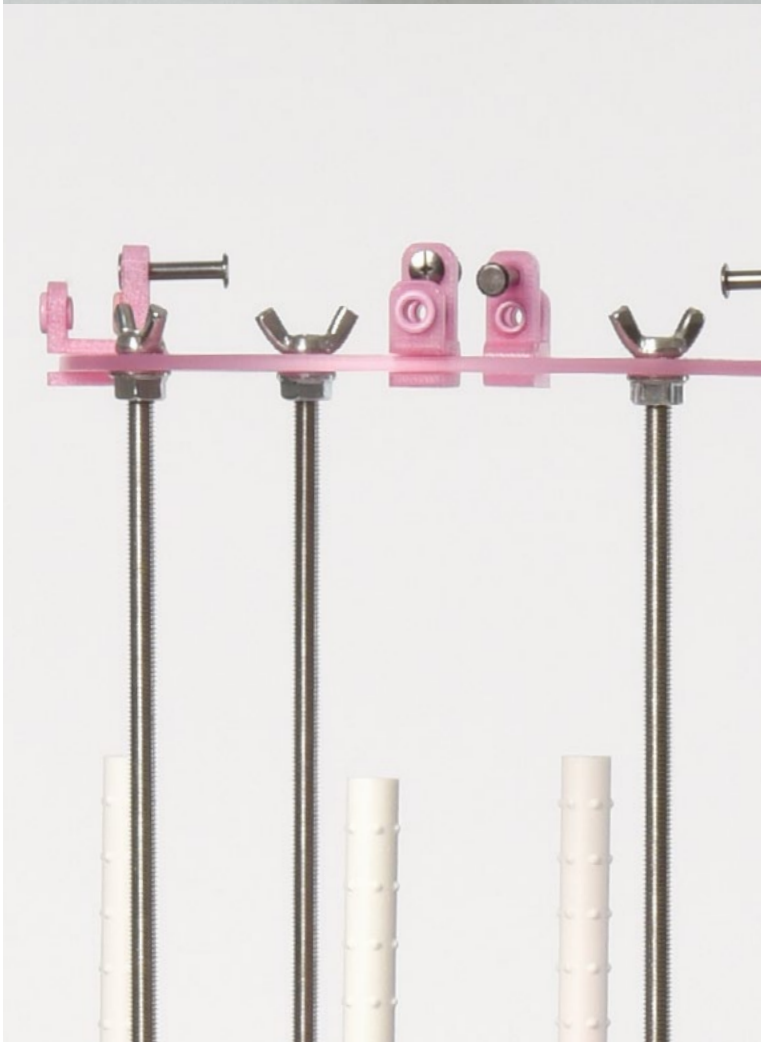


3D Printed Parts:
Top Layer

Hardware:
4x Flange Nuts M8
4x Wing Nuts M8

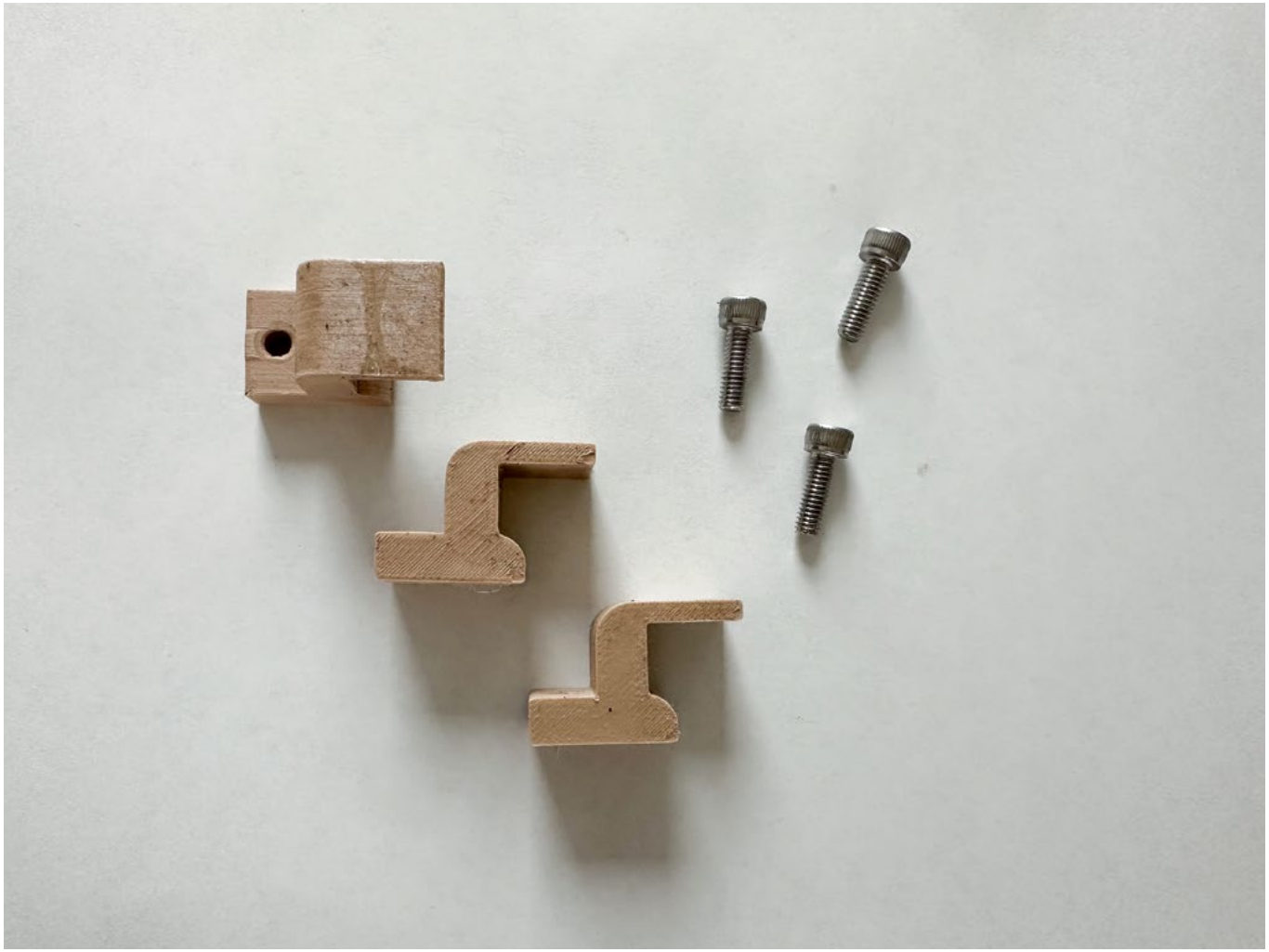


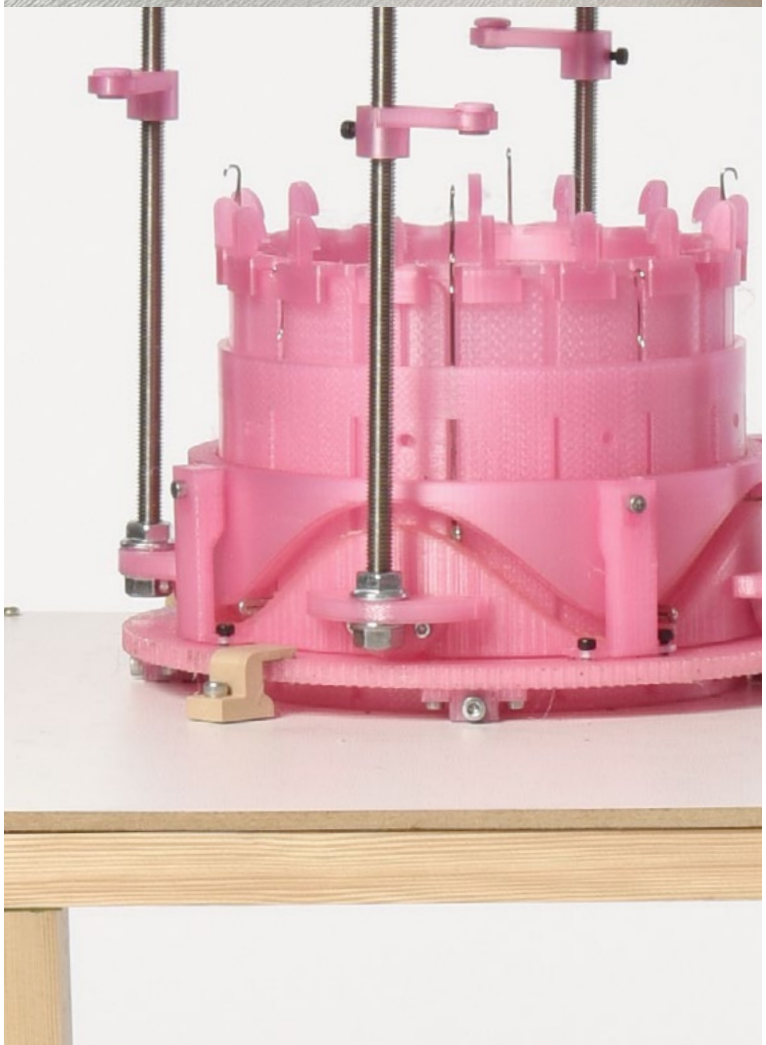




3D Printed Parts:
Yarn Tension Holder

Hardware:
8x Cermic Eyelets 5mm
4x Book Scew

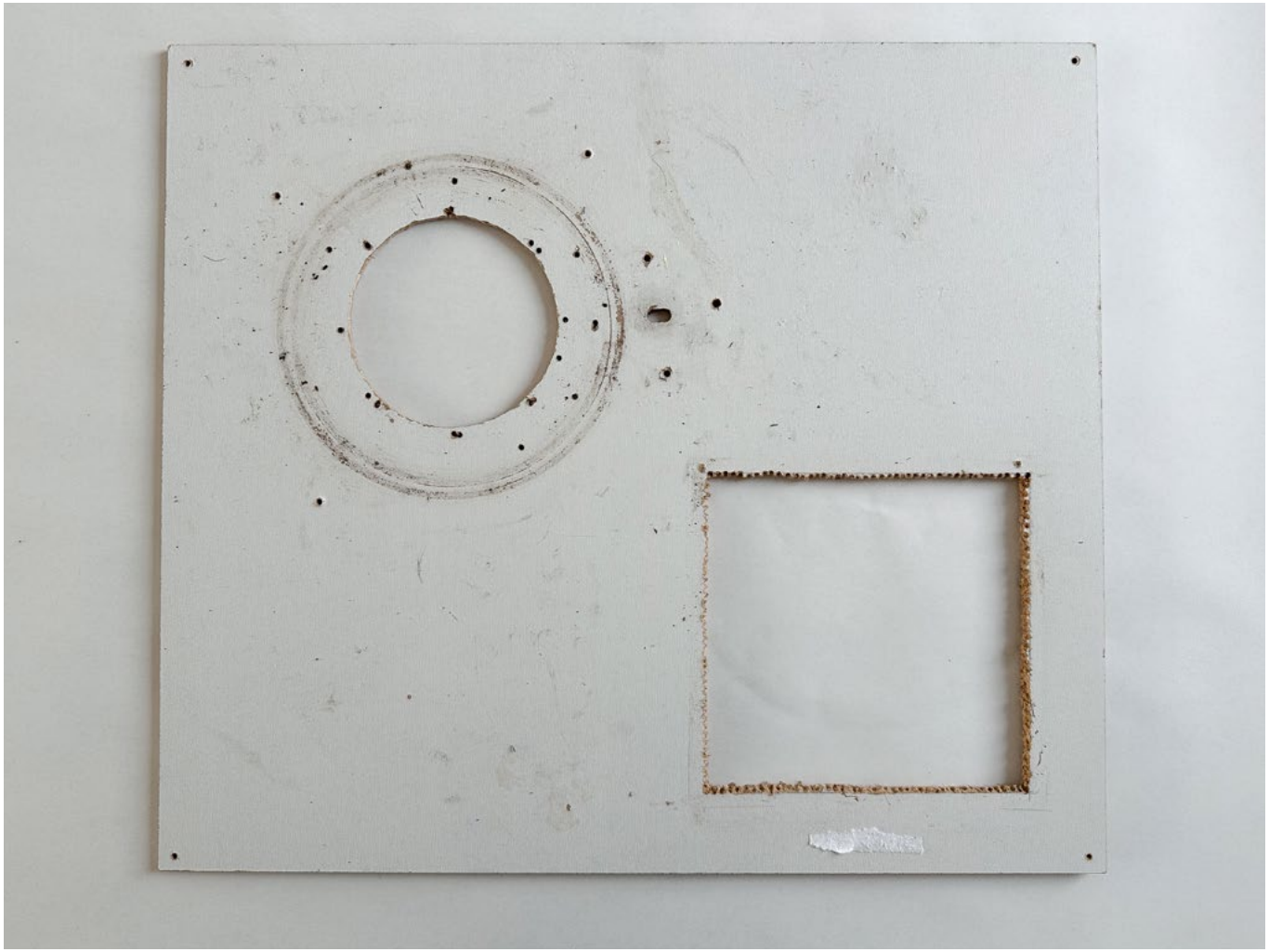


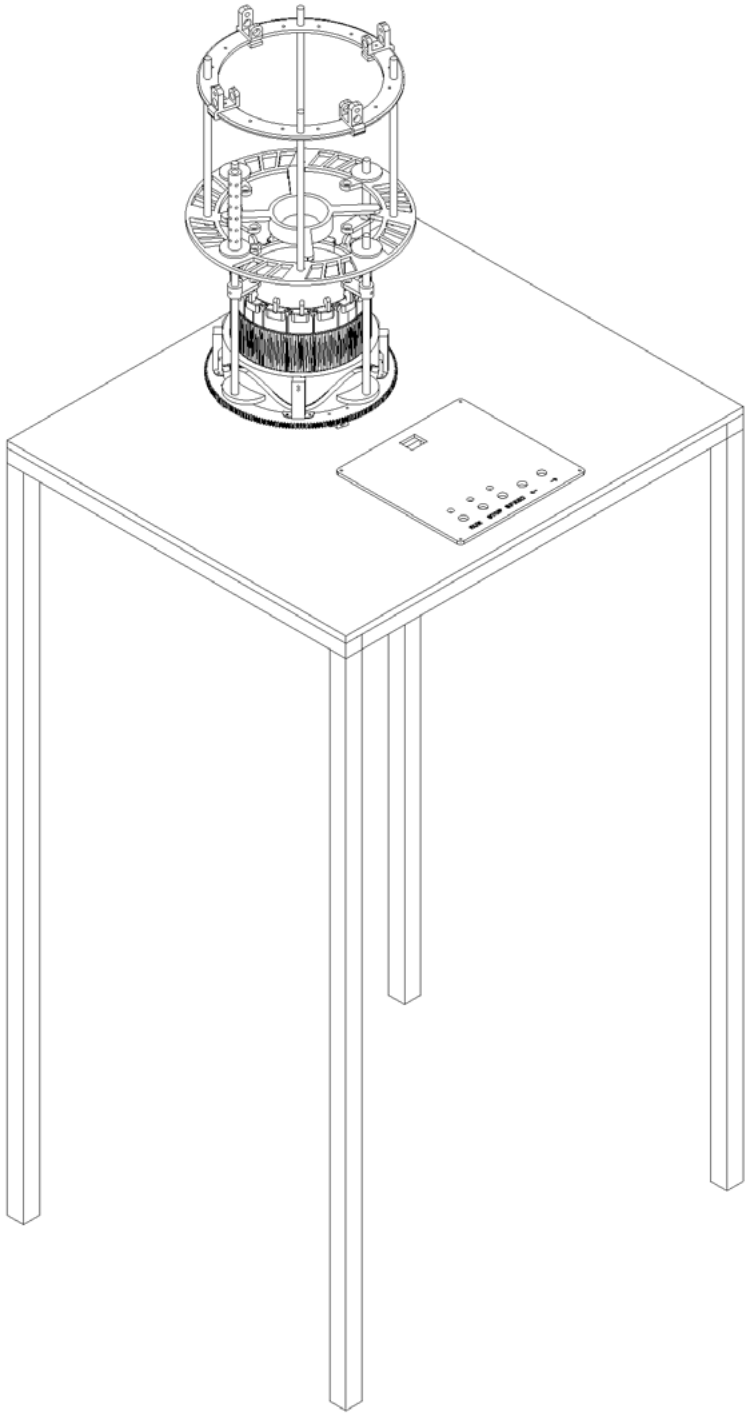


3D Printed Parts:
3x Bottom Gear Fix

Hardware:
3x M4x12 Screws

Bottom Gear
Cylinder Bottom
Cylinder Top
Yarn System
Table





Note: You can design the table basically how you like: Adjusted to your height, bigger work station etc. Here you will find my measurements for a simple table.

Tabletop:
610x520mm

Legs length: 1000mm
Diameter leg bars: 25x25mm
Connecting bars: 25x30mm

Round hole: I used the „Outer Cylinder“ to draw the holes of the screws and the outlet on the wood board. The diameter is 110mm.

Electronics:
The square hole is 175x175mm

End Notes:

You will find a STL File named „Needle Holder“ – you can also print those but I had the feeling it doesn’t quite work the way it should. Any feedback is welcome!

Anyway: You build your Macro Yarn Machine
– congratulations!

I’m happy to collaborate for further developments, contact me via E-Mail: studio.jasminmartinez@gmail.com

Let me and others find your process and developments via the hashtag #macroyarnmachine