



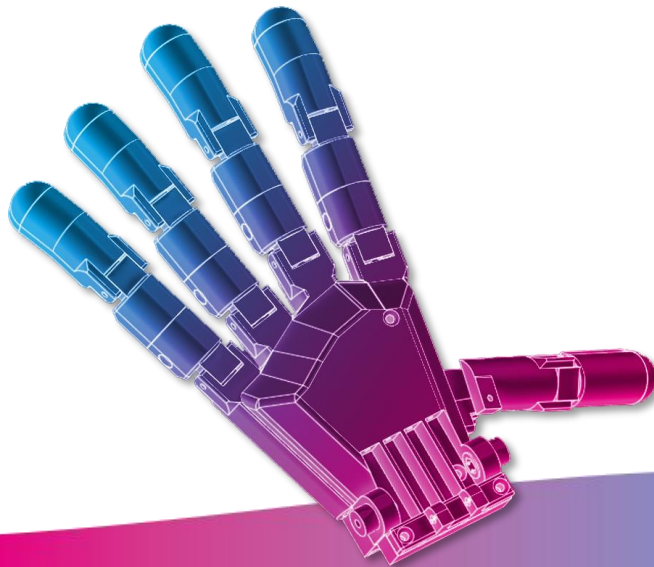
How to build your robot

www.pib.rocks/build



assembly instructions for:

HAND



You
Print
Build
Develop

your own robot!

Printable parts



Pib's hand consists of **10 printable parts** and the pre-assembled fingers and is assembled in **22 steps**.

In order to construct the hand, you will need to print the parts as seen in the table. You also need 4 assembled fingers.

Please note: For better readability we use the abbreviations in the tutorial: D02 instead of D02-Palm_right.

Non-printable parts

D02-Palm_right

D04-Hand_back_right

D09-Finger_tip

D10-Tube_cover

D11-Ballbearing_enclosure_upper

D12-Ballbearing_enclosure_lower

D13-Thumb_rotator

D14-Thumb_right

D16-Thumb_proximal_upper

D18_Tube-enclosure_right

Non-printable parts



You will also need the following non-printable parts from our pib.Box Master.

If you do not have it yet, you can buy in our shop

<https://shop.pib.rocks>

Non-printable parts

6 x **S01** M3 nuts

6 x **S06** M3 16 mm screws

4 x **S07** M3 18 mm screws

3 x **S09** M3 22 mm screws

3 x **S11** M3 30 mm screws

6 x **M08** metal rods

14 x **M01** Ballbearings

3 x **M10** Spring TOR410

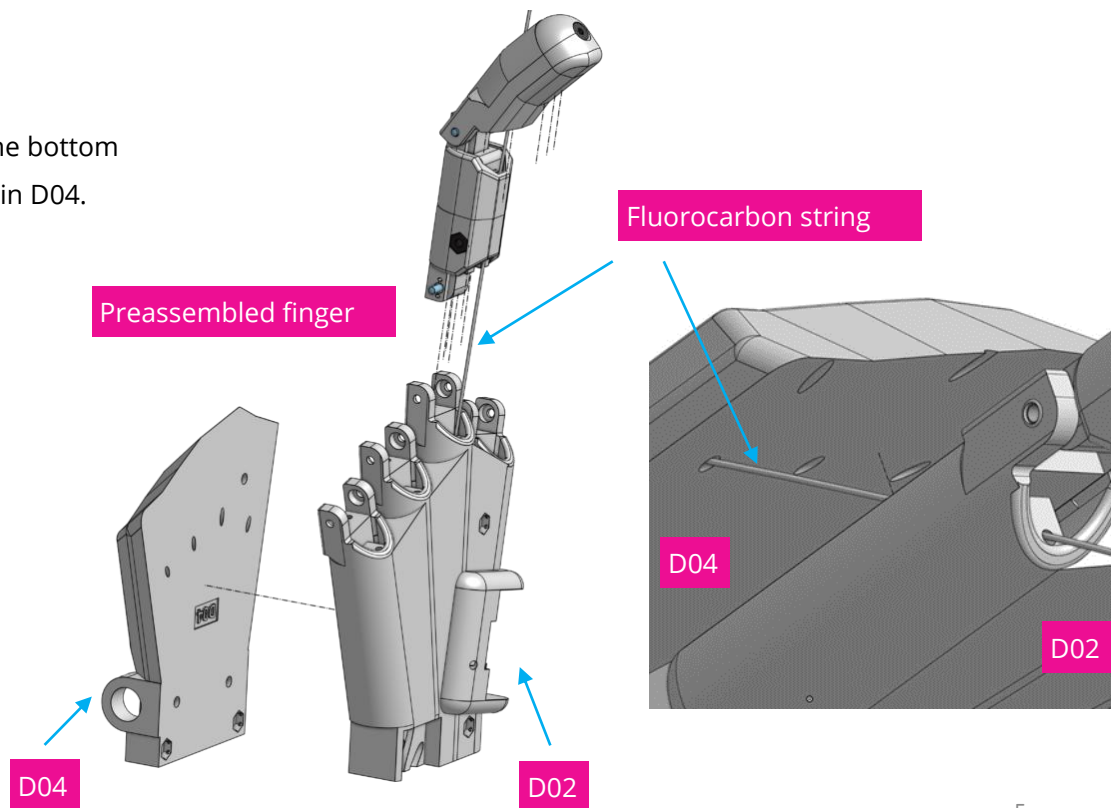
1 x **M11** Spring T460

6 x 65cm Teflon tubes

285 cm Fluorocarbon wires

Step 1

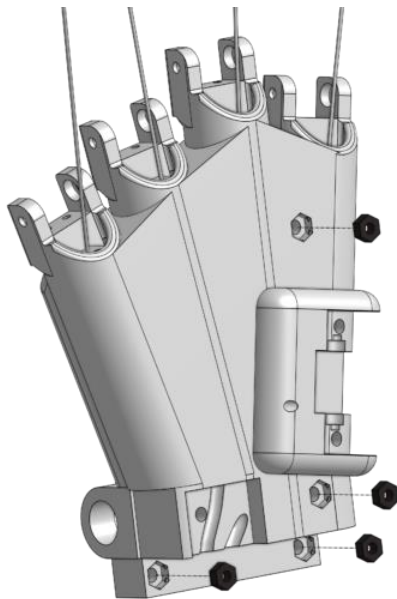
Guide the fluorocarbon string from each finger to the bottom hole of D02, then to the lower hole in the same line in D04.



Step 2



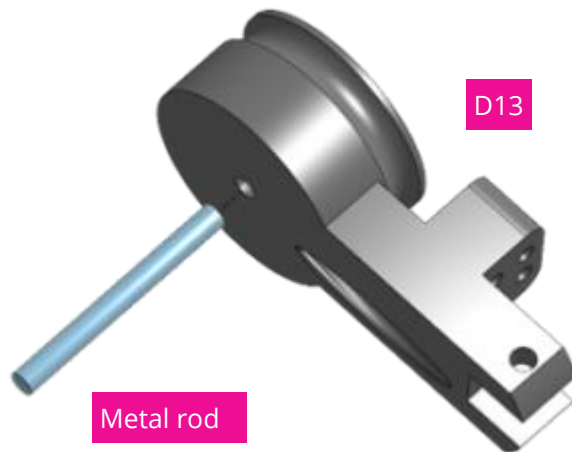
Place 4 x nuts in the shown spots of D02.



Step 3a



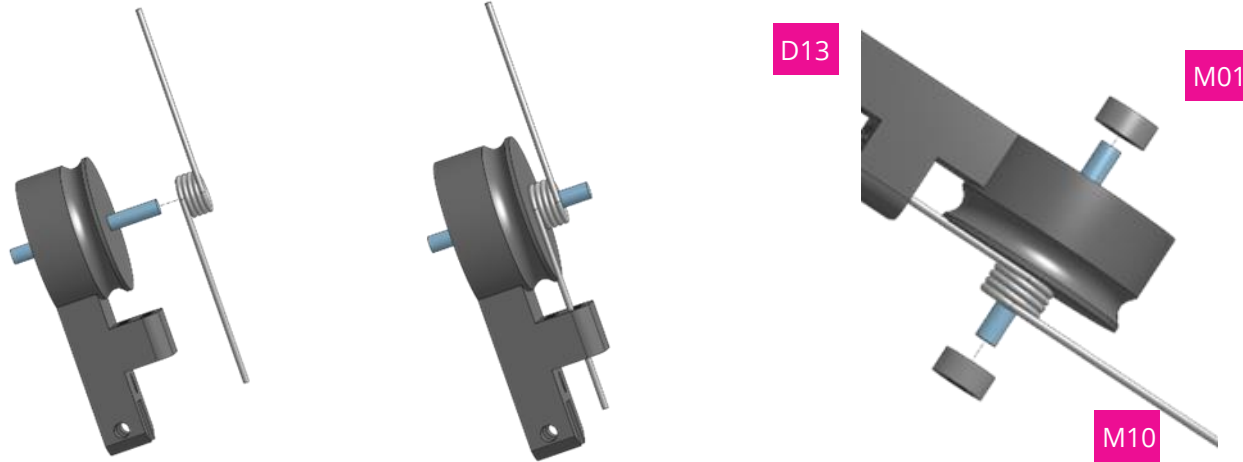
Insert the metal rod into D13.



Step 3b



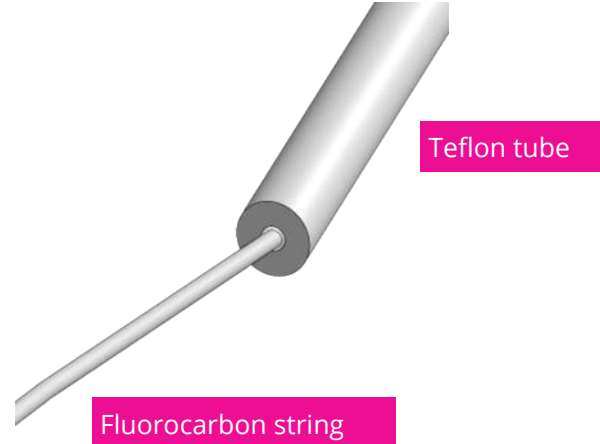
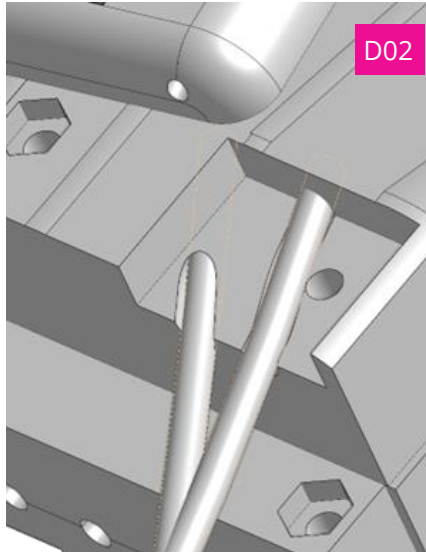
Then, place a M10 spring on the metal rod and add 2 x M01 ballbearings, one from each side of the rod.



Step 4



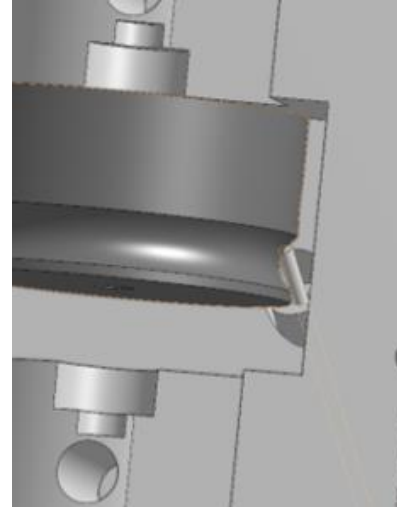
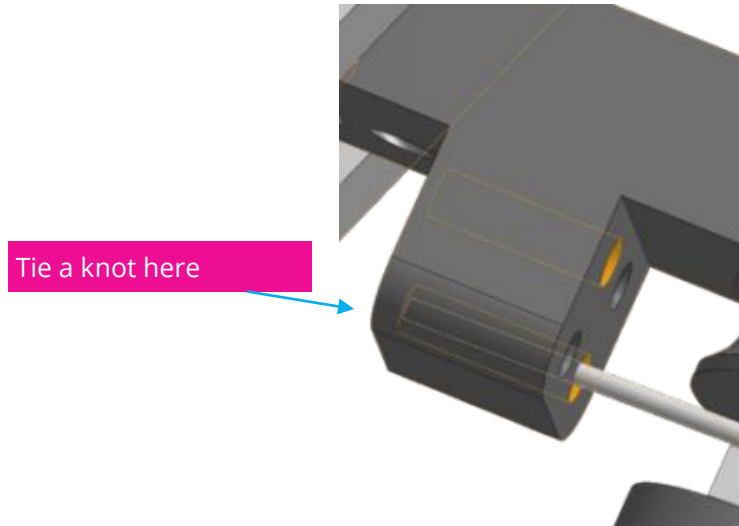
Insert 2 x teflon tubes with each 65 cm length into the shown spots of D02, then insert 1 m of fluorocarbon string into each tube.



Step 5



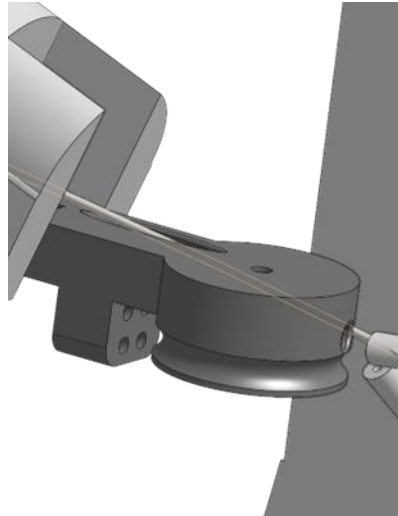
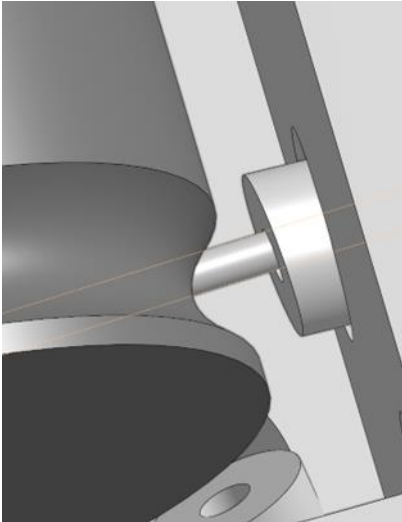
Connect the highlighted one from the top of D13 to the upper left hole and lower right hole and tie a knot.



Step 6



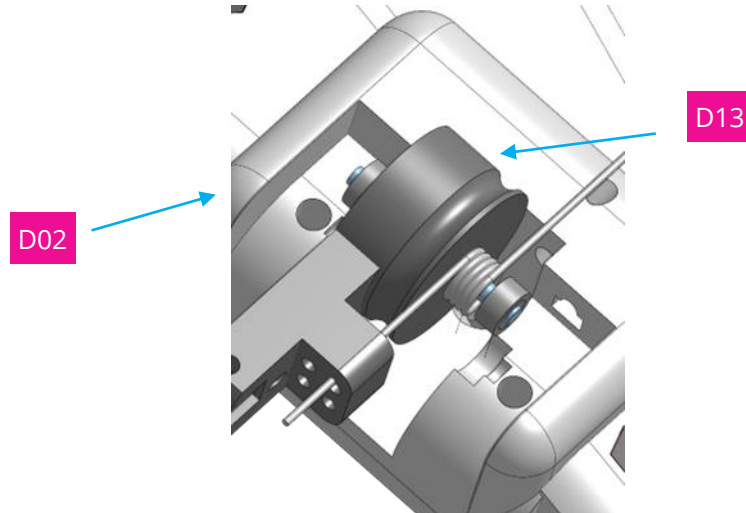
The other string should pass by the shown hole to be connected to the thumb later.



Step 7



Place D13 in the shown spot in D02 and insert the end of the spring to ist designated hole. Try to shorten the spring with a plier.

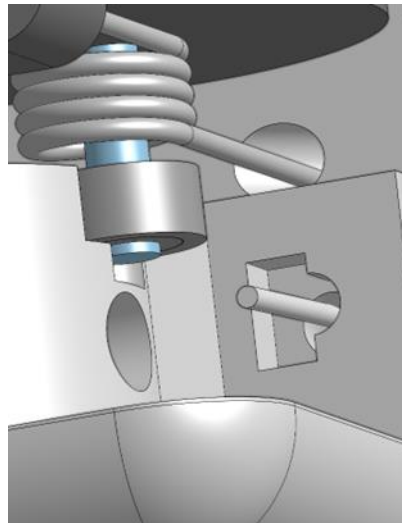
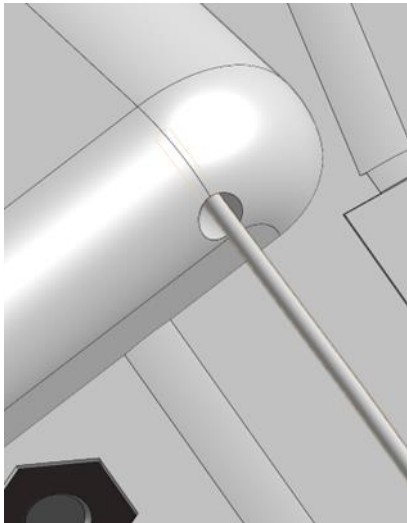


Step 8



Insert 80 cm of fluorocarbon string through the shown hole and tie a knot, then leave it loose to be used to motorize the wrist in the forearm tutorial.

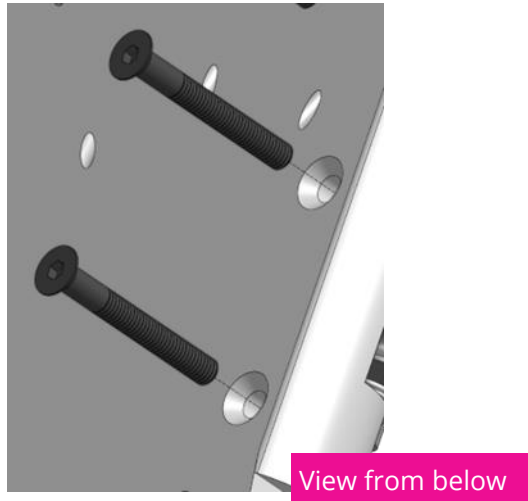
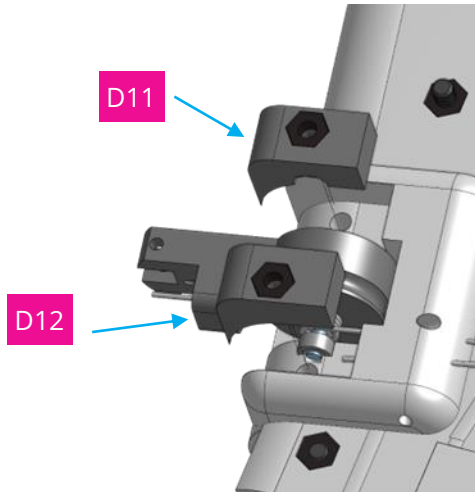
D02



Step 9



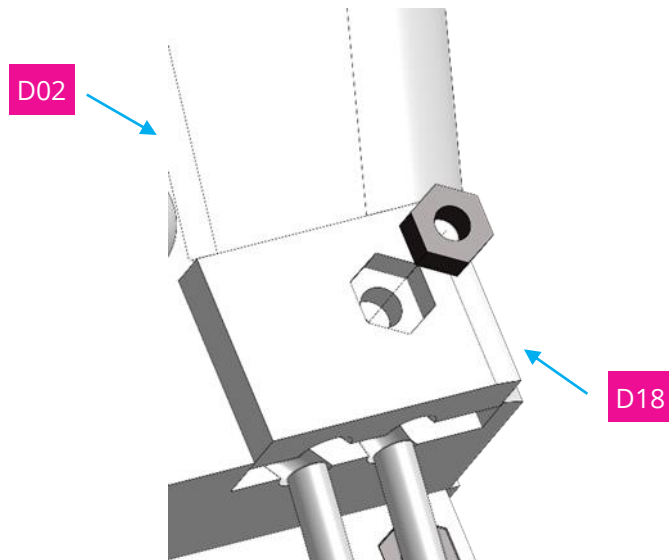
Hold D13 with your finger until you place D11 and D12. Place 2 x nuts in the shown spots and close them with 2 x 25 mm screws from the other side.



Step 10



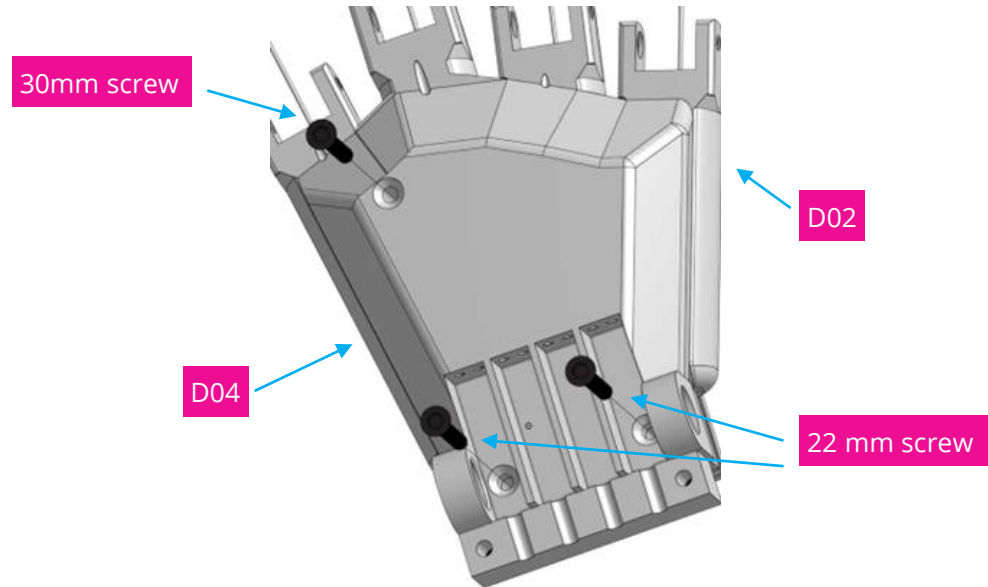
Put D18 in the shown spot above the tubes and place 1 x nut in it.



Step 11



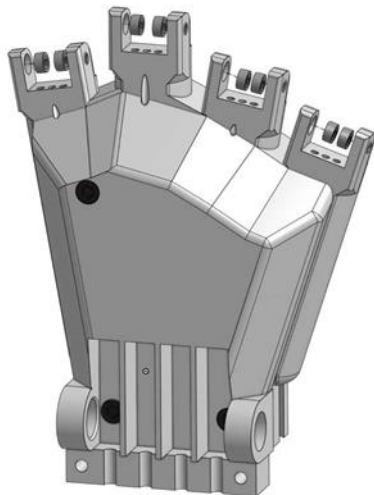
Use 2 x 22mm screws and 1 x 30mm screw in the shown spots and tighten them to connect A04 to A02.



Step 12



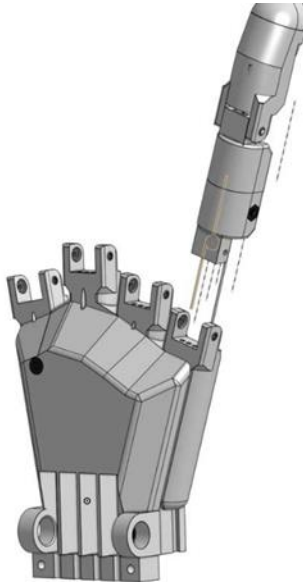
Place 8 x M01 ballbearings in the shown spots of D02.



Step 13



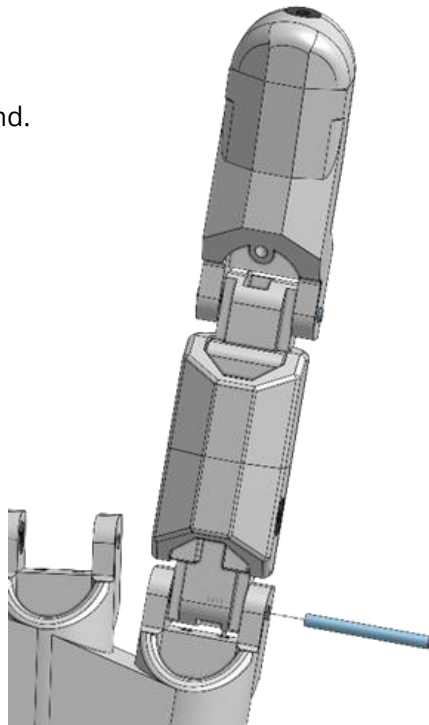
Place the end of the torsional spring attached to the finger into the left hole. Repeat for each finger.



Step 14



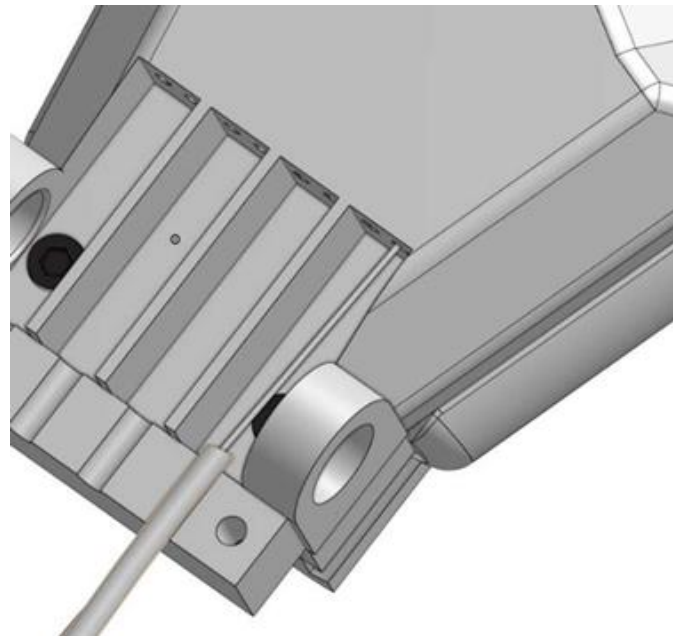
Insert metal rod in the shown hole to fully attach the finger to the hand.
Repeat for each finger.



Step 15



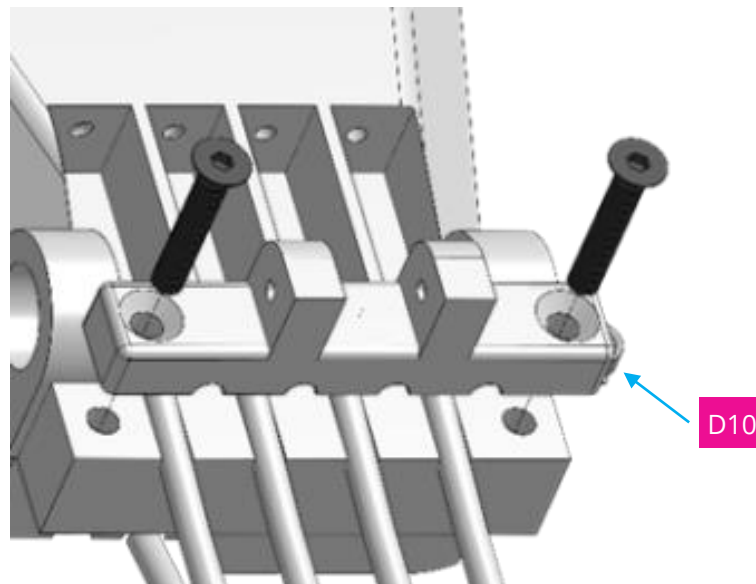
Insert each string from the finger into a teflon tube.



Step 16



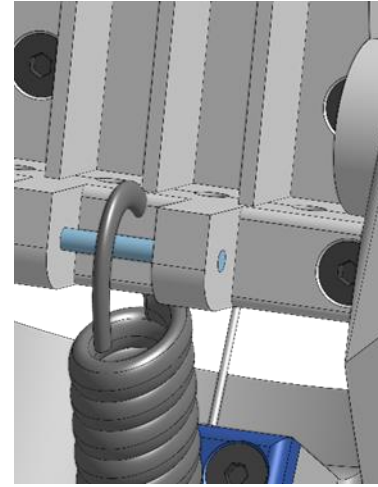
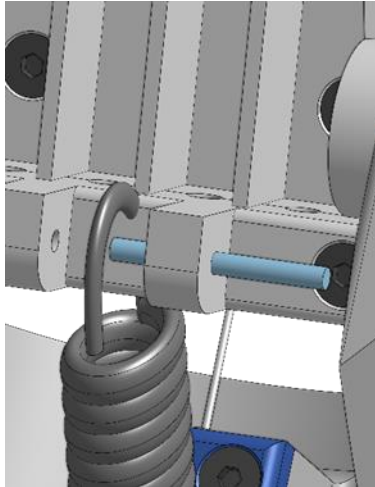
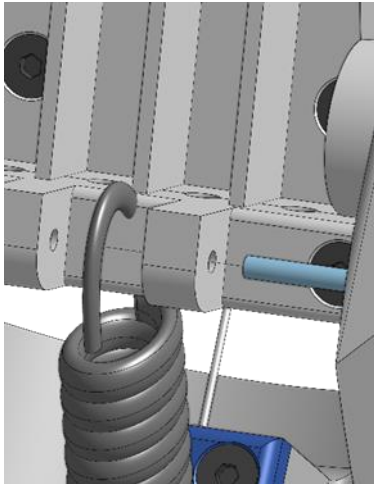
Close the tubes with D10 and 2 x 18 mm screws to secure it.



Step 17



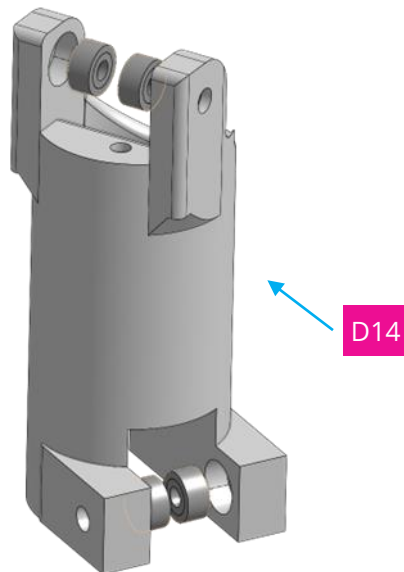
Push 1 metal rod with a tool through D10 until you reach the half, then place 1 x T460 spring on the rod. Push then the rod till the end.



Step 18



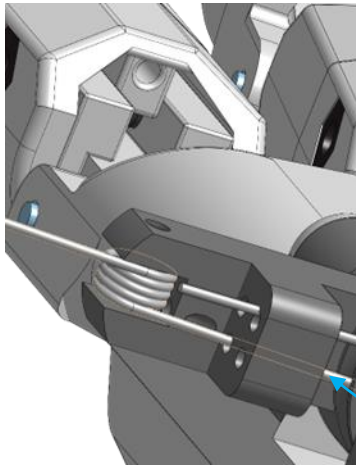
Place 4 x M01 ballbearings in the shown spots of D14.



Step 19

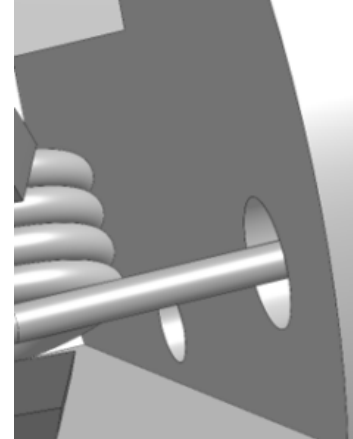
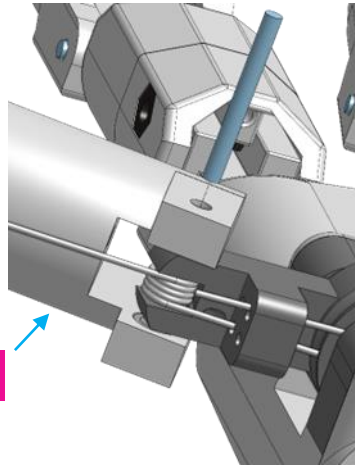


Place 1 x M10 spring in the shown space of D13, then place D14 on the other end of the spring and secure the assembly with a metal rod.



D13

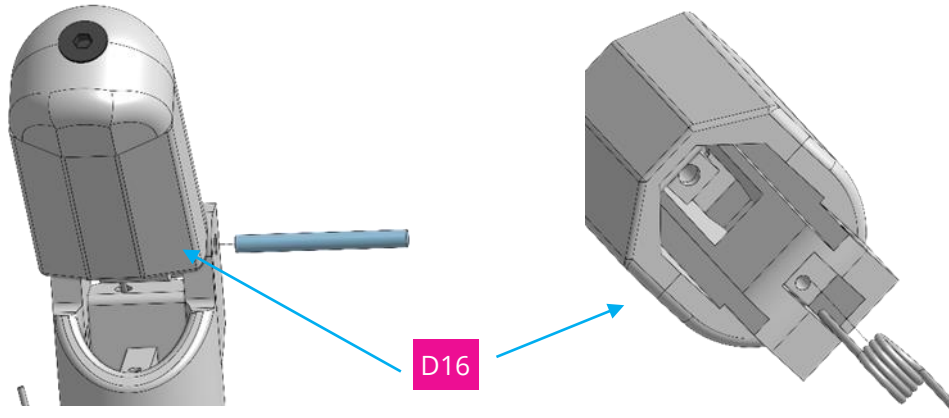
D14



Step 20



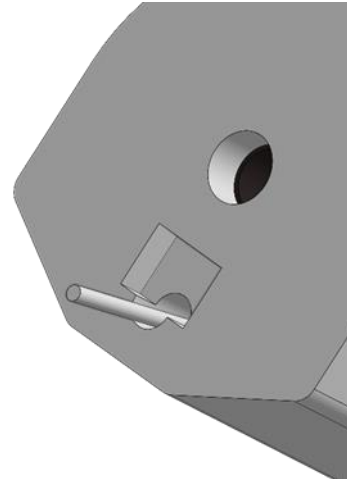
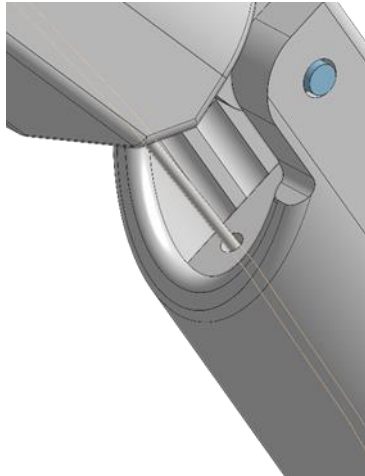
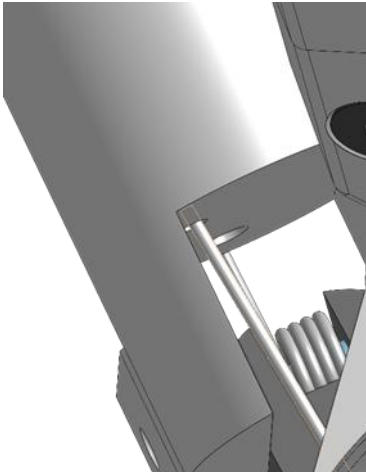
Place 1 x M10 spring to D16, then insert it into the shown hole in the thumb and attach them by using a metal rod



Step 21



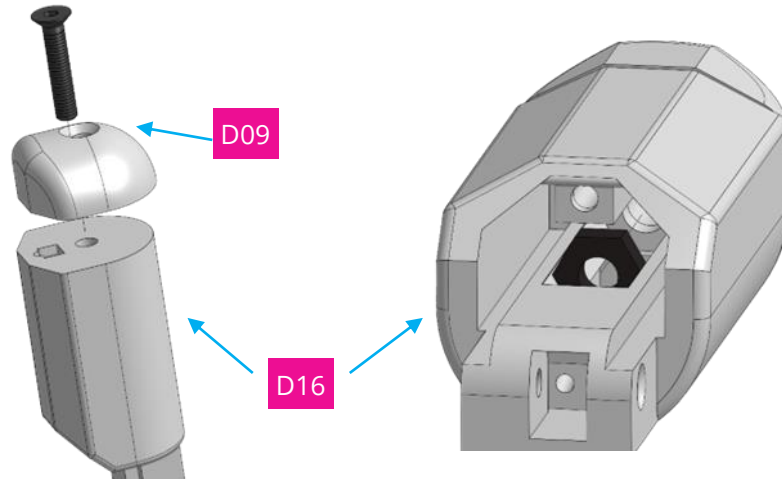
Pass the wire from step 6 to the shown holes in thumb and D16 and tie a knot.



Step 22



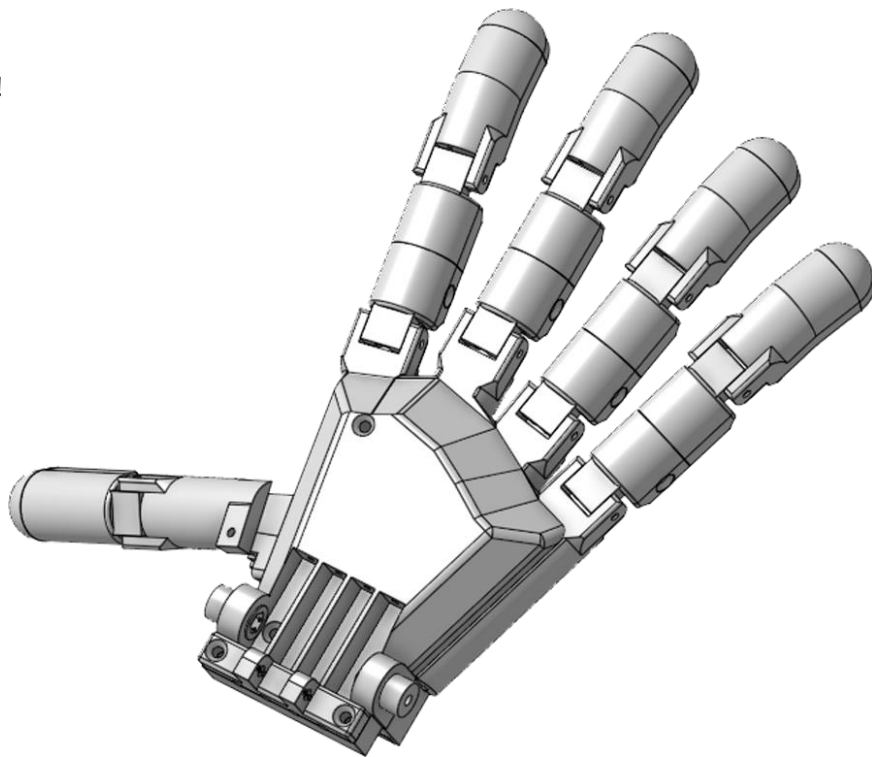
Finally, place 1 x nut in the shown spot of D16, place D09 on top of D16 and tighten it by using 1 x 16mm screw.



Congratulations



You did a great job, the hand is assembled!



Do you need support?



Or do you need our pib.Box with all non-printable parts?

Or maybe you have some new ideas and improvements?

Please contact us.



team@pib.rocks
Send us an email.



discord.com/invite/GRdpyeDu7P
Join us on Discord.



shop.pib.rocks
Order non-printable parts for pib.