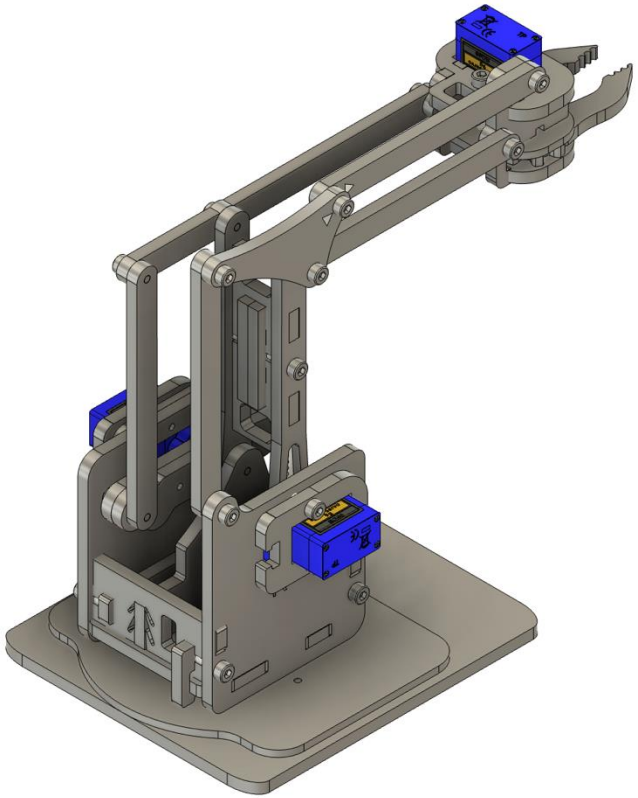
Imperial College London | Royal College of Art

Cyber Physical Systems



DE Arm 25

Assembly Instructions

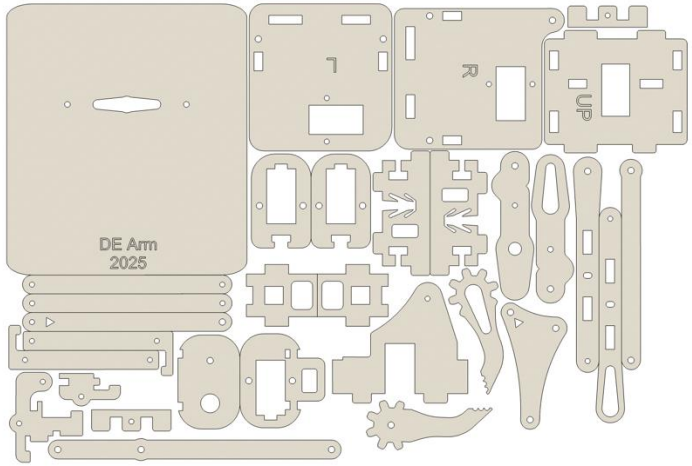
Dyson School of Design Engineering

Important Notes:

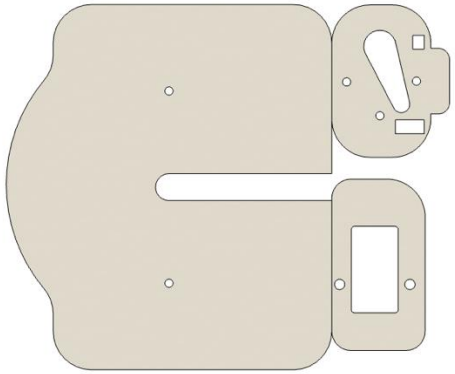
- Joints should move freely, do not overtighten the screws. The arm should be like a marionette without the servo motors.
- Before assembly you have to test and calibrate your servo motors to the positions shown in page 5.
- Take it easy, parts should sit in place with little force, if you find yourself using excessive force, check the manual and orientation again.

List of Parts

- 4mm Plywood Parts: 31 pcs



- 2.5mm MDF Parts: 3 pcs



List of Parts

- M3 x 6mm Screw: 2 pcs
- M3 x 8mm Screw: 10 pcs
- M3 x 12mm Screw: 13 pcs
- M3 x 20mm Screw: 2 pcs

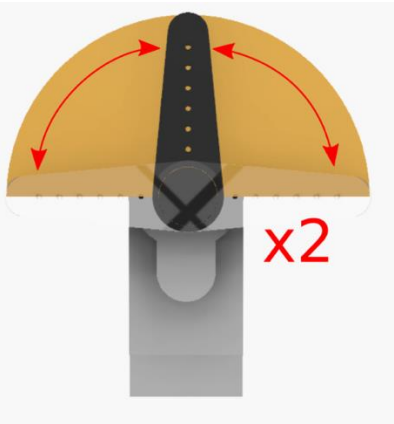
- SG90 Servo Motor: 4 pcs

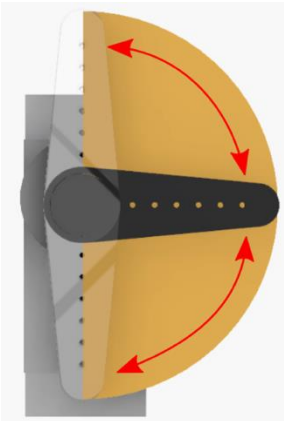
- Stick-on Silicon Feet: 4 pcs

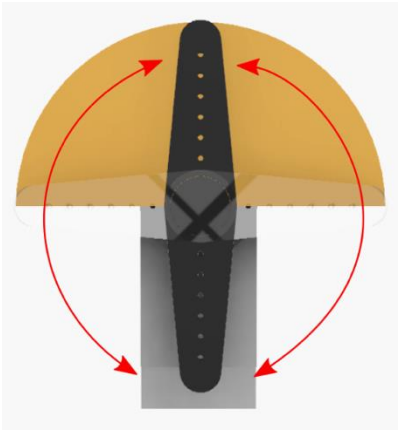
Servo Calibration

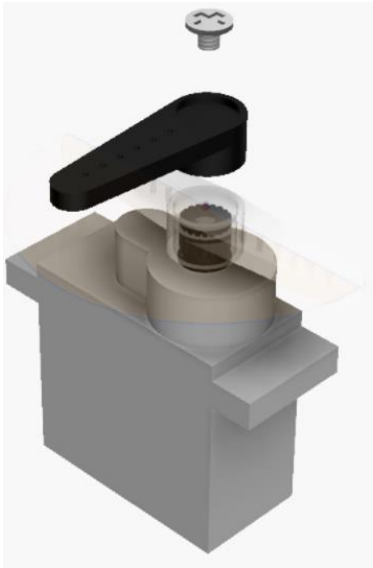
*You should have a total of 4 servos, calibrated as followed,

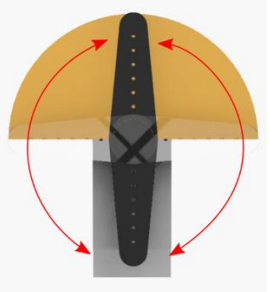
They will be identified and used in the assembly.

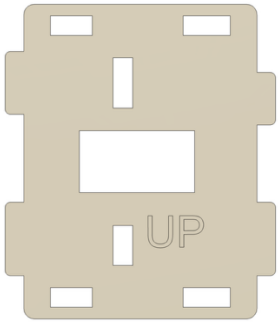








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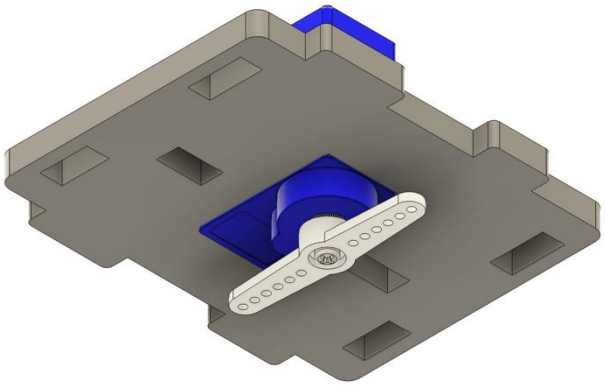

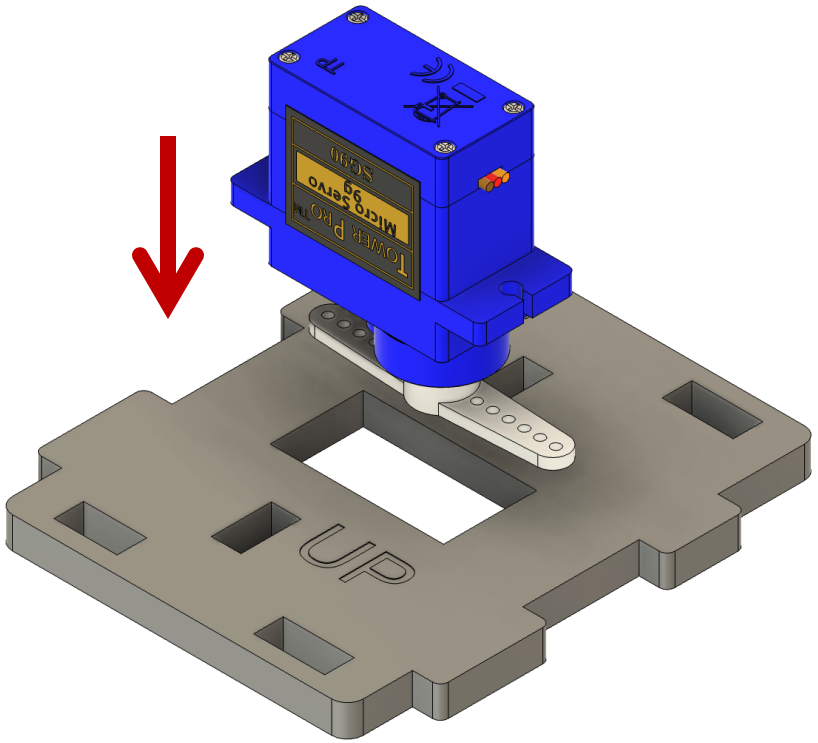
Tower Pro™
Micro Servo
SG90
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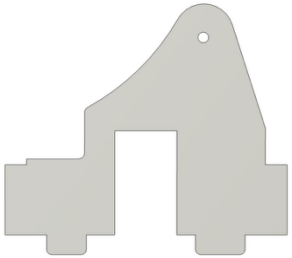

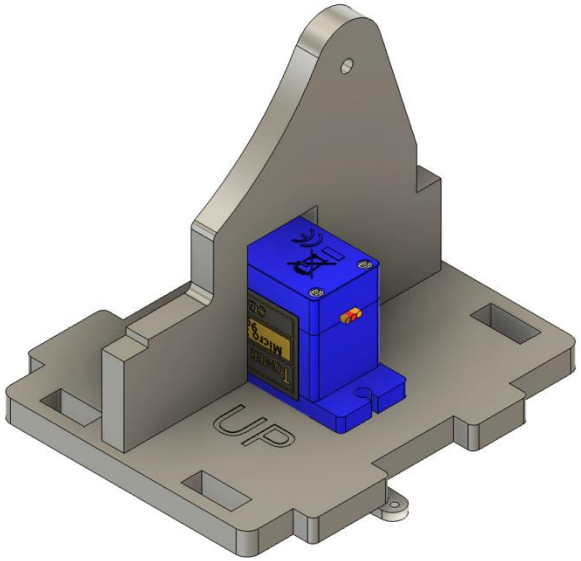
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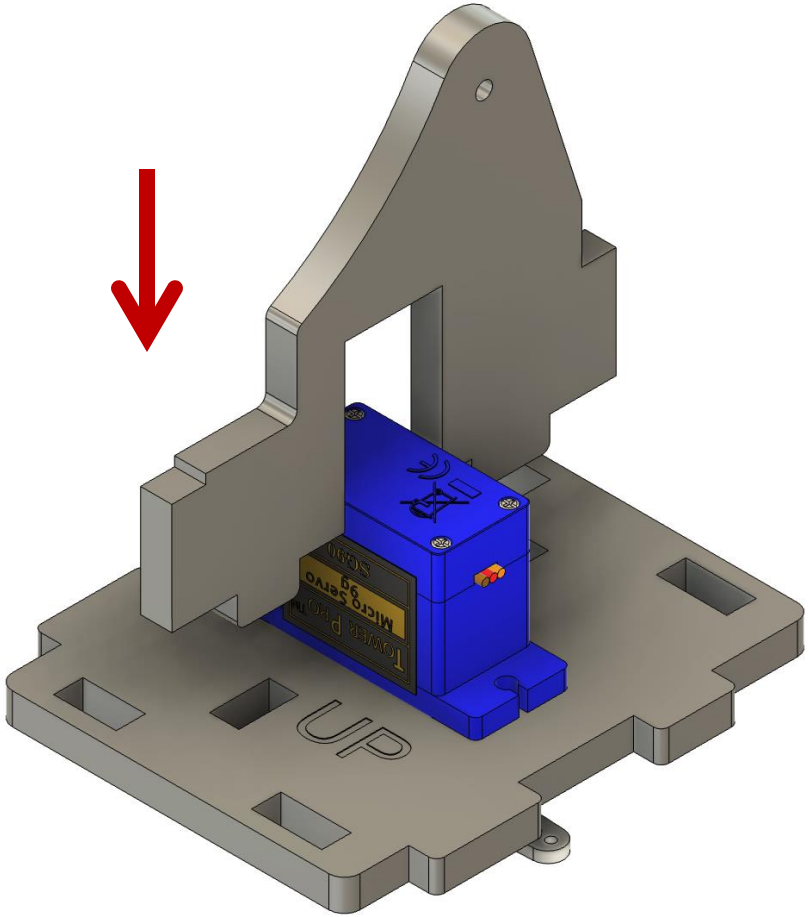
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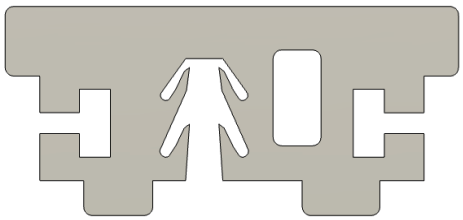

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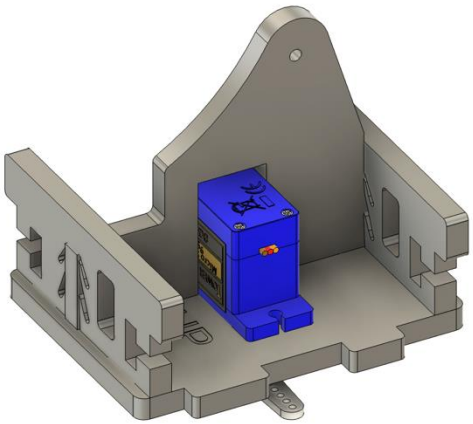

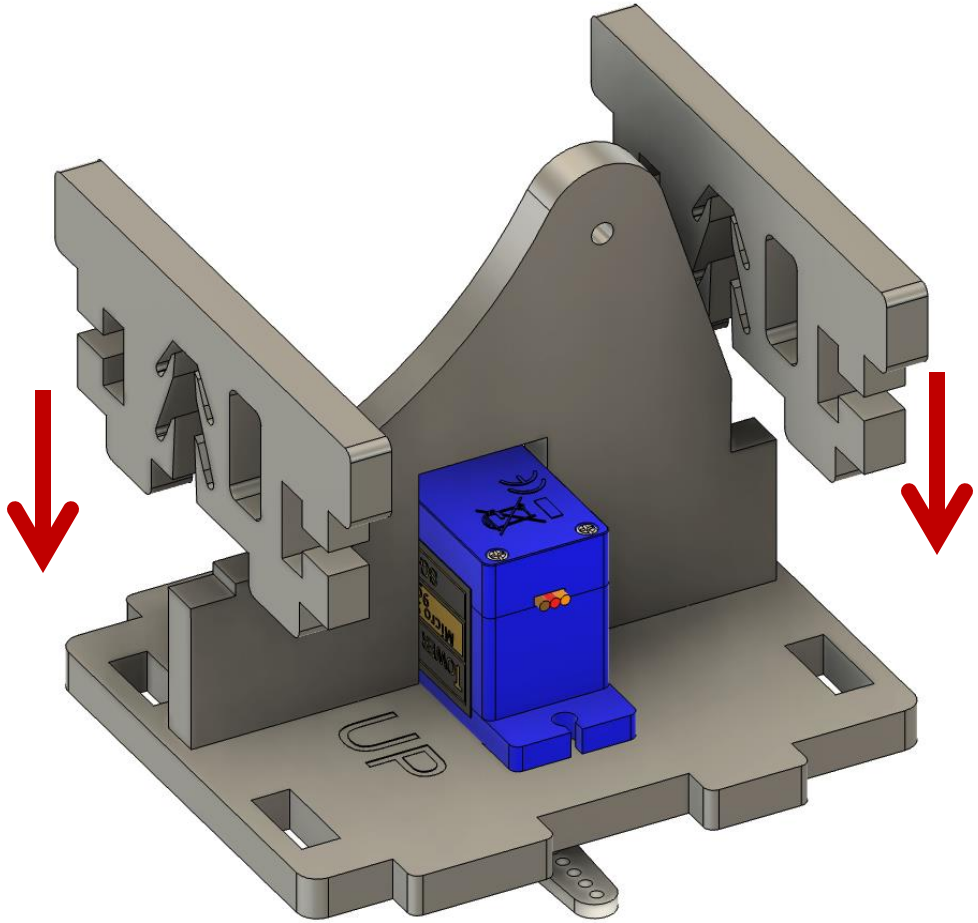

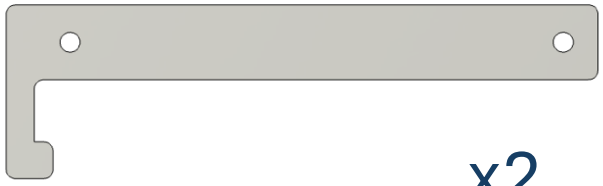

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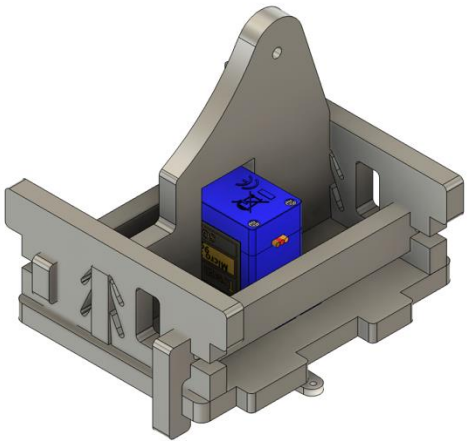

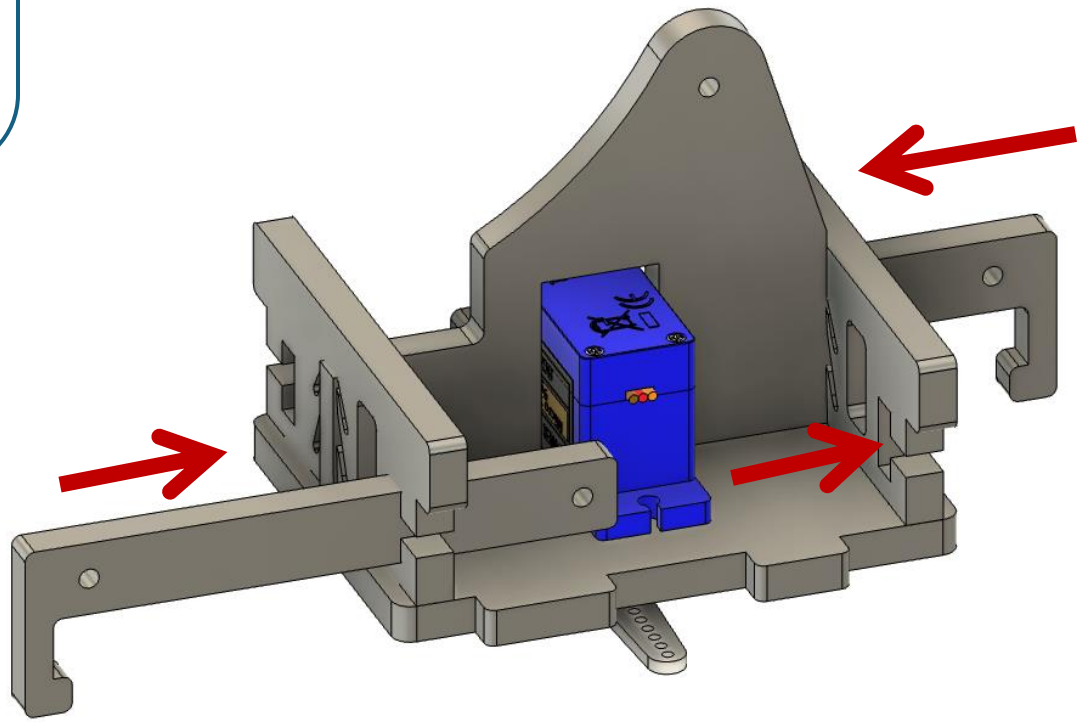

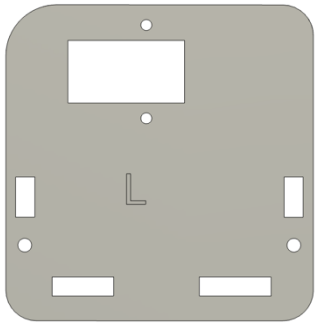

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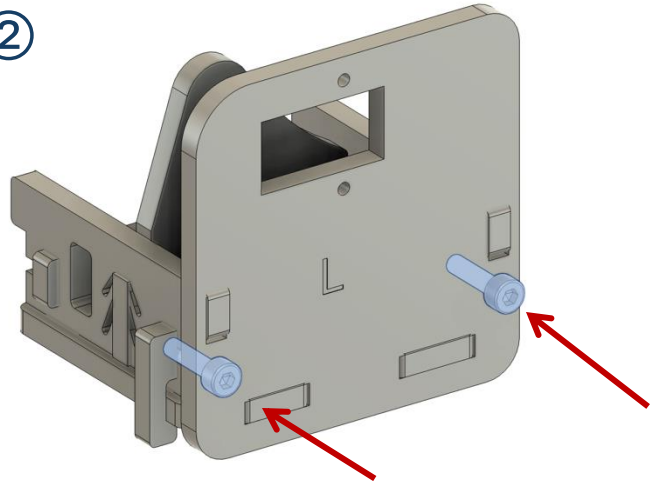

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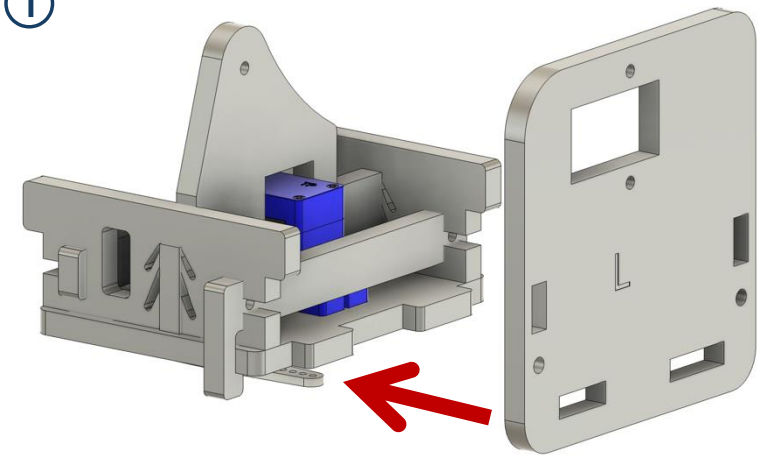

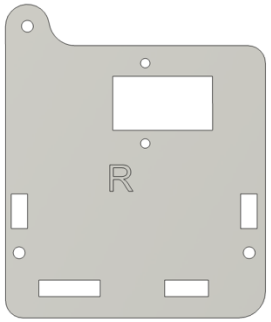

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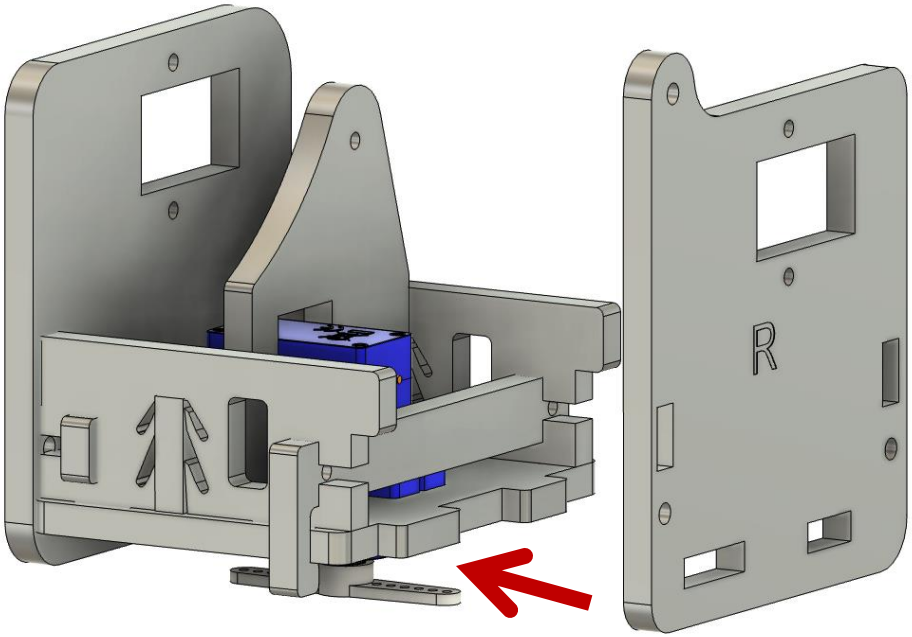

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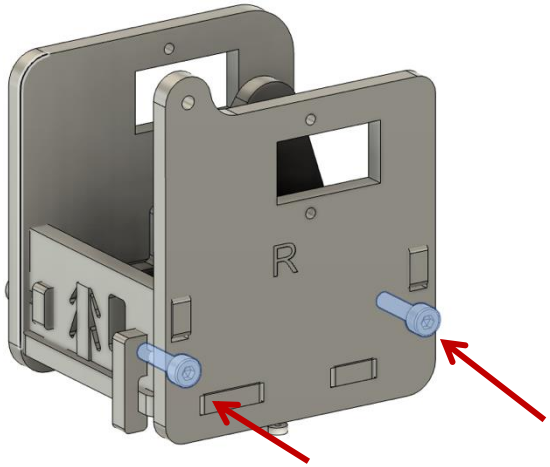

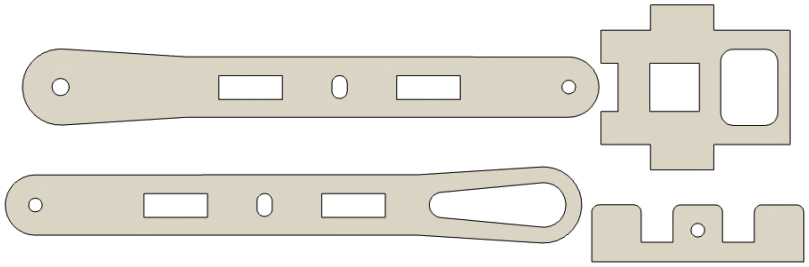

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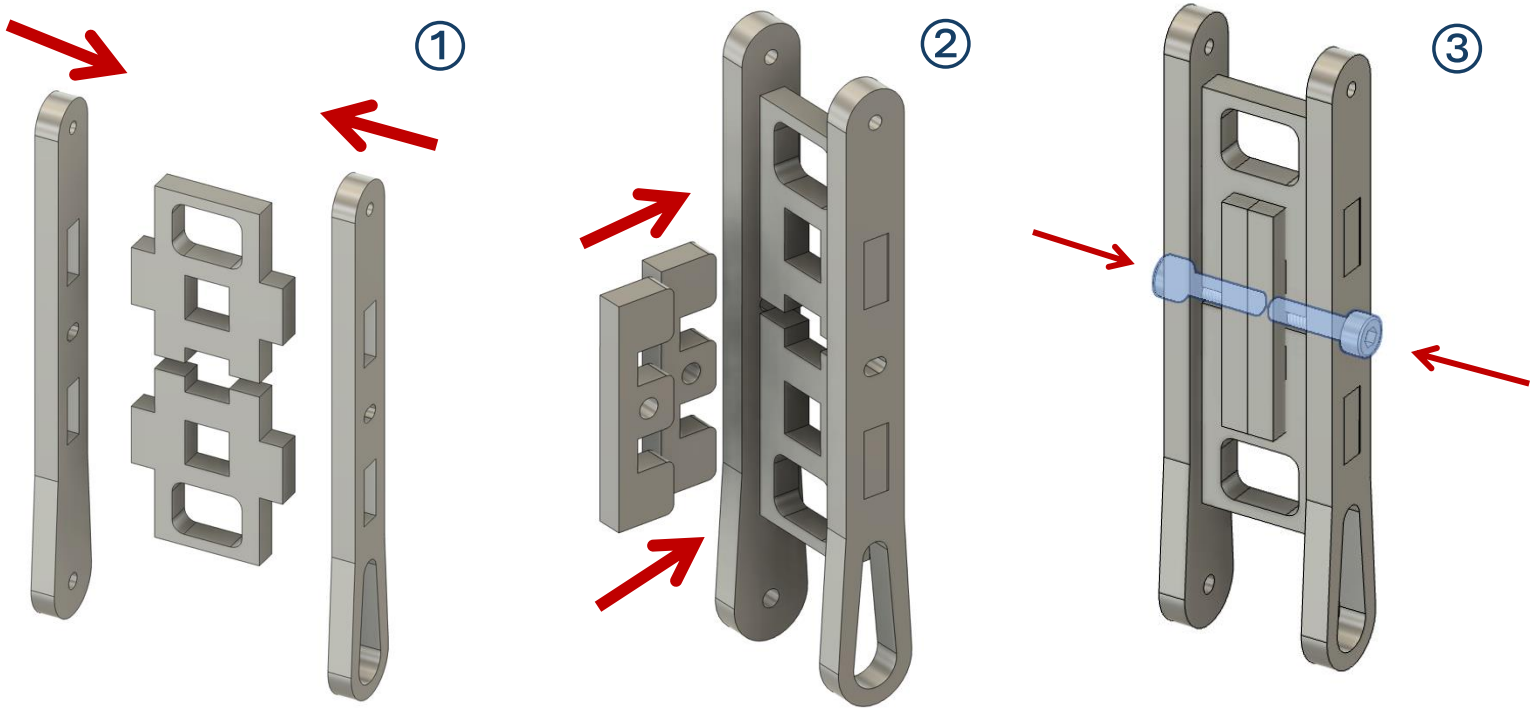

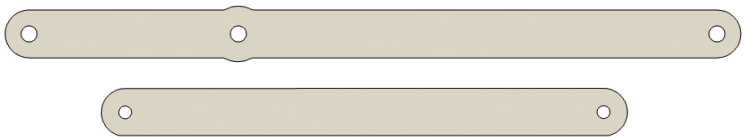

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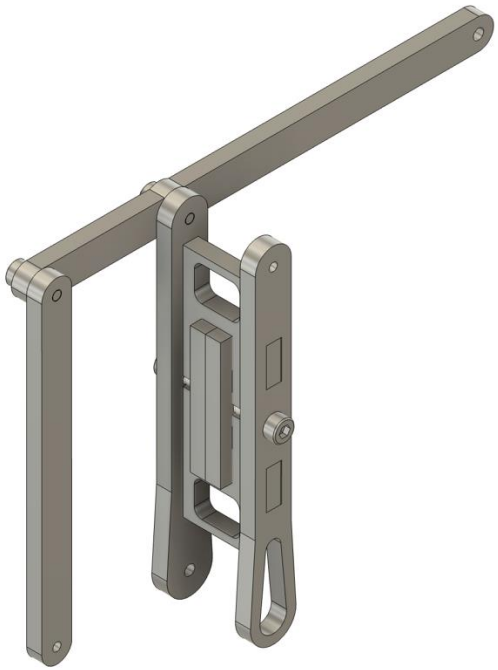

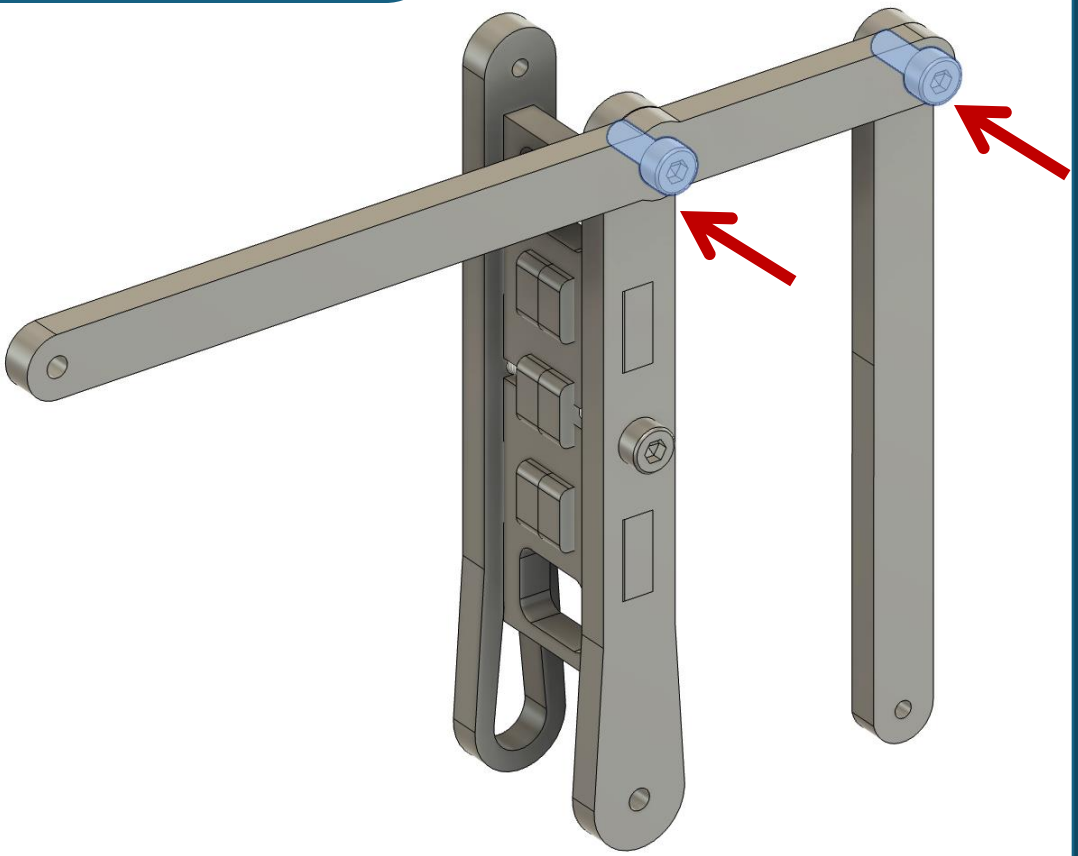

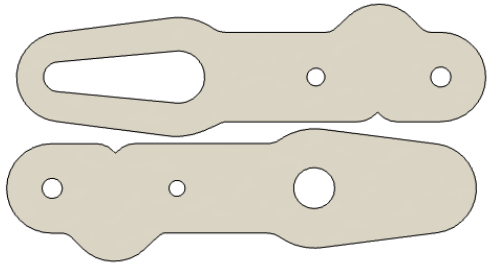

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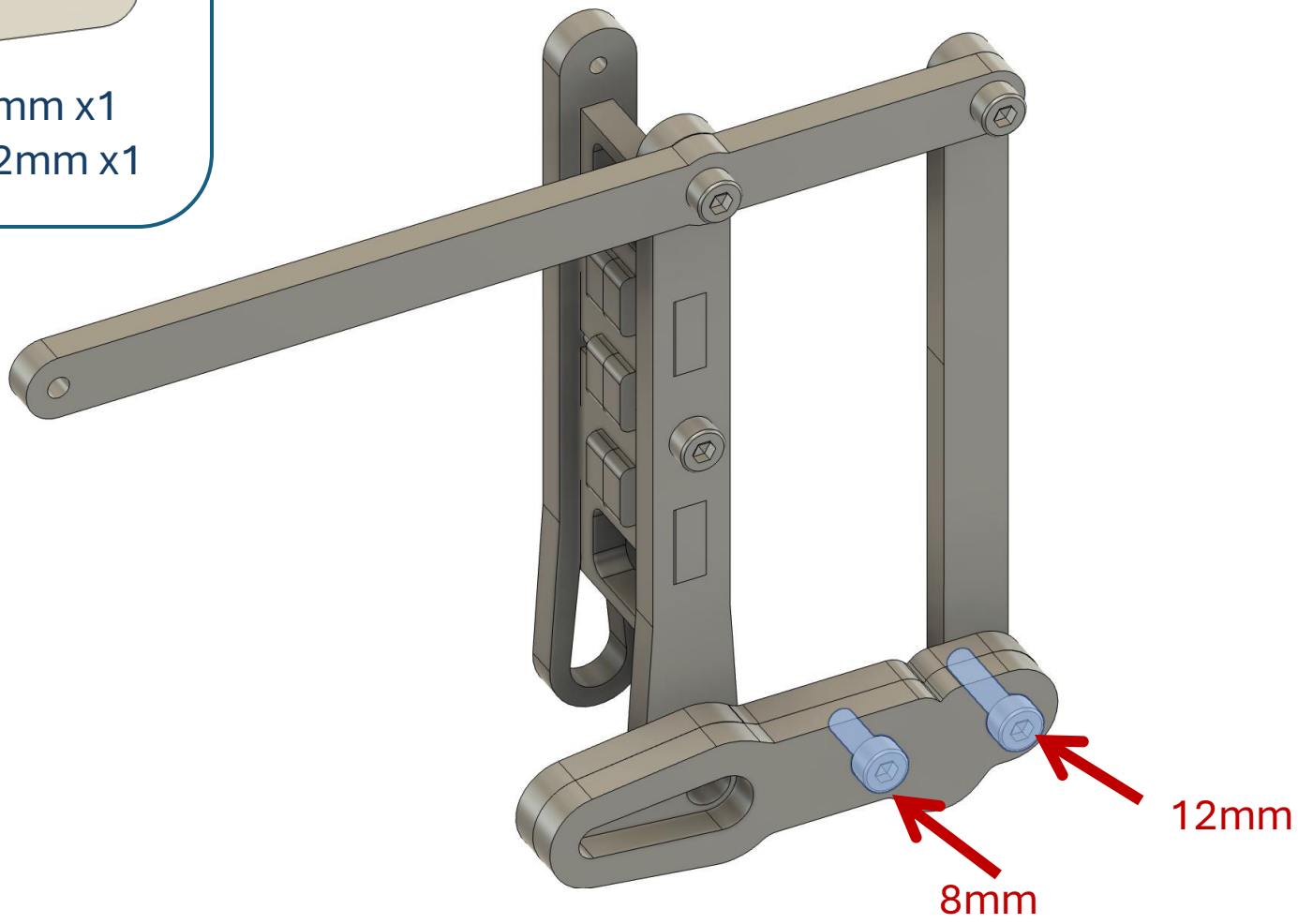
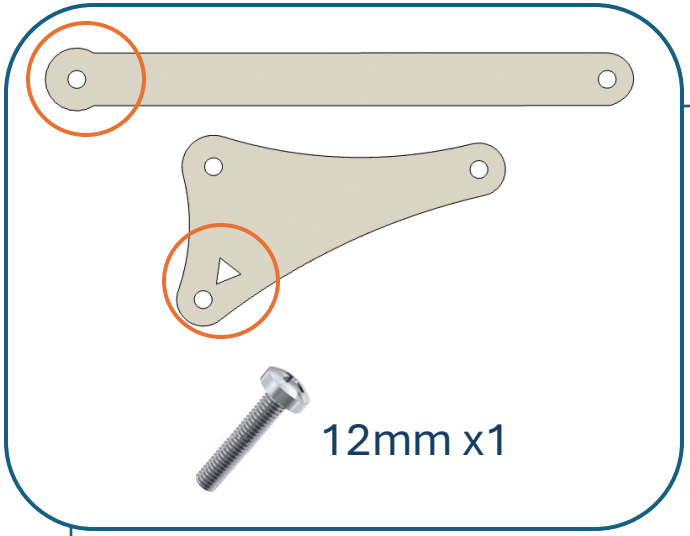
12mm x1

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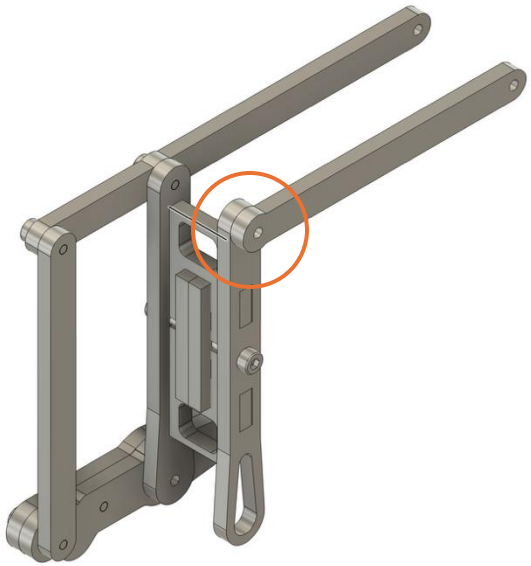

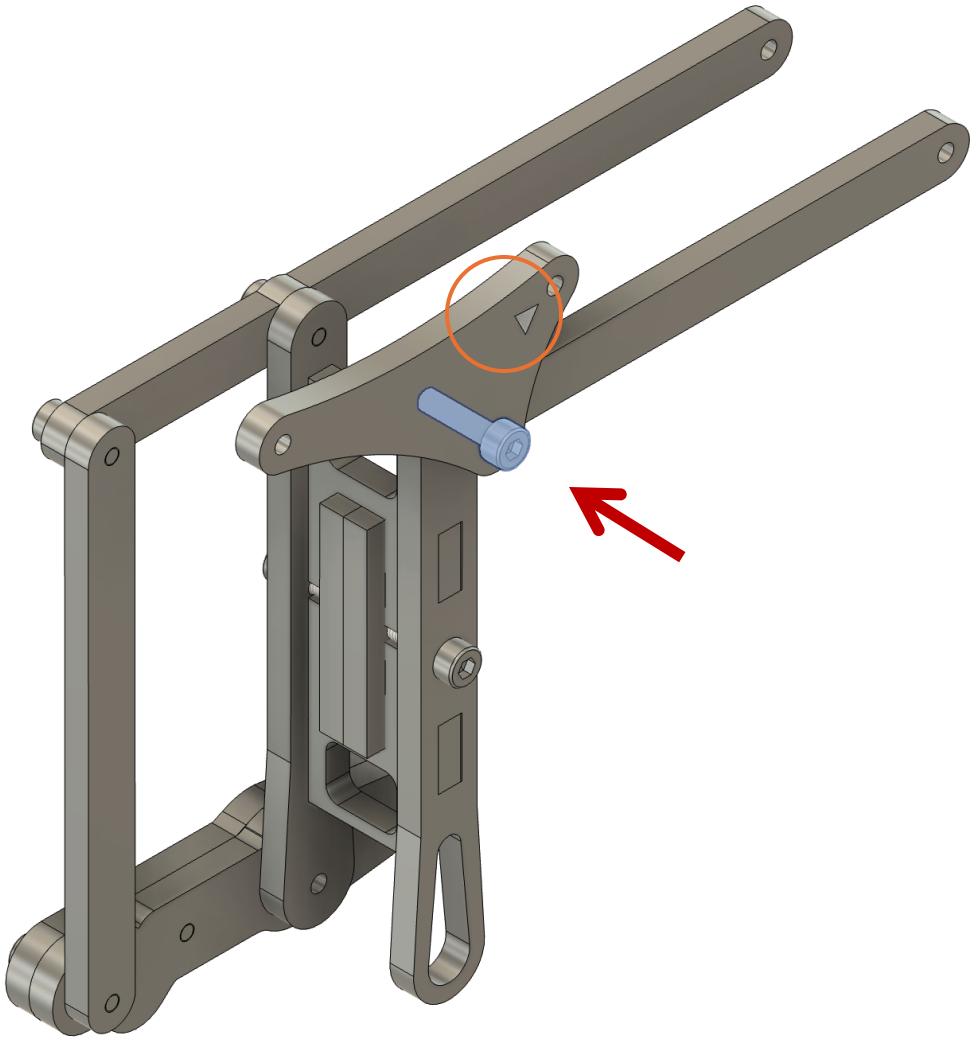

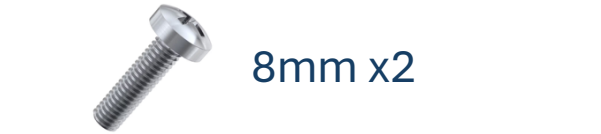

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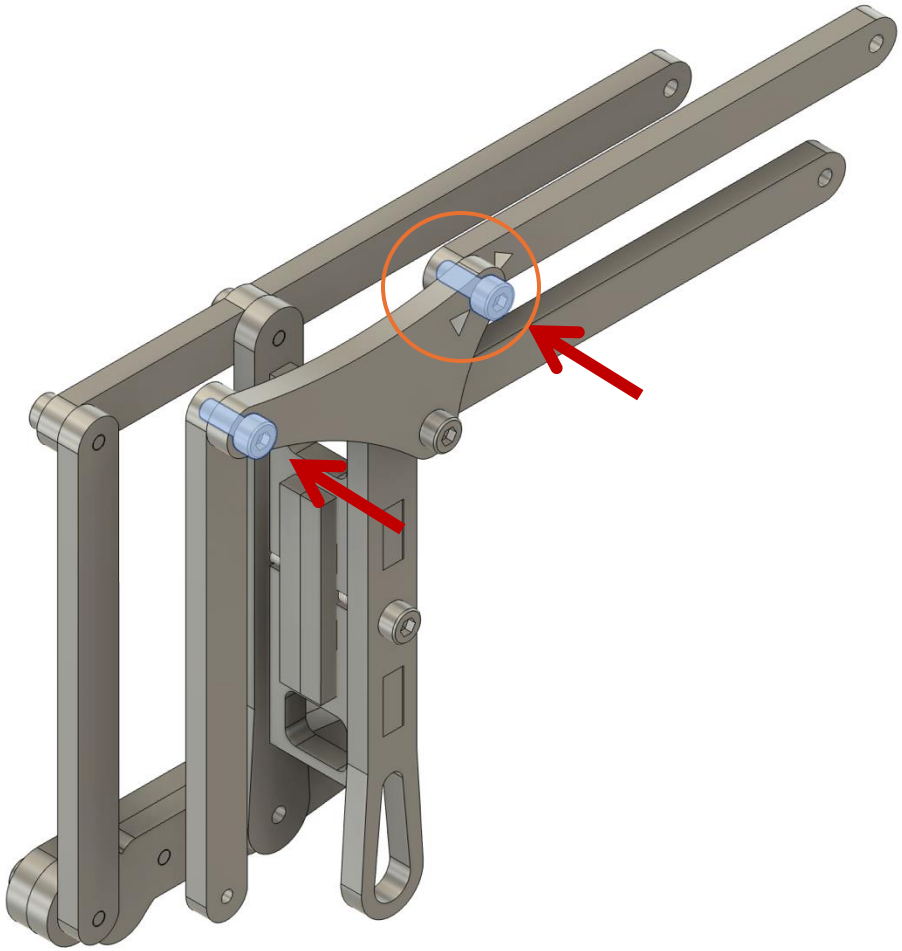

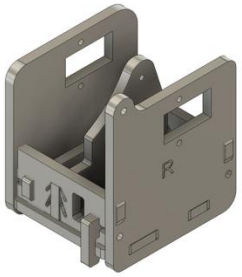

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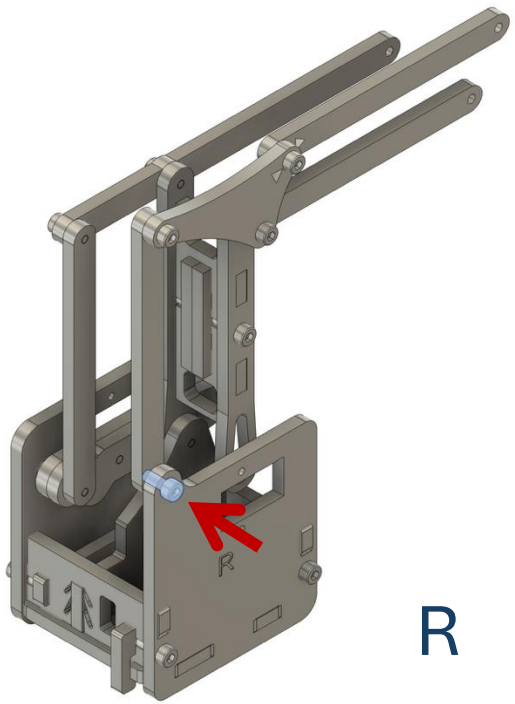

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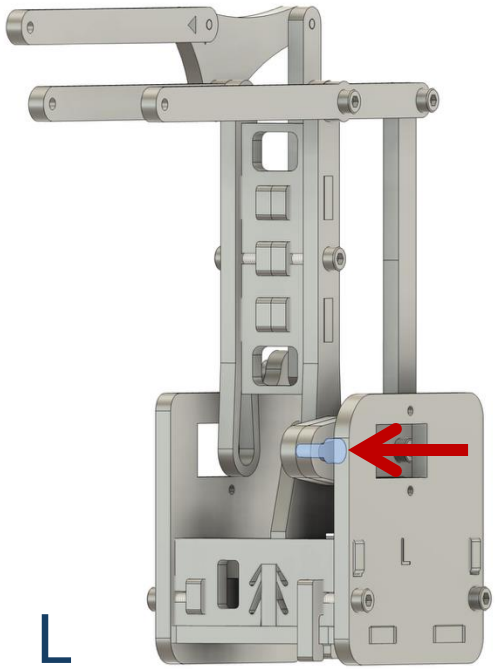

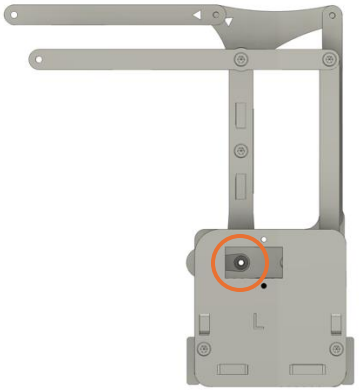

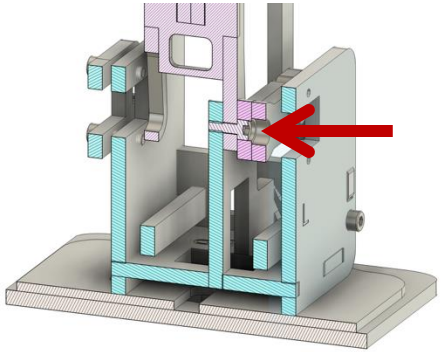

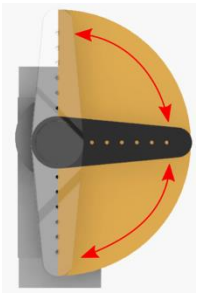

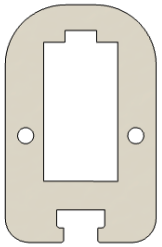

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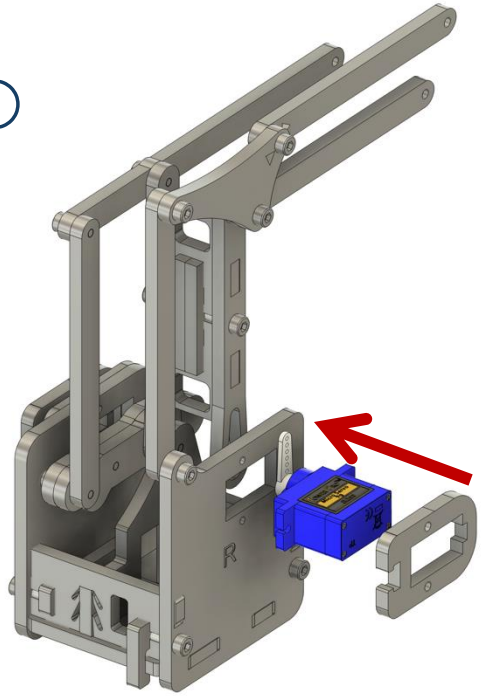

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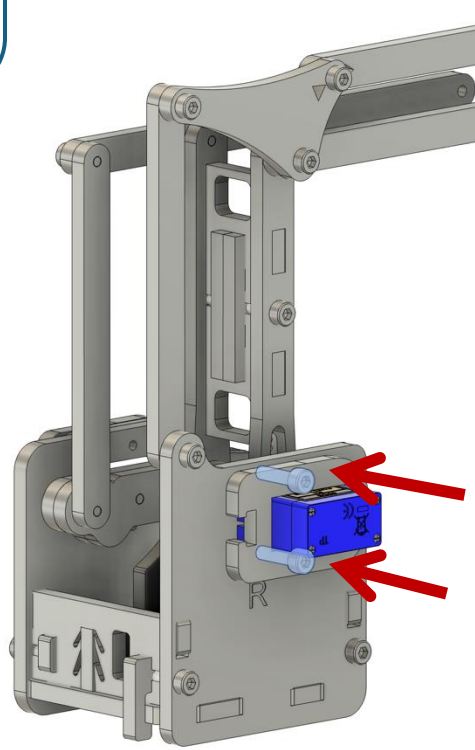

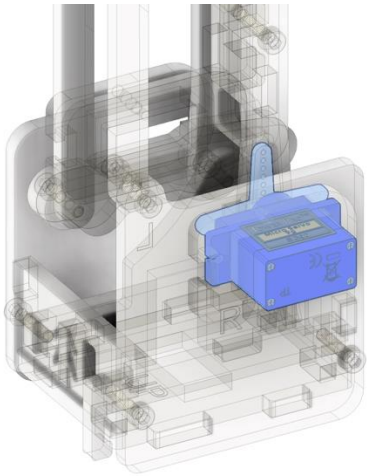

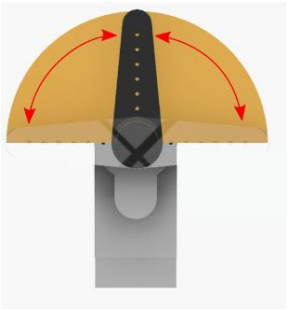

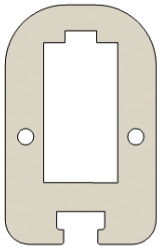

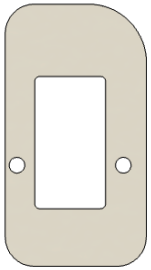

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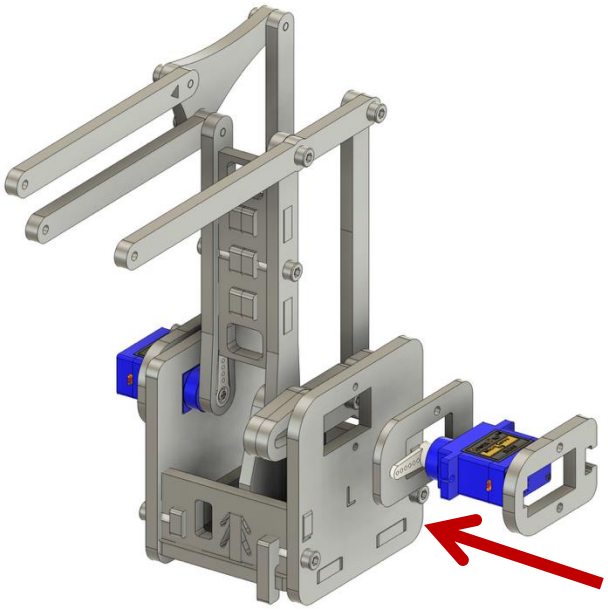

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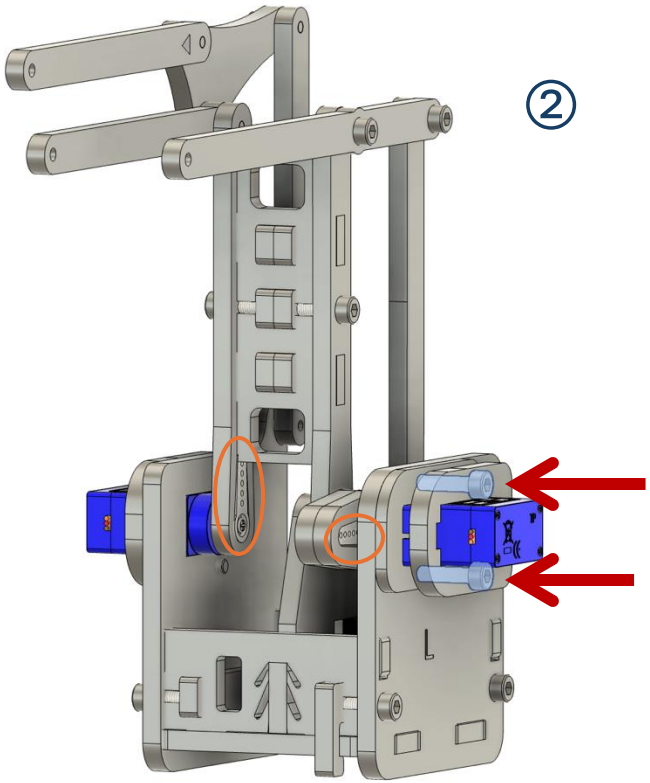
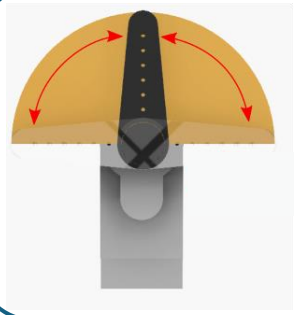
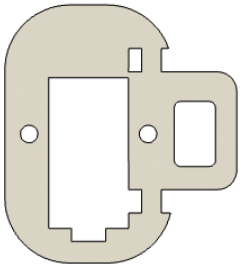
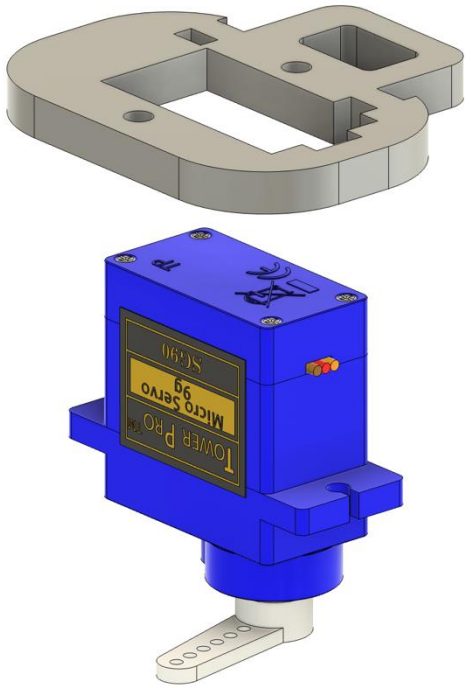
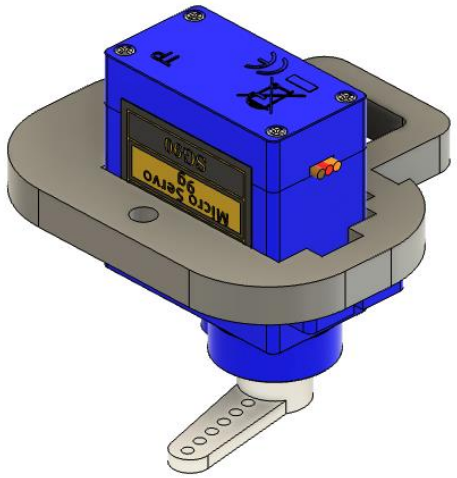
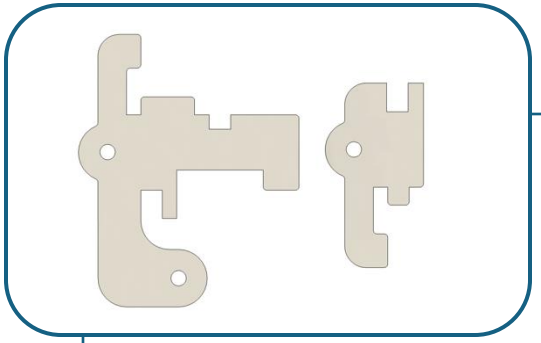


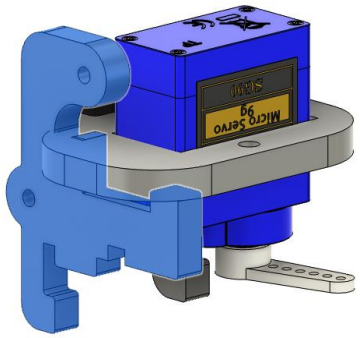


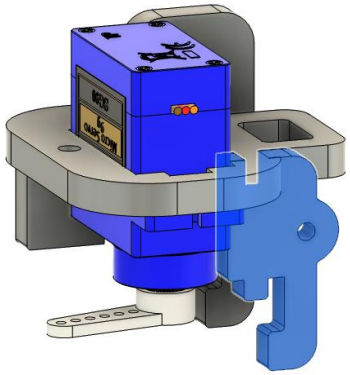



TOWER PRO
Micro Servo
9g
SG90


Micro Servo
9g
SG90




Micro Servo
9g
SG90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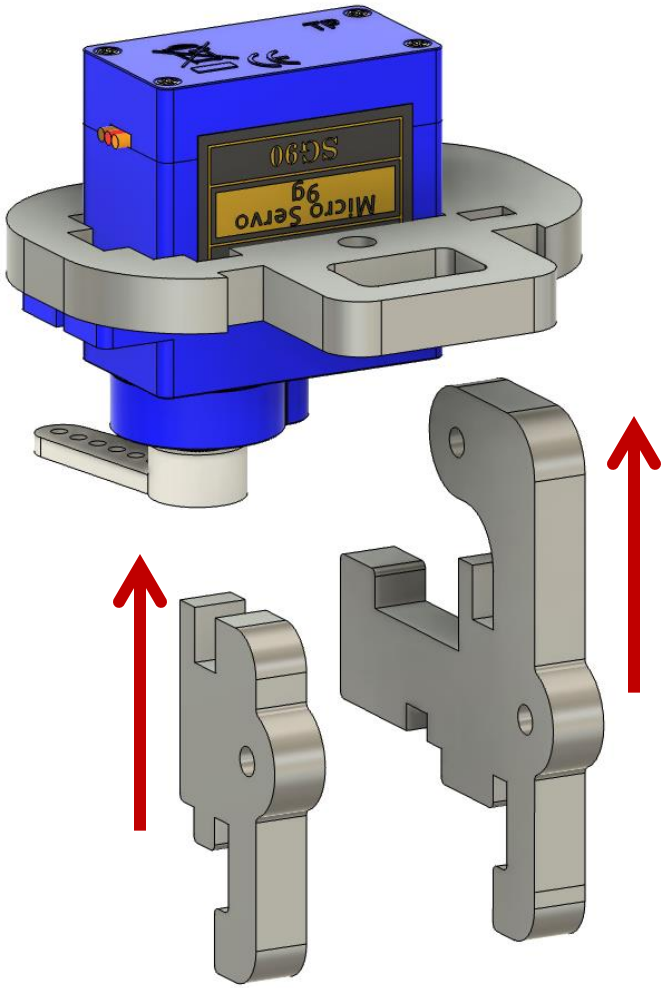
Micro Servo
9g
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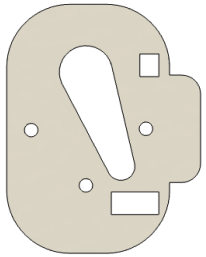
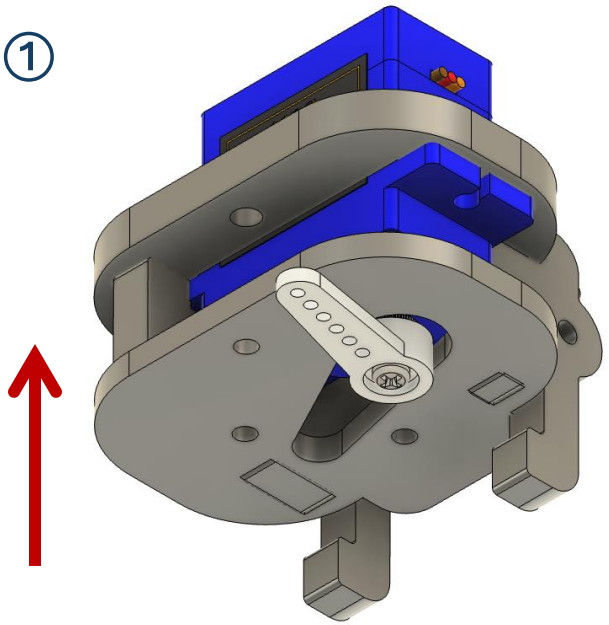


20mm x2

①



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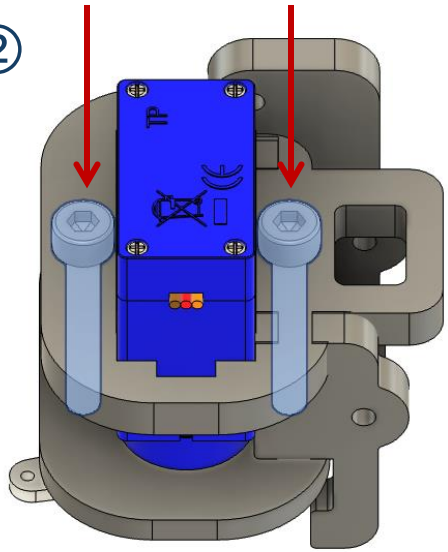
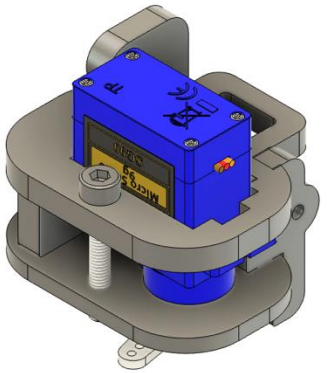
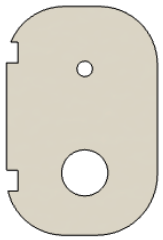
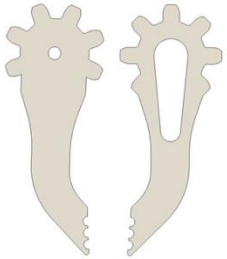


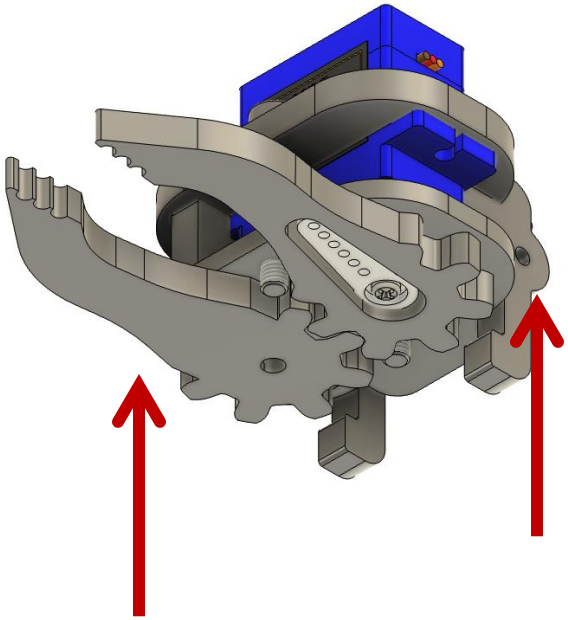






12mm x2

①



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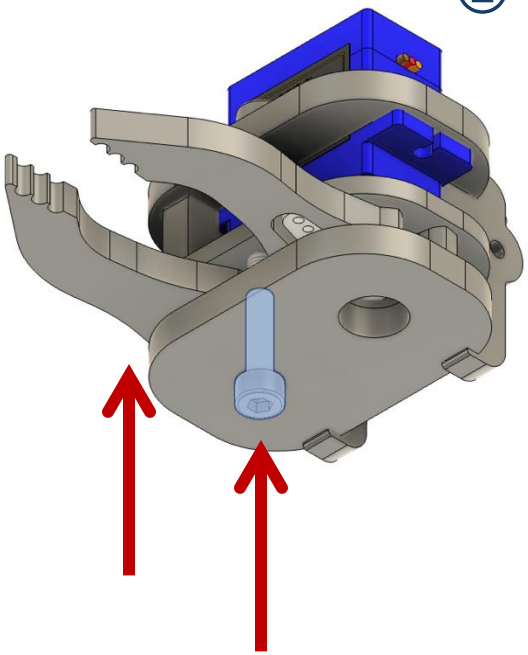
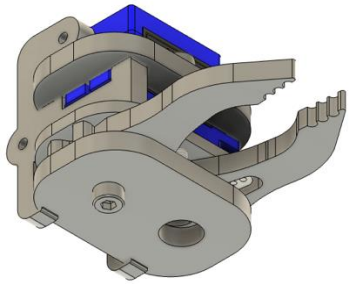
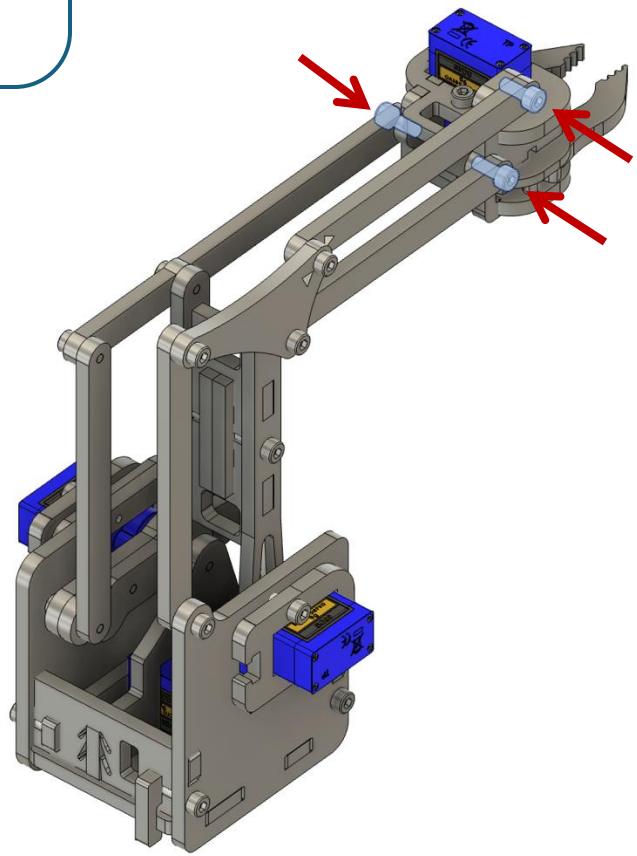
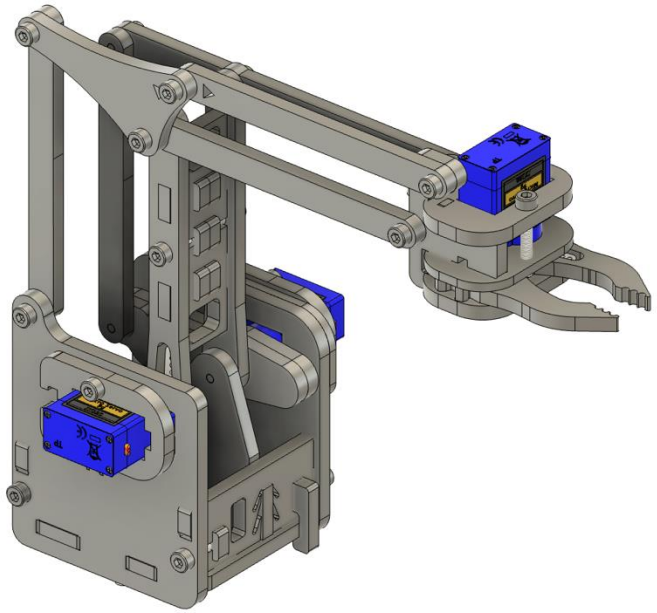


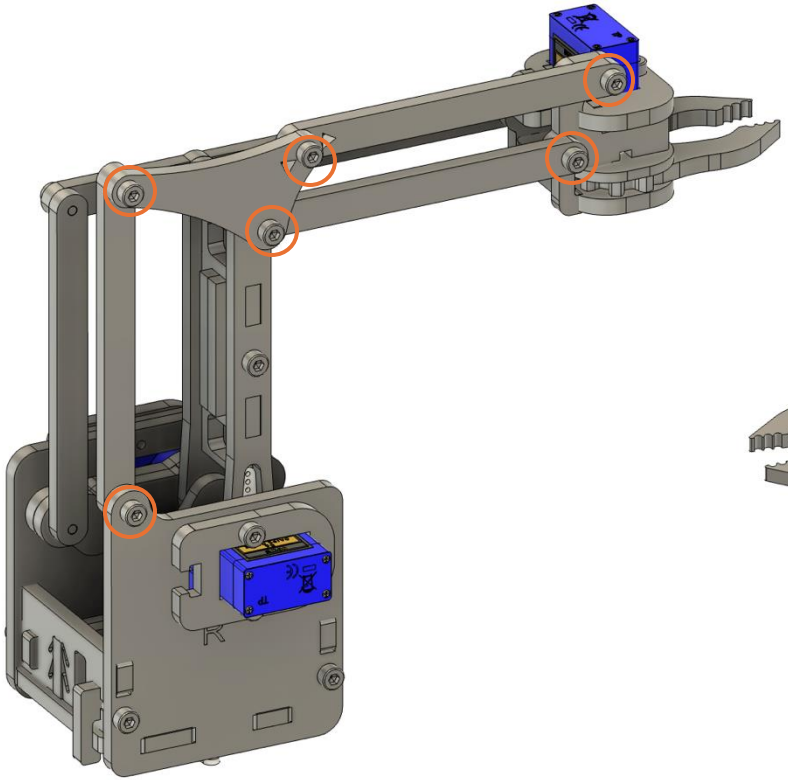


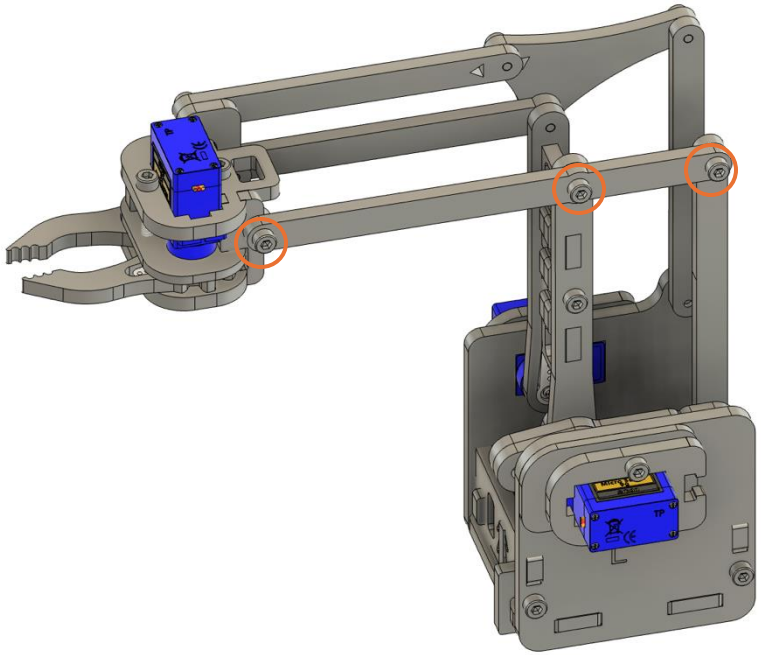
8mm x3

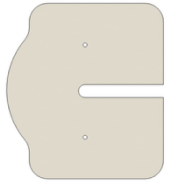




*Check if all joints move with little friction, if not, loosen the screw a few turns.

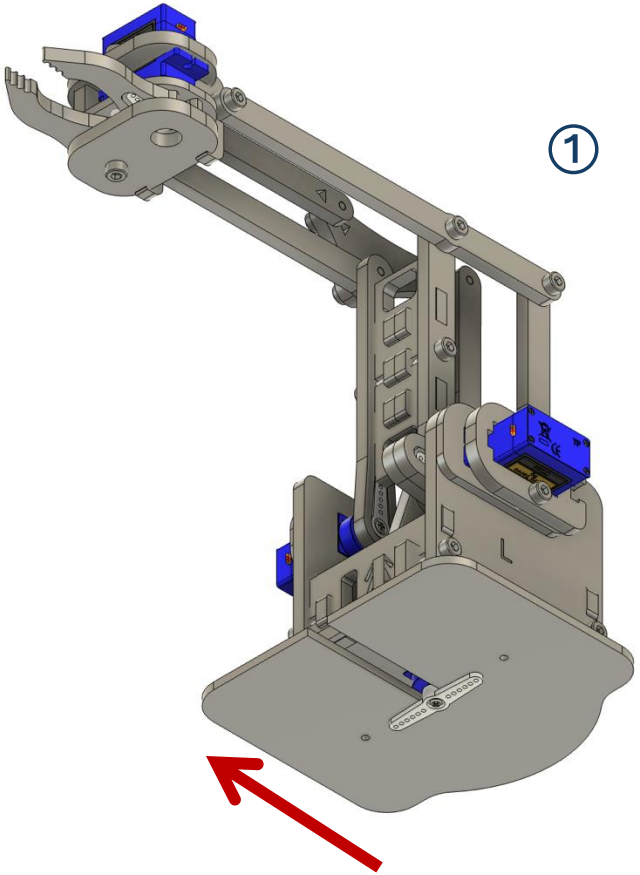




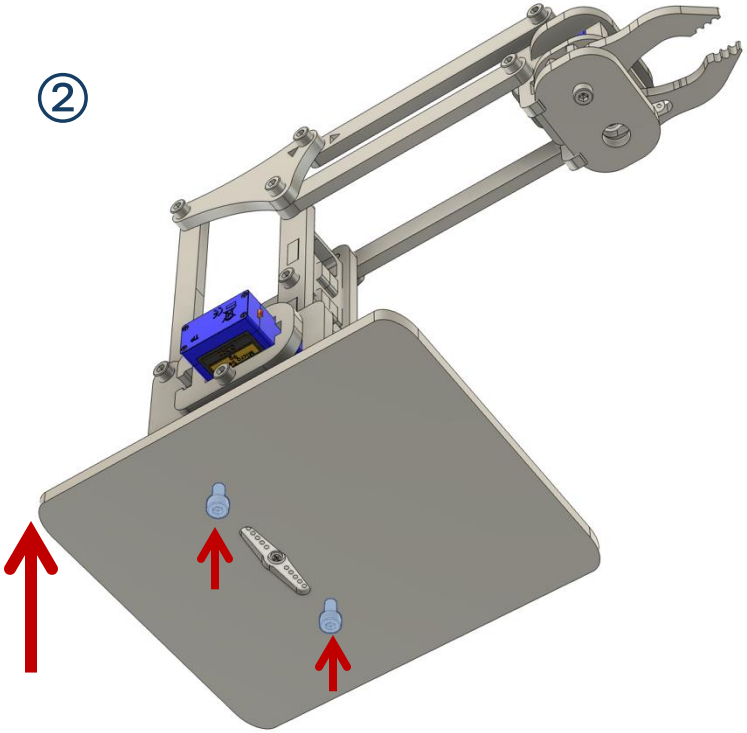


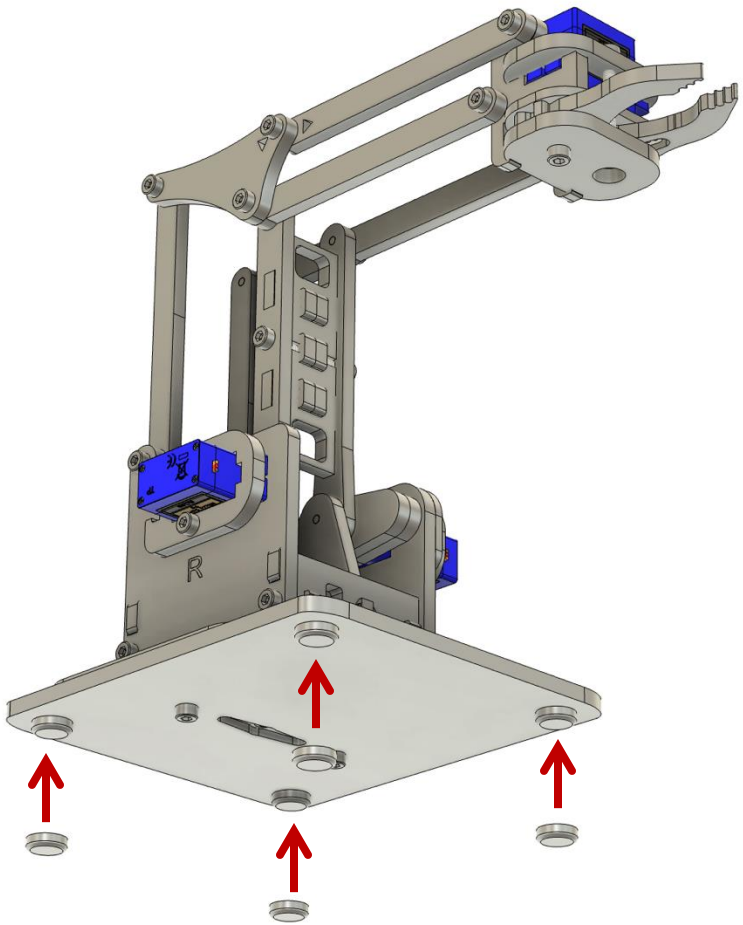
6mm x2

①

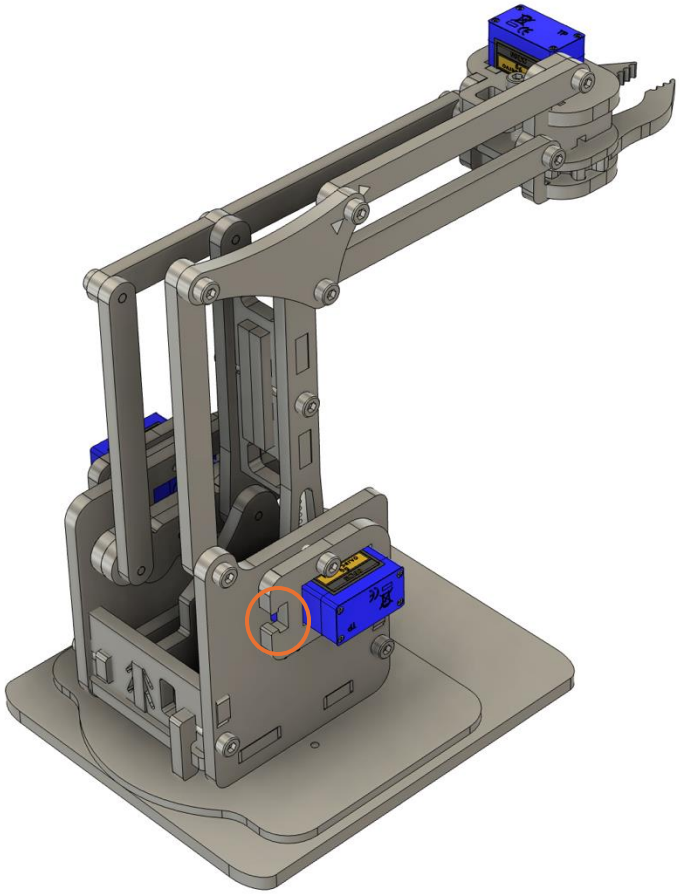


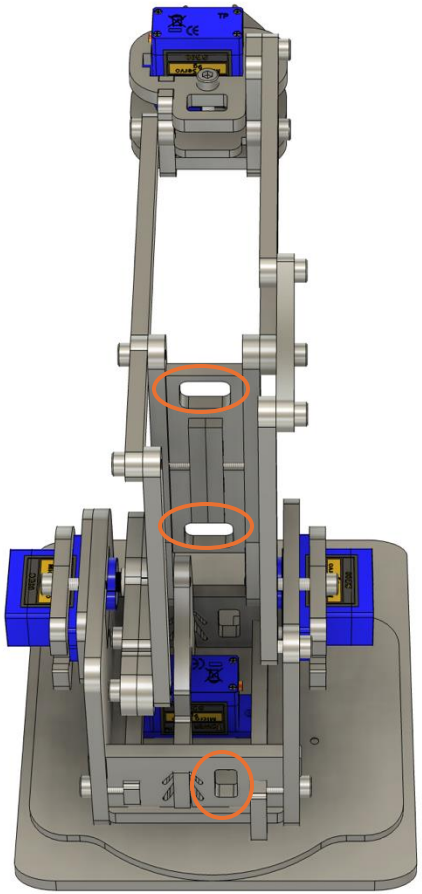
②

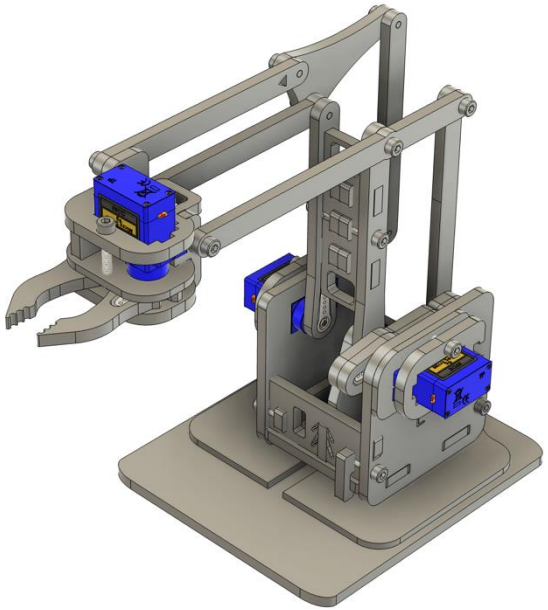


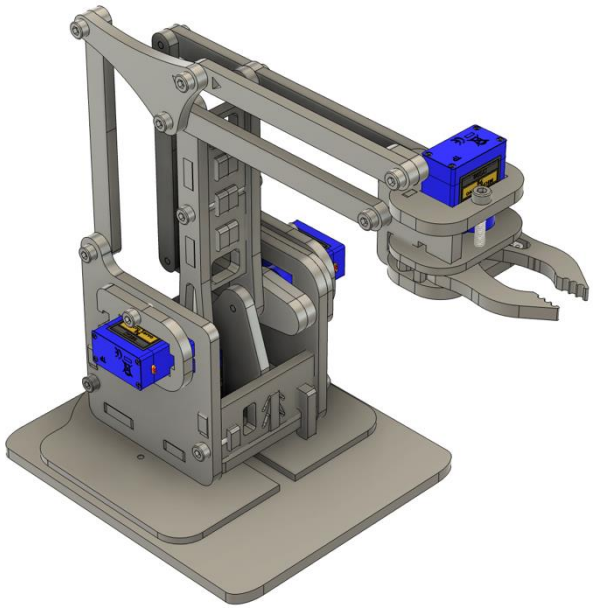

R

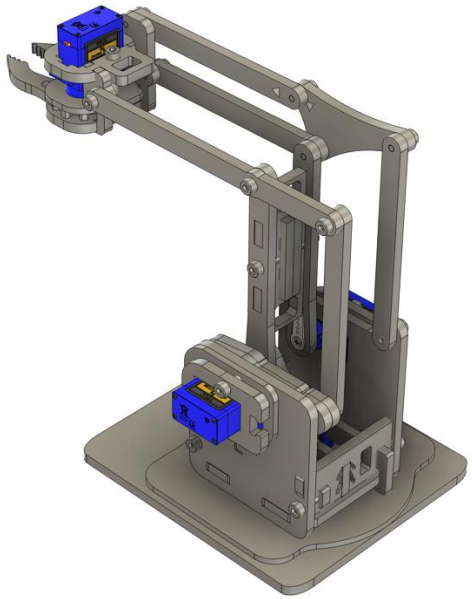
*Use the holes to manage the servo cables.

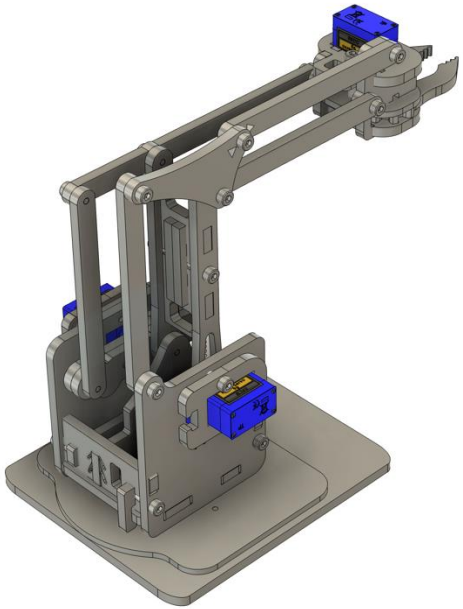


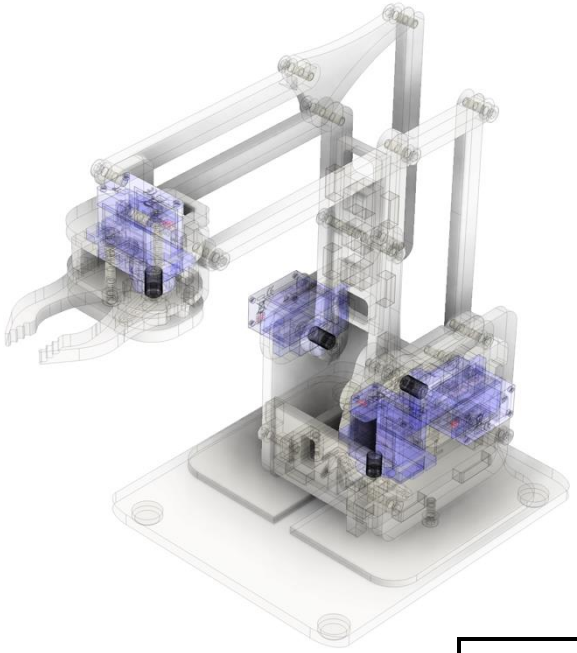


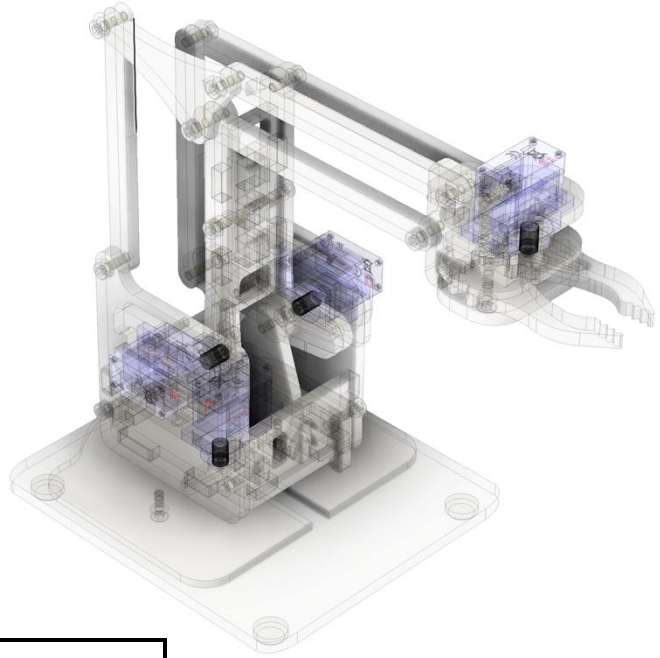




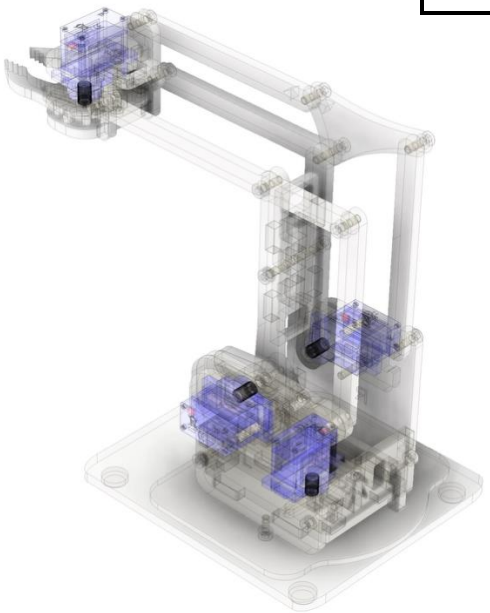


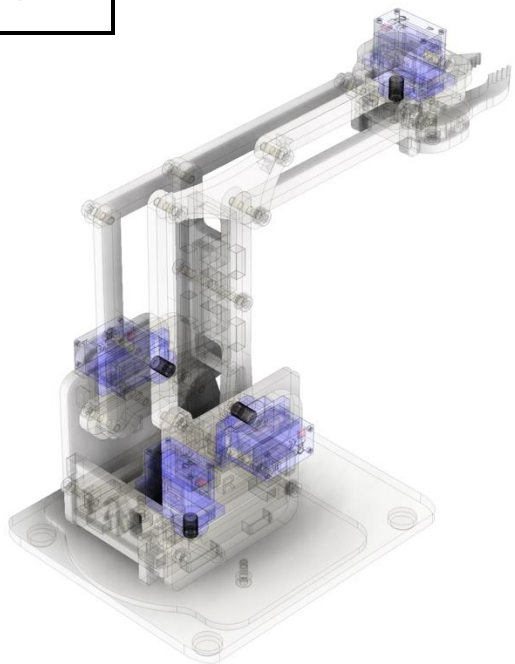






Congratulations!





Development Notes:

The DE-Arm is remastered by Tong Zhang and Dr Rebecca Stewart, from the open source MeArm V3 from [MeArm Robotics Lab].

The original build instructions for the MeArm can be found on the [company website] and [Instructables].The original laser cutting file that was modified to create the DE-Arm is available on [Thingiverse].

This module is taught at the [Dyson School of Design Engineering] at [Imperial College London].