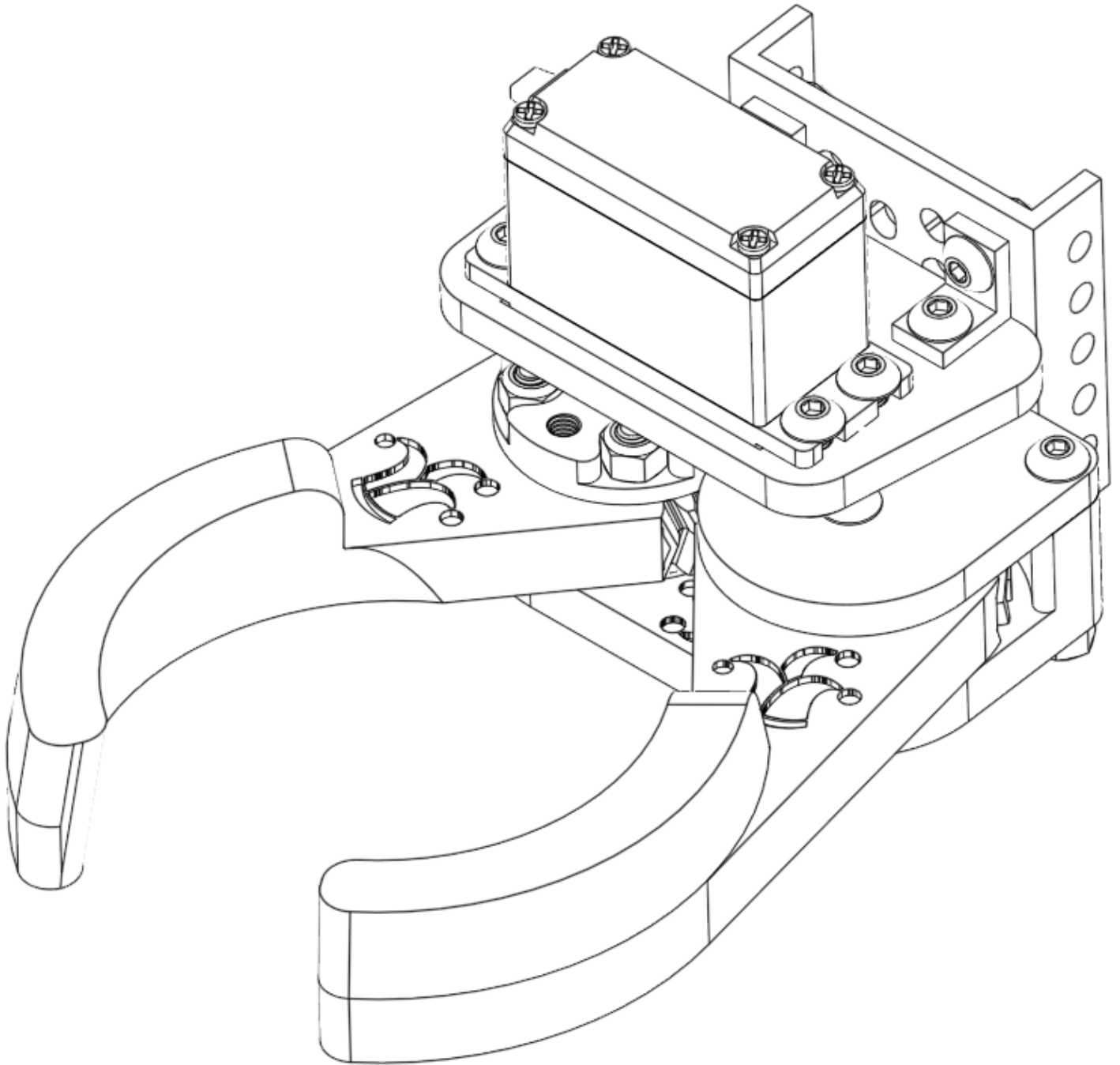


ASSEMBLY INSTRUCTIONS



LOONY CLAW: v1.0

BILL OF MATERIALS

PART NAME	SKU	QUANTITY	CHECK
block mount		1	
idle arm		1	
servo arm		1	
top plate		1	
servo mount		1	
M4x10	2802-0004-0010	2	
M4x12	2802-0004-0012	9	
M4x18	2802-0004-0018	4	
M4x30	2802-0004-0030	3	
M4 Nut	2812-0004-0007	18	
Low Side U Channel	1121-0001-0048	1	
4mm ID Spacer, 24mm	1502-0006-0240	1	
25 Tooth Spline Servo Hub	1908-0025-0032	1	
Torque Servo	2000-0025-0002	1	
L-Beam, 1 Hole	1103-0001-0008	2	
6mm Bearing	1611-0514-0006	2	
8mm Hex Bearing	1611-0514-4008	1	
Surgical tube/hot glue/ grippy material			

NOTES:

- This claw can be built using an Axon Mini or Mini+ servo using the “Axon Mini servo mount” part instead of the “servo mount.” The STL can be found in the GitHub repository for this design.
- The Low Side U Channel can be replaced with any length low side U channel, U channel, or goBILDA plate. The only requirement for mounting this claw is a flat surface with a 32x32 hole pattern.
- You will also need some kind of grippy material to line the insides of the claws. This design has been tested with surgical tube and hot glue, both of which work well for holding the cones.
- For questions or concerns, reach out to members of the Loony Squad on discord.
- Tables on each page will tell you how many fasteners/small items you need.

PRINTING PARAMETERS (PLA)

Here are the as-tested printing parameters for PLA. These were tested on a stock Ender 3. With MatterHackers MH Build PLA

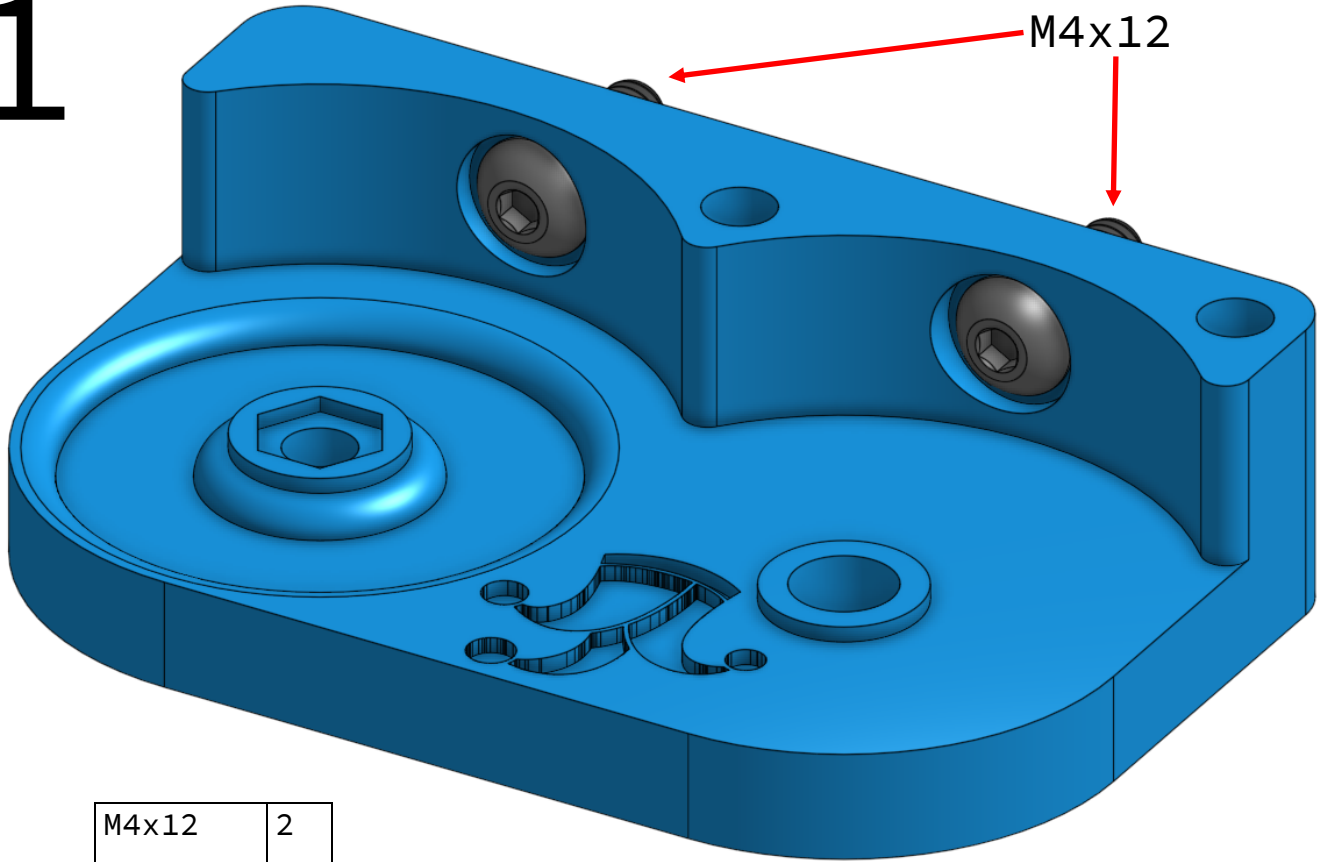
NOTE: Your printer or filament may vary. This is intended only as a starting point.

PART NAME	INFILL (GYROID)	WALLS	TOP/BOTTOM
0.4mm nozzle 0.2mm layers			
block mount	30	2	6/4
idle arm	50	6	4
servo arm	50	6	4
top plate	100	2	4
servo mount	100	2	4
0.6mm nozzle 0.3mm layers			
block mount	20	2	3
idle arm	50	4	6/4
servo arm	50	4	6/4
top plate	100	2	4
servo mount	100	2	4

These settings are designed to create the strongest parts possible. They are not ordered towards creating the lightest parts possible. With some adjustment, the weight of this claw may be reduced by a few dozen grams at the expense of some strength.

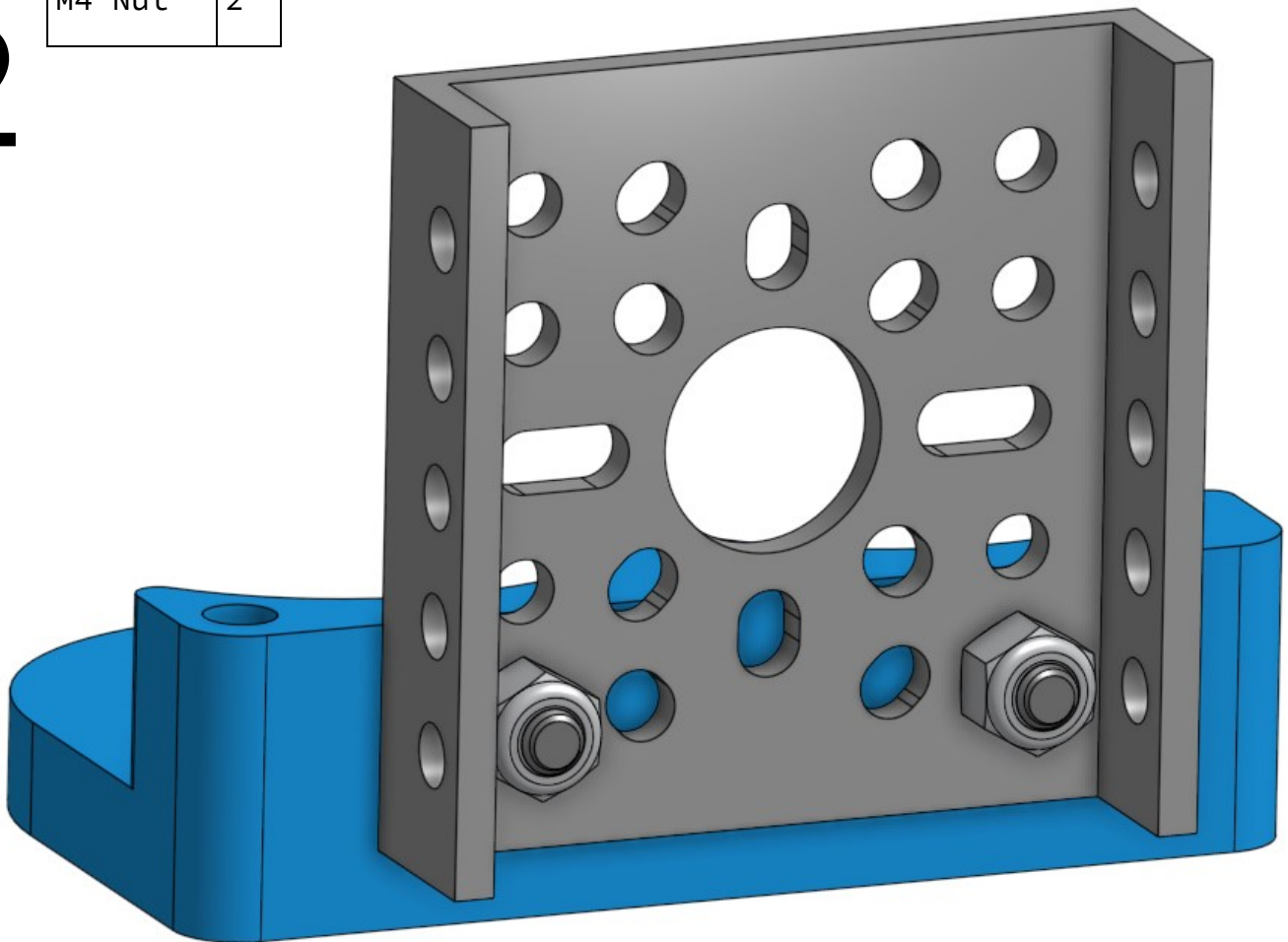
NOTE: With the goal of creating the most resilient claw possible, we printed the claws in Overture TPU with a 0.6mm nozzle at 0.3mm layers with 2 walls and 15% infill. These claws were flexible enough to withstand a full speed collision with the field wall, but were too soft to grip the cone effectively. However, this idea could work to create more resilient claws with more tuning.

1



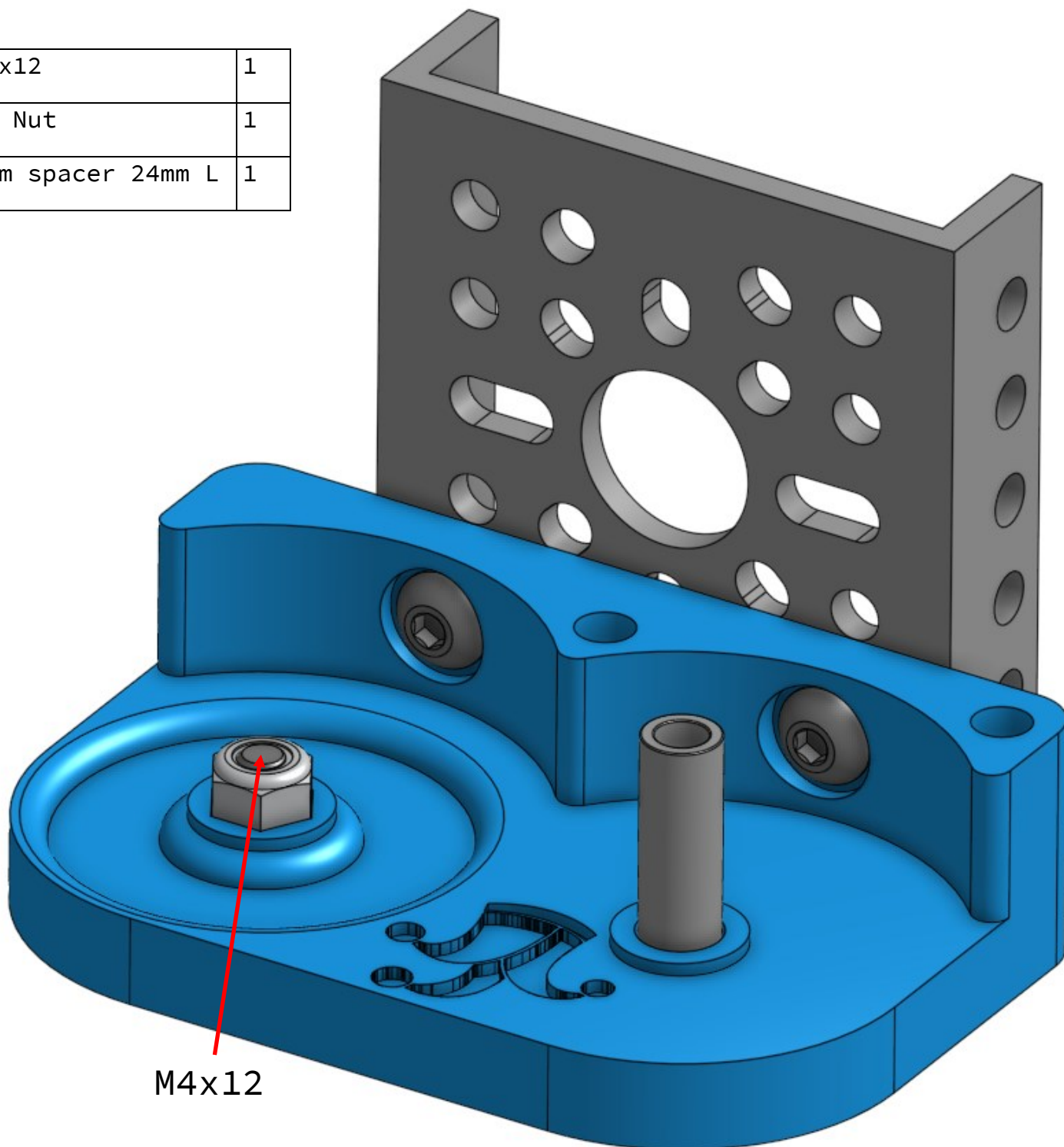
M4x12	2
M4 Nut	2

2



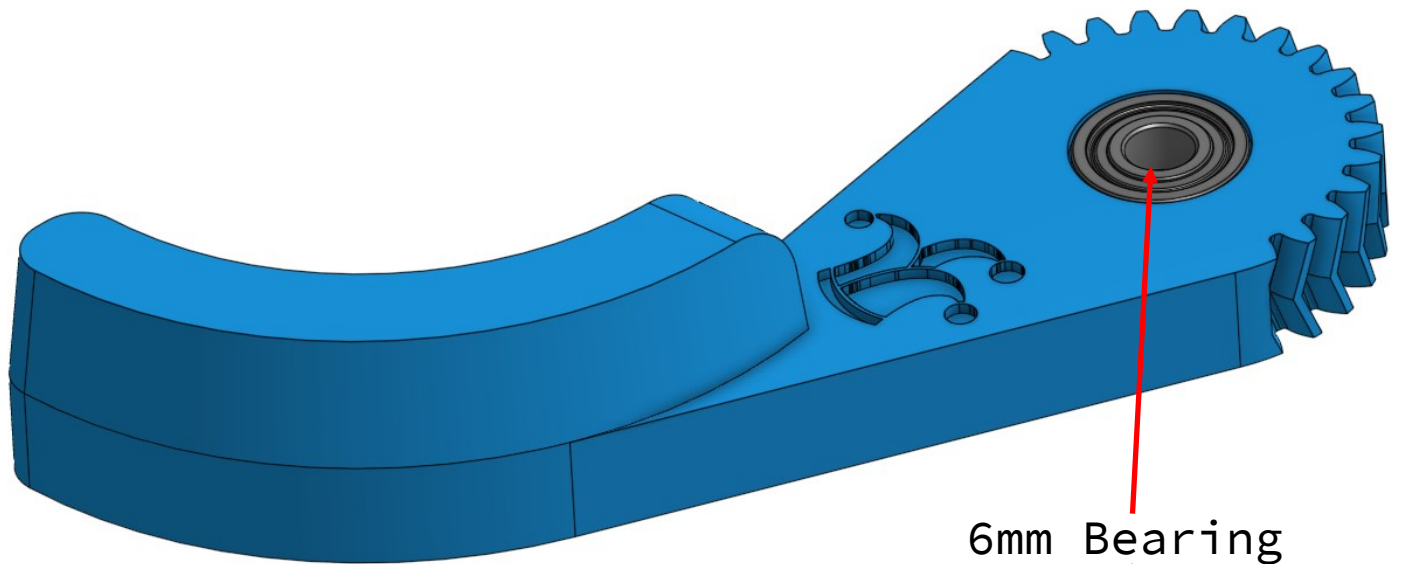
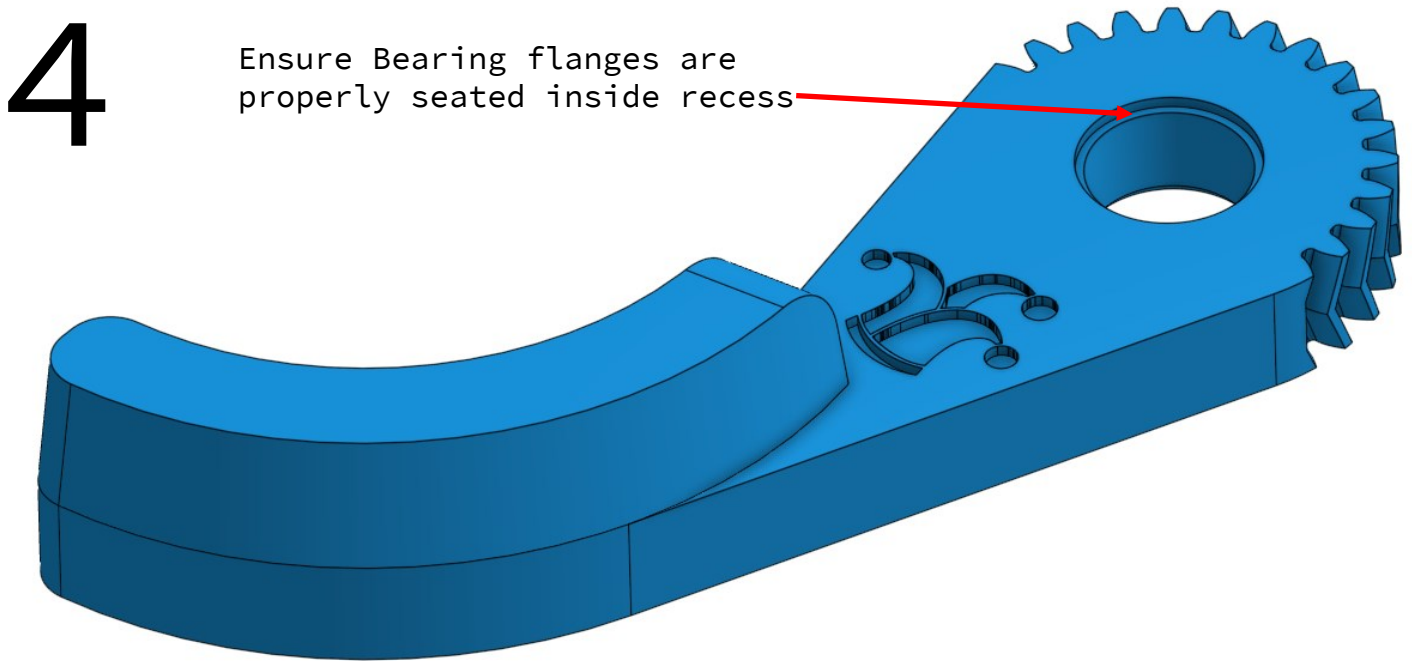
3

M4x12	1
M4 Nut	1
6mm spacer 24mm L	1

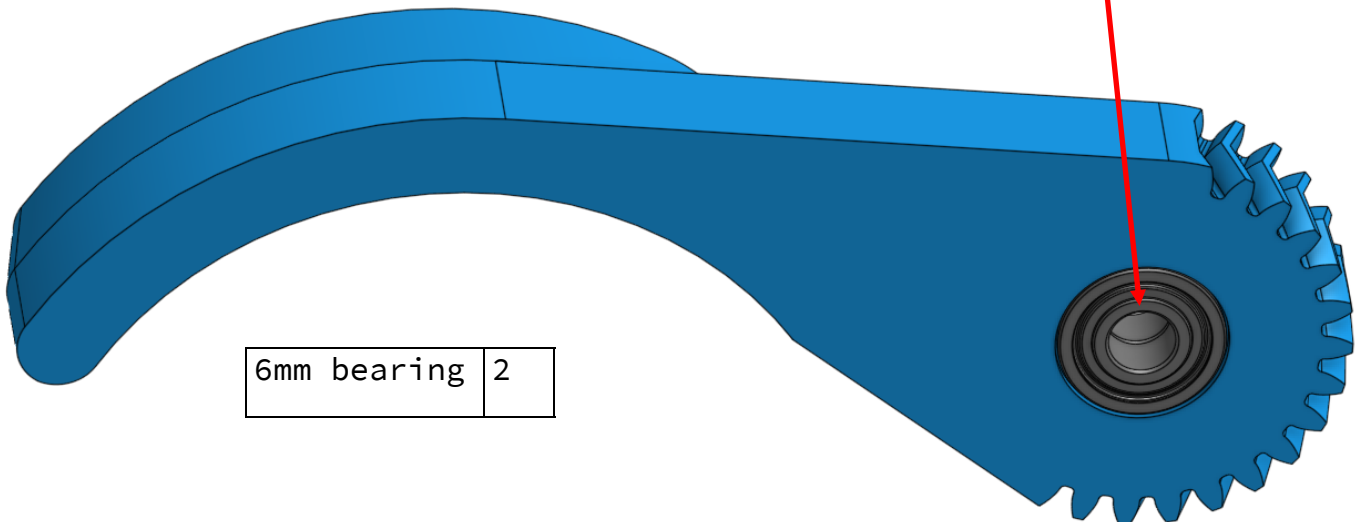


4

Ensure Bearing flanges are properly seated inside recess

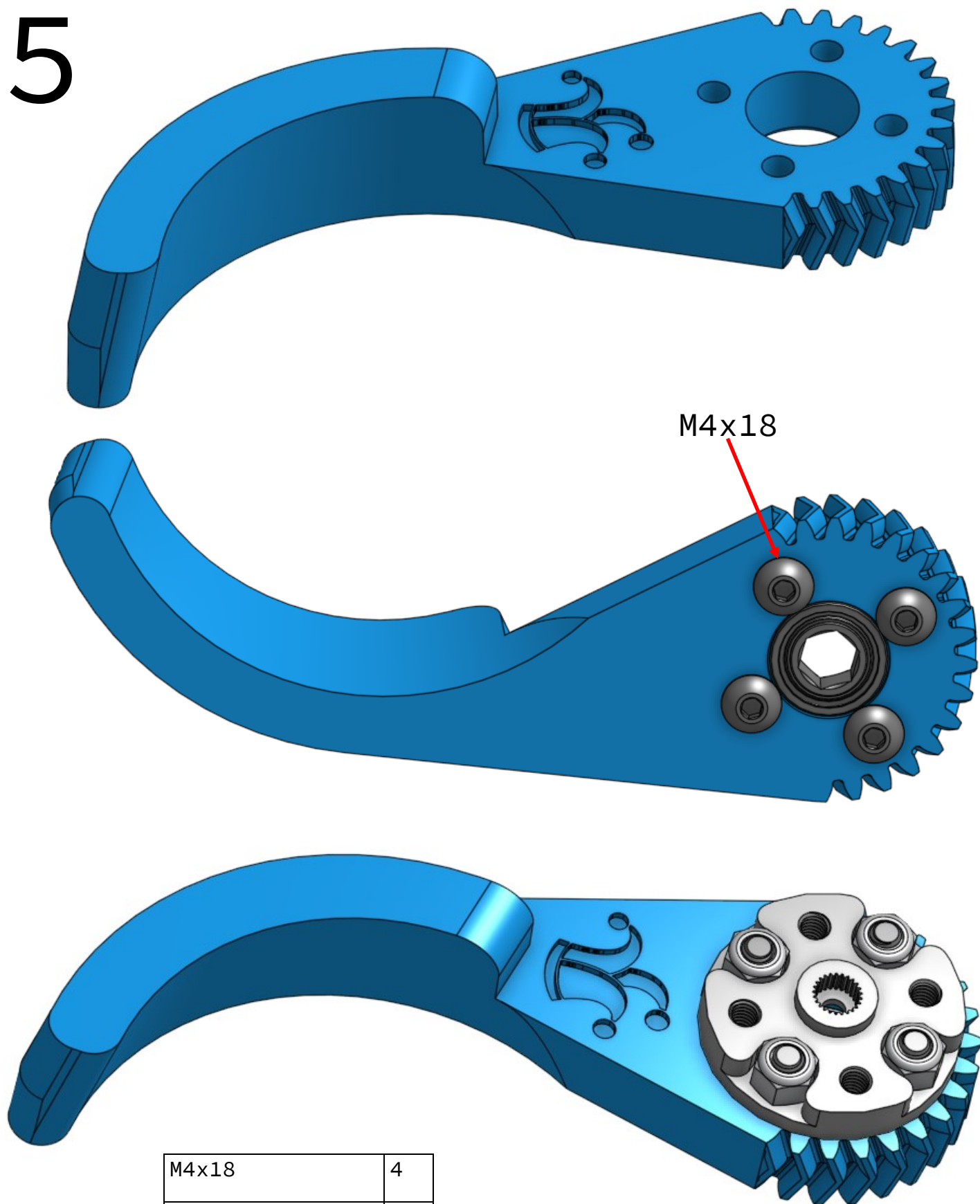


6mm Bearing



6mm bearing	2
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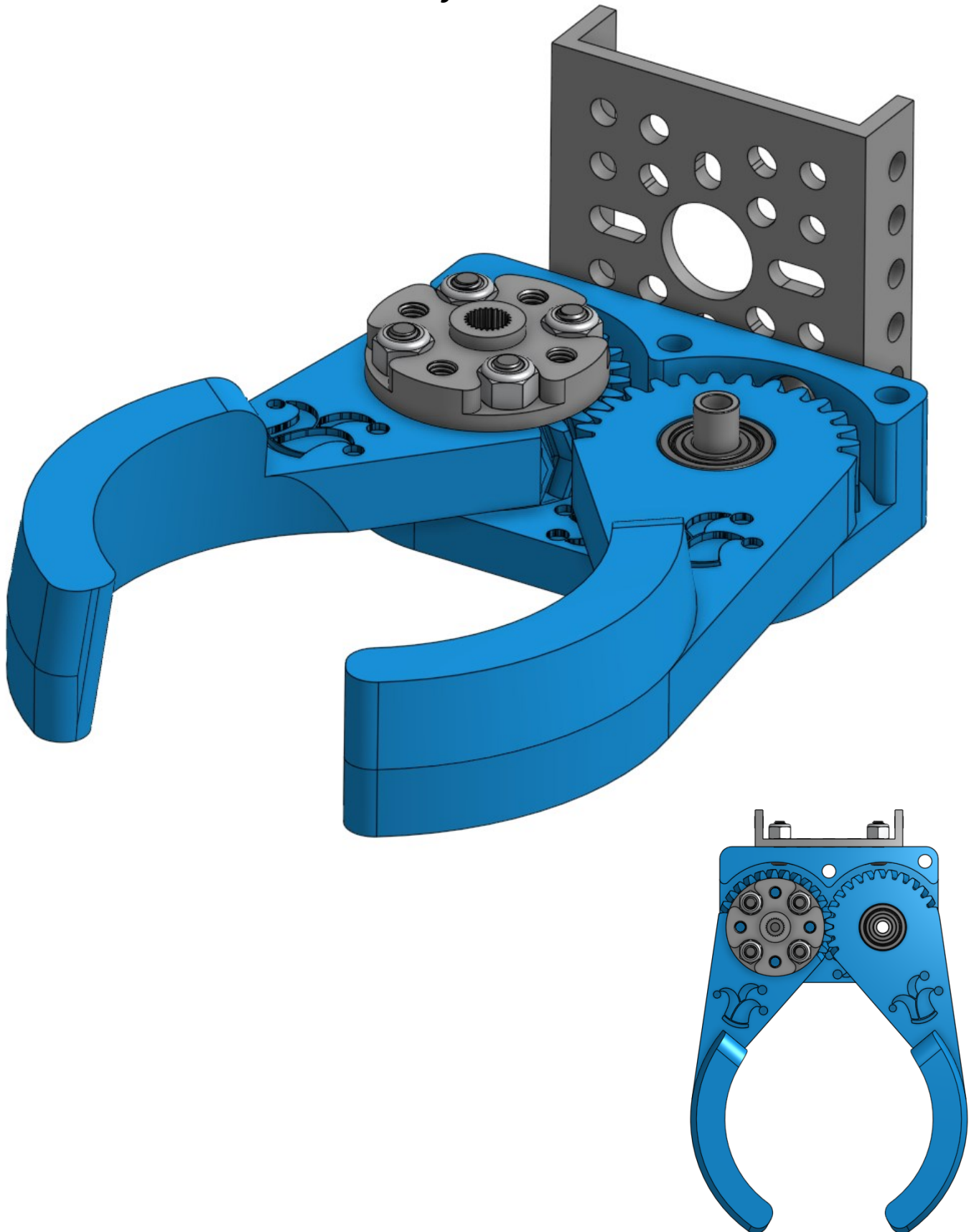
5



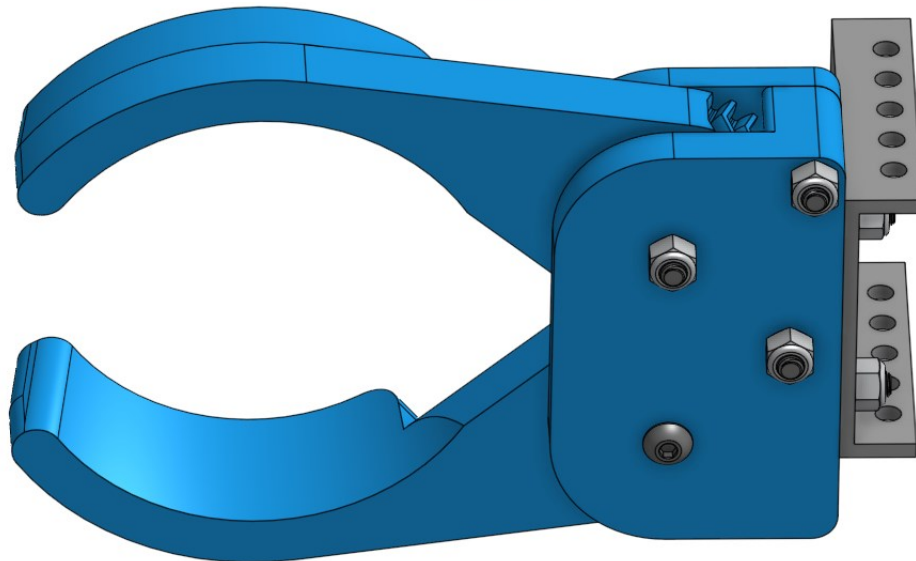
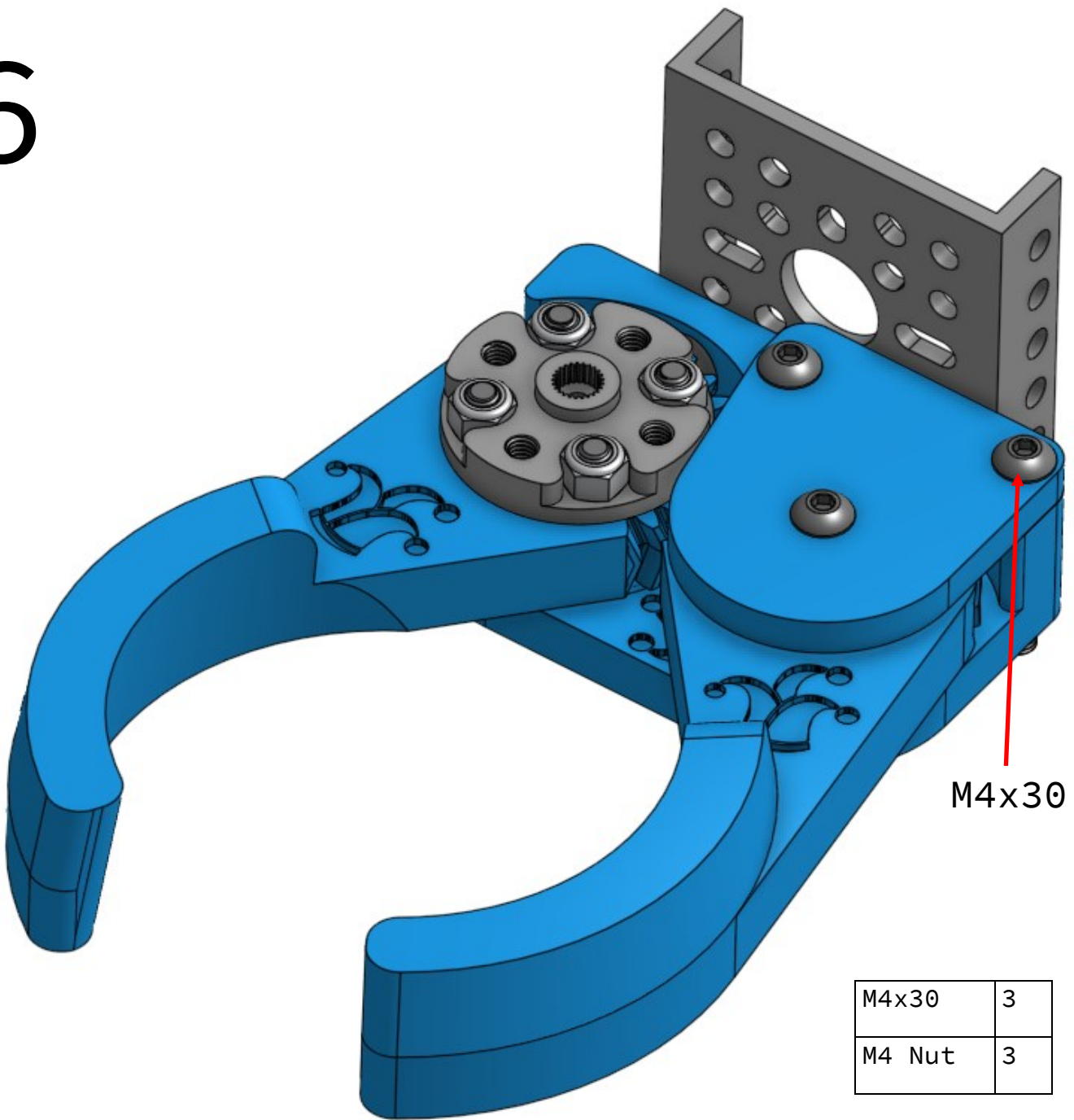
M4x18	4
M4 Nut	4
8mm hex bearing	1

6

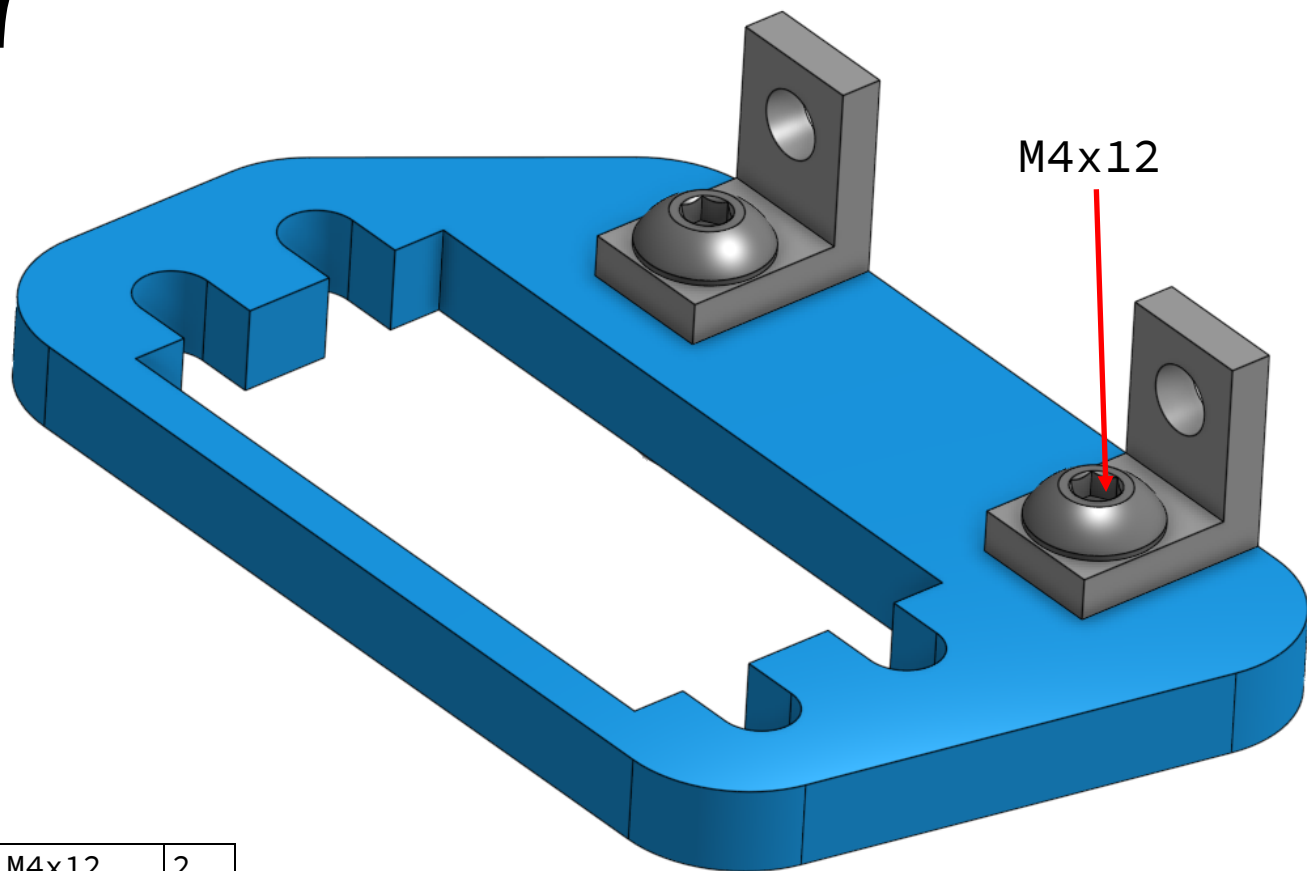
Ensure teeth are properly meshed and arms aligned to center of assembly.



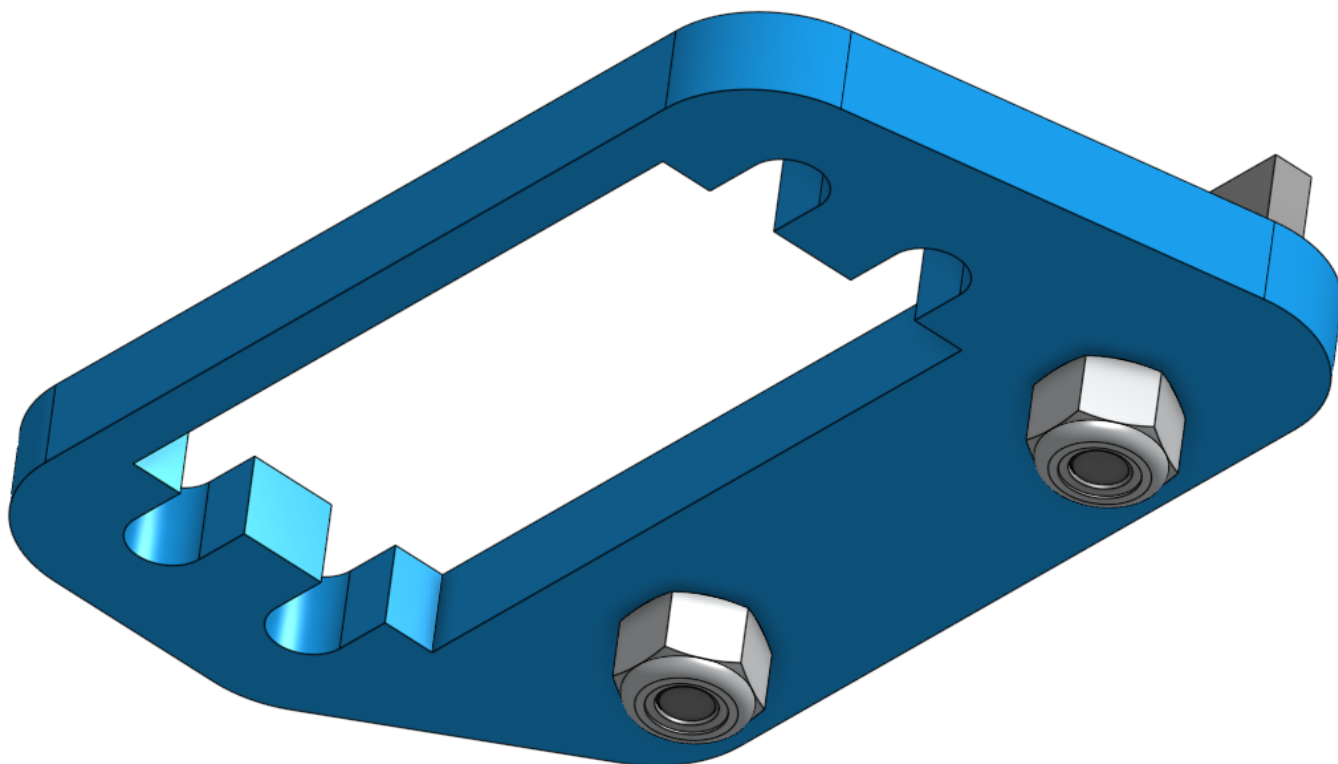
6



7

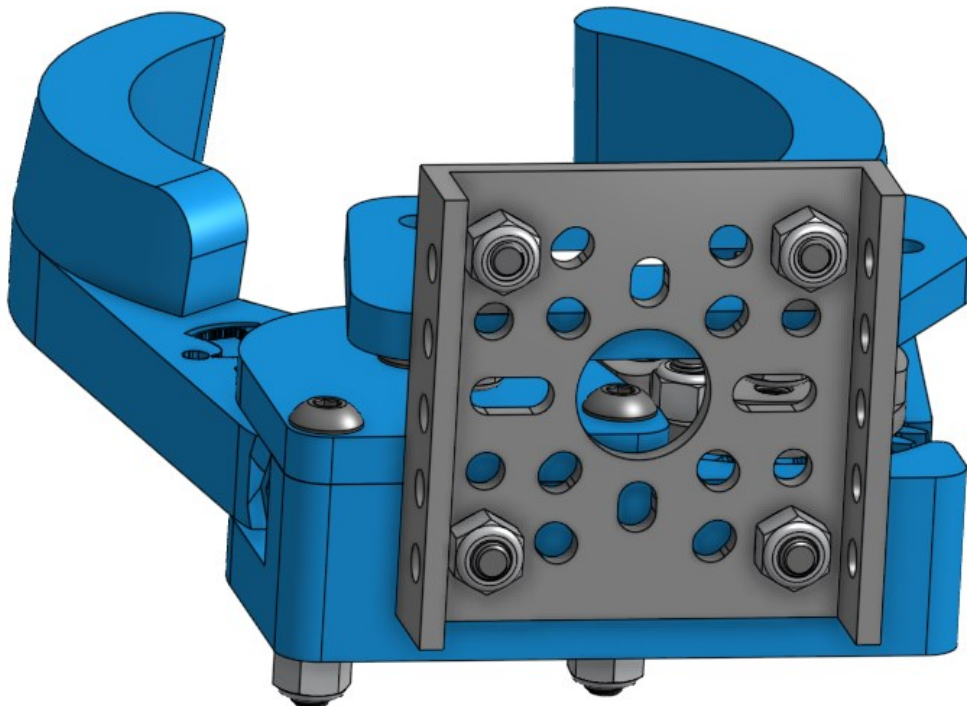
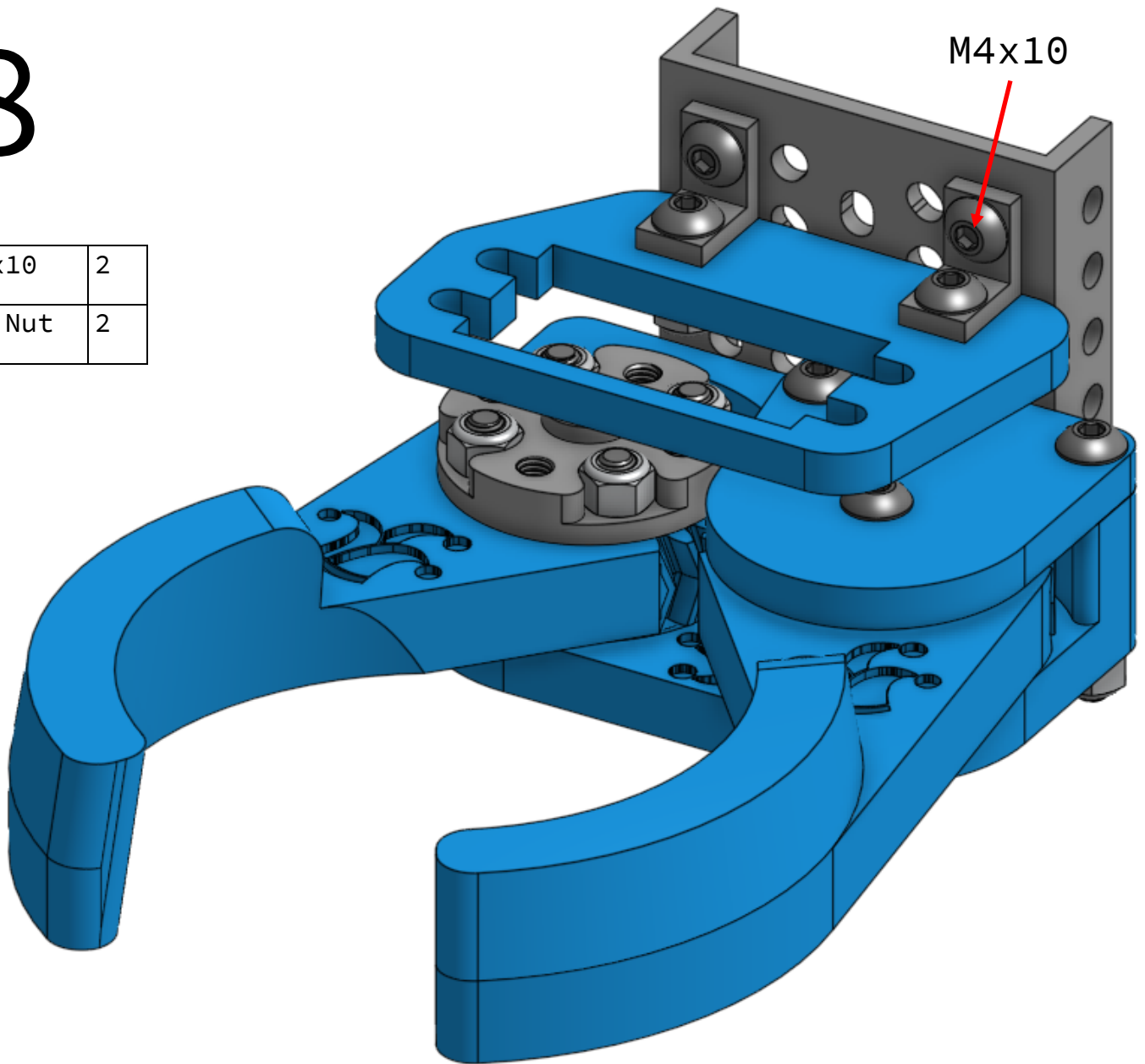


M4x12	2
M4 Nut	2

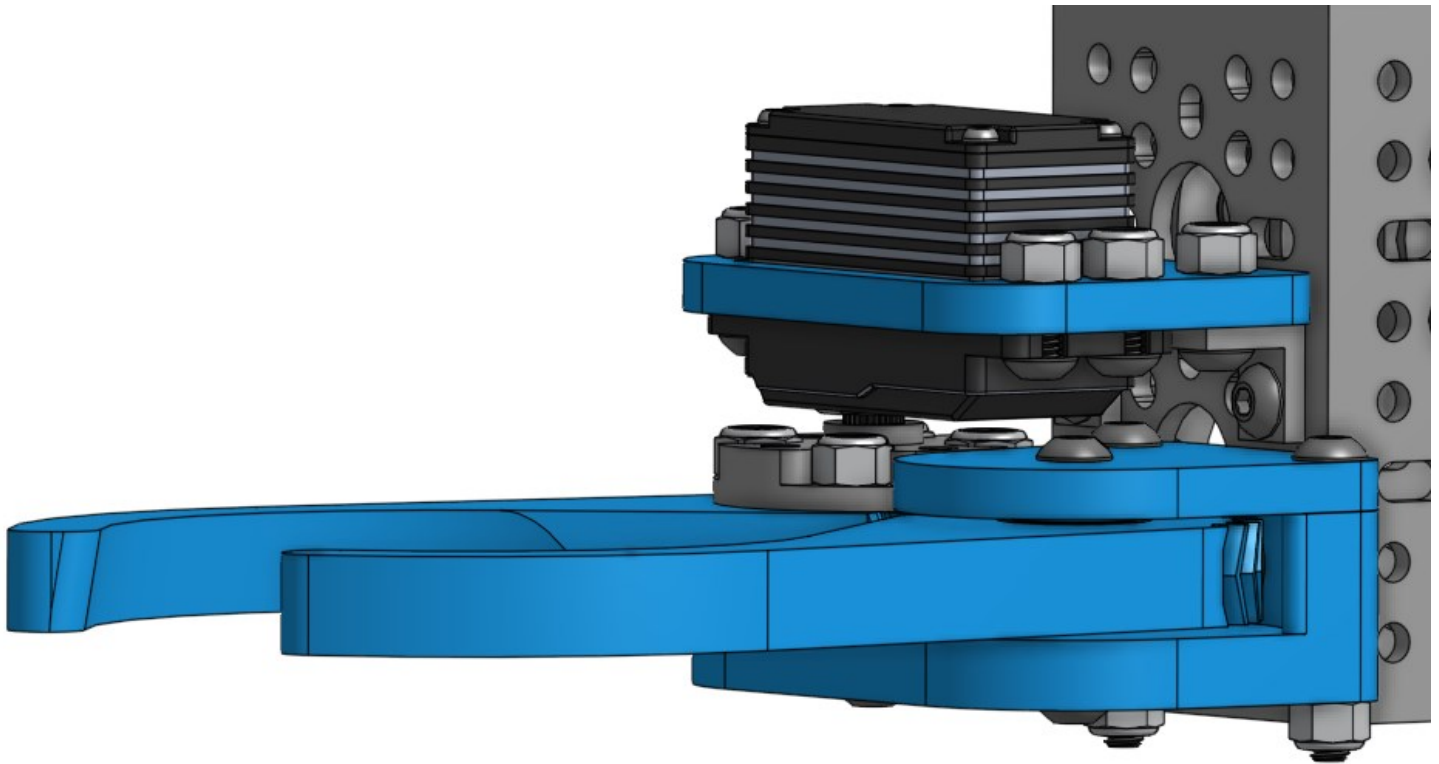


8

M4x10	2
M4 Nut	2

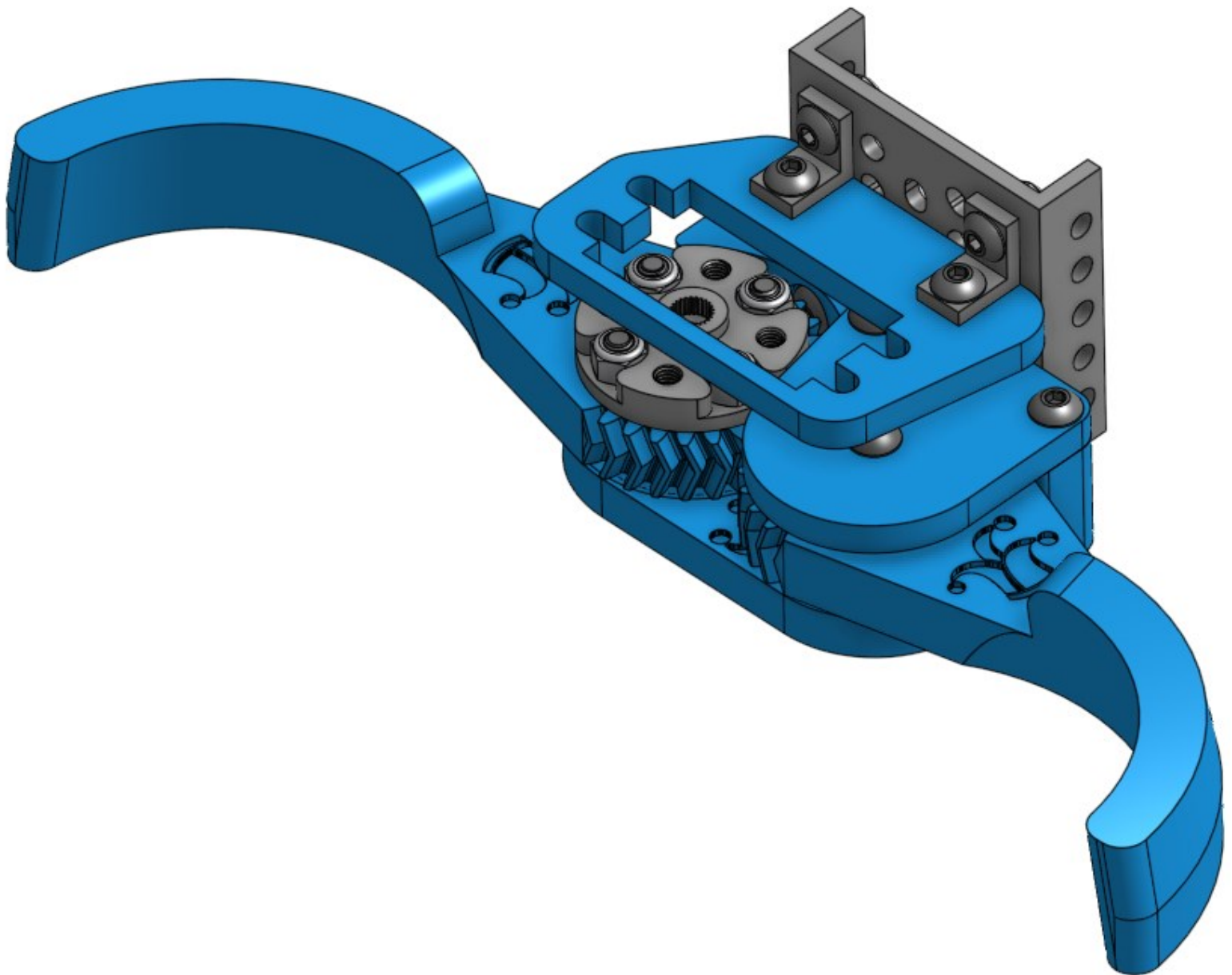


IGNORE THIS STEP IF USING GOBILDA TORQUE SERVO

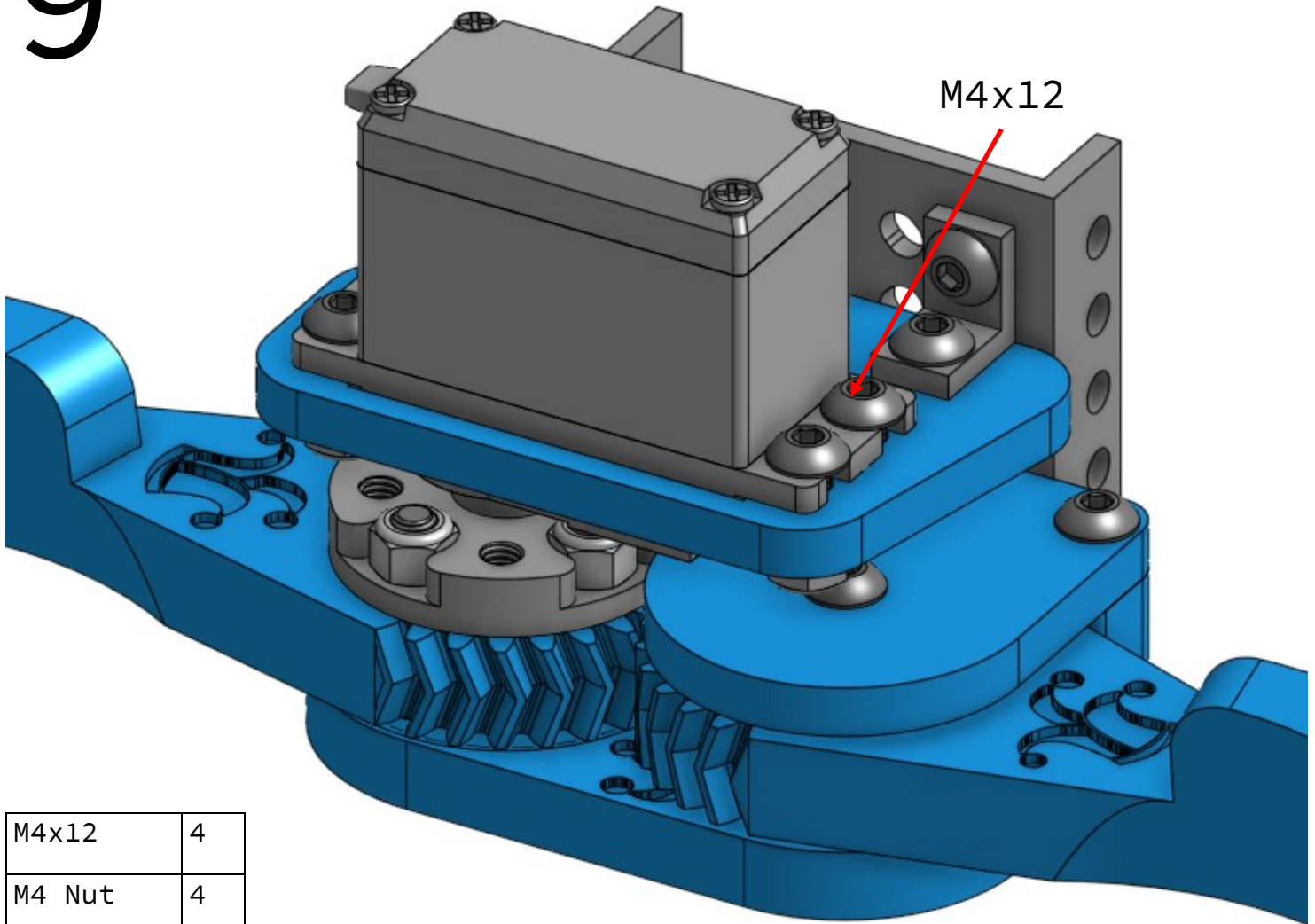


If using an Axon Mini/Mini+ servo, the “Axon Mini servo mount” must be used and be mounted upside down as pictured.

Open arms all the way
before installing servo.



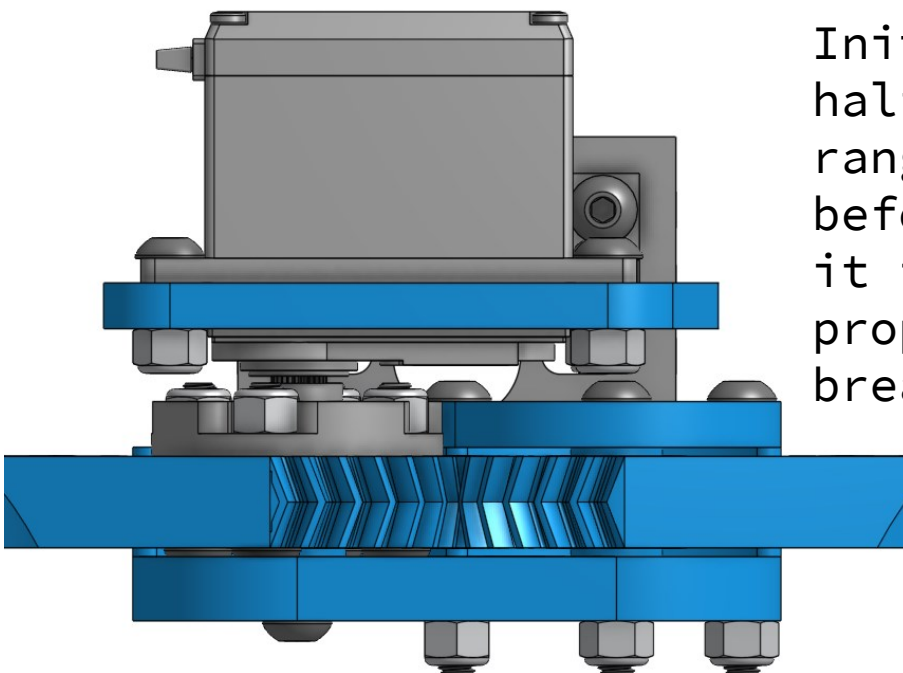
9

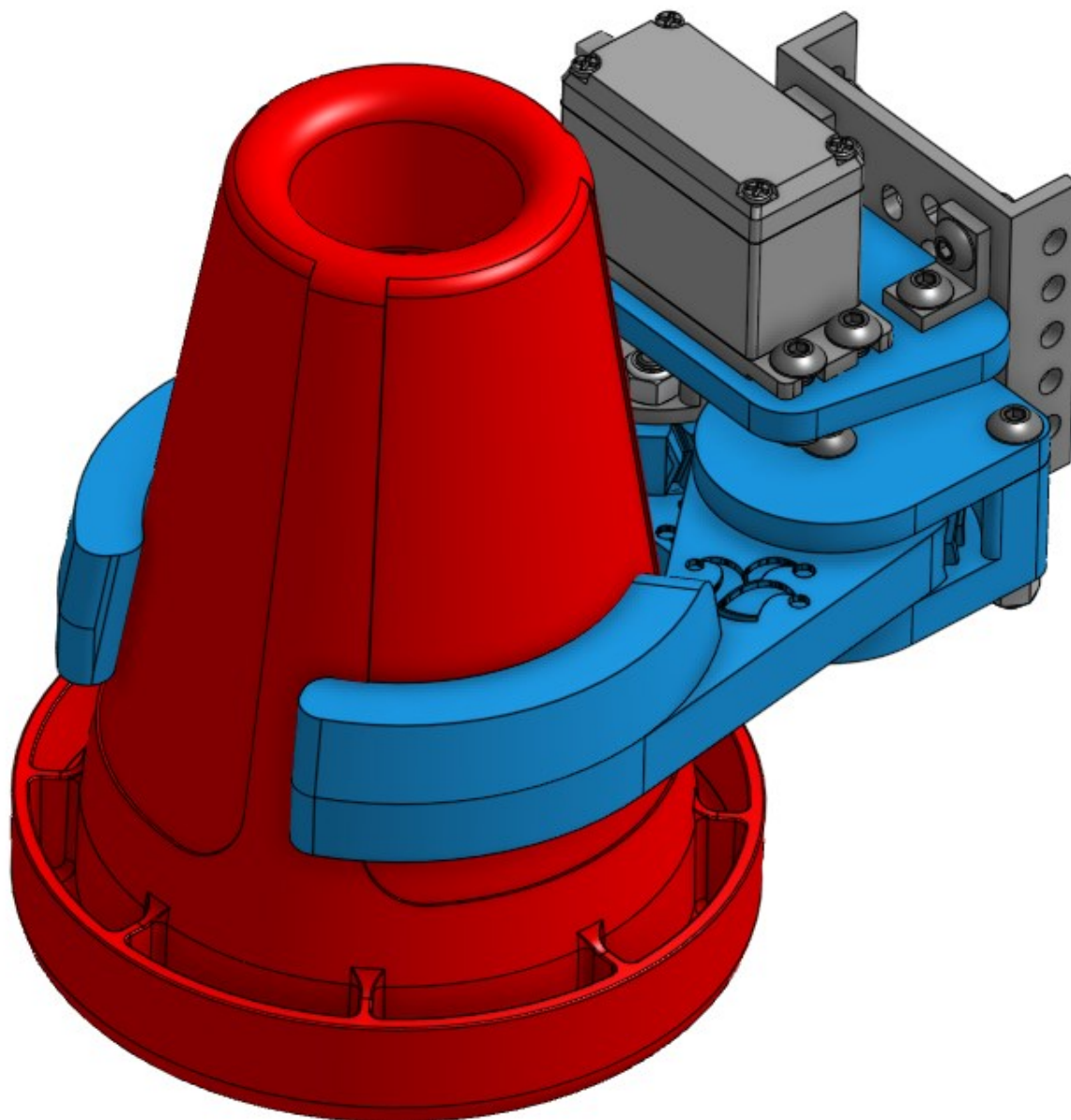


M4x12	4
M4 Nut	4

CRITICAL NOTE:

Initialize servo to halfway through its range of motion (0.5) before installing. If it is not initialized properly, parts will break when it moves.





ADDITIONAL INFORMATION

CAD: <https://cad.onshape.com/documents/129dc57b75a629234258d945/w/393048bd49f90455ff9c0a22/e/27d7fd42ed9d4c0cc4e530dd>

CONTACT: G-Force#5900 on Discord

LATEST STLs and INSTRUCTIONS: <https://github.com/The-Loony-Squad/PowerPlay-Claw>