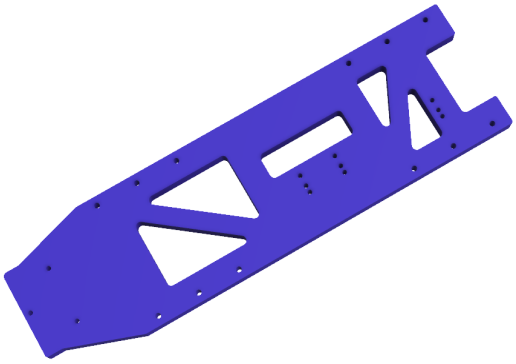
8.0 How to Build the Relic Arm Module

Step 1 Buy the parts listed below:

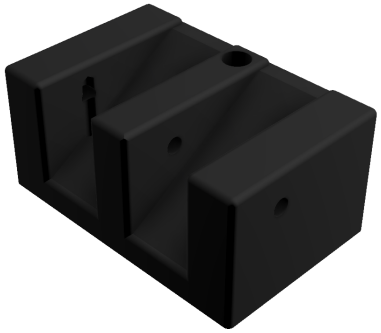
Quantity	***Item***	***Price***
1	½ inch HDPE	
1	High Torque Servo w/ 5:1 Gearbox- assembled, HS-785HB Prt #: CM-785HB	$130.00
1	Servocity, 25 tooth C1 spline, servo horn, prt # 525125	$3.99
1	Servocity Actobotics 25 Tooth Servo Hub Shaft C1 Spline prt# 525123	$9.99
2	Rev Robotics, Smart Servo, part # REV-41-1097 $30.00/ea	$60.00
--	Misc nuts and bolts	
	Total cost	$203.98

Step 2 Manufacture the parts shown below.

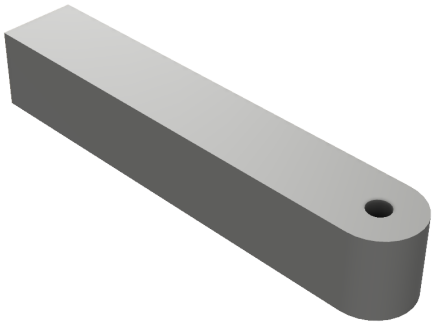


Using a CNC router, cut the Baseplate for the relic arm per drawing Relic.1.M

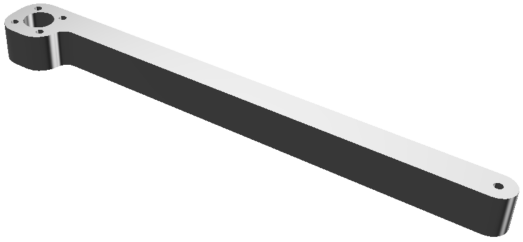
3D print four copies of the I-beam support for the relic arm per drawing Relic.2.M.



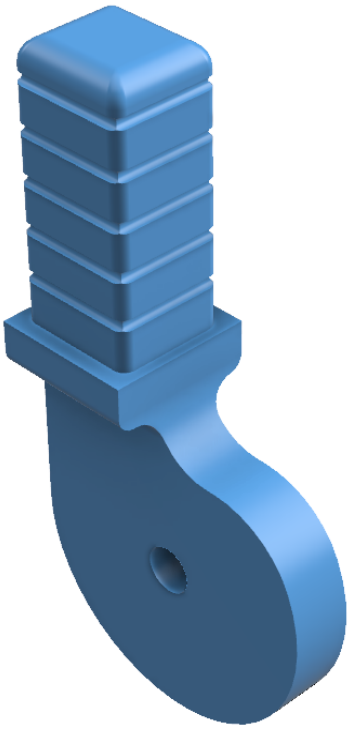
3D print one arm endstop per drawing Relic.3.M



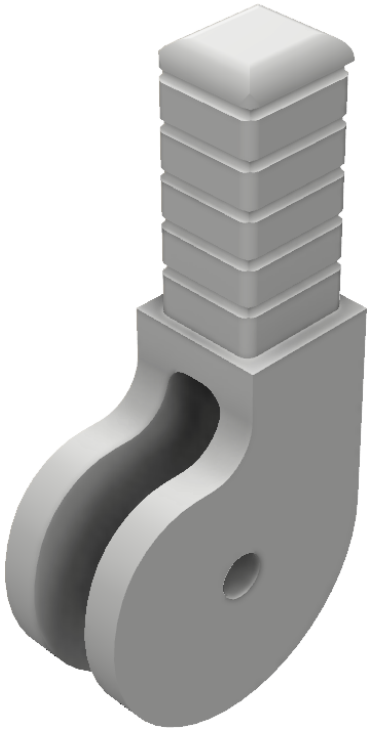
3D print two short bar per drawing Relic.4.M.



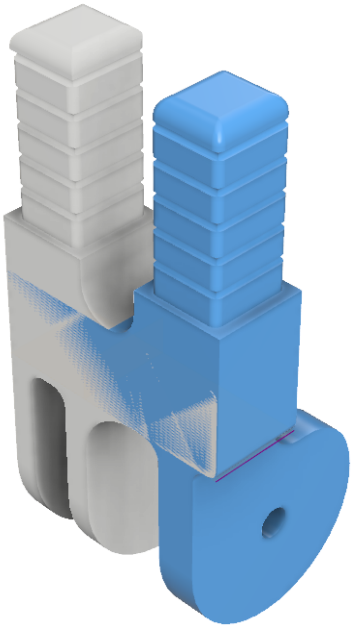
3D print one servo mounted short bar per drawing Relic.5.M.



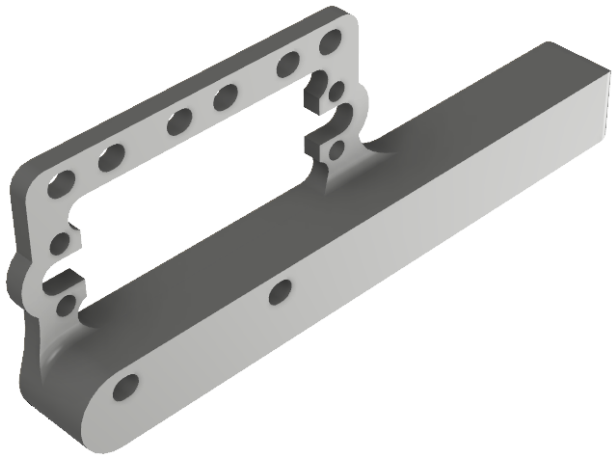
3D print six hinge inserts for arm per drawing Relic.6.M



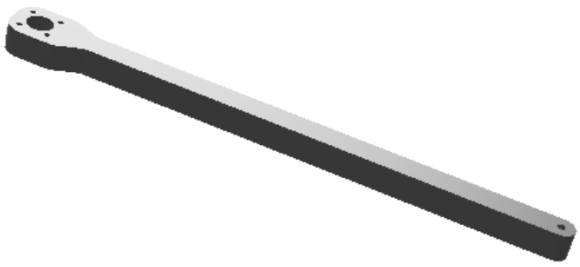
3D print four outer arm hinges per drawing Relic.7.M



3D print four inner arm hinges per drawing Relic.8.M
(Note; colors are not representative of final product)



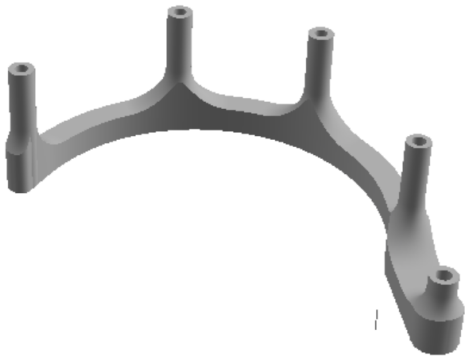
3D print one left half of loose bar w/ servo mount per drawing Relic.9.M.



3D print the gripper forearm per drawing Relic.10.M

3D print one gripper servo mount per drawing Relic.11M

3D print one left gripper claw per drawing Relic.12.M



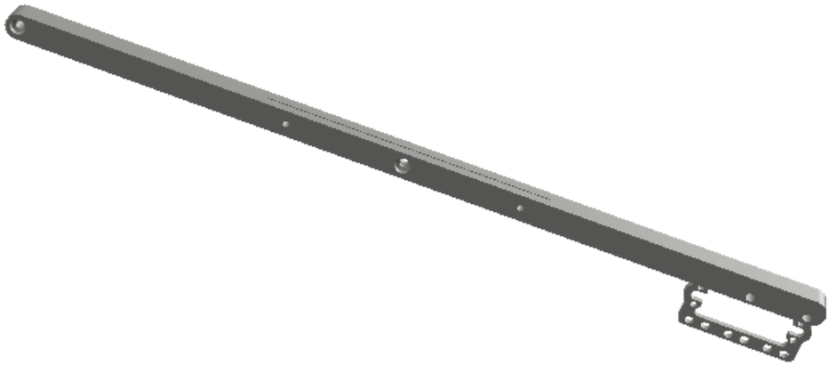
3D print the left gripper claw top per drawing Relic.13.M

3D print one right gripper claw per drawing Relic.14.M

3D print the right gripper claw top per drawing Relic.15.M

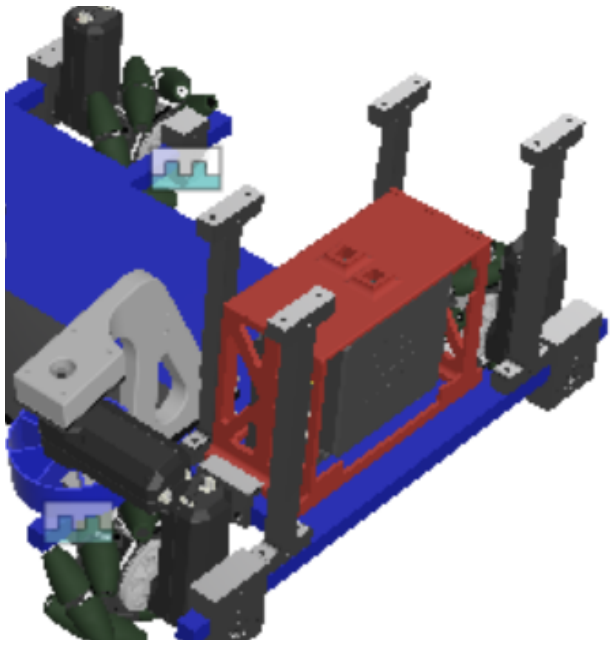
Step 3 Assemble the parts as shown below.

Connect the left half loose bar to the right half loose bar.

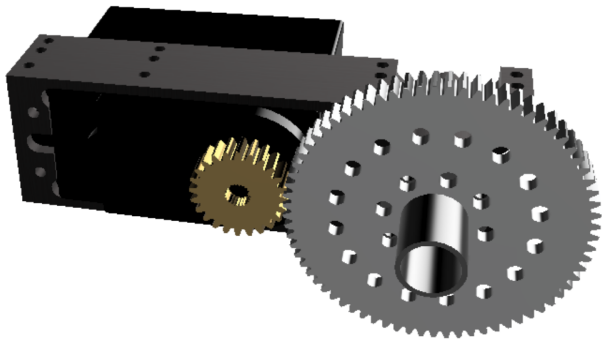


Connect the right half loose bar to the left half loose bar w/ servo mount.

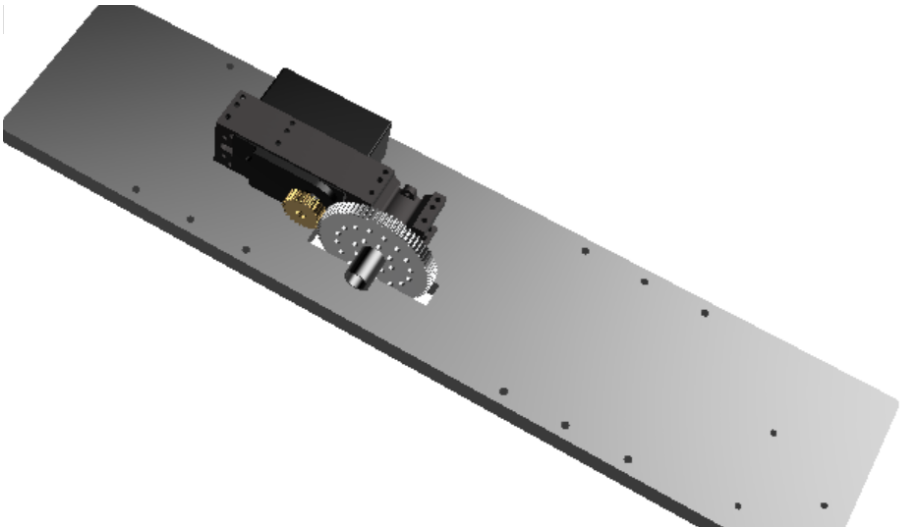
Connect two Threaded Half Bars together as Shown - Total: 2



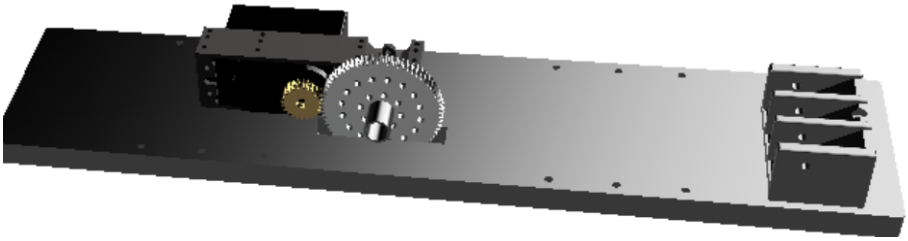
Attach the four arm supports.



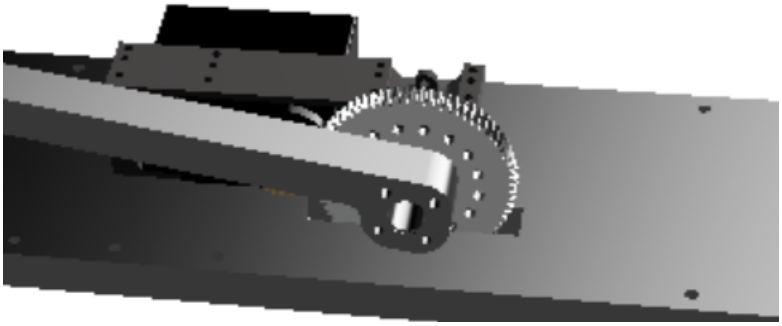
Unpackage your Servocity servo gearbox and make sure it looks like this.



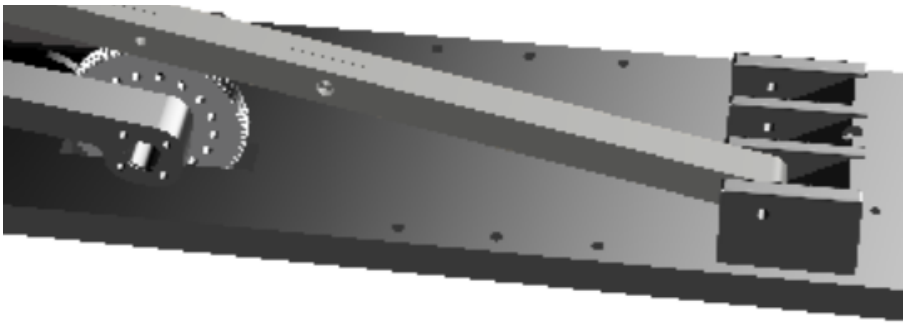
Attach the servo assembly onto the base plate.



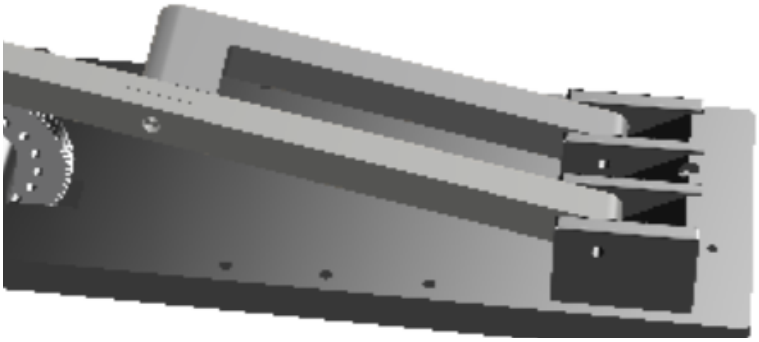
Attach the endstop to the base plate.



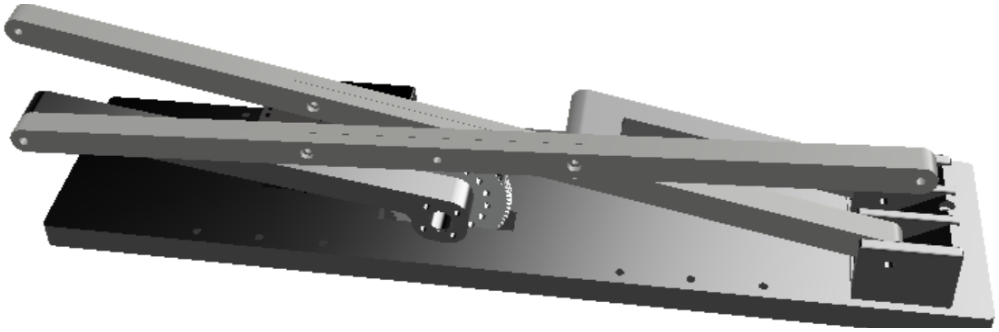
Attach the servo mounted short bar to the servo.



Attach the threaded full bar to the end stop.

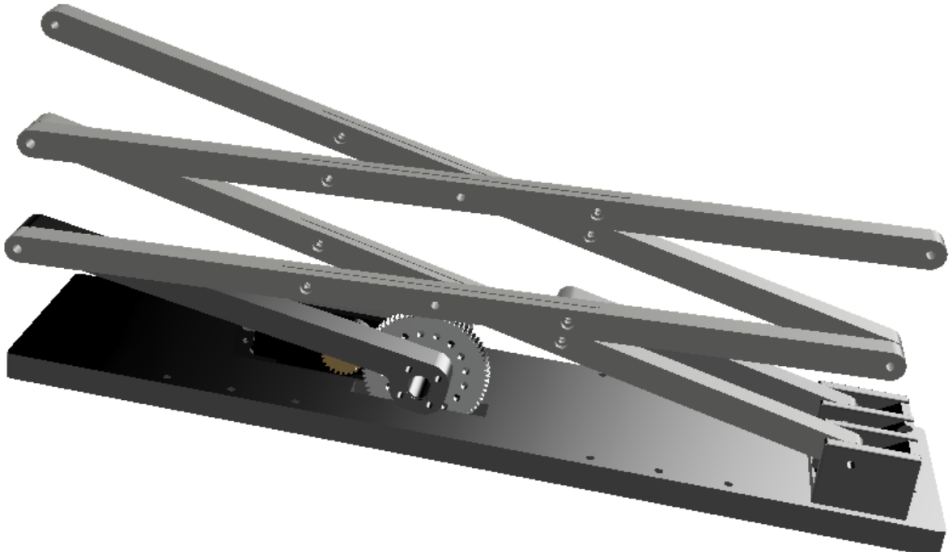


Attach the lower support bar to the end stop.

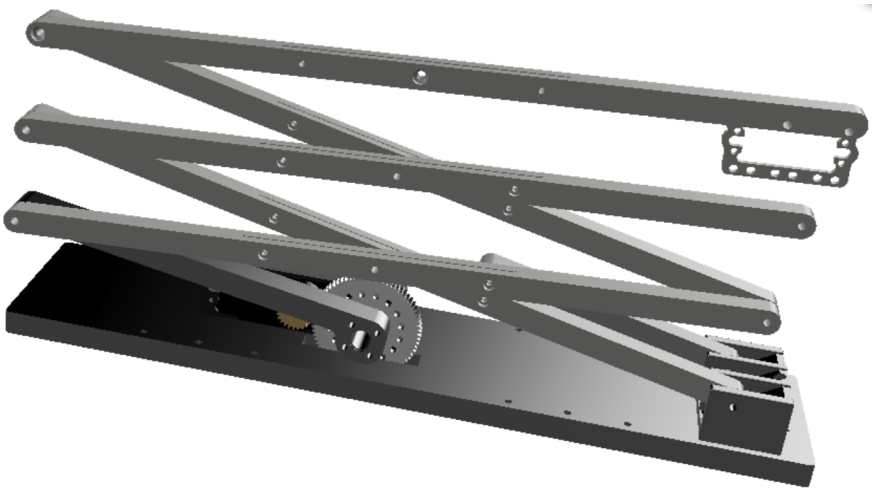


Attach one loose full bar to the assembly.

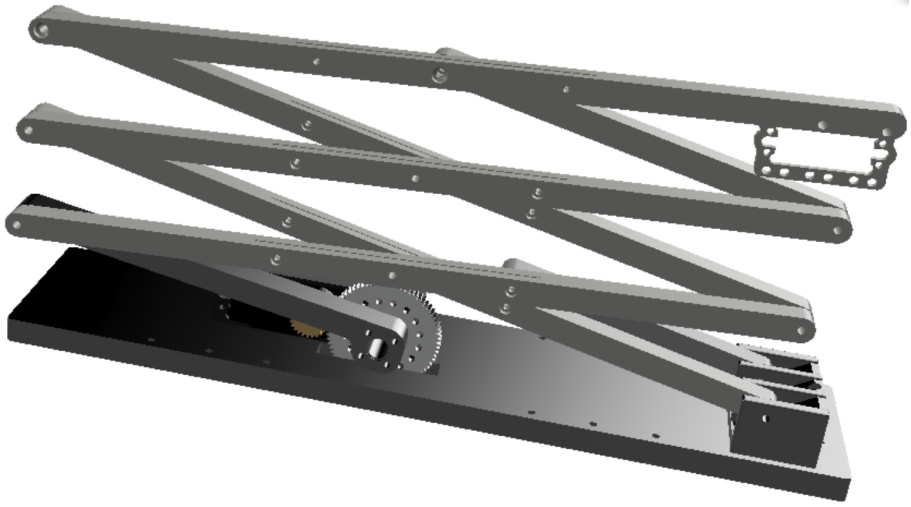
Attach a threaded bar onto the assembly.



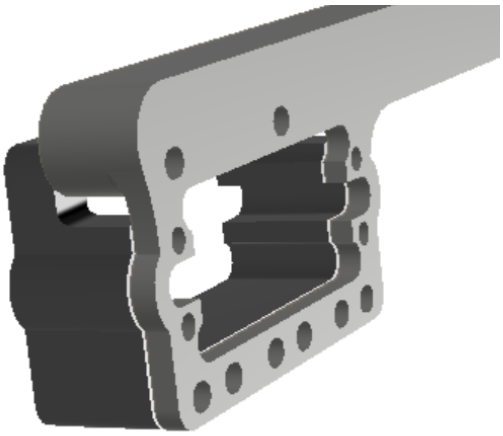
Attach a loose full bar onto the assembly.



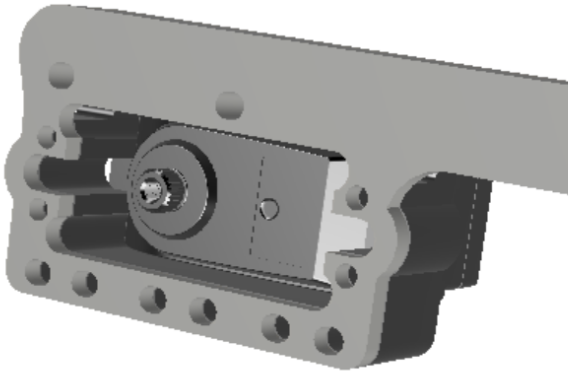
Attach the loose bar w/ servo mount.



Attach the short bar.



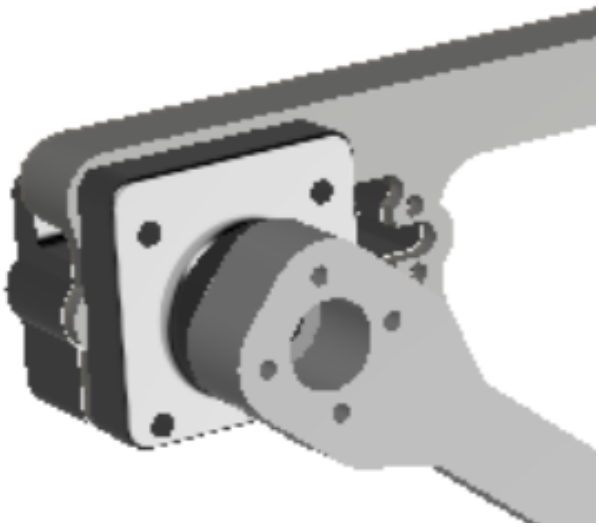
Attach the servo mount extension to the servo mount bar.



Attach the servo to the servo mount.

Attach the custom servo block.

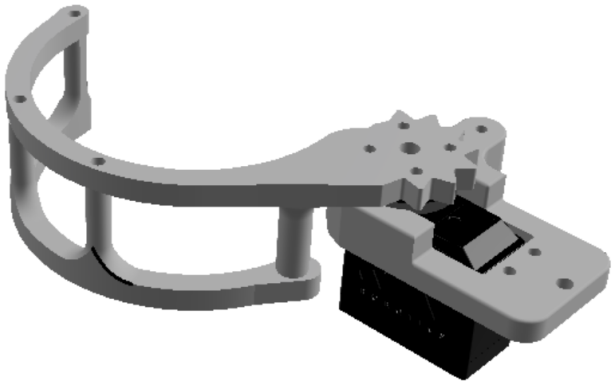
Attach the servo horn to the gripper forearm.



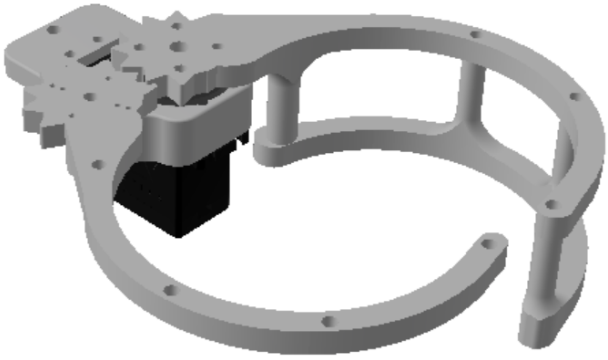
Attach the gripper forearm to the servo.

Attach the servo horn to the right claw.

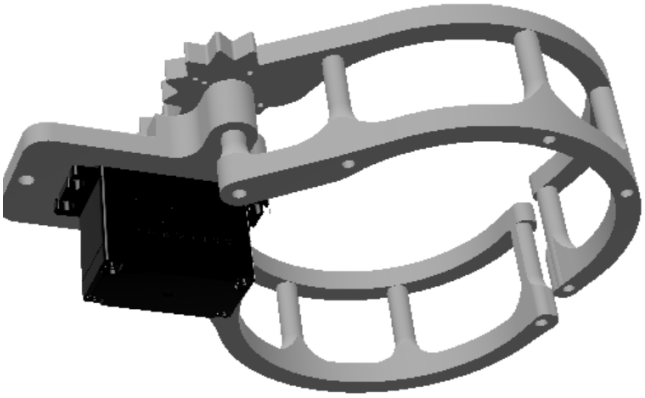
Attach the servo to the servo mount.



Attach the right claw assembly to the servo.

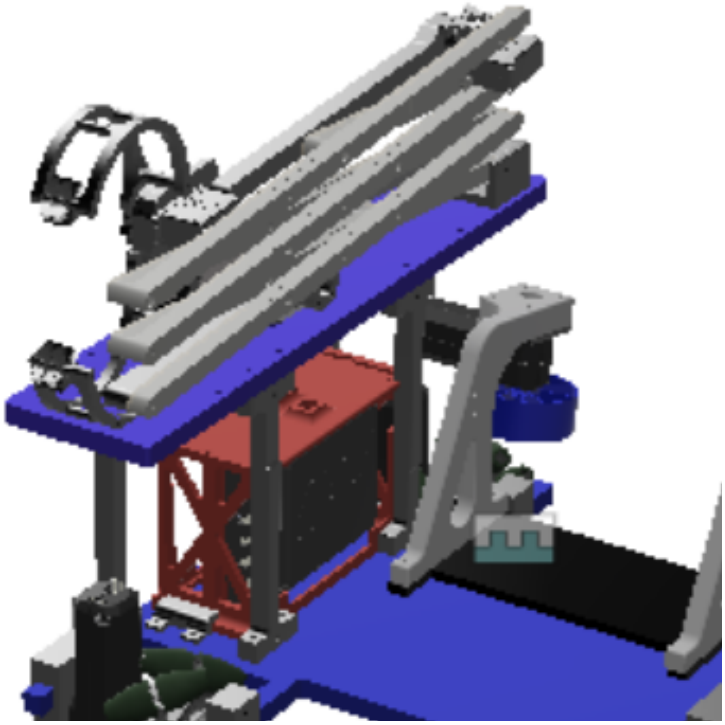


Attach the left claw to the servo mount .



Attach the left claw top onto the servo mount.

Attach gripper assembly to the forearm.



Attach the arm assembly to the four support I-beams on the chassis.