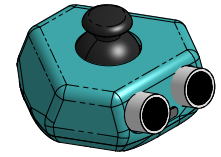


Stewy V2 Build Guide

Table of Contents	
Head	2
Arms	6
Top Plate	8
Base	9
Final Steps	12

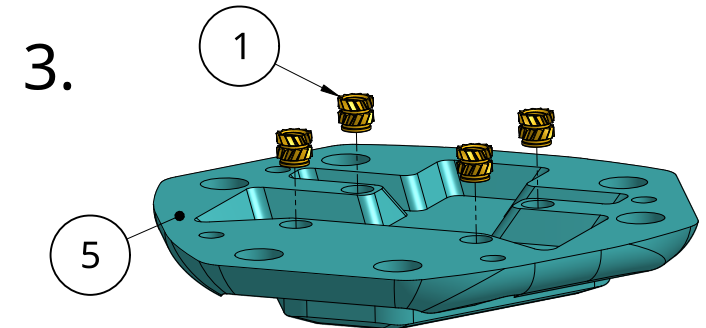
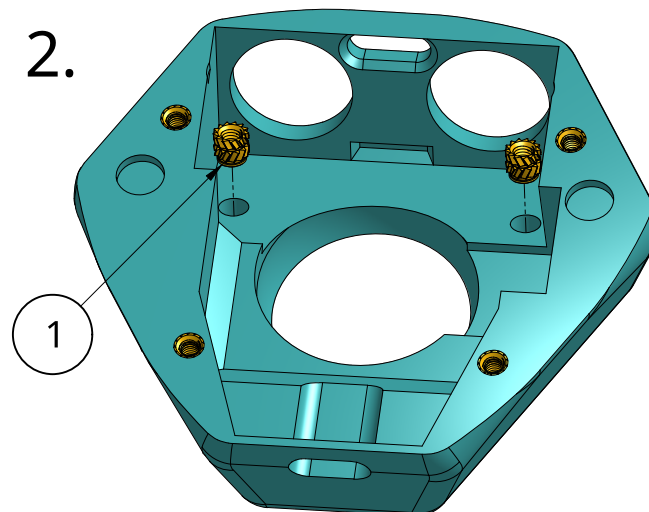
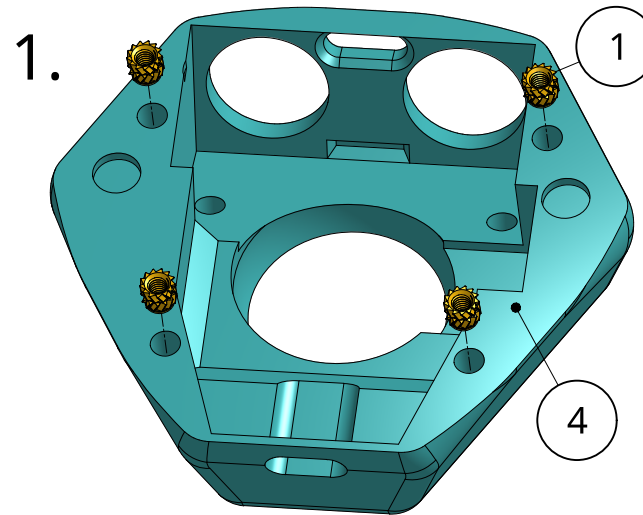


Building Stewy's Head P1

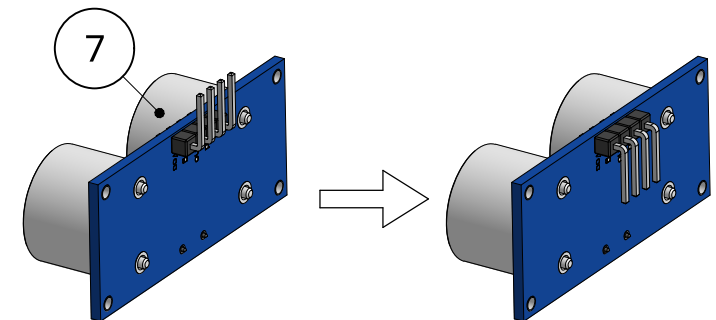


Item	Quantity	Name
1	10	4mm Heat Set Insert
2	6	Socket button head screw M3x0.5 x 6
3	4	Socket button head screw M3x0.5 x 12
4	1	Head Top Half
5	1	Head Bottom Half
6	1	Head PCB
7	1	HC_SRO4 Distance Sensor
8	1	KY-023 Joystick Module
9	1	Right Distance Sensor Stop
10	1	Left Distance Sensor Stop
11	1	ESP32-C3 Super Mini
12	1	Joystick Standoff
13	1	Distance Sensor Cable
14	1	Joystick Cable
15	1	Head Power Cable

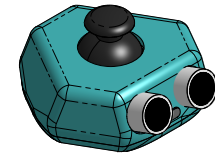
For 1-3 Use a soldering iron to install heat set inserts.
(These will come pre-installed in kits with 3D prints.)



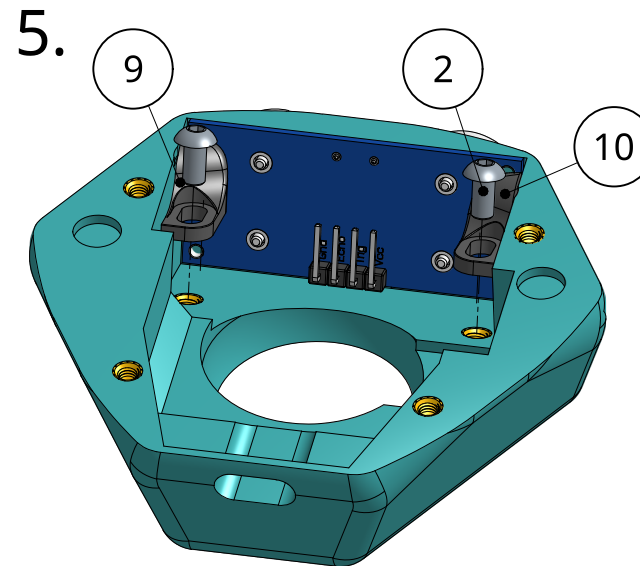
4. Bend back header pins. It helps to bend them all at once with the 4 pin cable (comes pre-bent in kits)



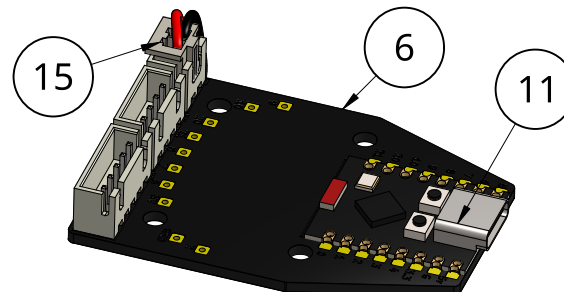
Building Stewy's Head P2



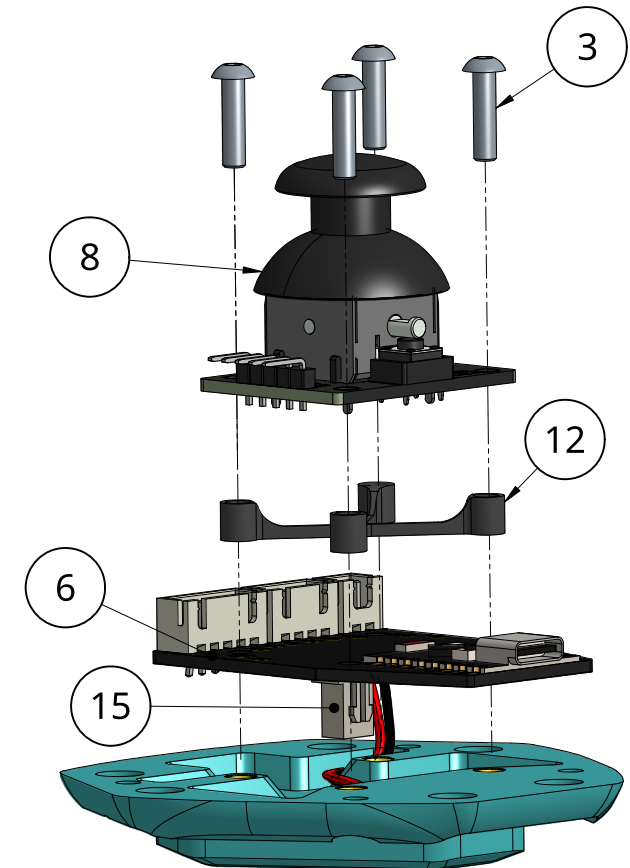
Item	Quantity	Name
1	10	4mm Heat Set Insert
2	6	Socket button head screw M3x0.5 x 6
3	4	Socket button head screw M3x0.5 x 12
4	1	Head Top Half
5	1	Head Bottom Half
6	1	Head PCB
7	1	HC_SRO4 Distance Sensor
8	1	KY-023 Joystick Module
9	1	Right Distance Sensor Stop
10	1	Left Distance Sensor Stop
11	1	ESP32-C3 Super Mini
12	1	Joystick Standoff
13	1	Distance Sensor Cable
14	1	Joystick Cable
15	1	Head Power Cable



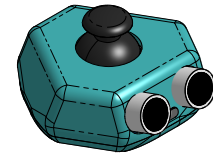
6. Solder components onto the head pcb (comes pre-soldered in kits)



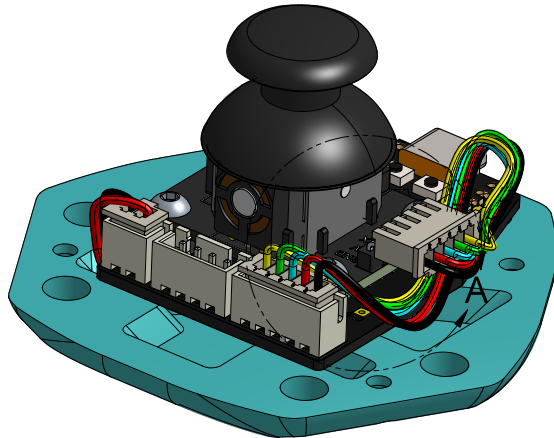
7. If using Head Power cable, route it under the pcb before this step



Building Stewy's Head P3

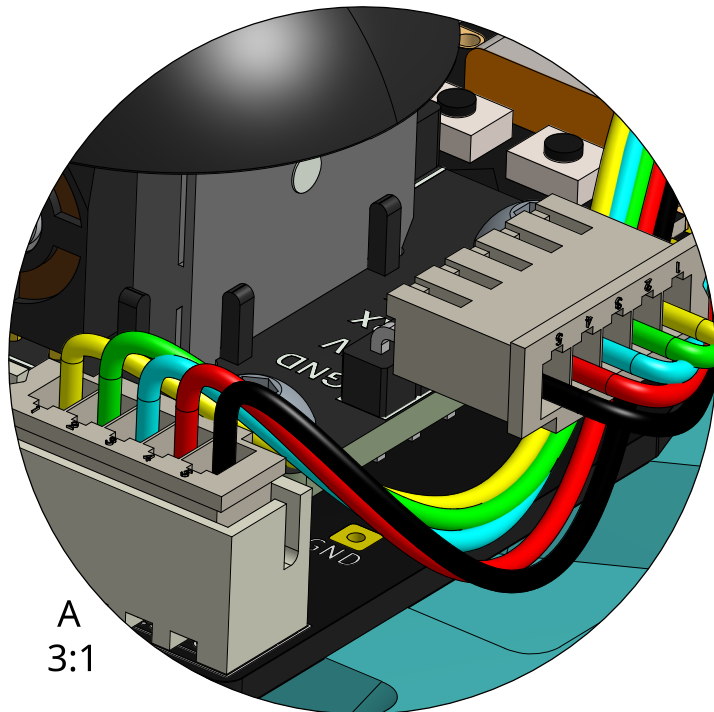
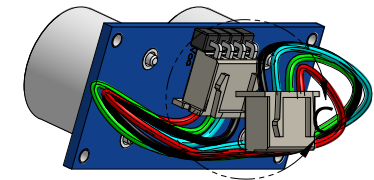
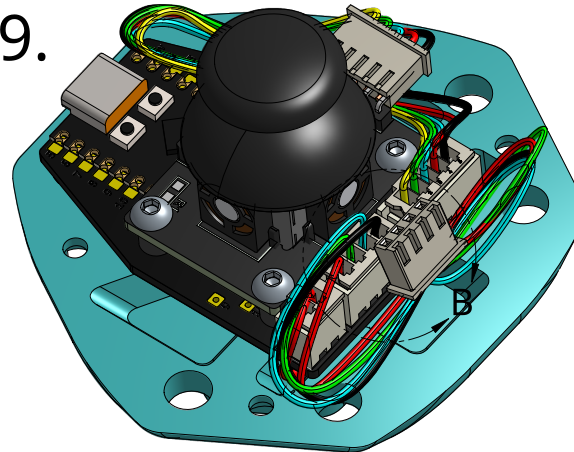


8.

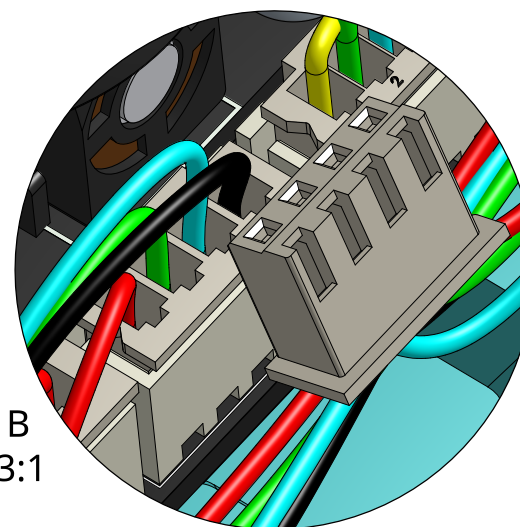


Plug in joystick and distance sensor cables, making sure the wires are going between the correct pins

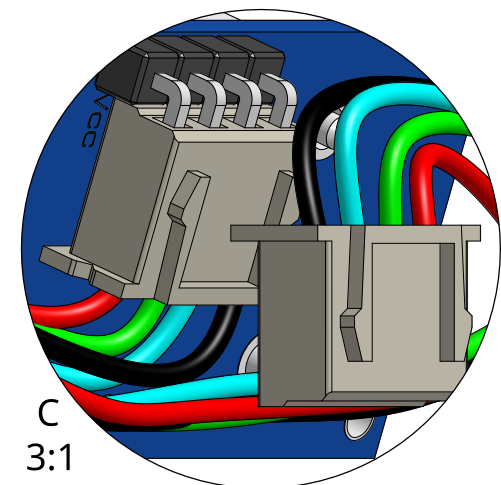
9.



A
3:1

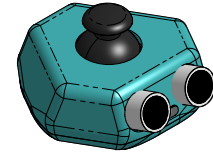


B
3:1



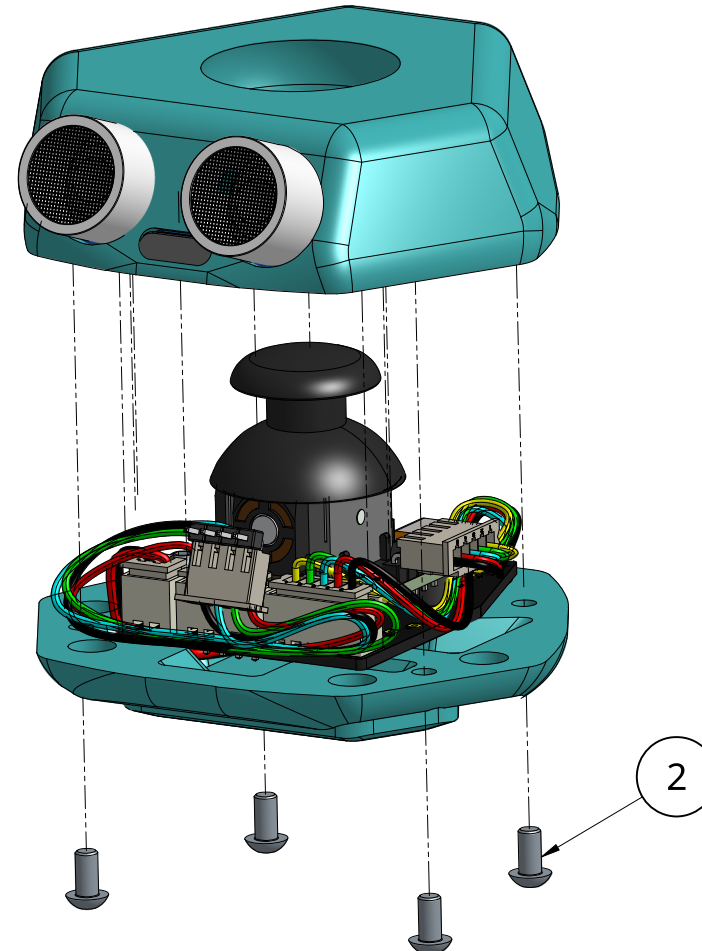
C
3:1

Building Stewy's Head P4

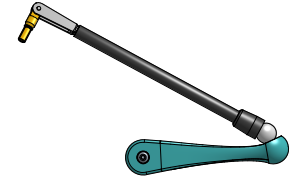


Item	Quantity	Name
1	10	4mm Heat Set Insert
2	6	Socket button head screw M3x0.5 x 6
3	4	Socket button head screw M3x0.5 x 12
4	1	Head Top Half
5	1	Head Bottom Half
6	1	Head PCB
7	1	HC_SRO4 Distance Sensor
8	1	KY-023 Joystick Module
9	1	Right Distance Sensor Stop
10	1	Left Distance Sensor Stop
11	1	ESP32-C3 Super Mini
12	1	Joystick Standoff
13	1	Distance Sensor Cable
14	1	Joystick Cable
15	1	Head Power Cable

7.

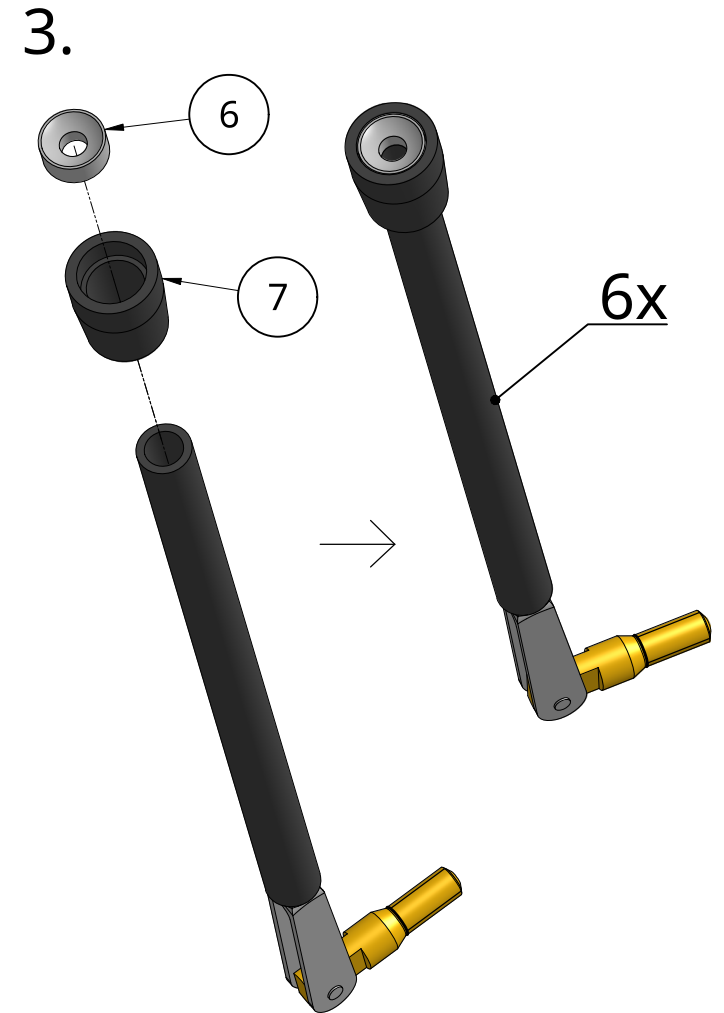
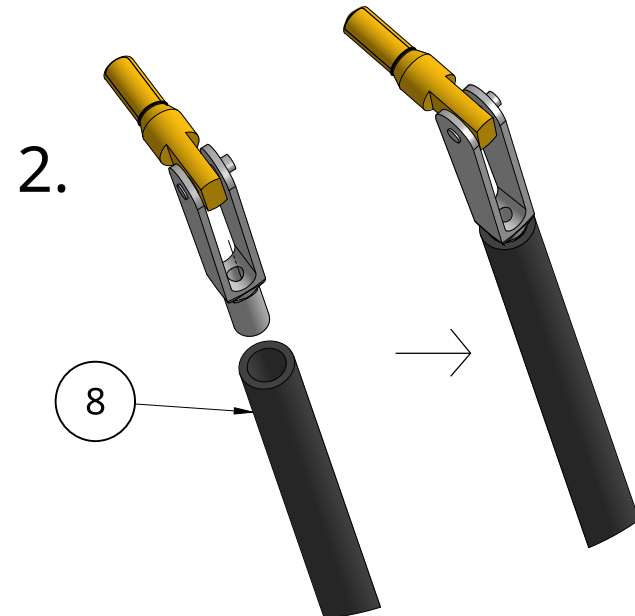
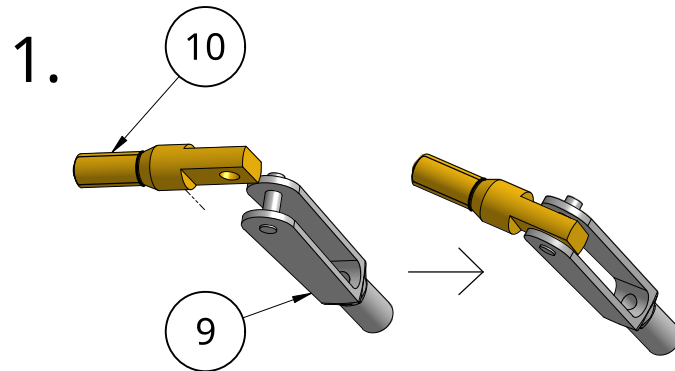


Building Stewy's Arms P1

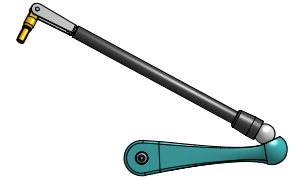


Add super glue to the joints made in steps 2 and 3

Item	Quantity	Name
1	1	Left Arm
2	1	Servo Horn
3	1	8mm M3 Stud
4	1	Tapped Ball Bearing
5	1	Socket button head screw M2.5x0.45 x 4
6	1	Magnet
7	1	Magnet to Tube Connector
8	1	Carbon Tube
9	1	Clevis M2
10	1	Tang M3
11	1	Bearing
12	1	M3 Lock Nut

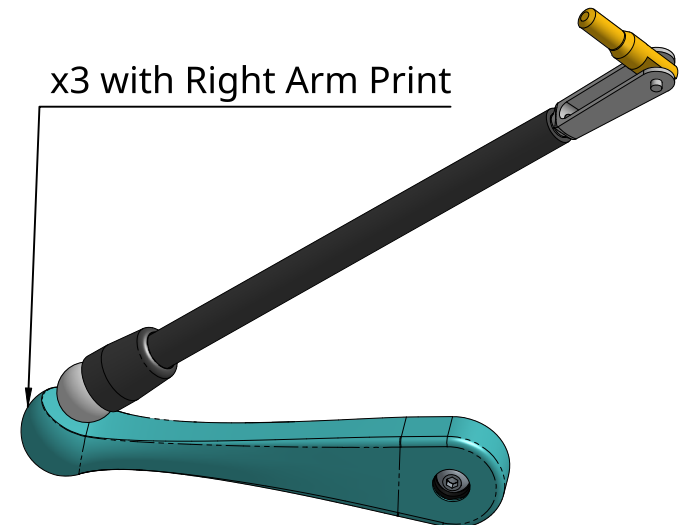
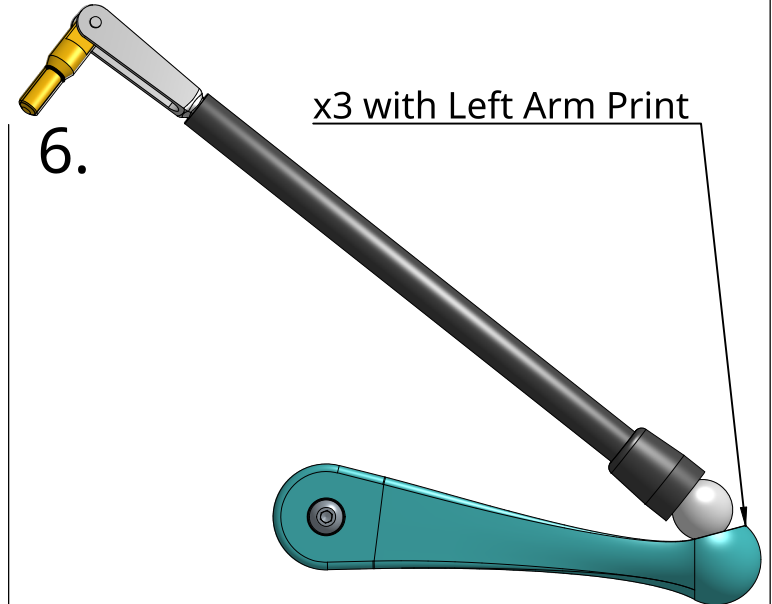
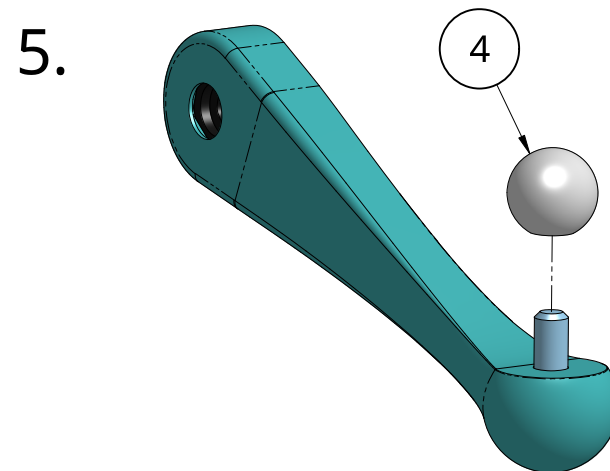
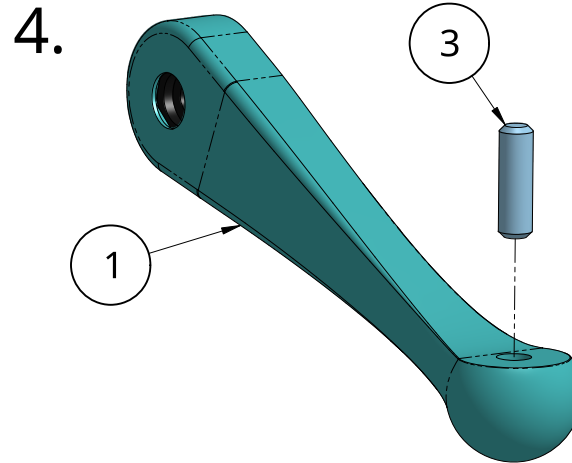


Building Stewy's Arms P2



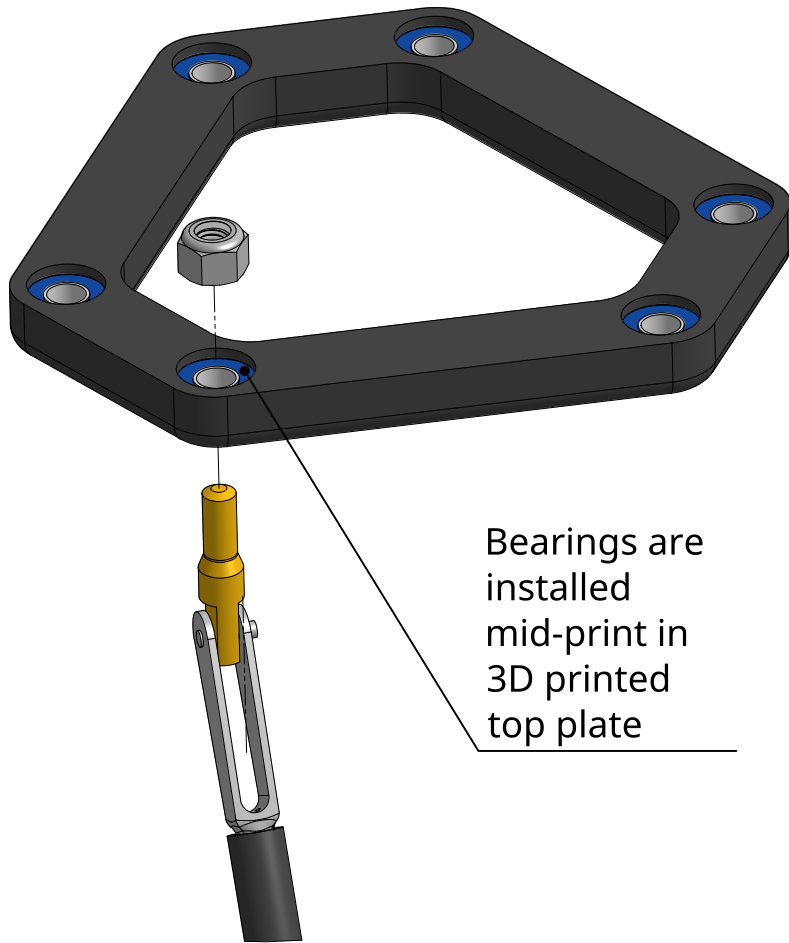
Add super glue to the joints made in step 4

Item	Quantity	Name
1	1	Left Arm
2	1	Servo Horn
3	1	8mm M3 Stud
4	1	Tapped Ball Bearing
5	1	Socket button head screw M2.5x0.45 x 4
6	1	Magnet
7	1	Magnet to Tube Connector
8	1	Carbon Tube
9	1	Clevis M2
10	1	Tang M3
11	1	Bearing
12	1	M3 Lock Nut



Building Stewy's Top Plate

1.

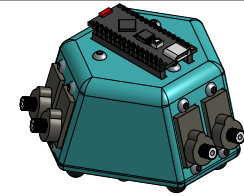


2.

After installing all six arms, trim the copper tangs just past the lock nut and file smooth. (Kits include pre-cut tangs.)



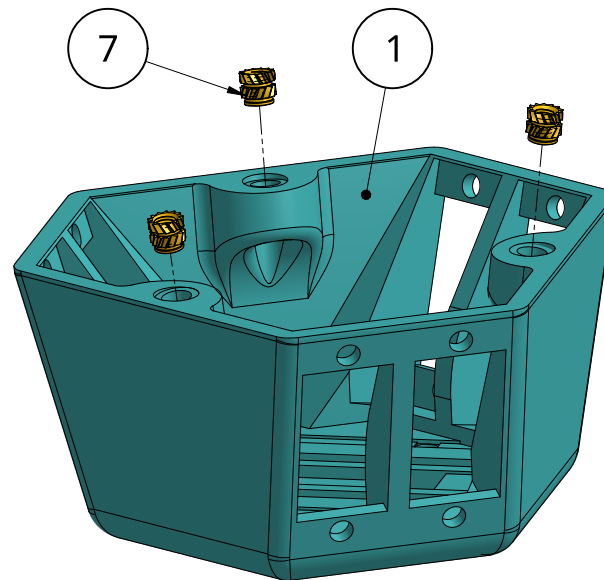
Building Stewy's Base P1



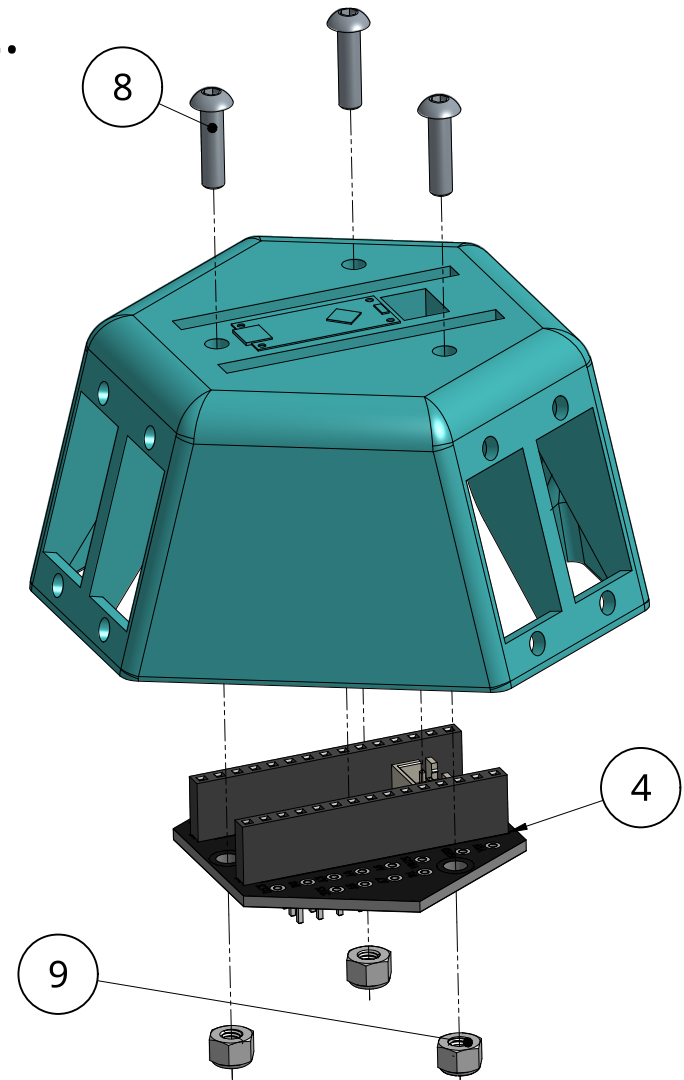
Item	Quantity	Name
1	1	Base top half
2	1	Base bottom half
3	6	MG90S Servo Motor
4	1	Base PCB
5	6	Rubber Foot
6	12	Socket button head screw M3x0.5 x 6
7	3	4mm Heat Set Insert
8	6	Socket button head screw M3x0.5 x 12
9	3	M3 Lock Nut
10	1	ESP32-S3-Nano

1.

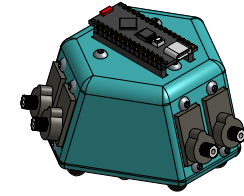
Use soldering iron to install heat set inserts
(Comes pre-installed in kits)



2.



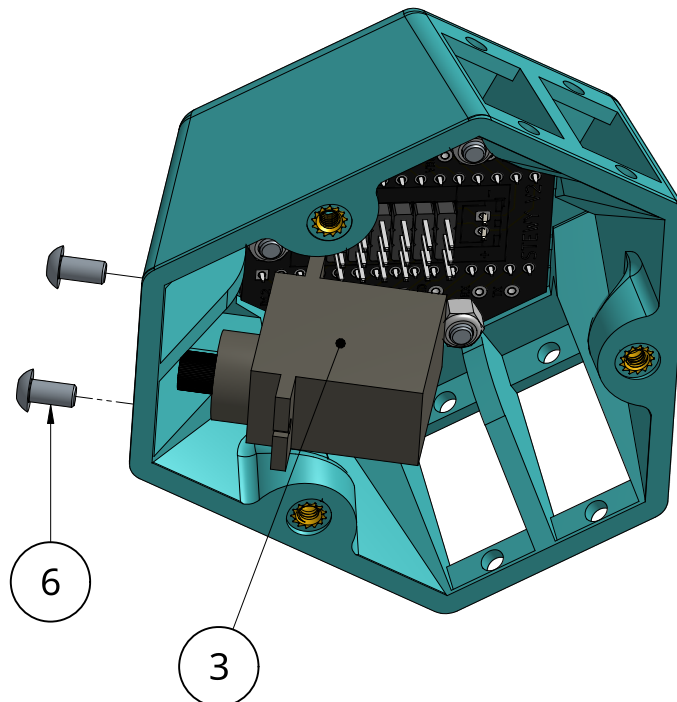
Building Stewy's Base P2



Item	Quantity	Name
1	1	Base top half
2	1	Base bottom half
3	6	MG90S Servo Motor
4	1	Base PCB
5	6	Rubber Foot
6	12	Socket button head screw M3x0.5 x 6
7	3	4mm Heat Set Insert
8	6	Socket button head screw M3x0.5 x 12
9	3	M3 Lock Nut
10	1	ESP32-S3-N ano

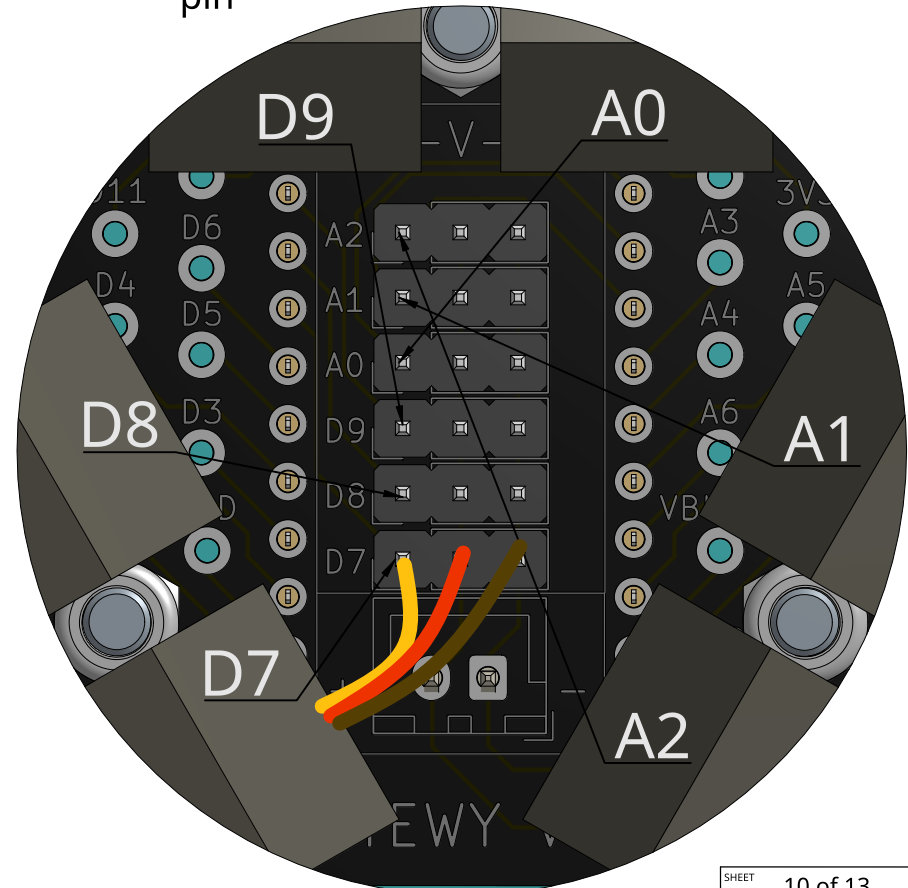
3.

Install all 6 Servo motors

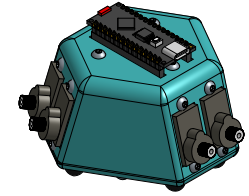


4.

- Plug in servos to Base PCB as shown below
- The signal wire (yellow) goes to the first pin
 - The positive voltage wire (red) goes to the middle pin
 - the ground wire (brown goes to the third pin

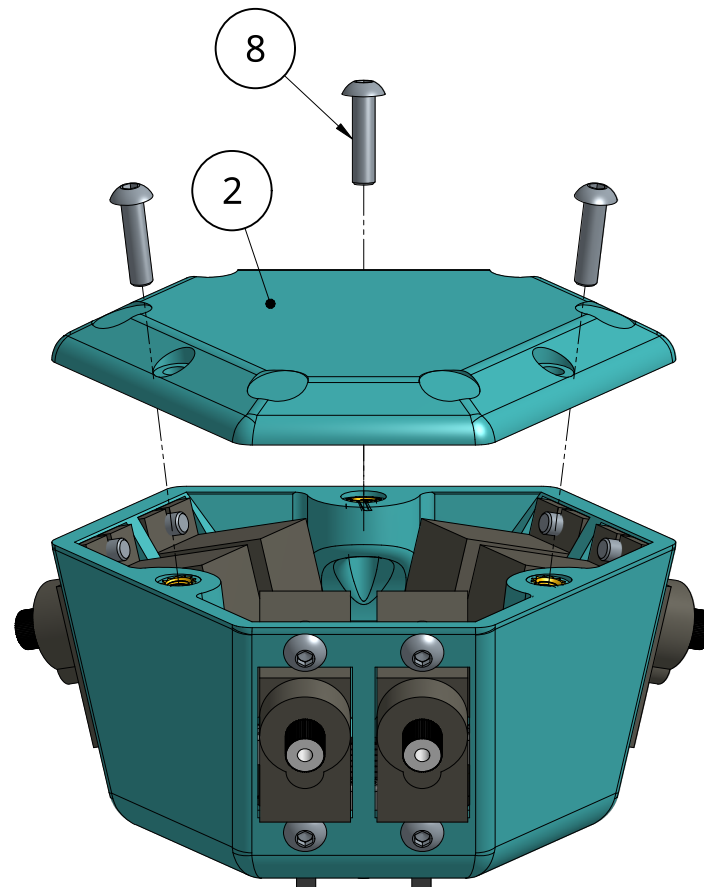


Building Stewy's Base P3

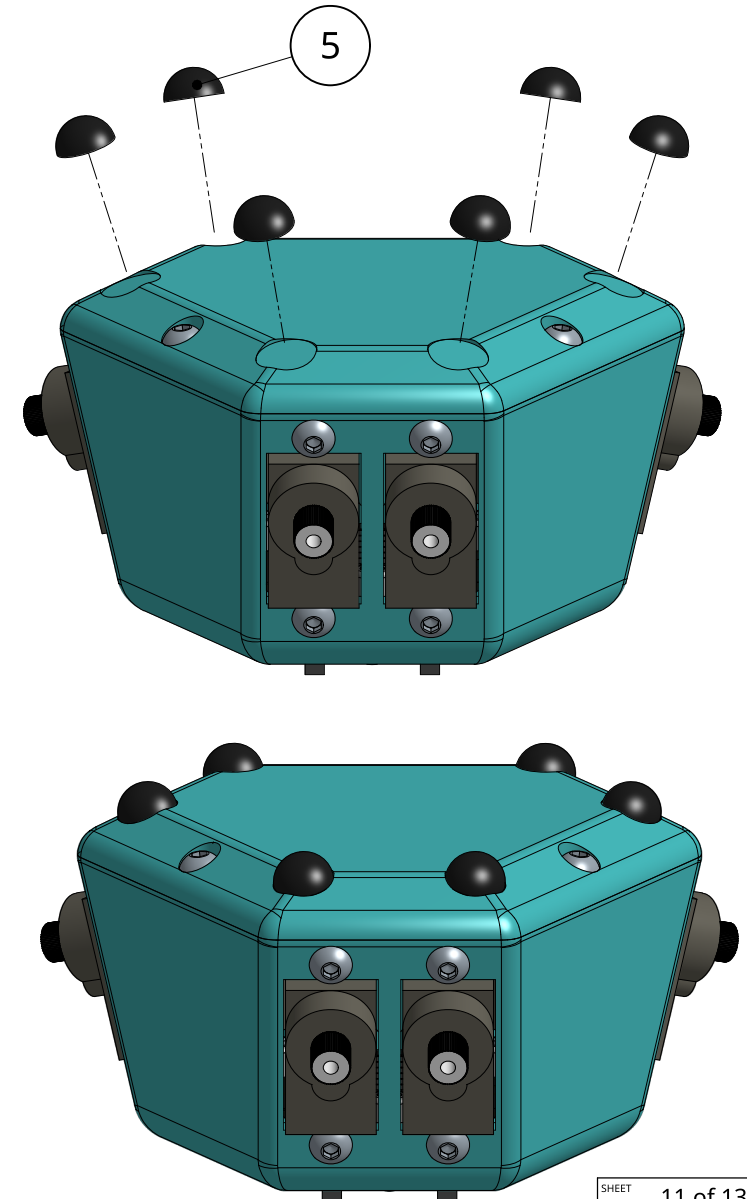


Item	Quantity	Name
1	1	Base top half
2	1	Base bottom half
3	6	MG90S Servo Motor
4	1	Base PCB
5	6	Rubber Foot
6	12	Socket button head screw M3x0.5 x 6
7	3	4mm Heat Set Insert
8	6	Socket button head screw M3x0.5 x 12
9	3	M3 Lock Nut
10	1	ESP32-S3-N ano

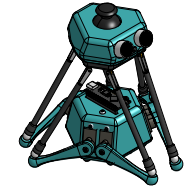
5. Organize the servo cables before closing up the base to avoid damaging the motors



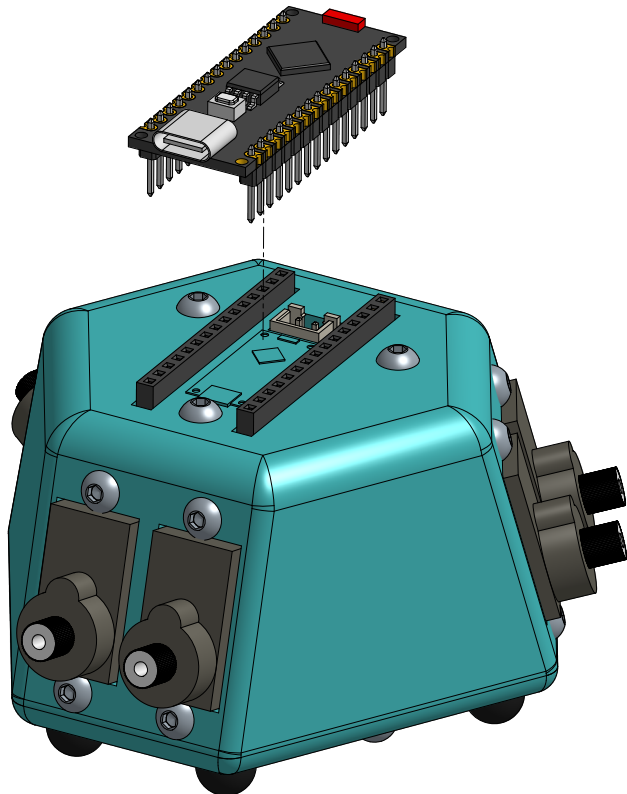
6.



Final Steps P1

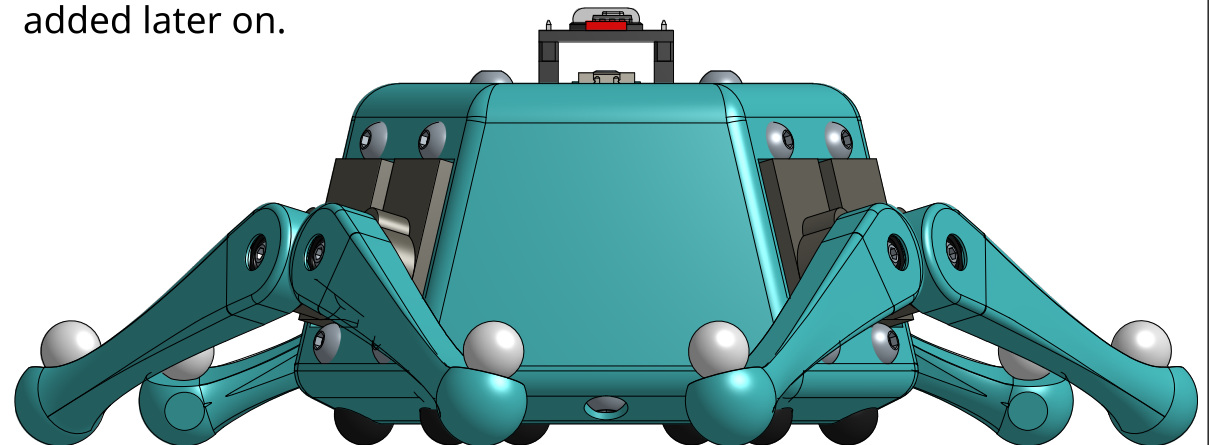
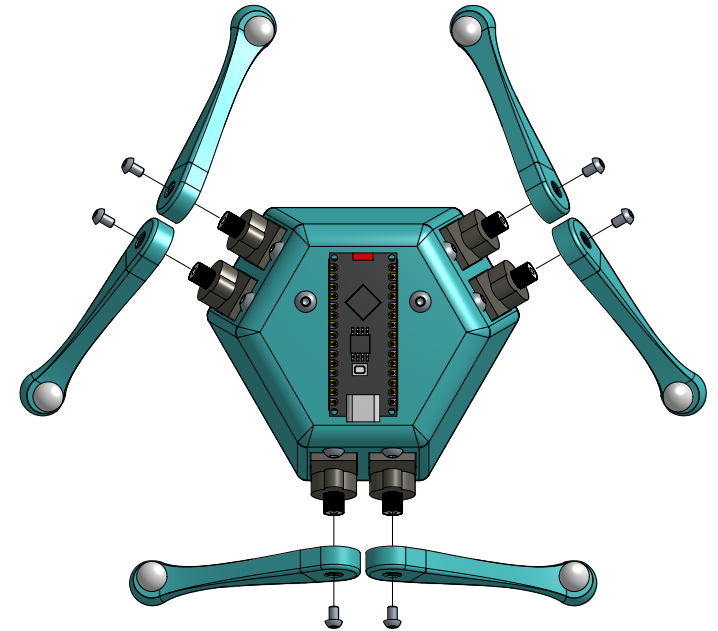


1. Plug in microcontroller after you have programmed it (See the programming guide on how to upload the correct code)



2. Plug in USB Cable to power Stewy.
Once powered on, the servos will move to their home position.

With the servos in their home positions, install the arms so that they are as close to touching the ground as possible. This doesn't need to be perfect, offsets can be added later on.



Final Steps P2



3.

