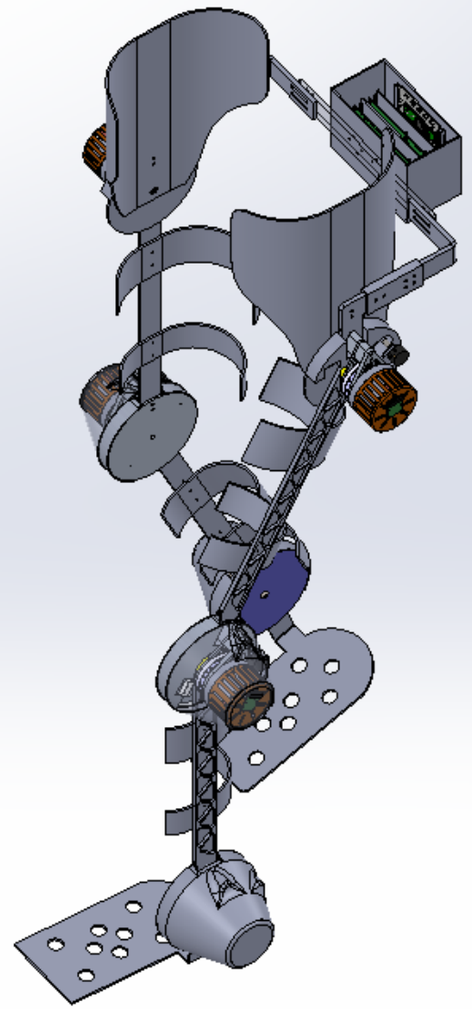
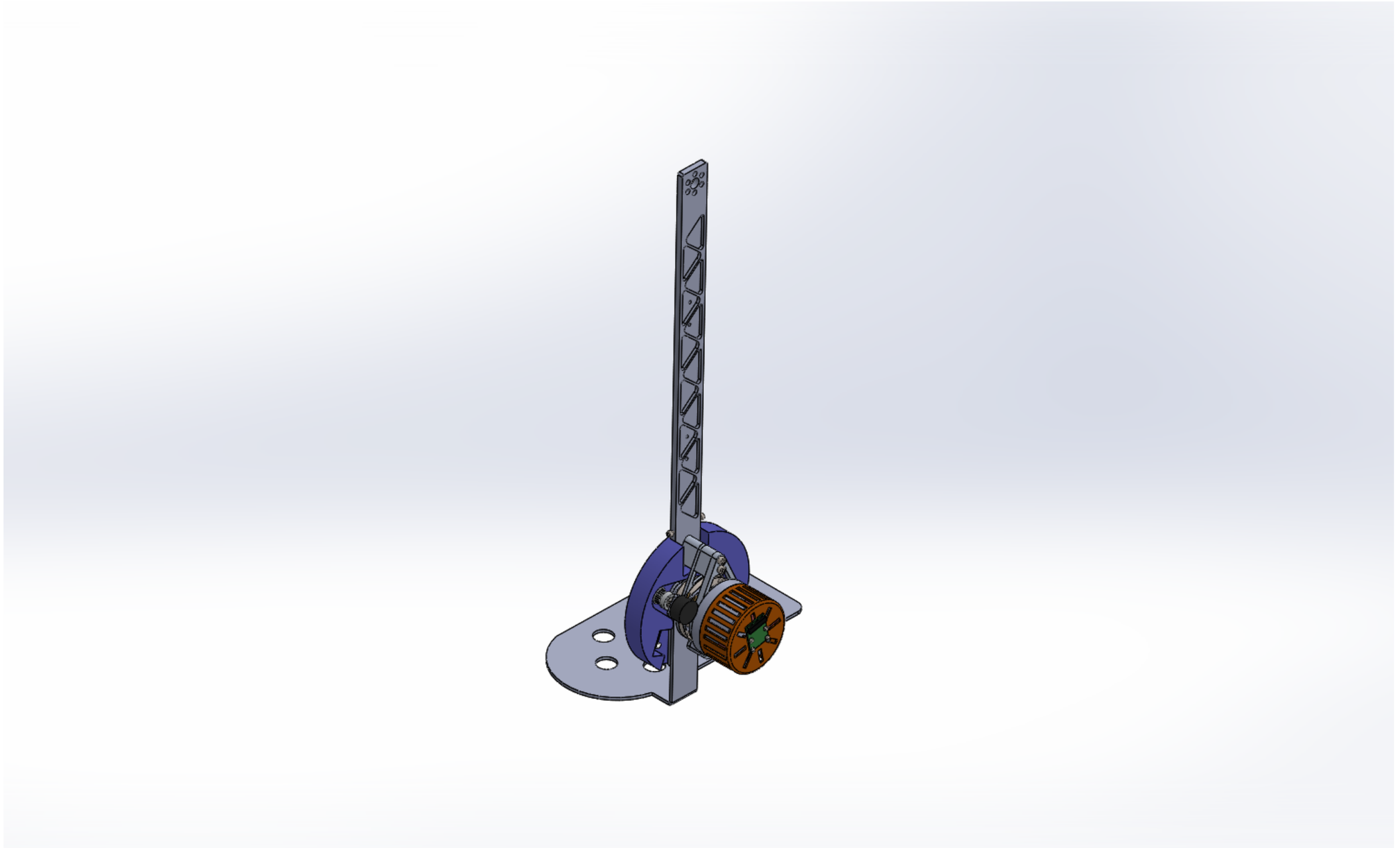
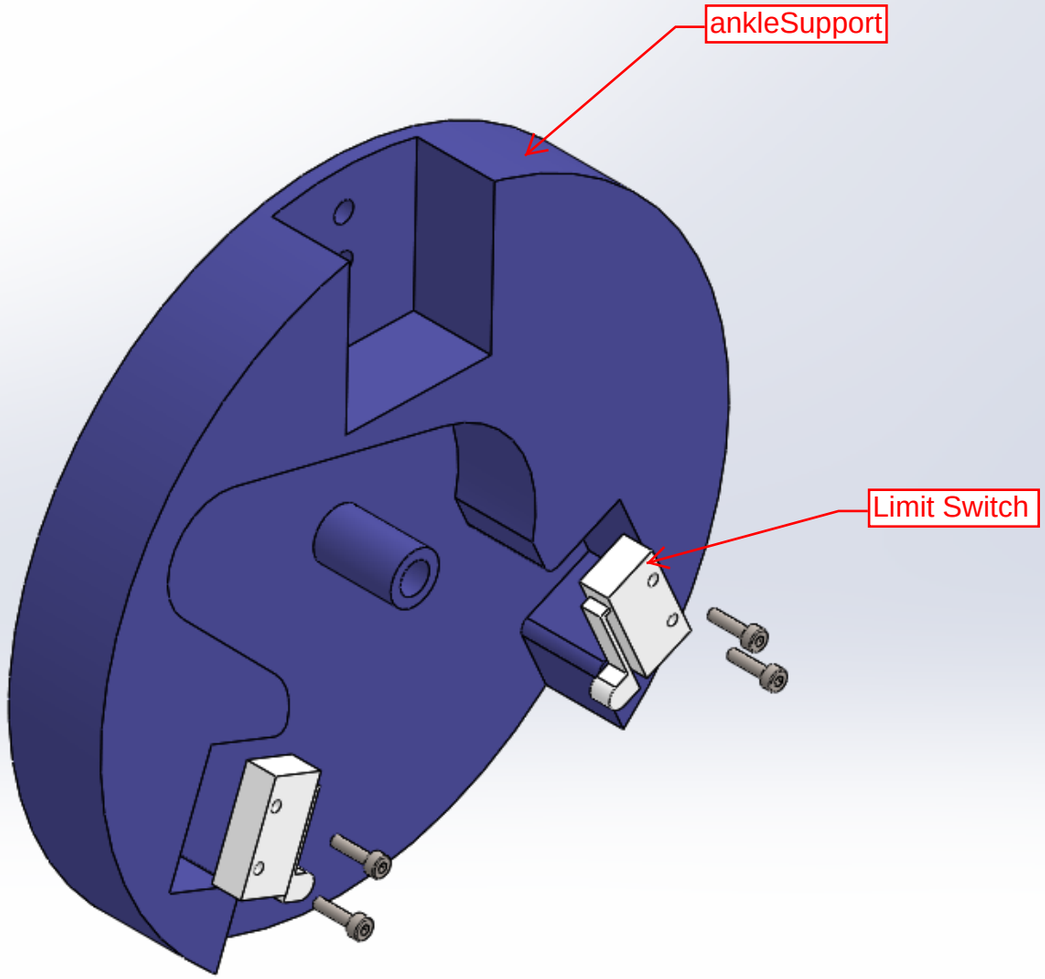


Ankle Assembly Instructions



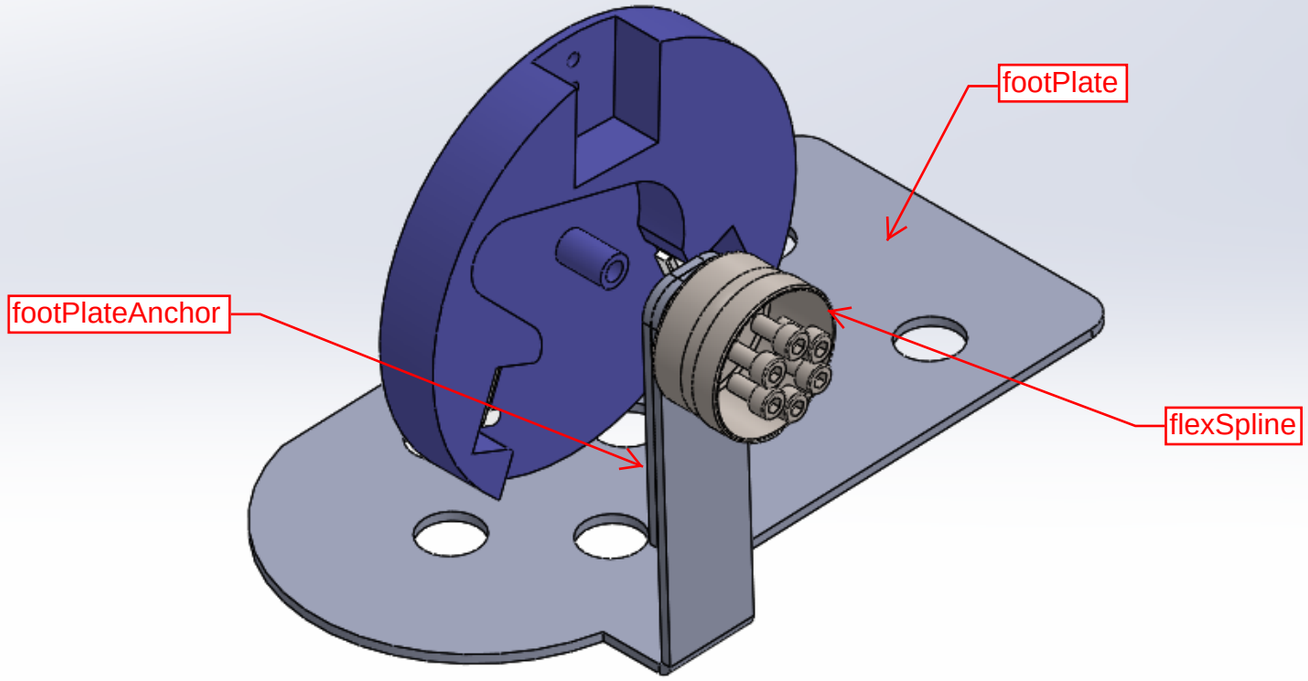
Bill of Materials

ITEM NO.	PART NUMBER	QTY.		ITEM NO.	PART NUMBER	QTY.
1	EC60motor	1		19	potBracket	1
2	magnetHolder	1		20	jointCover	1
3	motorCover	1		21	ankleLowerSpacer	1
4	AS5047P	1		22	M4 x 0.7 x 30 Hex SHCS	2
5	magnet	1		23	M4 x 0.7 x 16 Hex SHCS	2
6	miniThrustBearing	1		24	M4 x 0.7 x 10 Hex SHCS	3
7	csf-17-120-2a-r	1		25	M3 x 0.5 x 20 Hex SHCS	2
8	ankleGearSupport	1		26	M2 x 0.4 x 8 Hex SHCS	4
9	ankleMotorSupport	1		27	M2 x 0.4 x 6 Hex SHCS	4
10	ankleGearMotorSpacer	1		28	M3 x 0.5 x 8 Hex SHCS	2
11	limitSwitch	2		29	M3 x 0.5 x 12 Hex SHCS	6
12	footPlate	1		30	M5 x 0.8 x 10 Hex SHCS	6
13	footPlateAnchor	1		31	Hex nut M3 x 0.5	6
14	ankleSupport	1		32	Hex nut M2 x 0.4	4
15	ankleGearLowerLegSpacer	1		33	Hex nut M6 x 1	1
16	lowerLeg	1		34	M6 x 1.0 x 20 Hex Shoulder Bolt	1
17	potentiometer	1		35	GT2 98 tooth belt	1
18	GT2 20tooth timing pulley	1				



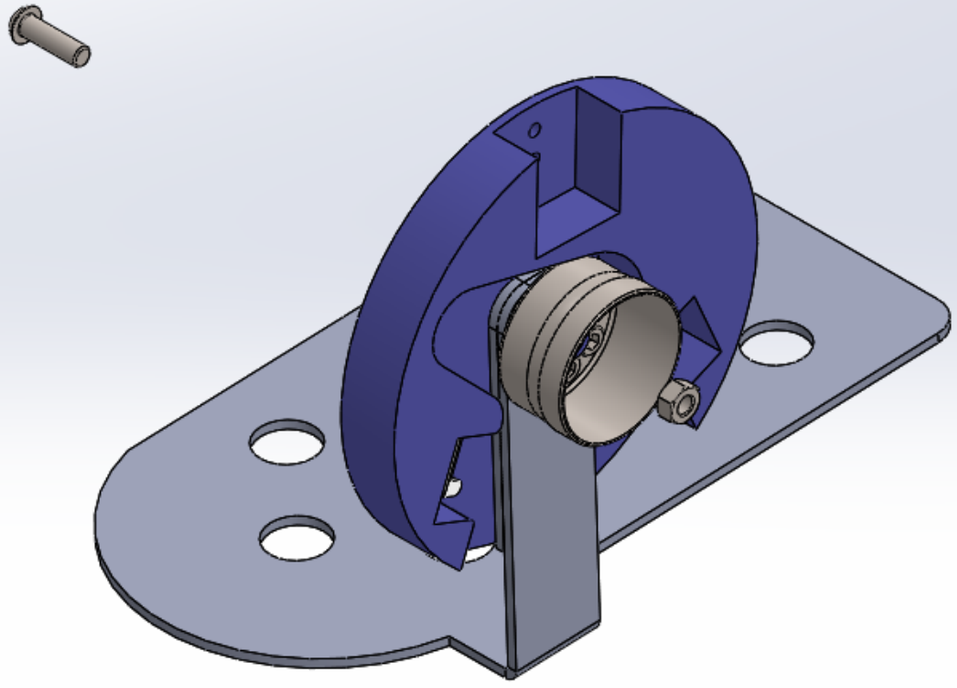
Hardware: 4 M4x8 screws

1. Screw limit switches into ankleSupport piece



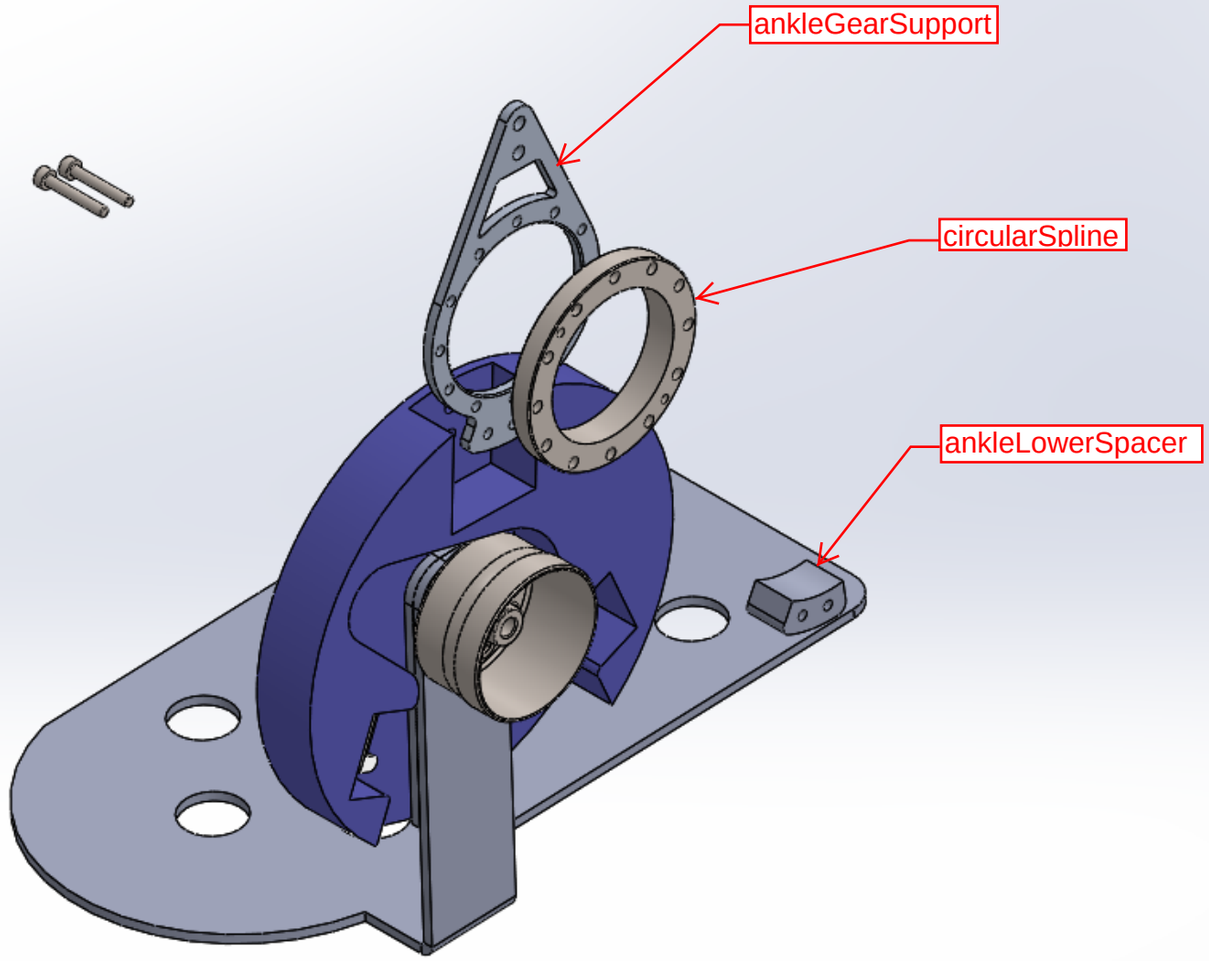
Hardware: 6 M5x10 screws

2. Insert six M5 bolts through the flexspline and footPlate and screw into footPlateAnchor



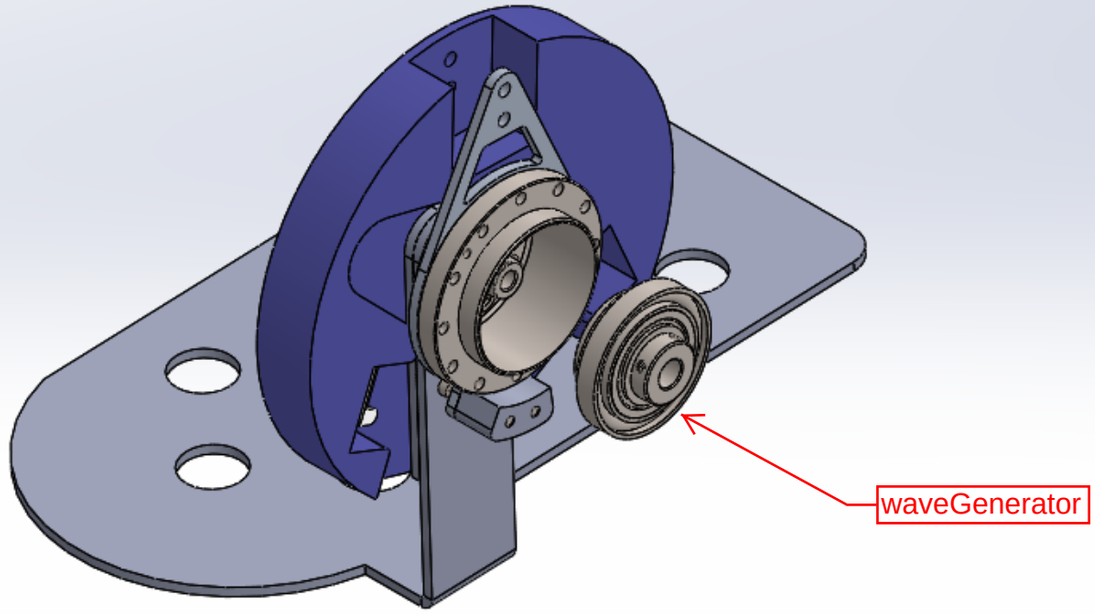
Hardware: 1 M6 shoulder bolt
1 M6 locknut
1 GT2 98 tooth belt

Step 3. Slide connected footPlateAnchor, footPlate and flexspline onto center of ankleSupport. Insert shoulder bolt and tighten nut. Slip belt over flexspline for later use

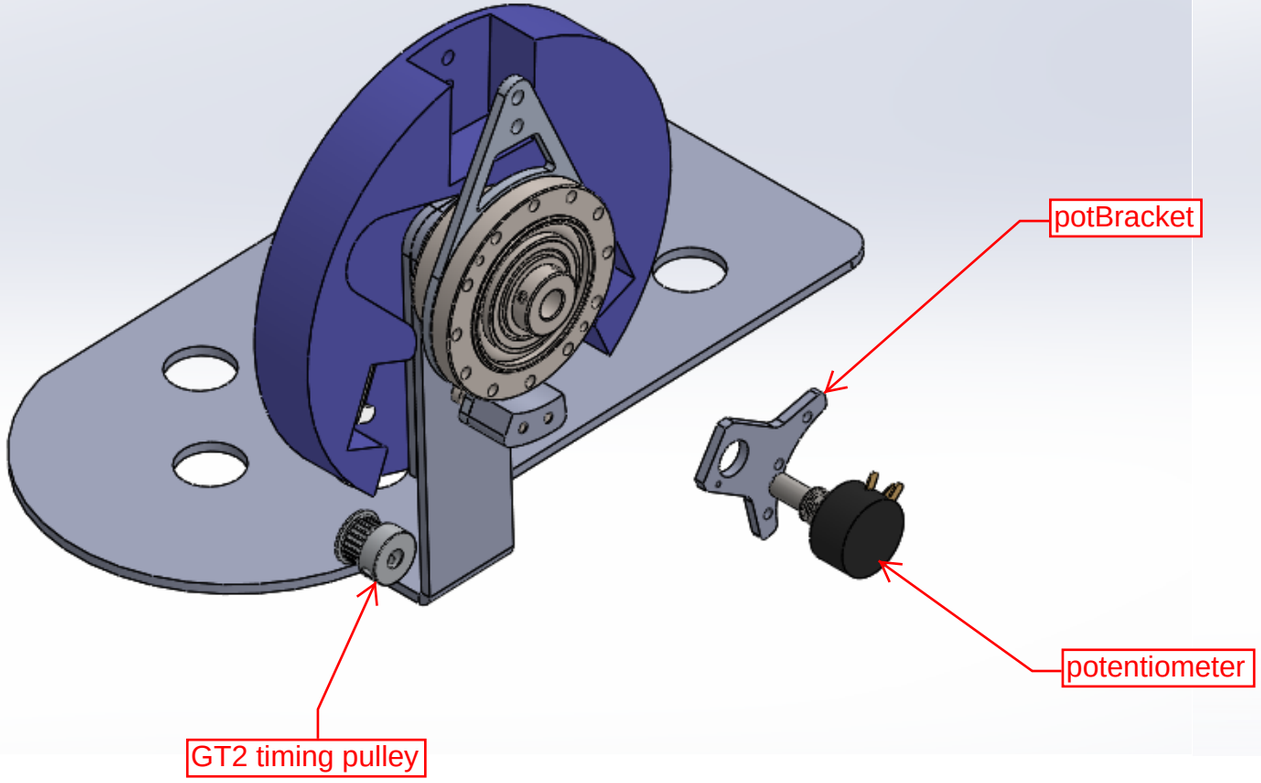


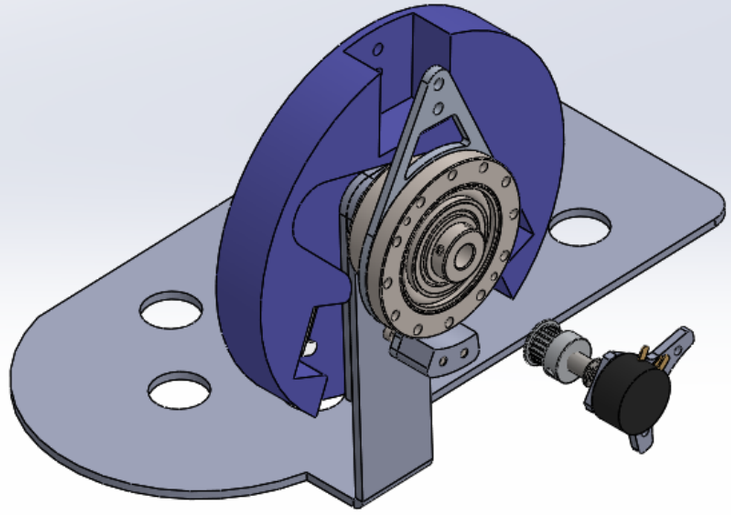
Hardware: 2 M3x20 screws

Step 4. Slide ankleGearSupport over the circular spline. Slide two M3x20 screws through both the ankleGearSupport and ankleLowerSpacer

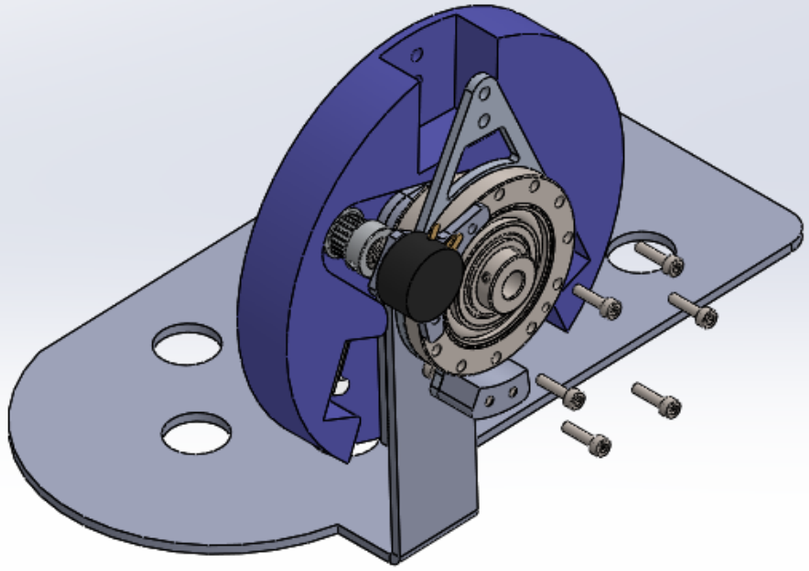


Step 5. Slide circular spline over the teeth on the flex spline and then insert the wave generator



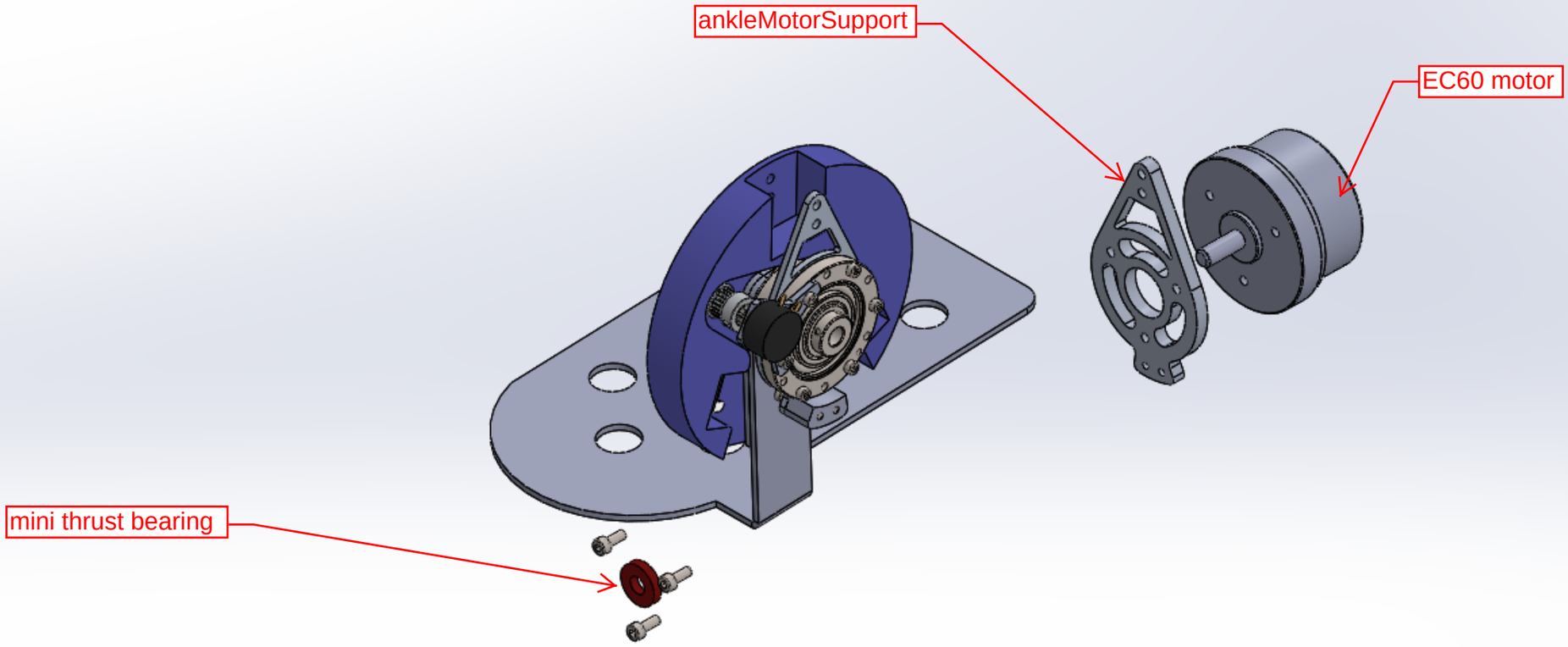


Step 6. Insert potentiometer into potBracket making sure the nub on the potentiometer fits into the small hole of the potBracket and the three terminals are facing up. Slides the lock washer over the threads and tighten the nut. Slide gt2 pulley onto shaft and tighten the two set screws



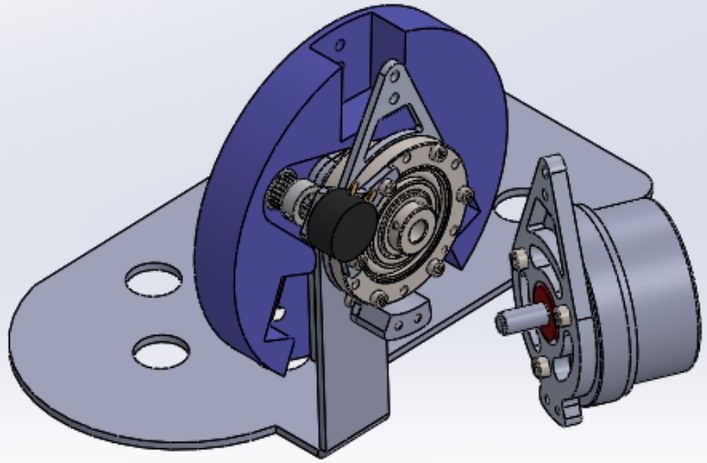
Hardware: 6 M3x12 screws
6 M3 nuts

Step 7. Insert screws into every other hole on the circular spline, with two of the screws also going through the potentiometer bracket. Fit M3 nuts onto all six screws

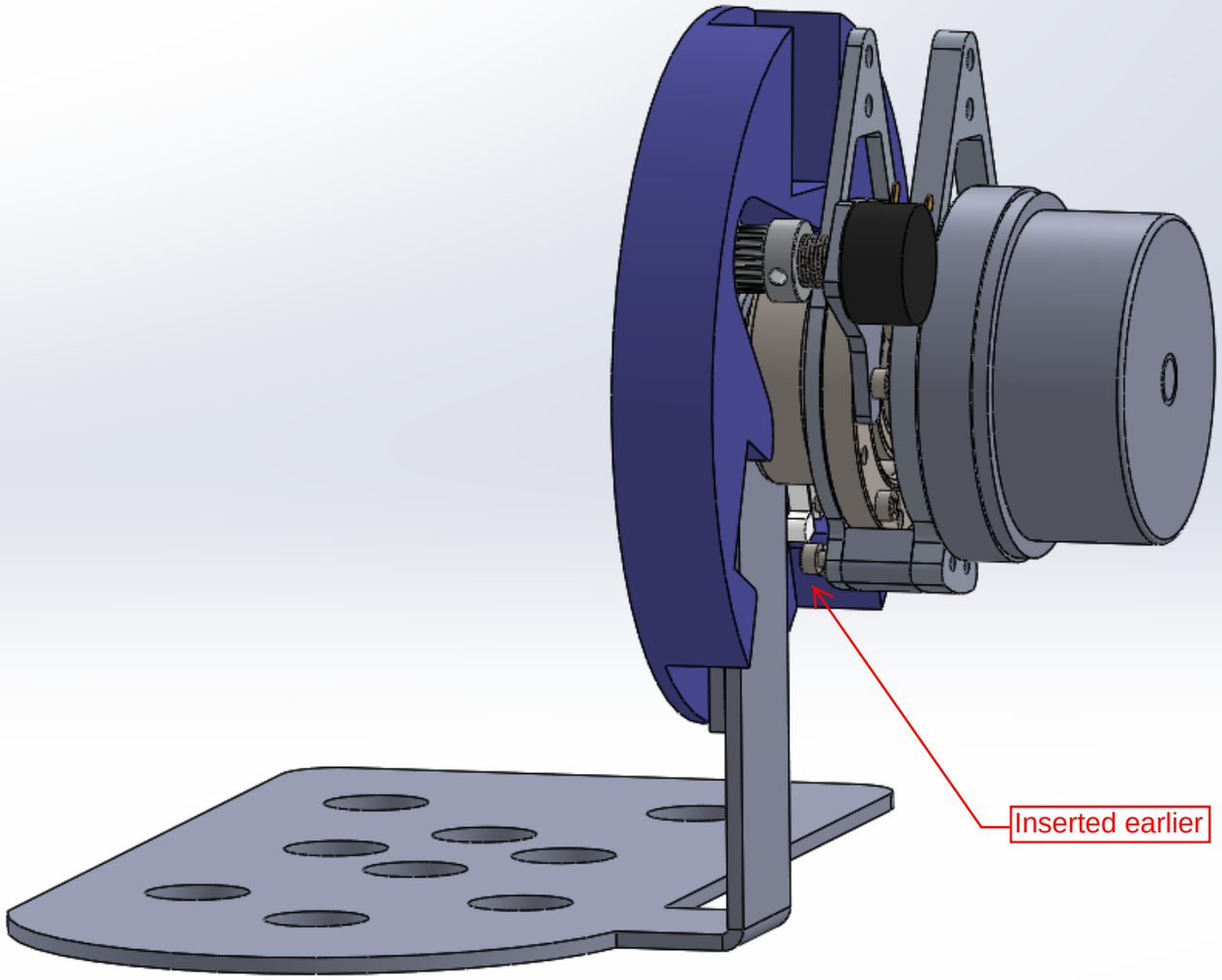


Hardware: 3 M4x8 screws
Mini Thrust Bearing

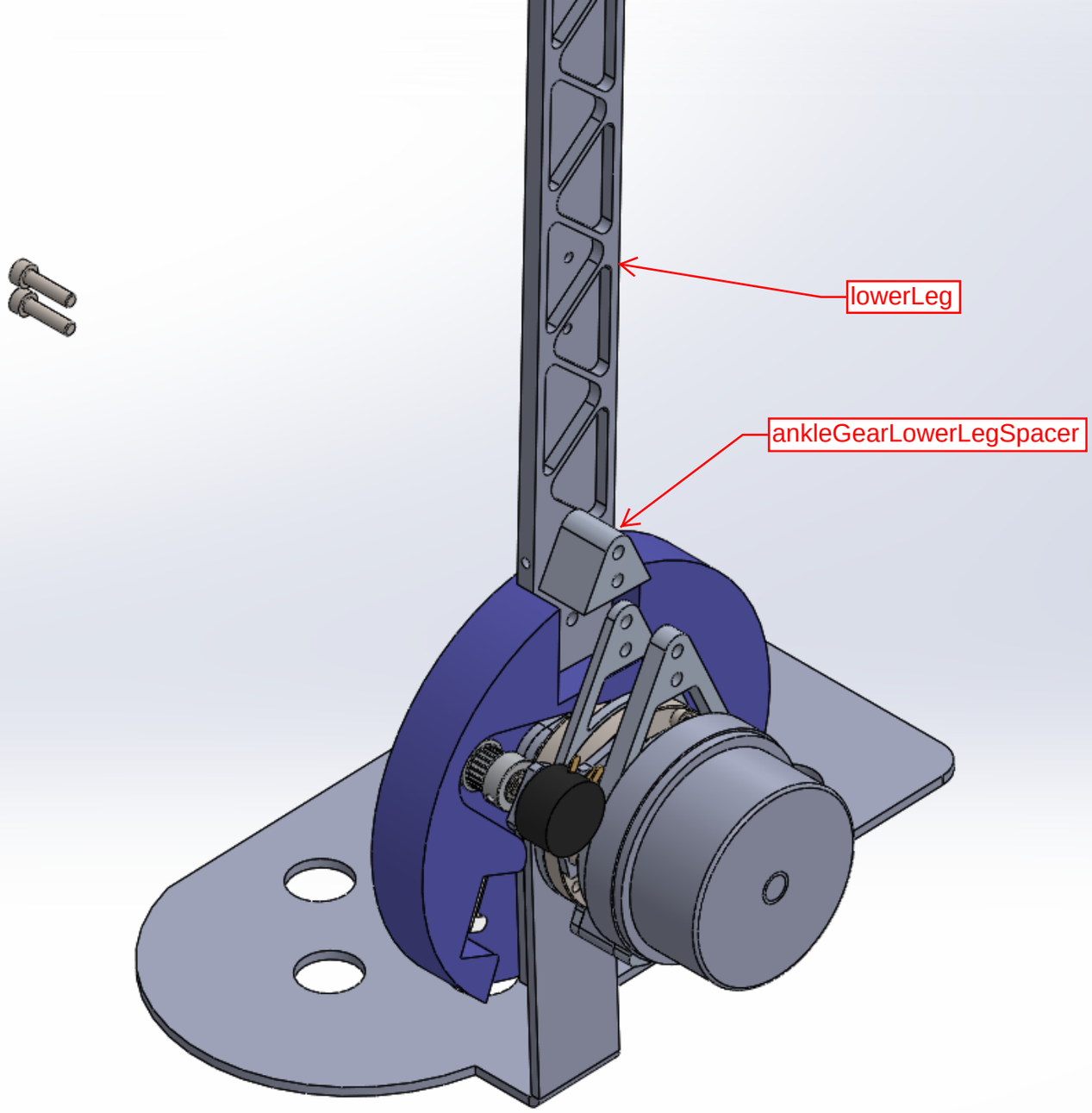
Step 8. Slide ankleMotorSupport onto motor and insert three M4x10 screws to fix it in place. For better cable management, mount the motor with the cables facing upward. Make sure the ankleMotorSupport is oriented correctly as in the picture. Slide the mini thrust bearing all the way onto the motor shaft



Step 9. Rotate and insert the motor assembly into the center of the gear. Tighten the two set screws in the gear onto the motor shaft

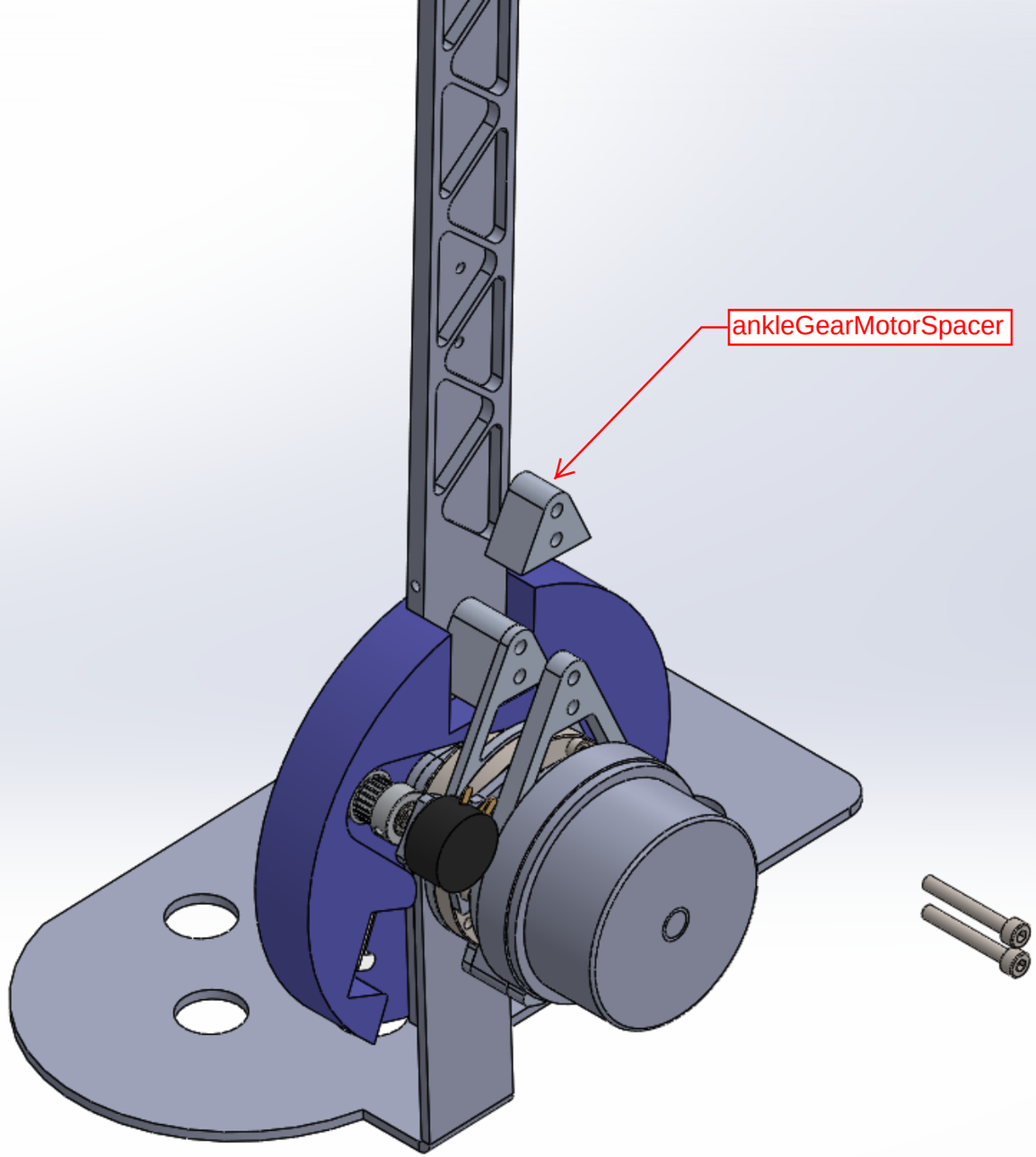


Step 10. Screw M3x20s inserted earlier all the way into ankleMotorSupport



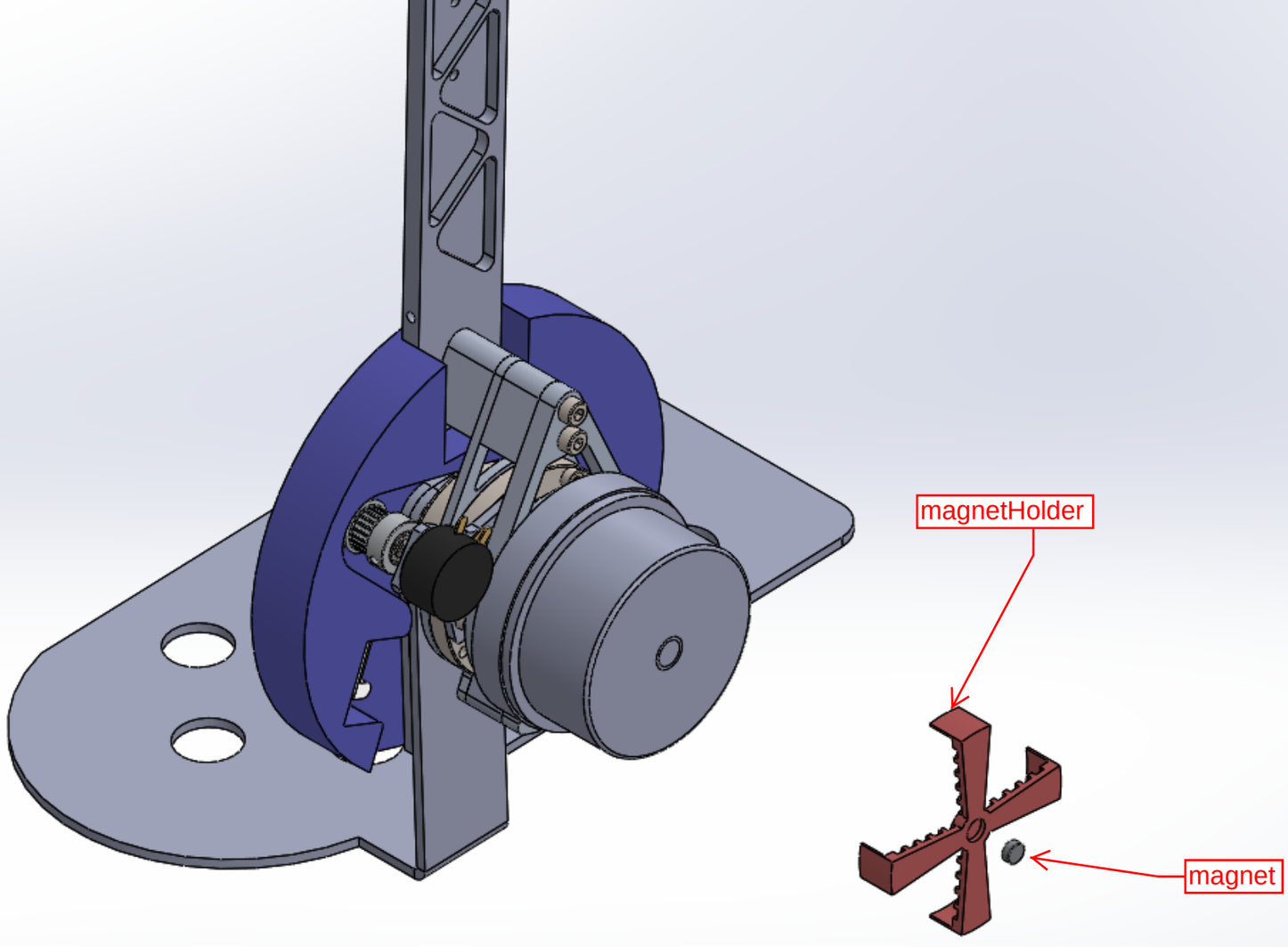
Hardware: 2 M4x16 screws

Step 11. Line up the holes of the lowerLeg, ankleGearLowerLegSpacer and ankleSupport and insert two M4x16 screws to hold them together

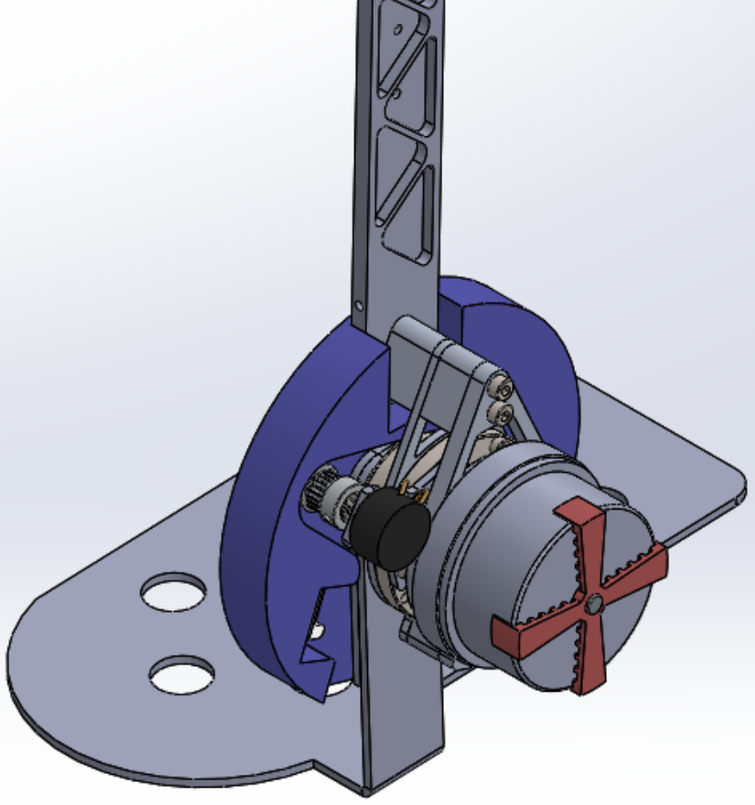


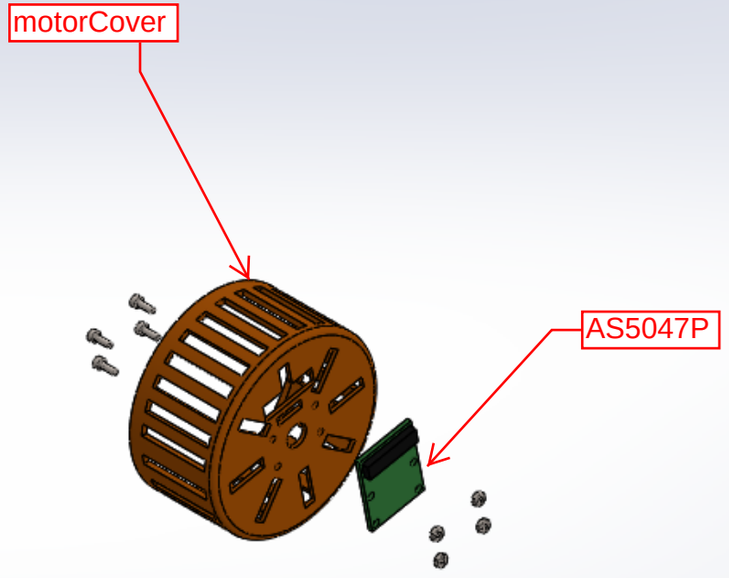
Hardware: 2 M4x30 screws

Step 12. Line up ankleGearMotorSpacer with the holes in the ankleGearSupport and ankleMotorSupport, then insert two M4x30 screws



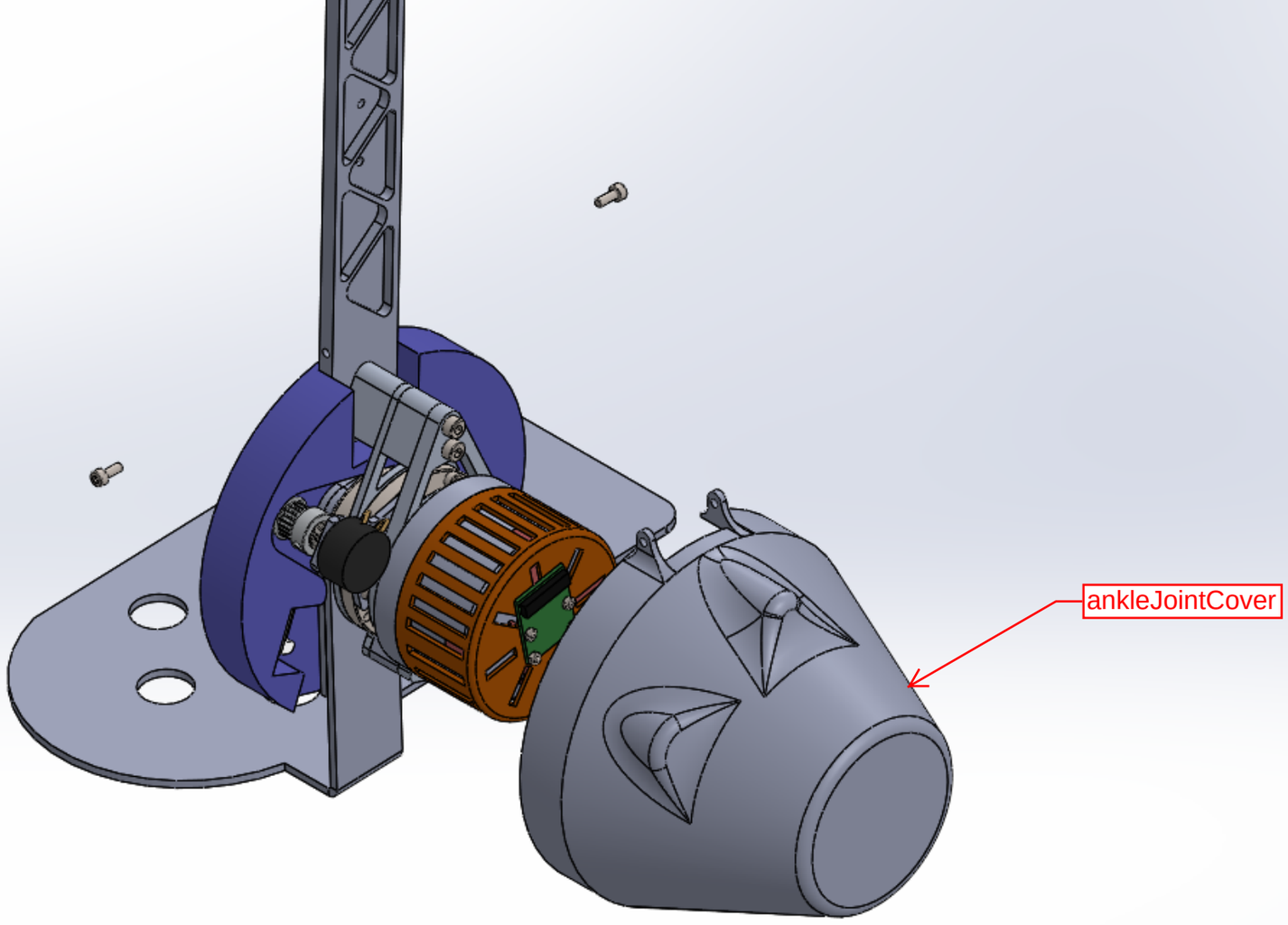
Step 13. Clean up the 3D printed magnetHolder so the magnet fits all the way down inside the hole. Add some epoxy or super glue to permanently fix the magnet to the magnetHolder. Slide the magnetHolder onto the back of the motor and fix it in place with a strip of tape or some epoxy/ super glue





Hardware: 4 M2x6 screws
4 M2 nuts

Step 14. Attach AS5047P encoder to the 3D printed motorCover with four M2 screws and nuts. The encoder chip should face down into the motorCover. Make sure the chip is centered before tightening the nuts. Slide the motorCover onto the motor and make sure it's all the way on all the way around, then fix it in place with tape or adhesive



Hardware: 2 M3x8 screws

Step 15. Slide jointCover over ankleSupport and lowerLeg pieces. Install the remaining two M3x8 screws to keep the cover in place