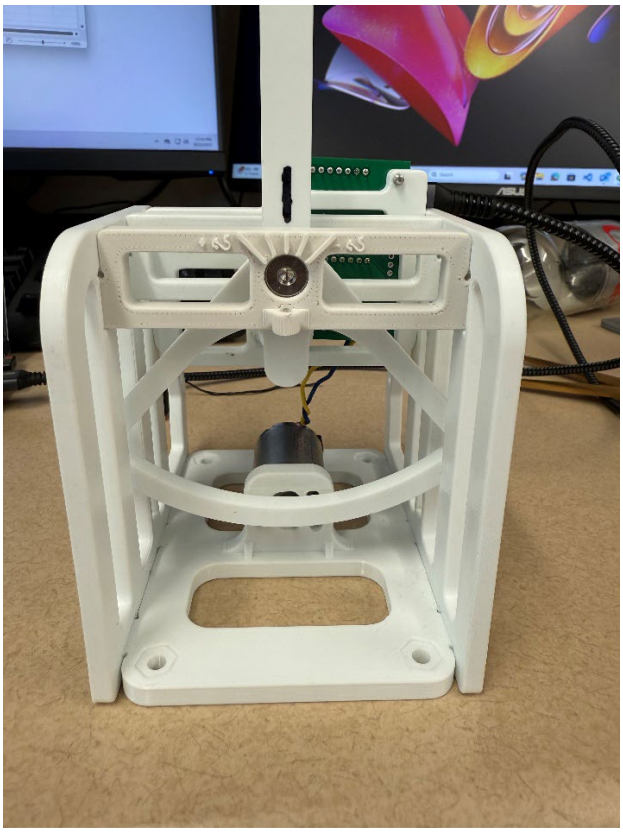
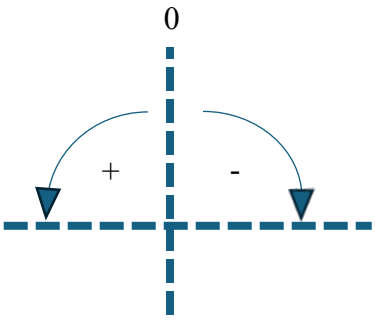
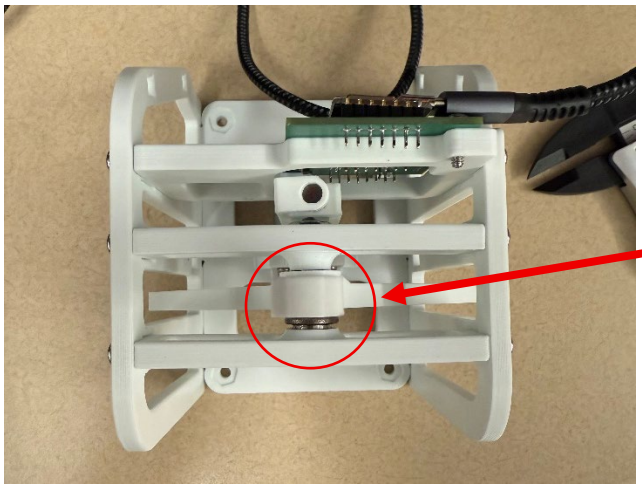
Set Up

1. Replace the front support piece with the calibration support bar, pictured below. Mark a centerline in the paddle arm for calibration.





2. Ensure the shoulder bolt is tightened enough to reduce perpendicular shifting of the paddle. It will feel relatively tight.



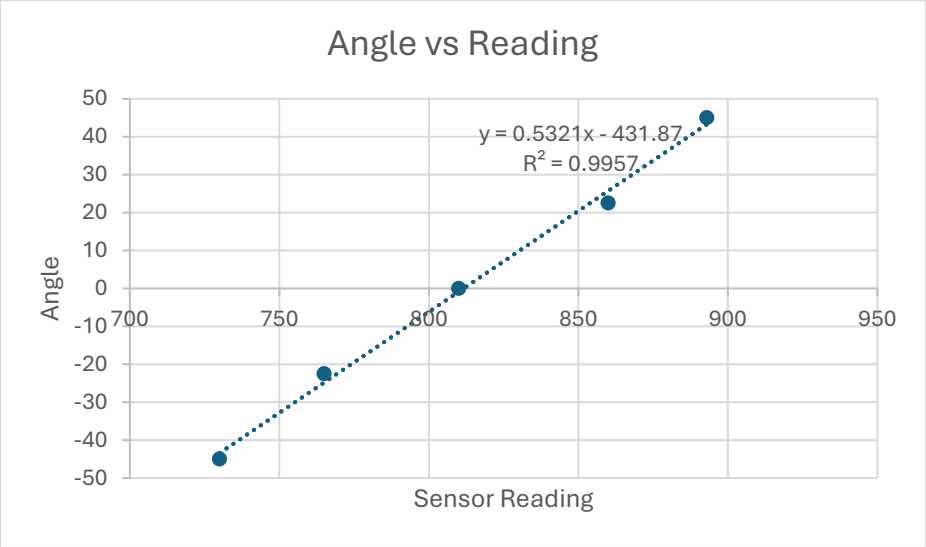
Should be very little shift front to back

Connecting to the Xiao RP2040 using the Arduino IDE

https://wiki.seeedstudio.com/XIAO-RP2040-with-Arduino/

Calibration

1. Using the calibration support bar and the attached Calibration sketch, record sensor values for each angle position (+40, +20, 0, -20, -40 using the reference frame defined above) using the serial monitor in the Arduino IDE. Sensor readings should ideally be between 700 and 900.
2. Graph and obtain a relationship to map sensor reading to paddle angle, exampled below, using the included Excel sheet.



3. Integrate this new relationship into the DesiredPosition sketch to finish calibrating the device.