

2019 FLYSET FTC Workshop

Ball Intake

(8/24/2019)





Presenter



Derek - FTC 8565

Derek is a 9th grader at Jasper High School. This will be his 9th year in the FIRST program and 3rd in FTC. His role on the team is with the hardware side and being a builder. Outside of robotics, Derek likes playing cello, soccer, and gaming.



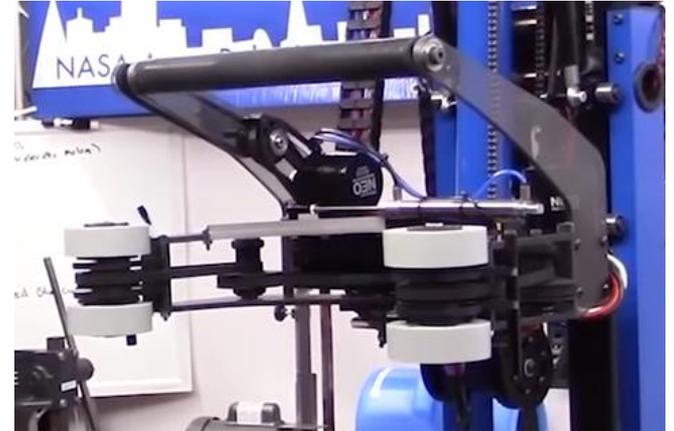


Project Background



Ball Intake

- Different intake mechanisms for different materials
- Inspiration from FRC team 254 Cheesy Poofs
- Intake worked very effectively in the FRC 2019 season





Project Design



Goals

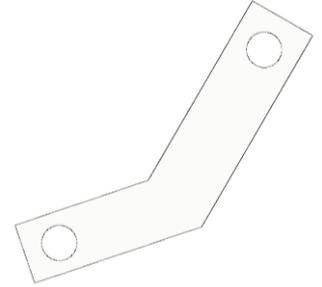
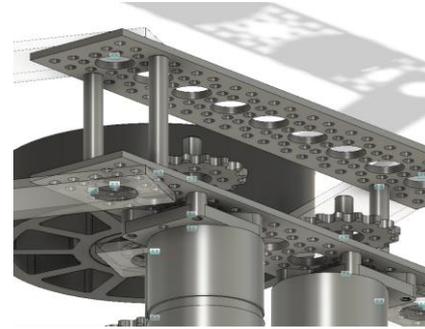
- See how effective intake was with balls
- How efficient and how much potential could it have





CAD

- Pre-building stage, planning out parts and design

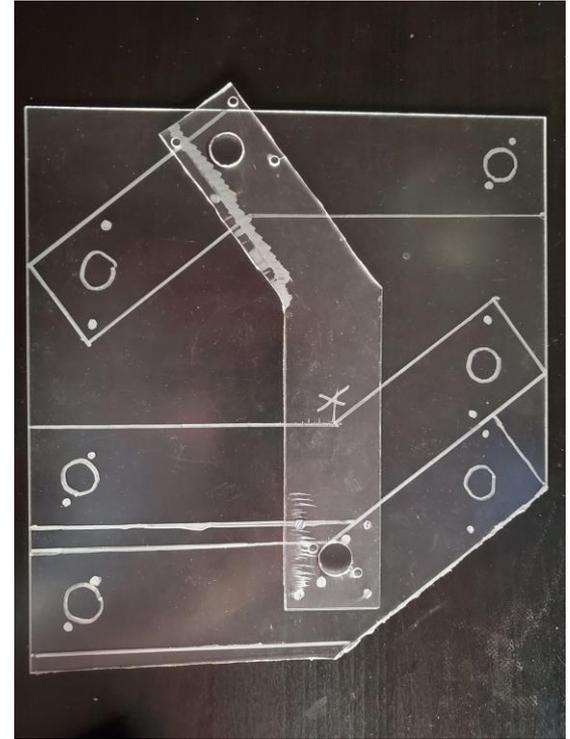
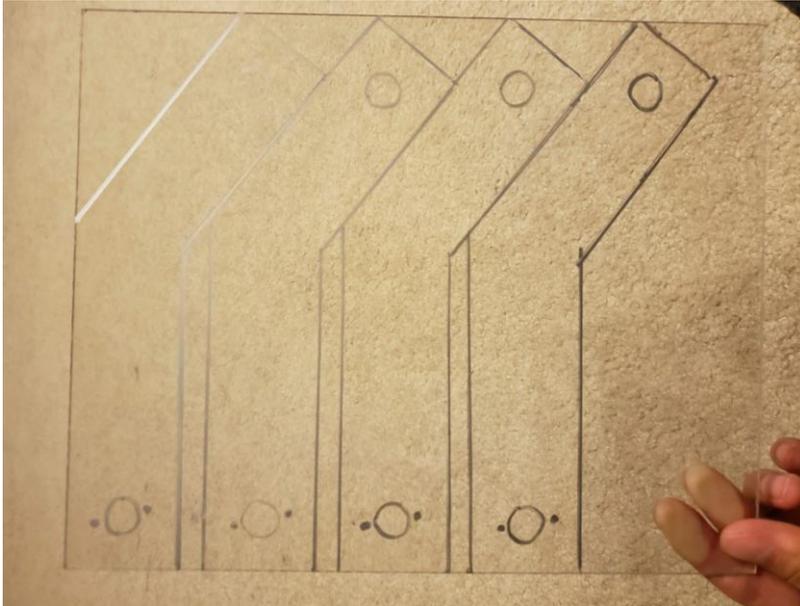




Build Stages

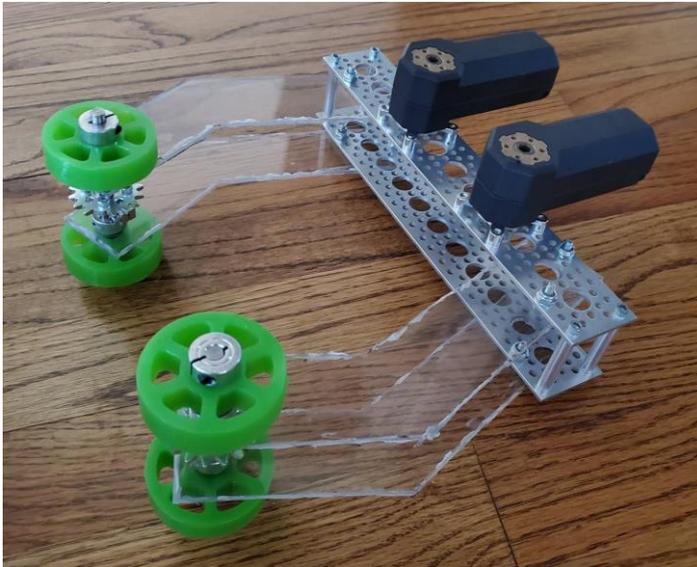


- Designed the right custom part



Build Stages

- Change in motors
- Positioning of custom parts

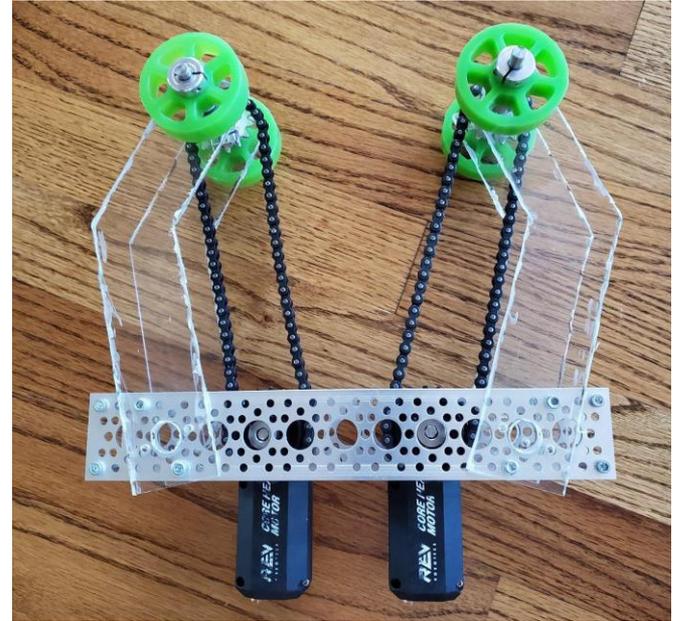




Project Results

Faults with design

- Custom parts too weak
- Chains aren't aligned
- Chains blocking room





Conclusions



Lessons learned

- Be as precise as possible when using custom parts (use CAD)
- Use the right tools to cut and shape it out (such as CNC)
- Think about spacing during design stage
- Taking shortcuts, not thinking design fully results in the long way in the end
 - More prototyping before full production





Questions?