



NCA&T FVPC

Team Members:



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Malik Rivers, Jiera Shears

Faculty Advisor:

Paul Akangah





Christopher Collins



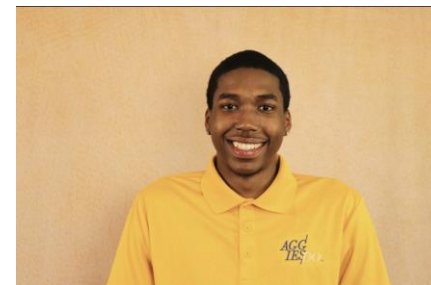
Kyra Chinnery



Malik Rivers



Jiera Shears



Branden Gibson

Vehicle Construction

- Pump and motor placement
- Sprocket was too large
- Visually aesthetic
- Ergonomically efficient



Hydraulics

- The hydraulic systems from last year's team were in great shape
- The pump and motor were not correctly mounted to be functional
- The motor went through three iterations with the last one being an L-shaped metal bracket mounted under the seat with bolts holding it in place. The motor was mounted similarly underneath the box of the bike.
- The sprocket on the motor had been bored out by the previous team which caused the shaft to spin but not the motor.
 - A metal sleeve was inserted as a bushing to fix this problem, but the shaft still solely spun. A new sprocket was bought and attached. The motor had to shift back in order for there to be tension in the chain.



Pneumatics

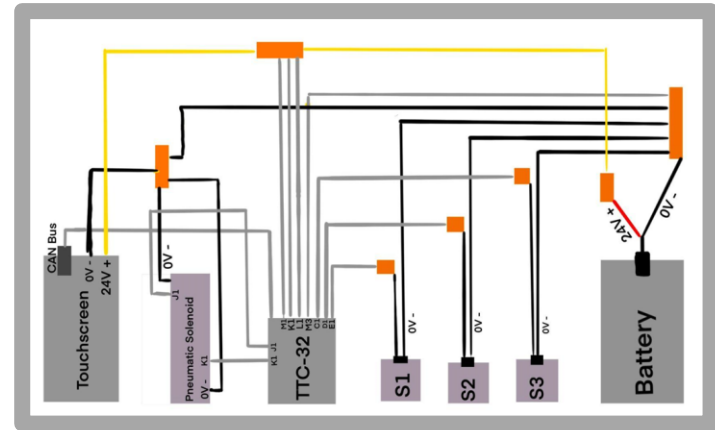
- Pneumatics system serves as bike's only working brake
- Entire system functions but doesn't bring bike to halt
- There are slight issues with the functionality of the air cylinder system where improvements can be made
- Improvements to Aesthetics can also be made

Electronics Incorporation

- Using the same PLC/Controller and tablet as last year's team
- Purchased a new battery and obtained wire sleeves for the bike

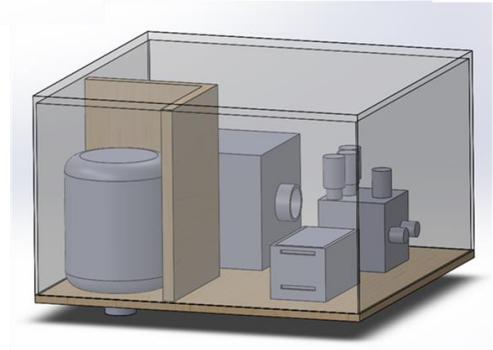
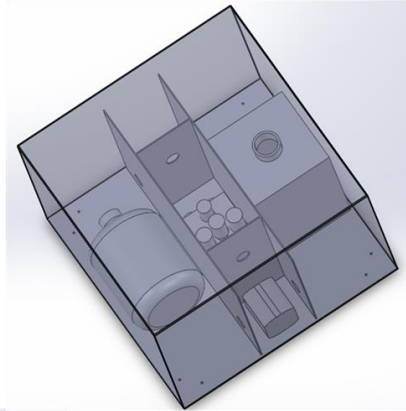
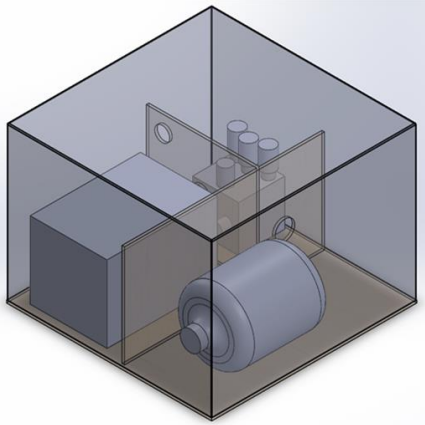


Zippered Wrap-Around Sleeving



Physical Wire Harness Set-Up

Design/Manufacturing



Design



BEFORE



AFTER



Setbacks

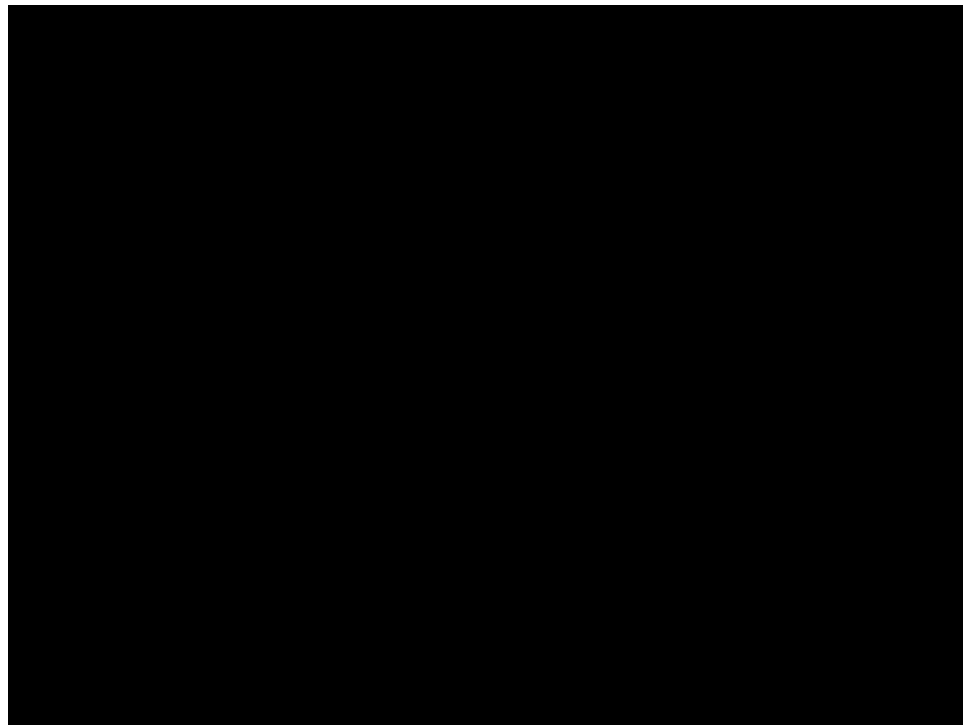
- Mounting the pump
- Mounting the motor
- Oil leaks
- Chain popping of bike
- Sprocket size to big



Lessons Learned

- Communication is key
- Having the correct hose fittings
- Not being afraid to ask for help
- Minimal effort won't work

Final Bike



References

- Cross Company helped us on multiple occasions
 - Working with them also gave us more input and allowed us to see another point of view



QUESTIONS?

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THANK YOU



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AND TECHNICAL STATE UNIVERSITY