

Individual Lab Report 5

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Team B: Monkey Bot

Teammates: Trevor Decker, Ian Hartwig, Ian Rosado

ILR05

March 19th, 2015

Individual Progress

Gripper Testing

I helped with the setup of the gripper and hanging weights off of it to determine the limitations of its strength. The weights were hung at a point away from the window that represented the predicted center of mass of our robot. Then, the weight was incrementally increased until the gripper slipped.

Manufacturing Components

I have begun to manufacture parts of the extending arm. This required me to focus on the details of the CAD model and work with my teammates to figure out the interactions of the components.

Challenges

Currently, the gripper is unable to hold up more than 5lb, which is a cause for concern since our robot is estimated to be around 10lb. By changing the width of the base plate of the gripper could allow for more contact area between the 80/20 and padding. Another modification could be to use a softer material for the padding to help conform to the shape of the 80/20.

Another challenge included machining the slots for the extender arm. Since it was a long, thin-walled tube, there was a lot of vibration in the part and I had to be creative in finding ways to stabilize the part to maximize the accuracy of the cuts. More specifically, I had to shift the tube along its length as well as clamp down on the end when cutting out the ends.



Figure 1. Machining end of slot in extender arm

Cross-Referencing with Other Team Members

Ian R. and I have been working with each other to test the gripper. Ian H., Trevor and I have been working to ensure that all parts are dimensioned correctly for manufacturing.

Future Work

For the upcoming week, I plan to continue fabrication of all the components and hopefully we will be prepared to assemble some of the other units. I will also continue to test the gripper to see what modifications need to be made to hold up our desired weight. Some alternatives for locomotion may also need to be explore. I will begin to update the website for our next checkpoint.