

Individual Lab Report 8

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Team G – Bob's builders

Teammates: Eric Newhall, Michael O'Connor, Christian Heaney-Secord

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Individual Work:

For this week, I mainly helped the crew by getting the DC encoder working properly for the wire cutter and testing out the flux with programs dedicated for testing it. In the DC encoder job, Eric and I decided to abandon our current coding for the encoder and instead use a library for the encoder. The library was optimized to get the best performance out of the encoder. This library fixed our encoder problem and can update the encoder values four times faster than before. We then were able to successfully get the wire cutter to cut more than one time consistently. For the flux, we arrived to a small problem that will be explained in the challenges and issues section. Other than that, I help by cleaning the flux.

Challenges / Issues:

One issue experienced this week was getting the flux working. It turns out that using encoders for the flux doesn't work. The DC motor would move too slow, while pushing the flux, that the encoder wouldn't detect it. We tried fixing this issue through the use of delay and timing. But the attempt was made with wrong results like releasing too much flux or being unable to release the flux. Even though the flux partially works, I believe that by tuning the delays more accurately, we might fix this problem. The current implementation of the flux is displayed in figure 1.

Team Work:

Michael O'Connor and Christian Heaney-Secord made the parts for the hopper and what connects it to the camera placement. It is not properly tuned, but it shows promise. They also attempted to add in the motors.

Eric helped me write out the code by giving me the high level instructions when dealing with the encoder and flux. In addition, he helped wire the motors together onto the arduino mega that were introduced along with the hopper. He also removed servos from previous subsystems which we will replace with better servos suited for those roles.

Future Plans:

In the previous weeks, our group dealt with motor control by using libraries that are optimized for such use. But as a consequence, it removed all previous methods of motor control. The current multitasking program for the overall system uses all previous methods. So I plan to implement the series of libraries onto the multitasking program in order to catch up with the changes done in our testing programs. I also plan to help out getting the components together. In next system demo, I may probably just apply a nonmultitasking version of the code and then later get the multitasking code working.

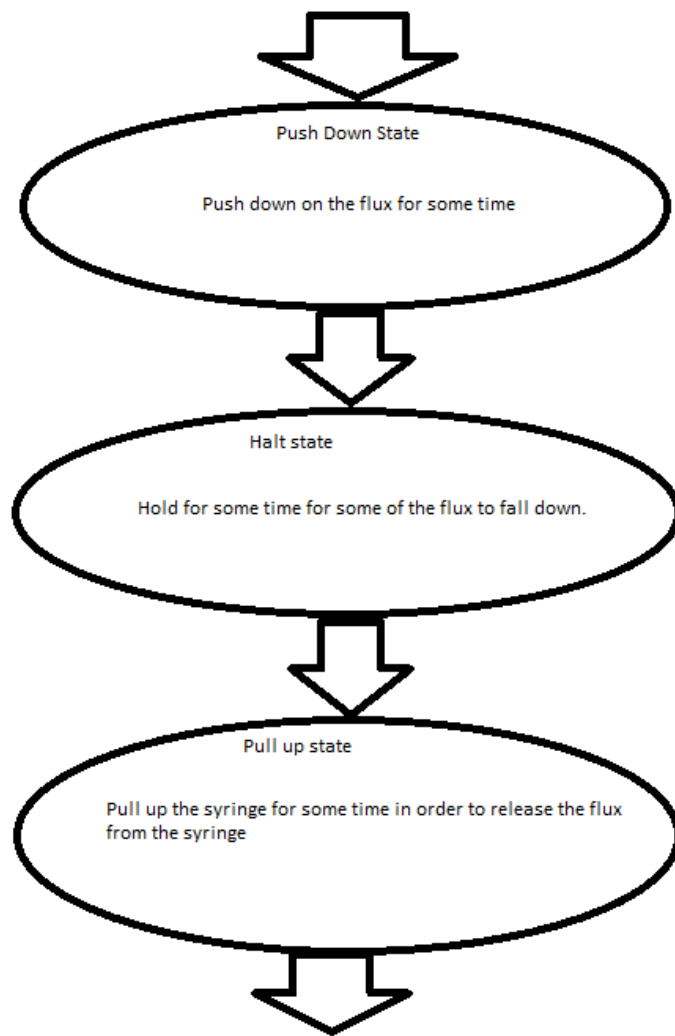


Figure 1: The current flux handling code so far.