Work Completed

Monitor Lift Project

Last week we took the finished components of the monitor lift and brought them all together. This week we tested the lift, made a couple of adjustments and worked on the switch/circuit.

We used a small, black plastic box for an enclosure for the switch and wires. The wires were soldered to the switch and heat shrink wrapped for safety. The switch was mounted in the middle of the ‘bottom’ of the box. The ‘top’ of the box is removable- it attaches by way of four small screws.

We tested the lift by attaching a motor to the wall mount. The monitor our sponsor will be using is 23 lbs and the motor is 22 lbs so it is a good representation of the load the monitor will regularly experience (especially when a few small weights are added). The motor was attached to the wall mount by use of a mounting bar.

It should also be noted that the motor is larger than the monitor depth-wise, so by using this motor to test the lift, we were exerting a larger moment force on the lift than it will
The monitor lift had no problem lifting the motor up and down or holding it up in the air. We also measured the current that the lift uses under these conditions. The maximum current experienced during the full range of lifting/lowering was when the lift starts moving from its lowest position. The guide rails are ‘stuck’ here (this is their fully closed mechanism) so a spike in current is seen. This spike reached about 1.77 A. Otherwise, the current drawn was about 1.1-1.3 A. This spike up to 1.77 A is too close to the allowable current for the adapter we were planning to use. The adapter only allows 2.14 A. We ordered a new adapter that could withstand up to 4.1 A. The new adapter also has an output voltage of 9V. It was determined by testing a variety of voltage levels that 7V would make the lift run the slowest we would like it to, and 10V would make it run the fastest that we would like it to. Nine amps is within this range.

**Paint Cap Remover**

This week, the structure of the paint cap remover was modified and the switch was built. The wires were soldered to the button and we decided that the button should be placed on the front/bottom of the enclosure that surrounds the motor. This was also done and then the enclosure was secured in place by way of two bolts.

A hole for the adapter’s cord was drilled into the right side/rear/bottom corner (see above right).

The back wall was too large. The user would use the lever for the vise and hit their hand on it. To resolve this, the left side of the back wall was cut off, leaving it in an L shape.
Future Work

Monitor Lift
- Finish attaching the wires/switches/fuses
- Further product Testing, Cleaning up the look of the projects, Final touches

Paint Cap Remover
- Finish attaching the wires/switches/fuses
- Product Testing, Cleaning up the look of the projects, Final touches

Project Review

Monitor Lift
The monitor lift project works. Everybody has worked well together to accomplish this.

Paint Cap Remover
The paint cap remover is nearly finished. Everybody has been working well to get the work done.

Hours Worked 13