Project Identity
The Human Integrated Gripping Device
Week #6
2/21/06
Philip Batista

Work Completed

Week 6 was the start of much of our prototype design build. My first task of the week was to put together the user interface: the cut resistant glove. I began this task by first ordering a second free sample of the glove from Best Glove for future use if needed. I then proceeded with the mitten design by sewing together the fingers of the glove using 20lb test fishing line. This provided an incredibly tight stitch that could withstand any conceivable amount of force a person could generate with their hand. The mitten was designed and finished this week as well as tested for comfort, ease of use, and durability. It successfully passed all. The glove build can be seen in the picture below.

Figure 1. Building of Glove Interface

Figure 2. Finished Glove Interface
My other tasks for the week involved working the support mechanism and mechanics compartment. Both of these have undergone some design changes. The compartment will be made from ¾” x ¾” stainless steel tubing. One end will be cut off and made to fit within the newly formed U-channel. This will create a compartment of ¾” by ¼” for the mechanics to be held within. The remaining ½” legs of the U-channel will then be used as a means of attaching to the user interface glove. These legs of the casing will serve as a contact surface for the force of the hand to act upon and result in the pushing of the mechanics into a grip position. This can be seen in the figure below.

Figure 3. Compartment Design

Also, the support mechanism is now further advanced due to this change but it will maintain the same basic concept of the harness design for which we are pursuing. The HDPE block material for the caps has been ordered and should be in shortly for molding. We have also received the nylon sleeving which is excellent for its use as a protective yet flexible barrier at the joints. Industrial glue for the adhesion of many of these parts has also come in. Finally, I have also ordered the stainless steel needed to commence building of the case.

Future Work

The next week or so will mainly involve prototype building. We are waiting on a couple parts to come in. Hopefully we can commence building of the stainless steel casing. Also, if the mechanics are done we can incorporate them into the casing. The modeling of the HDPE will also have to be done for the support mechanism as well as ordering of new sized elastic for the support mechanism. A time table of above said task is shown below

Table 1. Week 7 Timeline
Project Review

Our group is on target to finish. My only concern is the obtaining of vital parts in the next week so that we can finalize our prototype build and begin testing. I would like for testing to being within 3 weeks so that there is ample time to make any needed changes.

Hours Worked

Week 6 – 10 hours