Work Completed

In this week a portion of the case has been constructed. This was built from a 12 inch planter (black). The planter was cut for an 11 inch opening. This portion is to fit around the circular base and mid-plate. From the picture to the right the unit is mounted around the mechanical portion of the dispenser.

Work was conducted on the testing and redesign of the pill pusher piston and reception areas. The pill pusher received a more aggressively curved foam head with low friction coating. The funnel received a flexible flap to prevent pill jump out and the reception area was upgraded with a thick foam insert and thin foam cover to prevent pill ejection during placement. The changed are pictured to the right.

Testing of control sequences were conducted with the use of the vacuum motor and after some messaging of the control programs and wiring the control sequences executed correctly. However, the vacuum was unable to pick up the pills. This was traced to a problem with dirt in the pump valving. The dirt was removed however poses additional problems for operation. To combat this problem a filter must be introduced. Work is currently underway to build this piece. Additionally the method for determining pill capture is obscured with noise. This could be removed by filters however I am unsure if this will provide accurate real time control over the control loop. A secondary approach would be to use an op-amp controlled constant current
device to measure air flow through the pumps. This however would add a significant amount of time to the completed project.

**Future Work**

Program debugging, filter construction and pill capture control need to be resolved. In addition the fill and dispensing funnels must be build as well as the completed case.

**Project Review**

While we do not have a completely working project we have made significant progress toward that goal. The problems associated with this control and to keeping with low cost options is a problem area. We have no support from the PDA manufacturer and the technical website is useless due to corrupted information. With a lack of support the complete project will most likely be run from a laptop computer.

**Hours Worked**

Kevin Villani ~ 24 hours