**Project Identity:**

Orthodontic Wire Mechanical System Tester  
Group 7  
Week 8  
Bethany Lepine

**Work Completed:**

All of the machining is to be completed this week. Therefore I spent a very large amount of time completing the machining drawings, and organizing them in an understandable fashion. All of the three dimensional part files had to be converted to drafting drawings. The dimensioned drawing for the cutting of the stainless steel base piece from Yarde Materials can be seen in Figure 1 below.

![Figure 1: Cutting Dimensions](image)

Drawings needed to be amended so that each individual part could be clearly seen. One such part was the cylindrical attachment from the tool-side of the sensor face. The amended drawing and the dimensional analysis can be seen in Figures 2 and 3 on the next page.
Figure 2: Cylindrical Sensor Attachment

Figure 3: Dimensions of cylindrical attachment
These dimensions in Figure 3 above are both metric and English, but this is due to the fact that the sensor is in metric, however conversion would not be as specific as is desired. The closest conversion is 7/16”.

One challenge to be foreseen in machining is the approximation of screw sizes. While the screw sizes of the actually purchased parts are generally available on the specifications sheets, the best screws for each attachment purpose should be determined tomorrow.

I voiced this concern to Michael Brault from Ultimate NiTi and he said that the machine shop has many different sizes of screws available, and should be fairly easy to work with.

All of the machining will be provided by Ultimate NiTi, although unforetold problems may occur in the future which may require machining. All of the drawings need to be double-checked so that all dimensions are clearly marked. This will eliminate error. If machining is required, the shop here on campus could be used, and disassembly, though undesirable, should still be possible.

**Future Work:**

This coming week, we must focus on finishing machining and begin assembly. Assembly should be completed by the end of next week so that testing can commence.

**Project Review:**

Mechanical design has been completed, and machining is beginning tomorrow.

**Hours Worked:** 22