

EML 4501 – Spring 2010 Design Report 2 Oscillating Multi-tool

Assigned: Feb.5, 2009

Due at the beginning of class: March 5, 2009

The requirements for Design Report 2 are as follows:

- Produce a well organized and visually attractive report
- Describe the functional requirements of the product
- Describe how and why it works
- Discuss the positive and negative attributes of this particular design
- Create a parts list and describe which parts are commercial off the shelf (COTS) and which are manufactured specifically for this product
- Describe how each component works to meet the functional requirements
- Perform a thermal/fluids analysis
- Perform a mechanical analysis
- Perform an electrical analysis
- Only produce SolidWorks models and machine drawings, for the “front half” of the tool. All other parts can be photographed
- Do the necessary closure analysis for the “front half”
- Describe what all product components are made of and why that particular material is used
- Describe how the product is assembled and the time required for assembly
- Estimate the cost to injection mold the plastic parts
- Perform a cost analysis
- Describe safe operation procedures and safety features