Red Hot Routers
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Summary
Our goal is to design a way for the UCI FSAE team to efficiently and effectively manufacture their wings/airfoils. We are going to use a CNC (Computer Numerically Controlled) hot wire machine in order to do this. This approach will be cost effective, time efficient and accurate.

Key Features:
1. Adjustable hot wire temperature for various foam densities
2. Automated CNC Process
3. Able to make cuts as large as 2 feet

Engineering Analysis
- Max Wire Displacement = 0.310 mm

Final Design
- 2ft wide, 1.5 feet tall.
- Stepper motors & Lead screw to move wire.
- Power Source - 12v DC adjustable power supply.
- Holding wire in Tension- Clamp, rail and set screw.
- Wire Diameter - 0.025in.

Recommended Future Improvements
1. Auto Tensioning System
2. Enclosure and vent fan for toxic fumes
3. Auto shut off feature if failure is detected

References & Acknowledgments:
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