Automated Hog Marker
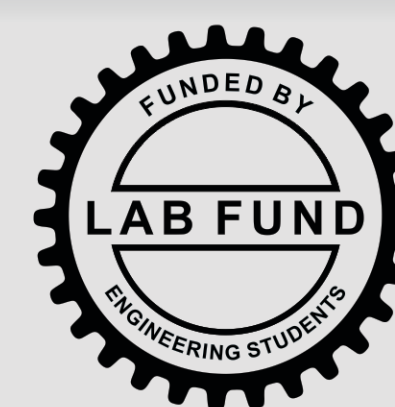
Ryan Horn • Robert Scott • Gareth Shepherd
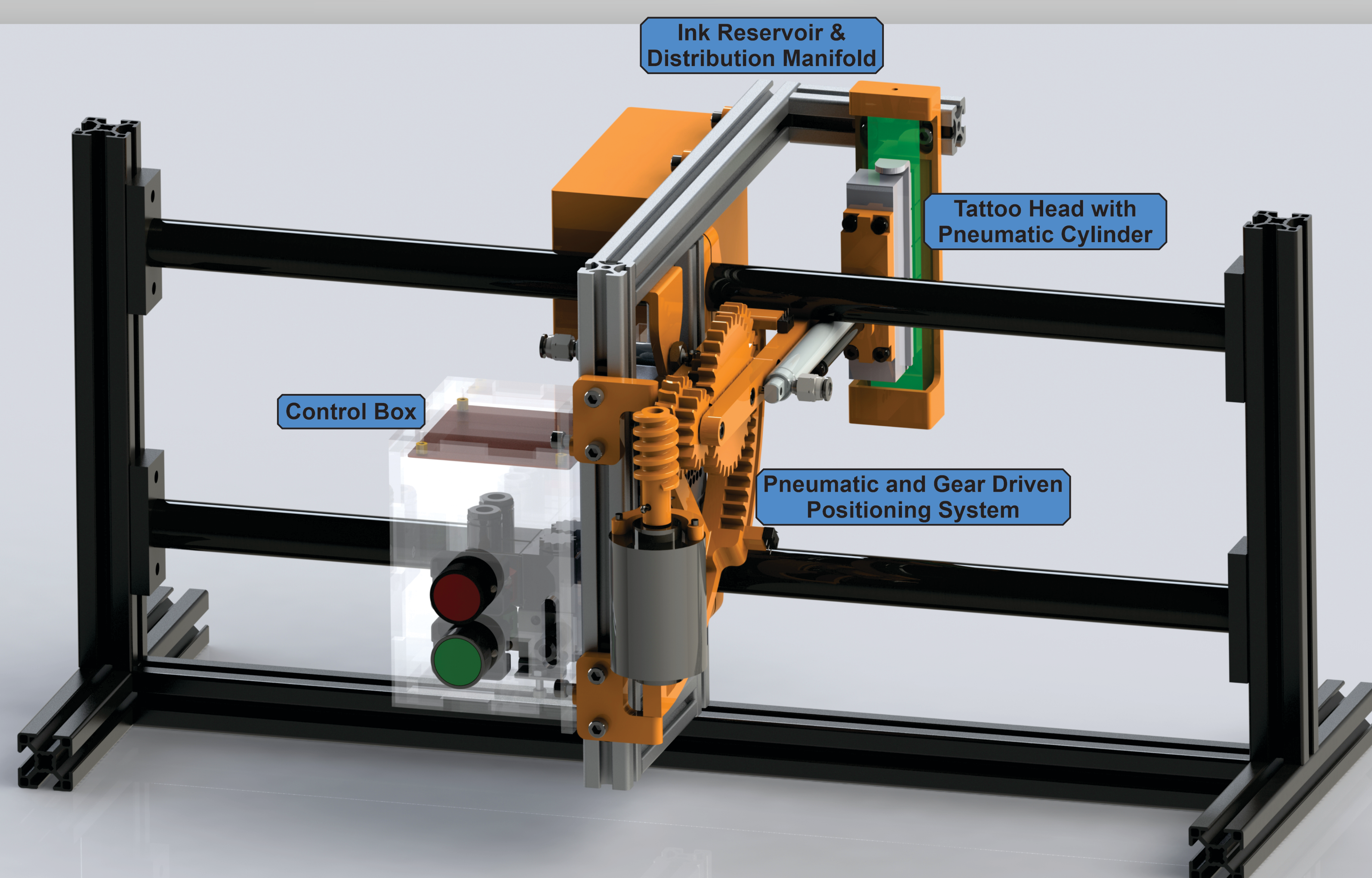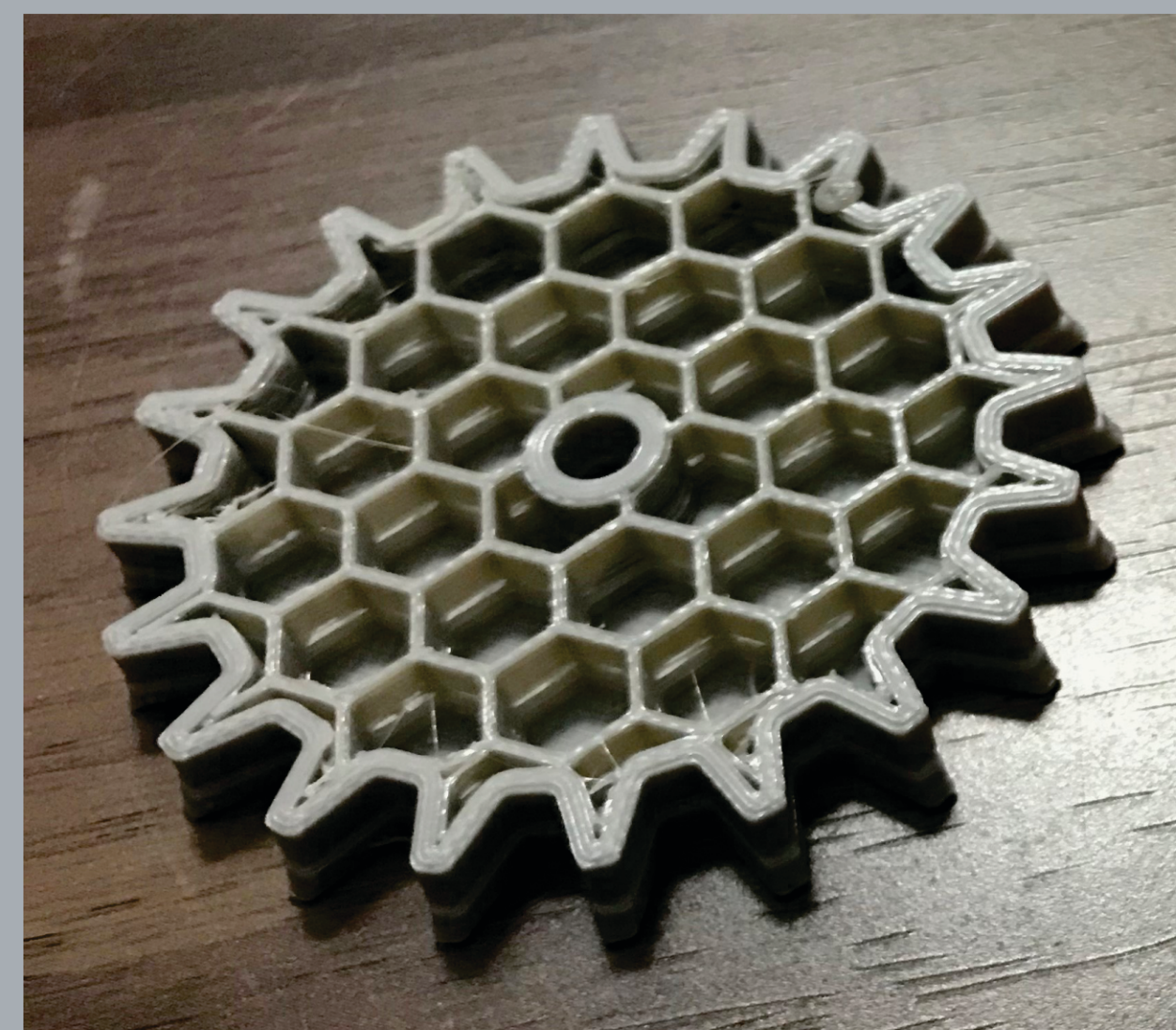
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Motivation & Rationale

- Before a hog is sent to slaughter, it is required to have a herd marker tattoo placed on its shoulder. This tattoo identifies the farm where the hog was raised.
- Currently, this is done manually using a hammer like device to mark the animals with the identifier. This process is laborious and physically taxing for the farmer and traumatic for the animals.
- The Automated Hog Marker removes the manual application from the process to reduce strain placed on both the animal and the farmer during the tattooing process.
- The system is designed to be modular and mounted to most standard automated hog scales.
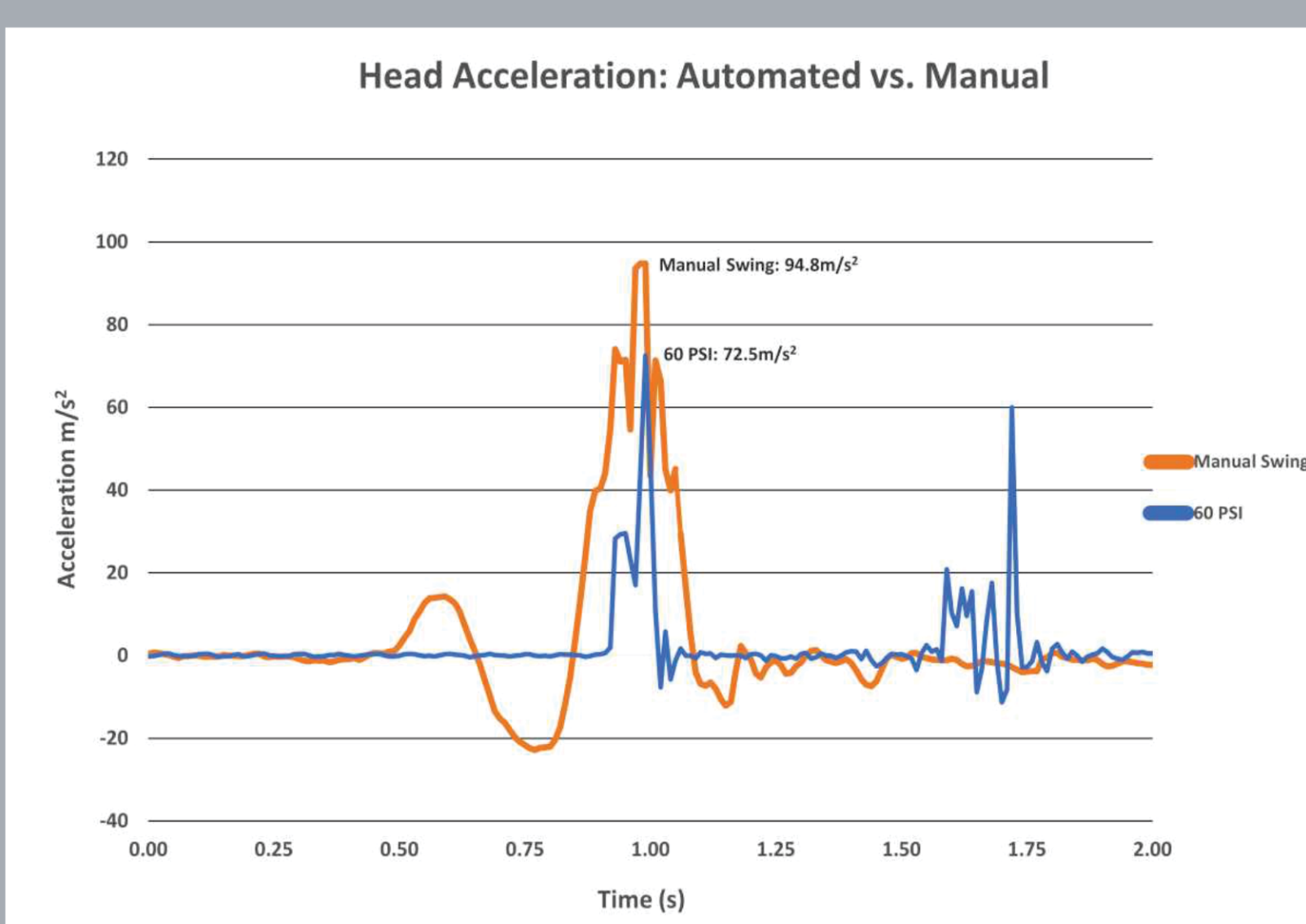
Control Board Layout
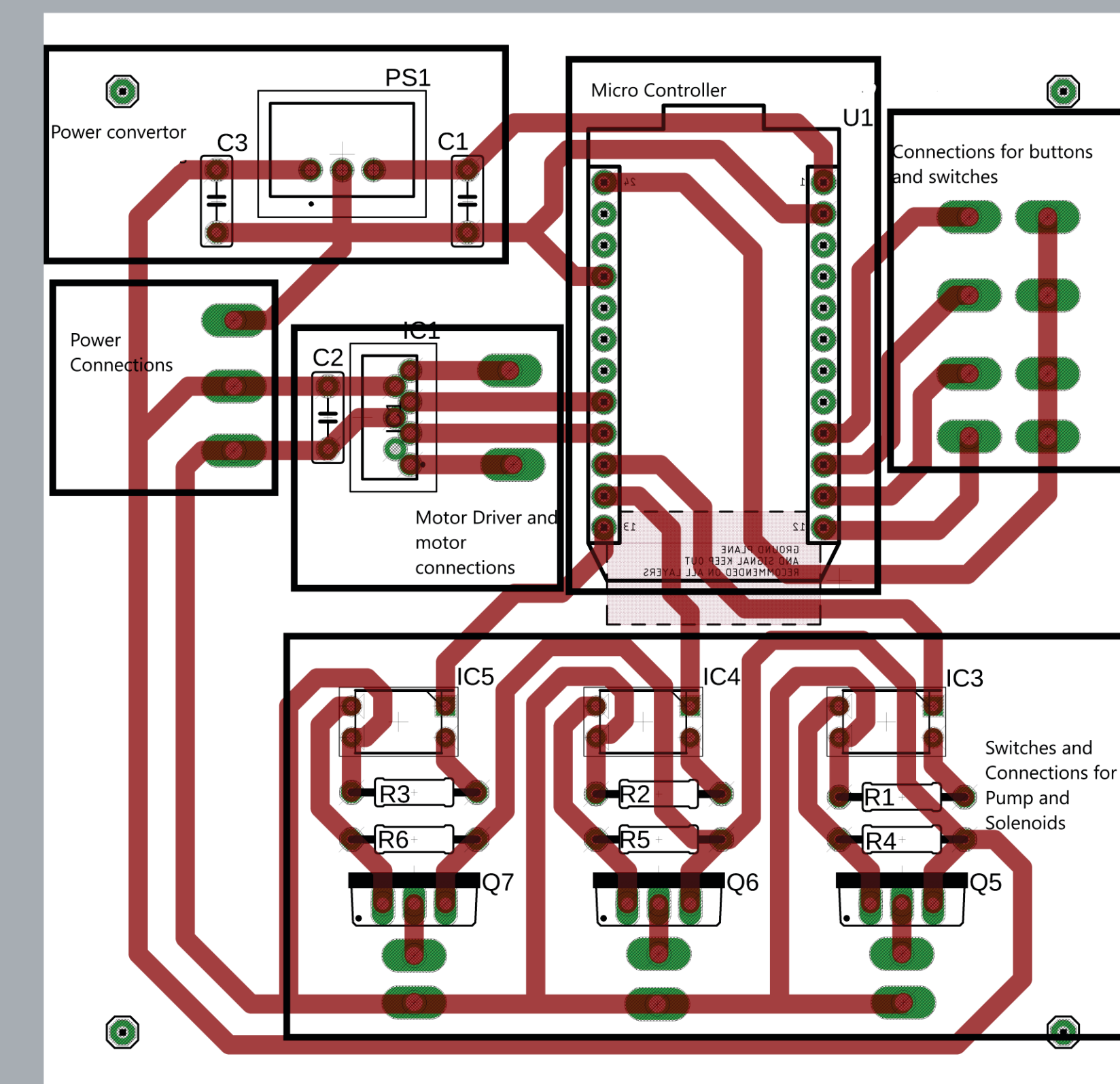
System Specs

- Operating Voltage: 120V
- Operating Pressure: 60PSI
- Aluminum Frame Construction
- Push-Button Cycle Start
- 3D Printed Plastic Parts with Honeycomb Infill for Impact Strength

Ink Reservoir & Distribution Manifold

Tattoo Head with Pneumatic Cylinder

Control Box

Pneumatic and Gear Driven Positioning System

Performance Analysis

Head Acceleration: Automated vs. Manual

- Acceleration of the tattoo head was lower when applied using the Automated Hog Marking system compared to manual application.
- Force experienced by the animal is reduced by using the Automated Hog Marker.

Conclusion & Recommendations

- The Automated Hog Marker applied a legible tattoo at a lower force than manual application, resulting in a more pleasant experience for the animal.
- Machine vision positioning system with animal shoulder detection paired with motor driven lateral axis
- Integration with scale software to eliminate the need for a cycle start button

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