Team 13: Pork Chops

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Criterion AUTOMATION

South Olive Christian School

Calvin UNIVERSITY 1876

Introduction

- South Olive Christian School produces pigs in a blanket for a year-round fundraiser

- Current demand is higher than their production capacity

- A process is needed to streamline production allowing product demand to be met

Figure 2. (From left to right) Jacob Van Wyngarden, Jonathan Washburn, Ryan Storteboom, Braden Kopenkoskey

Figure 3. Control box layout

Design Processes

- Dough flipper prototyping

- Sausage tubing prototyping

- Electrical subsystem integration testing

- CAD and FEA analysis

Figure 1. Pigs in a blanket

Results

- Machine integration successful

- Control box connects all subsystems

- Sausage tubing outputs four continuous sausage streams

- Dough flippers wrap sausage

- Vertical chopper cuts pigs in a blanket

- Increased pig production by approximately 10x

Figure 5. Integrated conveyor system

Objectives

- Increase production capacity of pigs in a blanket

- Intake raw dough and ground sausage inputs

- Output uncooked pigs in a blanket to be collected, packaged, and frozen

- Make machine operation simple and safe

- Design machine for simple cleaning

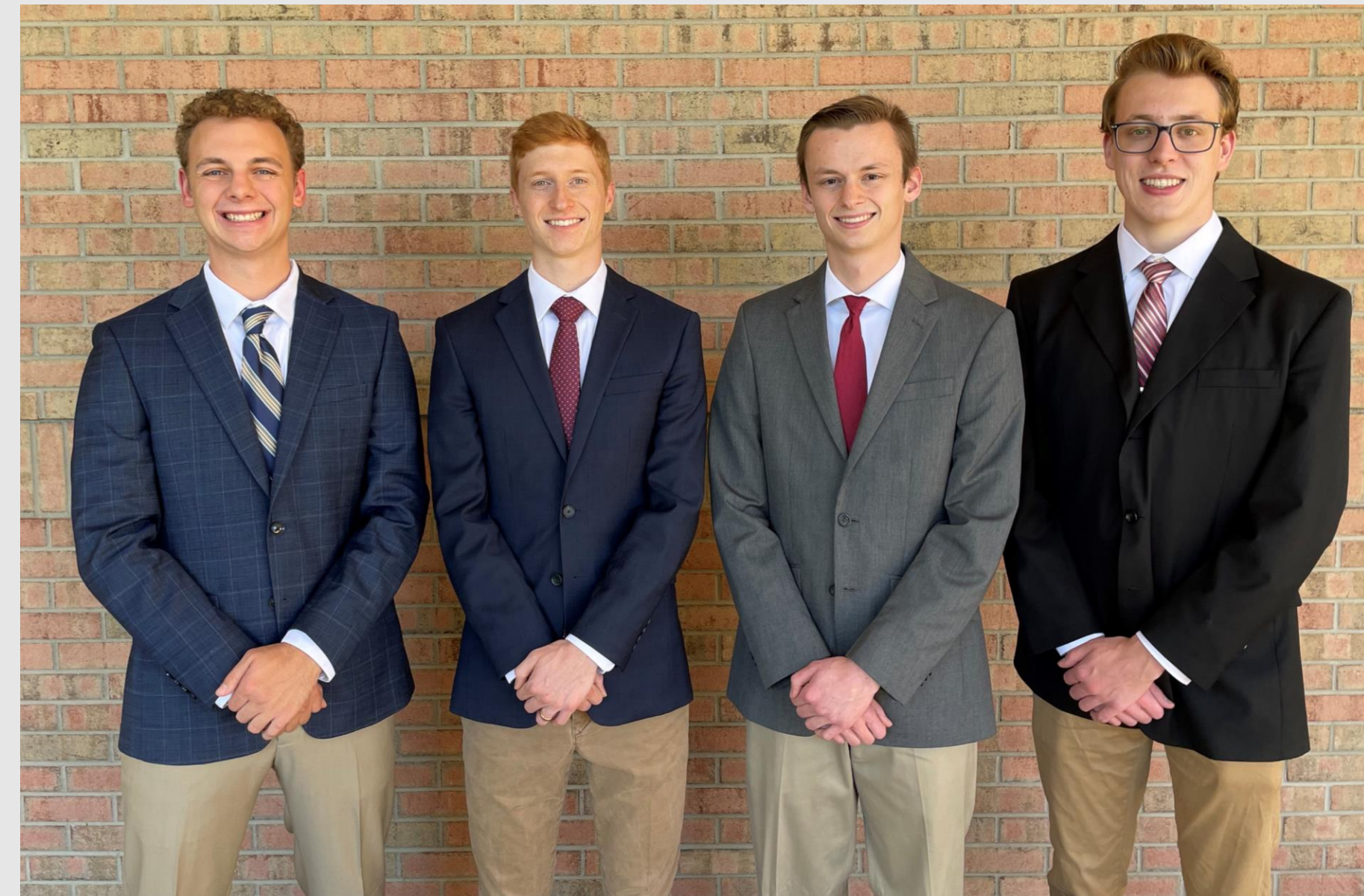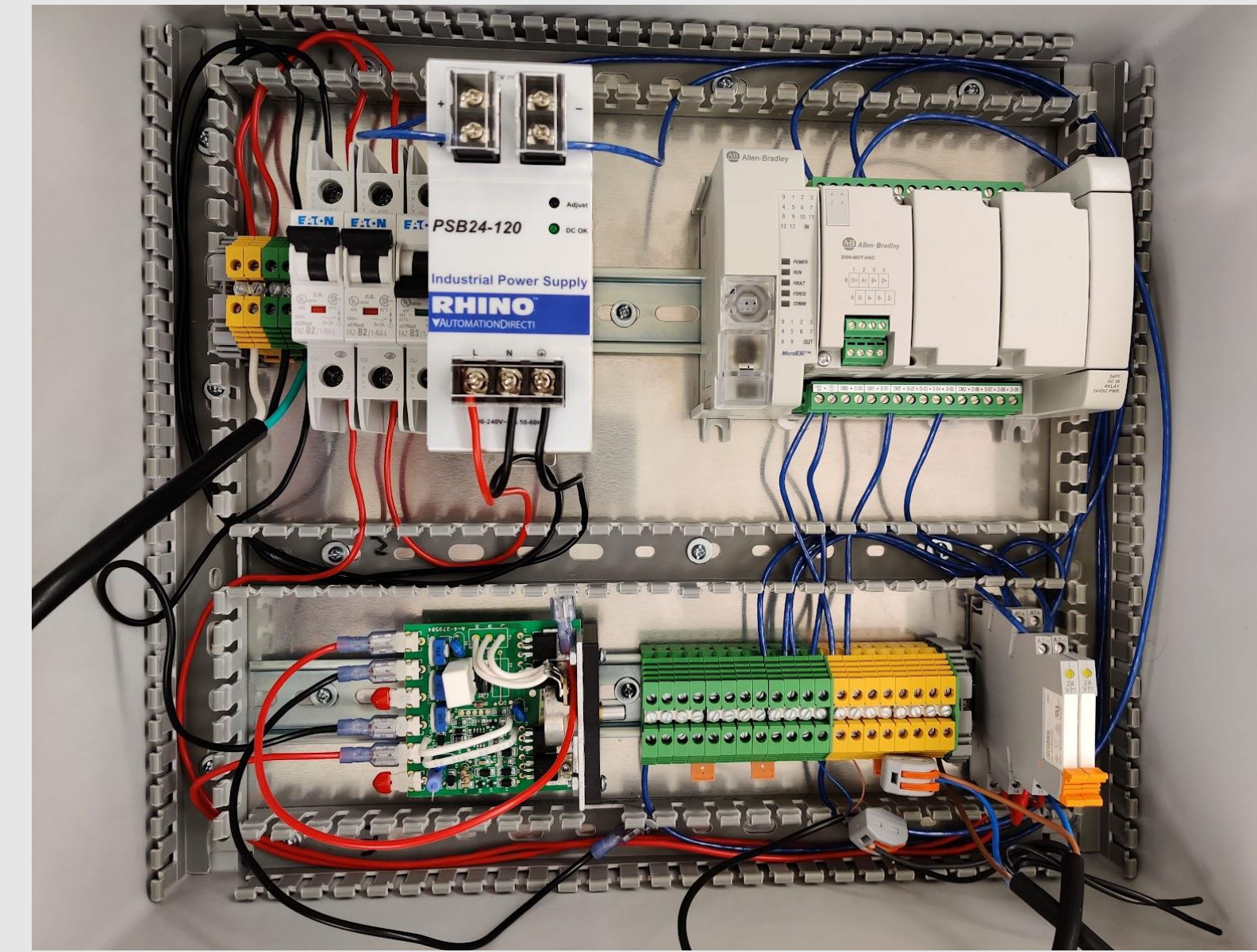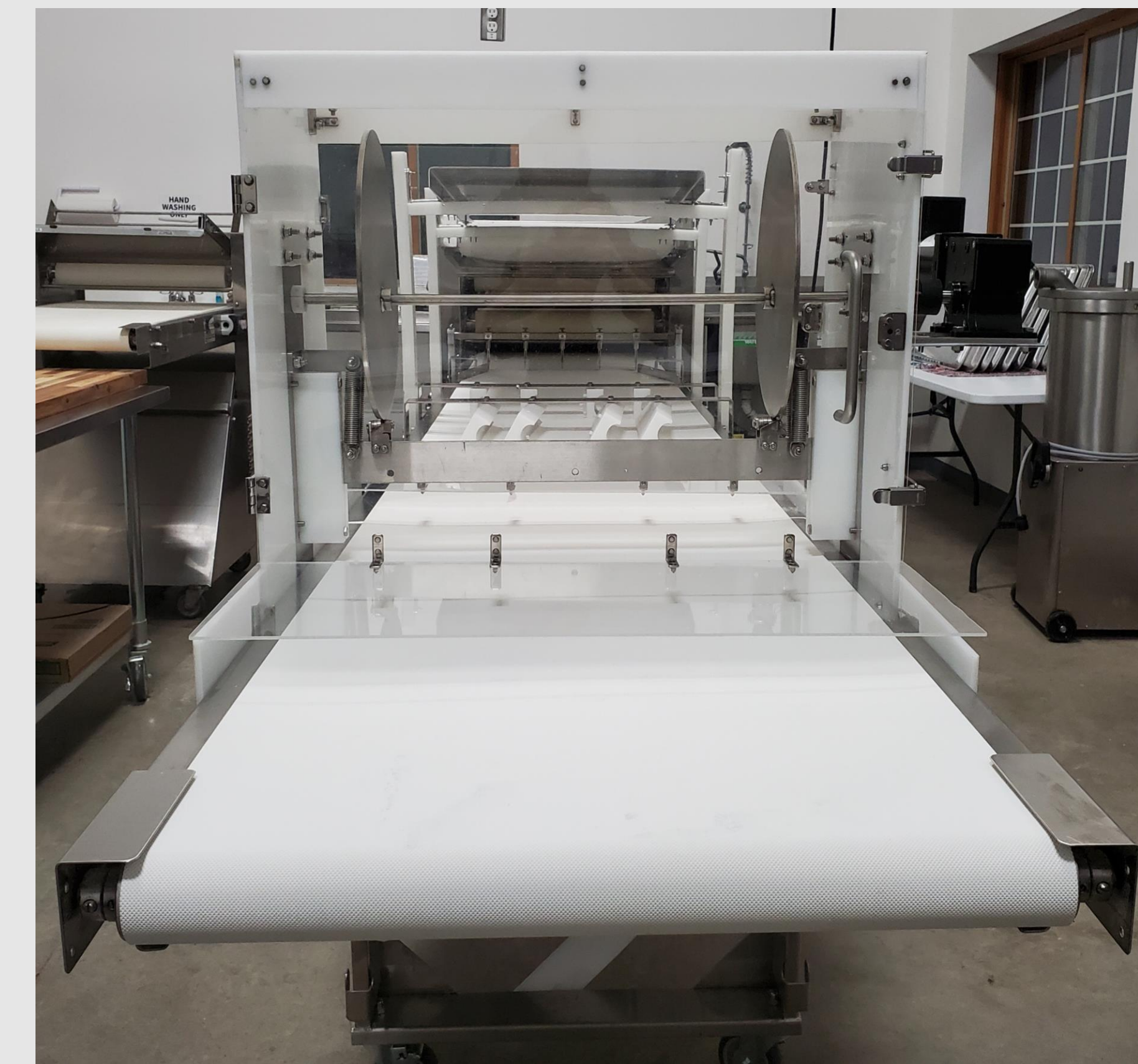- Meet all OSHA standards and FDA Food Code standards

Figure 4. Integrated conveyor system

Conclusions

- Automated system outputs 100 dozen per hour

- Safety and ease of operation criteria meet customer expectations

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