

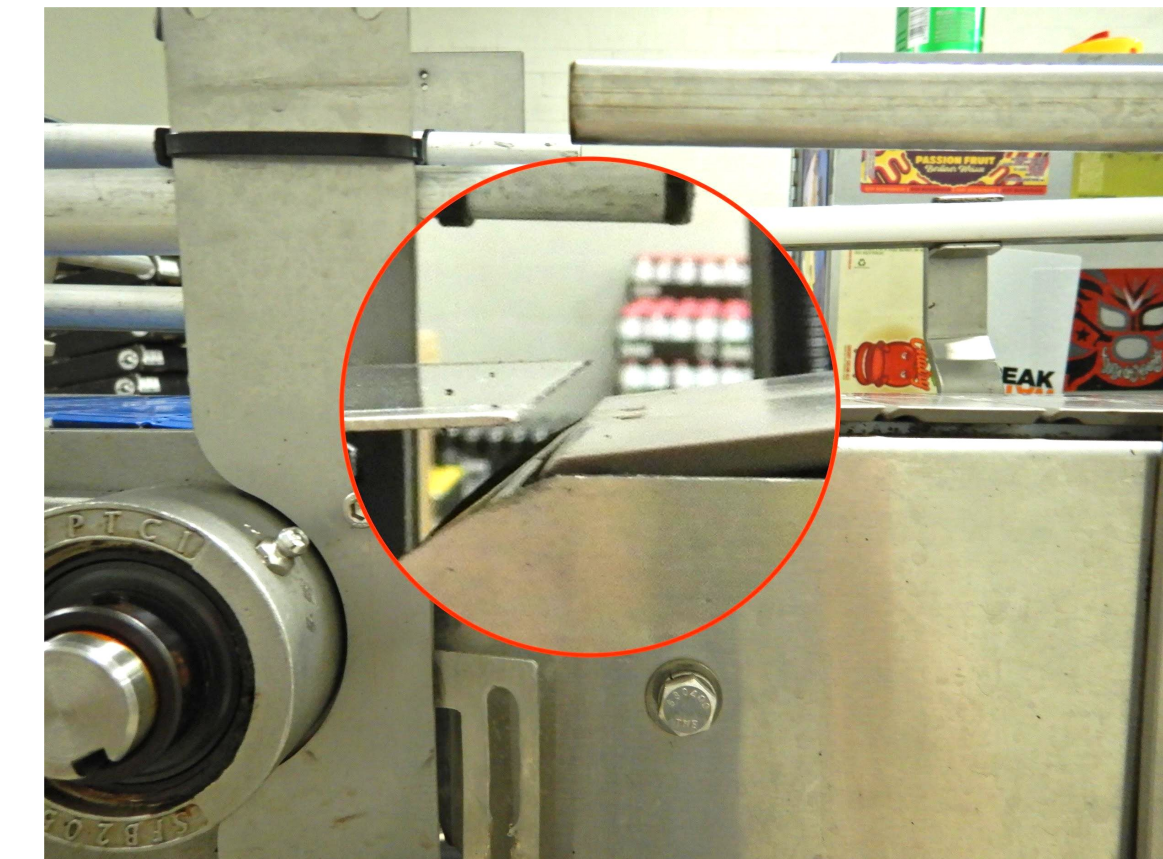
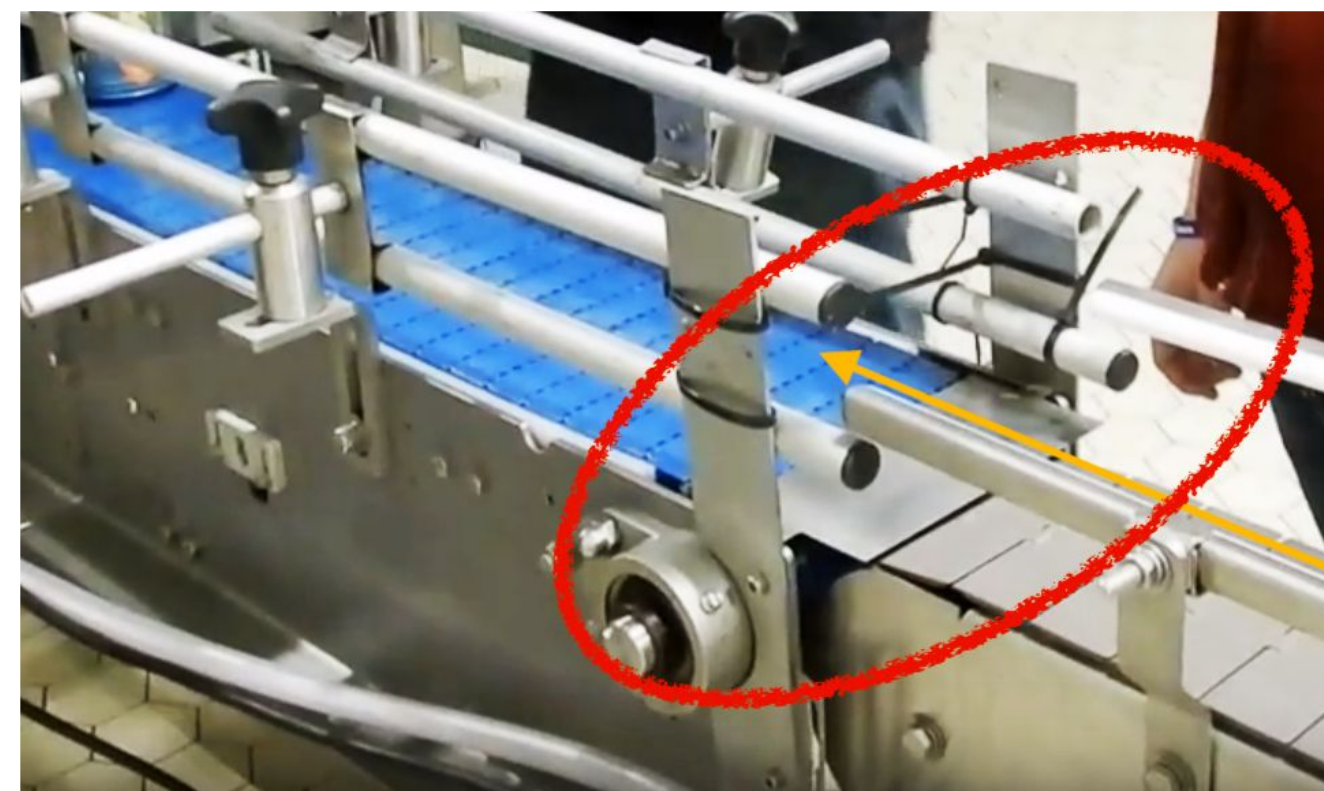
Project Scope

Who is our customer?

- JailBreak Brewing Company

What's the issue?

- Cans fall over between certain transitions



System Requirements

Function

- Shall prevent cans from falling over at the conveyor transition

Physical

- Shall be able to stabilize 12 oz. and 16 oz. cans

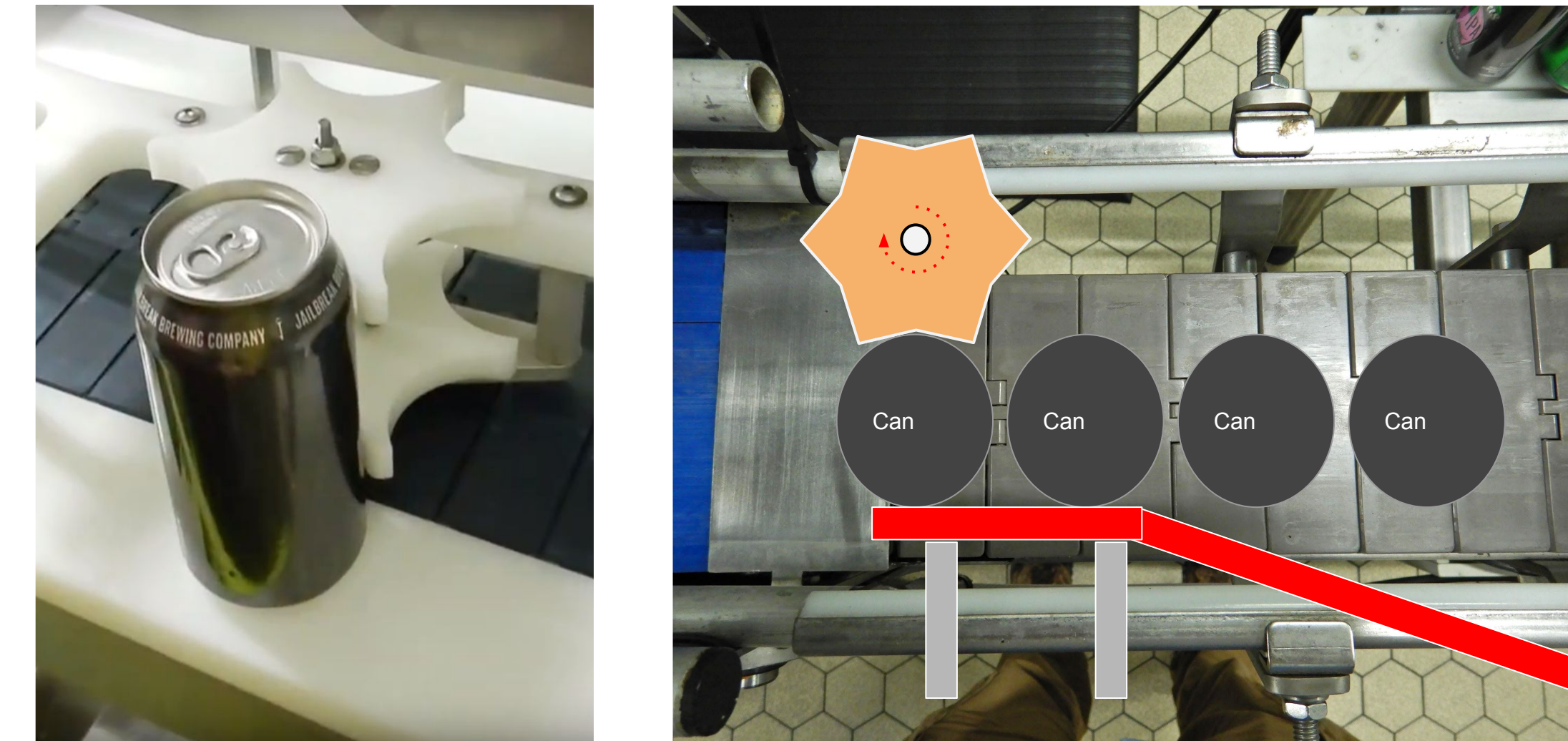
Performance

- Shall be able to transition 50 cans per minute
- Shall not allow more than 1 can fall-over per hour
- Shall not introduce additional jam points in canning line
- Shall take no longer than 5 minutes with basic hand tools to perform each of the following operations: detach, disassemble, reassemble, reattach

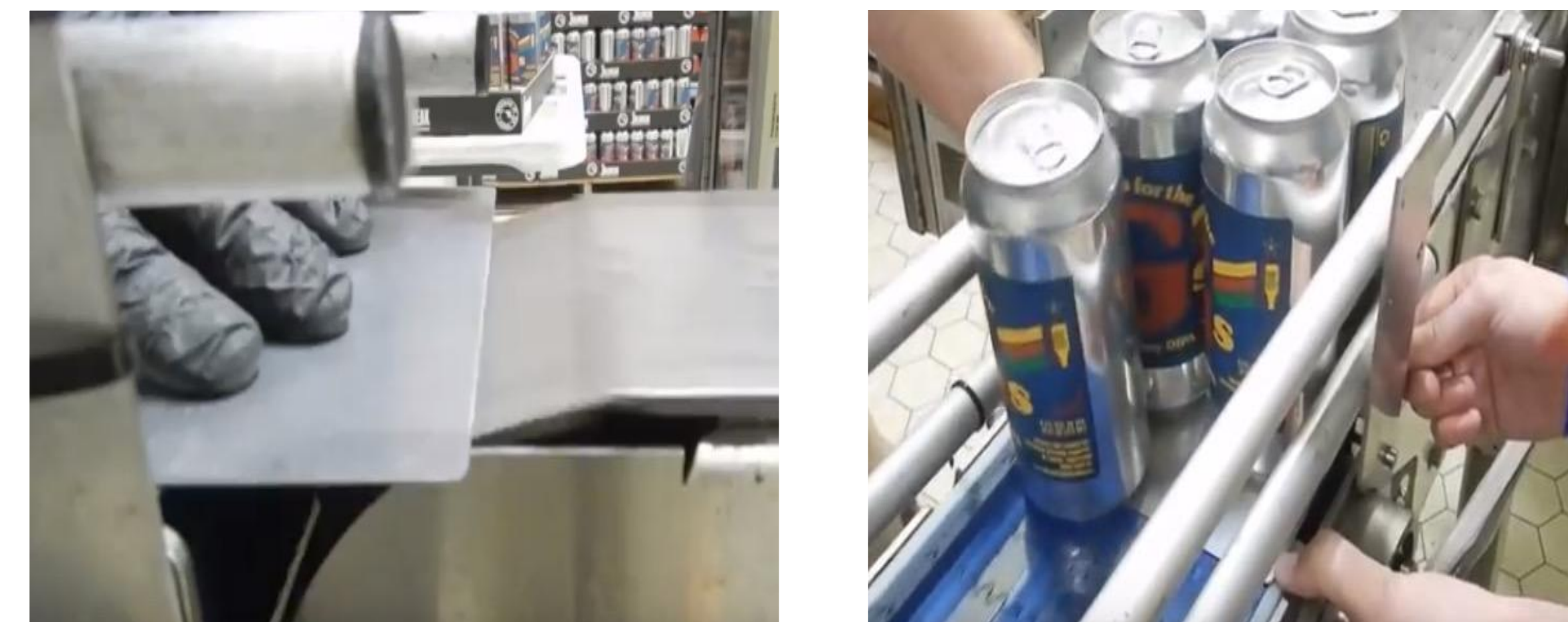
Environmental

- Shall be made from materials that will not corrode when exposed to water or beer

Design Iterations



Concept #1



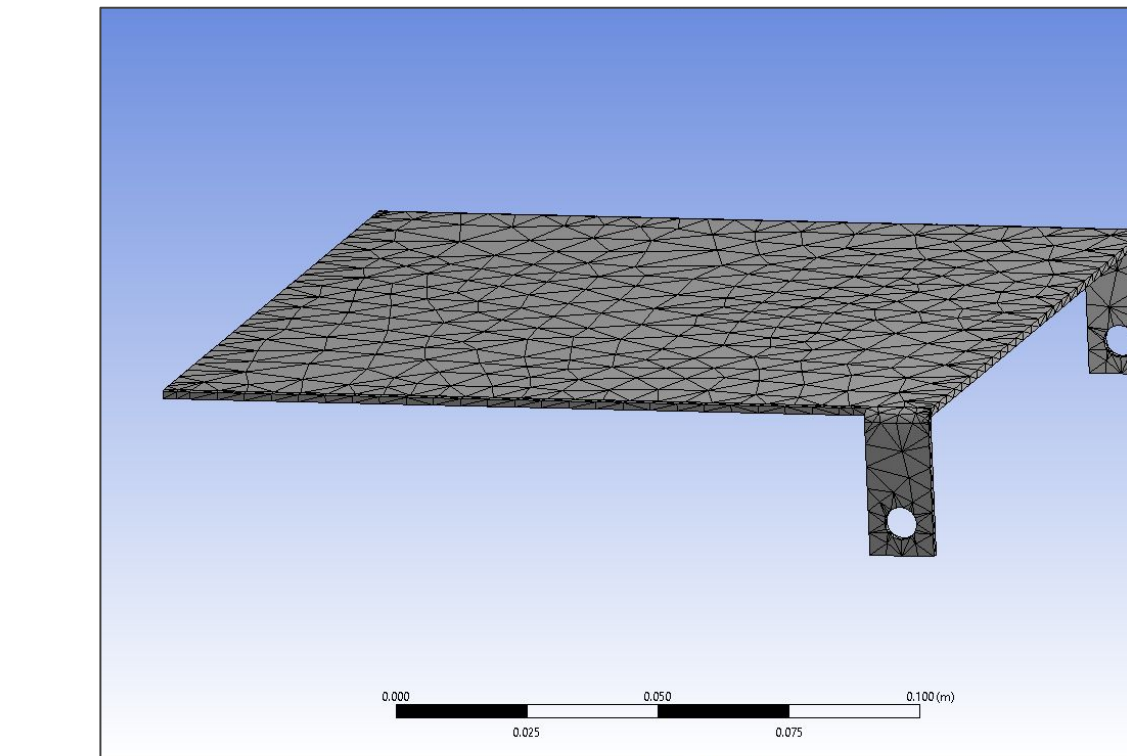
Concept #2



Final Design

Testing and Analysis

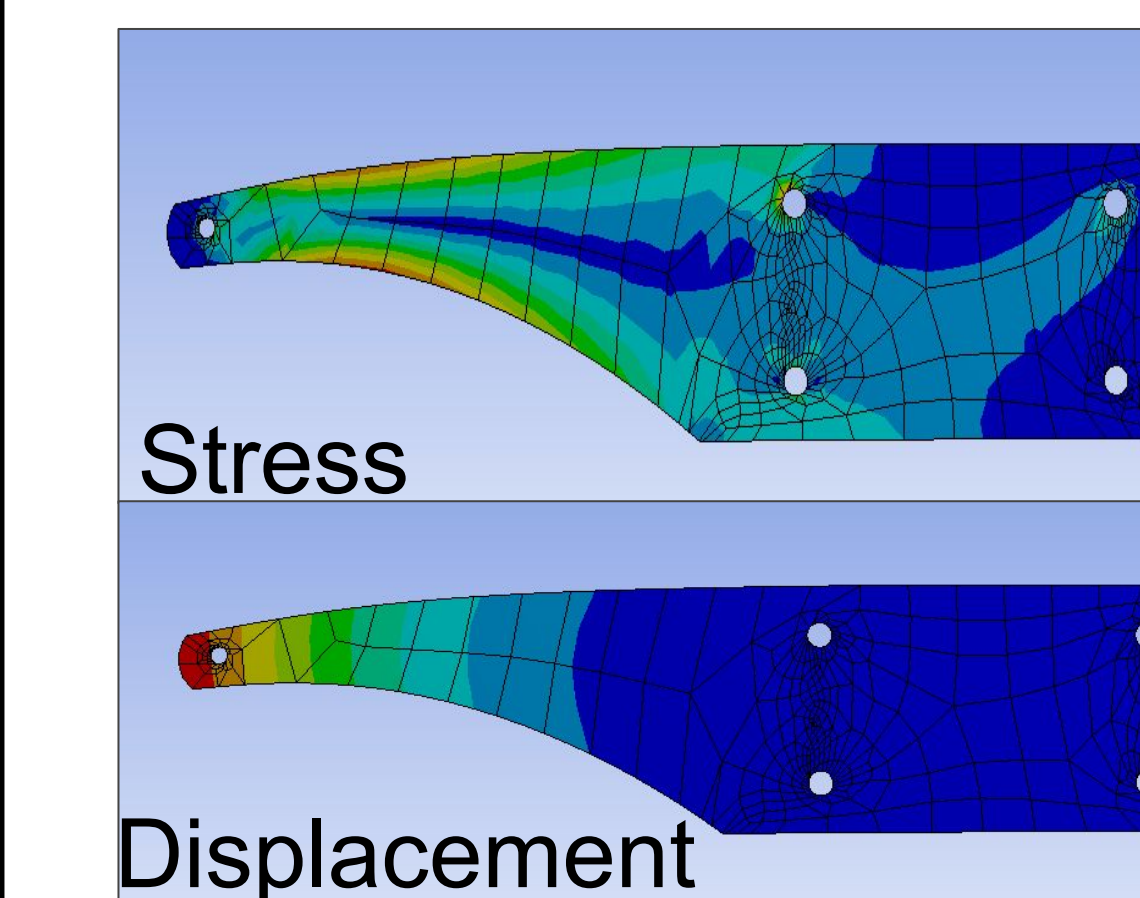
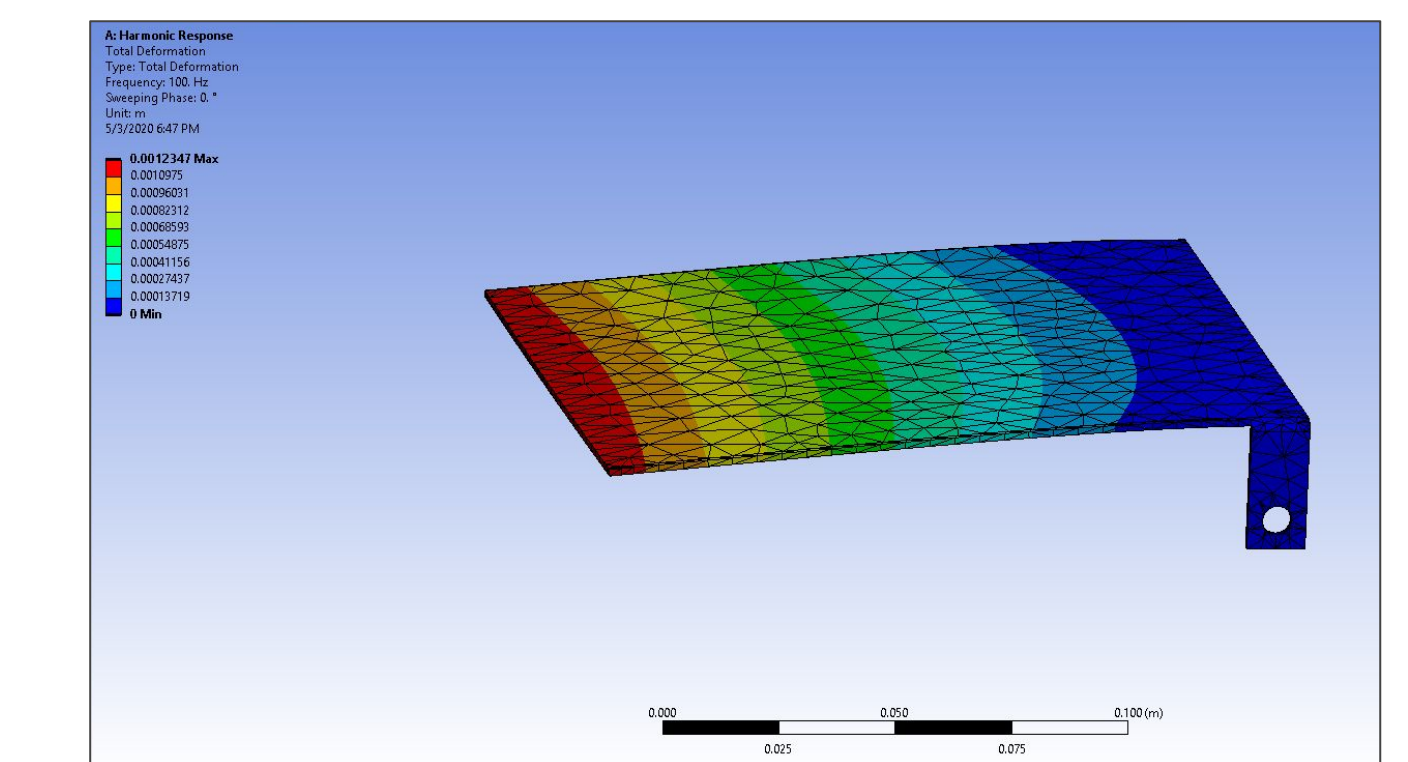
ANSYS Modal Analysis



Mode	Frequency
1	43.9 Hz
2	148.3 Hz
3	252.3 Hz
Labeler Belt	1.7 Hz
Six-packer Belt	2.5 Hz

ANSYS Harmonic Analysis

Minimum Frequency: 0 Hz
Maximum Frequency: 100 Hz
Frequency Interval: 10 Hz
Maximum Displacement: ~1 mm



ANSYS Static Loading

Load: 16 Lbs
Maximum Stress: 17.7 Mpa
Yield Stress: 172 Mpa
Maximum Displacement: <0.1mm

Future Work

If given the chance to continue the project in person we would like to actually build this device so that we are able to test its effectiveness in person as well as have something physical to deliver to our client.

Acknowledgements

We would like to thank Dr. Gurganus, Clay Baines, and all of the Jailbreak Brewing Company Staff for their help throughout the entirety of this project.