

Outer Housing Mechanical Attachment Design Feasibility

Meet the Sponsor

About Dexcom: Dexcom is a medical device company which develops continuous glucose monitoring sensors for diabetic patients. This sensor is attached to the user's body with an applicator and measures glucose levels in the interstitial fluid of the patient. Data from the sensor is sent to the patient's phone, allowing them to constantly track their glucose levels.

Dexcom Advisors: Sonia Goetschius, Nam Hoang

Project Overview

Problem: Currently ultrasonic welding is used to attach the three primary molded components of the applicator together, which is costly and not particularly reliable for high volume manufacturing.

Need: Develop a new method of mechanical attachment for the kangaroo applicator. Decided on snap fit components: Clamshell A to Chassis, Clamshell B to Chassis, and Clamshell to Clamshell press components.

Team Dextech



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Team Lead



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Design Lead



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Manufacturing Lead

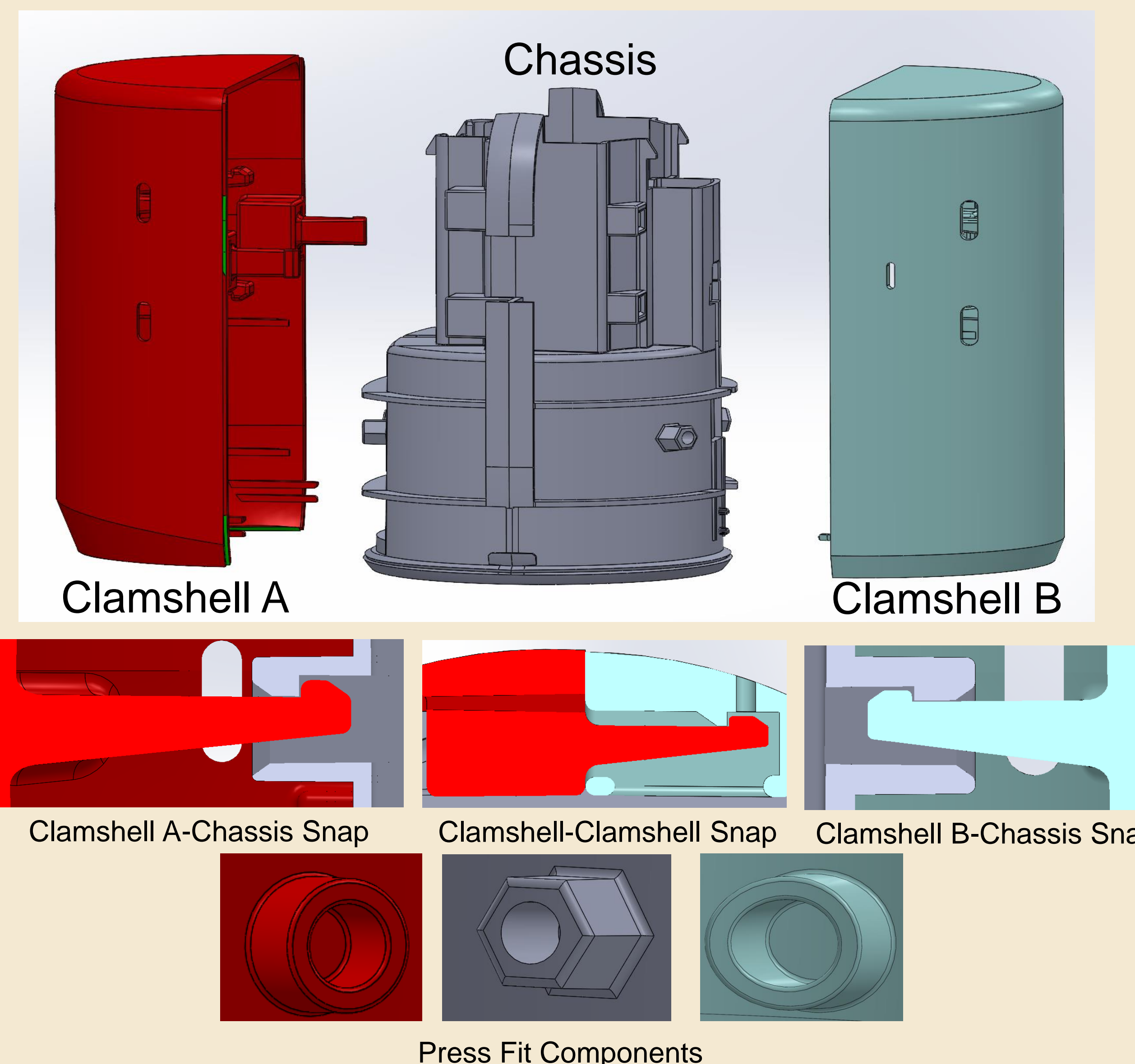


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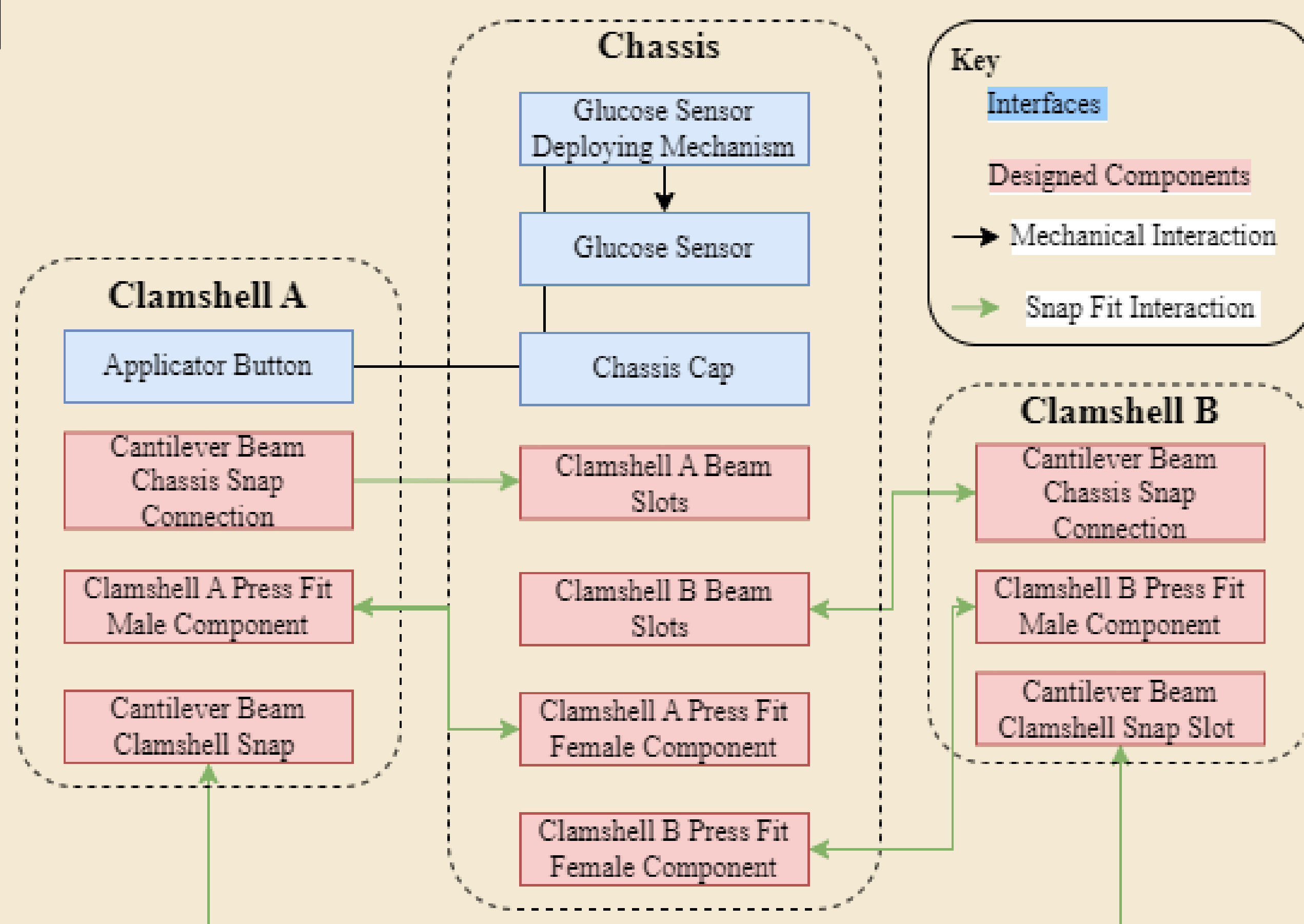


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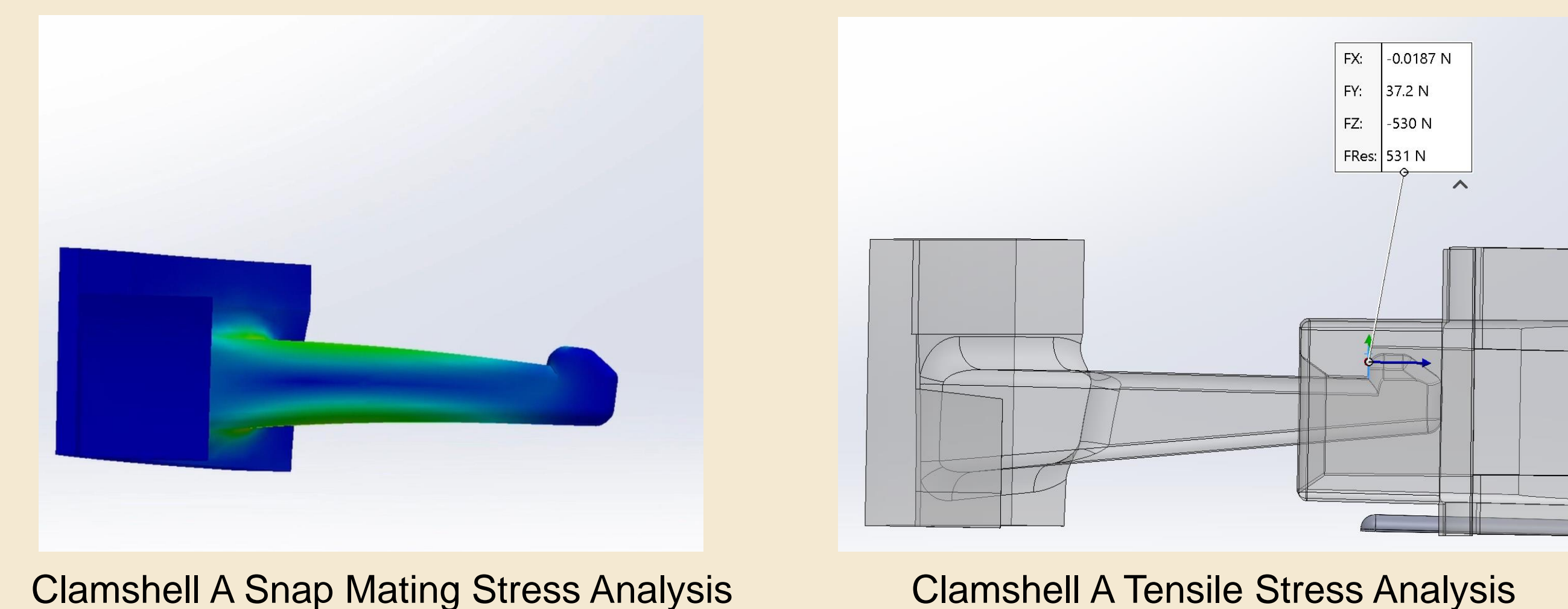
CAD



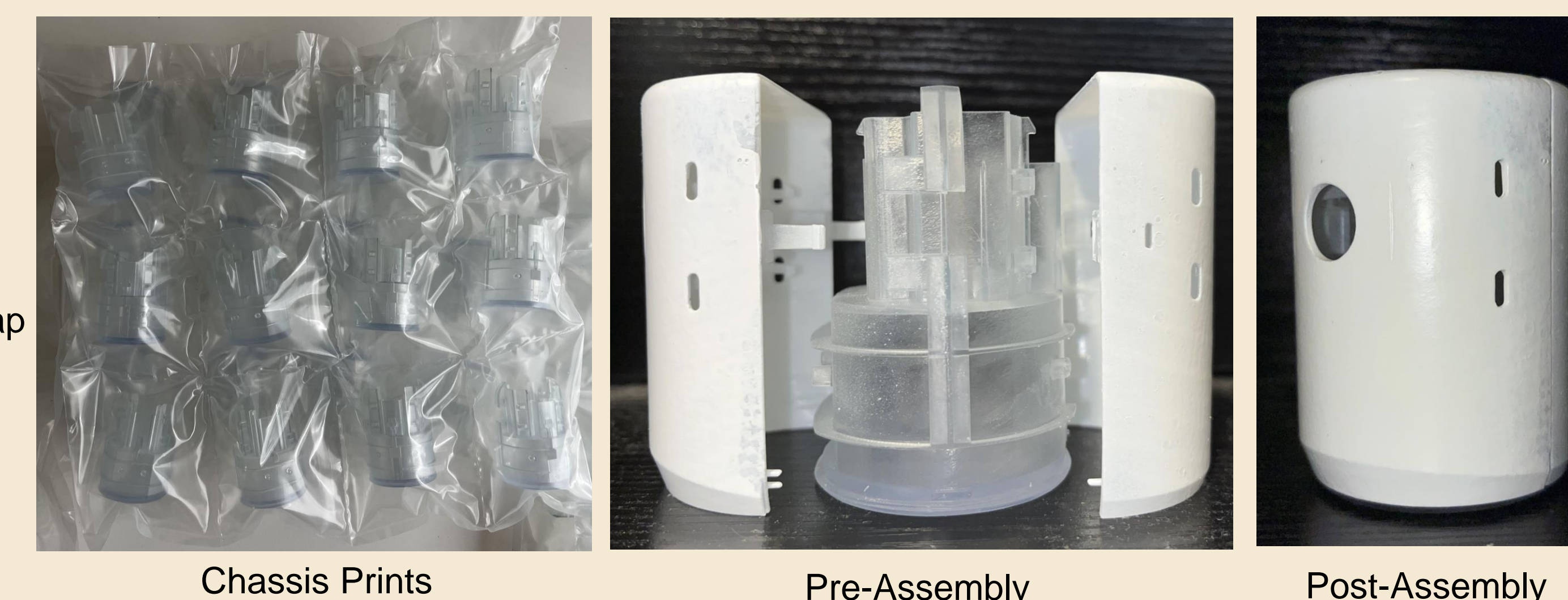
System Level Diagram



FEA Stress Analysis & Failure Analysis

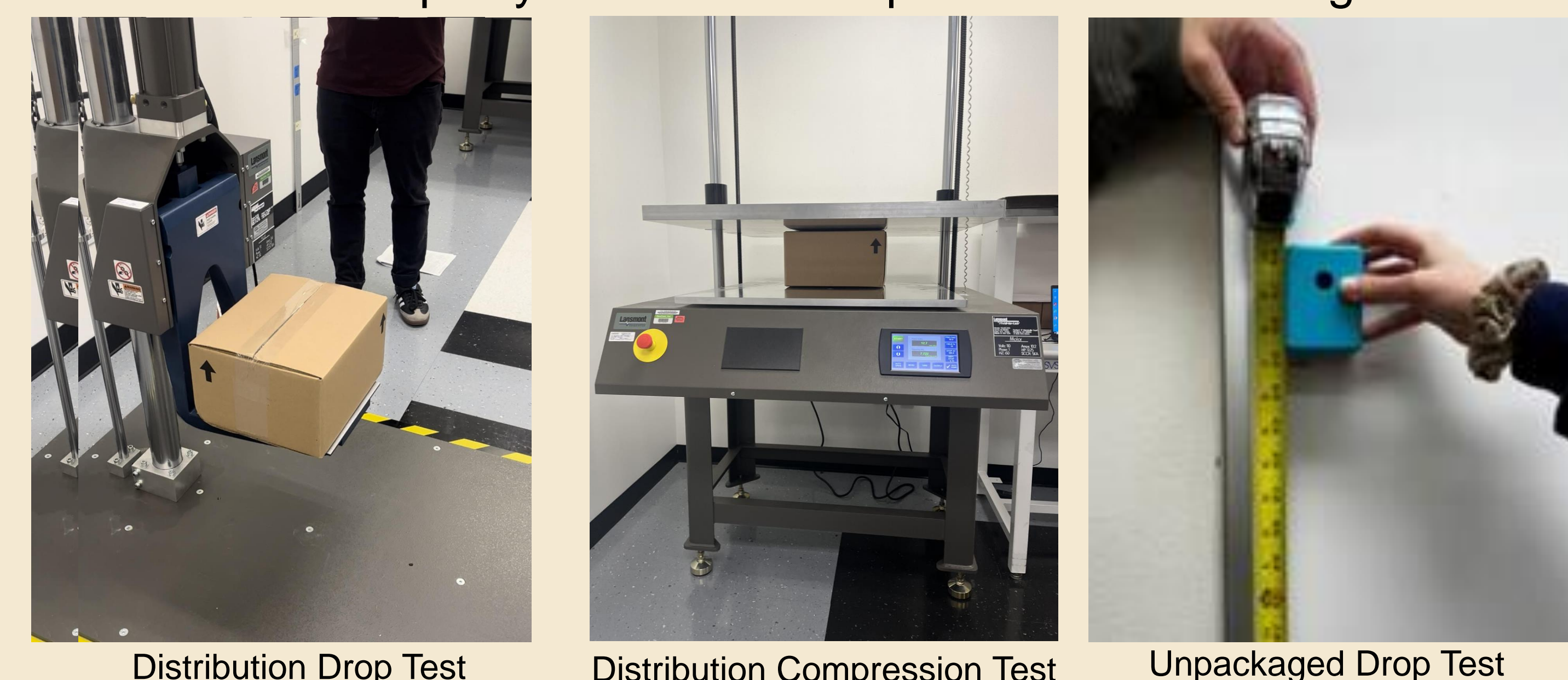


Manufacturing and Assembly



Testing

Distribution Testing: To verify applicator is strong enough to withstand forces experienced during distribution.
Drop Testing: To verify that mechanical attachment mechanism can sustain drops by the user from up to 55 inches in height.



Acknowledgements

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