

# PNEUMATIC FILL-TUBE CRIMPER REDESIGN



From left to right: Zak Hagglund, Evan Rogers, Sam Johnson, Logan Truman



## TEAM 8

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## PROJECT SUMMARY

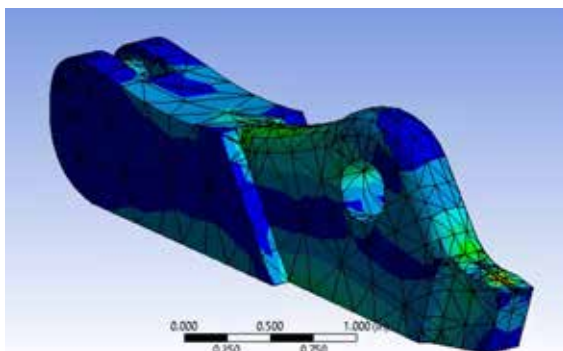
Team 8 was tasked with redesigning a pneumatic crimping tool used in the manufacturing of pressure sensors at Emerson locations. This was a continuation of the crimper redesign project started last year. The crimping device is used to crimp fill tubes that help to insert different fluids into pressure sensors. The device currently used at Emerson is too large and has trouble crimping fill tubes for certain pressure sensors. Our team continued this project by analyzing the design provided by the previous senior design team and implementing the required changes the design requires to be manufacturable, while still being able to follow the requirements set by the customer.

## DESIGN GOAL

To physically validate and make changes to the previous design that ensures at least equal crimping ability as the current Emerson design, while maintaining a reduced size when compared to the current crimper.

## DESIGN CONSTRAINTS

- Crimper shall be able to crimp fill tubes made of two different metals.
- Redesign must have a physical width reduction at the crimping end of the device of 30% to 40% when compared to the current crimper.
- Crimper must utilize an 80-100 psi air supply.
- Must be ergonomic for all operators.
- Shall have a fatigue life of greater than 1,000,000 cycles.



Stress Analysis of Inner Jaw in ANSYS



Manufactured Final Design of Crimper