Ag Bag Repair Kit

Overview
Silage bags are an efficient and economic alternative to silage bunks or elevated silos. In order to keep the ensiled feed material suitable and safe for animal consumption the bag must remain sealed. With many factors that can create holes in the bag, a fast, simple and effective means of repair needs to be developed to seal the holes and ensure the quality of the silage.

Objectives
The core objective is ultimately to develop a reliable repair system for silage bags. The design will focus foremost on ease of use and reliability. Additionally, the design will function to preserve the environment necessary for silage fermentation in order to preclude profit loss for the farmer. This system aims to provide a superior alternative to the current method of taping to repair, without being over-complicated or increasing repair time or cost.

Approach
- Customer needs were gathered by asking individuals who work with silage bags, and from the sponsor
- Additional information was gathered from Penn State Farm Operations and from Visiting Martanna Holsteins
- 2 concepts were generated for testing utilizing the tape as a control
- Tests were performed using a hydraulic press to apply a force to each of the tests samples. Forces were measured via a load cell located on the cylinder rod and recordings were taken when significant damage occurred on the samples.

Outcomes
With the conclusion of testing the aftermarket 4” wide tape proved to provide the best sealing ability than the supplied 2.5” tape. The benefits of the tape over the mechanical seal or adhesive are:
- No change in patching procedure
- Wider tape has more surface area
- No chemical contaminants in the feed that could cause poisoning
- Less parts than the mechanical seal
- Proven two year reliability