Well Master Corporation Global Project

Overview
A natural gas well lubricator’s role is to smooth the flow of liquid within the natural gas well during operation. The 135 lb, metal structure is about 4 feet in length, is manufactured outside of Shanghai, China, and shipped to the U.S. The main focus of this project was to create documentation of the whole manufacturing and testing processes and improve the quality of final products received from China from lubricator to packaging.

Objectives
- Create manufacturing process standards for the facility where the lubricators are produced.
- Bring the manufacturing production line closer to API 6A standards.
- Design more effective packaging to be used for shipment of the lubricators.
- Find ways to decrease the time used to test the lubricators for Quality Assurance and Control.

Approach
- Held conference between Well Master and team members from Shanghai Jiao Tong University to discuss objectives.
- Based on problem statement, the team created a proposal.
- Team broke the project into 3 sections and created numerous concepts.
- Narrowed down concepts after reviewing patents and other restrictions from Well Master.
- Presented concepts to Well Master to receive feedback for which concepts to pursue.
- Team members from Shanghai Jiao Tong University conducted site visits to gather data and feedback from engineers.
- Created SolidWorks models of concept designs.
- Received approval of concepts from Well Master.
- Bought materials and create prototypes of concepts.
- Created documentation of all work conducted throughout the duration of the project.

Outcomes
Well Master Corporation will make major steps towards API 6A Certification with the work completed during the project.
- Product and manufacturing operations instructions in English and Mandarin Chinese
  - Standardizes several manufacturing processes
- Mock up models of testing devices and documented procedures
  - Regulates and increases control
  - Combines two tests into one test
- Redesigned packaging generations
  - Incorporated economic and stability factors