Lubricator Testing Process Improvement – Global Project with SJTU

Overview
WellMaster Corporation would like to improve the testing process of the lubricator in order to ensure that each lubricator made is tested properly. Therefore, this project focuses on the creation of test equipment and a process of test for the in line production inspection testing for a lubricator. Each lubricator is required to undergo pressure testing at 7500 psi that is a very time consuming and labor-intensive process. The company believes that the overall preparation time can be reduced with a process that is quick, easy and robust.

Objectives
- Reduce the pressure testing preparation time for lubricator.
- Make the testing process safe for workers.

Approach
- Brainstorm different possible solutions to decrease the testing time.
- Make a comparison matrix to evaluate possible solutions.
- Skype with sponsor to update progress.
- Work together with the global team in China.
- Use Solidworks to sketch the puller design and run simulation on the puller.
- Perform an extensive material research for the puller.
- Use Solidworks to sketch the O-rings for the puller.
- Run before and after time study to validate that the testing time has reduced.
- Make a cost analysis on the new design for both company locations in China and USA.

Outcomes
Below is the list of outcomes of implementing the puller design in order to lessen the pressure testing time for Well Master:

- If the project resulted in design of a new unique handy tool called puller.
- CAD drawing were provided in order to illustrate the design as shown on the right side.
- AISI 4340 was selected as the material for the design.
- O-ring design was sketched in Solidworks.
- Time study results has shown that the implementation is reducing the total testing time from 61.26 min to 19.26 min, a 66% decrease in total.
- The cost analysis has shown that the profit return will be in less than 3 years both in China and USA.