**Project Name – Welding Fixture for Lee Industries**

**Overview**
Lee Industries manufactures large tanks for multiple applications and one component of these tanks is the bottom “bowl”. Currently there are welding fixtures that welding operators use to weld both the interior and exterior of the bowl. These fixtures cause high levels stress on the operator, excessive non-value adding touch/setup times for the operator, and decreases the amount of flexibility the operator has while welding.

**Objectives**
The team’s objectives are to reduce the non-value adding times of the operation as well as increase operator comfort and ergonomics. This will lead to greater throughput of parts which will lead to greater revenue for the company.

**Approach**
- To begin, the team first visited Lee Industries to observe the current process
- Initial design concepts were then created in SolidWorks in an effort to merge the two fixtures into one
- Multiple time studies were taken on-site to identify non-value added processes when assembling the bowls along with potential room for improvement
- Several iterations of feedback from management and operators led to the formulation of a hybrid final design stemming from initial designs
- A quarter-scale prototype was constructed to serve as a visual aid during presentations
- Finally, a Bill of Materials and Cost-Benefit Analysis were performed to ensure the economic feasibility of the design

**Outcomes**
- Estimated decrease of touch time by 7%
- Using labor costs alone, the payback period is less than 10 months
- Greater throughput
  - This leads to greater revenues
- Better ergonomics for operators
  - Less injuries
  - Less fatigue
- More predictable cycle times
  - This makes it easier to schedule jobs