



One Piece Flow Conversion

Lean Six Sigma Assembly Transformation

Assembly Operation converted to one piece flow assembly lines to improve throughput and efficiency.

Problem Statement

Challenge: Ramping production to meet demand: extremely long training cycle getting employees up to standard

The second issue was that we were 10% higher in cost than a China imported due to our labor. Losing customers to import tables

Current State

- Created a current value stream map from beginning to end to produce a complete table. The final table assembly was broken into natural sections.
- Spaghetti diagram to illustrate how much walking was being done by the operator to retrieve components

Analysis and Improvement

Team brainstormed what could be done to improve efficiencies and throughput and created a future value stream map.

- Simplified the number of bolts and screws from 8 to 3
- Created one piece flow system in place that matched balanced segments
- Implemented automatic screw guns to eliminate handling
- Implemented a supermarket for components behind each workstation
- Implemented a manual roller conveyor system to move the 5 ft. long product
- Implemented 5 S to build efficiency in the workstations – everything had its place. We standardized and sustained these workstations.

Results

- Completed the project in 5 months
- Reduced labor by 70%
- Ability to support spikes in demand
- Reduced lead time for rush jobs from 75 minutes to 12 minutes
- Matched China import table costs.
- Reduced to a few steps verses hundreds
- Reduced excessive motion through workstation layout and screw automation