

STANLEY BLACK & DECKER

Improving Labor Productivity in the Chesterfield Plastics Plant Assembly Department

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Stanley Engineered Fastening (SEF), a division of Stanley Black and Decker, manufactures and supplies fasteners for the North American automotive industry out of its Chesterfield, MI plant. The assembly department in Chesterfield has grown by 100% in terms of capacity over the last 2 years. Considering the fact that more than 80% of the activities are manual, SEF management tasked the Tauber team with increasing labor productivity by 20-30% (approximately \$400K savings per year) through a combination of immediate improvement projects, smart factory systems, and strategic long-term projects.

After value stream mapping the assembly department and interviewing various stakeholders, the team identified several projects which included both immediate and long-term improvement opportunities. First, to reduce non-value-added activities, the team implemented a bell notification system. Second, to alleviate ergonomic issues and eliminate scrap for a part family, the team redesigned and implemented an assembly press. Third, to replenish material efficiently, the team suggested implementing Kanban system by utilizing a water spider.

Fourth, to improve labor productivity, the team recommended several Smart Factory systems. These systems consisted of suggesting three automation projects to liberate labor for additional jobs, an automatic box filling system to make the material flow more efficient, and a vertical carousel storage system to reduce inventory locations. Fifth, to accommodate the Smart Factory systems, the team modified the existing assembly department layout. Sixth, to support more customer orders and increase available space for potential automation projects, the team created a future department layout in a new location. Finally, to increase in-house production capacity of strategic parts, the team developed an outsourcing strategy by subcontracting trivial parts.

The recommendations suggested are estimated to save the Chesterfield plant \$781K in actual savings per year. If potential savings from space gained are considered, the estimated total savings will be \$1.56 million per year, almost four times the target. In addition to labor savings and increased efficiency, these projects will promote the Chesterfield facility as one of Stanley's "lighthouse plants"—a model location for pilot concepts that may be rolled out company-wide..