



Case Study: Highly Engineered Capital Equipment

Client: Water Purification Equipment Manufacturer

An OEM of highly engineered water purification equipment had been losing market share due to long lead-times and pricing pressures. To regain market dominance they embarked on a lean transformation to focus on world-class lead-times, value-engineered products, and innovation.

The strategy for lean transformation at this company included:

- Creating flow from raw material through shipping
- Value-Engineering the existing product offerings
- Developing standardized, modular, and custom product design platforms
- Redesigning the quoting and engineering processes to provide more value to the customer in a significantly reduced lead-time
- Developing the internal leadership team to effectively lead in a lean environment

The initial flow created reduced manufacturing lead-time by creating manufacturing cells and a defined flow for this large capital equipment. Productivity gains were made by implementing 5S and standard work in the fabrication/welding/assembly cells in addition to utilizing SMED for the machining operations. Year 1 improvements netted a manufacturing lead-time reduction from 20 weeks to 12 weeks and a 27% labor savings per unit.

The value engineering activities included design, component and material changes that maintained the same high-quality end-product the company is known for, while reducing equipment cost by 32%. Manufacturability was improved significantly which contributed to greater gains in manufacturing.

The redesign of the quoting and engineering processes, along with the development of standard, modular and custom product design platforms created the ability to respond to requests for proposals much quicker. In addition, the improved quoting process provided more value-added options for the customer, while providing an ongoing revenue stream for our client. The improved engineering process flow, along with the new product design platforms reduced the lead-time to release an order to manufacturing from 18 weeks, down to 1 day for standard and modular products and 4 weeks for custom engineered solutions.

In total, lead-time was reduced from 38 weeks to 12-16 weeks in the first year. The improvements created significant additional capacity in quoting, engineering and manufacturing to support the sales growth, as well as to devote time to spending more time on product and service innovations.