



## Lean Manufacturing: A Success Story

Orchestrating Process Improvement in an Automotive Component Factory



TriVista



TriVista was able to reduce the cumulative annual mileage of all parts within the facility by more than 28 percent, or 150,000 miles per year.

Company Confidential is a privately held \$100 million manufacturer of specialty advanced technology heat exchange devices for the automotive, truck, and mobile equipment market. Company Confidential serves both commercial and military markets, with market segments ranging from general passenger vehicles, light duty trucks, heavy equipment, personnel transport, and specialty earth moving vehicles.

Expertise in cooling technology has kept Company Confidential at the forefront of the industry for nearly five decades. Pioneering projects in high-performance cooling applications resulted in the placement of their engine oil cooler on platforms including those at many leading North American automotive assemblers.

Today, Company Confidential has three manufacturing and distribution facilities in North America and is supported internationally with three joint ventures in China.

### The Business Challenge:

Over the last 20 years this company has been no stranger to change.

Much like the high performance vehicles and utility transportation truck markets they serve, action and speed are deeply rooted in their culture. However, working hard and fast does not mean you have reached optimal levels of performance. Despite extensive training in Lean Manufacturing Best Practices, their business was still struggling to overcome challenges presented by excess WIP inventory and an efficient but not fully optimized plant layout.

Executive Management recognized that in order to reach optimal performance, they needed to change their approach when developing improvement concepts to product flow and plant layout. Management also recognized that while they had some skill sets in house to develop small assembly cells and manufacturing work centers, they

needed assistance to help look at the big picture and gain outside experience and expertise to ensure that their improvement approach was holistic and sustainable.

### How TriVista helped

TriVista was engaged to lead a project, and collaborate with company management to deliver the following results:

- Optimization and flow of layout
- Increased efficiency (Reduced actual time against standard)
- Reduction of overall cycle time
- W.I.P. reduction
- Reduction of Movement
- Reduction of Handling
- Reduction of Overtime
- Visual Metrics
- 5S Visual Management

In order to achieve the desired results, TriVista was contracted to develop and implement a new layout and flow based on lean manufacturing principles. Utilizing Lean tools like



Value Stream Mapping, Spaghetti Diagrams, D.M.A.I.C. principles, Work Flow Planning and Line Balancing, our team of Lean Champions worked alongside management to design and implement the necessary changes to the factory floor. In order to make sure the improvements “stuck” our team designed a comprehensive metrics tracking system that provides real-time updates to management that alert them the moment a process breakdown occurs.

### Our Collaborative Impact

In addition to the original objective to layout the factory for improved flow and handling between cells, TriVista discovered that there was significant opportunity to improve not only the movement of material between manufacturing cells, but also significant opportunity within the manufacturing cells themselves. It was inside these cells that we found excess inventory, poorly utilized labor, lack of relevant operational metrics, unclear work documentation and flow.

Applying the same tools that we used at the macro level, we designed a new manufacturing cell with a one piece flow layout, defined work standards, orchestrated work flow, and relevant operational metrics to provide learning feedback and status reporting for the cell employees and managing associates. This detail work provided additional savings and improvements beyond the overall factory flow.

Upon completion of the 10 week project, our recorded savings included:

- **Travel Reduction between Cells:** 147,741.50 Miles Annually
- **Work In Process Inventory:** Reduced by 60%
- **Finished Goods Inventory:** Reduced by 40%
- **Overtime:** Saturday overtime was eliminated

With the implementation of one piece flow and orchestrated work

within the manufacturing cells, several other benefits were realized. Company Confidential now understands the true bottleneck in each of the four manufacturing cells. This has provided a clear priority for their manufacturing engineers as well as targets for effective utilization of capital expenditures that will yield real results.

A new level of teamwork and unification has been developed within their operations management team, and an environment that respects and values everyone’s input exists. Decisions are now based on collective discussion, and results are proven by relevant metrics.

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