No Speed Limit

Dorner Manufacturing improves process speeds through the use of Kanban and Lean manufacturing.

Dorner's new series of conveyers, the 5200, was recently displayed at National Manufacturing Week. The company is able to guarantee 5-day delivery on this product, mostly due to process changes that have increased efficiency within its facility.

For Dorner Manufacturing, the recently unveiling of its 5200 product series was not the company's first taste of innovation. Before moving into a new facility in 2000 to meet with growing production demands, the folks at Dorner made the decision that traditional batch manufacturing methodology was not going to take them where they wanted to be in the new millennium. This Hartland, WI-based conveyers, applications, and services company had basically tripled in size over the decade of the 1990's and company leadership decided it was time to improve on its processes.

Director of Manufacturing for Dorner, Randy Meis, explains the thought: "At that time we set out to find out what else was out there." Much deliberation was involved in this, including tours of other company's facilities who had excelled in process improvement. "We looked at things such as quick-response manufacturing,

demand-pull technology, and cellular manufacturing," he says. "We decided to go with the cellular manufacturing approach."

This conveyer manufacturing company was able to reduce the amount of inventory in its facility by using visual management tools like Kanban card systems. WIP is down to less than half a percent of total throughput.

Plug And Play

The company began a comprehensive approach to production where, the work cells became fully mobile across the manufacturing floor, and the employees themselves were trained to be able to optimize this mobility. "It's almost plug-and-play," Meis says of the 100,000 square foot facility floor. "Come back in two months and this will look completely different." Cross-training was also an important component to adding flexibility and increasing production in Dorner's build-to-order (BTO) approach to manufacturing. Assembly cells were also transformed to incorporate fabricating, to speed up the entire manufacturing process.

The creating of manufacturing cells, and the manner at which it goes about building conveyers in a BTO process means Dorner is able to better manage inventory and become more efficient at the same time.

"Even though we've got less inventory, we've been able to speed up our delivery rates for conveyers, in most cases, to just a few days from the time the order is received," Meis says. "Overall, our BTO process allows our employees to become more efficient in their jobs."

All Colors

Another focus in Dorner's transformation was in the utilization of visual management tools. "It was important to get signals in place so when 'this' action occurs, what's the next action in the sequence? People respond to these visual signals exactly the same. Basically we use the visual cues in place of an MRP system, so all of this color-coding has allowed us to move the decision-making to where it rightfully belongs, and that is in the workforce," Meis explains. "It's not about making the decisions and then telling them to execute it; it's giving them the information and letting them make the decisions on a timely basis."

The company has supplemented this visual process with the use of visual work

instruction.

An ISO-compliant company, Dorner displays digital photography with color-coded instructions in all its cells as a kind of checklist for its employees to follow. According to Meis, this step has greatly increased order accuracy of conveyers. Another visual tool that has been hugely successful for Dorner has been the use of Kanban. "We started with a four-bin system because we had so much inventory here in this building," Meis admits. But once the system really took, the gains of the process were quickly evident. "We had four cards, and once people saw some credibility in the system, we immediately pulled out one of the cards." After, the production team was able to pull another card, meaning 50 percent of its inventory was eliminated in a relatively short period of time. "We took half the inventory out, and we've been functioning at that level, even though shipments have rapidly increased. WIP is less than half a percent of the total throughput," Meis says. "I monitor that number because I equate that to the velocity at which we're moving the product and material through our cells."

Tangible Rewards

Other numbers that Meis has been monitoring related to the flow of product through this facility are equally impressive. Since the changes, throughput time on orders has been cut by nearly 90 percent. This faster throughput, according to Meis, makes for a circular loop of speedy production: "It's now less inventory sitting on the shelf collecting dust," he says. "Materials are now closer to the point of production." Another tangible benefit that Dorner has seen over the past several years is in its lead-times, despite the fact that the company is now fully immersed in a BTO strategy. "Product lead times have been cut by a minimum of 50 percent, and some as great as 75 percent," he says. "Engineering is the real hero here. We went through and re-designed all of our products with the build-to-order processing in mind. It's that re-engineering that allowed us to set up processes where we can now flow product through, fabricate on-demand-so you get those types of ben

It's truly an engineering-manufacturing joint venture. I think in many companies, the onus is on the manufacturing floor, but you can only take it so far unless you get that joint venture at work. I believe that is key, and a lot of companies miss that part of the puzzle."

Dorner Manufacturing is a family-owned company dating back to 1973.

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