CIRAS improvements lead to profits, plant success

Plant manager Joe Meier turned to CIRAS when Geater Machining and Manufacturing Company sought to create a new layout for its machining department. After all, Geater, located in Independence, Iowa, had worked with CIRAS in the past on other layout projects.

Machining is a key operation for Geater, which also performs finishing, sheet metal fabrication, assembly, and secondary operations for aerospace, electronics, and other high-tech companies across the country. Geater wanted to better utilize the space in its machining department to improve lead-time, reduce late shipments, and amplify productivity and production. The ultimate goal was to complete more jobs each month by reducing foot travel within the plant and decreasing material handling time.

CIRAS project manager Mike Willett worked with Meier and a great team of employees to jump-start the improvement by applying the process-of-on-going-improvement (POOGI). This improvement process is often used to maximize the amount of throughput generated by a system. The first step of POOGI is to identify the system constraint. The team determined that what limited the amount of throughput in the process was directly tied to the amount of time each day that the machine tool was cutting chips on a part. If they could increase this time they could increase throughput.

POOGI’s second step is to exploit the system constraint. In Geater’s environment that meant to do everything that they could to keep the machines producing chips. So the team performed an initial analysis to determine the reasons why and for how long machines were not producing chips. This generated a prioritized list of areas needing improvement, including, but in no particular order,

- lost time for lunches and breaks
- lost time taking the parts to quality control and waiting for inspection
- lost time trying to find tooling and programs
- lost time handling materials in and out of the machines
- lost time due to maintenance issues

The team then assisted in developing a policy to stagger lunches and breaks. They determined that the machine operators could save time by inspecting the parts themselves with equipment located directly at the machine. So they developed an equipment list of needed tools and storage facilities for these and modified the plant layout to accommodate them.

The third step of POOGI is to subordinate all non-constraint areas to the pace of the constraint. So they worked on system changes that had material handling, engineering, purchasing, and maintenance all working together to ensure the machine operators rarely had to stop making chips to deal with problems.

Willett worked with the team to identify and prioritize the tasks required to follow this process, while helping people work as a team to execute the changes. Geater management estimated that expanding the productivity of the machining department would lead to a five-percent increase in gross profit, resulting from a rise of $100,000 in departmental sales throughput and a reduction in inventory and operating expenses of $88,000.

Geater also sent management representatives to CIRAS’ one-day workshop called “What Is the Goal?” This workshop has been conducted 35 times for over 100 Iowa companies to teach the theory of constraints (TOC). At the workshop, Geater representatives learned how to challenge their ways of thinking when making decisions that drive the company.

TOC has been one method used by Geater to decrease and eliminate waste and generate additional throughput. CIRAS combines teaching and implementing TOC techniques in the workshop and in on-site projects by providing the tools companies need to design custom solutions. “Companies that recognize the value of this service are the ones that seek us out,” Willett says.

“Because our service is tied directly to client impact and we work with so many companies with similar problems, we can spot common pitfalls,” Willett says. “Sometimes clients may not have considered these, so we can help them work through them to create a better solution.”

CIRAS not only gave Geater the guidance to succeed in achieving their goal but also helped them apply the changes. The new layout plan for the manufacturing department was incorporated, and the necessary alterations were made. Geater saw immediate advancements in production and productivity after the renovation took place. To determine the success of the machining department remodeling project, Geater performed monthly measurements to calculate outputs in addition to conducting readings on individual machine efficiencies to analyze the changes that were made.

“We hoped we would see changes, and it was nice to think that we could expand our capacity so much,” Meier says.

After creating a new layout for the machining department and boosting throughput—with an investment of $200,000 in plant equipment—Geater’s sales rose by $1.5 million and they saw a cost savings of $300,000. The capacity of the plant expanded by more than 10 percent. Since the implementation, Geater has been able to take on extra work with the increase in space and productivity.

“We had serious layout problems,” Meier says. “Different suggestions from CIRAS along the way really helped raise production and productivity in the plant.”

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