

“ For the things we do, CimatronE is faster and more accurate than any other software. It has opened up new avenues for us to completely change the way we build tools.

Todd DeMint – Senior Tool Designer

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Industry Die making for the automotive industry

Location Vicksburg, Michigan, USA

Founded in 1969 as Triple S Plastics, the company got its current name when it was acquired in 2001 by EIMO Corporation, based in Finland. From its humble beginning, the company has grown to become part of a global manufacturing operation. At the same time, it has been able to maintain its independence as a local operating unit, with two production facilities and an advanced tooling and technology center, all located in Vicksburg, Michigan, and with the culture and characteristics marked by a continuous drive towards excellence.

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The Challenges

Delivering a diverse range of high quality products at lower cost and shorter turnaround times

The Solutions

EIMO Americas has been utilizing lean manufacturing practices to streamline processes from quoting to delivery, standardizing on the CimatronE software to support these processes throughout its tooling operations.

The Results

EIMO has been able to completely overhaul the way it builds tools, with speed and cost-effectiveness that have been recognized by customers both in the United States and overseas. Today, the company is part of a global manufacturing corporation, operating as an independent unit with two production facilities and an advanced tooling and technology center.

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Challenge: Adopting processes and culture to meet competitive pressures

Rob Stewart has been with the company since 1982, starting his career trimming plastic parts in the production molding facility before becoming a moldmaker and eventually assuming the responsibility for business development at the Tooling Technology Centre. In his 25 years with the company, Stewart has witnessed numerous changes, including a sea of change in the industry in which it operates: "The typical lead time for building a tool was 13 weeks, and as long as business was good, it was pretty much business as usual."

Things are different today, and EIMO's culture has changed accordingly. The transformation, however, did not go without a challenge. "We were challenged by people who were afraid or not willing to change," says Stewart, "but now we have a good group of people that understand we need to move forward and continuously improve."

Solution: Lean manufacturing

One of EIMO's recipes for success is continuous improvement. Four years ago, in an effort to run its shops more efficiently, the company embarked on a lean manufacturing initiative. "Management asked our employees who they thought would be good candidates for learning how to use lean practices to run our shop more efficiently," recalls Todd DeMint, EIMO's Senior Tool Designer. DeMint and Stewart were joined by Bill Currier, a lead tool maker, to attend Lean training for about a month, three days a week.

"Part of the initial effort was to figure out the process we had in the shop," explains DeMint. "Using the training we were then able to walk around the shop and calculate and optimize changes within the shop in order to eliminate waste, such as taking a machine and moving it closer to that other machine so that we're wasting less time traveling between these two machines 23 times a day."

"Over time" adds DeMint, "the lean effort has been extended from the shop floor to entire organization, including the front office and the design department. We now have a process of about 15 steps from purchasing and receiving all the way to assembly, including all the milling and drilling, EDM, CNC, and the rest of the processes in-between. We have a really good picture of the process that everything follows within the organization and we have daily meetings to keep us on track of what we need to do."

As Stewart describes, it all starts even before EIMO gets the job. "The person performing tooling quotations at EIMO is an experienced designer of twenty years. He has the ability to work with any software our customers use. When we receive an RFQ, we evaluate the data and look for anything that will cause problems with the tool manufacturing or could lead to cosmetic problems with the part, so we can provide immediate feedback to the customer."

"When I first joined the company, we implemented the first CAD system, which enabled us to manage all the engineering changes we were going through," recalls DeMint. Much has changed since then. "With the CimatronE platform," says DeMint, "we are able to do more work with half the number of designers. We have become far more efficient in the use of solids and we have cross-trained a number of people between CAD and the CAM side of the software so we can pull people from design to manufacturing and vice versa according to the work that needs to get done."

Eliminating paper output is a big part of the Lean effort. According to Stewart, almost all the workers on the shop floor are now proficient in the use of the CimatronE software. "When we started out, they were able to function within the software to the point where they could create their own prints. Now the moldmakers are versatile enough with the software so that they do dimensioning, detailing, check for interferences, and get a complete understanding of what a tool looks like in a 3D environment as opposed to looking at 2D prints, which is a waste of time and possibly error-prone."

As DeMint explains, similar advantages are now realized in the milling and drilling processes: "They are actually working from a 3D model – as opposed to working from print where you don't have all the information and can easily miss something – and utilizing the software so they can take steel plates and components, create machine paths, and manufacture these without ever actually creating any prints."

Another place where EIMO has been able to become more efficient is the EDM process. "Once we started using CimatronE's Quick Electrode, we have completely re-thought the way we are doing electrodes. We are utilizing more solid functions, which cut time in our design process, and the time it takes us to do electrodes is far quicker than what it used to be."

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The next step was to eliminate the manual input of electrode information into the EDM machine. "Positioning an electrode at the wrong location could easily cost you \$5,000. We are now using the CimatronE EDM Setup software so that we don't have to create burn sheets and rely on manual input to get the information out to the EDM machine. Our EDM department is now utilizing the system to pull dimensions from the CAD database and download them directly to the machine. We are able to keep the machines burning more often because we are not having to hand-program things. We also have fewer errors because we are able to verify and check the numbers instead of actually program them into the machine," says DeMint.

Finally, the CimatronE software is now used in the assembly department to check components, verify how parts are assembled, and do part detailing.

"For the things we do, CimatronE is faster and more accurate than any other software," says DeMint. "The CimatronE platform has given us new options to do things differently and more effectively."

Results: A new way to build tools

Through lean manufacturing practices, continuous improvement, and the use of the CimatronE software, EIMO is able to continually eliminate waste and tighten processes throughout the entire cycle from quoting to delivery.

"As we started utilizing Cimatron to work more in solids, we have been able to develop a rich library of standard catalogue components, as well as assemblies of lifters and standard mold bases," explains DeMint. "By now we have pretty much built all the standard components we need, so it is relatively quick for us to get tool designs done at a rapid pace and still be done right with the quality that we need."

Using CimatronE, EIMO's moldmakers have a better understanding of the process and can anticipate things they might not have been able to before. As a result, they have become more proactive and ready to take the lead even before the design is finished. "Our moldmakers are now able to bring up the database," says DeMint, "and review the complete tool design for things that might come up from a manufacturing standpoint that the designer might not completely understand. The designers are getting a lot more feedback from the moldmakers early on in the process because they are able to see the designs even before it is completely done."

"There was skepticism when we said all the moldmakers were going to learn the software," recalls DeMint. "It didn't happen overnight, but now these guys have become more marketable within our own organization because they got comfortable with the platform. They want to learn about other areas to be able to become more efficient at their jobs."

"We have completely changed the way we build tools from just a few years ago," concludes DeMint, "which has helped us reduce our lead times and improve our quality."

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