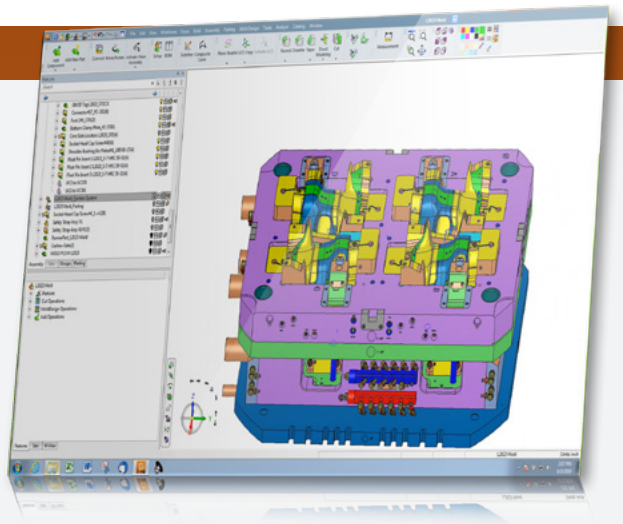
CIMATRON

CUSTOMER BRIEF | LIBERTY MOLDS, INC

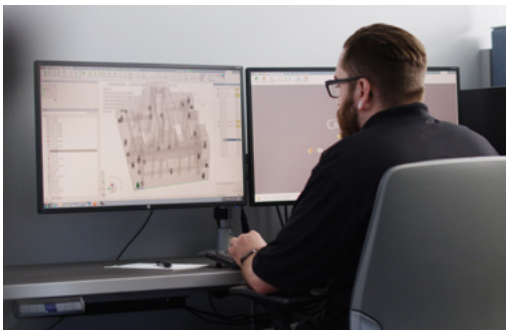


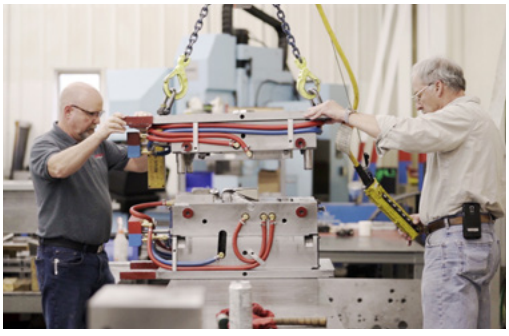
Liberty Molds Eliminates Errors and Reduces Design Time by 50% with Cimatron Software

Injection mold-making tool shop uses integrated CAD/CAM software to design and manufacture complex, high-tolerance, custom prototype and production tooling.

"In this business, time is money. Something that used to take us 16 weeks to build, we can now build in 10–12 weeks using Cimatron."

— **Pat Stevens**, Engineering Manager, Liberty Molds, Inc.





Challenge

- Deliver custom, high-quality molds with fast, on-schedule delivery times.
- Design and manufacture complex molds.
- Become more efficient with mold design; reduce translation errors/mistakes.

Solution

- 3D Systems Cimatron® integrated CAD/CAM software for mold design and manufacturing

Results

- Replaced three software solutions with a single, integrated CAD/CAM system.
- Eliminated translation errors, resulting in hundreds of hours saved on re-work per error to lower final costs.
- Cut mold design time by 50 percent.
- Prevented slowdowns and avoided additional cost by using simulation tools to identify and correct problems before designs are sent to the shop floor.
- Reduced the tool build time from 16 weeks to 10–12 weeks.
- Accelerated onboarding time for new employees.
- EDM package will pay for itself in a year or less.

CAMBRIO

www.cimatron.com | Email: info@cimatron.com

High-precision mold inserts designed and manufactured with Cimatron

Optimized Mold-Making Process

Using the dedicated, automation features of Cimatron for mold design, electrode design, and NC programming, HARTING optimized the entire mold-making process, which led to improved tool quality, reduced scrap, and accelerated delivery times.

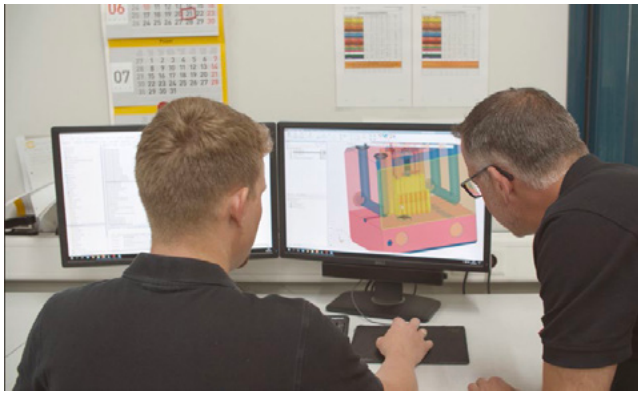
Andreas Weiß, production manager at HARTING Applied Technologies, praises working with Cimatron: “Rolling out Cimatron quickly enabled us to resolve the substantial EDM problems that we had been combating for 12 years.”

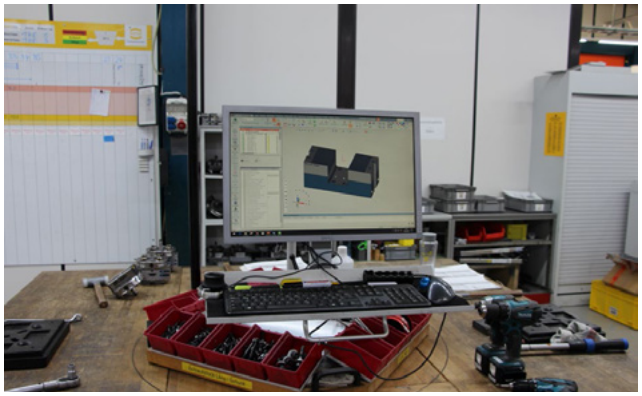
“With the implementation of Cimatron, we achieved data and process integration in the entire mold-making process, which is a key advantage for us.”

— Andreas Weiß,
Production Manager,
HARTING Applied Technologies

Accelerating Lead Times

“The switch to the Cimatron QuickElectrode add-on was a major improvement from the system we used previously,” recalls Weiß. “It offers several advantages such as working smoothly and reliably with the data and including all position data in the drawings.”





Harting employees at work with Cimatron

In addition, because they are now using one system to design and manufacture electrodes, they can maintain parallel workflows by starting the programming sooner, before the design is complete, which helps accelerate lead times.

"This is where we achieved the first data continuity. Electrodes designed in Cimatron were available, the CAM software was ready to use, and the electrode milling process was already end-to-end. In addition, all the information in the electrode data could be used directly."

Reducing Manual Work and Errors

Now that everyone at HARTING is using Cimatron, the production of aluminum and zinc die-casting molds starts with design. And, unlike other CAD/CAM software solutions, Cimatron is parameter-driven, which provides designers enhanced flexibility to modify and scale models.

HARTING designers color in all surfaces in the Cimatron mold design (CAD) module to clearly distinguish contact surfaces, free surfaces, and mold contours. This is useful because they are able to reduce and eliminate errors.

"Thanks to data integration and a color-coded tolerance system based on surface coloring that we developed in house, we can now integrate all the necessary information for part production—tolerances and production processes—in the data," explains Weiß.

This process, as well as using Cimatron view-only licenses on the shop floor for finishing processes like grinding and final assembly, eliminates the need for most paper printouts and provides access to much more information than would be available on a printout, making production virtually paperless and reducing manual work.

In addition, users can export and use data for the EDM program from QuickElectrode with Cimatron EDM setup. This enables a higher level of automation including eliminating the need for multiple data entry, which also significantly reduces effort and the number of errors.

Improving NC Programming and Tool Quality

With the Cimatron NC Programming (CAM) module, HARTING is now able to program any CNC or EDM machine.

A clear benefit of switching to Cimatron is the ability to simulate collision for 5-axis machining processes, which was not possible with previous solutions.

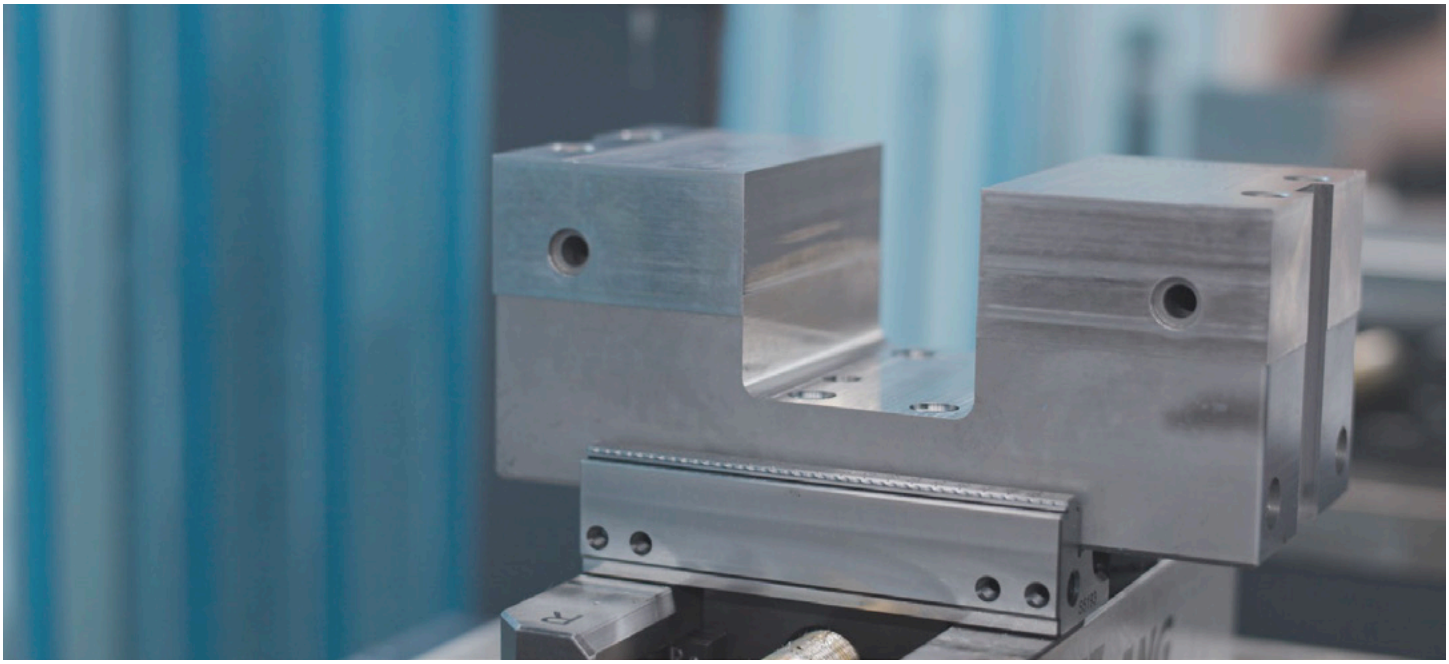
Another advantage is that reliable machining prolongs the life of the cutting tools.

Phased Implementation and Outstanding Training

To avoid productivity loss, HARTING implemented Cimatron in phases: first the Cimatron NC solution for programming milling machines (CAM), followed by the QuickElectrode add-on, and then the Cimatron mold design solution (CAD).

HARTING employees participated in the comprehensive Cimatron training offered to get up to speed quickly and ensure a smooth implementation. Thanks to this training as well as follow-up training courses, the switch was easy, says Weiß: "We received individual training precisely tailored to the needs of HARTING Advanced Technologies."

Training how to use Cimatron



Tool insert designed and manufactured with Cimatron

Industry Excellence

HARTING won a category award in the Excellence in Production Tool and Die Making competition in 2014, 2016, and 2018. The 2018 jury praised their high level of automation in essential machining processes such as milling, die-sinking EDM, and wire-cut EDM—which was largely made possible by their deployment of Cimatron.

Weiß thinks Cimatron is the best CAD/CAM solution for the entire mold-making process at HARTING Applied Technologies and can't imagine switching to any other CAD/CAM software.

"Competitive products would first have to achieve the data integration of Cimatron."

— Andreas Weiß,
Production Manager,
HARTING Applied Technologies