

HARTING Improves Tool Quality, Reduces Scrap, and Delivers Molds Faster with Cimatron

German toolmaker relies on integrated CAD/CAM software from Cimatron to design and manufacture high-precision molds.

HARTING Applied Technologies, an independent member of the HARTING Technology Group with headquarters in Espelkamp, Germany, is a specialist in sophisticated toolmaking. Its 49 employees develop, design, and manufacture injection molds, aluminum and zinc die-casting molds, stamping and bending dies, and special machines. All of its customers are members of the HARTING Group, which means the company works solely for internal customers.

HARTING employees use Cimatron to design and manufacture high-precision, single- and multi-component molds. Cimatron enables them to achieve higher data integration in the overall production process.

Before switching to Cimatron, HARTING used other software solutions that lacked data integration. A lack of data integration between software systems generally leads to production scrap because of data transfer errors between individual production steps. At HARTING, this led to a variety of problems that negatively impacted production reliability and lead times, which are key financial factors for a company operating as a profit center within a corporate group that must meet high quality and delivery requirements.

CHALLENGE

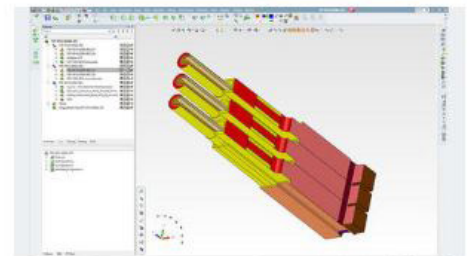
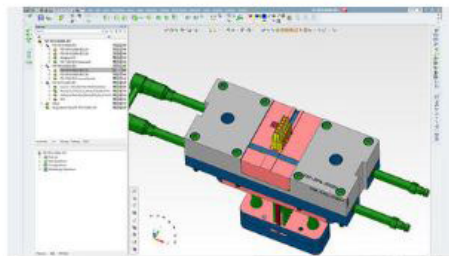
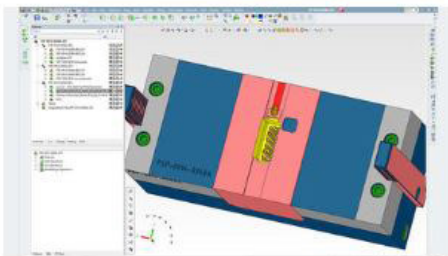
Improving production quality and efficiency by enhancing data integration through the entire mold-making process

SOLUTION

Cimatron integrated CAD/CAM software for mold design and manufacturing

RESULTS

- Decreased lead times and accelerated delivery times.
- Eliminated data transfer errors and reduced scrap.
- Improved tool quality.



Fixed side of a mold, movable side of a mold, and close-up of the mold insert in Cimatron



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.

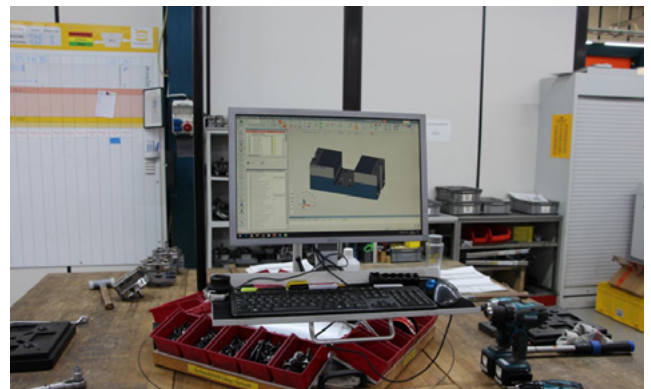
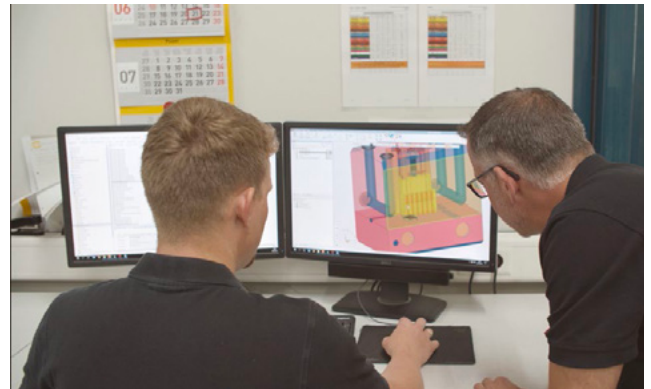
Andreas Weiß, production manager at HARTING Applied Technologies, praises working with Cimatron: "Rolling out Cimatron quickly enabled us to resolve the substantial EDM problems that we had been combating for 12 years."

"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.

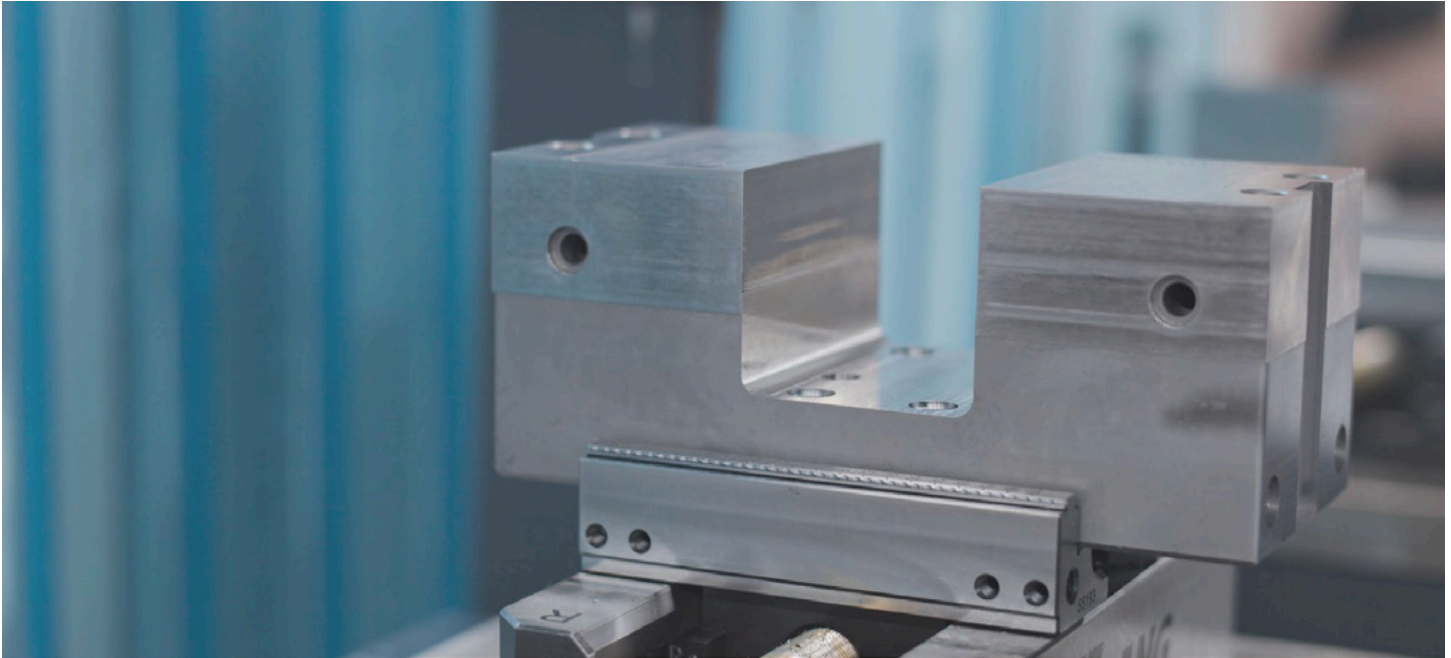
Phased Implementation and Outstanding Training

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



www.cimatron.com | Tel: +1 877.596.9700 | Email: info@imatron.com