STAMPACK

FORMING SIMULATION

Case Study
KRAMSKI GmbH

- Simulation reduces expensive workshop trials -

KRAMSKI in Pforzheim, Germany - Global solution provider for sophisticated stamping and injection molding technology.
(All Pictures: © KRAMSKI GmbH/ Stampack GmbH)

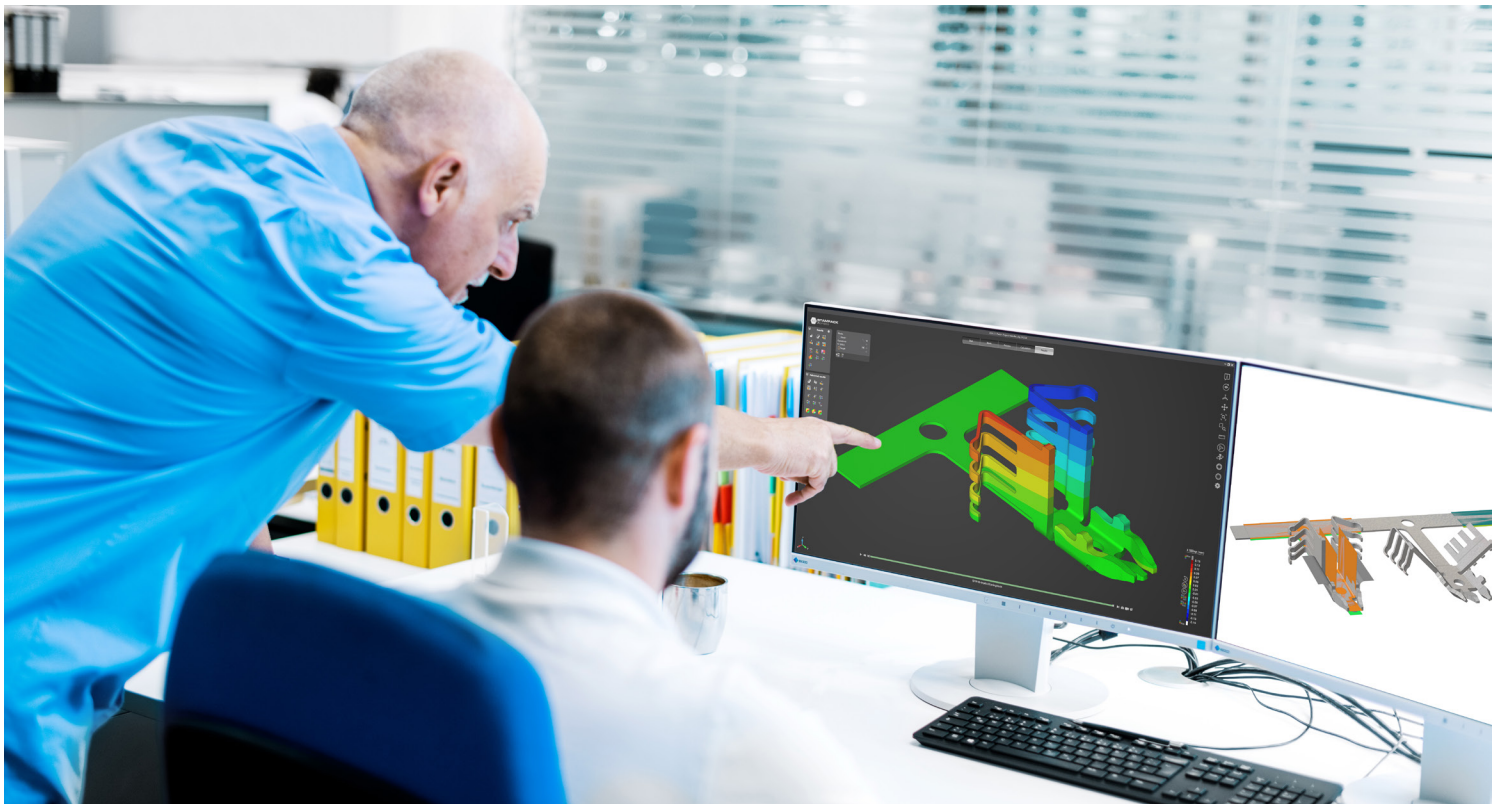
When designing high precision stamping and forming tools, the challenge is to push the limits of what is possible while increasing production efficiency. Forming metallic materials into the desired shape by drawing, bending or stamping - these processes are complex and subject to many influencing factors that require precise planning and design of the tools. Simulation software plays an important role here, reducing the need for costly preliminary testing to confirm feasibility at an early stage. Alternative test runs are not only time consuming and costly, but can also significantly delay the product development process. In particular, complex processes can be simulated and analysed virtually in advance. This allows adjustments to be made before physical molded parts have to be produced.

At the Stanztec trade fair, the Stampack forming simulation system caught the attention of KRAMSKI GmbH of Pforzheim, Germany. The global supplier of technologically sophisticated stamping and injection molding technology decided to carry out a free test phase. The result was that Stampack was very well suited to the company's requirements. Two members of the design department worked intensively with the software, using it to simulate typical bending, drawing, and molding processes. In particular, the ability to simulate volumes and shells proved decisive for the future use of forming simulation in the company. "Stampack enables precise simulation of the forming processes and a very reliable prediction of the workpiece behavior," explains Martin Gall, head of project planning and design at KRAMSKI. "In addition, the software is easy and intuitive to use."

Staff training was quick and smooth. Ongoing support was particularly appreciated: experts were always available to answer specific questions and develop customised solutions. The test phase showed a significant reduction in the number of correction loops required during mold development, which in turn reduces development times and costs in the long term. The final decision to purchase Stampack was made after the successful test phase in the summer of 2023. The decisive factor was the intuitive use of the system in combination with the expected efficiency gains in terms of time and costs.

Since its official launch in July 2023, the software has become an integral part of the design department's daily work. Stampack is mainly used at KRAMSKI to simulate bending, drawing and stamping processes.

These simulations are central to the design and optimization of stamping tools. Thanks to stamping simulation, designers can carry out a feasibility check at the quotation stage, thus avoiding costly preliminary tests. The ability to make changes and optimizations directly in the simulation environment minimizes the need for recursion loops. The software is also used to calculate springback during bending, allowing accurate prediction of material behavior and significantly reducing the need for subsequent adjustments.



Stampack Xpress calculates the trimming line and displays the springback behaviour in different colours by comparing the actual and target values.

KRAMSKI GmbH

KRAMSKI GmbH, headquartered in Pforzheim, Germany, is a global supplier of technologically sophisticated stamping and injection molding technology. With around 700 employees worldwide at locations in the USA, Germany, India, and Sri Lanka, the company is one of the leading suppliers of precision molds. Originally strongly rooted in the automotive sector, KRAMSKI now also serves industries such as medical technology, telecommunications, energy and environmental technology, and power electronics. The company is known for its high quality standards and the use of state-of-the-art production technologies. Toolmaking is at the heart of the company and plays a key role in the development of high-precision products.

Stampack also plays an important role internationally at Kramski, as the centralized control of the software application via the headquarters in Pforzheim enables efficient coordination of the various locations. In particular, forming simulation plays a key role in reducing time-to-market. This is another reason why the decision to use Stampack is proving to be a valuable investment for KRAMSKI.

The software enables faster and more cost-effective development and optimization of stamping tools, which has a positive effect on the overall cost efficiency of projects. Thanks to the precise simulations, potential ‘problems’ can be identified in the planning phase and avoided by making targeted adjustments. “This saves both time and money”, says Martin Gall. “Even against the backdrop of a shortage of skilled labor, ever-increasing time-to-market demands and international cost pressures, simulation software has become an indispensable part of our everyday lives. The use of Stampack in our design department has proven to be a complete success - even in an international environment.”

A multi-part connector manufactured in a single stage process. Selectively galvanised stamped strips with standard sheet thicknesses of 0.2mm-0.4mm are used.