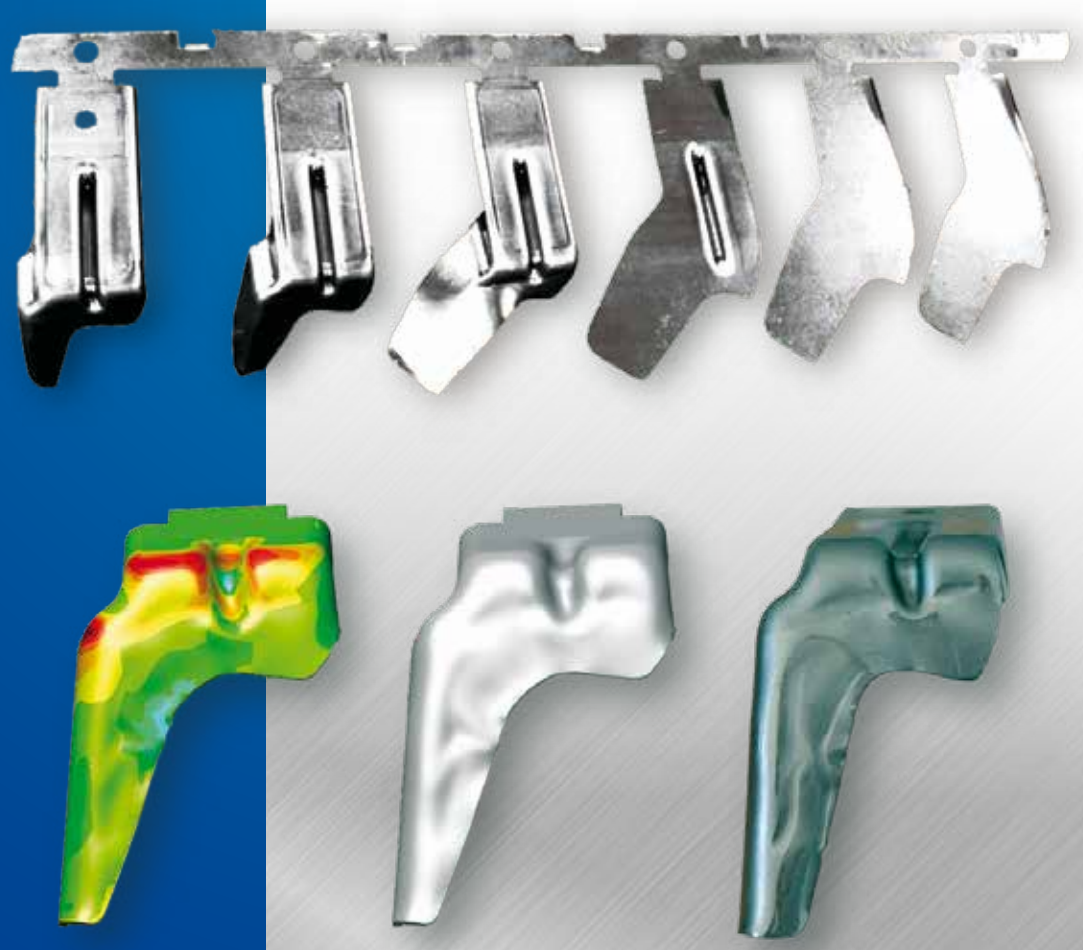
STAMPACK Xpress

User report
Felsner GmbH - InKo GmbH - Makoplan GmbH

- Stampack -
„Forming simulation replaces missing skilled workers“



For design offices that design and construct progressive die tools, the shortage of skilled workers certainly opens up perspectives for their future fields of activity. The shortage of skilled workers also means that a great deal of work is being outsourced by the manufacturers. As a rule, test presses are not available in the design offices - but they can now be completely replaced by simulation solutions.

The method planning of a progressive tool requires expert knowledge, a lot of experience with the planner and until recently also a test press if the method cannot already be verified by simulation. The shortage of skilled workers, which has long been complained of in toolmaking, has for some time been exacerbated by the demographics of the employees. Experienced skilled workers go into wellearned retirement, while their successors are far from even able to fill the gap left behind in terms of numbers. It should also be borne in mind that several decades of experience are lost with each early retiree and pensioner. The ‚successors', however, take a very long time to reach them. The training period of young employees is considerably shortened by the use of simulation, since the results of different forming methods can be displayed much faster than before on the computer without ‚chip generation'. Thus it becomes clear - this bloodletting does not pass without a trace at the tool construction, but can be clearly mitigated.

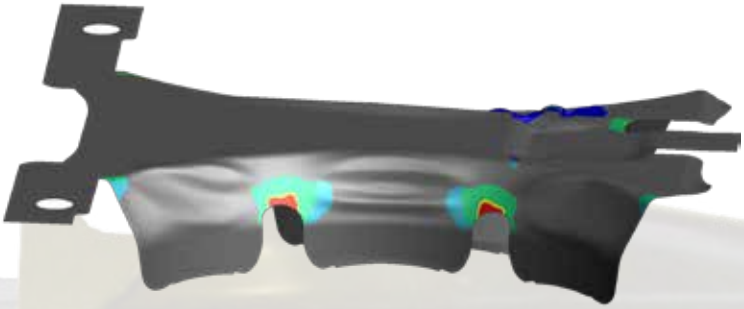
A solution to this problem is provided by experienced design offices such as Makoplan from Jugenheim in the Rheinhessen region. Makoplan, for example, designs complex, tool-integrated transfers with part turning and plate sorters. "Through optimised plate nesting alone, we have saved one customer 65,000 euros in material compared with the next supplier. The process now runs fully automatically via linear axes at 18 strokes per minute," explains Ralf Schneider. The Managing Director of Makoplan adds: "With such solutions, we can always stand out from the competition."

3D volume simulation allows the exact simulation of the forming process: Reality (right) and simulation (middle) are practically indistinguishable.

Ralf Schneider, Managing Director of Makoplan: "Stampack is just the ticket for us: Because if customers find that they have more security, fewer or no try out costs and hardware changes, they will be willing to honour that."
(Image: Makoplan)

Uwe Hallbauer, Managing Director of InKo-Ingenieurbüro für Industriekonstruktion GmbH: "Stampack saves us time and reduces costs."
(Image: InKo)

Gunter Felsner, Managing Director of Felsner Stanztechnik GmbH: "For us, the wide applicability of Stampack comes to the fore. Stampack is ideal for us, particularly when it comes to the combination of price and application areas."
(Image: Felsner)



Forecasting of cracks and folds with Stampack

Heat shield with folds and cracks confirms simulation result

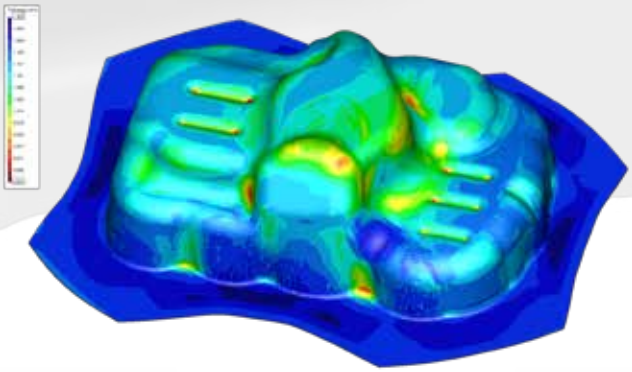
Whether a forming process functions as planned or not often depends on nuances that the designer can hardly foresee. The fact that apparent trivialities play a role in this is also due to the fact that the orders that end up with design offices are not the most straightforward of ordering companies. On the contrary, the forming process often pushes the limits of the strength and ductility of the material.

One of the biggest challenges for the designer is the increasing variety of materials: “In the past, a standard S-420 or S-360 sheet, regardless of whether it was two, four or eight millimetres thick, could be assessed relatively well on the basis of experience,” explains Ralf Schneider. “Nowadays, we get a different material on the table every day. Whether it‘s thin or thick, with or without a data sheet - if you haven‘t gained any practical experience with it yet, it‘s a matter of luck, even for the best designer.” In order to help the lucky ones to make the leap, the Makoplan Managing Director decided to invest in the Stampack simulation solution in 2011.

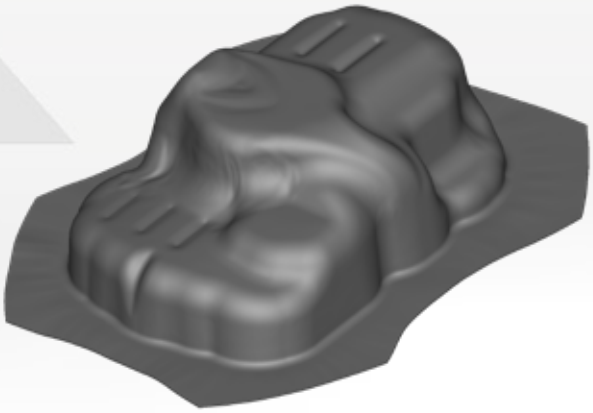
Stampack is an advanced and productive solution for all areas of metal forming. The software offers innovative applications for many demanding industries such as automotive, aerospace, metal packaging as well as household and electronic appliances. Stampack‘s highlights include stretch forming, forming of thickwalled sheets, rapid springback and compensation determination, stretch forming of sheets and profiles and other special forming processes. The practice-oriented software is intended for both product developers and method planners. Previous knowledge and practical experience in FEM is not required. Most simulation processes are simplified and automated in Stampack.

Stampack has been used at InKo-Ingenieurbüro für Industriekonstruktion GmbH Zwickau in Bärenwalde since 2003. With the simulation solution, the Saxons are pursuing the goal of reducing the try out efforts and carrying out the plate determination completely with Stampack. “Before Stampack, we built auxiliary tools for simulating forming processes for critically classified forming processes parallel to method planning,” recalls Uwe Hallbauer, Managing Director of InKo. “We have eliminated these additional expenses from the design process. “So Stampack saves us time and reduces costs.”

The Saxons see the highlights of the simulation solution in the vision pursued with Stampack, the price/performance ratio and the openness of the system with regard to network generation, the material database and the fact that it is a full version for which no additional modules are required for various applications. Keyword application cases: InKo uses Stampack in the course of customer orders - large suppliers as well as medium-sized toolmakers - e.g. for the simulation of thick sheet metal, deep drawing processes and crash forms. Uwe Hallbauer sees a significant advantage of the simulation solution in the fact that, thanks to the material database, the use of Stampack usually only requires spotting work and a maximum of one change loop.



Forecasting of thinning by simulation with Stampack



Forecasting fold formation by simulation with Stampack

Hallbauer‘s fellow Managing Director Gunter Felsner from Felsner Stanztechnik GmbH has trusted the simulation solution for two years and particularly appreciates the following benefit of Stampack: “For us, the wide applicability of the software comes to the fore. Stampack is ideal for us, particularly in the combination of price and application areas.” In Navis, Austria, Stampack is mainly used for large-area components in thin sheet metal - current applications strip widths up to 1000 mm, strip thicknesses from 1.00 mm to 4.00 mm.

“The feedback from the toolmakers about Stampack is generally very good - the forming operations have all worked, even the extremely marginal ones,” stresses Gunter Felsner. “The basic idea of forming still comes ‚from the gut‘, but the simulation solution can back up our ideas and takes away our guilty conscience.“ Stampack was invested in because it was necessary to be able to carry out simulations in-house, because outsourcing them to simulation service providers was not flexible enough in the long run. And thus the simulation solution in Navis now backs up the forming process and assists in finding and confirming new approaches to forming.

For Gunter Felsner, the proximity to Men at Work, Stampack‘s distributor, was also an important aspect in the acquisition of Stampack. The system house from Baden has successfully established itself on the market as a CAD/CAM service provider in the environment of the automotive industry with a focus on tool construction and also sells and supports the CAD/CAM solution VISI, which Felsner and Makoplan also use. Whilst Uwe Hallbauer praises the service from Men at Work, Ralf Schneider points out the “close-knit relationship with customers and the associated practical support” of the system house.

Another significant advantage of Stampack is that it validates the methods that are currently only to be found in the mind. Although this is becoming more and more of a topic on the client side, only very few design offices offer it. “Similar to Catia about 20 years ago, Stampack is equally just the ticket for us today. Because if customers find that they have more security, fewer or no try out costs and hardware changes, they will be willing to honour that,” concludes Ralf Schneider.

Stampack Trim Optimizer saves costly laser-cut prototypes and thus also valuable trial and development time.

“Furthermore, we also save time on design, because reworking drawing dies means not only physically re-milling in the workshop, but also reworking the die on the computer during design. We are convinced that this savings potential will more than cover the investment in Stampack“. Plus, as more or less the ‚icing on the cake‘, Stampack is also an innovative solution to the shortage of skilled workers.

„Info: Makoplan“

The areas of expertise of the design office founded in 1995 in Jugenheim near Mainz include everything to do with stamping and forming technology for thicker materials. In addition, the Rheinhessen company with its 11 employees also has a great deal of know-how in high-strength and stainless steels. Makoplan designs not only stamped parts or assemblies, but also complex process and method solutions for customers, most of whom come from the automotive and automotive supply industries.

www.makoplan.de

„Info: InKo“

InKo-Ingenieurbüro für Industriekonstruktion GmbH Zwickau in Bärenwalde was founded in 1994 and today employs five people. Sachsen offers services such as forming simulation, method planning, tool design and drawing derivation. InKo‘s reference customers include Aweba Werkzeugbau and Brose Fahrzeugteile.

www.inko-zwickau.de

„Info: Felsner“

Since 1989, Felsner Stanztechnik GmbH from Navis, Austria, has been offering development and design services in the fields of stamping and forming. The service range of the Tyrolean company with its current seven employees includes simulation and method planning, tool design as well as flexible punching from strip.

www.felsner.at

Stampack GmbH:
www.stampack.com