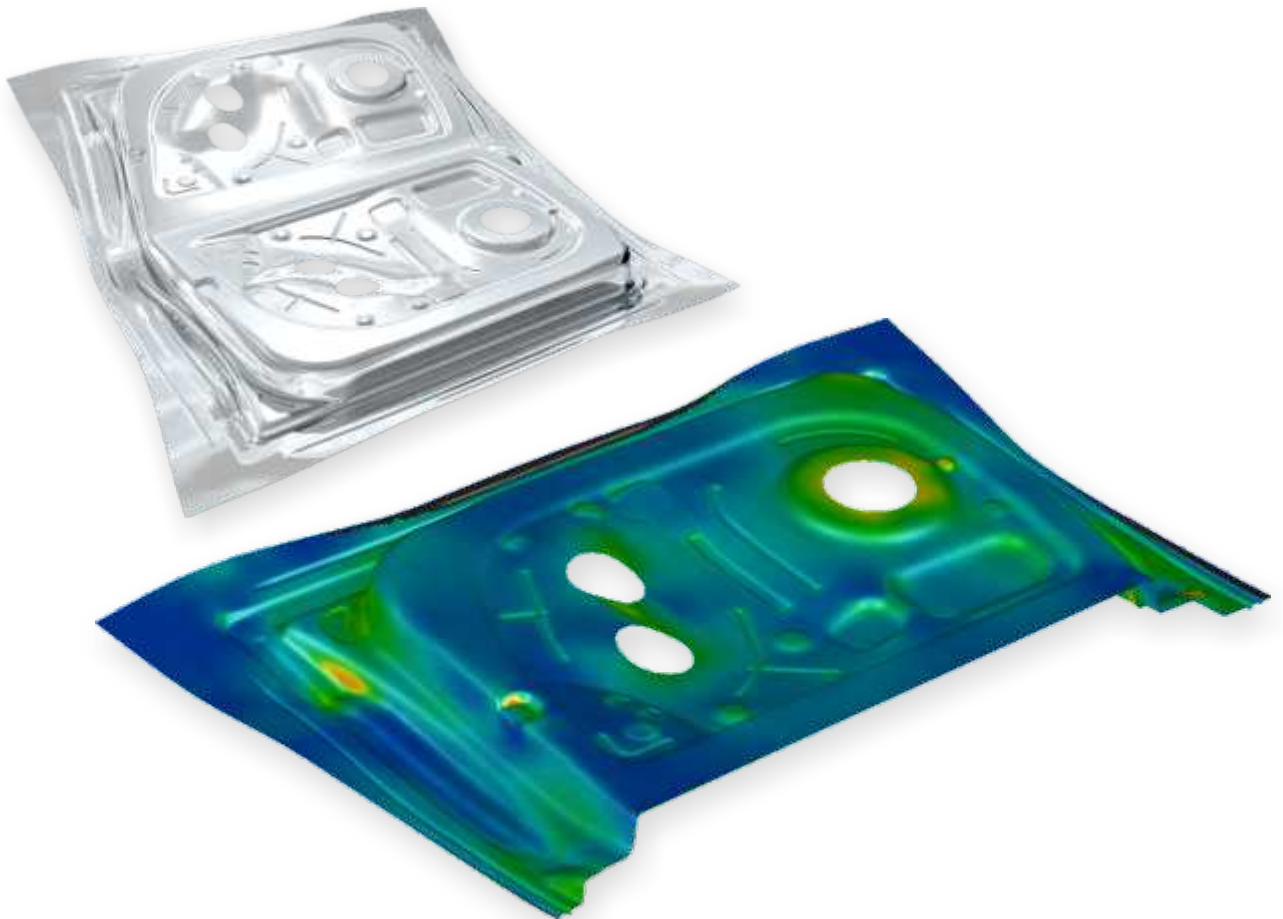


AutoForm-Sigma[®]

Software for Systematic Process Improvement



- ▶ Systematic approach to reduce engineering iterations
- ▶ Rapid feasibility assessment for effective part or tool geometry modifications
- ▶ Sensitivity analysis and identification of dominant process and design parameters
- ▶ Efficient springback reduction based on process, product and geometry modifications
- ▶ Optimized material utilization



AUTOFORM
Forming Reality

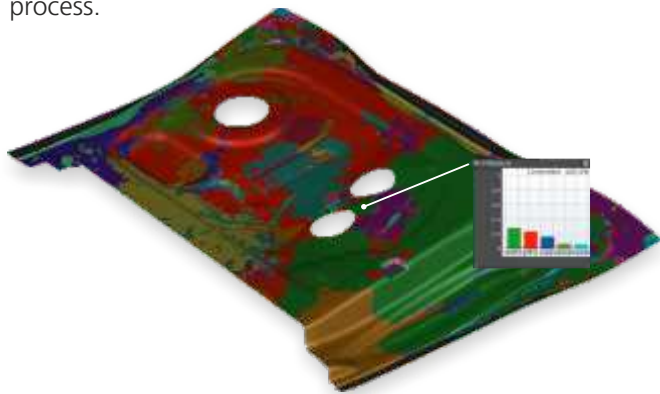
AutoForm-Sigma[®]

Influence of Process and Design Parameters on Forming Process

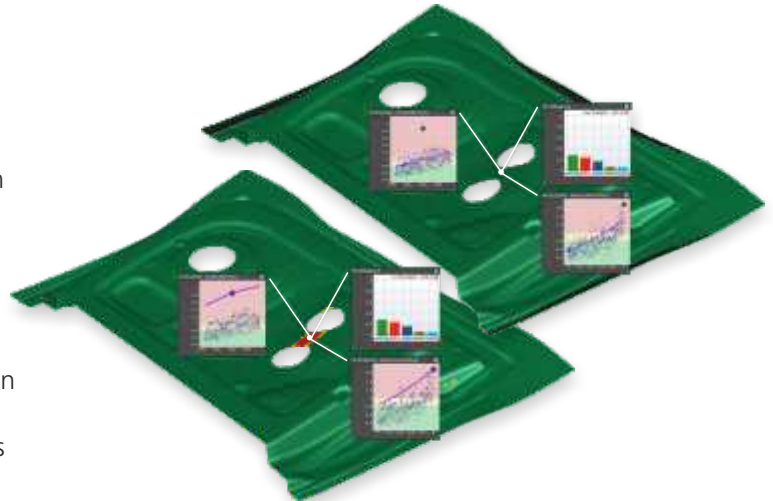
AutoForm-Sigma enables engineers to systematically improve the forming process. This is achieved through the variation of process and design parameters that are within a range which allows for safe process definition. This definition is essential for the efficient production of stamped parts which meet quality standards.

During process engineering and tool design, engineers define the stamping process, set up values for various parameters (e.g. binder force, bead forces, lubrication), define tool geometry (e.g. die/punch radii, addendum, binder) and verify results. With the conventional trial-and-error iterative approach, engineers go through this process and correct their results as many times as necessary until the most efficient result is achieved. AutoForm-Sigma is the ideal replacement for this time-consuming, conventional approach.

AutoForm-Sigma provides all of the relevant information to give the user an in-depth understanding of the forming process and the necessary variations of process and design parameters needed to ensure an efficient process.



AutoForm-Sigma brings transparency to the forming process by showing which parameters influence part quality and to what extent



Design parameters which have the most influence on the stamped part can be identified during tool and process design

The software allows engineers to focus on the quality target, which can be specified with regard to one or more output variables from the simulation. Parameters which have the most influence on the stamped part can be identified by engineers during tool and process design, enabling them to make the necessary adjustments and thereby systematically improve the forming process.

All modifications can be carried out based on comprehensive information and can be easily visualized through tailored post-processing functionalities using AutoForm-Explorer. Systematic process improvement carried out with AutoForm-Sigma increases stability and reliability of the forming process.

AutoForm Engineering – Company Offices

Switzerland	Pfäffikon SZ	+41 43 444 61 61
Germany	Dortmund	+49 231 9742 320
The Netherlands	Rotterdam	+31 180 668 255
France	Aix-en-Provence	+33 4 42 90 42 60
Spain	Barcelona	+34 93 320 84 22
Italy	Turin	+39 011 620 41 11
Czech Republic	Praha	+420 221 228 481
Sweden	Stockholm	+31 180 668 255
United States	Troy, MI	+1 888 428 8636
Mexico	Querétaro, Qro.	+52 442 208 8242
Brazil	São Bernardo do Campo	+55 11 4122 6777
India	Hyderabad	+91 40 4600 9598
China	Shanghai	+86 21 5386 1153
Japan	Tokyo	+81 3 6459 0881
Korea	Seoul	+82 2 6332 1150



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