Software for Systematic Process Improvement

- Automatic variation of design parameters
- Rapid identification of the most dominant design parameter
- Easy and comprehensible post processing of multiple simulations on the part
- Better understanding of forming and realistic insight into the process
- Efficient process improvement during tool and process design
AutoForm-Sigma®

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

AutoForm-Sigma enables engineers to systematically improve the forming process. It automatically carries out multiple stamping simulations. During these simulations, design parameters are varied while maintaining the focus on the quality targets set for the stamping part.

During tool and process design, engineers define many design parameters. Design parameters are those input parameters which can be adapted in tool and process design such as: part radii, binder surface geometry, addendum geometry, drawbeads, blankholder force, lubrication, etc.

AutoForm-Sigma is the ideal replacement for the conventional approach based on single simulation results. It carries out multiple simulations while automatically varying the values of the design parameters. It is focused on quality target, which can be specified with regard to one or more output variables from the simulation, e.g. no splits, no wrinkles, sufficient stretching.

Pareto plot: It is important to identify which input parameters are dominant – those which have the most influence on the stamped part.

Scatter plot of the most dominant design parameter: The red circles correspond to the multiple simulations carried out by AutoForm-Sigma.

In this way, design 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 systematically improve the forming process.

The time savings are significant as there is no longer a need for manual modifications of design parameters and considerable efforts to evaluate the results for each single simulation. AutoForm-Sigma enables easy and comprehensible post processing of multiple simulations on the part.

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