

AutoForm HemPlanner

Software for
Efficient Planning of Hemming Processes



- ▶ Simulation of line and progressive die stamping as well as hemming processes
- ▶ Rapid and accurate simulation of deep drawing, restriking, trimming and flanging operations
- ▶ Accurate springback simulation
- ▶ Deep insight into all operations of the stamping process
- ▶ Rapid verification of multiple new concepts for quality and cost improvements



AUTOFORM
Forming Reality

AutoForm-HemPlanner

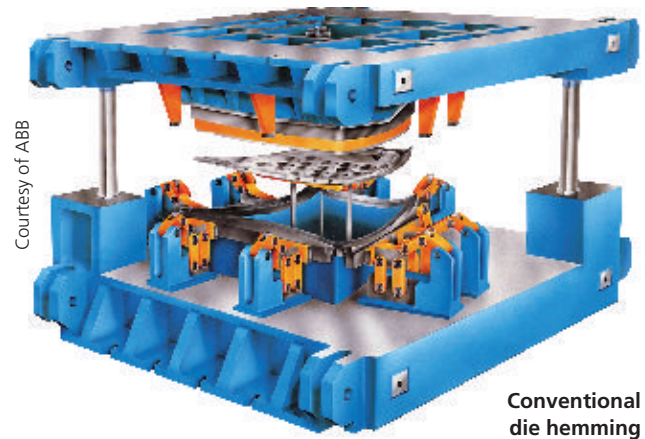
In combination with advanced solver algorithms, AutoForm-HemPlanner forms an integrated solution for the efficient planning of hemming processes.

AutoForm-HemPlanner enables users to easily define and optimize the hemming operation. Various hemming processes can be designed to evaluate whether the choice of flange outline and flange opening angle are accurate. In addition, the hemming solution allows for the prediction of full assembly springback after hemming.

The accuracy of the hemming operation is very important since it affects surface appearance and surface quality. Material deformations, which occur during the hemming process, can lead to dimensional variations and other typical hemming defects, including splits and wrinkles in the flange, material overlaps in the corner areas and material roll-in.

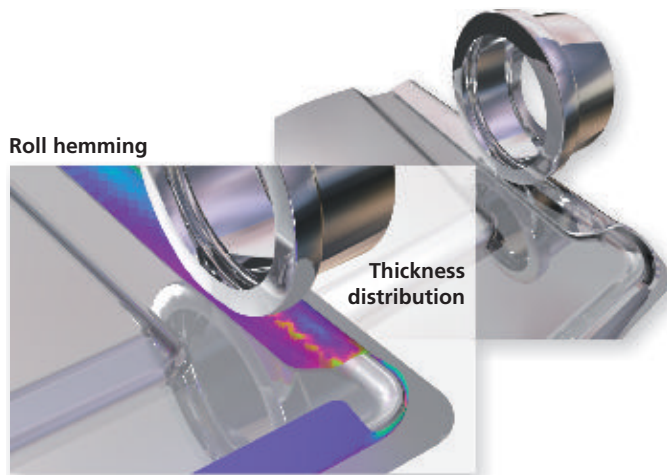
With AutoForm-HemPlanner, definition of the hemming process is streamlined since the design of tool active faces is no longer merely based on experience and the costly principle of trial and error. AutoForm-HemPlanner supports roll, conventional die and table top hemming. Depending on the product development process phase, AutoForm-HemPlanner supports two use cases, namely quick and advanced hemming.

Quick hemming is used in the early stages of product development and production planning, when the die layout of the drawing and forming operations is still not available. The CAD geometry of the flanged as well as hemmed parts provides the main input for the design of the hemming operation.



The advantage of quick hemming is that multiple simulations can be run in order to rapidly evaluate various process concepts and possible geometry modifications that will result in manufacturable parts. For example, the flange outline and flange opening can be validated at the same time.

Advanced hemming is used in process engineering when the detailed definition of the forming operations is available. The accuracy of simulation results is increased by taking into account the history of material deformation accumulated throughout the previous manufacturing operations. Advanced hemming is used to validate the selected hemming concept, i.e. validate the design of the clamping fixture, check if the spring supported roller follows the predefined trajectory, evaluate the potential hemming defects as well as predict full assembly springback. These information form the basis for compensation of inner and outer parts as well as any adjustments of the hemming equipment.



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