

AutoForm

Solution for Progressive Dies



AutoForm's State-of-the-Art Solution
for Progressive Die Engineering



 **AUTOFORM**
Forming Reality

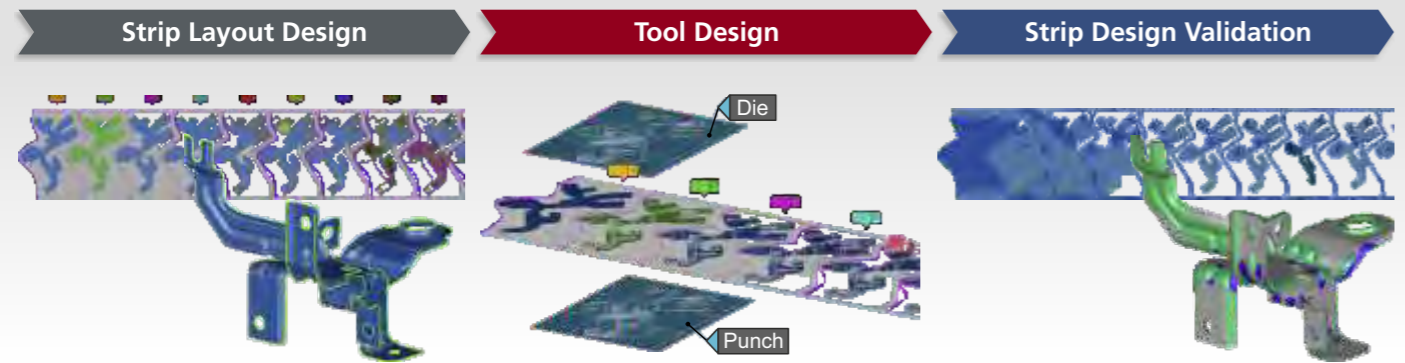
AutoForm ProgDie – Software Solution for Progressive Die Makers

AutoForm ProgDie is specially developed for users working in the field of progressive dies. The software allows progressive die makers to efficiently design, simulate, validate and modify various strip layout concepts and then select the one that best suits their needs.

Progressive die stamping is a versatile and cost-efficient stamping process for the production of a wide range of parts for various industries. Although progressive die stamping is based on the principles of sheet metal stamping, its process design, simulation and validation differs significantly from that of transfer and line die stamping. Consequently, this stamping process has its specific engineering and simulation requirements.

Progressive die stamping consists of several individual workstations, each performing one or more different operations on the part. The part is carried from station to station by the stock strip and then cut out of the strip in the final operation. Due to the complexity of progressive dies, it is necessary to address all of the factors that impact the desired level of part quality, including strip flow and alignment, stretch-web deformation as well as the timing and interaction of the strip with tools at different stations.

The AutoForm ProgDie workflow is tailored to meet the needs of progressive die planners and engineers. The software enables rapid strip layout design, tool design and strip design validation.

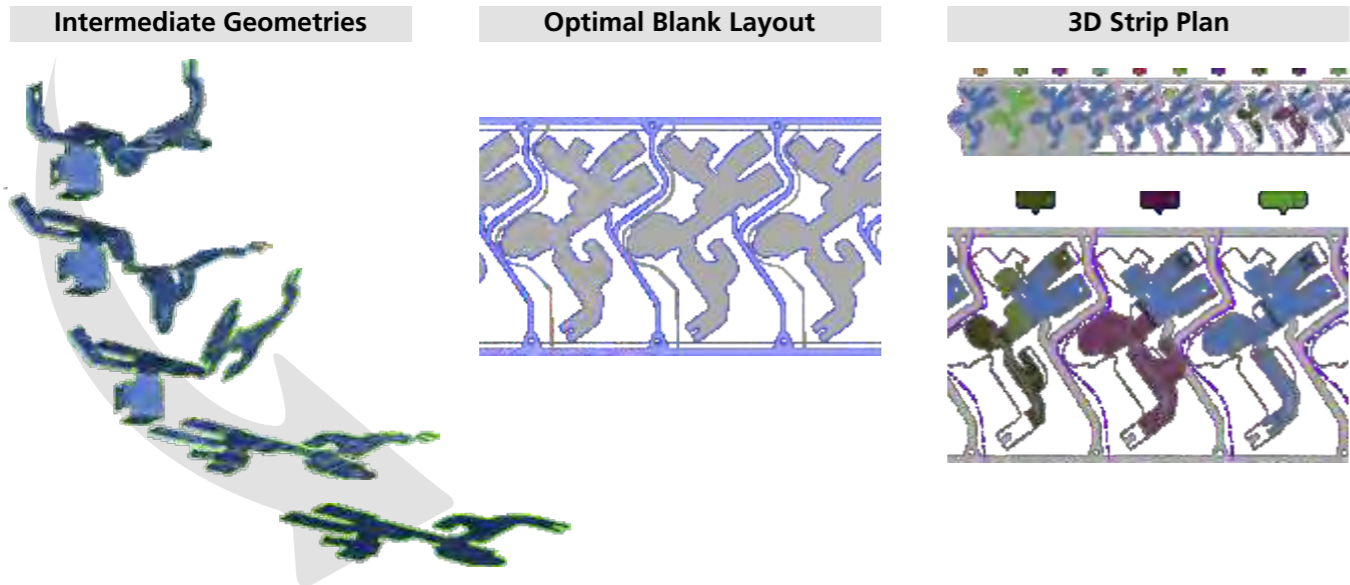


Strip Layout Design

AutoForm ProgDie enables progressive die engineers to design the optimal strip layout which is crucial for the cost efficient and precise manufacturing of a large number of parts with complex geometries. The users start with the part geometry and unfold it systematically by creating intermediate geometries until the part becomes flat. The software allows them to calculate the blank layout and to then quickly evaluate and compare different nesting options. In this way, users can

efficiently identify the optimal strip layout, taking into consideration maximal material utilization. In addition, the software enables them to easily design carriers and complex webs.

With AutoForm ProgDie, users can create a 3D strip plan with an intuitive drag-and-drop 3D design interface which simplifies the design process significantly.

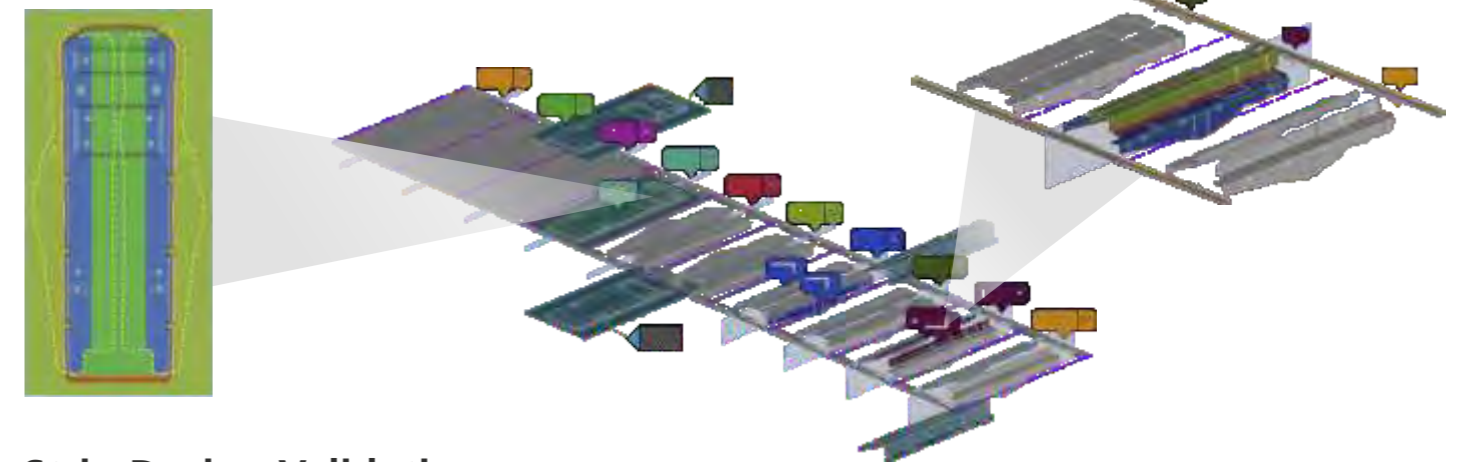


With AutoForm ProgDie, die makers can gain deep insights into the progressive die stamping process and can quickly identify problems that might occur during the process. The software enables them to easily and accurately validate the process, minimize part rejects and maximize production efficiency.

Tool Design

As automotive manufacturers and suppliers strive to reduce lead-time and tooling costs, they are focused on reducing tooling development time, which is one of the most time-consuming phases of the entire product development process. To achieve this, there are many challenges that must be faced before deciding on the most effective tool design.

AutoForm ProgDie enables users to rapidly create a tool design beginning with only the CAD part geometry, to evaluate alternative tool designs and to then select the best one to be used for the manufacturing process. The software allows them to create bending as well as drawing tool designs. With AutoForm ProgDie, users can gain an in-depth understanding of the progressive die stamping process including strip behavior during multiple forming and trimming operations.

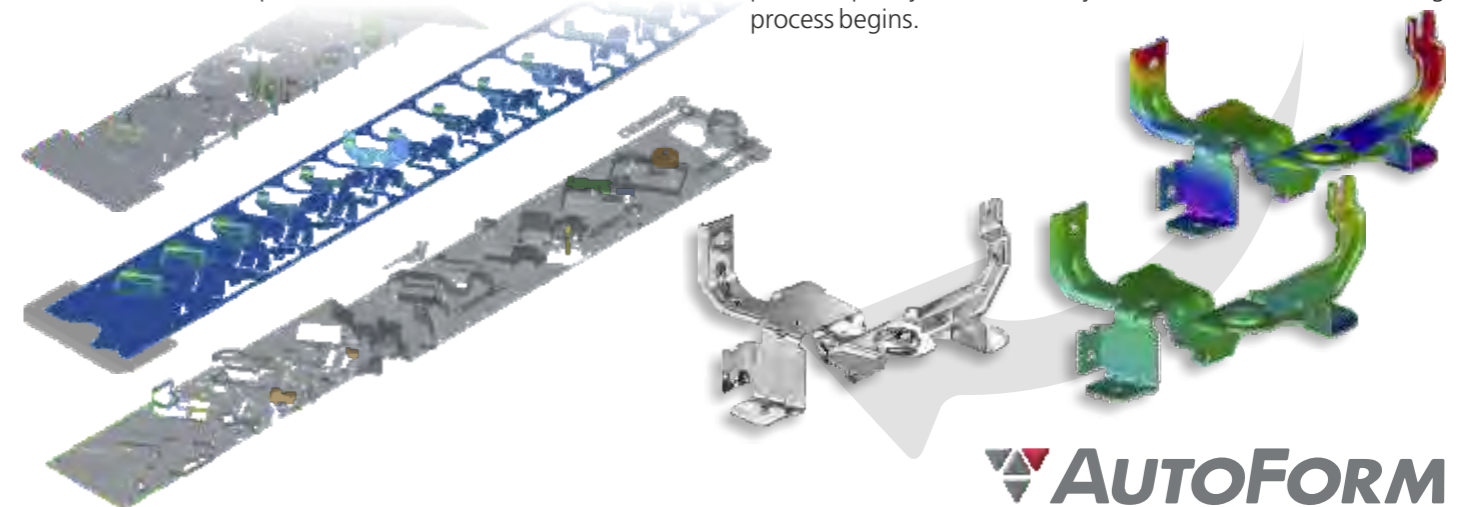


Strip Design Validation

Strip design validation is essential for any progressive die maker as it avoids costly trial and error adjustments as well as costly prototype design and creation. AutoForm ProgDie allows progressive die engineers to achieve a rapid and accurate simulation of progressive dies, including all forming and trimming operations. The simulation of progressive dies is based on the incremental approach integrated in AutoForm ProgDie. With AutoForm ProgDie, users can gain deep insights into the progressive die stamping process and can quickly identify problem areas such as wrinkles, splits, excessive thinning or springback, that might occur during the process. The software provides the best possible alternative solutions to correct the identified problems.

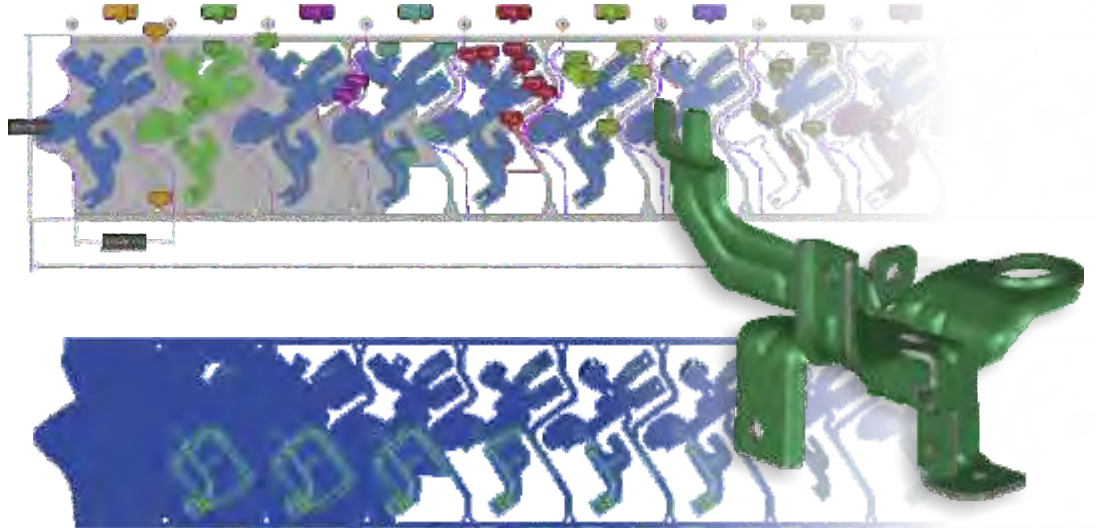
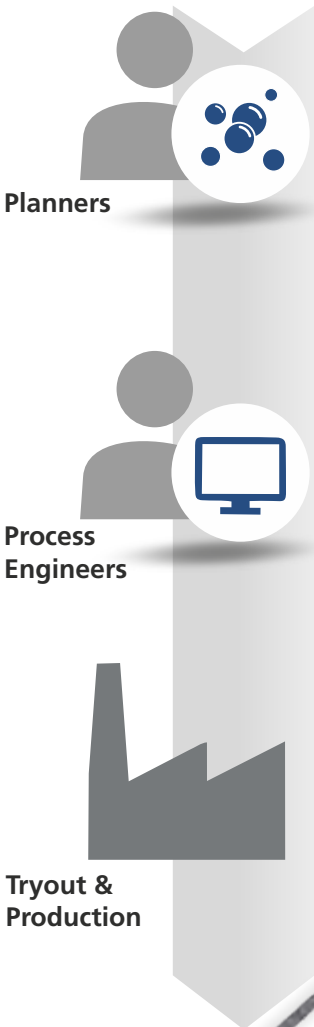
AutoForm ProgDie also enables users to carry out springback compensation as well as to optimize trim line thus meeting the part's expected surface and boundary quality requirements before milling the tools. In this way, the final part geometry can be produced within the required tolerances and with a minimum of correction loops.

In addition, AutoForm ProgDie allows users to address potential progressive die stamping robustness issues. They can achieve their desired process capability targets through the most efficient and robust manufacturing process possible. With AutoForm ProgDie, progressive die makers can validate a process quickly and accurately before the real manufacturing process begins.



AutoForm ProgDie Allows for the Full Digitalization of the Entire Product Design, Engineering and Production Process

AutoForm ProgDie enables users to obtain a digital process representation, which is then used as a blueprint for the physical process in the tryout and production of progressive dies. If there are problems in the physical world, the digital process model enables users to determine which adjustments need to be made to the physical process. AutoForm ProgDie allows progressive die makers to predict, control and solve problems efficiently. In this way, they can significantly reduce the number of physical tryout and quality loops which results in lead time and cost savings.



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