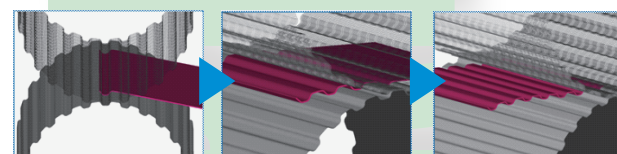
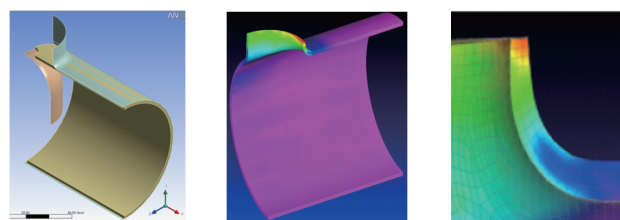




TP-MFORM 3D

TP-MFORM3D can handle all your sheet metal forming processes. It can simulate not only the conventional sheet metal stamping, but also the processes such as

- Roll forming
- Spinning
- Stretch forming
- Tube forming
- Hemming
- Sheet Metal Cutting
- etc.



Tube forming Simulation vs. Experiment



Experiment

Simulation

Benefits

Sheet metal forming solution for all your needs

TP-MFORM3D covers all your needs which are derived from the elasto-plastic deformation on your manufacturing process. Today, TrialPark is constantly improving the software to provide the convenience simulation tools for your needs.

Accurate and Reliable Solver

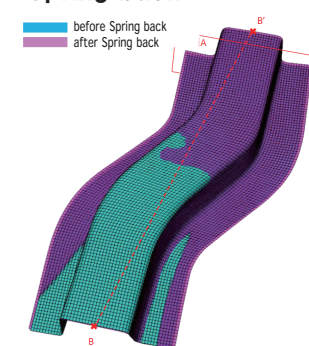
The most accurate finite-element-based static-explicit solver (TP-STRUCT) is integrated into the sheet metal forming simulation tool. It allows you to realistically simulate the springback.

Complete solution for every process

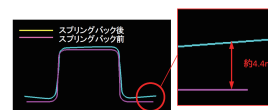
TP-MFORM3D employs the updated Lagrangian rate formulation and the explicit time integration scheme. Therefore, it offers a complete solution for simulating the entire sheet metal forming process. It can finish the large complex simulations faster than leading competitors.

Spring back

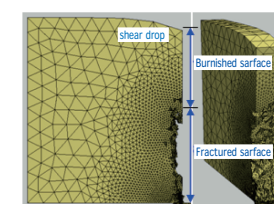
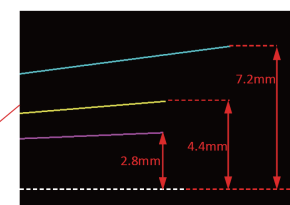
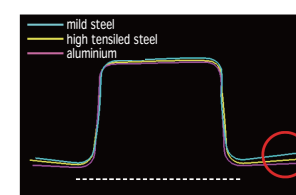
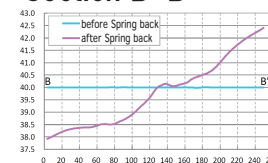
before Spring back
after Spring back



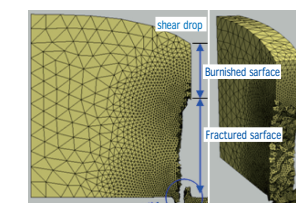
Section A



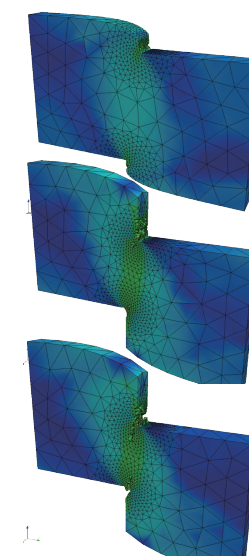
Section B-B'



Die Clearance=0.06mm



Die Clearance=0.6mm



Capabilities

Robust Process Validation

- TP-MFORM3D provides you with powerful capabilities to
- Validate the robustness of the manufacturing process
 - Determine the forming defects caused by wrinkles, fractures, etc.
 - Reduce the unnecessary time-consuming associated with the trial-and-error operations

Springback Calculation

Springback is the elastic recovery during unloading at the end of the elastic-plastic forming process. The spring back has to be compensated to achieve the dimensional accuracy of a finished product. Our original method "r-min" in conjunction with an efficient force cancelling algorithm allows the accurate springback calculation to show the expected deformation after the forming and release.

Seamless validation for manufacturing and product performance

The industry-oriented application can validate your product's behavior seamlessly for testing and manufacturing processes in synergy with the targeted product performance. It helps you study manufacturing feasibility in combination with the product performance changes.

Shearing with ductile fracture propagation

In addition to the sheet metal forming simulation capabilities, TP-MFORM3D enables shearing process simulation including the crack propagation phenomena. It allows you to validate the shearing behavior of the material which shows the shear droop, fractured surface and burnished surface.

Characteristics

TRIALPARK was awarded the contract from RIKEN to commercialize their own world-class scientific achievements. We are committed to the continued development of TP-STRUCT, which is built on work done by RIKEN researchers for many years.

ABOUT RIKEN (<http://www.riken.jp/>, <http://vcad-hpsv.riken.jp/>)

RIKEN is Japan's largest and most comprehensive research organization for basic and applied science and a world leader in a diverse array of scientific disciplines. For nearly a century since its foundation in 1917, RIKEN has fostered pioneering, innovative research in fields spanning the entire range of the natural sciences, from developmental biology and neuroscience to quantum physics and computer science.



Your Objective, Our Creation

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