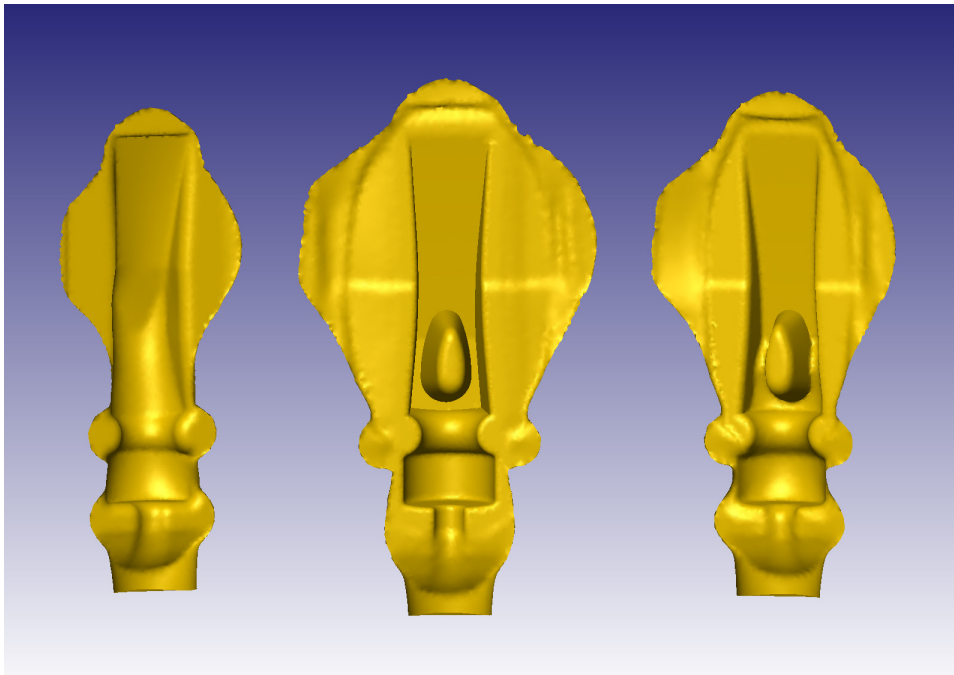


FORMING EXPRESS

3D

FORMING EXPRESS (3D) is a popular process simulation system designed to analyze three-dimensional (3D) material flow and heat transfer in metal forming processes. Applications include hot forging (closed and open die), warm and cold forming, drawing, extrusion and more. 3D simulation is needed to model complex shapes or defects such as buckling. **FORMING EXPRESS** is a practical and efficient tool to predict the outcome of metal forming operations without the cost and delay of shop trials.

Based on the finite-element method (FEM), DEFORM has proven to be an accurate and robust solution in industrial applications for more than three decades. The simulation engine is capable of predicting metal flow, loads and defects with great precision. The automatic mesh generator produces an optimized mesh with little user input. FEM settings are derived from the process details supplied by the user. **FORMING EXPRESS** shares the system architecture, mesh generator and FEM engine of DEFORM-3D, the advanced 3D process simulation system.



The bust, block and finish forging progression used to make a claw hammer head is shown above. The DEFORM results accurately matched production parts, including the prediction of non-fill. Courtesy Vaughan & Bushnell Manufacturing Company.

While **FORMING EXPRESS** provides sophisticated analysis capabilities, the graphical user interface is intuitive and easy to learn. A 'state of the art' multiple operation interface allows individual operations to be combined into process sequences that can be run one-by-one or sequentially. The system guides a user through data preparation, but also allows direct access to modify parameters or review results.

Scientific Forming Technologies Corporation (SFTC) staff has a unique combination of industrial, academic and software experience. This diverse background enables SFTC to provide unparalleled training and technical support. Our support staff is personally committed to the success of each and every DEFORM user.

Product Specifications

- Deformation and heat transfer are calculated in an integrated simulation environment.
- 3D simulation describes a wide range of complex geometries and behaviors.
- Planar symmetry is easily defined, when applicable.
- Automatic, adaptive remeshing is performed during simulations.
- Forming equipment models are available for hydraulic, screw and mechanical presses and hammers.
- Speed, load and sliding die (spring) controlled translational movements are also supported.
- Material models include rigid-plastic for cold forming, thermal rigid-viscoplastic for hot forging and elastic for die stress analysis.
- A wizard-based user interface allows for fast and efficient data preparation.
- Multiple operation sequences run without user intervention.
- Simulation results are analyzed via a powerful post-processor.

Computer System Requirements

- The minimum recommended configuration is:
 - 16 GB RAM,
 - 500 GB free disk space,
 - dedicated graphics card,
 - Windows 10 (64-bit).

Licensing

- FORMING EXPRESS** can be licensed as a 3D & 2D, 3D or 2D system.
- The FEM engine is licensed to run on one CPU thread. Parallel processing options are available.
- Node-locked licenses support one user on one computer. Floating licenses are available to use within a local-area network.

General Information

- Training, support, updates and DEFORM User Group meetings are available to active users.
- Online documentation is provided in HTML and PDF formats.
- The DEFORM Material Database includes a wide range of steel, aluminum, titanium, superalloy, copper and other material data.
- Technical support is readily available by phone, email, web meetings and the online DEFORM User Area.

DEFORM is a registered trademark of Scientific Forming Technologies Corporation. SFTC reserves the right to alter the product, price and/or computer system specifications at any time without notice. The SFTC software license agreement, including terms and conditions of software purchase or lease will be applicable. A perpetual license is subject to a maintenance fee for upgrades and ongoing system support.

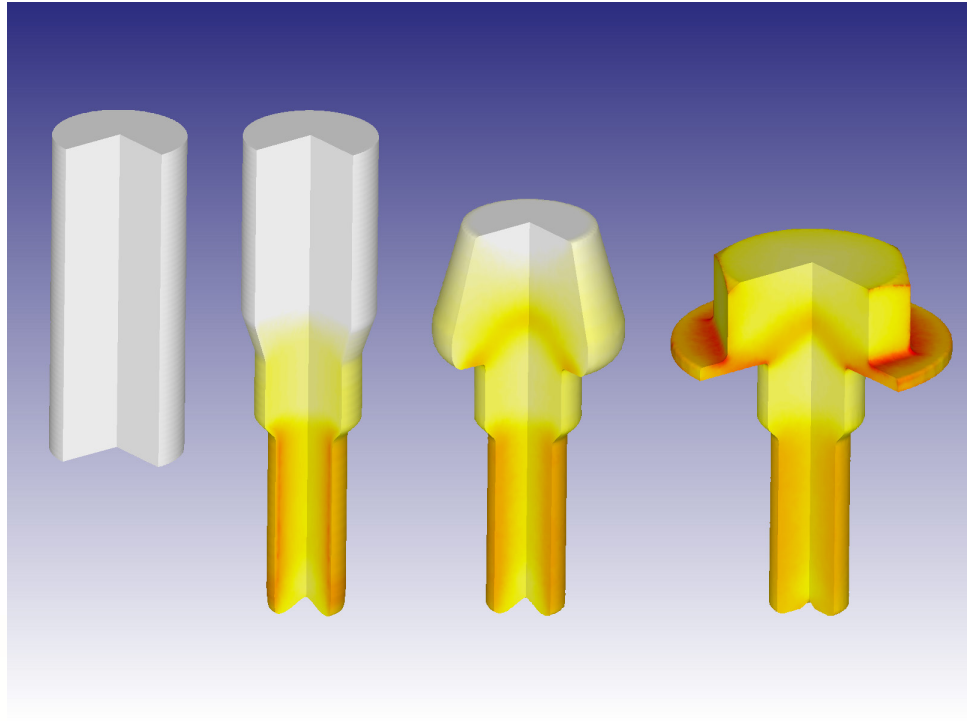
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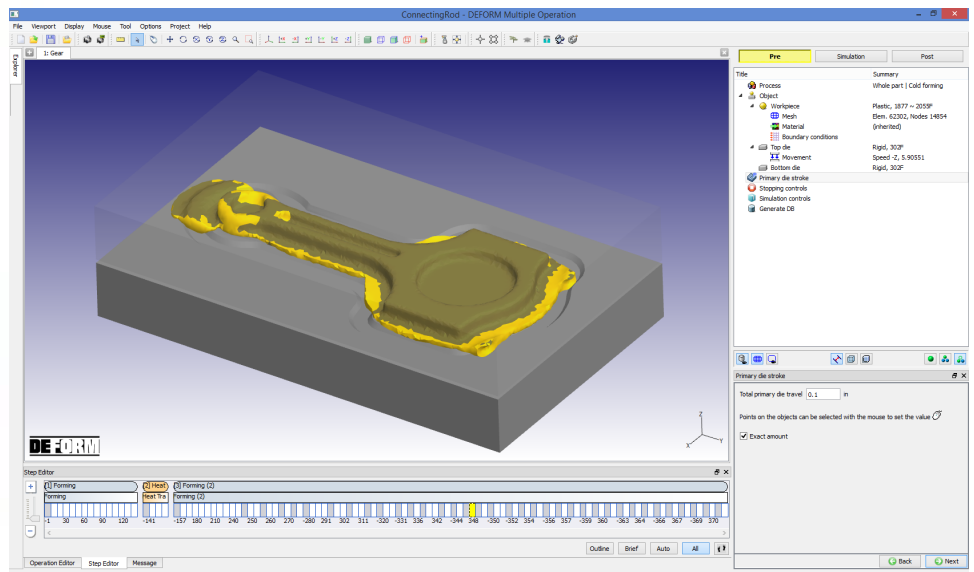


2545 Farmers Drive
Suite 200
Columbus, OH 43235
Tel: (614) 451-8330
Fax: (614) 451-8325
www.deform.com

FORMING EXPRESS



A cold headed bolt progression is shown above. Forming Express (3D) provides critical process information such as material flow, defects, forming loads, energy, strain, temperature, tool stress and more. Strain contours (shown) track work hardening as the part is passed from one operation to another.



The DEFORM multiple operation environment allows for the automatic simulation of entire process sequences. These are defined using a mix of flowchart, wizard-based and advanced menus. The hot forged crankshaft progression shown above can be simulated, from start to finish, with a single click of the 'Run' button.