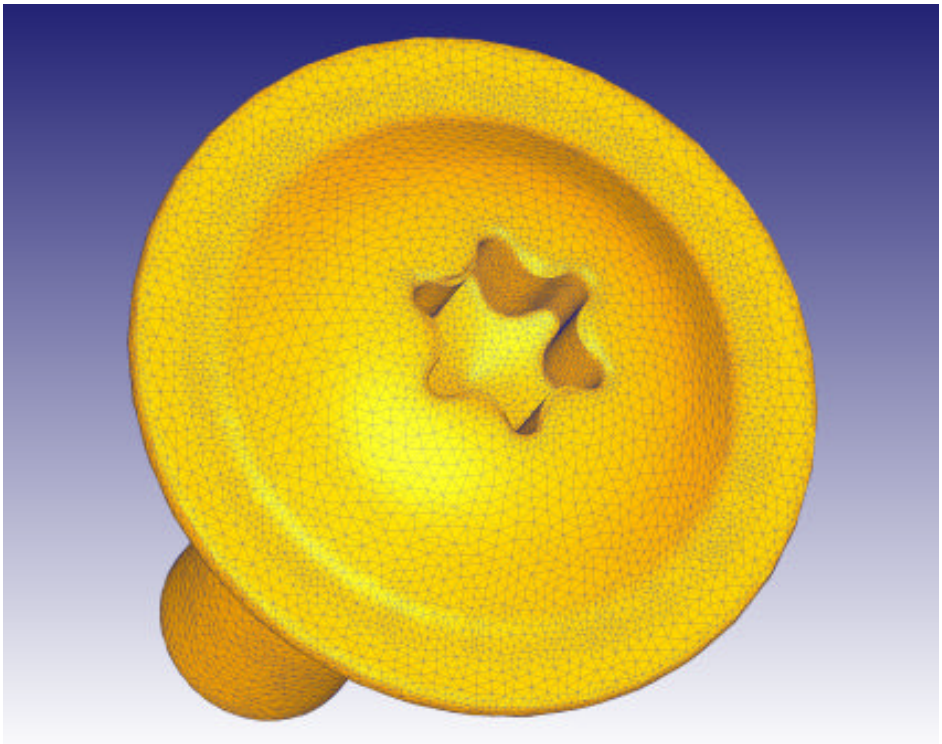
DEFORM™-F3

Scientific Forming Technologies Corporation

DEFORM™-F3 is a powerful process simulation system designed to analyze the three-dimensional (3D) flow of common metal forming processes such as die forging, cold heading, upsetting and extrusion. DEFORM™-F3 is a practical and efficient tool to predict the material flow in industrial forming operations without the cost and delay of shop trials.

Based on the finite element method (FEM), DEFORM™ has proven to be accurate and robust in industrial application for more than two decades. The simulation engine is capable of predicting metal flow, loads and defects with astonishing precision.



The automatic mesh generator produces an optimized mesh system with local element size control based on the specific process being analyzed with little to no user input. FEM paramaters are derived from the process details supplied by the user. Gravity-based drop positioning allows a user to easily handle ill-defined workpiece location in die forgings.

While DEFORM™-F3 provides sophisticated analysis capabilities, the graphical user interface is intuitive and easy to learn. The system guides a user through data preparation, but allows direct access to modify parameters or review results.

DEFORM™-F3 continues the tradition of accuracy and state-of-the-art capabilities established in the early 1980's. Scientific Forming Technologies Corporation has the experience and background to provide unparalleled training and technical support.

Product Specifications

- Deformation and heat transfer are automatically calculated in an integrated simulation environment.
- Full three-dimensional (3D) simulation describes a wide range of complex geometries and processes.
- Planar symmetry is easily defined by the preprocessor when applicable.
- Fully automatic optimized remeshing is performed during simulation.
- Forming equipment models are available for hammers, screw presses and mechanical presses. DEFORM™-F3 also supports user defined translational movement.
- Material models include rigid plastic for cold forming, thermal rigid viscoplastic for hot forging, elastic and rigid for die stress analysis.
- FLOWNET and point tracking deformation, contour plots, load-stroke prediction and more are available in the postprocessor.
- An intuitive user interface allows for fast and efficient data preparation.
- A suite of positioning options is available to match the actual workpiece location in the die. Drop (gravity), mouse-driven, offset, rotation and interference positioning options are included.

DEFORM™

Design Environment for FORMing

DEFORM™ - F3

Computer System Requirements

- DEFORM™- F3 runs on WINDOWS XP or WINDOWS 2000.
- The minimum recommended configuration is 1 GB RAM.
- At least 10 GB free disk space and a color monitor are recommended.
- Standard WINDOWS printers can be used for WINDOWS 2000/XP systems.
- Writable DVD, CD or tape drive is required to back up large databases.
- Internet access is desirable to take advantage of on-line technical support and service pack updates.

General Information

- Training, support and regular updates are available to active DEFORM™ Users.
- DEFORM™ Users Group meetings are held regularly.
- Outputs include graphics, text data, animations, printed copy and STL geometry.
- On-line documentation is provided in HTML (web browser) format.
- The DEFORM™ Material Database is supplied by SFTC which includes a wide range of steel, aluminum, titanium, superalloy, copper and other materials.

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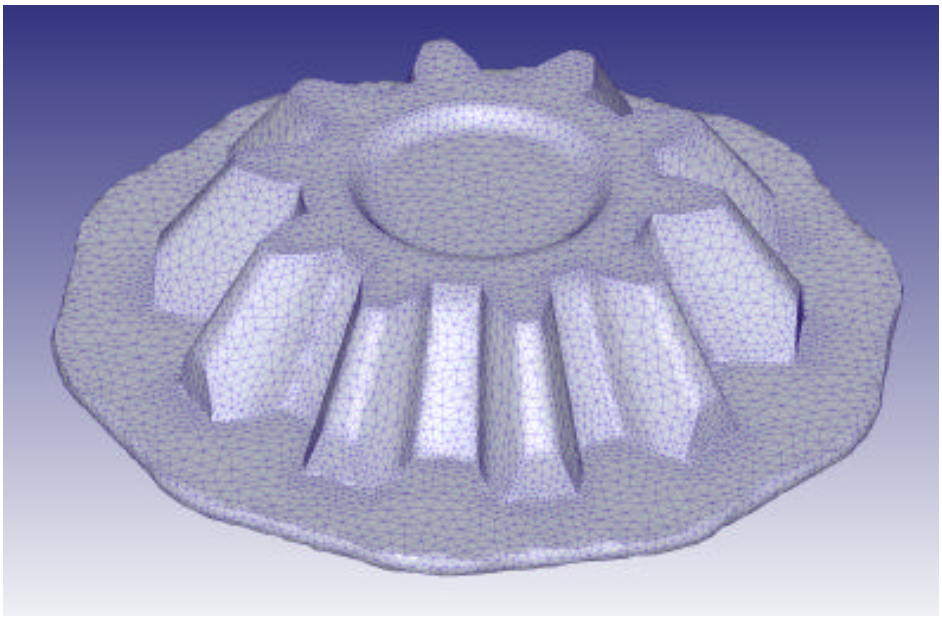
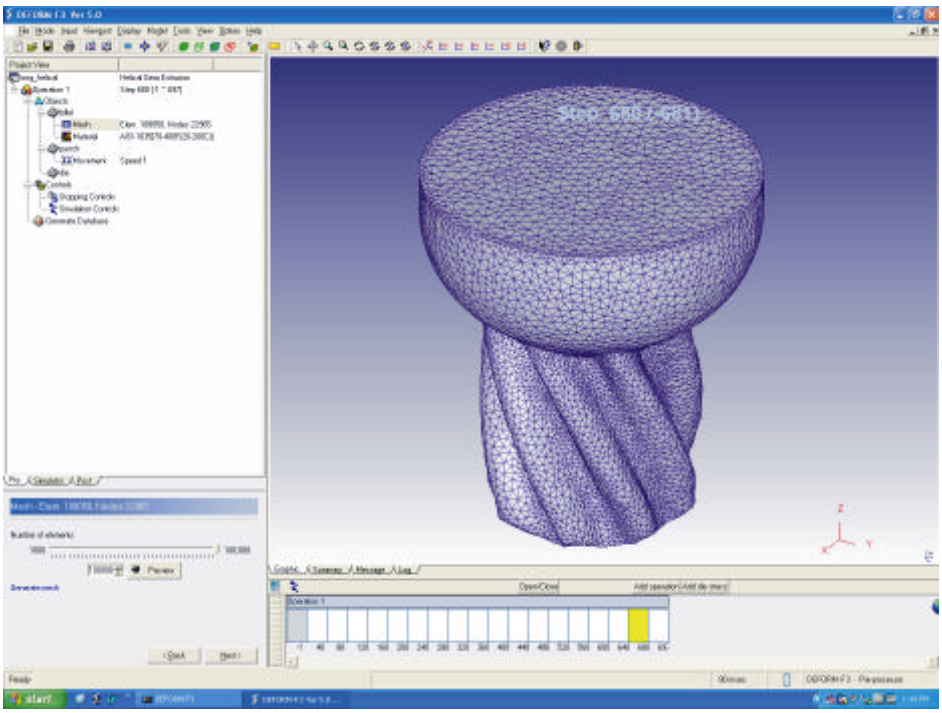


Hot forgings can be simulated using DEFORM-F3. This bevel gear was set up in minutes and run in a few hours on a laptop computer. Information on material flow, die fill, forging load, strain distribution, die contact, tool stress and more is available for your forging design - before spending money on tools.



DEFORM-F3 allows a fast problem setup in a very intuitive graphical user interface (GUI). The integrated environment provides a facility for users to set up complex problems quickly, run them efficiently and see the results clearly. OpenGL graphics is used for high quality graphic images in the display, animations & hardcopy.

Scientific Forming Technologies Corporation
5038 Reed Road
Columbus, Ohio
43220-2514
Tel: (614) 451-8330
Fax: (614) 451-8325

www.deform.com email: sales@deform.com