QFORM

SOFTWARE FOR SIMULATION AND OPTIMIZATION OF METAL FORMING PROCESSES

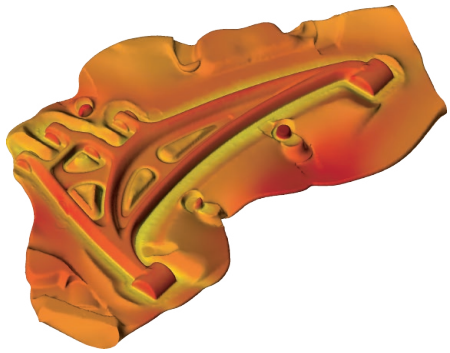
WHAT IS QFORM?

QForm is a professional engineering software for simulation, analysis and optimization of metal forming processes based on the Finite Element Method.

QForm software allows simulation of an entire technological chain at high speed and excellent reliability and provides a wide range of possibilities for process analysis.

The most important economic benefits of QForm software include:

- Decreasing production lead time
- Eliminating defects in metal forming production
- Increasing quality and improving product properties
- Reducing material consumption
- Elimination of test dies
- Reduced development time and improved efficiency



PROCESSES

Closed die forging

Ring and wheel rolling

Cross wedge rolling,
shape and transverse rolling

Cross-roll piercing

Open die forging

Profile extrusion

Cold forming

Hydroforming

Flow forming

Radial forging

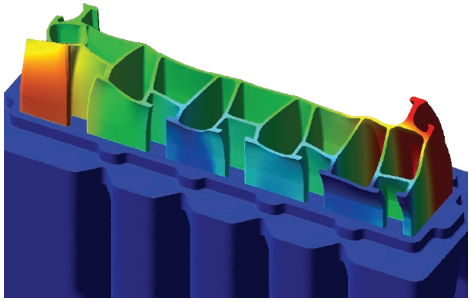
Orbital forging

Heat treatment

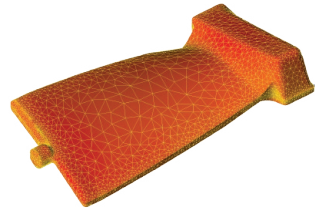
Microstructure prediction

Multiple billet deformation

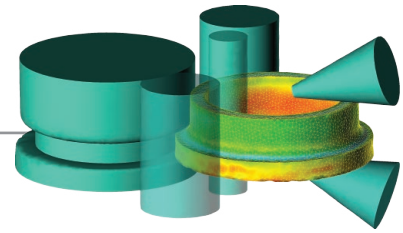
Bulk forming of sheet metal



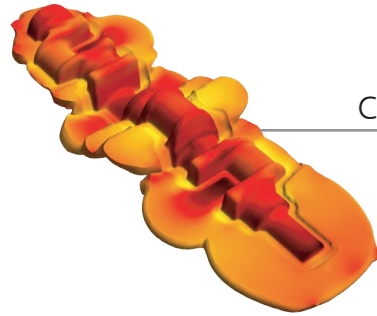
Profile extrusion (FEP, Brazil)



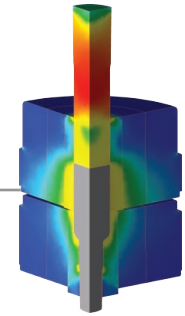
Blade forging



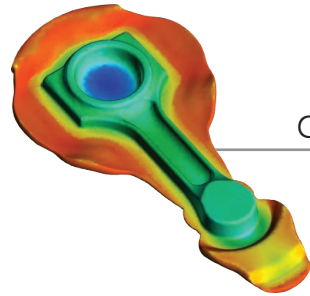
Ring rolling



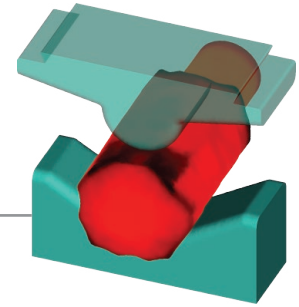
Crankshaft forging



Cold forming



Connecting rod forging



Rotor forging

NEW IN QFORM VX

Thin aluminium profile extrusion simulation

New dual mesh method features

Electric upsetting simulation

New operations structure

New forging manipulator

Pusher for rolling simulation

Advanced database features

Advanced ring rolling simulation features

Advanced features of creating finite element mesh adaptation box

Copying initial data from previous operation, inserting intermediate operations

Improved graphs and measurements

Improved diagnostic messages

Rotate light source mode

Calculating elastic unloading at elastic-plastic deformation

Importing DXF files with layers for 2D simulation

FEATURES

User friendly interface

2D & 3D simulation chain

Coupled thermal and mechanical problem

More than 1000 materials in database

Geometry import from any CAD system

Highest performance on multi-core and multi-CPU systems

Rotating and complex tool movement

Clear visualization of results concurrent with simulation calculation

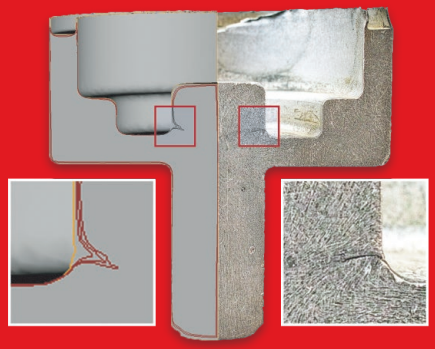
Assembled pre-stressed tools

User defined subroutines

Cloud and local network client-server versions for remote simulation

Dual mesh method for all processes

Elastic-plastic simulation of the workpiece



IMPLEMENTATION

Metal forming process development

Control of die cavity filling

Abrasive die wear simulation

Eliminating laps, flow-through and other material flow defects

Estimation of the deformation load and energy

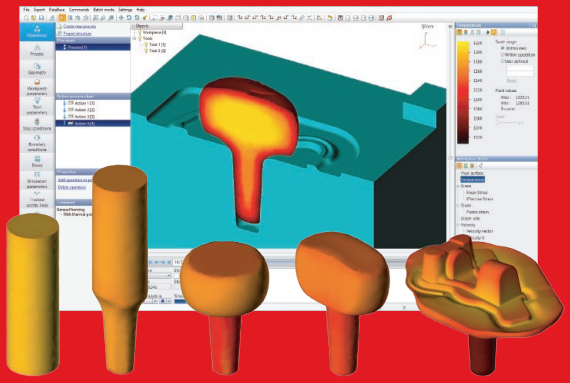
Optimization of raw material use

Die stress analysis

Carrying out scientific numerical research and experiments

Sales and marketing

Staff training



www.qform3d.com