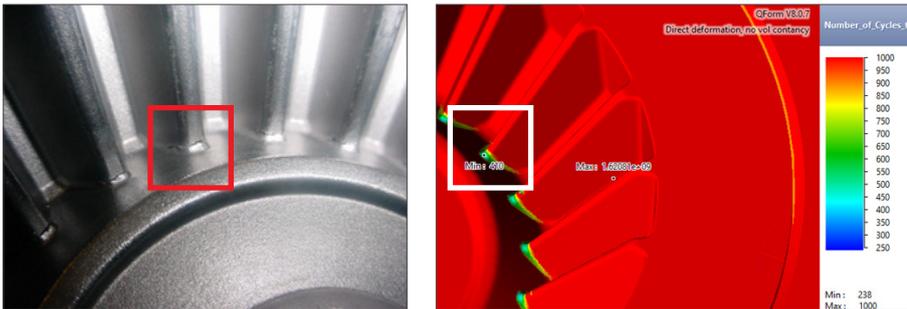


QFORM NEWS

WINTER
2015

Die life prediction for forging processes

Die failures due to plastic deformation and brittle cracks have been reduced in recent years due to the use of high quality die steels and careful monitoring of forging loads. These days the main reasons of premature die failure are abrasive wear and fatigue cracks so the durability of dies is one of the most important factors affecting the cost of closed die forgings. To investigate die life in hot forging we focus on a fatigue mechanism of die failure that is a complex thermomechanical process.

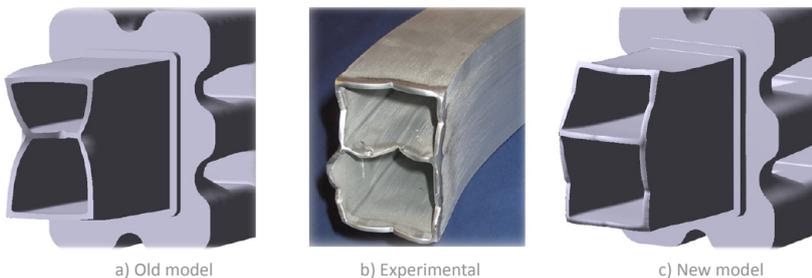


The crack in the die appeared in 400-500 cycles and its location predicted using proposed model with indication of the number of cycles till failure as 410

This model has been realized as a user's subroutine written in Lua language for embedded applications that runs in QForm's post-processor. Its implementation has been illustrated by examples of calculating of the number of cycles till the die failure in hot and cold forging. Above you can see a tool life prediction of a gear forging in hot state.

QForm-Extrusion improved. New version released

New calculating algorithms implemented in the latest version of QForm-Extrusion provide more accurate prediction of profile tip shape than before. A comparison of experimental results with simulation results using old and new models is shown below.



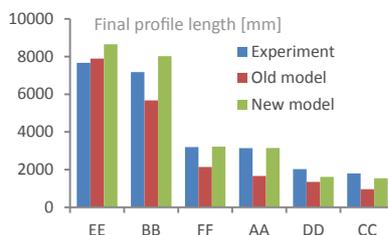
a) Old model

b) Experimental

c) New model

In March 2015 an international Benchmark ICEB 2015 took a place in Florence, Italy, where QForm-Extrusion once again showed the best and the most accurate simulation results compared with the experiment.

QForm is constantly being improved through the useful feedback from our customers. We have improved the friction model in the latest version of QForm-Extrusion that delivers the same ranking of the profile velocities in holes but also provides much better quantitative correspondence to experimental data (ICEB 2015 in Florence, Italy).



EVENTS

24 Nov 2015

Dr. Nikolay Biba with a QForm V8 presentation at CBM Aerospace event in Derby, UK

25 – 26 Nov 2015

QForm Simulation Workshop by Micas Simulations Limited in Oxford, UK

27 Nov 2015

QForm users conference with support of KENDIN and AGH University in Krakow, Poland. Beneficial QForm use report by Kuźnia Polska. Special guest is Sergey Stebunov, QuantorForm CEO

7 Dec 2015

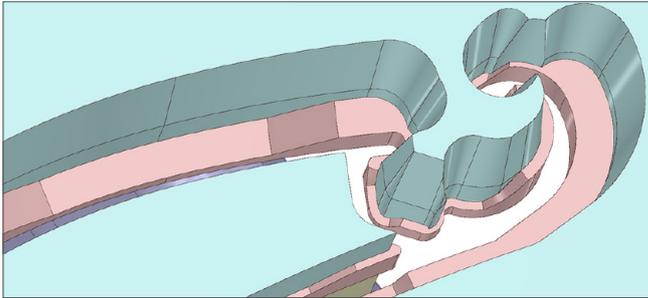
Association of Indian Forging Industry meeting in Chennai, India. Special offer for QForm software for AIFI members

21 Dec 2015

QForm workshop with support of Design Through Manufacturing in Bangkok, Thailand

New QExDD features. Closer to real manufacturing

Our new version of QForm-Extrusion Die Designer (QExDD) includes a feature for automated creation of advanced relief in accordance to the specific profile geometry. This feature provides a relief solid model with different offset and inclination values that correspond to the actual manufactured ones. This speeds up the design process, lowers the cost and helps get more accurate 3D models of tooling sets for further extrusion simulation or die manufacturing.



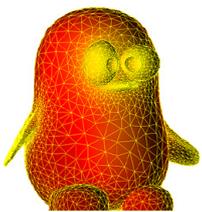
A solid bearings mode has also been added that allows the creation bearings with variable height values in solid models. The bearings are created automatically when they return to the parametrical model according to parameterization in the Bearing editor. Such a model takes the profile geometry characteristics into account and is more suitable for simulation of relief hogging as well as for further manufacturing of tooling set.

International QForm Olympiad

In April 2015 QForm will host a competition between students from different universities of Russia, India, Italy and Germany. Additional students from around the world are welcome to participate in the competition remotely. Register at our website or via your local distributor to take part in the event.

The competition will consist of two tasks: developing a forging and then modeling the developed forging process in QForm. QuantorForm Ltd. will give a free 3 month software license to any university that wants to participate in this event.

QForm operates on Linux now



We are always glad to receive suggestions and wishes from our customers and partners to improve our products in accordance with users' requests so we are happy to report that QForm can now run on Linux operating systems. We are sure this improvement will give an advanced impulse for Linux users in development in industry and science.

QForm basics book in Chinese

A book «Finite element method in metal forming simulation and QForm software basics and case studies» of almost 300 pages of finite element method theoretical basis, its realization in QForm simulation software and QForm user's guide with case studies released in Chinese language.

Authors of the book are Jiang Peng, Song Tong, He Xiaomao (Beijing Research Institute of Mechanical and Electrical Technology), Liu Hanlong, Cui Qiyu (Beijing Intelligent United Innovation Technology Co. Ltd), Sergey Stebunov (QuantorForm Ltd. CEO) and Andrey Vlasov (Bauman Moscow State Technical University).



NEW USERS

Sistem Alüminyum

Turkish aluminum parts manufacturer producing 35 kilotons aluminum profiles and 4,5 million m² composite panels a year

Preformed Line Products

Designer and manufacturer of products and systems employed in the construction and maintenance of overhead and underground networks

SAAB ENGINEERING

Indian manufacturer of automotive and engineering components with cold forging, CNC machining and heat treatment facilities

SADHU FORGING

Manufacturer and supplier of automotive forged parts from Faridabad, India

RB Forging

Founded in 1996 affiliated company of RB Group produces forged parts and supplies products in India as well as internationally

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