

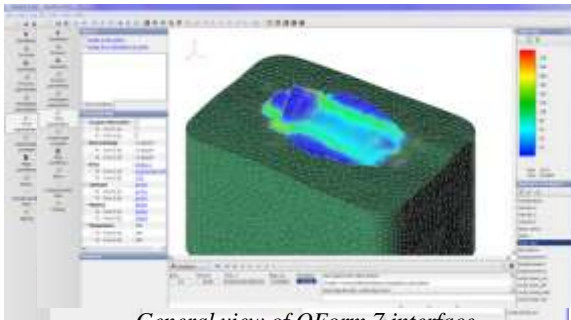
## Dear Colleagues!

We are happy to introduce you our first Newsletter providing information about QForm and its current development. We will now be issuing newsletters on a regular basis during 2011 and ongoing. In Part 1 we are pleased to inform you about the latest QForm7 version and new QForm 5.1 capabilities, some of which have been developed in conjunction with other software companies.

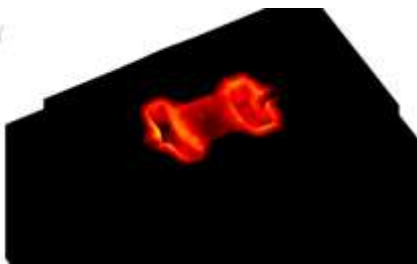
In Part 2 we inform you about future events taking place during 2011 and outline QuantorForms development plans for further extension of the QForm modules. In this section we also update you on planned user seminars, arranged by QuantorForm and their Distributors and other events in which we participate where we will make presentations or attend conferences. We are happy to invite you to take part in any of our seminars and/or visit our stands at the different exhibitions. Within these events our representatives will be happy to answer all your questions and demonstrate any aspect of the QForm software.

### I PART: TECHNICAL NEWS

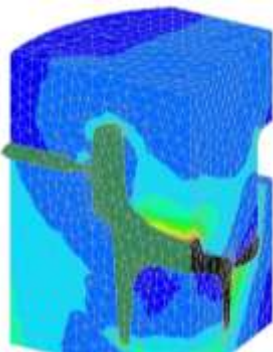
#### New QForm 7 issue



General view of QForm 7 interface



Coupled simulation of thermal problem: the temperature distribution in the tool.

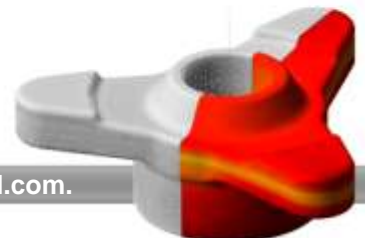


Coupled mechanical problem in the workpiece and in the tools

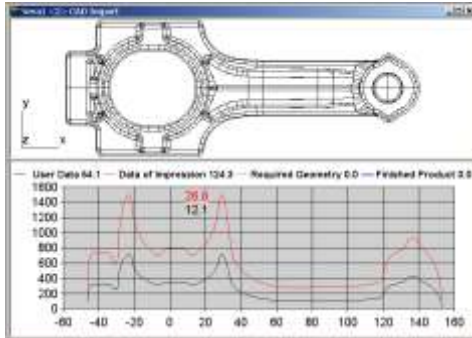
We have started testing new version of QForm. We have dramatically extended the program functionality, significantly enhanced the stability and calculating speed. Below, you may get acquainted with the new software capabilities and the main changes:

- ❖ New Data Preparation Wizard and graphic interface.
- ❖ Flexible opportunities for work by both production engineers and for more profound analysis under laboratory conditions.
- ❖ New simulation capabilities:
  - Coupled simulation of thermal fields in the workpiece and tools.
  - Coupled mechanical problem of the workpiece and deformable tools.
  - Coupled simulation of several deforming bodies.
  - Calculation of assembled pre-stressed tools.
  - Elastic-plastic model for workpiece material.
- ❖ New types of equipment:
  - Tools controlled by specified load.
  - Spring-loaded tools.
  - Tools with two rotational axes.
  - Simulation of hydroforming with variable hydrostatic pressure.
- ❖ Enhanced calculation methods.
- ❖ Advanced control of the simulation.

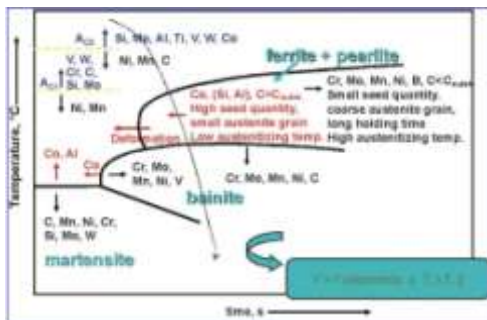
The new software and its capabilities will be presented at the series of the seminars that are scheduled to take place in different countries during this year.



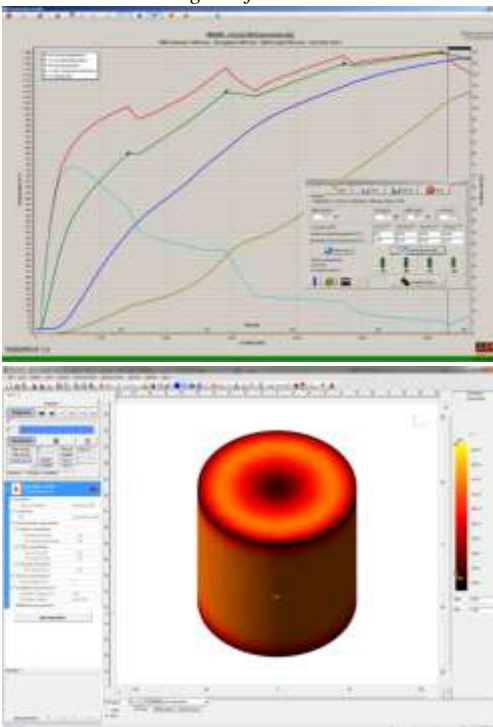
## Cooperation with the software developers



Mass distribution chart along the forged part axis in VeraCAD



Schematic TTT diagram for heat treatment



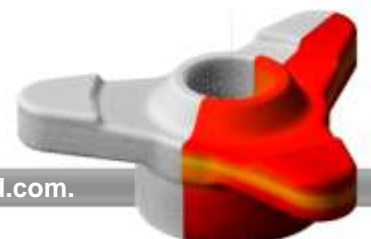
Induction heating simulation results in THERMPROF software and results importing to QForm

For many years the QForm simulation software has been used by both open and closed die forging companies all over the world mostly for simulation of metal forming. Recently the program has been enhanced by adding the capabilities for the simulation of ring rolling, extrusion, induction heating, microstructure evolution and heat treatment. Some of this new functionality been jointly developed with other industrial software produced who have been working in associated products areas for many years.

The first partner relations have been set up with VeraCAD software ([www.eratz.de](http://www.eratz.de)). VeraCAD is used for design of rolling passes and roll shapes for reducer rolling technology. Reducer rolling is the method for production of the profiled billet that should provide optimum distribution of the material along the axis of the forged part. Significant material savings can be made particularly in the automotive industry with high volume production. Due to the link between VeraCAD and QForm the reducer roll design is transferred to QForm for simulation and verification of the material flow during deformation. Where the predicted rolled billet shape is too different to the shape that was initially required the user makes the necessary changes to the process parameters and rolls design. After several iterations the final roll design goes to manufacturing. Having this technology process available for simulation in QForm will bring significant advantages for such market sectors.

The addition of the Microstructure and Heat Treatment Simulation Modules within the QForm software has been achieved through a joint project between QuantorForm and GMS Bernau, Germany who is a developer of Matilda database on metallurgical properties ([www.gmt-engineering.de](http://www.gmt-engineering.de)). The first of these modules provides simulation of distribution of the average grain size and the fraction of recrystallised grains through the volume of the product. By variation of the working temperature and deformation parameters it is possible to find the conditions when the grain size in the product fits the requirements. The second module predicts phase composition, mechanical properties, residual stresses and shape distortion in the product after quenching and tempering. It is based on interpolation of TTT-diagrams schematically shown on the picture and continuous simulation of the phase transition taking into account the influence of the alloying elements in the steel.

QuantorForm and the ABP Induction, Germany ([www.abpinduction.com](http://www.abpinduction.com)) have jointly developed an interface between the QForm software and THERMPROF. The THERMPROF software simulates conditions of the induction heating of the billet material in accordance to required parameters, necessary efficiency and the heating time in ABP inductor. In the picture (left) there are graphics of temperature variation during the process at the points along the radius of the billet. These results can be imported into QForm to provide real temperature distribution in the workpiece after induction heating.



## II PART: EVENTS 2011

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### 1. QuantorForm participation in exhibitions and conferences:

- ❖ **ESAFORM2011**, taken place in UK within 27-29 April ([www.qub.ac.uk/sites/ESAFORM2011](http://www.qub.ac.uk/sites/ESAFORM2011)).
- ❖ **7<sup>th</sup> International Congress Aluminium Two Thousand**, taken place in Italy within 17-21 May ([www.aluminium2000.com](http://www.aluminium2000.com)). QuantorForm, Ltd. jointly with their German partner Wihelm Oberste-Beulmann GmbH & Co. KG - supplier of special steels, will take part in the 7<sup>th</sup> International Congress "Aluminum Two Thousand". The aim of joint QuantorForm Ltd. and Wihelm Oberste-Beulmann GmbH & Co. KG cooperation is to provide the customers with best solution for longer tool life by achieving maximum technical and economical effect of die work conditions by means of simulation in QuantorForm products and further supporting the customers with best materials via Wilhelm Obserte-Beulmann GmbH & Co. KG.
- ❖ **4<sup>th</sup> International Conference on Extrusion and Benchmark ICEB2011**, taken place in Italy within 3-5 October ([www.ice-b.net](http://www.ice-b.net)). QuantorForm Ltd. is for the second time the main Sponsor of the Conference. On the ICEB 2011 3<sup>rd</sup> day "Technical Courses", which will be held on the 5<sup>th</sup> of October, 2011, QuantorForm, Ltd. will arrange a the Seminar on QForm-Extrusion.

### 2. QuantorForm seminars:

- ❖ **China**, March.
- ❖ **Poland**, 19th of April, Krakow, Hotel Pod Wawelem.
- ❖ **Germany**, 11-12th of May, Berlin.
- ❖ **Italy**, 5th of October, within International Conference on Extrusion and Benchmark ICEB2011.

Terms of participation: **free of charge.**

Seminar registration: at our web-site [www.qform3d.com](http://www.qform3d.com). Registration to the seminars will be open at the beginning of February, 2011!

For arranging meeting and negotiations within exhibitions/conferences or any additional information, please contact QuantorForm: **phone/fax: +7 (495) 663-3380; e-mail: [info@qform3d.com](mailto:info@qform3d.com).**

**We invite you and your colleagues to visit our booths within exhibitions and conferences, and take part in our seminars. We will be happy to meet you at our events and are waiting for your applications!**

