

TRANSVALOR NEWS

1. Quarter 2010

Let Forge 2009 find the best processing conditions to achieve a goal you specify, and under restrictions you control. This new feature - now implemented in the version FORGE 2009 - will allow you to setup a case and then optimize the setup to obtain the best results on the nominated areas; for example the lack of folds, the filling of the dies etc..



Automatic optimization module in Forge 2009

Optimization is a new efficient problem-solving approach

This feature in FORGE 2009 is a new approach for solving highly time-consuming problems as encountered in non-steady forming processes. The user's job is easier and allows him to come up with new solutions by analyzing the entire spectrum of parameter in a more systematic and consistent manner.

In the past, a user would launch a series of computations and modify, step by step, the data setup, considering the results obtained so far in previous simulations. This was very labor intensive and time-consuming.

Optimization is easy to use

Today, the data setup for an optimization is much easier. The only additional task to perform is the preparatory analysis for the optimization project. The user has to choose one or more criteria to be improved, identify the constraints (if any) which must be honored, and choose the parameters that will be varied, as well as their allowable range of variations. FORGE launches automatically the series of simulations with a choice of reasonable parameters in order to obtain an optimal solution.

For example, the objective of the optimization can be the reduction of weight of a billet considering filling constraints, minimizing forging load, to obtain precise shapes, or improving the soundness of the material, etc.

Optimization is fast

The optimization strategy is parallel. With the utilization of cluster computing resources, the optimization computations will run simultaneously with different parameter values. For example, the computation time for an optimization executed on an ideal cluster version reduces to one tenth of the time of classical FORGE computations.

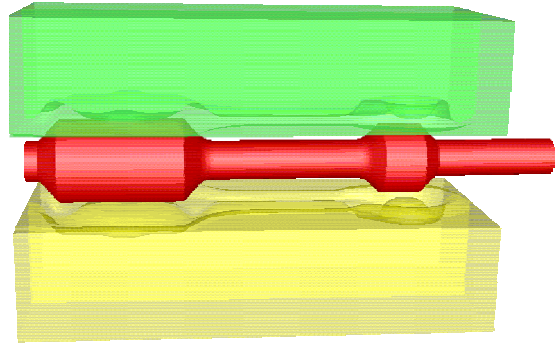
TRANSVALOR S.A
Parc de Haute Technologie
Sophia Antipolis
694, av du Dr. Maurice Donat
06255 Mougins cedex - France
☎ +33(0)4 9292 4200
☎ +33(0)4 9292 4201
sales@transvalor.com

Optimization is flexible

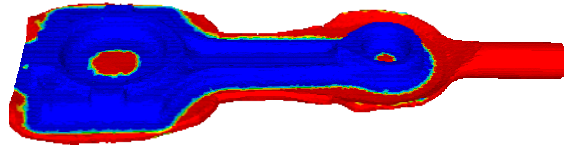
The license structure in FORGE 2009 allows the optimization model to be very efficient not only on a cluster version. The computations can also run on a PC or even split up on an entire PC network.

Examples:

This application regards a **connecting rod optimization**. It aims at minimizing the volume of the material while satisfying the filling of the dies and a shape without folds. The results show a **saving of approximately 4,5% material weight** compared to the existing production run. The complete optimization problem was solved in only 20 hours using parallel computing.

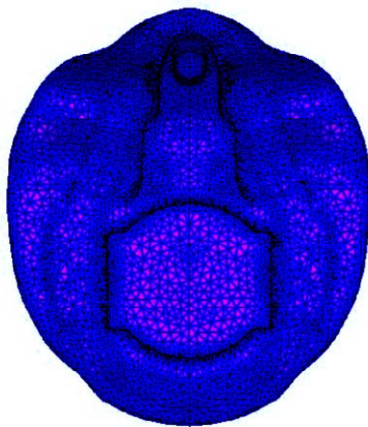


Definition of parameters

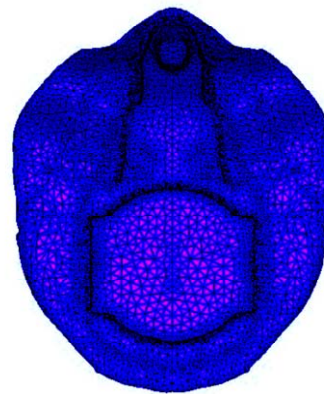


Best matching design found

In the example presented below the invested weight and press load could be considerably improved:
Approximately 16% of material weight could be saved!



Before optimization:
 Weight: 8,9 kg
 Pressload: 2800t



After optimization:
 Weight: 7,5 kg
 Pressload: 2000t