FORGE®

Automatic Optimization

You need to optimize your process? Discover the solutions for identifying an ideal billet for complete and flawless filling or a tooling design that minimizes stress. No more long and boring trial plans. Choose automatic optimization!

FORGE® automatic optimization is an extremely effective tool. Thanks to its genetic algorithm, you can automatically vary an entire range of process parameters (billet dimensions, tool shapes, billet positioning, etc.). This way you will be able to identify the best conditions for optimally forming your part. In addition, you will study parameter identification techniques using reverse engineering as well as couplings with CAD environments for designing blockers and tooling.

LEVEL

Advanced - Users willing to master automatic optimization principles so as to achieve reliable and efficient use.

PREREQUISITES

A good grounding in the use of FORGE® is required.

A perfect knowledge of the process is essential to determine what you want to optimize and how.

You need to understand chaining and transitions.

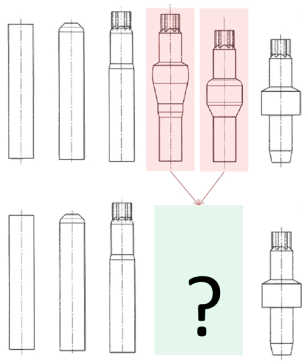
GOALS

- **Understanding optimization concepts and terms: genetic algorithm (individuals and generations), minimizable, constraint and parametered action**
- **Optimizing industrial processes**
- **Reducing billet volume and finished part faults**
- **Identifying parameters by reverse engineering**
- **Coupling optimization with CAD (PTC Creo Parametric, SolidWorks and Catia)**

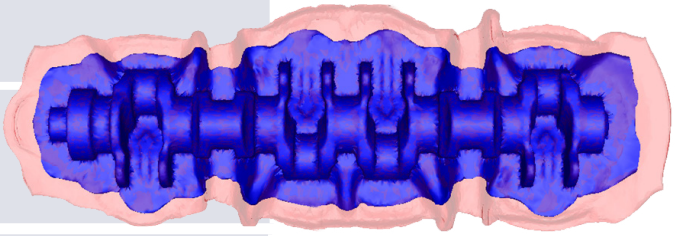
TRAINING	DURATION	PRICE EXCL. TAX	PARTICIPANTS
In-company	1.5 days	€2400 per training	1 to 3 people

DAY 1 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

Introduction	· Presentation of Transvalor · Course goals
Reminders on chaining	· Chaining · Transitions · 2D & 3D chaining
General concepts	· Automatic optimization · Individuals and generation · Definition of a minimizable · Definition of a constraint · Definition of parametered actions
Optimizing billet volume	· Setup · Analyzing optimization results
Optimizing a 3D rolled blocker	· Setup · Launching computation · Analyzing optimization results
Determining a friction coefficient	· Defining the simulation · Setup · Interpreting the results
Determining rheology by reverse analysis	· Defining the simulation · Setup · Interpreting the results



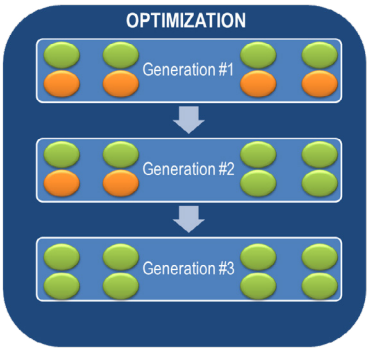
Optimization of a forging sequence



Original design (in red) vs Optimized design (in blue)

DAY 2 > 8.30 a.m. to 12.00 p.m.

Determining a heat transfer coefficient	· Defining the case · Setup · Interpreting the results
Coupling optimization with CAD	· Coupling concept · Example of use with PTC Creo Parametric · Example of use with SolidWorks
Innovation	· Optimization with discrete values · Optimization with Design Of Experiment
Conclusions	· Questions and course assessment



Genetic algorithm