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 analysis as well as couplings with CAD environments for designing blockers and tooling.

LEVEL

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

PREREQUISITES

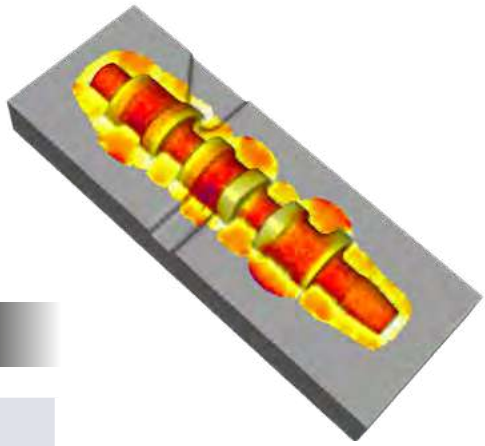
A good grounding in the use of FORGE® is a requirement. A perfect knowledge of the process is essential to determine what you want to optimize and how. You need to know the chaining and transitions concepts.

GOALS

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

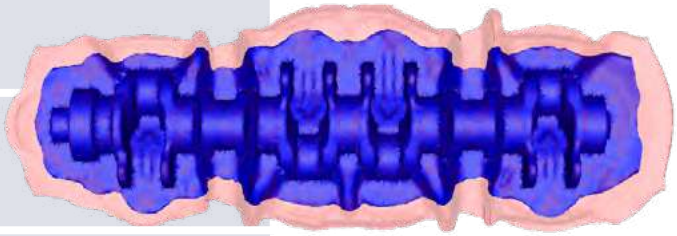
DURATION	DATES		
1,5 Days	04-05 March	29-30 June	04-05 November

TRAINING	PRICE EXCL. TAX	PARTICIPANTS
Inter-company	1050€ per person	3 to 8 people
In-company	2250€ 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.

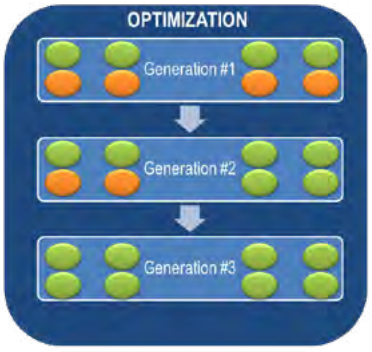
Introduction	· Transvalor presentation · Course goals
Reminders on chaining	· Chaining concept · Transitions · 2D & 3D chaining
General concepts	· Automatic optimization concept · Individuals and generation notions · Definition of a minimizable · Definition of a constraint · Definition of configured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



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

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

Determining a heat exchange factor	· 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
Conclusion	· Questions and course assessment



Genetic algorithm