



## Bottero Innovates with Optimized High Performance Mold-Motion using modeFRONTIER

*The company, one of the world leaders in the glass industry, leveraged the optimization platform developed by ESTECO to achieve the perfect balance between optimal geometry and mechanism stability*

Trieste (Italy), 9<sup>th</sup> May 2013 – Product innovation gained momentum at **Bottero**, leader in the **glass industry**, who leveraged modeFRONTIER to optimize a **high performance mold-motion mechanism**. The optimization platform developed by ESTECO allowed engineers in the Structural and Fluid Dynamics Simulation Department to achieve the **perfect balance between optimal geometry and mechanism stability**.

The recent launch of **E-MOC**, a family of mold opening and closing mechanisms (MOC), has challenged the hollow glass industry. E-MOC introduces a completely **new cooling concept**, granting the possibility to **achieve the proper temperature profile**, according to the type of process required for the application field.

“The innovative idea behind E-MOC design is the result of our R&D team’s work: numerous constraints were limiting the possibility of changing the machinery design, so modeFRONTIER, the multi-objective optimization platform, came to our help”, says **Marcello Ostorero**, Structural and Fluid Dynamics Simulation Department Manager at Bottero. The mechanism had to be equipped with a universal mold holder providing efficient cooling and, when mounted, it had to be readily accessible and installable on both **new and existing machines**. The optimal system performance called for a smooth and precise mold motion, with fast closing time, and maximum closing and clamping forces.

“Due to the intricate nature of the required mechanism, the **systematic optimization approach** proposed by modeFRONTIER was the only way to obtain a functioning high-performance design”, says Ostorero, “modeFRONTIER managed to **find a fine balance between a high number of rigorous constraints** and adjust the model geometry to the most important mechanism specifications so as to **increase its efficiency and quality**, while successfully **driving a number of software**, each solving a single aspect of the problem, integrated in a single workflow”.

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### About ESTECO SpA

ESTECO is a pioneer in numerical optimization solutions, specialized in research and development of engineering software for all stages of the simulation-driven design process. Perfecting engineering and reducing complexity in the design process is our vision. Founded in 1999, the company is headquartered in Area Science Park in Trieste (Italy) and currently employs 40 professionals and serves more than 250 international clients including BMW, Daimler, Ferrari, FIAT, Ford Motor Company, Honda, Mazda, Toyota. [www.esteco.com](http://www.esteco.com)

### About modeFRONTIER

modeFRONTIER is an integration platform for multi-objective optimization, automation of design simulation processes and analytic decision making. The software provides seamless coupling with engineering tools within different disciplines and its powerful workflow allows for the execution of complex chains of design optimization. Through innovative algorithms and advanced data visualization tools, modeFRONTIER helps companies identify the set of best possible solutions, while eliminating guesswork and introducing rigor and automation.

## **About Bottero**

Bottero is one of the world leaders in the glass industry, offering a complete range of solutions in the field of automatic machines for glass processing, in particular glass container production lines, flat monolithic and laminated glass lines and machines, and production lines for float and laminated glass sheets and packaging lines. Headquartered in Cuneo, Italy, the company has been present on the market for over 50 years, with branches and production plants in 7 countries: [www.bottero.com](http://www.bottero.com)