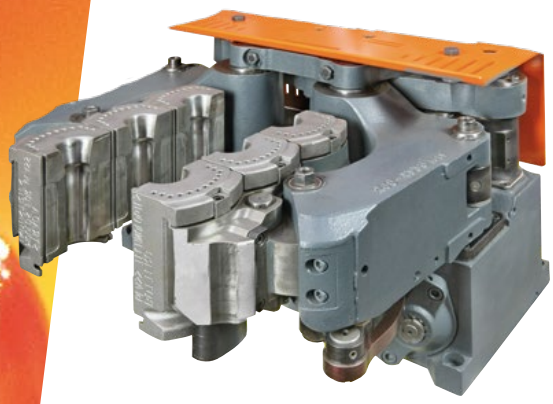
E-MOC Technology



EN

Hollow Glass Technology

we • glass

we • glass

We know glass, we love glass

As a global leader in hollow glass and flat glass processing technology, we have been helping to shape one of the most beautiful and useful materials in the world for over 60 years. Its unique qualities, combined with the passion for technology and innovation, guide us in seeking for newer and more effective solutions to improve and expand its use.

BOTTERO

E-MOC

The E-MOC is an enhanced open and close mechanism born from glass plants experience. It’s the key to simplify the forming process. A process oriented cooling system tailored on customer needs. The reading will introduce to E-MOC main features and production advantages.

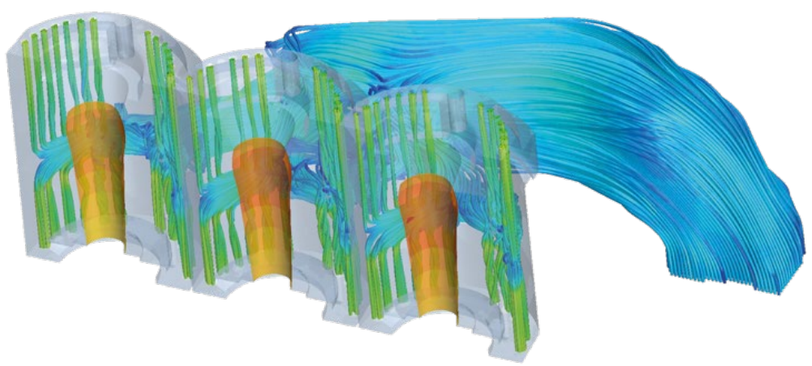
“Forming means heat extraction control...”

IS machine for forming engineers is a **heat exchange device**
The **cooling capability** is forming performance and its control is forming **know-how.**

What Market needs:

“Cooling capability is the full answer to the market needs”

What Cooling capability offers:

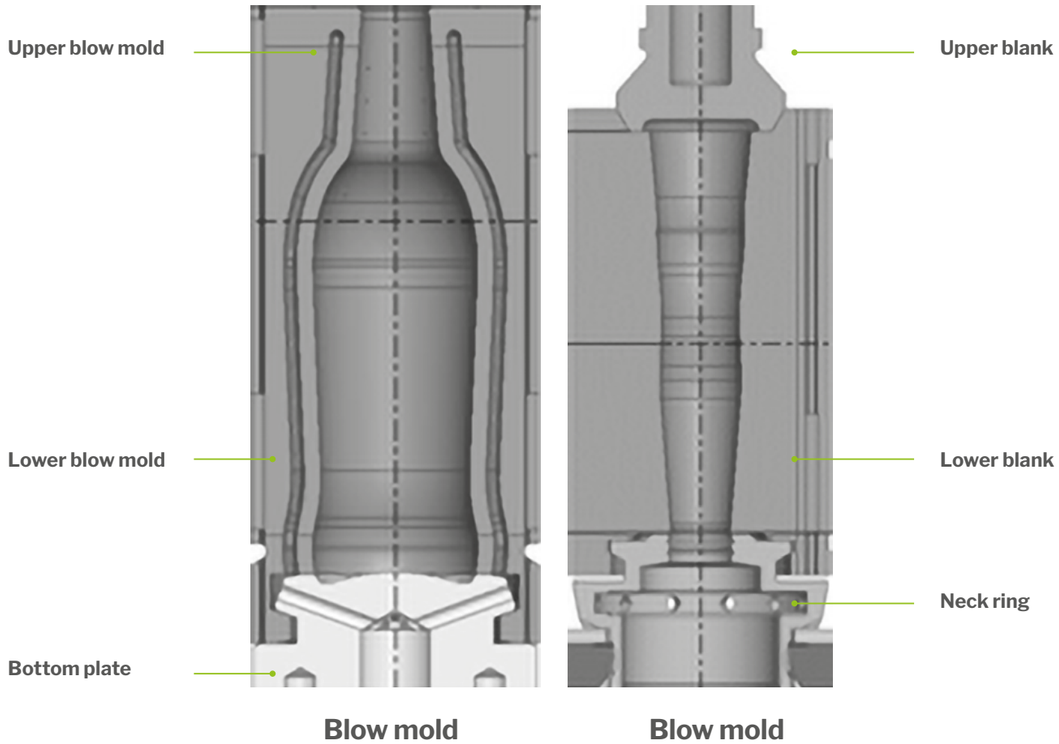


Conjugate heat transfer analysis: cooling specifications, mold temperature, thermal transfer and glass behaviour are all inside the simulation.

“E-MOC is Bottero solution for cooling capability following market needs...”

E-MOC is the most advanced **heat exchange device**.
Airflow cooling rate can be divided in the following areas

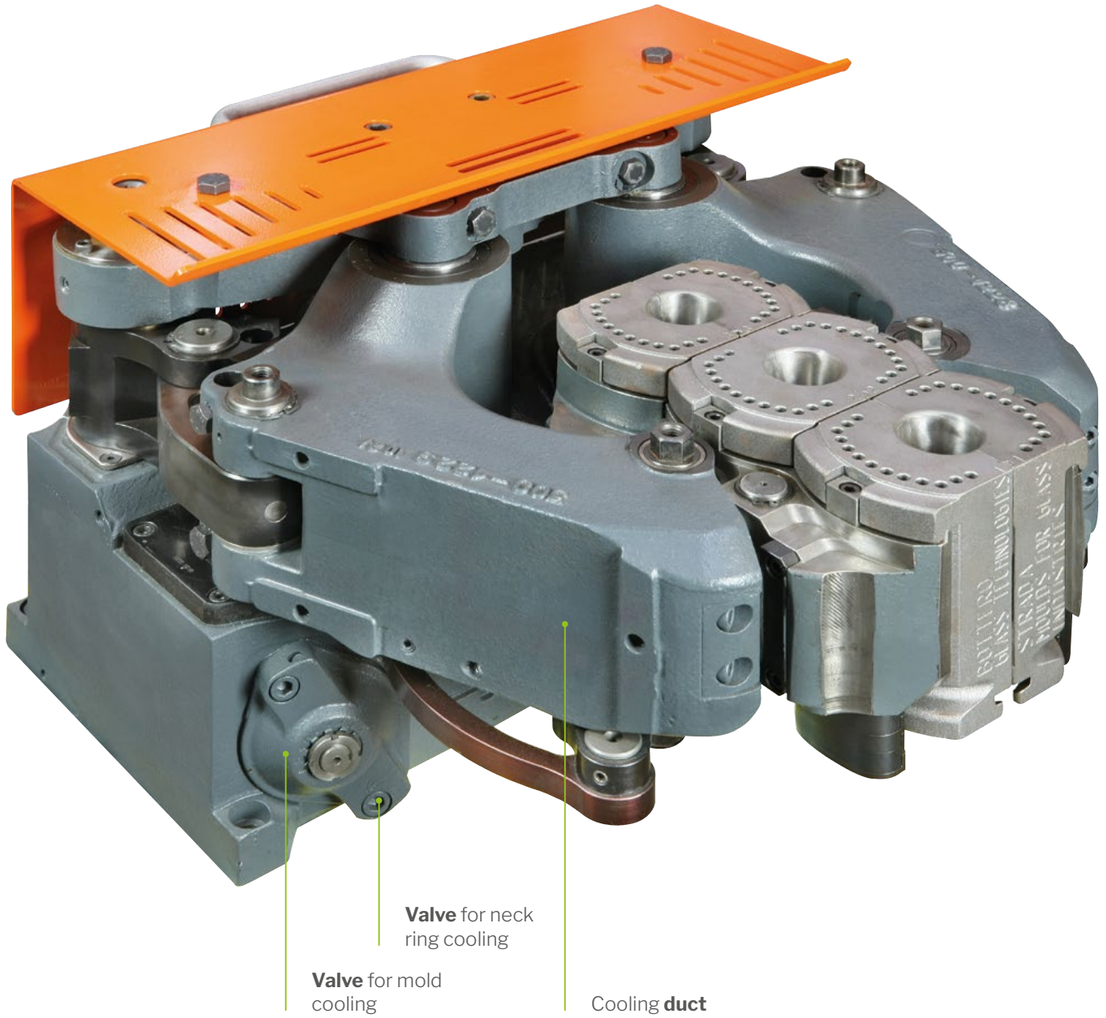
E-MOC cooling system



“What’s the cooling technology?”

Air flow carried, partialized and **controlled.**

Blank machanism

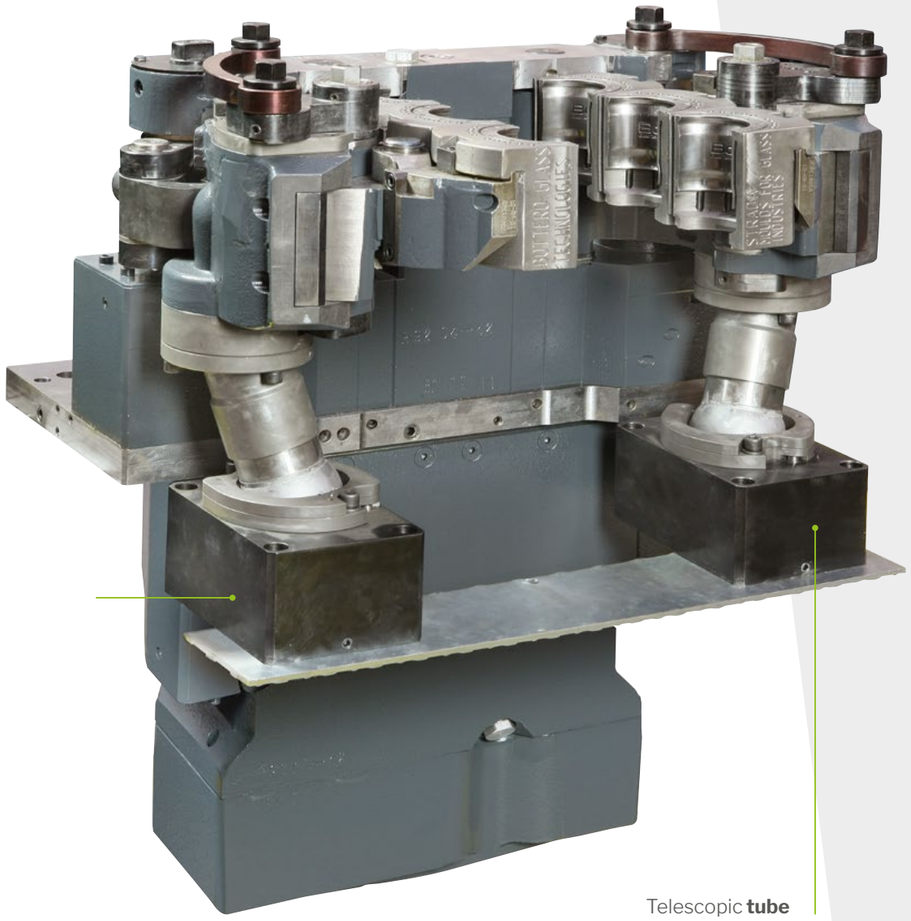


Valve for neck ring cooling

Valve for mold cooling

Cooling **duct**

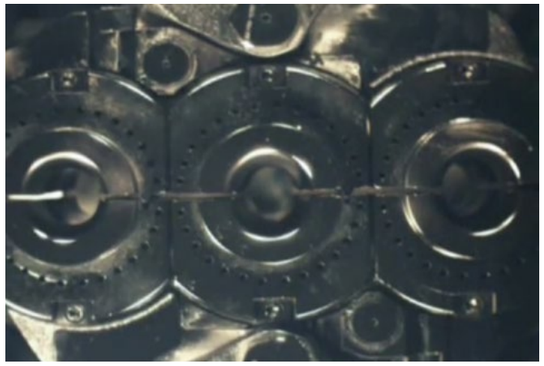
Blow mechanism



Valve

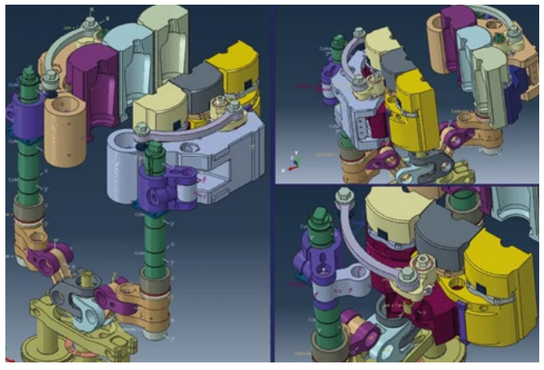
Telescopic **tube**

“What about E-MOC mechanism?”



Levers and parallel motion

- **Mold life time** increase
- **Easier** swabbing
- **More efficient** draft angle



Designed with structural simulations

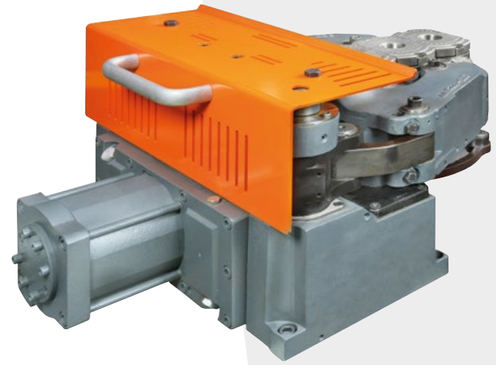
- **Higher clamping force**
- **Smooth o/c** movement
- **More efficient** clamping

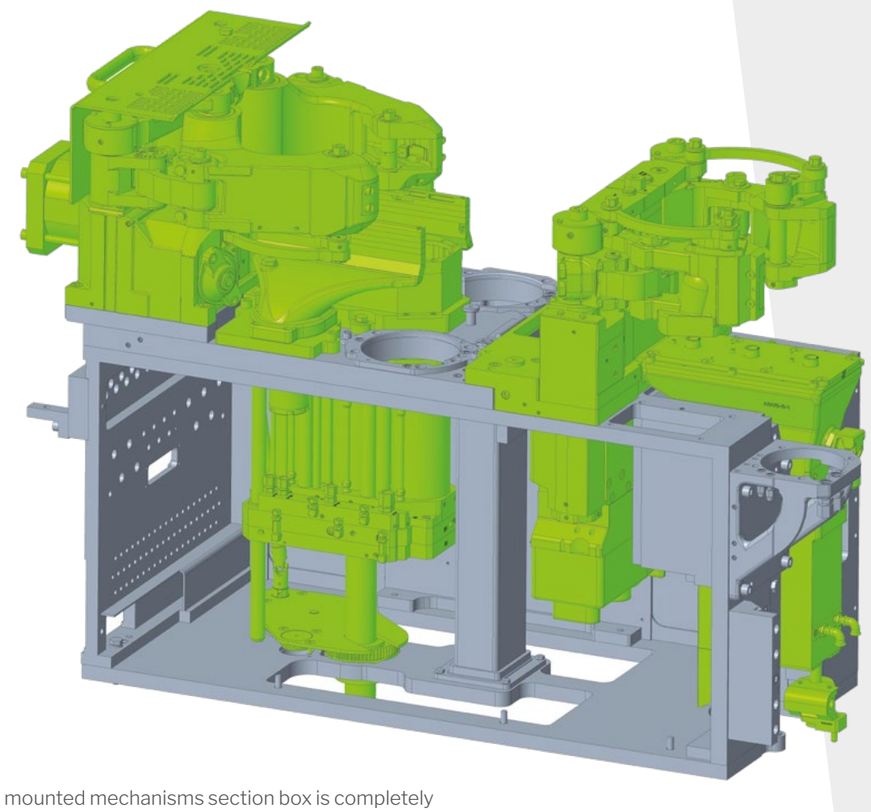
Job change with E-MOC is

- Faster
- Easier

Levers and parallel motion

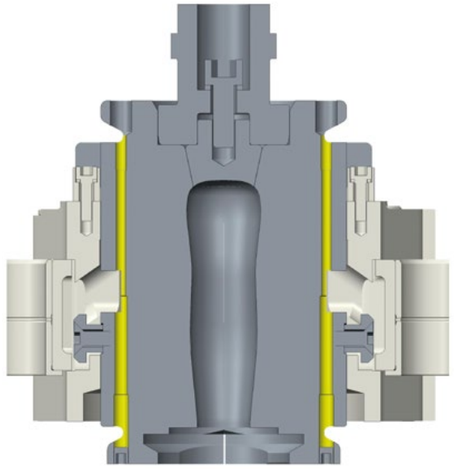
- **Mold life time** increase
- **Easier** swabbing
- **More efficient** draft angle





With all top mounted mechanisms section box is completely empty. Longer stroke plunger can be installed. Mechanism maintenance can be done in workshop, while machine is running.

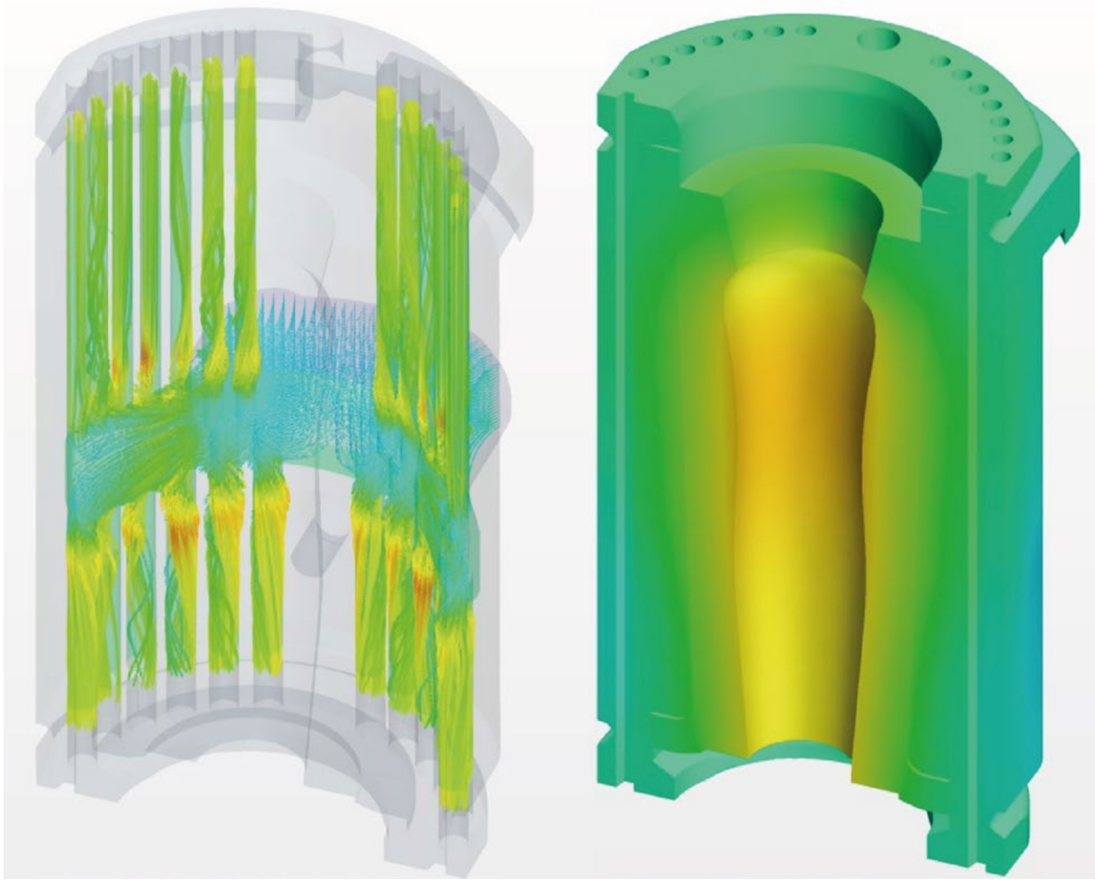
Cooling advantages: Blank cooling



E-MOC axial cooling

- **Efficient** Cooling from mold center
- **Better** horizontal temperature homogeneity
- **Easy** vertical temperature profile adjustment with PLUGS
- **Full 360°** cooling time
- **Low** fan pressure and mass flow requirement
- **Indipendent** blank and neck ring cooling

CFD airflow velocity controls mold temperature profile

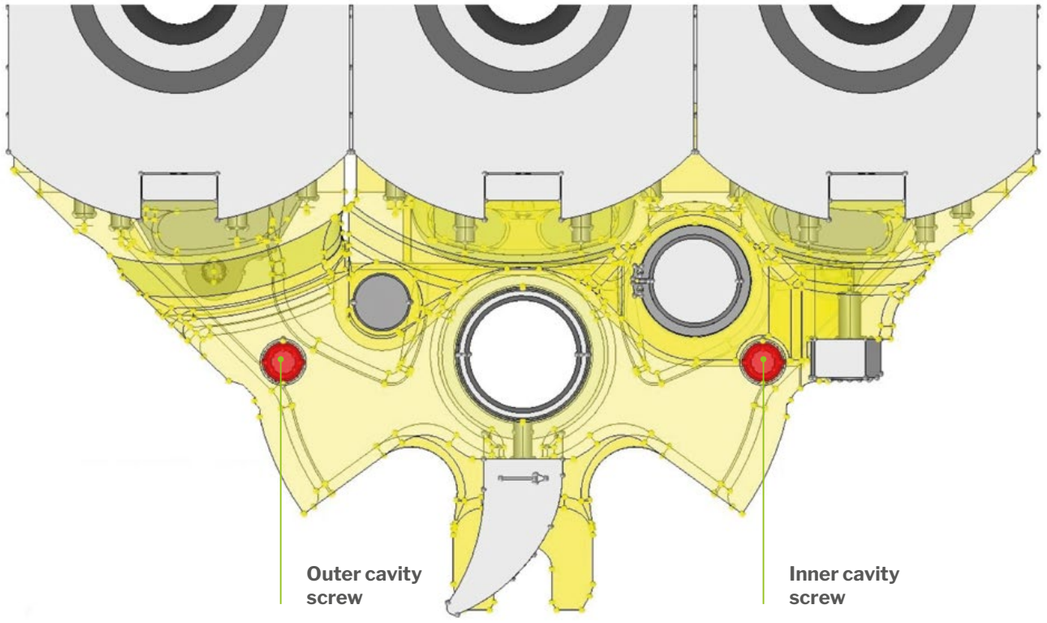


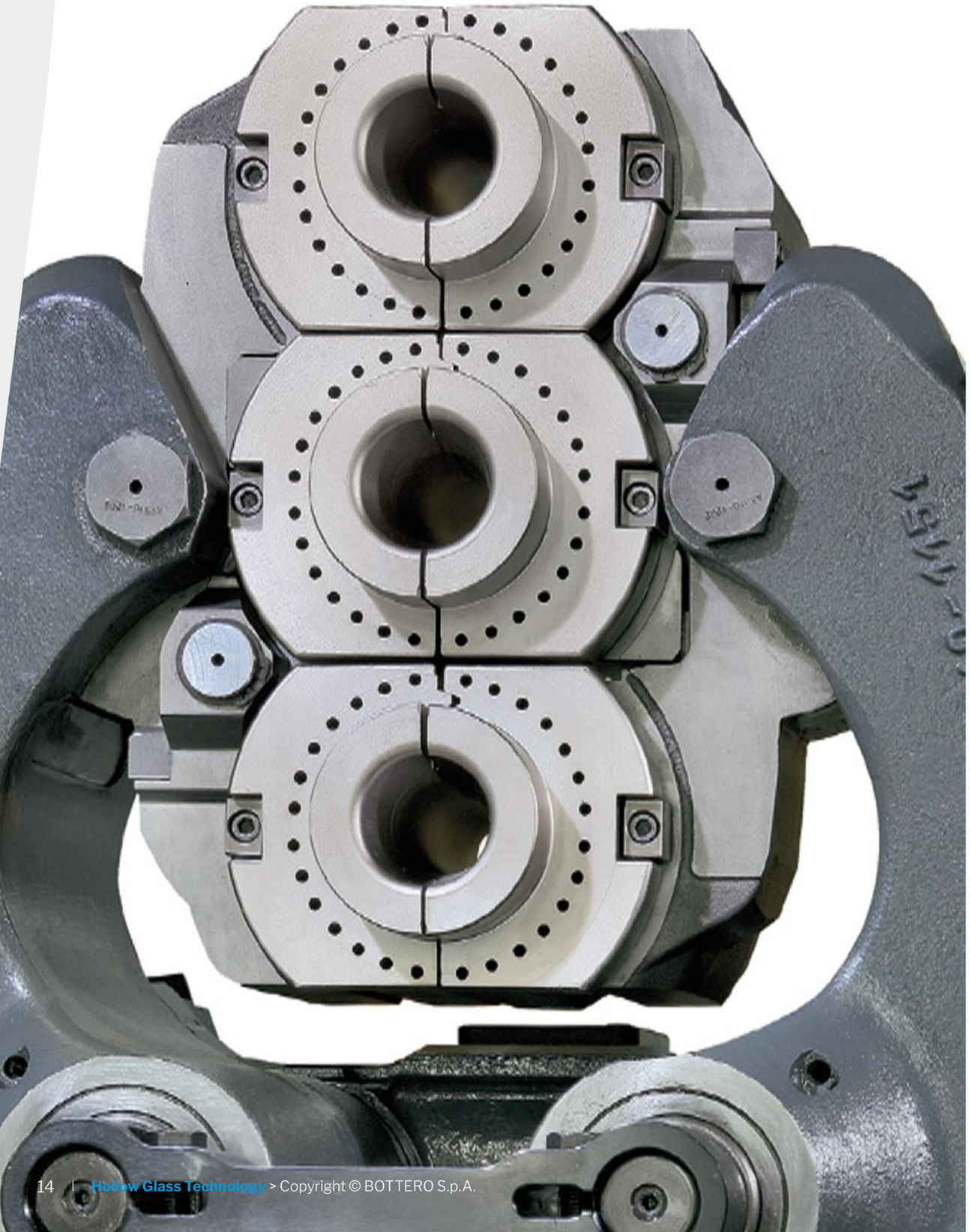
Computational fluid dynamics simulation for tailored parison cooling.

The cooling **adjustment:**

- Top & Bottom **number** of holes
- The **diameter** of holes
- The circumferential **distribution**

E-MOC axial cooling

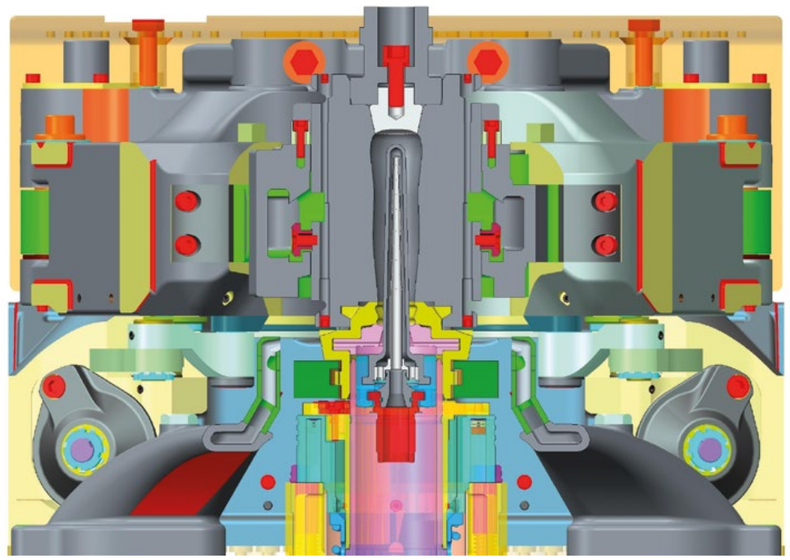




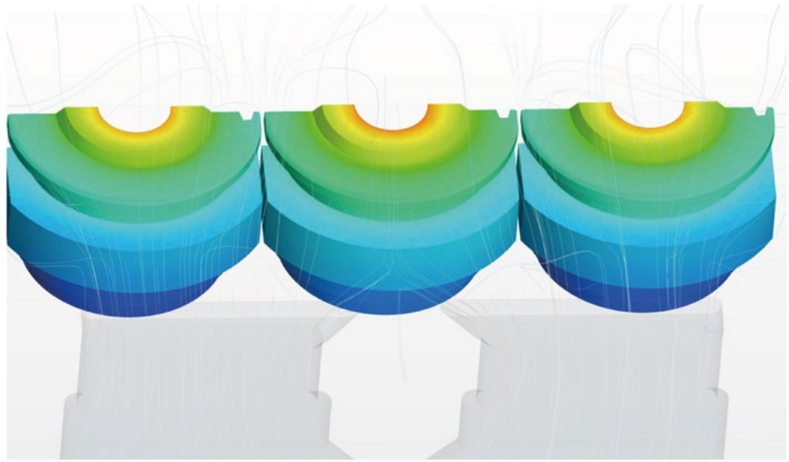
Cooling advantages:
Neck ring cooling

CFD airflow velocity controls mold temperature profile

ADJUSTABLE for all invert position



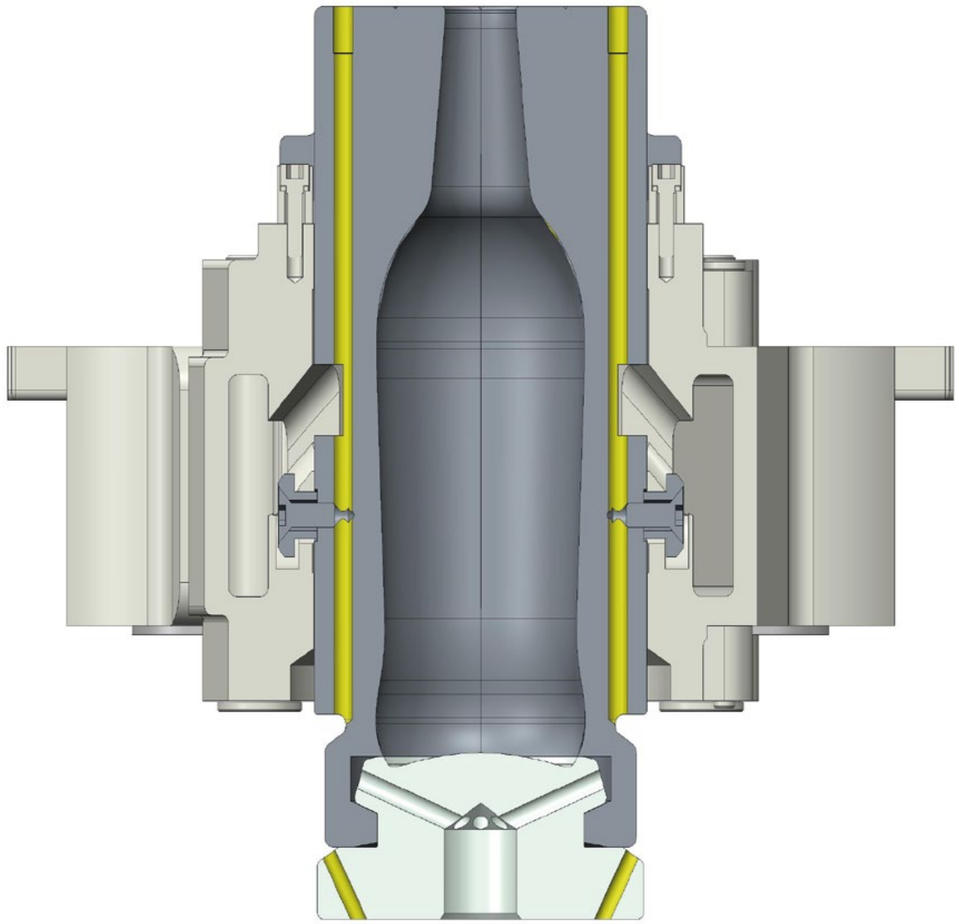
EFFICIENT for all cavities



Cooling advantages: Mold cooling

E-MOC mold axial cooling

- **Efficient** cooling from mold center
- **Better** horizontal temperature homogeneity
- **Easy** vertical temperature profile adjustment with plugs
- **Full 360°** cooling time
- **Low** fan pressure requirement
- **Indipendent** mold and bottom plate cooling
- **No** air **leakage** inside mold cavity



We support customers' development

Bottero, a global technological partner for customers growth

Thanks to the experience earned in the field through thousands of installations and thanks to the continuous and significant investments in research and development, Bottero has deserved the trust of many among the most important manufacturers of glass containers in the world. The **international** dimension of the company, the ability to be highly **innovative** and the **independent** market positionput Bottero in the ideal condition to supply every customer with solutions for the optimization of production processes and indications on new opportunities for technological investments.

Thanks to the presence in the hollow glass and flat glass sectors, Bottero can boast a widespread presence and top-class technical and commercial assistance.

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Bottero Flat Glass Inc.
Kernersville - North Carolina - USA

Bottero Glass Industry Co. Ltd
Shangai – China

Bottero has a unique know-how in glass processing available to customers who need technological development.

The images and data in this Catalog are only indicative and never override the contract engagement of Bottero S.p.A.
For photographic reasons the products are often shown complete with accessories that are not part of the standard equipment of the machine.

Discover the Bottero technology for Hollow Glass

Technology
Forming Machine
E-MOC Technology
Gob Forming
Servo Technology
Ware Handling
Pneumatic Mechanism

Automation
Architecture
Control System

Service
Forming Engineering
Customer Service

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