Automation meets artistry: The HSTEC CPM approach

A persistent bottleneck in mould finishing finds resolution in HSTEC's CPM 200 and 400 series. Designed exclusively for cavity polishing, the system combines servo-driven control, programmable emboss omitting and wet/dry flexibility to deliver automated consistency without full robotic complexity.

In the lifecycle of glass container moulds, the finishing stage has notoriously been the most difficult to standardise. While rough machining is easily automated, polishing remains a stubborn outlier-often reliant on manual labour which is increasingly scarce, or expensive robotic cells that can be overkill for smaller batches. The industry has long needed a middle ground: a solution that offers the consistency of automation without the complexity of full-scale robotics. Enter HSTec Glass Systems with their

latest answer to this specific shop-floor challenge: the CPM (Cavity Polishing Machine) Series.

A DEDICATED SOLUTION FOR A DELICATE PROCESS

The CPM 200 and CPM 400 aren't just repurposed milling machines; they are purpose-built units designed solely for the geometry of mould cavities. The distinction matters. By focusing on this single task, HSTec has engineered a system that respects the nuances of the mould profile in a way that general-purpose machines often miss.

The series comes in two primary configurations to match production throughput:

- CPM 200: Equipped with two independent polishing heads.
- CPM 400: A four-head powerhouse designed for higher volume workshops.

Both iterations share a robust backbone: a servo-driven architecture managed by Siemens control systems. This isn't just about brand names; for the operator, it means the feedback loop is immediate. The pressure, spindle speed and rotation velocity aren't just 'set and forget' - they are fully adjustable parameters that can be tuned to specific mould alloys or surface finish requirements.

THE 'SMART' APPROACH TO RELIEFS: EMBOSS OMITTING

Perhaps the most significant engineering stride in the CPM series is the 'Four Section Emboss Omitting' feature. Any mould shop manager knows the frustration of automated polishing and washing out critical details. Bottom plate engravings, recycling codes, and complex logos are often the first casualties of aggressive mechanical polishing. HSTec addresses this by allowing operators to programme specific 'no-go' zones.

The machine's controller divides the mould rotation into sections. When the polishing head approaches a programmed relief area-say, a customer logo - it automatically retracts or reduces pressure, skipping that specific segment before re-engaging. This mimics the intuition of a skilled human polisher who knows exactly where not to press too hard, ensuring that the mould comes out with a mirror finish while the engravings remain sharp and legible.

VERSATILITY ON THE FLOOR

Recognising that no two mould shops run exactly the same protocols, the CPM series is agnostic regarding the medium. It supports both wet and dry polishing processes right out of the box. Furthermore, efficiency is driven by the self-centring workpiece fixture. In a high-mix environment where operators might be switching between different mould types multiple times a shift, the ability to clamp a piece and have it automatically centred cuts down setup time drastically. Coupled with an integrated dust extraction outlet, the machine also addresses the health and safety concerns associated with metallic dust in dry polishing environments.

THE BIGGER PICTURE: FROM STANDALONE TO SYSTEM

While the CPM 200/400 units function perfectly as standalone workhorses, they represent a piece of a larger puzzle. HSTec Glass Systems, with its roots deep in robotics and automation since 2016, views these machines as entry points into Industry 4.0. For facilities ready to go further, these units complement HSTec's broader portfolio of multi-machine automated robot cells. However, by offering the CPM as an independent unit, HSTec provides a scalable path for glass plants. You don't need to overhaul your entire workshop to get automated quality; you just need the right tool for the finishing touch.

IN SUM

With the CPM series, HSTec Glass Systems confirms its status not just as a machinery builder, but as a company that understands the granular realities of glass manufacturing. By solving the specific problem of 'emboss protection' in an accessible, automated package, the CPM 200 and 400 are poised to become essential assets for mould workshops aiming for perfection. ■