DOGANAY MOULD

Termoform Teknolojileri San. Tic. A.Ş.

Thermoforming Mould

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INTRODUCTION

Doganay Mould designs and manufactures thermoforming moulds for station-based machines.

Founded in Istanbul in 2008, our company brings together over 40 years of combined experience in mold design, machining, and process understanding. We export to more than 35 countries across all continents, with customers ranging from local producers to multinational packaging manufacturers.

We don't aim to impress with scale or volume. Our work speaks through its consistency: in design logic, in part quality, and in long-term reliability. What we produce is not just a mould; it is a tool shaped by detail, experience, and iterative refinement.


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OUR PERSPECTIVE

We value precision, repeatability, and technical clarity, not just speed for the sake of speed.

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A mould is not just a part that works; it is a system that must perform reliably under real production conditions. We design with that mindset: every detail, no matter how small, contributes to the outcome.

We believe in open communication. If a component has a tolerance, a limitation, or a design tradeoff, we address it. If there's a simpler or more robust way to achieve the same goal, we pursue it. This is how we take responsibility for what we deliver, not just physically, but also technically.

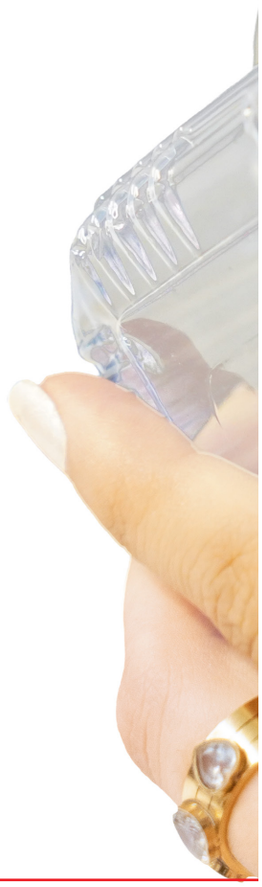
PRODUCT DESIGN **PARTNERSHIP**

We don't just make molds; we help design the products that go into them.

In many cases, our customers bring us only a rough idea, a sample piece, or an early 3D file. We work with each input, whether physical or digital, and turn it into a manufacturable, stackable, and structurally sound design.

Our team provides feedback on critical features such as stacking behavior, interlock mechanisms, sealing geometry, and overall product strength.

This collaborative approach ensures that the final product is not only formable, but also practical, consistent, and compatible with high-volume production.



PROTOTYPING CAPABILITY

We value precision, repeatability, and technical clarity, not just speed for the sake of speed.

Before committing to full-scale mold production, partners may request sample prototypes to validate form, function, or packaging compatibility. We provide this service quickly and efficiently, without compromising on quality.

Our prototypes are produced using a real thermoforming machine under production-style heating and forming conditions. While the prototype mold is typically single-cavity, it still allows for meaningful evaluation of thickness distribution, shape accuracy, and stacking behavior.

Because the process simulates key parameters of final production, the feedback gathered is practical and relevant. This helps our partners make faster decisions and supports a smoother transition to full mold manufacturing.

MATERIAL SELECTION FOR STRUCTURAL PERFORMANCE

We treat material choice as a fundamental part of mold performance, not a secondary concern.

We primarily use high-grade aluminum alloys such as 7075 and 6082, selected based on mechanical strength, thermal conductivity, and machining behavior. Each component of the mold is evaluated according to its functional role and stress exposure. Areas subject to repetitive pressure or mechanical wear are reinforced with the appropriate material type to ensure long-term reliability.

We do not use a single standard alloy throughout the mold. Instead, we tailor material selection for each region, prioritizing dimensional stability, thermal consistency, and machinability where it matters most.

This careful distribution of materials reduces warpage risks, minimizes thermal distortion, and allows for high-precision machining. It also creates a predictable, stable base for plug movement, cooling integration, and fine cutting tolerances.

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EFFICIENT SHEET USAGE

We don't only design for product shape; we also design for how efficiently the sheet is used.

Each mold layout is planned to minimize unused areas, reduce skeleton waste, and maximize product yield per cycle. We pay close attention to product rotation, spacing, and nesting patterns to ensure that material is used with intention, not assumption.

At the same time, material efficiency is never pursued at the expense of thermal performance. Every layout decision is balanced with cooling design, because a well-placed cavity that can't run at full speed is not truly efficient.

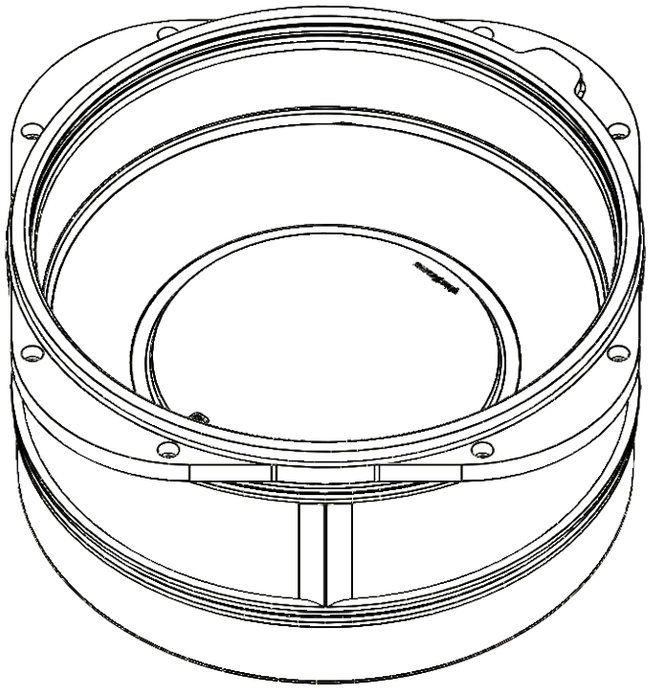
This approach offers cost advantages for high-volume production and reduces environmental footprint, without compromising the structural integrity or the forming speed of the mold.

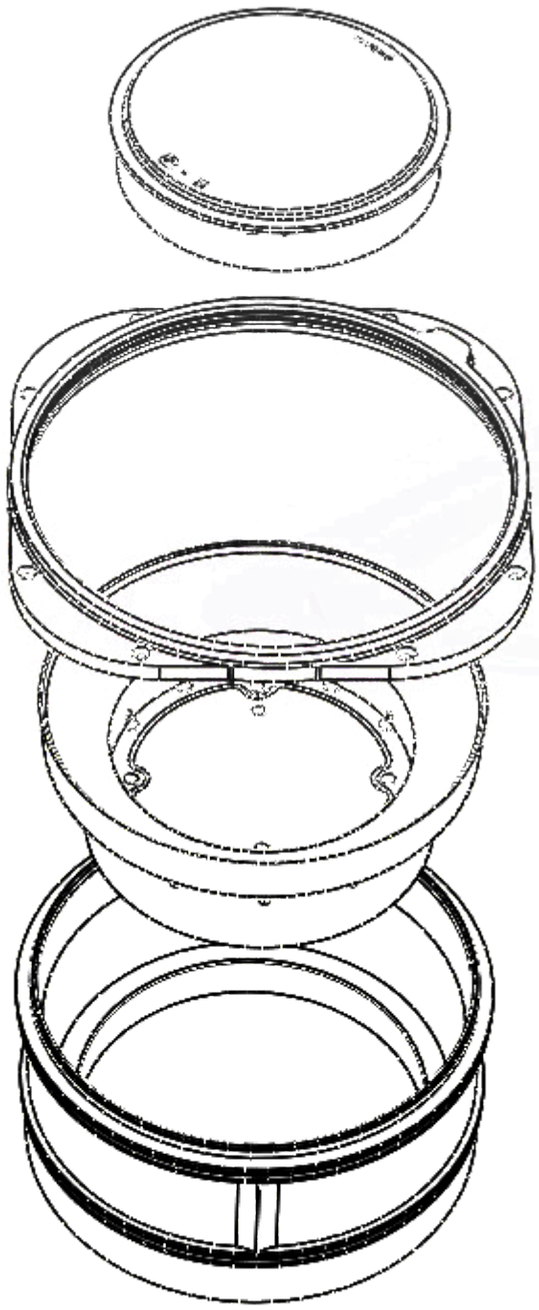
MODULAR INSERT DESIGN

We design our molds with modular insert architecture to allow quick product adaptations without full redesign or re-machining.

This structure enables selected insert regions to be replaced when dimensions, patterns, or logos change, keeping the main body intact. Our insert interface zones are standardized to minimize fitting tolerance work and eliminate unnecessary re-alignment during replacement.

In multi-product environments, this approach saves setup time and cost while preserving precision. Insert change becomes a process, not a project.



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ADVANCED COOLING DESIGN

Cooling design begins with the product itself, its geometry, thickness, and cycle expectations.

For each mold, we develop tailored water line layouts that support uniform internal temperature distribution, not just surface contact. This allows us to prevent warping, reduce cycle time, and support smooth demolding without residual stress.

Cooling planning is done alongside cavity positioning and structural design. We avoid shortcuts that sacrifice thermal efficiency for layout convenience. In our process, performance and consistency take priority, and cooling is engineered to support both.

PLUG DESIGN AND MATERIAL DISTRIBUTION

The plug plays a decisive role in how the material flows during forming, especially in controlling thickness and preventing uneven stretch.

Each plug is shaped and positioned according to the geometry of the product, the type of plastic, and the desired thickness distribution. We ensure that the material flows predictably, thick where it must be strong, thin where it can be light.

Rather than relying solely on standard profiles or trial-and-error methods, we use accumulated experience, precise machining, and targeted testing to match the plug to the product. This way, the material is guided into the right shape with the right balance.

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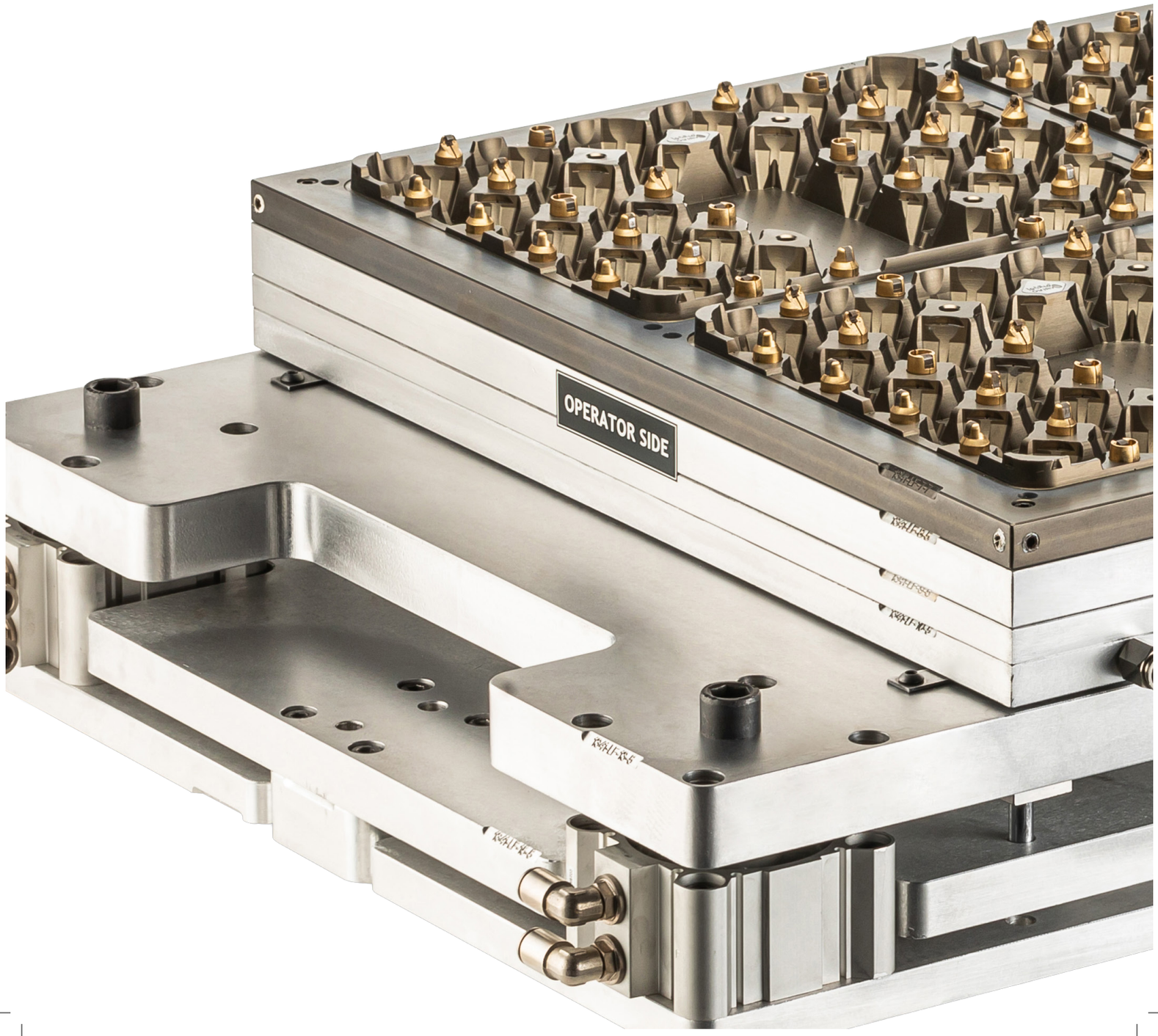

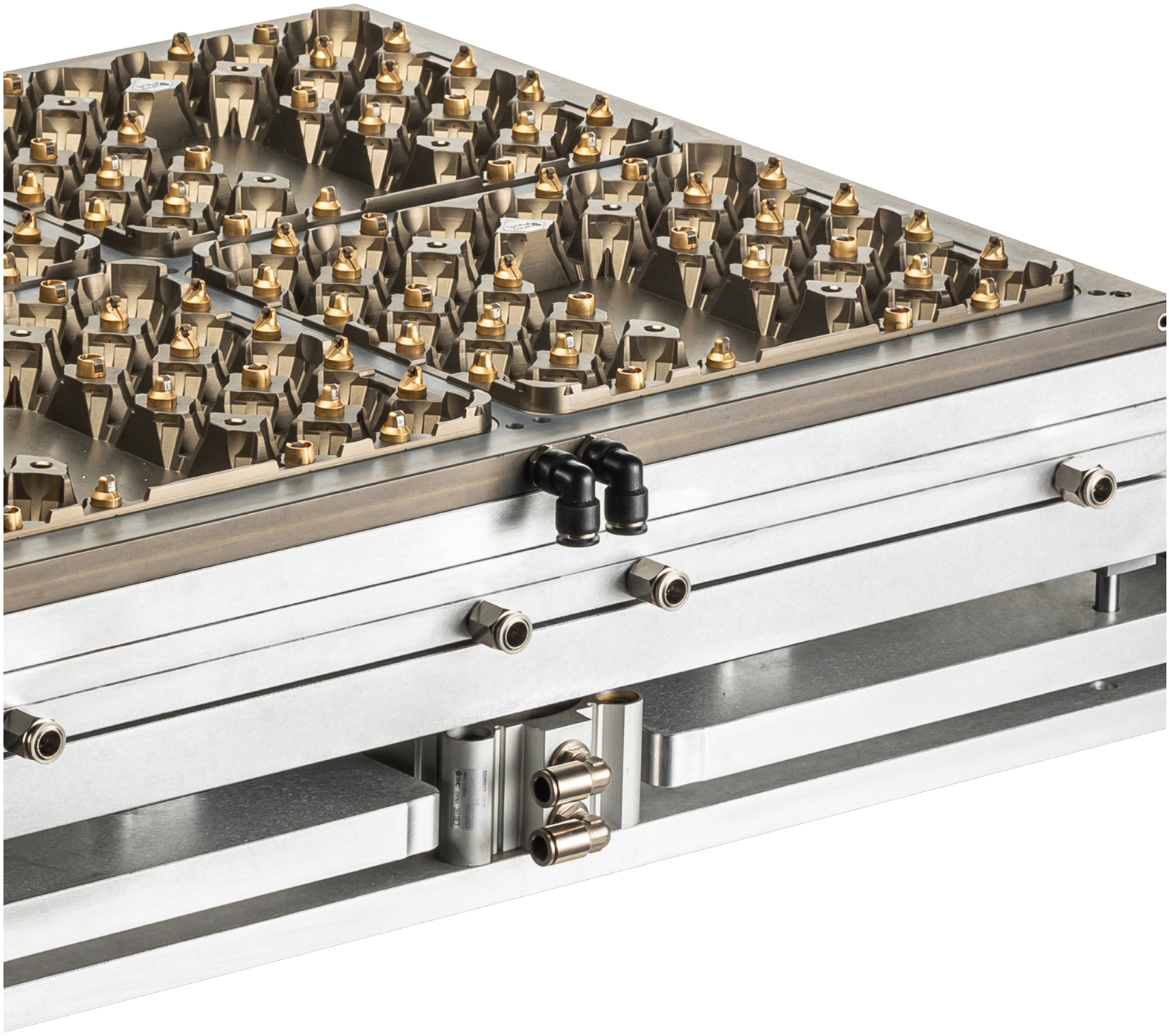

QUICK-CHANGE PLUG ASSIST SYSTEMS

Plug assists are mounted with quick-access systems that allow for fast replacement, adjustment, or cleaning, without the need to unmount the mold or disassemble surrounding components.

We use self-aligning geometries and minimal fasteners to keep the process efficient and repeatable. Positioning and tolerances are designed to prevent misalignment, even after multiple insertions.

This setup reduces downtime and operator workload, especially in molds that are used for multiple product variants or require regular plug maintenance.

SMART DEMOLDING SOLUTIONS

Some products are easy to form, but not easy to remove.

Certain geometries, undercuts, or thin-wall features can cause parts to stick, warp, or crack during ejection. We anticipate these risks during the design phase and develop demolding strategies that match the product's needs and the machine's capabilities.

Whether it's a matter of pusher angles, airflow, draft angles, or material flexibility, we create demolding systems that simplify release and preserve product shape. Even in complex geometries, we engineer the solution directly into the tool, minimizing the need for external intervention or reduced cycle speed.

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FUNCTIONAL
SURFACE TREATMENTS

Surface treatments are applied not for appearance, but for function. On forming components, we use protective coatings that reduce friction, support product release, and delay surface wear, especially under repetitive heat cycles and vacuum contact.

On aluminum-based mold components, we apply surface treatments that increase hardness and resist abrasion without altering dimensional precision. In certain cases, additional layers are used to reduce friction and protect the contact surface from chemical or thermal degradation. These treatments extend tool life and maintain consistent product quality over repeated cycles.

Rather than applying the same treatment to every part, we tailor the approach to match the product's functional needs and customer preferences. Coating types and applications are selected based on expected usage, material behavior, and any aesthetic or technical priorities shared with us during the project.

The goal isn't to make the surface look special. It's to make it last longer and perform with consistency over time.

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PRECISION
STEEL RULE CUTTING

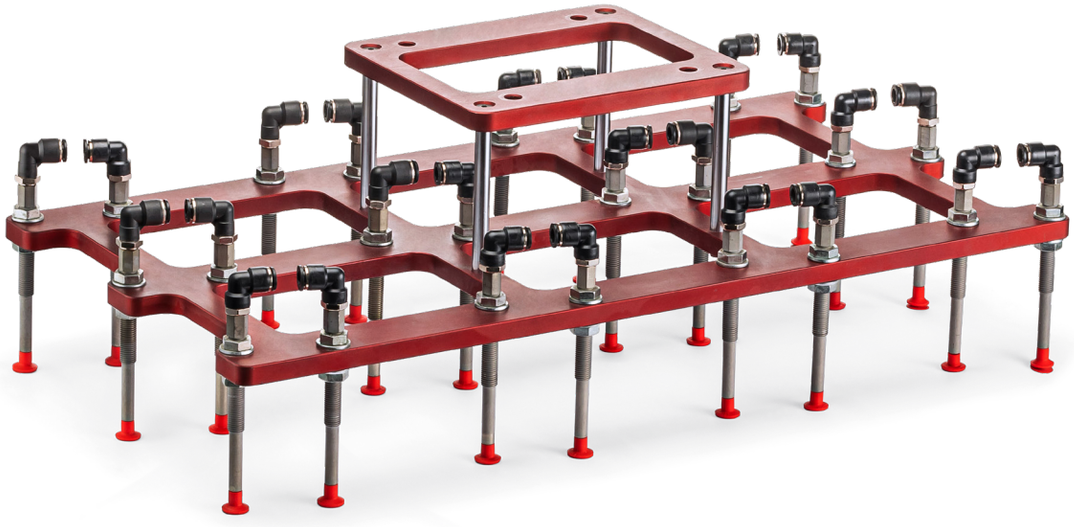
The cutting unit uses a high-grade steel rule knife, selected for edge durability and sharpness retention. Clean cutting depends not only on blade quality but also on alignment and support.

To ensure centered and consistent cutting across all cavities, we use mechanical centering systems with spring-loaded pins. In some layouts, internal centering structures are also used. The aim is always the same: balanced cuts, even under tight tolerances.

The striker plate beneath the knife is a hardened steel block, approximately 30 mm thick with 60 HRC surface hardness. It provides structural resistance and supports the knife edge throughout high-pressure cycles.

Together, these components ensure a cutting setup that performs with repeatability, edge clarity, and dimensional control.


MADE IN TURKEY



PRODUCT STACKING **INTEGRATION**

Stacking is not an afterthought. It's an essential part of ensuring that products leave the mold in the right position, in the right orientation, and without deformation.

We select the stacking method based on both the machine's capabilities and the geometry of the product. Whether robotic stacking, upward stacking, or downward stacking is used, our focus is on cycle stability and product safety.

The design of the pusher system is closely aligned with the product's shape. This ensures controlled ejection without tipping, jamming, or surface contact damage.

In cases where the machine itself does not support stacking formats such as AB or ABC, we can integrate these configurations into the mold design. This allows customers to achieve complex stacking logic without changing the machine infrastructure.

Our role is to deliver products ready to move to the next stage, neatly, safely, and cycle after cycle.

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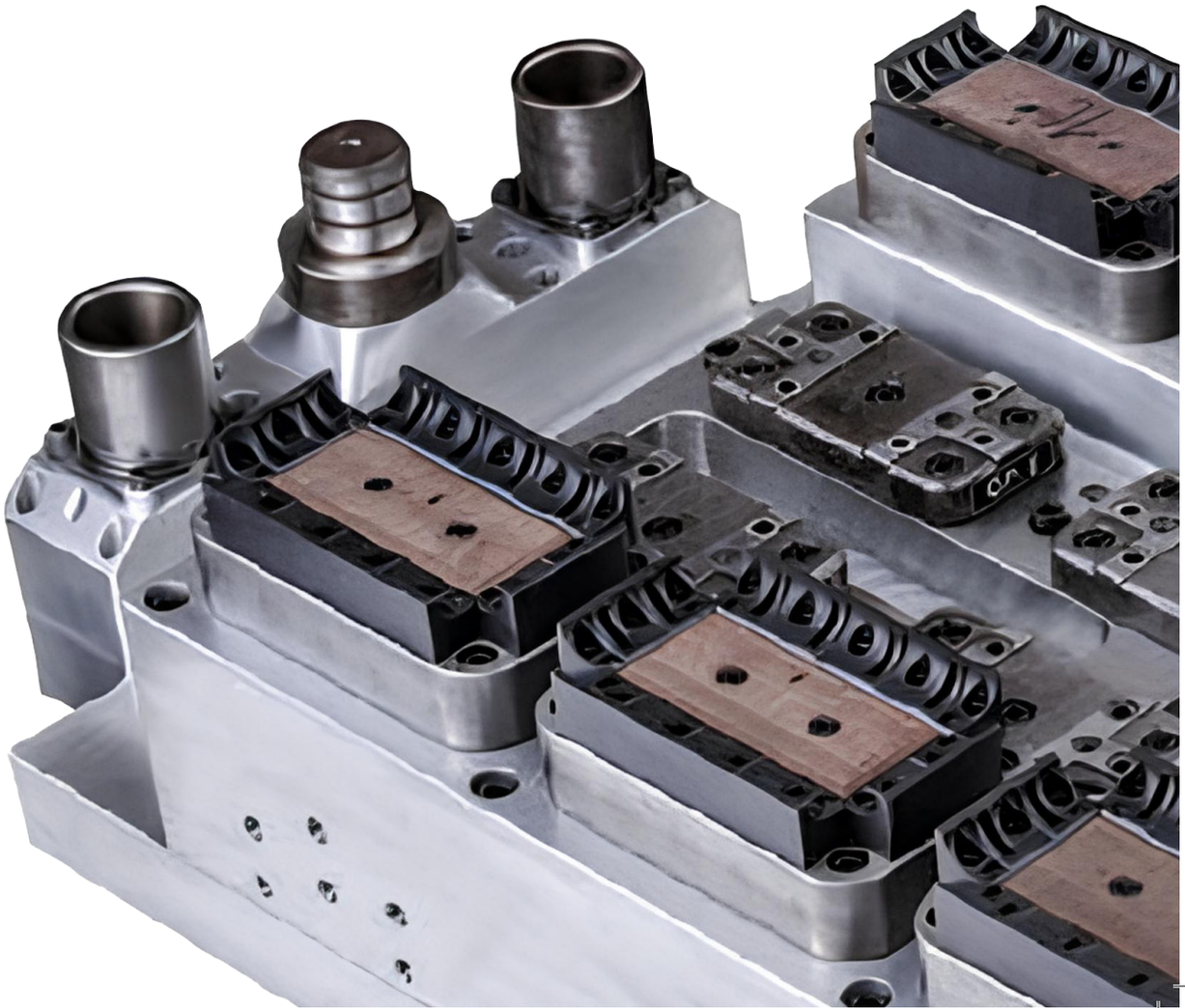

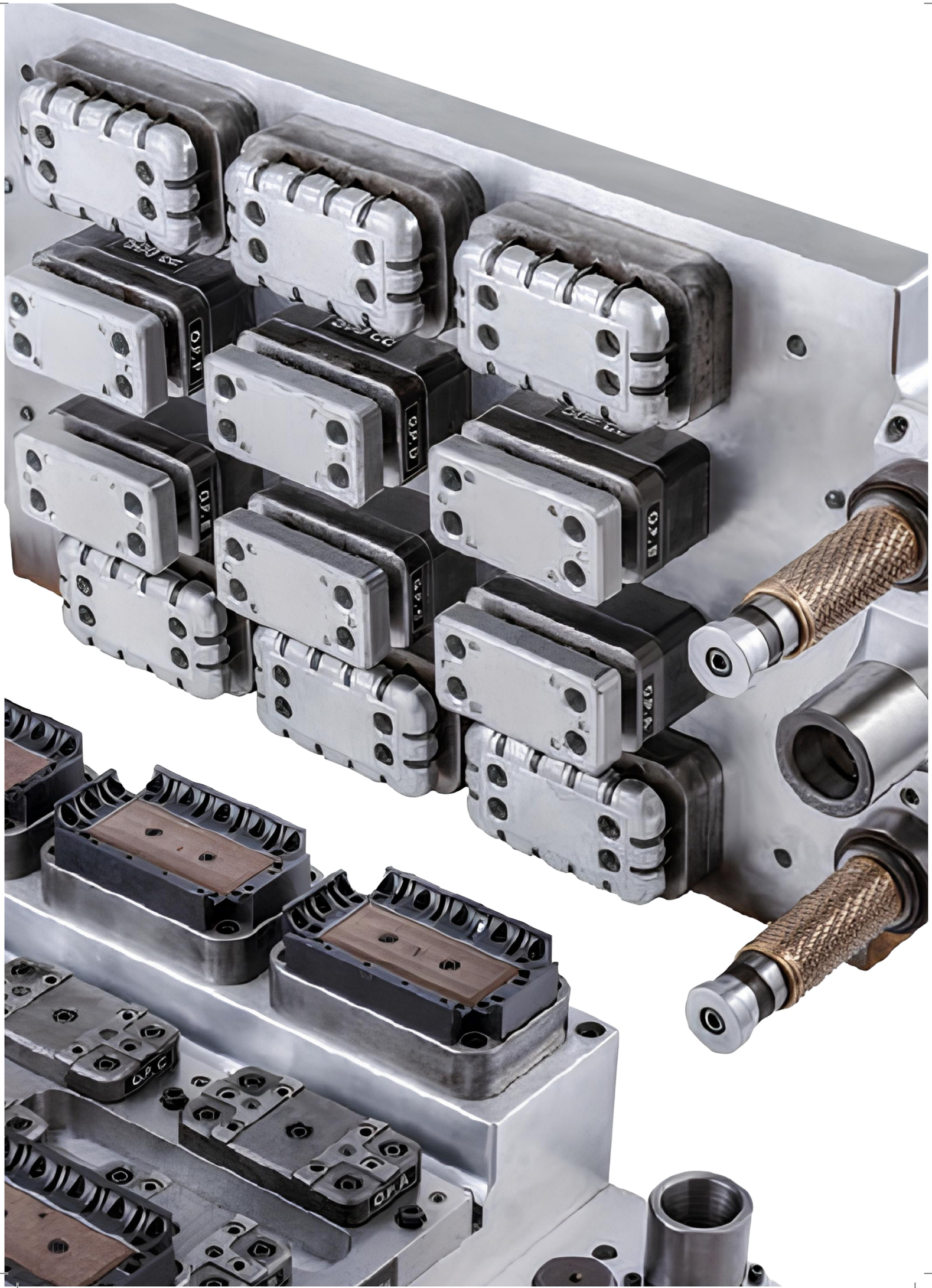

PUNCHING UNIT & **ENGINEERING**

When punching is required in a thermoforming mold, the components must perform with both precision and durability. Our punching units are engineered to sustain sharpness, maintain alignment, and simplify maintenance over repeated cycles.

We select high-performance tool steels for both male and female punch elements, carefully pairing them with hardness levels that minimize edge wear while avoiding premature cracking. These materials are chosen not just for strength, but for their ability to preserve cutting accuracy under repetitive mechanical stress.

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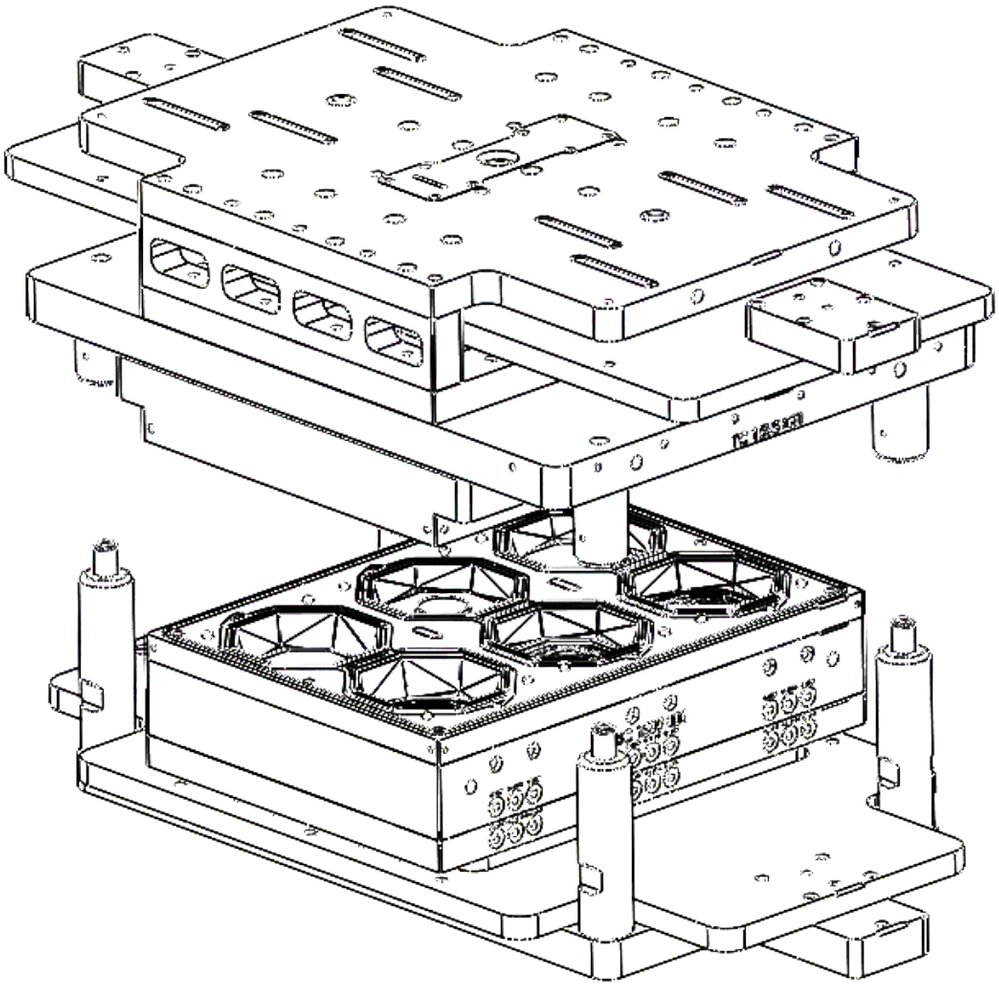
Each punch component is manufactured in-house using high-precision wire EDM machines. By keeping this process internal, we maintain control over tolerances and consistency, essential for clean shearing. To enhance alignment between male and female units, we implement a robust 4-column guide system paired with an additional 2-point central alignment mechanism.
Our punch components are designed modularly, allowing quick replacement of individual male or female parts without the need to disassemble the full unit. This reduces downtime and also lowers spare part costs for the customer.

Surface treatments are applied to reduce friction and protect punch edges from heat and abrasion during repeated cycles. We also design the mold with optimized waste discharge channels to ensure that punched material is ejected efficiently, preventing build-up or cycle interference.

Every detail in our punching system is engineered with repeatability and robustness in mind, because a punching unit shouldn't just work well today, it should work the same way tomorrow.



IN-MOLD
CUTTING INTEGRATION

IMC molds combine forming and cutting within the same station, a configuration that demands exceptional precision in timing, heating, and mechanical movement.

These molds are typically used when the customer requires highly centered, low-tolerance cutting directly within the forming cycle. Because the forming and cutting actions happen within milliseconds of each other, there is no room for tolerance stacking. Every detail, from plug assist motion to tool clearance, must be engineered to work in harmony.

Material flow must be fully stabilized before cutting occurs. To achieve this, we pay close attention to air balance, plug depth, heating profile, and form pressure. Misalignment at this stage can compromise cut edges and overall product quality.

When executed correctly, an IMC mold produces clean-cut products in one motion, offering speed, compactness, and consistency without requiring post-trimming or extra handling.

INHOUSE
PERFORMANCE TESTING

All of our molds undergo live testing on our in-house thermoforming machine before shipment.

Our machine is configured to support mold types compatible with the world's most widely used brands. This allows us to evaluate both the product quality and the overall system performance under real operating conditions. Cycle speed, stacking sequence, cutting precision, and timing behavior are all observed and verified.

This process helps us catch and resolve any issues before the mold leaves our facility. It reduces risks, saves time during customer installation, and ensures a smoother production start. Partners are always welcome to attend test sessions for firsthand observation and feedback.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PLUS

QUALITY & **CONTROL**

Precision starts before the first cut, and continues until the mold is packed for shipment.

Our molds are machined using high-accuracy CNC equipment, operated under tight process parameters. Key functional surfaces are verified using coordinate measuring machines (CMM) to ensure dimensional consistency and alignment.

Each component is checked according to its role and tolerance level. Not everything needs microns, but the critical zones always get it. We maintain a structured inspection workflow and document key checkpoints across the process.

Our goal is simple: to ensure that the mold functions reliably from day one, with no surprises or rework needed.

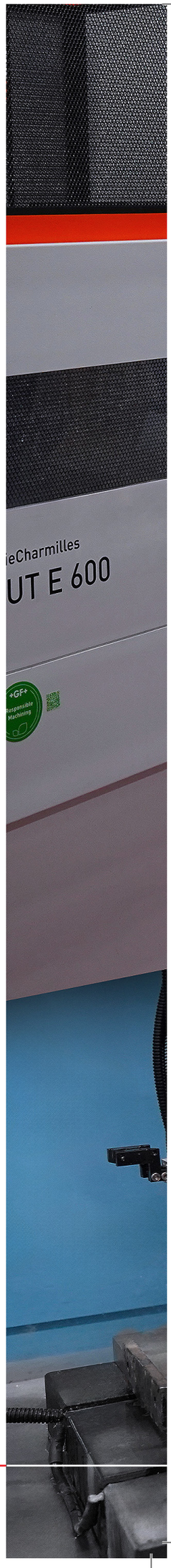
WHERE **WE STAND**

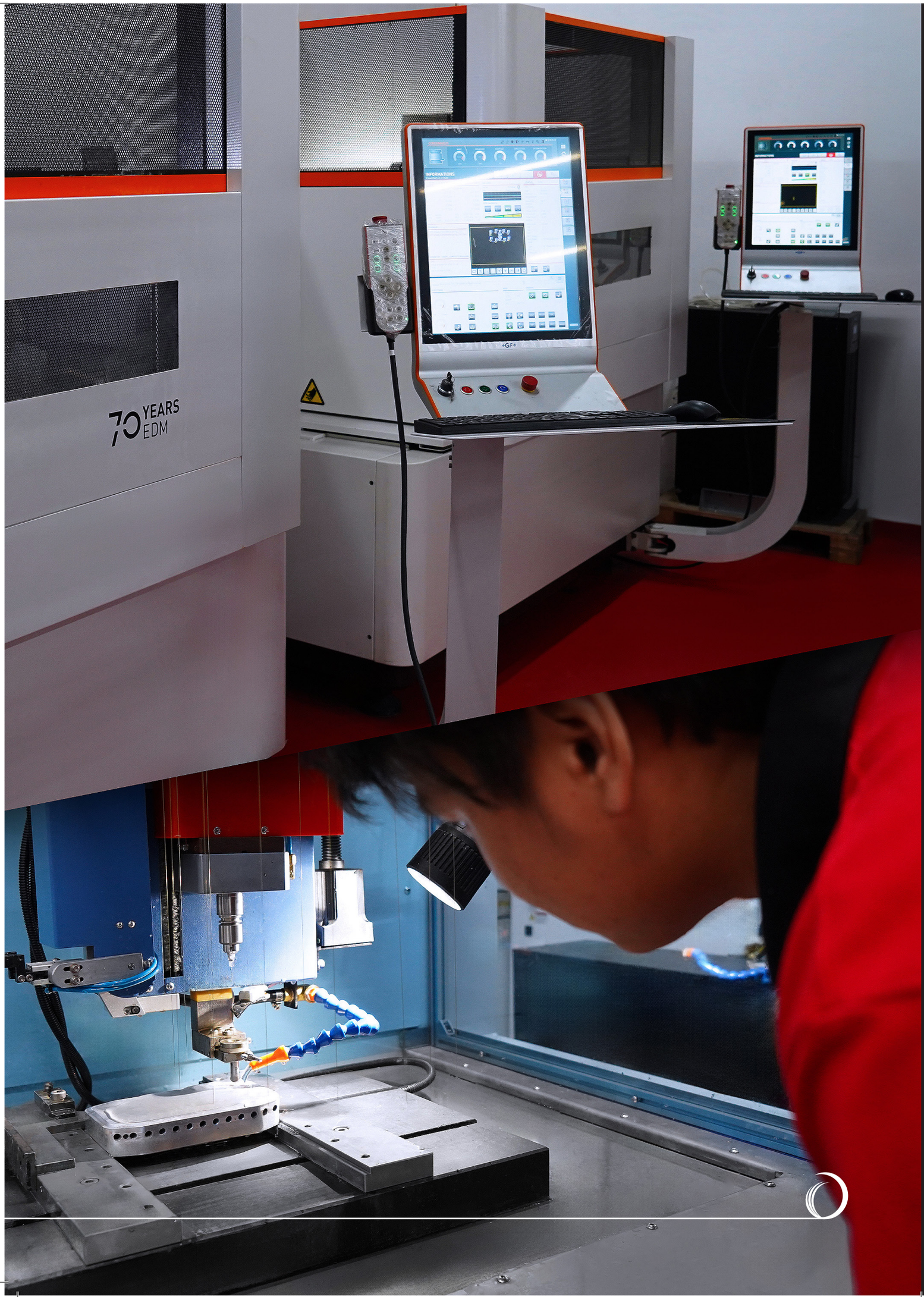
We don’t claim to reinvent the process.

If a mould runs differently than expected—or if a detail needs refining we’re ready. Our support is not scripted. It’s experienced.

You’ll speak directly with someone who knows the tool, the machine, and the material. Sometimes it’s about a fine adjustment. Sometimes it’s just a second set of eyes.

Either way, we stay involved until it works right.




70 YEARS
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We don't believe in making noise

We believe in making tools that work.

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