KIEFEL
TECHNOLOGIES

A Member of Brückner Group



THERMOFORMING SOLUTIONS FOR PLASTICS PROCESSING FOR THE **PACKAGING INDUSTRY**

MEMBERS OF KIEFEL



KIEFEL GmbH · Freilassing · Germany



Bosch Sprang BV · DA Sprang-Capelle · the Netherlands



Mould & Matic Solutions GmbH · Micheldorf · Austria

Thermoforming – Solutions from a single source

Kiefel – Bosch Sprang – Mould & Matic

Serving the Thermoforming Industry

Thermoforming machines and/or tools, automation for downstream, complete turnkey projects, article development or material analysis and testing – we assist you to reach your targets. As a team or as an individual partner.



KMD Speedformer

Steel rule cutting machines

KMD Speedformer Series – flexible for your needs

Fast for high volumes, economic for smaller jobs. Flexible in the production of food or non-food articles, versatile with all common thermoforming materials. Modular and configurable for your requirements and added functions such as notch-free punching solutions.







KTR Thermorunner

Tilting machines

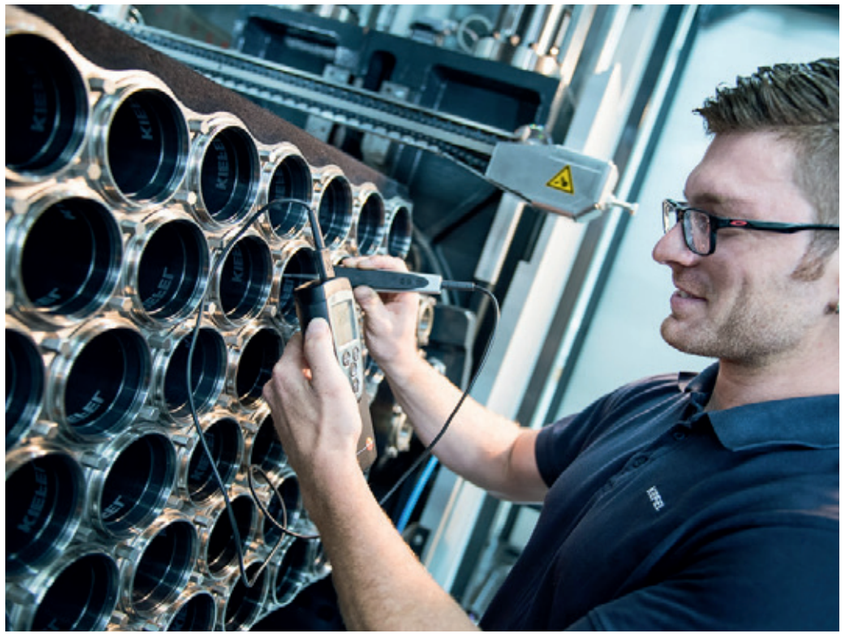
KTR Thermorunner Series is more

More robustness and availability. More performance and precision. More options in tooling with Kiefel Team Tooling or your preferred Toolmaker. More than a machine. More solutions for downstream automation and T-IML.



Focus on customer request

Our Technology Center brings you a step ahead





The Kiefel Technology Center is equipped with standard KMD and KTR production machines as well as numerous other Lab-Thermoform- and test equipment.

- Access to further capabilities and devices with in a team Bosch Sprang and Mould & Matic
- Support provided from basic material testing and/or product development for tuning up your thermoforming production
- Dedicated training for operators and maintenance staff
- Thermoforming courses in German, English or other languages on request

Better products and higher yields are our motivation.

KMD Speedformer

Yes we can!

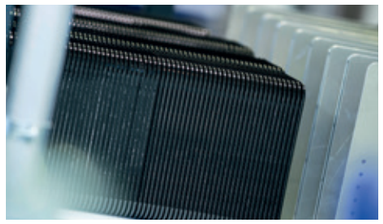
The Kiefel Speedformer Series offers all standard machine sizes and configurations. Capabilities for all common plastic materials in thermoforming. Main attributes are: robust and precise, standardized and customizable, safe and easy operation. **The name Speedformer speaks for itself. Performance is our passion.**



Productivity
Stacking contributes enormously to high machine uptime. As article designs can differ greatly, Kiefel offers various stacking systems to provide the best solution.



A/B Stacking
Repeatable distance part-to-part is key for auto de-nesting. A/B method is the alternative to undercut design. Kiefel offers integrated machine solutions for A/B stacking to minimize tool costs.



Cutting at its best
Precision cutting is a requirement for trouble-free stacking. Kiefel is the know-how leader in steel-rule technology fulfilling requirements such as precision, smooth cut edges, durability and long-life knives, etc.



Form & function
Thermoformed products protect, preserve and display food and have to meet functions such as: rim for sealing, rims for tightly fitting lids, etc. Kiefel was the forerunner in integrated plug-assist drive and BFS system in KMD type machine addressing increasing product challenges.



KMD series overview

KMD 64 **KMD 78** **KMD 85** **KMD 90**

Auxiliaries: KA- Unreeling and KVH- Preheating Series, KES Punch Press

Please contact our Sales Department or visit our Website www.kiefel.com for details.

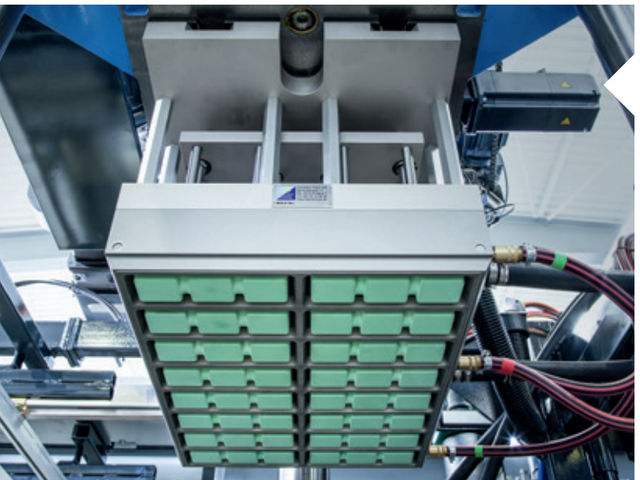
KMD Speedformer

Experience and know-how provide confidence

The first steel-rule type inline machine at Kiefel was built in the early 1960s. Keeping ahead of innovation, making the good better, working analytically, building strategies but also paying attention to detail … examples of German quality which say a lot about Kiefel's achievements in over 50 years of KMD-type machines.



Heating the plastic properly is fundamentally essential to ensure the production of top quality products and highest machine performance. Warming up plastic with fast and efficient heating elements **reduces energy costs.**



Heard about 3rd motion?
Independent plug assist improves product quality, the deeper the draw, the more improvement possible. Better, even and uniform material distribution can result in thinner film starting gauges. **Your cost saving potential.**



Stacking efficiency
Machine uptime can be positively influenced by proper stacking. Moreover, stacking is the "interface" to packaging and smart solutions reduce labor. Both contribute to **lower production costs**.

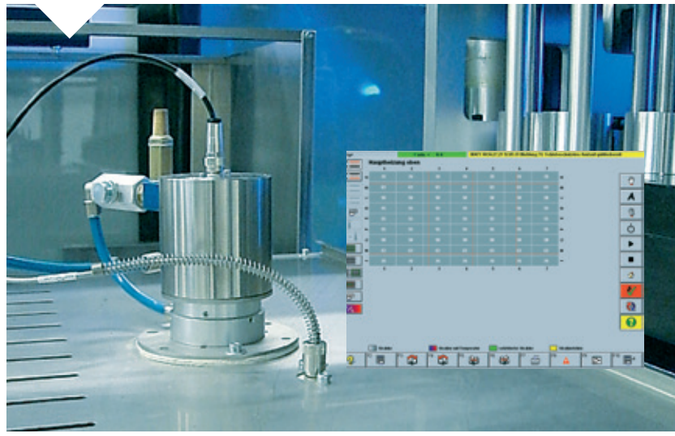


Caring for environment
This often goes hand in hand with saving resources and money. Available technologies like motor energy recovery, more efficient heating systems are built into our machines. **A win-win situation.**



Tension bars give control
Steel rule knife lifetime increases. Using the combined BFS (Form-/Cut) technology the position control does not require a "stop mechanism" in tool. Result: **lower tooling costs.**

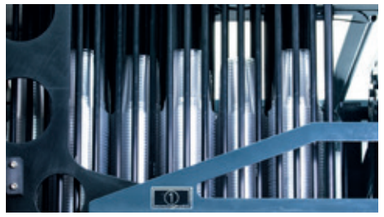
Process Control
Heating element temperature is often the only feedback provided. But, what does this mean for plastic? We measure film temperature and other process relevant variables. **Transparency - less rejects - more profit**.



KTR Thermorunner

We just can't get enough!

The Kiefel Thermorunner Series offers maximum cavitation in each machines size. Size matters, however the cutting force is also a determining factor to maximize output. Main attributes are: robustness and precision, standardized and customizable, safe and easy to operate. **The Thermorunner itself will boost your production figures.**



Productivity
Stacking makes a major contribution to high machine uptime and to article quality. Mandrel support increase your availability and reduce reject amount.



Barrier film processing
Proper heating is the key. Heating duration matters, check out our heater capacity. And equally important for output and uptime: cutting force! KTR will bring you ahead.



Decoration
T-IML is a technology the industry is keeping an eye on. Kiefel offers proven high-end solutions. In offset printing even material distribution improves the quality of the product. Your decoration quality will benefit using KTR.



Bottom holes and name tag slots
Some cup or pot types product require specific functionality. This can be a machine, a tool or a combined solution. No matter what, the Kiefel Team will handle it.



KTR series overview

KTR 4 **KTR 5** **KTR 6**

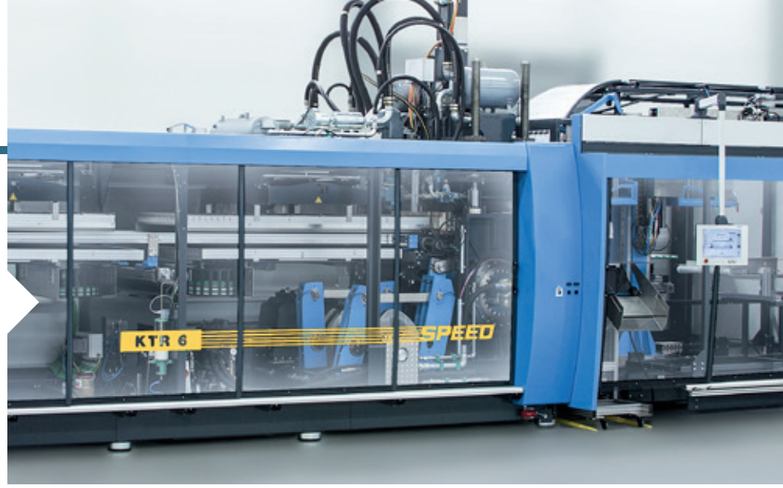
Auxiliaries, Downstream, and more: KA- Unreeling and KVH- Preheating Series, Tooling, Automation, product and material development

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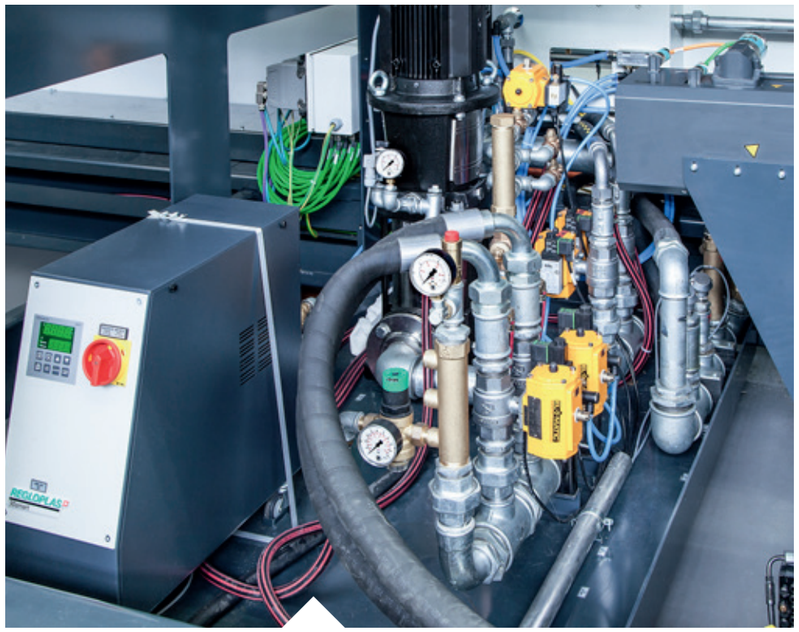
KTR Thermorunner

A strong machine, a strong team

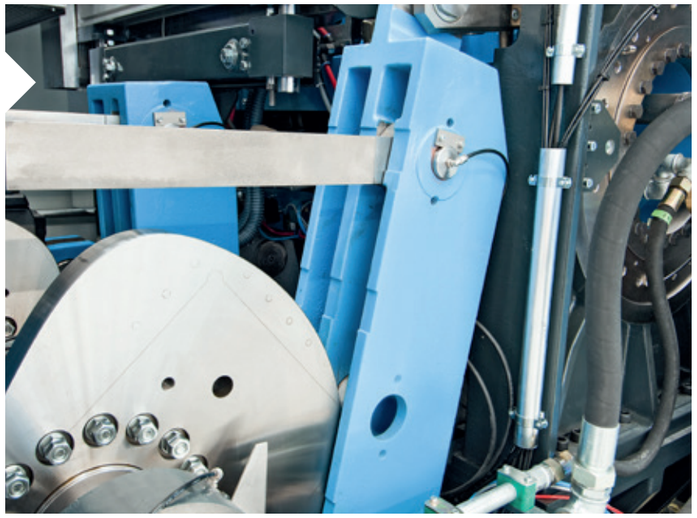
KTR machines have a remarkable heritage – strongly influenced by one of the world's most reputed manufacturers coupled with Kiefel engineering skills.
Always the product in focus. Key production needs like longevity, 24/7 operation, high output requirements in mind. Open to and capably of contribution to set in place new trends like capsules, barrier products and T-IML. The Kiefel Team does more than just deliver a machine that works. We offer a one-stop solution and support with R&D if required.



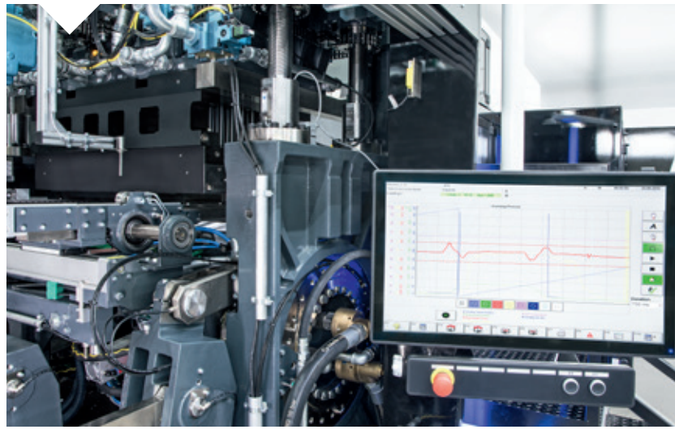
Some like it hot
Plastic films have different physical preconditions. Barrier films add challenges. Our heating system is engineered to warm the plastic efficiently and uniformly with **minimum energy input.**



Process Control
Heating element temperature is often the only feedback provided. But, what does this mean for plastic? We measure film temperature and other process relevant variables.
Transparency - less rejects - more profit.



Solid, stiff, built to last
Nowadays, the main challenges are cutting tougher materials (PET, barrier), as are the small products with high cavitation (capsules, portion cups). Robust forming station designed for **reliable and powerful performance.**



Cool down fast to speed up
Life circle of thermoforming: heating and forming done, let's get energy out of plastic! The faster the better. Often the simple solutions are the best. Plenty of water and one temperature simply **boost your production speed.**



Deal with the film characteristics
Most plastic materials tend to sag whilst heated, some more than others.
An accurately engineered film transport enables a controlled spreading. Some cases require 2-step-system to maintain **highest product quality.**



The stacking modules
Kiefel introduced vertical systems with great success. Having Mould & Matic in the group result in a further boost in stacking know how. No matter how thin, whether the product's tendency to become oval-shaped, or the requirement for automation, we have the adequate high-end solution to **make your production profitable.**

Computer Aided Teaching – CAT

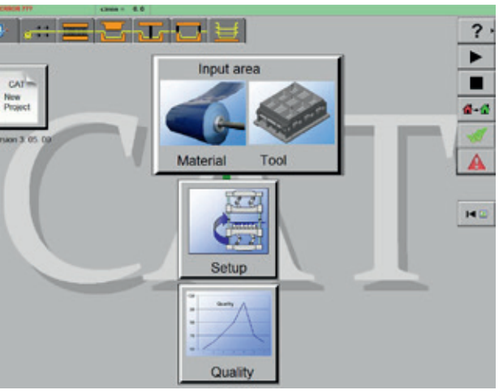
Technology makes sense when it makes life easier

Thermoforming requires a lot of experience. New product / tools, other plastic materials are often a big challenge to set up a proper recipe.

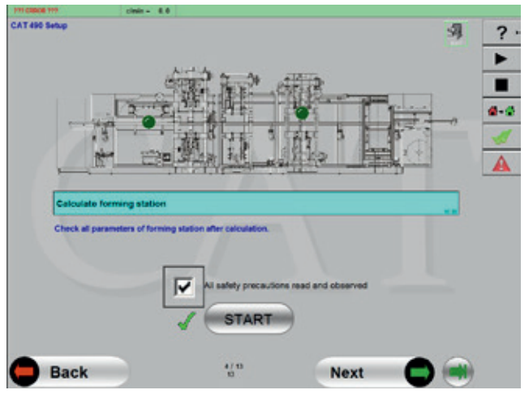
CAT is a self-adjustable intelligence = teaches machine parameters: heating adjustment, table strokes and speeds, delay and effective timings. This makes the operator's job very simple indeed.

Feed the CAT
Little data is required. No machine parameters setting necessary! Simply set the information about your product, film, tools … a few minutes that pay off.

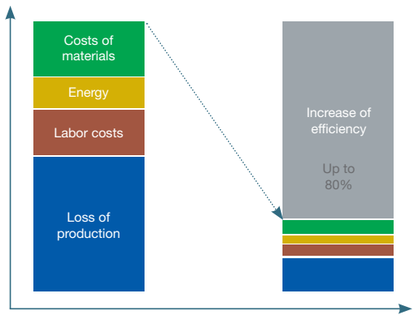
CAT works for you
Based on the data set, CAT develops recipes. A benchmark recipe for 20 cycles/min and one maximum speed possible. Altogether it takes no more than 15 – 20 min to make professional articles.



A few entries only



Auto teaching of parameters



Maximize your profit
Less tool change and set up time means more production time and this is where money is earned. Figure out a simple equation: How many new jobs do you start up per week or month? How much time in average is required to adjust the process parameter properly?
Interested in CAT?

One stop turnkey solution

We have the answer to your challenges

Capsules for coffee and other hot or cold drinks have taken over in most of our homes. There is great scope for continuing growth in the next years. The volumes are on the increase and consequently market seeks for more automation.

The Kiefel Team has the solution! Thermoforming, tooling and product development, downstream! Counting and packing into plastic bags, video monitoring and out/in feeding devices, boxing and palletizing.



KIEFEL COMPETENCE

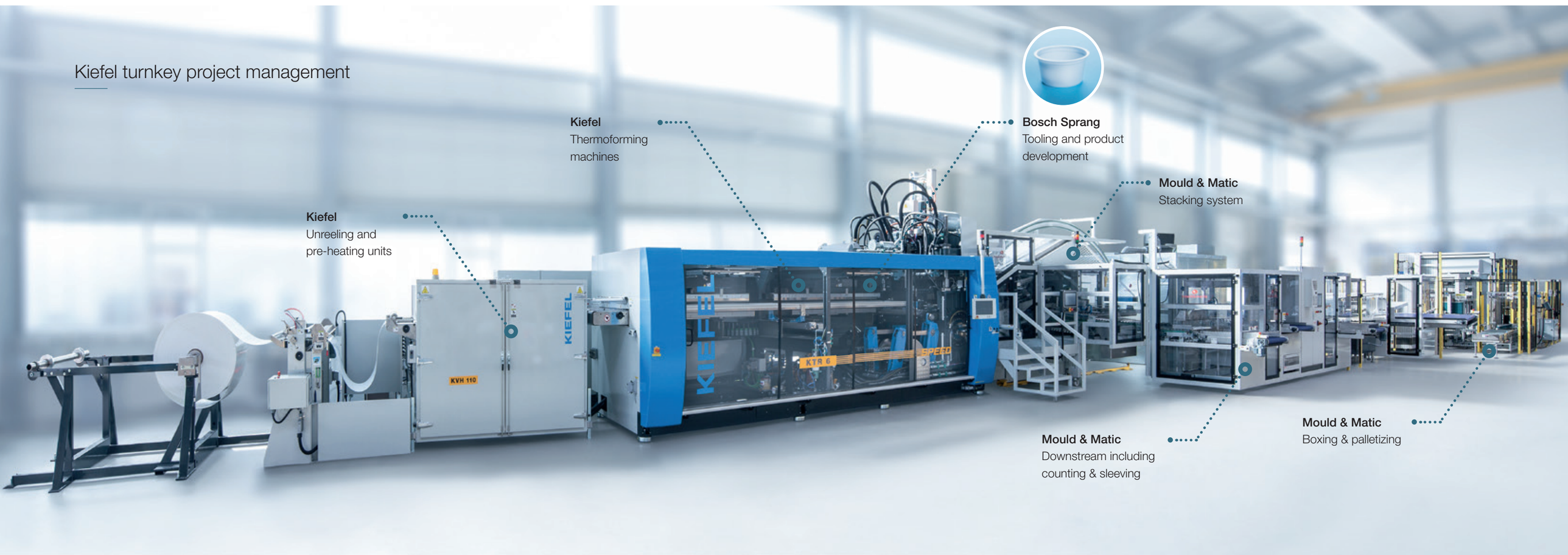
Care for a coffee?

Many more products where automation makes sense.

Capsules are products the industry immediately thinks about automation. For other mass production such as for cups or trays an engineering solution for packing automation can make sense.

Reduced labor, improved hygiene for your benefit.

Kiefel turnkey project management



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The KIEFEL GmbH is a world leader when it comes to the design and manufacture of machines used to process plastic film materials. The company offers core expertise in the fields of forming and joining technologies. As a supplier to reputable manufacturers in various sectors, KIEFEL GmbH services customers in the automotive, medical technology, refrigerator and packaging industries. The headquarters of KIEFEL GmbH is in Freilassing/Germany. The company also runs its own network of sales and service centers in the United States, France, the Netherlands, Russia, China, Brazil, Indonesia and India, and is represented by sales partners in more than 60 countries worldwide. Kiefel also owns the automotive specialist SWA based in the Czech Republic, the Dutch thermoforming toolmaker Bosch Sprang, and the Austrian Mould & Matic Solutions, supplier of tools and automation solutions. KIEFEL GmbH is a member of the German Brückner Group, a worldwide leading supplier of plastics machinery.

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