



PRESS RELEASE

Easy, economical and highly productive –

FRIMO presents technological innovations at FAKUMA 2018

09/26/2018 – From October 16-20, 2018, FAKUMA will once again become the meeting place for the international plastics industry. The FRIMO Group (Hall A1, Booth 1334) will be presenting its latest developments in PU processing, surface finishing (thermoforming, laminating), trimming technologies, plastic joining and composites/lightweight construction. Following their motto HIGH TECH AND HIGH PASSION, visitors will also be able to immerse themselves in the virtual world of FRIMO and experience full-scale systems across their entire spectrum of technology.

The exhibition focuses on highly productive tooling and equipment concepts, sustainable solutions for material and energy savings, as well as new approaches for high-volume production of lightweight constructions. The recent SPE award for an organo front-end carrier with integrated air ducts brought FRIMO its 24th Award as Valeo's partner in the project. Now that the award ceremony is over, it is time to move on to FAKUMA.

"The personal exchange is immensely important. This is why FAKUMA is the ideal platform for us to talk to our customers and interested trade visitors from all over the world about upcoming projects and to present our diverse solutions," says Manfred Rudholzer, Head of Sales at FRIMO. In Friedrichshafen, FRIMO will present trend-setting solutions that offer customers advantages in plastic part production. (Photo 1)

One-shot solutions for efficient lightweight construction

First place in the structural components category at this year's SPE Awards went to a two-shell plastic front-end carrier made of organic sheeting, manufactured using a one-shot process. FRIMO's high-performance tool technology for mass production supports the fully-automated production process used to make this part.

The part not only meets rigidity requirements, but also makes air duct integration possible near the headlight and bumper connections. That is the reason for its clam-shell construction. The shell halves are produced using FRIMO tooling. The organo sheets are formed and the edges are coated simultaneously in the tools,



which can then be finished directly during the process without additional trimming; the inserts are formed and coated in a single step. This One Shot process not only shortens cycle times, but also eliminates the need for additional contour trimming. The pre-fabricated organo sheets are inserted automatically and draped around the insert during the process. (see the link: <http://www.spe-ce.de/aw2018siegerautom.htm>)

Automated and combined - all-around talent for the highest production demands

Economic production is a big issue, now more so than ever. When it comes to weight, material and energy use, cycle times, and space requirements, less is more. Add in maximum performance and that pretty much sums up the requirements for future-oriented production facilities: universal tools, multi-purpose machines, and flexible systems. Using "One Tool" concepts, different materials can be processed in one tool. This increases productivity and lowers investment costs. Multi-purpose machines include multiple technologies, again reducing investment costs. Flexible, highly-automated machines with quick tool change systems, where multiple tools can be used and different parts can be produced all in a single machine also ensure high productivity within a small space. "Our customers want optimal production in terms of functionality, quality, process reliability, and profitability. There is a growing demand for highly-automated and therefore highly-productive systems," says Manfred Rudholzer, summing up the challenges. He goes on to say, "With our cross-technology know-how, we can offer users uniquely combined solutions. We have numerous references in the market, not only in thermoforming, laminating, punching and edge folding, but also in welding combined with thermal contact rivets and automatic assembly processes."

FRIMO offers maximum material savings in vacuum and press lamination with FABL®

From cutting to the prefabricated part in a flash: FRIMO Accurate Blank Laminating, or FABL® for short, is precision laminating of contour-cut decorative panels, which aims to save 25-45% on decorative material and adhesive - a key factor in increasing material prices, especially for high-quality materials such as those used in today's premium vehicle interiors. The method also reduces grain stretch and leaves a higher remaining wall thickness, which contribute to a higher-quality appearance. Depending on the method, edge folding or trimming in preparation for edge folding is done directly in the process. In addition to the savings in materials, personnel, energy and space, FRIMO creates possibilities with FABL® that cannot be achieved with conventional laminating processes, e.g., one-piece door panels that are only partially laminated with decorative materials of different colors. (Photo 2 + Photo 3)

Resource-saving thermoforming with TSHC, the revolutionary heating concept from FRIMO

Efficient and precise heating in thermoforming saves space, time and energy. FRIMO has developed a new solution that achieves optimum temperature distribution in the shortest amount of time, called Time Shifted Heat Control. TSHC is already being used successfully in series production and has proven itself through



energy savings, a simple maintenance concept, and reduced heating times and space requirements. The new solution has many advantages over its predecessors, especially for technically demanding applications, such as automotive interiors. The core of the concept is a sophisticated calculation algorithm. Halogen infrared heaters are used. Taking all influencing factors into account, TSHC determines exactly when and for how long the individual heaters are switched on. Thus, the film is constantly heated at optimal efficiency. (Photo 4)

Airbag weakening for leather and artificial leather now also easy in 2D

With invisible airbag weakening, also called scoring, a defined tear line is added to the back of the decorative material. Usually, the tool (blade, burr, etc.) is moved perpendicular to the surface (3D scoring). To satisfy the growing market for leather and artificial leather applications on instrument panels, FRIMO now offers FlexTrim 2D scoring as an interesting alternative for weakening sensitive materials in the airbag area. In this process, the skin is inserted into a flat fixture prior to stitching, fixed by vacuum, and weakened in a plane (2D). Because it is a natural product, processing real leather brings with it special challenges. The material is not homogeneous; injuries can cause scar tissue, making some parts harder than others. Therefore, leather scoring uses a round blade that weakens the leather in a rotating process. (Photo 5)

Smart and digital: FRIMO 4.0 and Smart Service

Secure data storage and the ability to process data from anywhere, as well as analyze and derive process improvements from it are becoming increasingly important. Extensive development in sensors, measuring systems and programming all drive networking. All relevant machine, production, energy and maintenance data are recorded and processed directly. Production and processes are becoming faster and more transparent. Therefore, errors can be detected early on and preemptively remedied, for example by providing spare parts and planning service assignments in agreement with the customer. FRIMO Smart Service offers a tool for remote diagnostics and rapid on-site problem solving. The system status is transmitted via smart glasses through the Internet to the FRIMO service experts, who support the customers "live" in solving the problem. The smart glasses can even overcome language barriers: The integrated chat function translates into the desired language. (Photo 6)

In addition to these selected topics, FAKUMA visitors can expect many further developments from the entire FRIMO Group. We are fully-dedicated and hope that FAKUMA will continue growing this year, attracting visitors from both Germany and abroad to visit FRIMO at Booth 1334 in Hall A1 and get information about manufacturing trends and future-oriented production. (8.220 characters, including spaces)

About FRIMO (www.frimo.com)



FRIMO has spent over five decades strategically building an unparalleled technology spectrum, turning the corporation into one of the leading production system suppliers for manufacturing high-quality plastic components.

- “High Tech and High Passion” means being a reliable partner and contributing to customers’ daily success. The 15 production and sales locations in Europe, Asia, and America and a team of over 1500 employees offer customers around the globe the benefit of local access to the expertise of the entire FRIMO network.
- FRIMO equipment is used in many industries:
Automotive | Railroad | Construction | Small Appliance | Heating | Sanitation | Airline
Medical | Furniture | Commercial Vehicle | Sporting Goods | White Goods
- FRIMO is a global technology partner that supports customers along every step of the way, from the original idea to series production for:
PU Processing | Flexible Trimming | Punching | Pressing, Forming | Thermoforming
Press Laminating | Edge Folding | Joining, Gluing

FRIMO demonstrates its innovative capabilities on a daily basis – on all levels. The most recent examples are in the fields of lightweight construction, Industry 4.0, Smart Service, and, of course, in our TechCenters.

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