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## PRESS RELEASE

WITTMANN BATTENFELD at the K 2022

### **Injection-compression molding for thinner wall thicknesses**

***At the K 2022, booth C06 in hall 15, WITTMANN BATTENFELD demonstrates its expertise in the area of thin-wall injection molding with the production of a cup using ICM technology.***

In injection-compression molding (ICM), the melt is injected into a not yet completely closed mold. Final forming of the part takes place following complete closing of the mold by displacement of the melt into the cavity. This enables the mold to be filled under lower pressure, which in turn leads to a reduction of warpage inside the part. Injection-compression molding allows processing of an extended range of materials with particularly high efficiency in material and energy input. This process enables the production of extremely thin, precisely reproducible wall thicknesses and accurate reproduction of surface structures.

WITTMANN BATTENFELD will demonstrate this technology at the K 2022 on a high-speed EcoPower Xpress 160/1100+. With a 4-cavity mold supplied by GLAROFORM, Switzerland, a 230 ml cup made of polypropylene from SABIC, the Netherlands, with a wall thickness of 0.28 mm will be produced within a short cycle time. The machine is equipped with a 4-fold IML system supplied by BECK Automation, Switzerland. This system stands out by its high speed and compact design. One of its special functions is automatic positioning of all four labels. Regardless of its position inside the magazine, every label is invariably placed into exactly the same position on the IML core. This reduces both reject rates and operating effort, since manual fine adjustment of the label magazines is no longer necessary. Quality inspection of the cups will be carried out by a vision system with 10 cameras integrated in the production line, which comes from INTRAVIS, Germany.

The IML labels are supplied by MCC Verstraete, Belgium. These labels from MCC Verstraete marketed under the trade name NextCycle IML™ are products developed with special attention to the needs of an effective circular economy. For example, the NextCycle IML™ labels detach themselves from the PP carrier material during

mechanical grinding without any additional intervention. In the subsequent washing and drying process, the lighter components, i.e., the NextCycle IML™ label flakes, are separated from the heavier carrier material, so that only the pure PP container flakes are extruded. By using special, non-bleeding print colors, MCC Verstraete makes sure that the washing water is not polluted. In this way, a fully decorated packaging product based on white carrier material is recycled into white rPP, while a packaging product based on transparent carrier material is recycled into transparent rPP. Thus, the original color of the packaging is preserved for re-use.

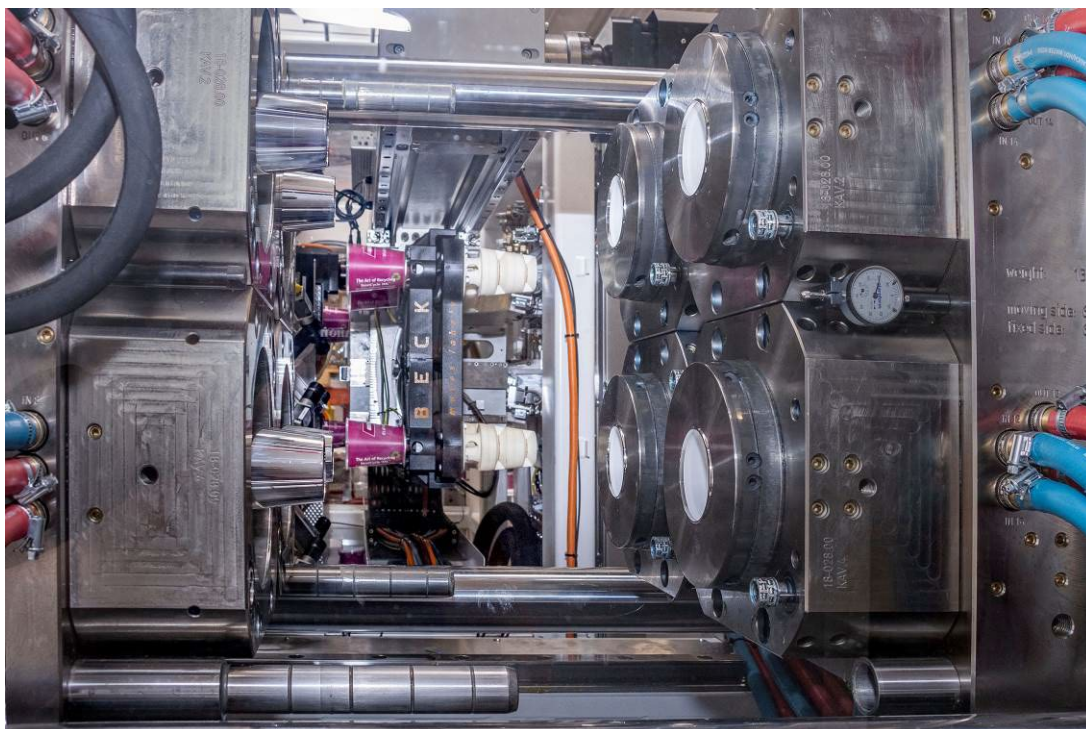
In contrast to other decoration techniques, NextCycle IML™ does not require any consumer intervention to separate materials prior to disposal, and since NextCycle IML™ packaging products consist of mono PP material, no material losses during the sorting process nor any pollution of other material waste streams occur.

The high-speed EcoPower Xpress used to manufacture the cups is the ideal equipment for using IMC technology, especially since this machine's highly dynamic drive technology provides the short injection times required for the ICM process.

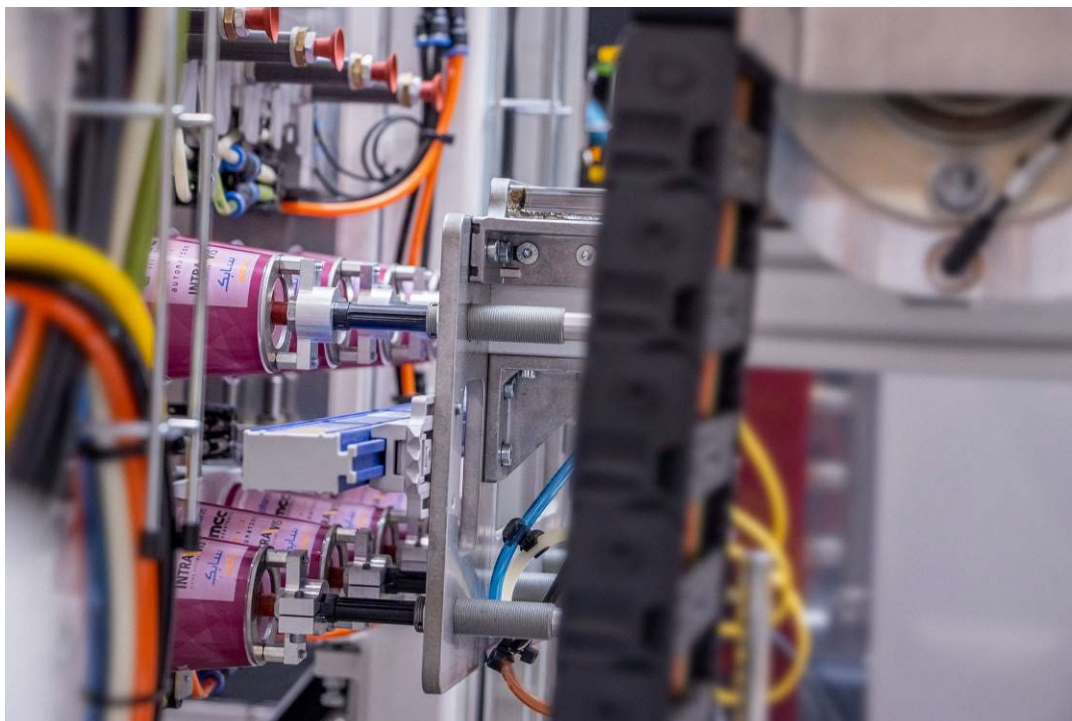
With the EcoPower Xpress, injection speeds of up to 600 mm/s and injection pressures of up to 2,500 bar can be reached, as well as an injection acceleration of up to 15,000 mm/s. These attributes of the machine make it possible to achieve extremely short filling times and thus also a high level of accuracy in parts reproduction. The platen parallelism generated through clamping plate support by low-friction linear guides ensures parallel embossing in order to achieve ultimate high precision.

The "injection-compression molding" package is easy to set up and operate via the Unilog B8 control system of the EcoPower Xpress.

In addition to cost savings due to less material input through injection-compression molding, further cost cuts are achieved by lower energy consumption and an extremely short cycle time. Simultaneously, this process also leads to a higher level of surface quality, an improvement most clearly visible on transparent parts.



**Fig. 1:** Production of cups using ICM technology, decorated with NextCycle IML™ labels from Verstraete



**Fig. 2:** Removal of the cups by the BECK parts removal gripper



**Fig. 3:** IML line of BECK with INTRAVIS vision system



**Fig. 4:** Cups with 0.28 mm wall thickness and NextCycle IML™ labeling

## The WITTMANN Group

The WITTMANN Group is a globally leading manufacturer of injection molding machines, robots and auxiliary equipment for processing a great variety of plasticizable materials – both plastic and non-plastic. The group of companies has its headquarters in Vienna, Austria and consists of two main divisions: WITTMANN BATTENFELD and WITTMANN. Following the principles of environmental protection, conservation of resources and circular economy, the WITTMANN Group engages in state-of-the-art process technology for maximum energy efficiency in injection molding, and in processing standard materials and materials with a high content of recyclates and renewable raw materials. The products of the WITTMANN Group are designed for horizontal and vertical integration into a Smart Factory and can be interlinked to form an intelligent production cell.

The companies of the group jointly operate eight production plants in five countries, and the additional sales companies at their 34 different locations are present in all major industrial markets around the world.

WITTMANN BATTENFELD pursues the continued strengthening of its market position as a manufacturer of injection molding machines and supplier of comprehensive modern machine technology in modular design. The product range of WITTMANN includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. The combination of the individual areas under the umbrella of the WITTMANN Group enables perfect integration – to the advantage of injection molding processors with an increasing demand for seamless interlocking of processing machines, automation and auxiliaries.

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