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## PRESS RELEASE

WITTMANN BATTENFELD at the K 2022

### **Energy-saving and environmentally friendly production with multi-component technology**

***WITTMANN BATTENFELD can draw on many years of experience in multi-component technology. At its booth No. C06 in hall 15, the company is demonstrating its expertise in this area. On a 3-component machine from the SmartPower Combimould series, a reusable coffee-to-go cup is manufactured. In combination with multi-component technology, Cellmould structured foam technology is used as well. This application highlights both the advantages of and the improvement in parts quality which can be achieved by combining several special processes.***

The coffee-to-go cup is produced with a servo-hydraulic SmartPower 400/750H/210S/525L Combimould, equipped with a servo-hydraulic rotary unit. Although no less than 3 injection units are mounted on the machine, the H-D-L configuration of the aggregates (horizontal-diagonal-horizontal on the rear side of the machine) leaves room for the linear robot to be installed in its “standard position” on the fixed clamping plate. The result is an extremely compact production cell with a space-saving footprint. A feature worth special notice is the fact that each of the three injection aggregates comes equipped with its own servo drive module. This concept permits unrestricted parallel movements of all injection units as well as operation of the ejector and core pulls parallel to the closing stroke of the mold, which leads to minimal cycle times.

The rotary unit also comes from WITTMANN BATTENFELD. Its servo-electric drive system enables fast, precise rotary movements. Here, rotations parallel to the opening stroke are also possible, to shorten the cycle time even further. Another special advantage is the easy installation and removal of the rotary unit. This enables conversion of the machine for use in single-component applications, too, without any great effort or expense. With every re-installation, the rotary unit is again positioned precisely by its own centering device, thus ensuring both safety and tool-friendly production.

Moreover, the ejector placed in an off-center position in the finished parts demolding area, enables the type of smooth demolding process normally expected from standard single-component injection molding.

The main aggregate, the 750H, is designed as a Cellmould unit. The relevant process developed by WITTMANN BATTENFELD for manufacturing structured parts by direct gas injection into the melt together with a physical foaming agent is used in this application to foam the second component. The necessary additional pieces of equipment, such as the compressor, gas flow regulator and gas injector, are completely integrated. For setting up and controlling the process, a separate screen page is available in the machine's Unilog B8 control system.

Using a mold supplied by HAIDLMAIR / Austria, a cup with a lid made of Borneables<sup>T</sup> from Borealis is manufactured on this compact production cell. The Borneables<sup>TM</sup> material made of renewable raw materials (i.e., non-petroleum-based feedstock) enables Borealis to meet the quality and sustainability standards required by WITTMANN. The material is food- and dishwasher-safe as well as ISCC PLUS-certified (International Sustainability & Carbon Certification). The feedstock for making Borealis Borneables<sup>TM</sup> originates totally from bio-mass, waste and residual substances of the second generation, which are not in competition with the human food chain. Product safety and performance features are on a par with those of modern polyolefins, with a simultaneous significant reduction of the CO<sub>2</sub> footprint. A special feature of the mold from HAIDLMAIR is the use of hybrid elements in the mold plate to optimize cooling. These hybrid elements are manufactured by HAIDLMAIR directly on a laser tech machine in one production step from a combination of conventionally processed tool steel with 3D-printed yellow bronze.

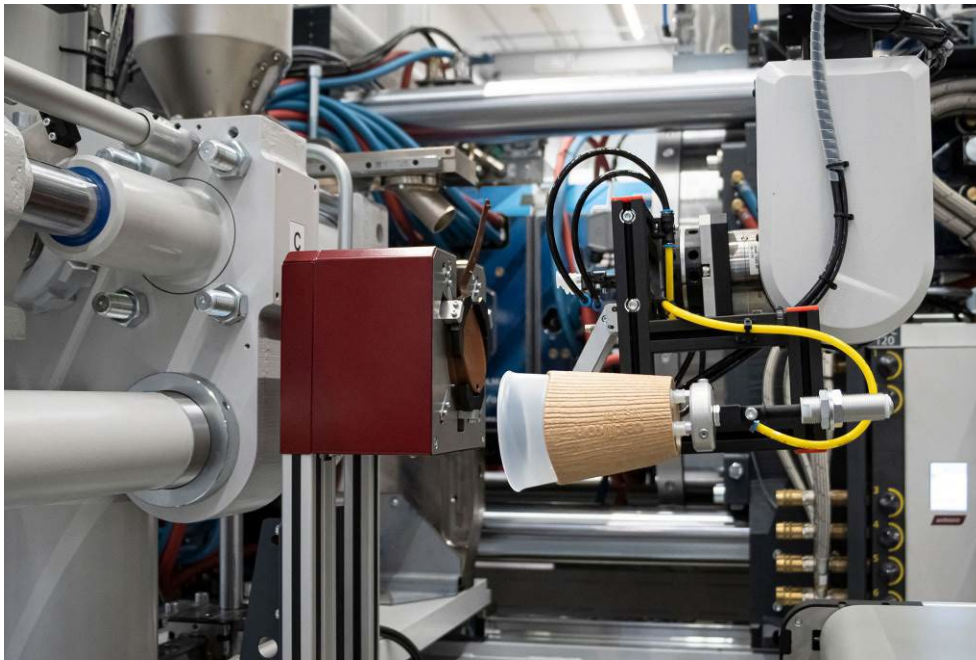
The cup produced in clear optic in the first cavity is over-molded in the second cavity with a shell and provided with an additional insulating effect by foaming the melt with Cellmould technology while reducing the amount of material used. The lid for the cup is injection-molded in an adjacent cavity. It consists of the same material as the main body, but can be individually colored thanks to the special mold technology. The choice of materials was made to suit the cup's function and give it a clear optical appearance. So, the entire cup is not only produced from Borneables<sup>TM</sup>, but can also be both re-used and 100% recycled in line with the principle of circular economy. The parts are removed and deposited on a conveyor belt by a WX142 robot, then passed on to a Simplicita Bag Smart 400H flow wrapping machine from Ravizza Packaging, Italy, and packaged. The use of a tubular film for bag forming ensures simple, safe and hygienic packaging of the parts. In addition, the sealing parameters are fully configurable for a correct bag closure. The packaging material used in this instance also comes from the Borneables<sup>TM</sup> product family from Borealis.



Fig. 1: SmartPower 400/750H/210S/525L Combimould



Fig. 2: 3 component machine equipped with Cellmould technology



**Fig. 3:** Transportation of the cup to the lid



**Fig. 4:** Coffee-to-go cup

## 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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