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PRESS RELEASE

WITTMANN BATTENFELD Highlights 2021

WITTMANN BATTENFELD live at the Fakuma 2021

Following a year of "Fakuma break", the WITTMANN Group is now looking forward to presenting itself again live on site in Friedrichshafen and showing its product highlights at booth 1204 in hall B1. But this time, "live" is more than just being there on site. In addition to the exhibits to be viewed physically, WITTMANN will also offer the opportunity of live connection with its various facilities via its new media technology WITTMANN Interactive to obtain information about additional exhibits.

Highlight *SmartPlus*

The highlight of this year's presentation by WITTMANN BATTENFELD is the new *SmartPlus*. The *SmartPlus* is a servo-hydraulic machine which stands out by its high level of cost and energy efficiency, as well as repeatability. Thanks to the use of proven technologies and carefully selected options, short delivery times and an excellent price-performance ratio have been made possible for this machine.

A special feature of the *SmartPlus* is the new B8X control system with system components developed in-house. These enable a higher frequency, shorter response times and a higher repeatability rate for parts, with the same operating comfort as before and the familiar visualization concept. Of course, the *SmartPlus* also offers the KERS energy recovery technology originally developed for the *EcoPower*.

The *SmartPlus* is currently undergoing practical tests at selected customers. From the 4th quarter of 2021 onwards, the machine is expected to be available in a first series with clamping forces ranging from 60 to 180 t.

The advantages of the new *SmartPlus* will be demonstrated on a *SmartPlus* 180/750. This machine is equipped with the HiQ Flow® application software, the new CMS-Light condition monitoring system to monitor an extended range of service-relevant machine parameters and a GRAVIMAX G14 gravimetric blender. The automation system, using a PRIMUS 26T robot from WITTMANN, is implemented via an Easy

Cell developed and manufactured by WITTMANN BATTENFELD Deutschland in Nuremberg. The Easy Cell mounted on castors requires no safety gate and thus takes up only a minimal amount of space beside the injection molding machine. In spite of its compact design, customers receive the complete range of CE-compliant safety features.

On the *SmartPlus* 180/750 a hub-cap for lawn mowers will be manufactured from PP, using a mold supplied by Uralan, Germany. In the interest of sustainable manufacturing, the part will be produced from a mixture of virgin material with regrind. The HiQ Flow® software will be used to ensure adequate parts quality. This is a material viscosity-related injection control system to compensate the effects of temperature and batch fluctuations on the viscosity of the material.

Medical application on *EcoPower* 55 production cell

With the production of a hose clamp for medical technology in an 8-cavity mold supplied by WILAmed, Germany, WITTMANN BATTENFELD will demonstrate its digitization expertise. The machine to be used is an all-electric *EcoPower* 55/350, equipped with the software packages HiQ Flow® for compensating viscosity fluctuations, HiQ Melt for material quality monitoring and HiQ Metering for active closing of the check valve.

Equipment integrated in the machine's UNILOG B8 control system via WITTMANN 4.0 will include a WITTMANN W918 robot, an ATON plus H30 segmented wheel dryer and three temperature controllers from the TEMPRO plus D series, as well as the TEMI+ MES system. The electronic mold data sheet will also be used by UNILOG B8. It enables the production cell, integrated via a WITTMANN 4.0 router, to check whether the connected auxiliaries are sufficient for the selected product data set, or whether additional equipment is needed. In this application, too, the automation will be installed by way of an Easy Cell from WITTMANN BATTENFELD Germany.

LSR application on *MicroPower* 15/10H/10H COMBIMOULD

WITTMANN BATTENFELD will show its expertise in the area of LSR processing as well as injection molding of micro parts at the Fakuma by manufacturing a support ring with a silicone membrane made of PC and LSR on a *MicroPower* 15/10H/10H COMBIMOULD.

This multi-component version of the *MicroPower* comes equipped with two injection units in horizontal configuration and a rotary disc. The machine is laid out for clean-room injection molding. The rotary disc is completely encapsulated. All connections

for heating aggregates, temperature sensors, water tempering, core pull pneumatics and sensors, as well as the blow-off valve, are mounted on the rotary disc. The connections to the mold have thus been kept short to enhance the machine's user friendliness. As in the standard machine, the injection units of the multi-component *MicroPower* also take the form of two-step screw-and-plunger aggregates with a shot volume of 4 cm³, which enable processing of thermally homogeneous melt with minimal flow paths to achieve excellent parts quality.

The materials used to make the support ring presented are polycarbonate (Macrolon) from Covestro and a self-adhesive LSR (Silopren) supplied by Momentive. The mold has been constructed in cooperation with Nexus. The LSR dosing unit comes from Nexus and is equipped with a new Servomix dosing system including an OPC-UA interface (Euromap 82.3).

IMAGOxt to minimize energy consumption

All machines exhibited at the WITTMANN booth will be equipped with the IMAGOxt software, an additional module for the MES TEMI+. IMAGOxt makes it possible to visualize and monitor the energy consumption, or energy flow.

IMAGOxt supports the preparation of a detailed energy cost analysis for the machines connected to it. This enables subsequent creation of user-defined KPIs, generation of personalized alarm signals and monitoring of the company's energetic performance.

AIRMOULD® Center

The latest developments in the area of AIRMOULD® internal gas pressure technology will be presented in a separate AIRMOULD® center at the booth. Here, interested visitors can gather detailed information about the opportunities this technology has to offer in terms of sustainable parts manufacturing, as well as the advantages of the new pressure control module and the AIRMOULD® Next manual operating device of the next generation.

WITTMANN Interactive – streaming from the fair to the technical labs

In addition to the exhibits on display at booth 1204 in hall B1, the WITTMANN Group will offer its visitors the opportunity to log in on site with the technical labs in Kottingbrunn, Meinerzhagen and Nuremberg, using the new media technology

WITTMANN Interactive, in order to receive information about further selected exhibits.

Via WITTMANN Interactive, WITTMANN BATTENFELD will present existing technologies such the **CELLMOULD® light-weight technology on a *MacroPower* 1100/12800**. With this machine, a seat carrier for a German sports car model will be manufactured from PP using a single-cavity mold supplied by Frimo, Germany.

Moreover, **inline recycling with a *SmartPower* 60 Ingrinder** will be demonstrated at the Meinerzhagen facility. On this machine, a can with a lid made of PS will be produced using a double 2-cavity mold.

At the facilities, several new applications will also be shown in addition familiar technologies:

Injection compression molding for thinner wall thicknesses

In injection compression molding (ICM), the melt is injected into a mold which is not completely closed. The actual forming process takes place by way of pressing the melt into the cavity after the mold has been closed. In this way, the mold can be filled under lower pressure, which results in reducing the warpage inside the part.

WITTMANN BATTENFELD will present this technology in Kottingbrunn using a high-speed *EcoPower* Xpress 160/1100+. The machine is equipped with a WITTMANN robot for fast parts removal. Using a 4-cavity mold supplied by GLAROFORM, Switzerland, a thin-walled cup will be produced within a short cycle time. The highly dynamic drive technology of the high-speed *EcoPower* Xpress makes it possible in particular to work with the short injection times required for the ICM process.

Saving resources with AIRMOULD® Next internal gas pressure

With AIRMOULD® Next internal gas pressure technology, nitrogen is injected into the mold cavity, which is either partly or completely filled with melt, thus forming an internal cavity structure. In this way, light-weight parts can be produced within a short cycle time and simultaneously with good surfaces.

All necessary system components were developed by WITTMANN BATTENFELD. The pressure control module and the manual operating device required for use on machines of other brands have been thoroughly revised, with a special emphasis primarily on compact design of the new units, as well as improvement of user-friendliness and quality monitoring.

The new AIRMOULD® Next internal gas pressure technology will be demonstrated in Meinerzhagen with a *SmartPower* 120/525. On this machine, a towel holder made of polystyrene will be produced.

Decorated and functionalized surfaces

In a joint project with LEONHARD KURZ, a maker of functional foils and foil feeding equipment, and Syntech Plastics, an IMD technology supplier, WITTMANN BATTENFELD is continuing to drive the interesting and promising theme of decorated and functionalized surfaces for the automotive industry as well as white goods and other sectors, by supplying appropriate injection molding technology. To this end, the company is working on a machine concept which incorporates all essential elements for four different decoration processes and will be adjustable to specific applications. The equipment is to be laid out flexibly for IMD with a foil feeding unit, IMD with foil pre-heating, IMD Vario with pre-heating and thermoforming insert molding. The machine is equipped with the EXPERT-Coining package, which permits parallel mold movements during the injection process.

Via WITTMANN Interactive, the partners will present the production of an interior covering for the automotive industry with a functional surface at the WITTMANN BATTENFELD facility in Nuremberg on a *SmartPower* 300 production cell with automation and WITTMANN 4.0 integration. The finished interior part will be shown on demonstrators at both the WITTMANN booth and the booth of LEONHARD KURZ.

Fig. 1: *SmartPlus* 60

Fig. 2: hub cap for lawn mowers, produced on the new *SmartPlus* 180

Fig. 3: hose clamp for medical technology, produced on an *EcoPower* 55/350 WITTMANN 4.0 production cell (photo of hose clamp: WILAmed GmbH)

Figs. 4a+b, from the left: pressure control module and manual operating device for AIRMOULD® Next

Fig. 5: towel holder, produced with AIRMOULD® Next internal gas pressure technology

Fig. 6: cup, manufactured on a high-speed *EcoPower* Xpress 160 using ICM thin-wall technology
(Photo: GLAROFORM AG)

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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