NEWS RELEASE
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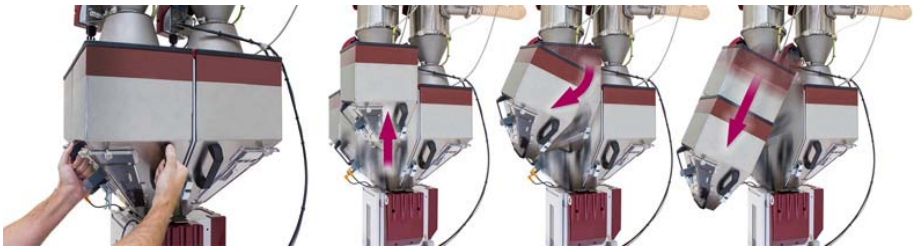
WITTMANN at the Fakuma 2017: innovations all round!

This year, the WITTMANN Group is again taking the opportunity to present its most recent product developments in a great variety of different areas at the Fakuma in Friedrichshafen. The company will showcase its latest innovations in automation and peripherals from 17 to 21 October at its booth No. 1204 in hall B1.

MATERIALS HANDLING I: more comfortable operation of gravimetric blenders

The **GRAVIMAX** from WITTMANN stands out by its precise, reliable material metering as well as homogeneous blending of the material. It comes with an easy-to-operate touch control, and its ingenious structure is designed to facilitate easy cleaning. At the FAKUMA 2017, WITTMANN will show the appliance, which has been further improved for even easier access, to a broader public.
In recent years WITTMANN has been highly successful with the material hoppers of its **GRAVIMAX** blenders. Due to their sophisticated design, the hoppers are very easy to remove. The newly introduced designation **SL**, "**Stationary Lid**" stands for a lid firmly fastened to the blender, to which the material loaders can be attached. The hoppers can now be detached without having to remove the material loaders. Ease and comfort in working with the production equipment considerably enhances the satisfaction of operating staff and thus ultimately increases productivity.



Push the hopper upwards, unscrew it and take it off; all material loaders remain in place

This innovation has become extremely popular within a short time especially for appliances with small throughput rates of up to 80 kg/h and for frequent change of materials. More expensive alternatives – such as using pneumatic cylinders to lift the lid – have already been superseded by this new design.

However, using this solution for larger appliances with higher throughput rates is not practicable, due to the higher volume and substantially heavier weight (when filled) of the hoppers used in such cases. For these applications, WITTMANN now offers a new hinged lid for **GRAVIMAX**.

Illustration of the new GRAVIMAX hinged lid's functionality

The hinged lids made of stainless steel can be moved with a specially designed handle. The rotatable handle also serves to close the lid tightly again, so that additional fastening with screws or clamps is no longer necessary. Two guide rails attached to the lid help the operator to open it, and a locking device on the rails prevents unintentional closing of the lid. If desired, existing blenders from the current **GRAVIMAX** series can be retrofitted with these hinged lids.

MATERIALS HANDLING II: the smart machine hopper

Very simple devices can often greatly facilitate daily work in a production plant. Cleaning the material loaders and machine hoppers is a regularly recurring chore. At this year's Fakuma, WITTMANN will present a pivotable attachment to be placed on machine hoppers, which makes this procedure extremely easy.

The pivoting device for the machine hopper can be retrofitted

As part of the necessary routine for a material change, the machine hopper on the injection unit of the processing machine and the material loader connected to it generally need thorough cleaning. Normally, the material loader must be disconnected to gain unobstructed access to the machine hopper. An elaborate task,

which takes a considerable amount of time. Manual work at the top of an injection unit located at some height also involves a certain safety risk for the operator. WITTMANN material loaders are specially designed to enable very quick and easy cleaning. In the case of central material handling appliances from WITTMANN, the vacuum connection to the machine is not made with parts which need to be opened (such as the lid of the appliance), so that cleaning can be carried out without having to sever supply connections. So it is not necessary to disconnect the material feeding, compressed air or vacuum supply lines. This special design concept of WITTMANN material loaders has already proved its effectiveness over a number of years.
By using the new pivotable hopper, easy cleaning of the underside of **FEEDMAX** material loaders has now also become possible. And while the material loader is open, access to the hopper is unrestricted. It is no longer necessary to dismantle certain components. The cleaning procedure is also facilitated by the extremely smooth inside surface of the hopper, since it prevents deposits of granulate particles which could easily be overlooked. Such residual grains could cause contamination of the material to be used next.
Various WITTMANN machine hopper models can be retrofitted with the pivoting device. Using a clamping ring, an adapter is attached to the existing hopper. The material loader is screwed onto the pivotable part, and the material loader can subsequently be swung out. Finally, it is not necessary to place a sealing ring – which could also slip out of place – between the pivotable part and the hopper.

TEMPERATURE CONTROL I: *SpeedDrive* option for even more efficient temperature control

Although injection molding is one of the most efficient modern mass production processes, the plastics processing industry still strives to increase efficiency even further. Here, processors' attention has increasingly been focusing in recent years on temperature control. WITTMANN has now taken another important step in this area with the new ***SpeedDrive*** option for its **TEMPRO plus D** temperature controllers. This option is now available for open systems up to 90 °C and for pressurized appliances up to 180 °C.

TEMPRO plus D160 temperature controller, now with the new SpeedDrive

At the Fakuma 2017, WITTMANN is introducing its **TEMPRO plus D** temperature controller with the newly developed ***SpeedDrive*** option. It consists of a motor speed-controlled pump, which offers users several additional options to make the injection molding process even more efficient. To start with, **TEMPRO plus D** controller offers extremely accurate temperature control inside the mold inlet (with deviations of no more than ± 0.2 °C), as well as continuous, parallel system pressure control based on the inlet temperature, which ensures cavitation-free running of the pump. But with ***SpeedDrive***, the motor speed or pump pressure, or the differential temperature are additional parameters which can be preset without having to purchase any additional optional equipment for the temperature controller. With every one of these additional parameter settings provided by ***SpeedDrive***, process reliability can be increased and, depending on the application, it also becomes possible to save energy – and consequently costs.
Motor speed, pump pressure and differential temperature (the temperature difference between mold inlet and mold outlet) have a decisive influence on the injection molding process. The differential temperature says a lot about the thermal balance inside a mold, in particular about the more or less homogeneous temperature distribution inside the cavities. Once the differential temperature has been calculated for a particular application, it can become a set parameter and be monitored by defining tolerance margins. If any change occurs in the process parameters of the injection molding machine with an effect on the cycle time, the set differential temperature is restored by increasing or reducing the pump speed in response to the change.
Regardless of which parameters have been set: a **TEMPRO plus D** equipped with ***SpeedDrive*** gives processors a decisive head start in terms of process accuracy over appliances with conventional pumps, since the variable speed makes it possible to adjust the operating point of the pump to the process.

TEMPERATURE CONTROL II: FLOWCON plus

FLOWCON plus is WITTMANN's answer to the question of how a lower operating pressure can be achieved for the pump without changing the total flow volume through the pump.
FLOWCON plus is a compact, fully automatic medium distributor which can be placed close to the mold and enables parallel distribution of the total flow volume among the individual temperature control channels. In this way, the total pressure loss can be reduced, and it becomes possible to control and monitor the flow quantity and outlet temperature in every individual temperature control circuit.

FLOWCON control unit, Masterbox, FLOWCON plus (from left to right)

FLOWCON plus, previously only available in combination with a WITTMANN BATTENFELD injection molding machine, is now also on offer as a compact, space-saving stand-alone system, which can be connected to an injection molding machine of any brand: either via an alarm bus bar and an external on/off device, or via OPC UA. A TTY (20 mA) temperature controller data transfer interface is now also available for this appliance, which makes it possible to connect the **FLOWCON plus** system to injection molding machines with older control systems as well.
The new **FLOWCON Masterbox** provides the visual operating system for the stand-alone solution and, unlike the version integrated in a machine, also houses the power connection.
All in all, WITTMANN currently supplies the perfect, unrivalled temperature control solutions for the injection molding process. It consists of a **TEMPRO plus D** temperature controller with the ***SpeedDrive*** option, connected to a **FLOWCON plus** system with up to 48 circuits.

AUTOMATION I: the new PRIMUS robot presenting itself

Last year, WITTMANN introduced **PRIMUS 16,** the first robot model of the new **PRIMUS** series designed for injection molding machines ranging from 120 to 250 t in clamping force. Following a highly successful first year, another model in this series will now be shown at the Fakuma 2017: **PRIMUS 14**, an appliance for Pick & Place applications which is just as compact and ideal for use on machines with clamping forces from 50 to 150 t.

WITTMANN PRIMUS 14

The mechanism of the **PRIMUS 14** has been further optimized again. The extremely compact control cabinet can easily be installed inside the protective frame of an injection molding machine, to eliminate any costs for additional safety measures which might otherwise be incurred.
PRIMUS 14 is equipped with a horizontal axis ranging from 900 to 2,000 mm in length. Its optimal cable management system permits a compact carrier geometry without excessive lengths due to the power chain. This reduces its space requirements and allows for parts depositing inside the protective frame. The vertical axis comes with a stroke of up to 1,000 mm, the demolding axis has a stroke of 440 mm. The package is rounded off by an **R8** manual input terminal and the **PRIMUS** control system. The latter supports easy, intuitive operation.

Just like the larger model **PRIMUS 16**, **PRIMUS 14** also operates with the WITTMANN-specific absolute encoders. These prevent collisions – in particular immediately after the control system has been switched on – since the robot's position is recognized without delay.

AUTOMATION II: the first model of the new WX robot series

So far, the robot models **W853** (75 kg load capacity) and **W873** (125 kg load capacity) have been known as the top-end models of the handling appliances in the WITTMANN portfolio. They are used primarily on injection molding machines with clamping forces from 1,800 t upwards. Due to the generally increasing importance of automation and especially the rising number of enquiries from the white goods or household goods sectors, a demand has emerged for a new hybrid model. The answer is now the new **WX163**. The concept of the new robot is based on both the **W853,** which has been proven for many years, and the new **W843 pro** – a highly interesting combination for many a plastics processor.
In its basic configuration, the **WX163** can handle a load of 45 kg. In this version, a combined pneumatic C-axis with an exceptionally high torque is used. As well as the high torque, this solution offers the added benefits of a variable assembly area being available for the removal gripper and a dramatic improvement in the entire system's torsional rigidity.
The comprehensive modular system of additional WITTMANN axes makes it possible to use the proven components of other robot models with the **WX163.** This helps to minimize costs and ensures that at the time of its market launch up to three additional servo axes are available for the new model. The rotary servo axes A, B and C are triggered by controllers integrated in the robot. Consequently, it is not necessary to enlarge the control cabinet or change its position – a very genuine WITTMANN solution. The axis structure is traditional: horizontal strokes are available up to a maximum of 18,000 mm, the demolding axes offer a stroke of 1,500 mm, and the vertical stroke is 2,600 mm.
The **WX163** features an intelligent combination of steel and aluminum components, which ensures both high dynamism and excellent rigidity. Of course the appliances from the **WX** series are also fitted with **ambiLED**, already known from the **pro** series. The light signal at the end of the horizontal bar facilitates checking of the robot's status. The automatic mode is visualized by a green light signal, blue indicates a phase stop or manual operation, and red stands for an open safety gate or an interruption of the safety circuit. Options for the **W** robot series, such as ***EcoVacuum*** and monitoring of the vacuum system, are also available.
The new **WX163** robot comes with the latest version of the internally installed WITTMANN **CNC9** control system and the **R9** manual input terminal as standard. Its functionality is largely identical with that of the proven **R8** version, but further refined with various additional visualization options, a display now enlarged to 10.1" with multi-touch attributes, and special step keys for setup. Naturally, the **R9 TeachBox** (THE manual input terminal from WITTMANN) continues to provide the familiar programming and teaching environments such as ***TextEditor***, ***QuickEdit*** and the ***Wizard***. So downward compatibility with existing older program versions is a given.

RECYCLING: the new G-Max 23 granulator from WITTMANN

The **G-Max 23** is the latest model in a series of flexible, custom-made and belt-driven compact granulators. The **G-Max 23** is specifically designed for the closed-loop recycling of sprues/runners from injection molding machines with up to 240 tons of clamping force. It is a portable piece of equipment which allows for great versatility and can be moved easily from one molding machine to another. This granulator operates with low energy consumption and is equipped with sound insulation for the cutting chamber, greatly reducing the overall noise level. It is powered by an IE2 motor for high energy efficiency. With the **G-Max 23**, a granulating throughput of 80 kg/h is made possible.

G-Max 23

In common with other models of the **G-Max** series, the **G-Max 23** allows a new way of working: A remote control replaces the fixed electrical control panel usually used on granulators. This new functionality allows for standard functions that are not available with traditional granulator design. For example, the control device has an hour counter with a digital display, helping to fix the appropriate maintenance date. An interface enables full communication with the injection molding machine. As an option, a special shutdown-function is available: When the injection molding machine is “off”, the granulator stops automatically, helping save energy. There are two different positions of the control on the granulator to choose from, making it much easier for the operator to supervise the grinding process. The control’s connecting cable to the granulator has a length of three meters, and this feature allows the control of the granulator from outside a protective housing. In contrast to the competitor products, WITTMANN offers this feature as a standard part of the granulator package.

G-Max 23 rotor

The **G-Max 23** is also equipped with a hybrid rotor (open and staggered) consisting of 3 × 2 knives with open spaces between the rotating knives and the centre of the shaft. This provides unrestricted air-flow through the large 310 × 235 mm cutting chamber – thus cooling hot materials. Consequently the **G-Max** is ideal for granulating heat-sensitive resins or feedstock that is still warm from processing. (For

the grinding of even hotter materials, the granulator can be retrofitted with a special cooling water circuit.) In addition, the slanted knives improve the cutting process of thick parts, biting into them from different angles. The rotating knives can be sharpened with ease, and are also individually adjustable. This leads to optimal knife gaps that minimize dust and achieve a great overall regrind quality.

The WITTMANN Group is a worldwide leader in the manufacturing of injection molding machines, robots and peripheral equipment for the plastics industry. Headquartered in Vienna/Austria, the WITTMANN Group consists of two main divisions, WITTMANN BATTENFELD and WITTMANN, which operate 8 production facilities in 5 countries, including 33 direct subsidiary offices located in all major plastics markets around the world.
WITTMANN BATTENFELD focuses on the independent market growth in the manufacturing of state-of-the-art injection molding machines and process technology, providing a modern and comprehensive range of machinery in a modular design that meets the actual and future requirements of the plastic injection molding market.
WITTMANN's product range includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, mold temperature controllers and chillers. With this comprehensive range of peripheral equipment, WITTMANN can provide plastics processors with solutions that cover all production requirements, ranging from autonomous work cells to integrated plant-wide systems.
The syndication of the WITTMANN Group has led to connectivity between all product lines, providing the advantage plastics processors have been looking for in terms of a seamless integration of injection molding machines, automation and auxiliary equipment – all occurring at a progressive rate.

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