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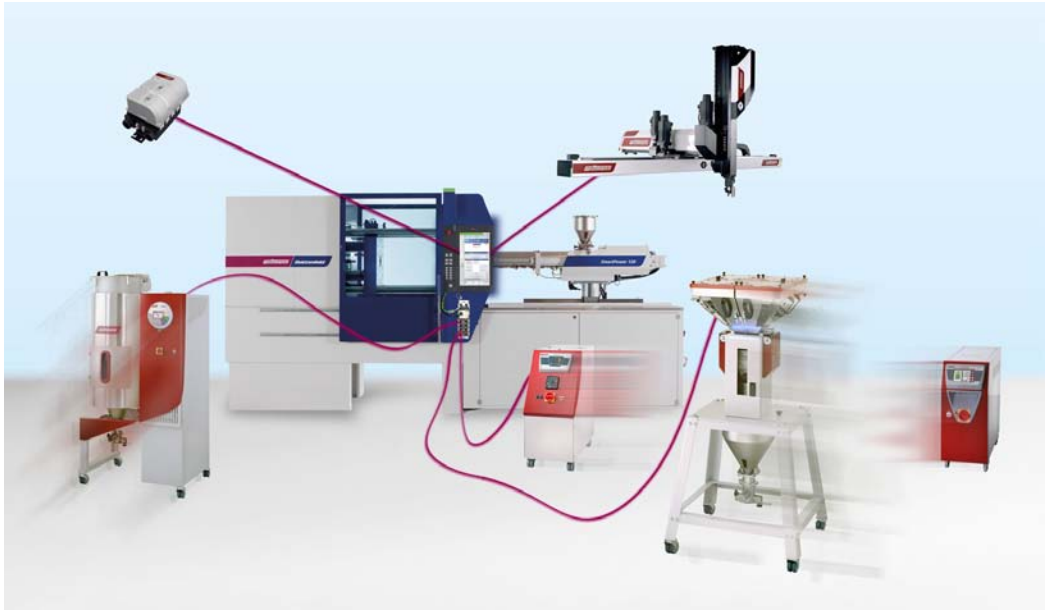
WITTMANN 4.0 – the flexible Industry 4.0 production cell

*With **WITTMANN 4.0**, the WITTMANN Group is presenting the only solution in the injection molding industry so far, which fulfills all requirements in terms of complete data acquisition and offers maximum flexibility for the combination of several production cells as well.*



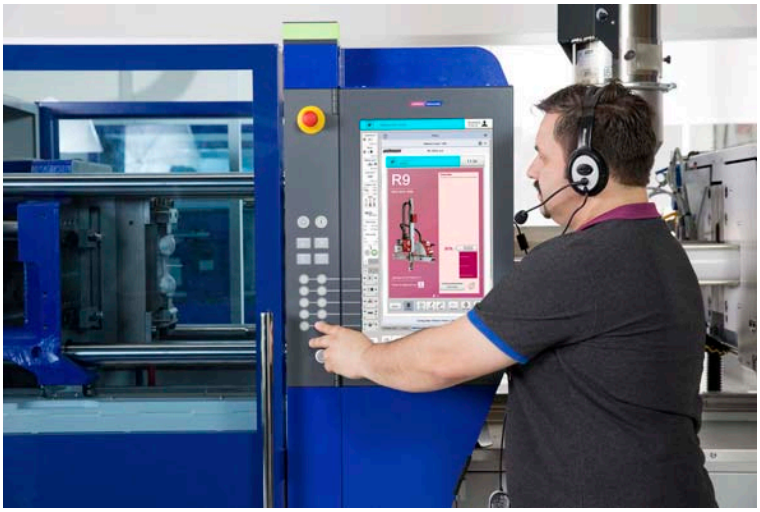
Highest flexibility: WITTMANN 4.0 allows for simple plugging and unplugging of peripheral equipment via the special switch at the processing machine.

A technological prerequisite for Industry 4.0 is intelligent digital networking of machines, peripherals and sensors, to enable communication of all participants via the “Internet of Things”. The final goal of these efforts in the area of digitization is the improvement of corporate efficiency through intelligent industrial systems, which optimize themselves automatically as far as possible, through more flexible production methods and improved quality analysis.
While the German Engineering Federation VDMA has launched some very promising initiatives towards standardization of data communication between the various manufacturers, the need for the appropriate standardization in the area of networking and addressing of network participants is realized only slowly by the manufacturers of machines and appliances. The relevant problem for injection molders is that some of the additional participants now arriving on the Internet of Things are mobile units which simultaneously fulfill location-dependent functions. While it makes no difference for a network addressing where, for example, a temperature controller or

mobile dryer is located physically in the production hall, this information is absolutely vital for data acquisition and analysis. A wrong allocation of peripheral appliances to processing machines – and consequently a faulty visualization of production cells – would defeat the purpose of any kind of data acquisition and analysis from the very beginning.

Pioneering solution WITTMANN 4.0

The WITTMANN Group's answer to this task is **WITTMANN 4.0**. With **WITTMANN 4.0**, not only the processing machine can be operated via the **UNILOG B8** injection molding machine control system from WITTMANN BATTENFELD, but also the WITTMANN robots (with **R8.3** or new **R9** control) and WITTMANN peripheral appliances (with **net8** control) networked with it. This enables intelligent, appliance-specific interaction between the individual appliances. Moreover, **WITTMANN 4.0** allows the transmission of settings and process parameters of all appliances connected to a superordinate ERP or MES system. In the **WITTMANN 4.0** system, it is not necessary at all for the MES/ERP system to address the existing physical appliances individually, but rather – fully in line with the Industry 4.0 principle – only the cyber-physical models of the participants which represent the actual appliances in a given production cell.



Operator, carrying out robot settings using the injection molding machine's UNILOG B8 control.

Simple and flexible

The unbeatable advantage of this system is that the MES system – or, in other words, the operators of the MES system, are not required to deal with any individual parts of the production cell. It is definitely not necessary to continuously make new settings in order to define precisely which appliances form a production cell at a given point in time. In contrast to most other necessary actions, this task could only be accomplished by means of manual adjustments, would thus cause an overwhelming organizational effort, which would be extremely error-prone into the bargain. After all, injection molding production requires that production cells must be

formed depending on requirements placed on the mold and on the parts. So high flexibility is a must.
Another important reason why flexibility in the composition of production cells is necessary is the separation of maintenance cycles for different appliances. The most costly components of a production cell are normally either the injection molding machine or the mold, and these should normally define the maintenance cycle of the entire production cell. For otherwise those appliances of a production cell which have the shortest maintenance cycle would have a negative effect on the efficiency of the entire production cell. The payback periods of machines and appliances would be prolonged accordingly, and the entire sense of implementing Industry 4.0 would become doubtful.

Unique and comprehensive

WITTMANN 4.0 is the only solution in the injection molding industry so far, which completely amalgamates all data and simultaneously enables the flexible composition of production cells. Users benefit from **WITTMANN 4.0** in many ways. The procedures previously adopted by injection molding companies in forming production cells can be maintained. But in addition, the production and process data including correct allocation to the production cells are collected and thus enable correct, informative evaluations.

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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