

press report

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## Consistent standardization for more flexibility

Rauschert is setting new benchmarks in injection molding with linear robots from WITTMANN

**For Rauschert Steinbach, WITTMANN linear robots have almost completely replaced six-axis robots in the plastics processing shop. The new automation concept enables maximum flexibility. Here, the W828 model plays the essential part.**

The plug components being passed round in the conference room during our visit to Paul Rauschert Steinbach GmbH, based in Steinbach am Wald in Southern Germany are quite complex. They consist of fiberglass-reinforced Polyamide with contact pins pressed in. The parts are destined for use in automobile air suspension systems. In fact, there are two plug models involved, which are being produced inside a 1+1-cavity mold on a 100-ton injection molding machine. A total of 600,000 units are leaving the plant each year.

For a long time, these plugs were manufactured semi-automatically. "Between work steps, there was much idle time for the operating staff", reports Tobias Büchner, Rauschert's Production Manager. With the more stringent quality standards and pressure for more cost efficiency, this approach was no longer viable. "It became clear to us that we needed to introduce more automation", says Büchner.

Today, the plug housings are produced fully automatically. There is now less manual work, and the idle times have been completely eliminated. The production staff can now be employed much more efficiently. This successful move towards automation was part of a comprehensive standardization project, which Rauschert has implemented across its entire plastic parts sector to maximize flexibility and efficiency.

## **Automation for a great variety of demands**

As a family-run business with two facilities in Germany, as well as several international subsidiaries, Rauschert has been a leading developer and producer of ignition components, engineering ceramics and molded plastic parts for 125 years. "With our value chain across three interconnected production segments, including in-house tooling and plant manufacturing, we are unique world-wide", says Udo Jakob, Purchasing Manager at Rauschert, and emphasizes: "Plastic valve bodies with VOSS threading are one of our special strengths." Rauschert products are used in household, heating, electrical and high-temperature technologies, as well as in the automotive sector.

The injection molding equipment at the facility in Steinbach consists of 28 machines. Visitors immediately notice the equipment's clear-cut structure and uniform appearance. The 14 most recently acquired injection molding machines are all already equipped with a standardized automation cell. Its core in each case is a WITTMANN W828 linear robot. "We have designed and built the automation cells ourselves. Thanks to standardization we were able to install the automation very quickly. That is precisely the strength of this system", Jakob points out.

The automation cells all include the robot's working area, an automation station for insertion, assembly and inspection tasks, feeder units and the outfeed conveyor belt, which is laid out to accommodate boxes of different shapes and sizes, including even Euro pallets. "Everything is now possible from manual removal right up to complex, fully automatic insertion jobs", comments Alexander Förtsch, Maintenance Manager at Rauschert in Steinbach am Wald, with pleasure.

## **Robots as masters of the entire cell**

The plugs for the air suspension systems in vehicles fully exploit the potential of the standardized automation cells the manufacturing process starts with preparation of the pins and injection molding of the plug housings. The W828 linear robot then demolds the housings and passes them on to fully automatic downstream processing. Here, the pins are fused with the housings and then presented to a camera for 100 per cent inspection.

"The crucial point of our new standard is total integration into the control system", emphasizes Büchner. "In each case, the WITTMANN linear robot is the master of the

downstream work steps following injection molding.” “The openness of the WITTMANN system is something special”, underscores Manuel Rommel, CIP Manager for molded plastic parts at Rauschert. “We discussed this concept with various robot manufacturers. Only WITTMANN was able to offer this integrated solution without any additional control device.”

With the new automation cells, the Rauschert team has managed to create a standardized automation system which covers a great variety of different requirements. This is necessary, for they have a total of more than 300 molds in active use, and their customer base is heterogeneous. “The numbers of units range from 500 up to 3 million”, is how Büchner describes the challenge. “That requires great flexibility. We also find it important to have some backup options. In this way, we ensure continuous delivery capability. If one of our machines has an unplanned standstill, we can quickly transfer the mold and the automation system involved to another machine. Thanks to standardized automation, this is possible without any problems – similar to ‘plug and play’.”

### **Setup times minimized**

In regular operation, too, short setup times make an important contribution to competitive overall efficiency. Four or five setups are carried out in every shift. “Since the startup of our standardized automation cells, we can also begin production of a new batch during the night shift, when there is only one machine setter on site. All the setter has to do is just load the program without having to program anything himself”, Förtsch emphasizes. “Previously, setups were only possible during the day, when the fixture construction team was present.”

Particularly large time consumers were the six-arm robots, which were formerly more frequently in use inside the injection molding hall, before the standardization process. “Following setup, we were often still busy with teaching for a considerable time. With the linear robots, by contrast, many steps happen intuitively, and therefore much faster”, reports Rommel.

The standardization project has significantly increased both flexibility and productivity of the injection molding production at the plant in Steinbach am Wald, and simultaneously improved the consistency of quality as well. An additional benefit is greater sustainability. “Through the optimization of setup times, we are now able to utilize our production cells more effectively, which has a positive effect on our energy balance”,

explains Tobias Büchner. The objective of a new project will be to calculate the CO<sub>2</sub> footprint for every plastics product. For this aspect, too, is becoming increasingly a decisive factor for competitiveness.



These plugs are used in automotive air suspension systems. Two different models are being produced.



A total of 14 production cells are each equipped with a standardized automation cell.



Linear robots from WITTMANN play a vital part in the standardized automation cells at Rauschert.



In the team for more flexibility and productivity: Alexander Förtsch, Manuel Rommel and Tobias Büchner from Rauschert and Wolfgang Prütting from WITTMANN BATTENFELD Deutschland (from left to right). Not in the picture: the automation team with Frank Pöselt, Felix Neubauer, Jürgen Neubauer and Fabian Völk.

Photos: Rauschert and WITTMANN

## 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 ten production plants in seven countries, and the additional sales companies at their 35 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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