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USER REPORT

PWF Kunststofftechnik GmbH & Co. KG

PWF – a competent partner for automotive suppliers

PWF Kunststofftechnik, domiciled in Glinde near Hamburg/Germany, specializes in the production of complex connector housings primarily used in the automotive industry. PWF uses latest injection molding technology from WITTMANN BATTENFELD to fulfill the stringent quality standards required for its products.

PWF has been a by-word for top-quality high-precision tools since 1969. In 1990, PWF Kunststofftechnik was established. The privately owned company can look back on a continuous annual growth rate between 5 and 10% since its foundation. Its sales figures of 16.5 million Euros for last year have more than doubled since 2010.

The company's main business is the production of sophisticated plug connectors for the automotive industry. PWF's customer base includes globally leading automotive suppliers, which purchase tools as well as finished parts and complete assemblies from PWF. In addition to the automotive suppliers sector, with which PWF realizes about 90% of its sales, the company is also active in the household appliances industry and in the of laboratory and medical equipment, HIFI technology and sensor segments. Its production program includes items such as electricity meter caps, sensors for respirators, housings for pneumatic valves, test tubes which change their color at different temperatures, and much more.

In the tool-making segment, about 50 high-precision tools are manufactured every year. A proven, long-standing international sub supplier network with partners in South Korea, Portugal and China ensures that PWF has no problems with supplying its customers with the tools they need and simultaneously filling the large-volume orders for parts from its international customers.

The special strength of PWF is the company's extreme flexibility. For example, series of one and the same product are manufactured in batches ranging from 200 to 60 million units. PWF processes some 200 different materials annually in 150 different colors. Virtually all standard engineering plastics are used, including high-

temperature materials and thermoplastic elastomers. In 2016, 976 different products were manufactured with 393 different molds. The total plastic parts output was 313 million units with a delivery performance of 95%. In order to produce such numbers of units, the machines at PWF operate round the clock on 362 days a year.

Accordingly, the injection molding machines used at PWF, including automation and peripherals, must meet extremely stringent requirements. PWF has a total of 49 injection molding machines installed, ranging from 150 to 4,000 kN in clamping force. In 2017, WITTMANN BATTENFELD delivered four all-electric machines to PWF, three of which were from the *EcoPower* series with clamping forces of 550 kN and 1,100 kN, each equipped with a latest-generation linear robot from WITTMANN. The machine delivered most recently is a model with 150 kN clamping force from the *MicroPower* series specially designed for injection molding of micro parts. This machine is equipped with an integrated rotary disc, a WITTMANN parts removal system specially designed for this machine, a DRYMAX Micro material dryer from WITTMANN, as well as a quality inspection system based on imaging and a clean room module, which provides a class 6 clean air production environment according to the ISO 14644-1 standard. This enables PWF to comply with the highest standards for cost-efficient production of top-quality micro parts.

PWF relies on the WITTMANN Group not only for state-of-the-art all-electric machines, but in particular also for automation and peripherals. So the majority of the injection molding machines installed at PWF are equipped with linear robots from WITTMANN. WITTMANN temperature controllers, blenders and granulators are also used on the PWF Kunststofftechnik production floor. The company's entire material transport needs are taken care of by a central materials handling system from WITTMANN.

In addition to a good price-performance ratio, PWF requires from its injection molding machines above all a high standard of process reliability, an attribute of paramount importance for an automotive supplier. Moreover, the Managing Directors of PWF Kunststofftechnik, Mathias Wernicke and Volker Hansen, lay great store by low energy consumption and, above all, a low noise level of their machines. And of course these machines must be easy to operate, with modest maintenance requirements. Due to the great variety of different products, the requirements placed on the machinery are also subject to constant change. "What we need are cost-efficient and quietly running injection molding machines, which are easy to operate and can be extended and retrofitted without any problems to meet new requirements", says Mathias Wernicke. "The machines from WITTMANN BATTENFELD fully meet our requirements in these areas, with their uncomplicated, Windows-based control system and extensive range of options." According to

Mathias Wernicke, top-quality service is just as important as machinery of excellent quality. In this context, Wernicke emphasizes above all the human side in addition to the quality and availability of the service. “I prefer service engineers who are able to communicate well with my staff members, so that they can solve problems together fast and efficiently”, Wernicke explains. Mathias Wernicke is very satisfied with the sales and service staff at WITTMANN BATTENFELD and with the training of his employees on WITTMANN BATTENFELD equipment.



Fig. 1: from the left: Frank Siegers, Sales WITTMANN BATTENFELD, and Mathias Wernicke, Managing Director of PWF with Martin Hirschenauer, WITTMANN BATTENFELD and PWF staff members during training on the newly installed *MicroPower 15*

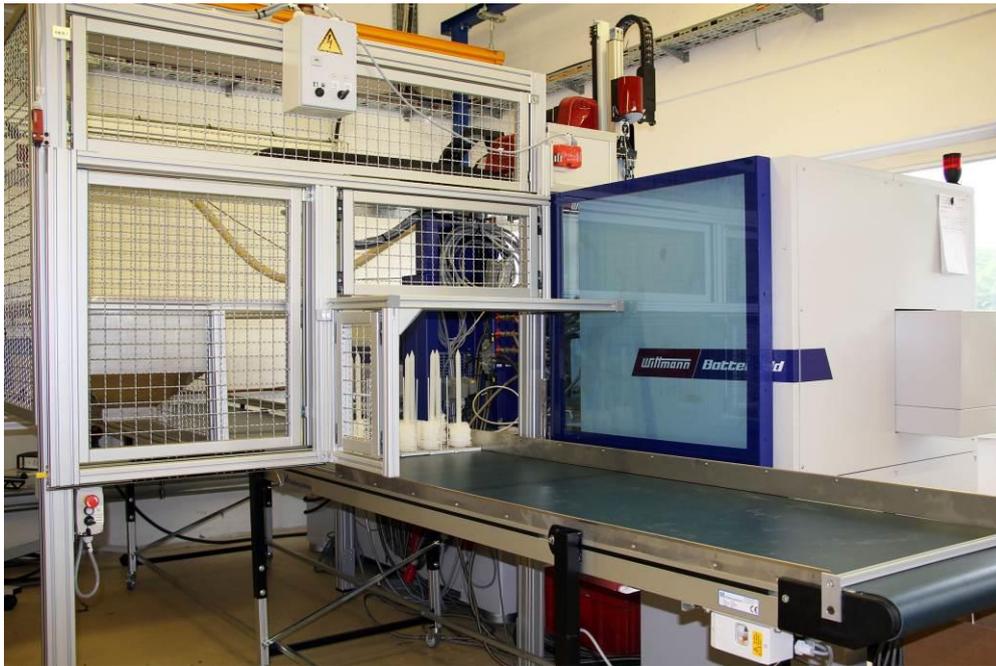


Fig. 2: All-electric *EcoPower 110* with W823 robot from WITTMANN and conveyor belt

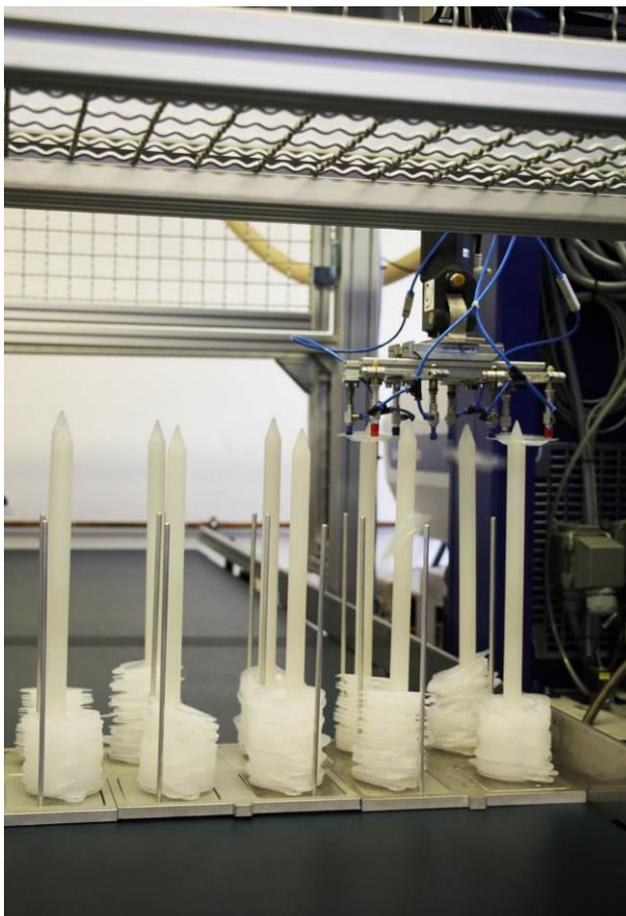


Fig. 3: Parts depositing with W823 robot from WITTMANN



Fig. 4: Central materials handling system from WITTMANN



Fig. 5: Temperature controllers from WITTMANN's TEMPRO series



Fig. 6: A selection from the wide range of small parts produced by PWF

The WITTMANN Group

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 more than 33 direct subsidiary offices located in all major plastics markets around the world.

WITTMANN BATTENFELD focuses on 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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