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USER REPORT

FUSO – Joh. Fuchs & Sohn GmbH / Ybbsitz, Austria

Sustainable injection molding technology for high-quality plastic parts

Joh. Fuchs & Sohn based in Ybbsitz / Lower Austria is a well-known manufacturer of high-grade plastic parts for a great variety of applications. Ultra-modern machine technology enables this company to offer its customers injection-molded solutions which are both sustainable and cost-efficient.

Joh. Fuchs & Sohn – FUSO – was established in 1947 in Waidhofen on the river Ybbs in Lower Austria. In 1964, it started off into plastic injection molding by producing the orange-colored lids for Ovomaltine cans. Today, the family-owned company managed by its CEO Maximilian Högn and its CSO Klaus Großtesner makes highly sophisticated plastic parts from a great variety of materials, including high-temperature plastics, for many different sectors of industry, with about 80 workers on a production floor of just under 3,000 m². The company makes a point of supplying technical plastic parts and assemblies to a solid, mixed industrial customer base. The various sectors served by FUSO include the automotive and railway industries, as well as consumer goods, electronics, medical technology, building construction, telecommunication, mechanical engineering and renewable energy generation.

To make all these parts, a number of injection molding machines ranging from 450 to 5,200 kN in clamping force are in operation, 17 of which have come from WITTMANN BATTENFELD. Moreover, FUSO is also a long-standing customer of the WITTMANN Group for automation equipment, using more than 40 handling devices with load capacities from 5 to 30 kg, including No. 7 robots as well as latest No. 9 series models with R9 control systems.

The items produced range from micro parts weighing just 0.03 g right up to large parts weighing 2 kg. In addition to manufacturing complex plastic parts by 1- or 2-component injection molding, the company offers insert molding for functional parts, mounting of complete assemblies, as well as glueing and welding, plus decoration by 4-color pad printing and laser printing, and 3D scanning for reverse engineering. 3D

prints for rapid prototyping are also possible. Injection molding tools and automation systems are planned, designed and manufactured in-house at the company's own mold-making shop. For ecological purposes, the company has made a special point of installing tool-friendly cooling water systems. Further evidence of FUSO's commitment to protecting the environment are waste heat utilization and a photovoltaic system.

Requirements from the customer base concerning quality standards and attributes of the parts in terms of tolerances, outward appearance and materials used are constantly becoming more and more stringent. FUSO scores with purchasers by its extensive technical know-how and many years of experience in making high-quality parts and assemblies. This wealth of expertise enables the company to offer top-quality solutions which are both sustainable and cost-efficient. FUSO also stands out on the market by its high supply availability and reliability towards its customers.

With the rising demands from customers on the parts and assemblies produced, FUSO's own demands on the injection molding equipment used are also increasing. The company's machinery is state-of-the-art, with a high level of automation on its production floor. All systems are fitted with matching robots to ensure careful parts handling. In addition to a good price-performance ratio, FUSO requires from injection molding machines above all stability, as well as easy access for servicing and cleaning, a smooth, easy-to-clean surface, user-friendliness in operation and a high standard of repeatability. Other factors gaining increasingly in significance are the machines' energy efficiency, their networkability with robots and auxiliaries and availability of assistance systems. Last, but not least, the quality of the after-sales service including the possibility of using an online service also play an important part in the purchasing decision according to Klaus Großtesner. In the acquisition of robots, easy programmability is a top priority in addition to all other criteria which are also applicable to the machines.

The cooperation between FUSO and WITTMANN BATTENFELD has already been in existence for four decades. The machines most recently supplied by WITTMANN BATTENFELD are exclusively models from the SmartPower series. The machines from the SmartPower series are hydraulic machines equipped with fast-responding servo motors and powerful constant displacement pumps. This technology, combined with the KERS (Kinetic Energy Recovery System) to recover the deceleration energy within the machine, which is included as standard, provides the SmartPower's high level of energy efficiency. Further characteristics of the SmartPower are its small footprint and its pivotable injection unit, which ensures easy access to the barrel for quick and comfortable barrel change.

All SmartPower machines except one are designed as Insider cells, which means that they come with a WITTMANN robot and a conveyor belt integrated in the

production cell. This variant offers a number of advantages, ranging from an enormous amount of space saved compared to systems with conventional automation solutions, all the way to cost advantages from the fact that all hazardous areas are already secured and certified ex works. Moreover, the robot cycle time can be minimized due to shorter travel distances and direct parts depositing on the conveyor belt.

The machines delivered in 2023 also come already equipped with the new B8X control system and the HiQ Flow assistance system. The B8X control system includes several control components developed in-house. These allow a higher internal clock frequency with shorter response times to sensor signals and consequently a higher standard of parts reproducibility, with user-friendliness and familiar visualization remaining unchanged. The HiQ Flow assistance system is an injection regulation function by which viscosity fluctuations in the material used can be compensated. This function enables automatic process automation and compensates even minimal fluctuations in the material quality. FUSO is so completely satisfied with this system that all of the company's other machines have been retrofitted with it, too, wherever technically feasible and economically advisable.

“The Insider cells based on the servo-hydraulic SmartPower and WITTMANN linear robots meet our requirements in every respect”, Maximilian Högn confirms. “The equipment is space-saving, highly energy-efficient, easily accessible and easy to operate.”



Fig.1, from the left: Martin Stammhammer, Int. Sales Manager Robots, WITTMANN Technology, Maximilian Högn, CEO of FUSO, Klaus Großtesner, CSO of FUSO, Andreas Högn, Majority Shareholder and Advisor, FUSO, Roland Pechtl, Area Sales Manager WITTMANN BATTENFELD (Photo: WITTMANN BATTENFELD)



Fig. 2: SmartPower machines from WITTMANN BATTENFELD designed as Insider cells with WITTMANN linear robots (Photo: WITTMANN BATTENFELD)

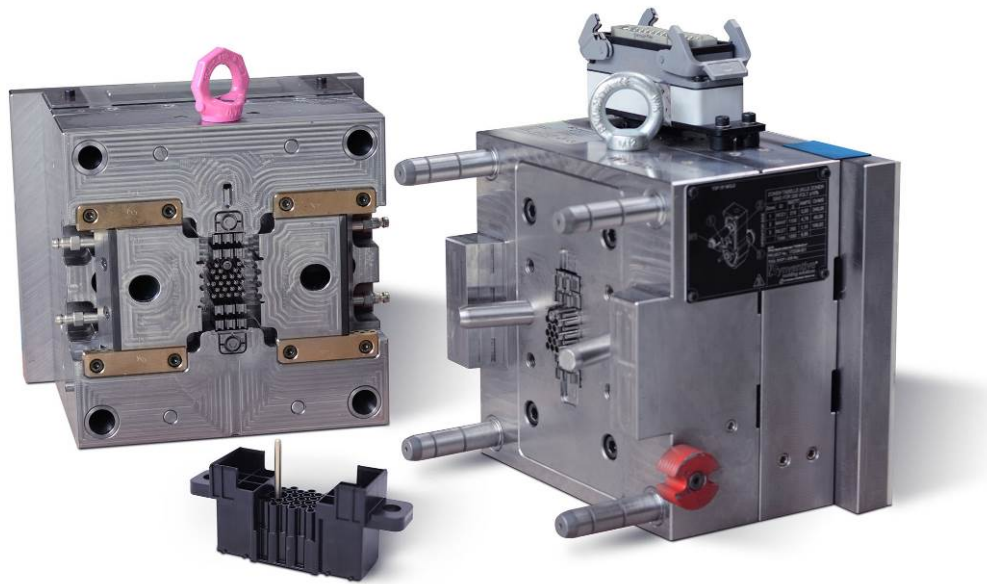


Fig. 3: Mold to produce an AMP plug for communication units in critical infrastructure, manufactured in-house by reverse engineering at Joh. Fuchs & Sohn's own mold-making shop (Photo: FUSO)



Fig. 4: Housing for aqua sensors to measure the water quality in BSH dishwashers (Photo: FUSO)



Fig. 5: Housing for WITTMANN flow controllers (Photo: FUSO)



Fig. 6: Housing for an electrical tool (Photo: FUSO)

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 six countries, and the additional sales companies at their 36 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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