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USER REPORT

MACO, Austria

Flexible, fully integrated production cells for MACO in Trieben

Mayer & Co Beschläge GmbH, an internationally renowned manufacturer of high-precision components for windows and doors headquartered in Salzburg, uses fully integrated production cells from WITTMANN BATTENFELD to produce its plastic parts. The servo-hydraulic machines from the SmartPower series with insider solution have been in operation at the production plant in Trieben since the end of 2018.

The family-owned company Mayer & Co Beschläge GmbH was established in 1947 by Lorenz Mayer and has had its headquarters in Salzburg since 1952. In 1994, the Trieben production plant was opened, where now most of the MACO product range is manufactured. The MACO Group employs a total workforce of 2,600, 870 of whom work in Trieben.

The product portfolio consists of components for windows and doors including high-quality revolving and sliding doors. Typical products are slide and tilt fittings, sealing components, ground sills, window handles, edge closures, window rebate ventilators, door locks, access control systems and sensors. The majority of its products are exported. The company supplies customers in the building construction industry in more than 40 countries and operates 15 subsidiaries for this purpose, 6 of which have their own warehouses. To manufacture its parts, MACO uses many different production processes such as punching, pressure die-casting, injection molding, extrusion, aluminum casting, turning, milling and others. One of MACO's strengths is its expertise in surface technologies, which offer maximum corrosion protection. The TRICOAT-PLUS process developed by MACO is unique on the market.

The company's injection molding technology is located at the main production plant in Trieben / Styria. From there, all assembly plants are supplied with components. In Trieben, both semi-finished and finished parts are made. Most of the tooling required for this purpose is manufactured in-house. 60 toolmakers are employed in Trieben alone who, in addition to molds for injection molding, also produce pressure casting and punching dies. All common types of materials are used, with polyamide,

polypropylene, POM and ABS taking the lion's share. For load-bearing parts, materials with up to 50% fiberglass content are processed. The great diversity of the plant's product range is impressive. For example, more than 1,800 injection molded articles, each with a different geometry, are manufactured in Trieben. In order to satisfy the high quality standards, preliminary simulations in the form of mold filling studies are also carried out at the Trieben plant.

With 52 injection molding machines installed, ranging from 250 to 1,800 kN in clamping force, MACO is the largest injection molding plant in the region. The company's requirements for the injection molding machines are determined by the stringent requirements imposed on the parts produced by MACO. Very many articles are produced in large quantities, some of these with extremely small geometries, which are further processed with a high degree of automation. Typical examples are fusing parts, of which more than 40 million units are produced annually. Here, the reject rate must be kept as low as possible. This requires machines which meet high standards of process stability and precision. Due to the company's wide range of different parts, the machines must also be adaptable to a great variety of mold sizes without compromising on stability and precision. Therefore, the possibility to exchange the injection units of the machines with only minor effort is important to MACO.

WITTMANN BATTENFELD has been present with its machines at the MACO plant in Trieben from the beginning. Most of the machines purchased in the initial stages are still running today. Currently, 22 of the injection molding machines installed at MACO have come from BATTENFELD.

Last year, three new machines from the servo-hydraulic *SmartPower* series were delivered to MACO, one with 600 kN clamping force, the other two with 350 kN clamping force. The two *SmartPower* 35 machines are also equipped with an insider cell and WITTMANN 4.0 integration of the robots and temperature controllers. An insider cell is a production cell with an integrated robot, conveyor belt and fixed protective housing combined with the machine. This solution not only saves valuable space on the production floor. It also offers a number of additional benefits, such as systematization of the material flow with a uniform logistics interface for finished parts transfer at the end of the clamping unit, as well as cost advantages due to the fact that all hazardous areas are already secured and certified ex works. Via WITTMANN 4.0, the WITTMANN W808 robots and the TEMPRO plus D temperature controllers are integrated in the Windows® IoT-based UNILOG B8 machine control system and can be operated from there.

Christoph Guster, head of the entire plastics technology at MACO, and Manuel Steiner, responsible for plastics injection molding, are very satisfied with the new machines. Christoph Guster comments: "These machines are compact production

cells which meet our stringent requirements for process stability, precision and flexibility in every respect.” Christoph Guster and Manuel Steiner also regard the possibility to purchase machines, robots and auxiliaries from a single source at the WITTMANN Group as a major advantage, mainly also due to the system integration via WITTMANN 4.0, from their point of view definitely a step in the right direction.

Manuel Steiner is particularly pleased about the high process stability of the WITTMANN BATTENFELD machines, which, as he puts it, thanks to their stable production process can also continue to operate in “ghost shifts”, that is, without a machine setter being present. According to Steiner, this not only applies to the new, but also to the older BATTENFELD machines. Manuel Steiner specially appreciates the high standard of customer support offered by WITTMANN BATTENFELD: “For us, the excellent customer support provided by WITTMANN BATTENFELD was a decisive argument in favor of buying the machines from the *SmartPower* series. The response times are short, the support functions perfectly, both by phone and on site”.



Fig. 1: Machines from WITTMANN BATTENFELD – in the foreground the most recently delivered *SmartPower* 35 with insider cell and WITTMANN 4.0 integration (Photo: WITTMANN BATTENFELD)



Fig. 2: from the left: Bernhard Schaufler, Regional Sales Manager Austria at WITTMANN BATTENFELD, Manuel Steiner, Head of Plastics Injection Molding at MACO, Christoph Guster, Plastics Technology Manager at MACO, Alfred Schrammel, Customer Support WITTMANN BATTENFELD (Photo: WITTMANN BATTENFELD)

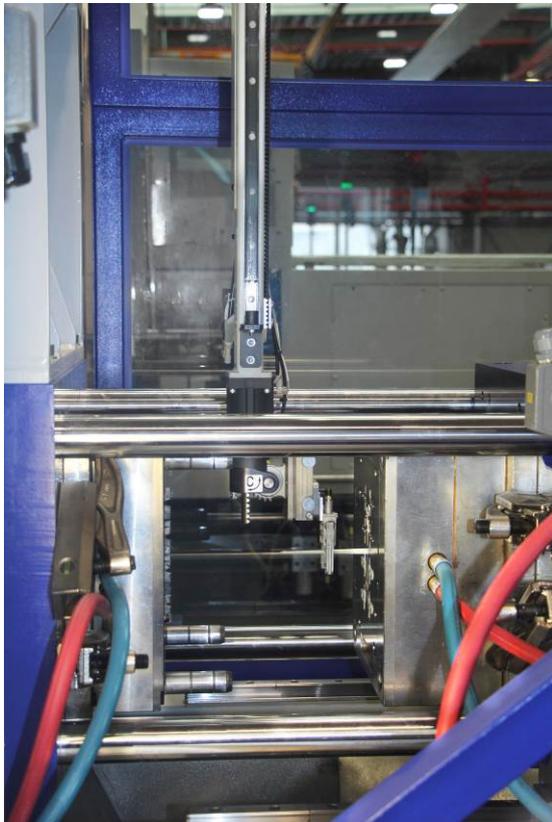


Fig. 3: Parts removal with W808 robot from WITTMANN (Photo: WITTMANN BATTENFELD)



Fig. 4: Typical components for windows and doors made by MACO (Photo: WITTMANN BATTENFELD)



Fig. 5: Typical components for windows and doors made by MACO (Photo: WITTMANN BATTENFELD)



Fig. 6: Window rebate ventilator, consisting of 5 individual components (Photo: WITTMANN BATTENFELD)

The WITTMANN Group

The WITTMANN Group is a worldwide leader in the production of injection molding machines, robots and auxiliaries for the plastics processing industry, headquartered in Vienna/Austria and consisting of two main divisions: WITTMANN BATTENFELD and WITTMANN. The companies of the group jointly operate eight production plants in five countries, and with their additional sales and service companies they are active on all important plastics markets around the world.

WITTMANN BATTENFELD pursues the further expansion of its market position as an injection molding machine manufacturer and specialist for state-of-the-art process technologies. As a supplier of comprehensive, modern machine technology in modular design, the company meets both present and future market demands for plastics injection molding equipment.

The WITTMANN product portfolio includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. With this diversified range of auxiliary appliances, WITTMANN offers plastics processors complete solutions to cover all production requirements, ranging from independent production cells to completely integrated plant-wide systems.

The syndication of the various segments under the umbrella of the WITTMANN Group has led to complete connectivity between the various product lines, for the benefit of plastics processors with an increasing demand for seamless integration of processing machinery with automation and auxiliaries.

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