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USER REPORT

STIEBEL ELTRON

Premium-quality plastic parts for building service appliances – manufactured with injection molding technology from WITTMANN BATTENFELD

The STIEBEL ELTRON group based in Holzminden, Germany ranks among the market and technology leaders worldwide in the areas of building services and renewable energy. To manufacture its plastic parts, STIEBEL ELTRON has been relying on injection molding technology from WITTMANN BATTENFELD for decades.

Today's STIEBEL ELTRON group was founded by Dr. Theodor Stiebel in 1924. The company's first product was the coil immersion heater developed by Dr. Stiebel, which offered a particularly high degree of efficiency due to its special surface structure. The same principle is still applied today in modern heating systems. In 1927, the first small instantaneous water heaters were rolled out. The present product range of the STIEBEL ELTRON group includes appliances which work with renewable energy, such as heat pumps, heat accumulators, solar panels and photovoltaic systems, as well as water heaters such as instantaneous water heaters, automatic hot water generators, also hand dryers, heaters and air conditioners.

The STIEBEL ELTRON group with a current workforce of more than 3,000 employees sells its products worldwide. Its main market is the German-speaking area, where the company is the market leader. The main success factors of the STIEBEL ELTRON group, which had its most profitable fiscal year ever in 2016, are seen primarily in its uncompromising commitment to innovation, high quality standards, reliability and customer-oriented service. It operates a total of five production plants, of which two are located in Germany, one in Slovakia, and one each in Thailand and China.

The Hessian town of Eschwege is the home of the STIEBEL ELTRON group's plastics competence center. Here, all plastic parts for the European facilities are produced in 3 shifts, as well as small appliances consisting mainly of plastic

components, such as small water reservoirs holding 5 to 15 l, hand dryers, hot water boilers or quick-response heaters. With 170 employees, the plant produces 26 million plastic parts annually, ranging from 2 g to 2.5 kg in weight. Most of the molds come from the company's own mold making shop. The plant also has its own compounding system, which enables in-house production of the polyamide required for heater components. Marko Mühlhausen, Plastics Production Manager in Eschwege, is particularly pleased with the newly installed driverless transportation system (DTS), which has contributed significantly to increased efficiency.

To manufacture the plastic parts at STIEBEL ELTRON in Eschwege, processes such as 2-component injection molding, back molding and injection stamping are used, in addition to standard injection molding. Of the 24 injection molding machines installed in Eschwege, which are virtually all equipped with linear or industrial robots, about half are from WITTMANN BATTENFELD. They include toggle lever machines from the proven TM series. Two of these TM 240/1330 machines with 2,400 kN clamping force were each automated by WITTMANN NUREMBERG with an articulated robot from Kuka. Marko Mühlhausen reports that this equipment replaced similar equipment which had also been automated by WITTMANN, and that the replacement of the machines proceeded smoothly within a very short time. Apart from the TM series models, STIEBEL ELTRON has also installed several machines from WITTMANN BATTENFELD's *PowerSeries*, among these an all-electric *EcoPower* 110/750, which features extreme energy efficiency and precision, a 2-component *MacroPower* 500/3400H/210S with 5,000 kN clamping force and a *MacroPower* 850/5100 with 8,500 kN clamping force. The most recently delivered *MacroPower* 850 is equipped with a W843 robot from WITTMANN, a conveyor belt and a safety barrier.

The cooperation between STIEBEL ELTRON and WITTMANN BATTENFELD has continued for more than three decades. Marko Mühlhausen is very satisfied with the machinery from WITTMANN BATTENFELD. Apart from the high standards of precision and repeatability offered by these machines, he specially appreciates their easy operation, and even more the excellent after market service. Marko Mühlhausen: "Good service is vital for us, and in this area WITTMANN BATTENFELD has a definite edge on its competitors."

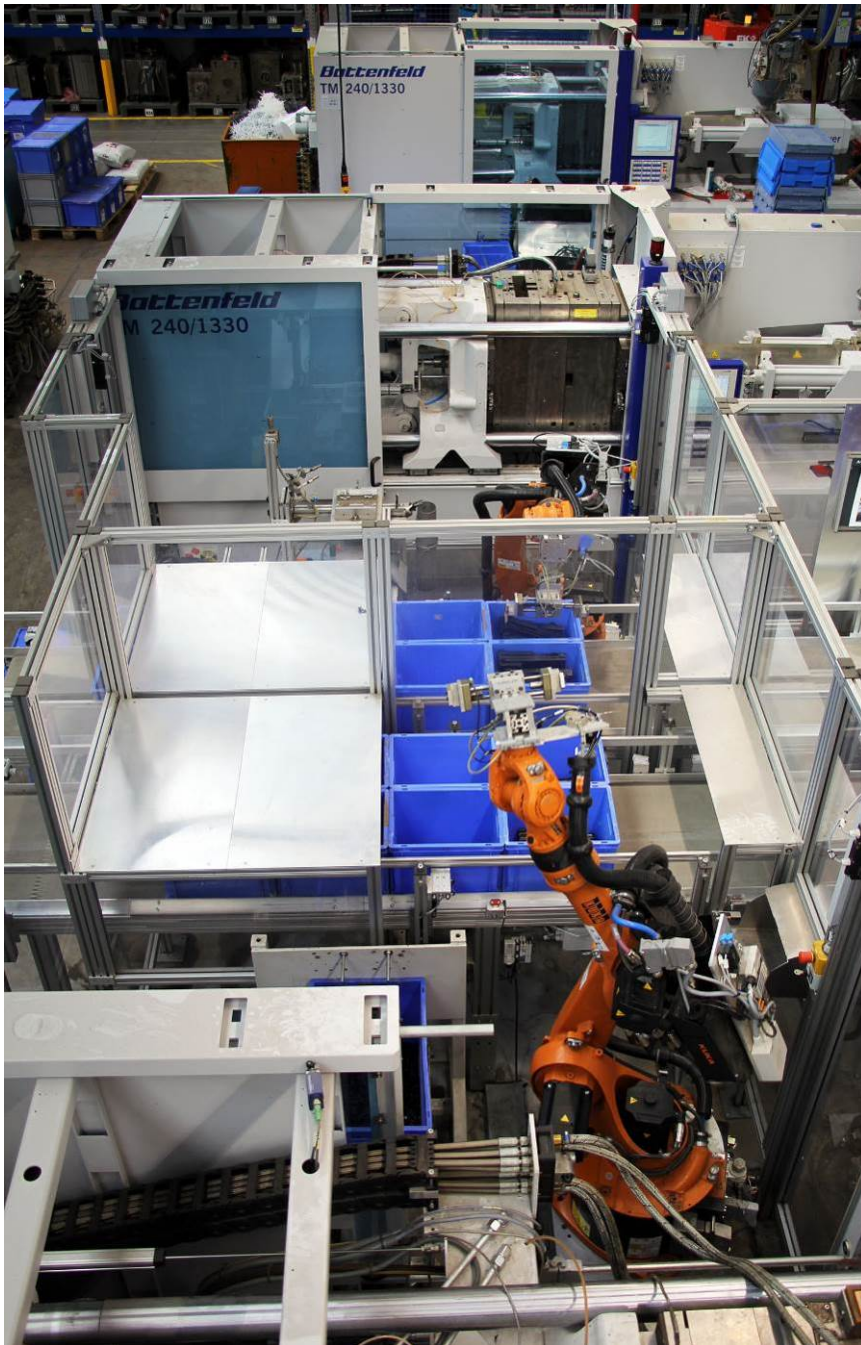


Fig. 1: 2 TM 240/1330 machines – automated by WITTMANN Nuremberg



Fig. 2: Dieter Jackel, WITTMANN BATTENFELD salesman and Marko Mühlhausen, Plastics Production Manager at STIEBEL ELTRON in front of the *MacroPower 850/5100*



Fig. 3: Driverless transportation system at STIEBEL ELTRON



Fig. 4: Housing components for a wall storage heater – manufactured on the *MacroPower 850*

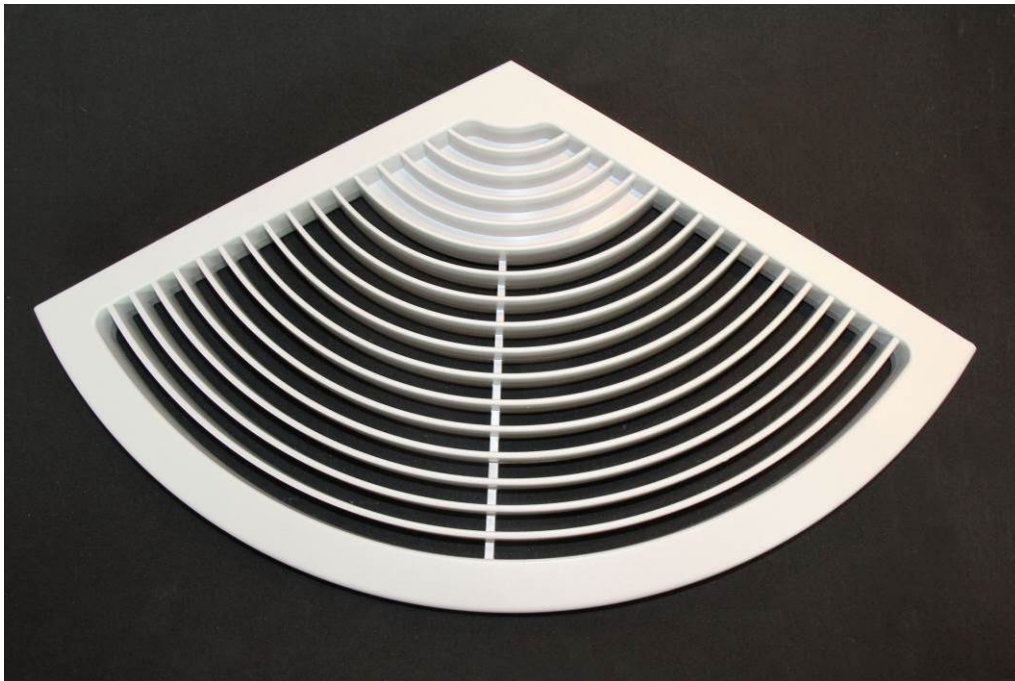


Fig. 5: Ventilation grille – manufactured on the *MacroPower 850*



Fig. 6: Heating insulator for an instantaneous water heater made of material compounded in-house – manufactured on the TM machine automated by WITTMANN



Figs. 7a + b: Examples of finished appliances from STIEBEL ELTRON (hot water boilers and instantaneous water heaters)

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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