

December 2018, Kottlingbrunn/Austria

USER REPORT

YONWOO, Korea

***MicroPower* replaces conventional injection molding at YONWOO**

YONWOO, the largest manufacturer of packaging for the cosmetics industry in Korea, is replacing conventional injection molding machines with machines of the MicroPower series from WITTMANN BATTENFELD, which are specially designed for injection molding of micro parts.

YONWOO, based in Incheon, Korea, was established in 1983. Today, the family-owned company with a current workforce of 1,500 employees ranks among the world's leading manufacturers of cosmetics packaging with a high technological standard. YONWOO owes its success largely to continuous further development of its products and strict quality control.

The company's product range includes all types of cosmetics containers, such as cream jars and tubes, make-up containers, oil pumps, sprays, foaming devices and much more. One of its main product lines is a range of dosing pumps which YONWOO developed in 1990. YONWOO was the first manufacturer of dosing pumps in Korea. These pumps were previously imported from Japan for the cosmetics industry in Korea. Most of these pumps work with the Airless technology developed by YONWOO. This technology enables a highly accurate, consistent release of the required dosing volume with each pumping process. The portfolio of these pumps includes pumps with dosing volumes of 0.08, 0.15, 0.2, 0.3, 0.5 and 1 ml.

YONWOO sells about 50% of its products in Korea, the remainder is exported. Its main export markets are Europe and the USA. The company's customer base includes groups such as L'Oréal, P&G and Estée Lauder.

To make the small individual components of the pumps, such as sealing caps, check valves, piston cylinders and housings, YONWOO has decided to replace conventional injection molding machines with *MicroPower* machines from WITTMANN BATTENFELD. The company has ordered a total of twelve *MicroPower* machines from WITTMANN BATTENFELD, of which six are already up and running.

These are used to make parts for pumps with dosing volumes of 0.15 and 0.2 ml. The project to replace conventional injection molding machines with machines from the *MicroPower* series started in December 2016 with WITTMANN BATTENFELD presenting a first mold layout in cooperation with Ernst Wittner GmbH. This layout was then further optimized by YONWOO in close collaboration with WITTMANN BATTENFELD. Next, a first mold was constructed and tested successfully in May 2017 at WITTMANN BATTENFELD in Kottlingbrunn, in the presence of YONWOO staff members. This was the starting signal for the first six machines. They were delivered in December 2017.

The six *MicroPower* machines have replaced two conventional injection molding machines on which parts had previously been produced with a 64-cavity mold within a cycle time of 14 seconds. Thanks to their compact design, the six *MicroPower* machines take up no more space than the two machines they have replaced. What is more, in contrast to conventional machines, the *MicroPower* machines with their small dimensions could be transported easily to the seventh floor, where they now stand right next to the assembly area for the pumps. In this way, it became possible to optimize transport distances and to save valuable space in the hall on the ground floor. The molds now in use have 12 cavities. Particularly positive for YONWOO is the weight constancy of only 2 mg from one part to the next. This could not be achieved reliably with the 64-cavity mold. In this way, it not only became possible to considerably reduce the production and maintenance costs for the molds, but handling and quality inspection of the parts has also become much easier. The cycle time is now only 8 seconds, and the scrap rate has been reduced to a minimum. Thanks to the cost savings realized together with significantly higher productivity, the investment in the *MicroPower* machines has paid off within less than a year.

Following this positive development, YONWOO decided to order more machines, with the next six *MicroPower* machines being delivered between November 2018 and the first quarter of 2019. The machines are equipped with a rotary disk. As a special highlight, it should be mentioned that the injection volume, which is 4 cm³ for the *MicroPower* as standard, will be increased to 6 cm³ for the first time in one of the machines.

Seong Ho Kim, Team Leader M&I Technical Center at YONWOO, shows himself impressed by the short response times and uncomplicated, good cooperation with WITTMANN BATTENFELD, and is looking forward to further close cooperation.



Fig. 1: *MicroPower* machines with UNILOG B8 control system at YONWOO in Incheon, Korea
(Photo: Wittmann Battenfeld)



Fig. 2: from the left: Martin Philipp-Pichler, Product Manager *MicroPower*, Wittmann Battenfeld, Chong Geun Kim, Managing Director Wittmann Battenfeld Korea, Roland Pechtl, Project Manager Asia, Wittmann Battenfeld, Kim Hong Suk, Deputy Project Leader Yonwoo at YONWOO in Incheon, Korea (Photo: Wittmann Battenfeld)



Fig. 3a: Quality inspection of sealing caps
(Photos: Wittmann Battenfeld)



Fig. 3b: Sealing cap



Fig. 4: Machine acceptance at WITTMANN BATTENFELD in Kottlingbrunn,
from the left: Roland Pechtl, Project Manager Asia, Wittmann Battenfeld, Seong Ho Kim, Team Leader
M&I Technical Center at YONWOO., Martin Hirschenauer, Application Technology *MicroPower*,
Wittmann Battenfeld, Chong Geun Kim, Managing Director Wittmann Battenfeld Korea (Photo: Wittmann
Battenfeld)



Fig. 5: Typical products from YONWOO (Photo: Yonwoo)

The WITTMANN Group

The WITTMANN Group is a worldwide leader in the production of injection molding machines, robots and peripheral equipment for the plastics processing industry, headquartered in Vienna/Austria and consisting of two main divisions: WITTMANN BATTENFELD and WITTMANN. They jointly operate the companies of the group with eight production plants in five countries, and its additional sales and service companies are active with 34 facilities 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 peripheral units, WITTMANN offers plastics processors solutions to cover all production requirements, ranging from independent production cells to 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 peripherals.

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