

# Pioneering a new era of paperboard production

**The American machine manufacturer MarquipWardUnited has entered the market for fully servo-driven processing machines with the high-end rotary die cutter, ServoGrafix. The leading American manufacturer of machinery for producing and processing corrugated paperboard has created a completely new innovation, which combines particularly robust American machine construction with a complete state-of-the-art automation solution from B&R. The characteristics achieved through this combination, such as outstanding productivity, top-quality die cutting and printing, and high availability of the machine, which result in the lowest possible operating costs, have already convinced their first buyer on the European continent: The German manufacturer of corrugated paperboard and paperboard packaging, P-Well.**

A blue haze settles in the gigantic production hall at the P-Well GmbH company headquarters in the German town of Bad Bentheim, not far from the Dutch border. Between the expansive systems for producing and finishing corrugated paperboard, heavy forklifts transport rolls of paper and tall stacks of corrugated paperboard in a variety of sizes and shapes through the aisles so quickly that it doesn't take long for visitors to see that every minute counts here.

"Maintaining extremely short delivery times for an extensive range of products is an important competitive advantage in the hotly contested market of corrugated paperboard," assures Tino Lorenz, head of the P-Well plant in Bad Bentheim. "That's why we offer our customers an extremely wide >>



Ideally suited to P-Well's requirements: The combination of robust machine construction from MarquipWardUnited and highly modern control technology from B&R results in a new rotary die machine with very high throughput.

sheets per hour and does it at the lowest possible cost per 1,000 m<sup>2</sup> of processed paperboard. The machine, which is equipped with four ink chambers for P-Well (more than 10 are possible) for machines with the highest-grade flexo direct printing features, proves itself through high throughput, environmentally-friendly handling of sheet material, minimal waste (even when changing the ink and changing batches) and excellent precision.

These outstanding characteristics were achieved through skillful utilization of servo motors. 47 servo drives from B&R's ACOPOSmulti device series are used to drive 52 servo motors in the four-color machine at P-Well. This also includes motors with a direct, gearless connection to the printing unit shaft - an innovative solution that offers considerably higher precision, is more robust and even consumes less energy than conventional solutions.

**High-precision printing with servo technology**

The higher printing precision is also due largely to the fact that the servos are driven individually. As an example, this means that the cylinders can be driven at different speeds if necessary and the printing length can be temporarily adjusted, even during the printing process. This makes it possible to compensate for the image distortion that is inherent in flexo printing with photopolymer printing plates and significantly improves printing quality.

Misprints caused by operating mistakes are reduced to an absolute minimum with ServoGrafix because the user interface employs a process-

range of corrugated paperboard formats and designs as well as a 48-hour delivery service for specified quantities."

Machine failures are not an option for the plant manager - particularly because many of the systems in the machine park do not have backups that could be used if a failure occurs. That's why productivity and reliability are the main criteria when purchasing production equipment.

**Rotary die machine for high-grade flexo printing**

The company set their expectations equally high when purchasing the first rotary die machine for the plant in Bad Bentheim. The goal was to employ directprinting on their corrugated paperboard and to be able to further process the material into fully cut packages, thereby rounding off their product line.

To achieve this goal, the company envisioned a rotary die machine that offers high throughput with minimal waste and runs with high efficiency, reliability and precision. "To sum up, we didn't want a machine like everyone else has. We wanted a solution that gave us a competitive edge," shares Tino Lorenz.

During their search, the decision makers at P-Well discovered MarquipWardUnited (MWU). At the time, the leading American manufacturer of machinery for producing corrugated paperboard was in the process of implementing a machine specially tailored to the high demands of the European printing market in order to regain market shares there.

**An ideal combination: B&R and MWU**

"The machine concept presented by MWU matched our plans perfectly," states the head of the P-Well plant in Bad Bentheim. "The combination of the well-known robust machine construction provided by MWU and the advanced drive and control solutions provided by B&R, whose reputation in the corrugated paperboard industry is on the rise, promised a high degree of reliability and productivity with comprehensive functionality and ease of operation."

P-Well's expectations were met and the decision-makers' willingness to take a risk was rewarded. After two solid years working together on the new concept, the company now has an unrivalled solution: Thanks to many detailed individual solutions, the machine produces up to 11,500



The paperboard produced is processed with direct printing using the machine solution from MarquipWardUnited.



Precise adjustments to the printing process using B&R servo technology connected to third-party systems greatly improves print quality.

employ these modules," adds Thomas Hartmann. "Although there were some growing pains with the brand new technology, B&R reacted immediately and effectively. They replicated the drive and control structure of the entire machine at their headquarters in Eggelsberg and corrected the problem. There are many companies who could learn a thing or two from this level of service."

The efforts were definitely rewarded: With the new "ServoGrafix" die cutter, MWU and B&R have significantly raised the bar for high-end rotary die cutters. "The machine is more than capable of competing in Europe and beyond. That's why the next machine is already on the way!" boasts Thomas Hartmann happily. ■

oriented design (SmartControl) as opposed to one that is machine-oriented. This ensures operation that is workflow-oriented and user-friendly. The system operator no longer has to enter individual parameters such as the column size. Instead, they can choose meaningful, production-relevant values such as the position of the printed image. The control and drive solution then handles all of the necessary settings automatically. This makes it possible to utilize the machine's full potential after just a very short learning period.

#### Complete package from B&R

"This was made easier for us by the fact that we no longer have to rely on different suppliers because B&R meets all of our needs," explains Thomas Hartmann, Product & Project Manager of Converting Equipment at the German subsidiary of MWU, who planned and accompanied implementing and commissioning of the new machine at P-Well. "This and other factors such as high reliability and the complete uniformity of the B&R solution were decisive in our choice for B&R as preferred automation technology supplier for our machines. With B&R, we and our

customers are now well-equipped for the future."

Tino Lorenz confirms this and sees clear advantages for his company through the use of B&R technology: "As end-users we see it as a major advantage that B&R is constantly gaining more and more supporters among machine suppliers for the paperboard industry and that the machines can more easily be combined into complete systems thanks to the openness and complete uniformity of the B&R solution." The P-Well plant manager then puts it even more clearly: "In practice, this means that fine-tuning is possible during production and that all of the crucial machine data can be easily accessed, saved and re-called for a subsequent job by the system controller. This results in shorter setup times - a decisive advantage in a competitive market."

#### B&R: Exemplary service

Machine operation, including setup, is optimally supported by B&R's integrated safety features. 71 safety modules from the X20 System device series control a total of 280 channels. "We are now among the first users to

#### MarquipWardUnited:

**Barry-Wehmiller**  
**MarquipWardUnited**

**Founded:** 1968

**Employees:** 1.000

**Revenue:** 200 m USD

**Locations:** HQ in Phillips (USA), additional locations in HU, UK

**Products & services:** Machines and systems for the production, processing and finishing of corrugated paperboard and for paper processing (sheeters).

[www.marquipwardunited.com](http://www.marquipwardunited.com)