

Stamped as a



Trodat is Europe's largest manufacturer of stamping and marking products. As an internationally active company, they are continually adjusting their processes and capacity to meet current market developments. To continue to react quickly and flexibly to changes such as sinking batch sizes and increasing type variations in the future, Trodat engineers have constructed a new production machine that combines high quality with excellent productivity using modern automation technology from B&R.

The Trodat Group with headquarters in Wels, Austria develops, produces and distributes stamping and marking products. This ranges from classic stamps and writing utensils with a built-in stamp function to laser engraving systems and software for creating digital signatures.

Continual development and innovation of their products has allowed Trodat to expand their international business. The Trodat Group invested approximately five million euros in research and development in 2004 alone. Not only their innovative products have driven the company's success, the goal of always having a price advantage over the competition has also been a great contribution. That's why the

highest priority is placed on extremely modern production halls, continually optimized product quality and low production costs.

This is also true for the Trodat production plant in Wels where Swop-Pads and other products are manufactured. Swop-Pads replace conventional stamp pads and are also used as replaceable ink storage for self-inking stamps. This mainly consists of a laminated pad that is glued in a plastic housing and filled with ink. It is then either closed with a cover or placed on a palette system for further usage.

The requirements

As part of the continual optimization of the production system, the existing machines that had been used for the production of Swop-Pads for several years were replaced by a new machine in the autumn of 2004.

The following factors were decisive in this decision:

- The end of the lifespan of the machines that were in operation for over four years was approaching.
- Output could not be further increased.
- The requirements for quality, flexibility and productivity could not be fulfilled much longer.





The new machine features increased precision and higher throughput.

To be able to optimally meet the market requirements for quality, price and type variations in the future, the new machine should have the following characteristics:

- High throughput
- Increased process capabilities
- Reduced downtimes
- Shorter preparation times
- Highest possible precision
- Seamless quality control and documentation (incl. remote monitoring)
- Wide area of use (support of as many types and colors as possible)
- Few manual adjustments
- Less space needed

“With this system, our goal was to increase productivity and flexibility and also guarantee that we could offer the best prices”, said Dr. Norbert Almhofer, CEO of Trodat Manufacturing Inc.

Target reached – 35% Increase in production

Based on their cumulative experience with the machine that needed to be replaced,

the engineers under the direction of Roman Sklarski, were quickly able to devise the principle architecture of a new machine including the most important hardware components.

The Trodat engineers then went to their long-time partner B&R with this concept design. “During our project discussion, B&R presented the latest product developments to us. At this point, we worked together to define the ideal hardware platform based on our requirements”, states Hubert Dörner from Trodat Manufacturing Inc. who took on the project programming. By June 2005, the machine was already being handed over to production. The results are astounding in all aspects: “We reduced our setup times for a full type-change from the previous 40 minutes to 25 minutes, increased the clock rate by 30 percent and improved production output by 35 percent compared to the old system”, summarizes Johann Wilfingseder, Director of Production Technologies at Trodat Manufacturing Inc.

The foundation: Complete automation

The high level of flexibility of the new system is mostly credited to the effective implementation of a modular and remote approach to machinery and automation. The use of a rotary transfer table together with automatic separation & feed systems

and a high degree of automation contributed to a significant increase in throughput. A quality check is automatically performed after each stage at the production stations. This made it possible to meet the defined requirements for process capability, repeat precision and quality. In order to save space in the already limited production area, the technicians decided to use remote components. For example, the Festo valve manifolds that have an XV connection module connected directly to the multi-pin connector are controlled using 16 digital outputs. The CPU communicates with the valve manifolds via remote I/O bus. The IP67 components represent an additional method of remote I/O in this system. These input/output modules are also placed close to the sensor/actuator directly in the system without a switching cabinet, thereby reducing wiring to a minimum. The switching cabinet contains conventional 32 channel I/O modules and two B&R servo drives, which control the motors for the dynamic positioning application.

Local visualization on the system is handled by the graphics-capable Power Panel. Additionally, a VNC server is also installed on the system’s CPU. This installation makes it possible to display life production data and quality data on all enabled office computers via Intranet, without any additional programming.

This allows users who have the necessary authorization to interact with the system from their office by modifying set values and parameters.

This structure now enables Trodat to fully control and document the process.

