The Mabeg company in Mörfelden-Walldorf, Germany, well known for its high-performance sheet stackers and unstackers, has successfully occupied a new, strategically important market niche: Mabeg developed a modular system for the inspecting and sorting of printed sheets to meet the printing industry’s growing demand for automatic quality control and customer-specific printing processes. The system simplifies processes and reduces the risk of delivering faulty copies.

Compact processing and inspection line

The basic machine is the highly modular Mabeg Sheet Processor (MSP). It consists of a stacker with a prestacking facility, a process line, and optionally one or two sheet stackers. The process line is equipped as required with devices for top and bottom inspection of the sheet, inkjet or labeling systems, data matrix or barcode printers, hologram and radio-frequency identification (RFID) applicators, and the appropriate test stations.

One of the engineering challenges is the integration of the camera-based sheet inspection system. Since high resolution can only be used when the camera is not disturbed by vibrations, an extremely smooth-running machine is essential.

Smooth running and process safety

Automation with the Simotion D motion control system, the Sinamics S120 drive system, and 1FK7 servomotors plays an important role in the successful implementation of the system. Thanks to the smooth running achieved by this drive solution, the high resolution of the camera inspection system can be used almost undisturbed by out-of-focus movements, even at high production speeds. The sheet inspection system thus has an impressive high-end resolution. The excellent control quality of the drives also has a positive effect on the other stations on the line. The printed sheets are fed reliably through the machine without leaving marks that reduce quality.

Mabeg used a motion control system for the first time in this project. The developers discovered that implementing the new technology was not as complicated as they had envisioned and praised the excellent support from Siemens. The project shows that even smaller companies can change automation systems with manageable effort – the change is often worthwhile thanks to technological synergies alone, and it can even be decisive for success. Mabeg is also considering changing over its previous product range to Simotion D motion control and Sinamics drives.

Precise Printed Sheet Inspection

A modular solution for the individualization and quality assurance of printed sheets opens up a new market niche for the machine manufacturer Mabeg. The smooth running of the drives enables the use of sophisticated camera inspection systems and ensures safe processes.