

Industry: Textiles

Products: AC servos and motion control

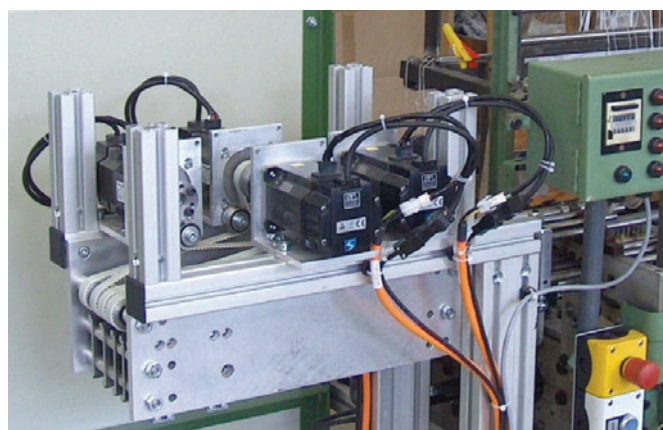
Replacing a Mechanical Solution with Servo Technology

Ruther & Eienkel KG from Annaberg-Buchholz in the state of Saxony is a specialised manufacturer of trimmings for furniture and interior design elements, including fringes, edging, gimps, cords, puffs, decorative buttons and so on. Founded in 1881, the company's main product today is curtain heading tape, with 40% of the output exported from Germany to customers all over the world. In 2006 R&E decided to retrofit a knitting machine built in the 1960s with modern technology – this was necessary because the old chain control system was no longer flexible enough for the demands of today's markets.

The retrofit was performed by KIB of Crottendorf using automation technology from Mitsubishi Electric. The mechanical control components were replaced with an



electronic motion control system running on a MELSEC System Q controller. In this system an external encoder transmits the current position of the drive to the motion controller, which then operates four servo motors to move the knitting needles with perfect angular precision in synch with the



main drive. The work cycles are controlled with virtual cams that are always synchronised with the current working speed. An operator selects the pattern for the heading tape to be produced at a Mitsubishi Electric control terminal. These patterns are stored as "recipes" and can be transferred to and from a PC as CSV files via an Ethernet link.

In addition to high precision the system's second main advantage is easy configuration. Instead of being stored as switching commands on a mechanical chain the patterns are now standard CSV files that can be edited directly on a PC with Microsoft Excel, and this makes reconfiguration for different products very easy.

The modular architecture and flexibility of the control systems makes it very easy to adapt the system for other applications, enabling the company to respond fast to new customer requirements.



Fast reconfiguration and high reliability are essential to us for maintaining customer loyalty.

**(Hans-Jörg Seifert
CEO Ruther & Eienkel KG)**



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