

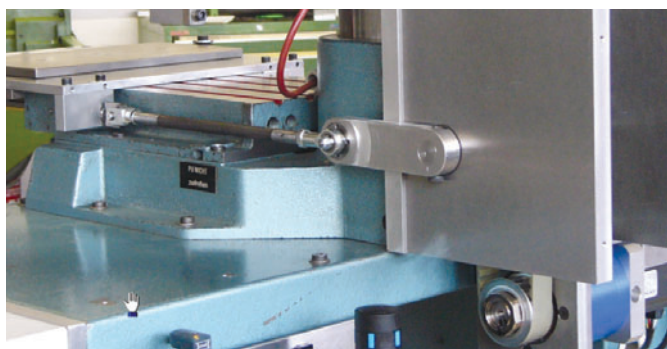
Application: Packaging
Industry: MR-J2S-CL AC servos

Servo Technology Replaces Pneumatic Solution

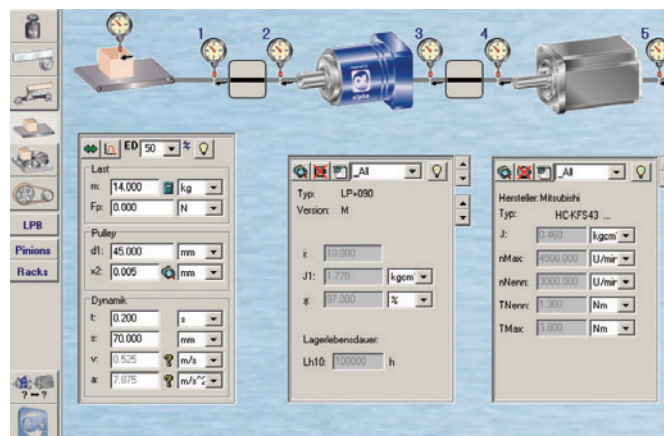
The Leser Group is an international company with production facilities in Germany, China and the USA. It was originally founded in 1937 in the Black Forest town of Lahr, which is still the company's headquarters. Today the group manufactures over 70 million packaging units every year for watches, jewelry, fashion accessories, coins, gifts and marketing items.

Just like many other sectors, today's packaging industry must be highly flexible and able to constantly adapt to the changing and growing demands of the world markets: Production costs must be kept to a minimum despite ever smaller batch sizes and the growing variety of packaging product types. These conflicting demands can only be met by optimising automation processes.

For several decades Leser GmbH has been using hot stamping machines with pneumatic slide tables for printing their packaging products and over the years these systems have performed many millions of duty cycles. Today, however, this pneumatic solution is no longer flexible enough and is unable to keep up with the constantly changing demands of the modern markets. The ratio of retooling and setup time to production throughput has become poorer and downtime caused by mechanical failures has increased. In addition to this, the speed increases that are now required in the production process are very difficult to achieve with the pneumatic technology.



A number of contractors were commissioned to find a suitable way of improving the system, including the Alexander Bürkle company. A number of possible solutions were analysed, including retrofitting the pneumatic system in collaboration with Leser's engineering division. However, the upgrade option for the existing pneumatic system was quickly abandoned because it would have been very complex to implement and would still not have been flexible enough. After a number of other options had been examined it became clear that servo systems were the only viable solution.



As the possibilities were examined the specifications for the new system became increasingly extensive and Leser GmbH eventually opted for a servo solution from Mitsubishi Electric. The Mitsubishi configuration submitted by Alexander Bürkle along with components from other vendors met all the quality, flexibility, price and performance requirements.

The prototype used an MR-J2S-CL programmable servo amplifier, an HC-KFS-43 servo motor and a matching LP090 transmission from Alpha Getriebbau with a 1:10 reduction. Tests with this system demonstrated a number of key advantages over the existing pneumatic system:

The servo motion travel and speed sequences can easily be programmed for the precise needs of the products being manufactured. Programs can be selected with simple BCD switches, reducing setup times for different products to an absolute minimum. The hot stamping system now operates with reproducible speeds, enabling Leser to improve their bonus system for their employees. No separate PLC is needed to control the slide table and the physical dimensions of the hardware are smaller, bringing a significant increase in system availability.

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It seemed impossible that such a small servo motor would be able to deliver the required torque, but it really could.

**(Bernd Walter, Dipl.-Ing.
Alexander Bürkle GmbH & Co. KG)**

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