

Control and drive systems in the textile industry

Lenze achieves 30% reduction in production costs



J. Zimmer Maschinenbau GmbH
Employees: 340
Country: Austria
Industry: Textile printing and coating machines
Machine type: Machine control
Internet: www.zimmer-austria.com

J. Zimmer Maschinenbau GmbH, which is based in Austria, is a global leader in the textile printing and coating machines industry. The Kufstein site is the centre of excellence for digital printing machines, while staff at the Klagenfurt site focus on screen printing machines and coating machines.

The task

The mechanical side of the screen printing process in textile printing is highly sophisticated. No major innovations are anticipated for the foreseeable future. For this reason J. Zimmer Maschinenbau GmbH, based in Austria, has decided to concentrate on the production and follow-up costs of their screen printing machines. That was also the case for the ACR4 machine control system. Overhauling the drive and control technology will allow a dramatic reduction in the production costs for the control system, without compromising on precision, availability and service life.



As a result of the collaboration with Lenze, the drive and ACR 4 control technology costs for the ROTASCREEN from Zimmer have been reduced by 15%.

Decentralised compact controllers enable the design engineers to achieve a significant reduction in wiring costs.



The approach

Experts in drive optimisation

Initially, Lenze carries out a comprehensive analysis of the automated applications and gives in-depth advice. A team made up of Zimmer and Lenze staff then works on developing a new control architecture. "Our previous experience of working with Lenze was very successful. We were impressed by the reliability of the technology, the expertise of Lenze staff and the service provided. For this reason we have decided to work with Lenze in other areas as well, in this case, control technology", explained Product Manager Peter Gugl.

This is what we call Optimizing.

Scalable product range

Lenze and Zimmer developed the automation solution drawing on the advantages of a broad, harmonised and scalable product range. The L-force drive and automation platform from Lenze is a perfect example of this. The linchpin of the new architecture is a print head control system based on a Lenze control cabinet PC from the CPC2000 AP range. A DVI MP 5000 monitor panel acts as the operating and visualisation station. Alongside the new control system, the drive electronics were also modernised. Servo controllers from the Servo Drives 9400 range integrate seamlessly into the modular machine architecture and can be tailored to suit the different configurations at minimal cost. Zimmer textile machines demand an extremely high degree of precision from the servos: the average rotary printing machine with 12 colours requires 24 servo drives to operate the screens on both sides. Up to 48 of these may be required on large machines. In addition, there are at least ten auxiliary drives in Zimmer textile printing machines that operate as speed-controlled three-phase motors. The main drives must be synchronised with each other in the direction of the fabric passing through, as well as with the movement of the print materials. It is also essential that the two servos at the ends of the

screen run with angular synchronism. This is what we call Rightsizing

Customer-specific solutions

Lenze software technicians created the basic structure for control and visualisation. The machine and visualisation applications were written by Zimmer software experts using L-force Engineering and the VisiWinNET® Professional visualisation platform supplied by Lenze.

This is what we call Solutionizing



The result

The new control architecture, a reduction in the number of components used and the application of the powerful Servo Drives 9400 inverter range have all resulted in a 30% reduction in production costs for the control system compared to its predecessor – this is what Lenze is all about.

"Our previous experience of working with Lenze was very successful. We were impressed by the reliability of the technology, the expertise of Lenze staff and the service provided. For this reason we have decided to work with Lenze in other areas as well, in this case, control technology"



Peter Gugl,
Product Manager at
Zimmer Maschinenbau

An extremely high degree of precision is required from the drive and control technology when printing very fine detail like this.

Customer benefits at a glance

The task

- ▶ Reduce production and follow-up costs
- ▶ High quality with good precision

The solution

- ▶ New control architecture and modernisation of the drive technology
 - ▶ Reduce the number of components used
 - ▶ Exploit the benefits of integrated safety engineering
- **30% reduction in production costs**

The products

- ▶ Servo Drives 9400 servo inverter
- ▶ Various servo and geared motors
- ▶ CPC2000 AP industrial PC
- ▶ Communication via CANopen
- ▶ VisiWinNET® Professional visualisation platform

To drive, control and transport: that is our global mission, and has been for more than 60 years. As a specialist in drive and automation technology, we are a solutions partner for all our customers. Expertise, products, services - everything at Lenze is aimed at value creation for our customers. Our remit extends beyond just the technology. We seek to build a true partnership with customers, from choosing the best product or system and project planning right through to the start of production and beyond.

Vitamin L:

Lenze drive and automation solutions



Contact

Lenze SE
P.O.Box 10 13 52
D-31763 Hameln
Hans-Lenze-Straße 1
D-31855 Aenzen
Phone +49 5154 82 0
Fax +49 5154 82 2800