FROM SILK TO METAL

TRINCA TECHNOLOGY | TEXTILES

DRIVE OBSESSED

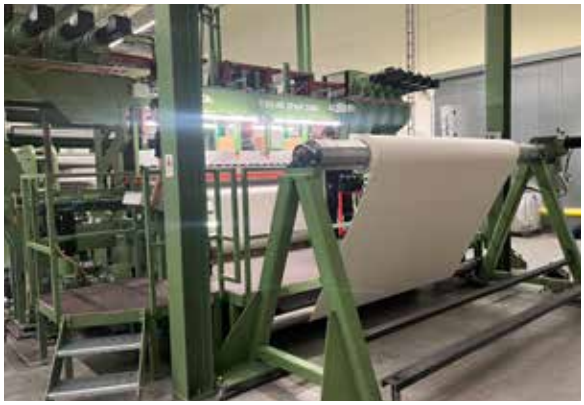
INTEGRATED MOTION SOLUTIONS FOR SPECIAL LOOMS

THE TRINCA TECHNOLOGY EXPERIENCE

With Control Techniques' integrated solutions, Trinca Technology manufactures some of the world's most advanced looms, guaranteeing exceptional productivity and top quality even in the toughest applications.

The Italian textile machine industry is a global benchmark for technology and quality. Trinca Technology is one of the very few companies in the world today producing fully digital controlled looms with exceptional performance. With its operations in the province of Como, Trinca have moved from conventional cotton and silk to technical materials, particularly metal fabrics used for applications that include the production of packaging materials, geotextiles, meshes, kevlar and fabrics for other industrial uses.

Trinca have been innovators in textile machinery as electronics revolutionised the industry. Working in partnership with Control Techniques since the late 1980s they have utilised servo and automation technology to achieve greater precision and speed and eradicate mechanical changeovers.

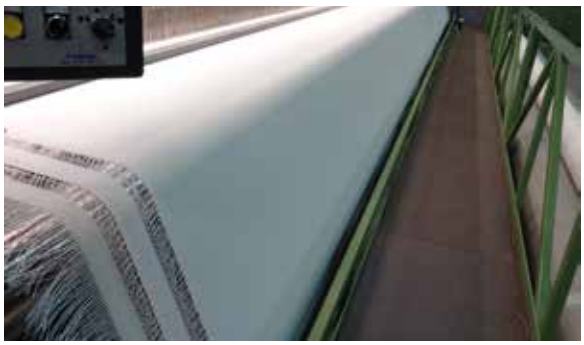


The Challenge

Most recently, Trinca's goal was to develop an open, high-performing, fully digital platform that could produce their highest levels of output and quality while being easy to reconfigure for flexible production. Initially they decided to set up an in-house department for building operator panels and developing the related software, however, it was not long before they realised that it was too complicated to produce all components alone.

The Solution

From the extensive catalogue of Control Techniques solutions, Trinca took advantage of the high-dynamic Unimotor HD servo motors and high-performance Digitax servo drives, controlled by MCe and MCz motion controllers.



Unimotor HD is a range of brushless servo motors designed for applications demanding rapid acceleration and deceleration, obtained by the overall low inertia.
Digitax servo drives guarantee top performance in a minimum size package. Optimized for high-dynamic applications, they maximise loom performance by exploiting some of the most common protocols (EtherCAT, machine control with MCi, Ethernet and Base) to interface with other devices required by the customer or to integrate additional machine functions.

The MCe embedded controller, with all-in-one PLC, and the MCz controller, an authentic industrial PC with motion control functions, have the task of managing the whole system. Standard and open tools are used for operations and programming, such as the Windows operating platform and Codesys development environment. A high-performance EtherCAT network is used to connect the controller, the drives and the remote I/Os to each other.

Also, MiS250 safety modules integrate motion safety functions (STO, SBC, SSx) in the drive, offering a decentralised approach that simplifies the design, reducing wiring and costs while speeding up commissioning.

The Benefit

Trinca's know-how is complemented by the performance offered by Control Techniques systems. Their latest generation looming machines are easy to configure and produce record performance levels, with gripper speeds up to 15 m/s, beating frequencies up to 250 bpm at a power equivalent of 80 tonnes.

Key to overall textile production quality is the software controlling the finely tuned movements, where the digital cam is refreshed every machine turn to ensure best operating conditions. Continuous adjustments based on dynamic needs mean no revolution is ever the same as the previous one, with the software ensuring optimum motion profiles are translated into commands for the motor, which in turn ensure the motion performance and quality required by the operator.

This is one of the strengths that make Trinca looms unique and high performing. "While our competitors offer machines for a single product or specific production, this solution means that we can supply our customers with flexible machines that can be quickly and easily reconfigured," Luca Trinca states proudly. "These results come not only from our specific know-how and the precious support of the Control Techniques engineers, but also from the support of a local partner we have been synergically working with for some time, especially in the motion control field.

> ***"The clearest advantage of using Control Techniques solutions is the availability of a complete, high-performing package, based on the Windows operating standard and Codesys development software, which guarantees full interaction and interoperability. Also it provides an integrated platform offering an optimised, high performance system"***
>
> **Luca Trinca**

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