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To Textiles

WARP DRIVE
Unidrive SP controls Spanish warping system

The need for extremely fast response, using non-standard motors, has led Spanish company Rius Textile Machinery of Barcelona to standardise on Unidrive SP AC drives from Control Techniques for its direct and sectional warping systems and knitting machines.

In the face of aggressive competition, the company is carving out new market niches – medical / sanitary, agro-textiles, mechanical and food wrappings – and producing machines designed for leading edge fibres for high performance products.

"Our machinery has to accelerate very fast and maintain precise torque control, to prevent fibres breaking," explains Valentí Ruis Jr, Rius Textile Machinery's sales director. "We often use non-standard motors such as OML high-speed, low inertia motors, which have extremely dynamic performance. Other motors have completely different characteristics, but we find that the Unidrive SP from Control Techniques can be set up to give optimum performance across the range. And, because we export some 90% of our output worldwide to around 96 countries, it's important that our customers are assured of local support from Control Techniques' network of drive centres."

KEY BENEFITS

- CONSTANT & STABLE SPEED
- CONSTANT TENSION
- WINDER SOFTWARE
- ON-BOARD PROGRAMMING
- ADDITIONAL ENCODER FACILITY

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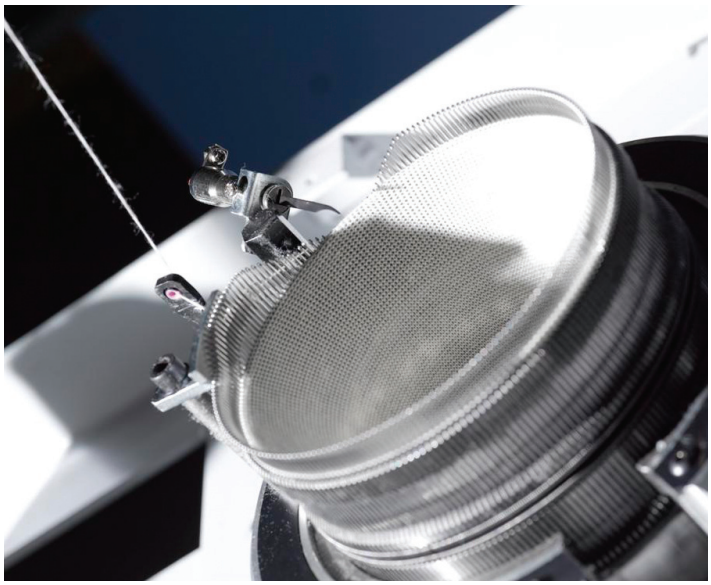

The Rius' high performance sectional warp winding machine gathers together up to 2,000 yarns and prepares the yarn for weaving by winding it in a prescribed sequence onto a beam (drum). The machine is designed to warp all types of natural and synthetic yarns on beams up to 1,000mm diameter.

Lateral displacement of the warping carrier is completely controlled by the computer, with automatic positioning for each section. The warper is driven by a 15 kW OML fast response, low inertia motor at constant speeds of up to 1,000 metres/minute. "The speed must be absolutely constant and stable during winding," explains Valentí Rius Jr, "and at a constant tension. As the diameter of the wound drum increases, its speed is decreased to keep the winding speed constant."

This is achieved with the use of Control Techniques' winder software loaded onto the plug-in SM-Application module fitted into the Unidrive SP. In addition, an SM Encoder Plus is fitted to provide an interface for an additional encoder to be connected to the Unidrive SP, to be used as position and speed feedback for the drive.

The machine has two touch-screens, for the warping carrier and beaming head-stock, with overall control from a PLC that sends the warping speed to the drive. The drive speed is calculated in the drive, taking account of yarn thickness.

Other machines made by Rius Textile Machinery also use Commander SK AC drives, for small power applications, as well as Unidrive SP drives.

The Unidrive SP AC variable speed drive range spans 0.75kW right up to 1.9MW. Unidrive SP is the world's most advanced 'solutions platform' AC drive, configurable into five operating modes – open and closed loop, vector, servo and regenerating modes – connectivity to most industry standard networks, configurable for all types of AC motors, including linear motors, and accepting 14 position feedback protocols. With a range of plug-in module options, its on-board PLC can be supplemented, as in this case, with programmable modules.

Rius Textile Machinery has been producing warping and knitting machinery for nearly 70 years. The company prides itself on designing solutions to meet the exacting requirements of their clients as well as providing training and comprehensive after-sales support.