



Automated production

Slitter rewinders

Unwinds, rewinds

Trim winders

Spooling



Unwinding the textile business

By Simon King, Managing Director, Alpha Converting Equipment Limited

Alpha Converting has recently delivered two contracts, to the automotive and furnishing industries, for the supply of its range of **ALPHA REEL** unwinds and rewinds for technical textiles.

The first contract was for a sophisticated unwind stand for feeding both coated and bare woven webs into a new generation laser cutting machine.

It is a very significant order for us because it reinforces our ability to supply the right equipment for first and second tier suppliers.

These customers demand reliable equipment with good service – both of which we are able to deliver.

Different tension zones

This ALPHA REEL unwind has two different tension zones with independent settings.

The tension can be set at one level for smooth unwinding of the web from the mother roll and then fed into the laser cutting machine at the optimum tension for the cutting process. Both tension zones have an AC motor with flux vector drive operating under dancer control.

The dancer for the second zone feeding into the laser has been specially designed for this project. It has a zero friction arrangement for very low tension

operation when processing lighter materials.

In order to optimise the flow of the web through the line, the unwind is fitted with programmable edge guiding featuring both centre guiding and edge guiding.

In centre guiding mode, the edge guide heads automatically adjust to different web widths so that the web is always in the centre of the machine with minimum operator involvement. In the edge guiding mode, the operator can set the desired position on the touch screen and the edge sensor automatically moves to set the web to the desired position.

Dancer control

The second contract comprised five ALPHA REEL unwinds and a rewriter for a multi-web laminating line – it is pictured on the next page.

Each unwind, up to 1,600 mm diameter, is motor driven with dancer control, and again the tensions can be set independently for each unwind to suit the webs making up the different layers of the lamination.

Joining of the unwind web is simplified with a thermal bonding

Alpha Converting supplies slitting and spooling equipment for a very wide range of products, with each machine engineered to optimise the efficiency and quality of the process. All its spoolers have an easy operator interface for selection of the spooling pattern, with computer control of the pattern for accurate and repeatable lay down of the tape or yarn.



The ALPHA REEL unwinding and rewinding system for wovens / nonwovens uses advanced technology and multi-tension zones for lightweight and extendible materials.

station for heat sealing the new webs.

The rewinder has an automatic end of roll changeover system with manual exchange of the roll carts. A twelve roll accumulator allows the laminator to continue production at full speed during roll change.

The reel stands were supplied complete with roll storage carts that are docked for easy winding.

Automatic engagement

The industry standard is to use prop shafts for connecting the drive motors with removable roll carts. The ALPHAREEL stands have automatic engagement of the drive to reduce roll change over time and eliminate a heavy task traditionally done by the operator, thus improving health and safety standards.

Each reel stand has its own PLC controller so that it can be operated independently for quick installation and startup in the customer's plant; it is also supplied ready for interfacing to the principal line controller for a fully integrated system.

Reduced operator input

With increasing demand for high performance textiles from the automotive, footwear, clothing, medical, furnishing and safety product manufacturers, sophisticated web handling equipment is now essential, particularly as users want minimum operator involvement, without, in our experience, the cost of full automation.

ALPHAREEL units allow the user to select the level of automation required, which typically

reduces the operator input to functions such as reel changes.

ALPHAREEL units are designed to handle a wide range of materials on reels up to 2.5 metres diameter and 3 metres wide for applications ranging from simple shaft loaded stands to fully automatic winders.



This ALPHAREEL mated with an existing process line. It features automatic closed loop tension control to minimise stretching or elongation of the web and is fitted with an accumulator to provide continuous line running at full speed during reel change over.