

ITMA 2011: Spin-knit machines to offer greener future

Billy Hunter reports from Barcelona

The best knitting and probably textile technology story at the recent ITMA in Barcelona, was for me, the simultaneous introduction of combined spinning-knitting machines by three leading circular knitting machine builders - Germany's Mayer & Cie and Terrot and Taiwan's Pailung.

All three companies had obviously been developing their concepts for some time before ITMA, but only two showed actual machines, neither of which was on open display.

So it seems that the technology is not quite market ready yet and the machine builders are testing for market reaction - Is the market ready for the technology? Is the time right to introduce the technology to the market?

Terrot introduced its concept via printed material and discussion, Pailung showed its machine to a very select group of potential customers behind closed doors and Mayer & Cie showed its technology in a booth within a booth by appointment only.

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Towards a greener future

First impressions for many were that there was a bit of posturing and gamesmanship going on between the three machine builders with purely futuristic concepts being aired.

But some visitors later realised after looking closely at the exhibits and considering their potential, that this could in fact be a really important 'green' initiative from the circular knitting machine builders - a step towards a greener future with fewer machines in the overall manufacturing process, producing the same volumes of knitted fabric with less energy being consumed, at lower cost.

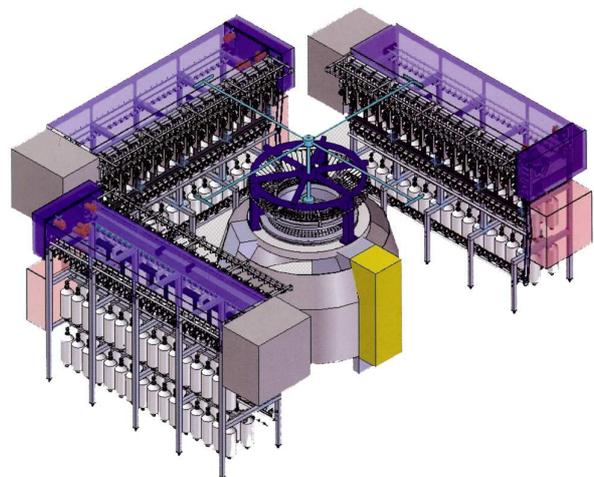
By eliminating the need for ring spinning frames and twisting frames, the spin-knit circular knitting machine builders say they can offer significant savings in terms of energy, space, investment costs and production costs.

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Terrot F132-AJ

The Terrot F132-AJ direct spin-knit process takes a different approach to that of Mayer & Cie and Pailung. It uses an air jet spinning system like the others but does not mount the rovings, clearing or drafting units or indeed spinning nozzles on the knitting machine.

Instead it has a creel type arrangement on three sides of the machine which house the complete rovings to spinning process. In other words, yarns are spun by the side of the machine and then fed to it in a more 'normal' way. According to Terrot's Head of Research & Development, Hermann Schmodde, the F132-AJ spinning unit can therefore be fitted to all single and double jersey machines unlike the Mayer or Pailung systems.



"Our direct spin-knit system is even suitable for high system densities and large diameters (up to 120 feeders) and can be used in gauges from E20-E36," Mr Schmodde said.

Terrot says its spinning system, which is modular can be fitted with 24, 32 or 40 spinning heads per unit and has an integrated flyer, integrated fluff removal and integrated monitoring process.

Although fabrics were not available for inspection, they are said to have a top quality feel and look, have a soft handle and have good dyeability with rich colours. Elastane plaiting is possible with the Terrot system.

According to Terrot, the F132-AJ has a speed factor of up to 600 (20rpm, 30") and unfinished fabric output of up to 360kg/24 hours (20rpm, 30"). Yarns processable are said to range from Nm40-Nm100 in count - in combed compact cotton yarn (medium staple), synthetic fibre and blended fibres.

Terrot claims efficiency savings of 33-40% in terms of space, up to 50% in terms of energy, up to 30% in terms of investment costs and up to 50% in terms of production costs.



What future?

Terrot's F132-AJ brochure is clearly marked 'patent application pending' and Mayer's Spinit systems hand out says that 'Relating to the Spinit technique currently 27 own and licensed patents are pending'. There is no doubt about the seriousness of these machine builders.

There are many questions which remain to be answered however, both technological and economic. Can the combined spin-knit technology produce profits for early adopters? Which market sectors is it relevant to? What are the quality of fabric can it produce at what speeds and so on.

Then of course there is the big question - who will buy the technology? Spinning and knitting have been separate entities for thousands of years at a domestic level and for hundreds of years since the industrial revolution at an industrial level.

Assuming it develops to its full potential, will we see spinners buying this technology and going in to knitting? Or will we see knitters adopting it and going in to spinning? Or will we see a new generation of textile entrepreneurs or 'spin-knitters' emerge? Only time will tell.