

# Speed is of the essence

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As companies are constantly trying to appeal to consumers by offering attractive and practical new packaging innovations, bag and sack converters are also continually looking for new ways to make the converting process as seamless as possible. MJ Deschamps reports.

Bag and sack converters are looking for efficiency in their operations, but they are also looking for speed.

Vivian Auer, Sales Manager at the Belgium and USA-based Hudson-Sharp Machine Co says that innovations in the field of bag and sack converting today invariably focus on higher outputs combined with increased efficiency. Considering the competitive nature of the market, he says, these gains have to be achieved without increasing basic costs. "Since cycle speeds are limited by the ability of the operator to offload and package the finished product, a lot of attention is in the area of automation and product handling."

Hudson-Sharp was the original inventor of the 'wicketer' style bag machine for producing bread, produce, chicken and hygiene related bags normally filled on automatic packaging machinery. Over time, it has invested considerable resources to develop the product line with state of the art technology, says Mr Auer.

In 2010, for example, Hudson-Sharp secured a significant multi-million dollar order to supply several high speed model 5750 W Wicketers together with fully automatic offloading and boxing for a leading European producer of bread bags, reports Mr Auer. The machines are running successfully at production speeds of between 380 and 400 bags/min, enabling customers to maximise efficiency and labour savings.

Hudson-Sharp's wicket automation equipment is designed to produce advantages such as high production output while maintaining the quality of end products; and an ability to maximise efficiency in terms of labour use while minimising waste and energy.

Ulrich Stienecker, spokesman for German manufacturer Windmüller & Hölscher, agrees that greater speed and efficiency is a key current goal for bag and sack converters. One recent development Hecites is the company's year-old AD 8330 Convertex bottoming machine, which features an output of 80 bags/min. "The efficiency is remarkable, given the technology employed: the first generation of this machine started with 40 bags/min some 17 years ago," he says.

Last year, Windmüller & Hölscher also impressed the paper sack industry with its new cement sack line, through significantly reduced production costs, and increased productivity. At 360 bags/min, it claims to be the world's fastest such line, permitting shift outputs of more than 120,000 bags.

That is an increase of around 50% when compared with the output of a line introduced to the market 10 years ago, reports Mr Stienecker. The new AD 8300 bottomer reaches 20% higher production speeds due to the smart end-of-roll monitors at the unwinds which ensure rapid roll changes, minimising waste at the same time.

For use both with form-fill-seal (FFS) and WPP, Windmüller & Hölscher has also developed a tubing machine, which permits production of two-ply tubing in diverse combinations, for instance WPP/paper or WPP/PE film for two-ply woven valve sacks, PE-film/metallised PE-Film or PE-film/nonwovens for use in FFS applications.

“Mainly, most machinery manufacturers are trying to find solutions to be more efficient in production, that is to control and check bottom sealing during production and to control and minimise the length between the seal and the perforation,” says Jonas Hellström, Marketing & After Sales Manager for Swedish manufacturer of plastics bag machinery FAS Converting Machinery.

Catherine Kerninon, Communications Director at EUROSAC (European Federation of Manufacturers of Multi-Wall Paper Sacks), says that another big area of innovation for the federation’s members right now is the development of innovative barriers, which is of interest to clients that fill their bags and sacks with powder-type products. “It’s a big problem for [some manufacturers] when they are trying to fill many sacks very quickly with powdered products without getting powder all over their factory,” she says.

Mr Hellström, of FAS, says that it has also been a goal for converters for many years to downgrade and to find a mixture of material which will provide the same properties as a thick bag in a thinner bag.

In fact, today's plastics packaging is up to 80% lighter than it was 20 years ago, according to the British Plastics Federation. Advances in materials and processing technology have seen the weight of items decrease substantially over the years, and minimisation brings, of course, the added advantages of reduced fuel consumption and associated airborne emissions during distribution of packed products.

“There is now a focus on material development, such as an aim towards thinner and lighter materials that maintain high strength and tear resistance,” says Cordula Hauer, Product Manager at Starlinger, machinery manufacturer for woven plastics packaging.

Ms Hauer says the development of thinner and more lightweight materials also contributes to cost reduction. “This [development] aims to reduce raw material input and thus an important portion of the production costs,” she says, adding that especially in the polyolefine sector, raw material price development is a key issue.

## **Advantages**

“One of the great advantages of woven plastics tape fabric is the fact that even lightweight fabric delivers the required characteristics such as high strength and tear resistance, while keeping raw material input comparatively low,” she says. “Plastics film, in turn, needs to be produced thicker in order to gain strength and resistance - and thus requires more raw material input.”

She adds that in lieu of the global movement towards more eco-friendly lifestyles, monomaterial solutions are also becoming more and more popular, due to their recyclability. Ms Hauer also notes that packaging made of woven plastics tapes (mostly polypropylene) is gaining popularity in Europe, in specific areas such as pet food packaging, FFS applications, carrier bags, or industrial applications such as sacks for cement and other bulk goods.

“Woven plastics tape fabric offers decisive advantages,” she says. “The main two are fewer bag ruptures - and thus less waste because of the higher strength and tear resistance of woven fabric - and better protection of the packaged goods against humidity.”

Another innovation that gives a nod to environmentalism comes from Italy’s Leuenberger+C, which has developed a new range of eco-compatible adhesives for many sectors, from paper converting to foodstuff packaging. To prevent any risk of migration and to favour the recycling of cartonboard while maintaining quality performance, its new technology allows plasticiser-free dispersion in respect of food packaging rules.

The company’s Resicol C263 adhesive, for example, is said to be suitable for use on high speed machines where quick settings are required; doesn’t migrate from paper and carton; maintains elasticity and stability, and guarantees a sure and lasting gluing, according to the company.

Over in North America, Shaughn V Hanley, Director of International Marketing and Sales for the USA-based CMD Corp, manufacturer of converting equipment for the blown film industry said that in terms of machine technology, rotary bag making has become especially attractive for converters who require high output, since it offers the highest bag production speeds in the industry. For example, he says, one CMD rotary Global Bag Machine can produce as much as three intermittent-motion machines.

“Although most bag and sack converting machinery on the market today is intermittent-motion, several machinery manufacturers sell rotary-style equipment,” says Mr Hanley. “CMD offers rotary drawtape technology for the conversion of popular drawtape-style close-and-carry features into trash bags and bin liners at speeds up to 183m/min.”

Mr Hanley notes that advances in bag and sack winding technology can also offer unique options for converters. “Utilising ‘overlapped’ technology allows bags to be wound without perforations, for easy dispensing and unique product offerings,” he says. “We have found that bag and pouch converters ask for speed, flexibility and repeatability in bag and sack making equipment,” he says.

He adds that, lately, there has been increased interest in process validation tools and technology that will track production data such as seal temperatures, dwell times, and seal pressure. For example, CMD now offers ProcessIQ – a suite of tools and services that converters can use to identify and manage production-limiting and quality-limiting factors up and down their production lines.