

For mid-speed wrapping, is it One reel or two?

CONTINUOUS-MOTION, SINGLE-REEL SHRINK-WRAPPING MAY HAVE THE CACHET, BUT THE TWIN-REEL ALTERNATIVE HAS THE TRACK RECORD AND, IN MANY CASES, CORNERS THE COST BENEFITS. PAUL GANDER TALKS TO SUPPLIERS OF BOTH TYPES OF MACHINERY.

Shrink-wrapping is certainly not alone among major packaging operations in offering a choice between intermittent and continuous-motion alternatives. But with shrink-wrapping, particularly fierce competition, shifts in retailer demands and perceived issues about final pack quality have enlivened the industry debate.

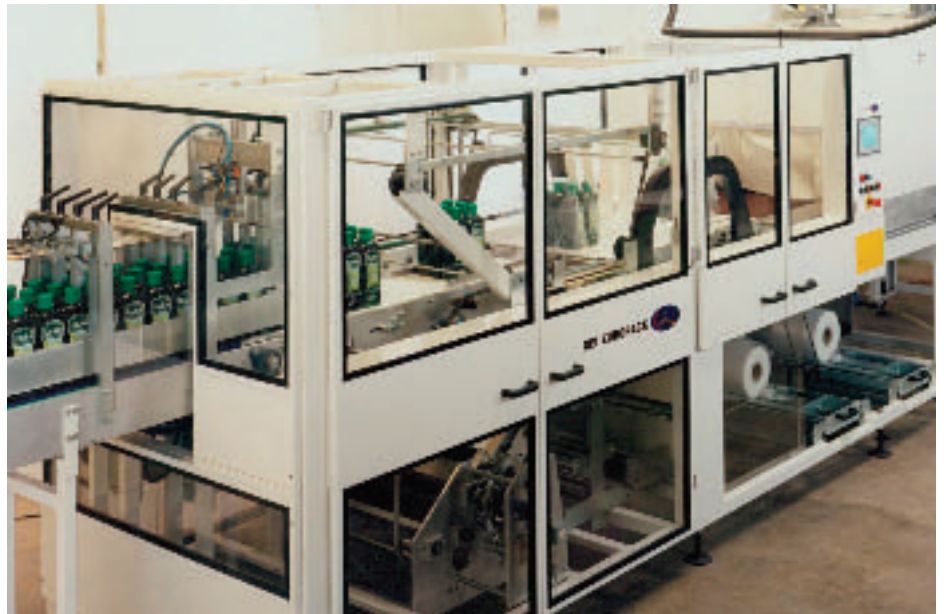
On the one hand, there are the suppliers of those twin-reel (intermittent-motion) machines which still account for the bulk of UK manufacturing's installed base; on the other, those challenging this established market with medium-speed single-reel (continuous-motion) machines.

As the UK representative of the US-based Strategic Group and its Rochman range of machines, Yorkshire Packaging Systems (YPS) does have a single-reel machine that it can offer customers. But according to sales director Glyn Johnson, this is a completely different market segment, and demand in the UK is overwhelmingly for twin-reel machines.

Johnson reckons that twin-reel still accounts for some 80 per cent or even 90 per cent of industry requirements in the UK. He sketches out the pyramid structure of this market, with the high-speed machines from the likes of Kisters and Kettner near the apex of the triangle, a small number of mid-range, medium-speed, single-reel machines below that, and then the mass of installed twin-reel machines.

As he puts it: "Single reel machines are designed for speed, and offer greater control when it comes to film registration, for example." And he paints a picture where, at some £200,000 a go, the top-of-the-range, high-output single-reel machines cost eight or even ten times as much as a twin-reel machine.

At Aetna UK, chairman Barry Tucker agrees that the market "is split in two in quite a definable way". But, he says, as users of twin-reel systems come to replace their current



Single reel option: SR continuous motion wrapper from Europack

machines, some 75 per cent of them in the 20 packs a minute plus bracket will begin to look at single-reel as an option.

"For the majority of packers doing more than 20 or 25 packs a minute, it would make sense to go single-reel," he maintains. "There are now economy single-reel systems costing as little as £45,000 including the shrink tunnel. A decent twin-reel system plus tunnel would cost you more than that."

Prices falling

Prices for single-reel systems have been falling over recent years, says Mr Tucker, although this process may well have gone as far as it can. In fact, since like other machines they are at the mercy of world steel prices, they may well start to become more expensive, he points out.

He admits that the price lists for manually-fed twin-reel systems at the 10-15ppm end of the market do reach down much lower than the £45,000 he quotes. But he claims that, when it comes to food and drink containers that can be

handled automatically, manufacturers of twin-reel machines are having a hard time establishing a replacement market for themselves in this "middle ground".

Barry Tucker argues that the efficiency of single-reel systems is far greater than twin-reel which, when tray-loading is included, can require up to four different machines. "With single-reel, it's all done in-line," he points out. "There's a huge difference in efficiency between the two."

UK machinery manufacturer Europack can supply single-reel as well as twin-reel systems, but sees the greatest potential overwhelmingly in the twin-reel segment of the market.

Indeed, sales director Ivan Reeve puts Europack's ratio of intermittent-motion to continuous-motion sales at around 3:1. He agrees that there is a cut-off point between the two types of technology somewhere in the 20-30ppm range, but in this key area of the market, a lot can hinge on throughput differences of just five packs a minute.



Twin reel: Europack RTF W, one of a range of standard machines adaptable to specific tasks

Europack generally favours the twin-reel approach up to around 30 packs a minute, explains Ivan Reeve, adding: "We look at it on the basis of product stability. So if the item being shrink-wrapped doesn't like intermittent motion, that might change our mind. But you certainly wouldn't venture below 25 packs a minute."

The length of the line will be a key consideration for a packer running at around the 25 packs a minute mark, Mr Reeve believes.

His estimate puts the length of a tray/wrap-around single-reel line plus shrink tunnel at up to 15 metres, while a slower twin-reel system, including a shorter shrink tunnel, may cut 5 or 6 metres off that figure. What he calls a "more forgiving" film feed system, where lengths of film are fed and cut before being sealed around the product, may also add to the size of a single-reel line.

A customer may simply not appreciate these vital space requirements when weighing up which type of line to buy, he warns.

Europack's differential costings for continuous and intermittent-motion shrink-wrapping tend to fall in the mid-range. Ivan Reeve talks about a "30 per cent on-cost for continuous motion" although, when it comes to machine price versus cost of ownership, this on-cost is absorbed on average, he calculates, at speeds of 30 packs a minute and above.

Debating downtime

Clearly, advocates on both sides of the single-reel/twin-reel divide emphasise different aspects of the subject.

With twice the amount of sealing, says Aetna's Barry Tucker, there is twice as much to go wrong on twin-reel machines, and the pack is unsightly. He adds: "The reels never run out at the same time, of course, so it incurs twice the downtime."

Campak, the UK supplier of Italian-built CAM machinery, notes some additional benefits of single-reel systems. According to the company, single-reel designs eliminate the need for

skilled operators to track and tension twin reels of film. Like Aetna, Campak stresses the consistent seal position and appearance obtained with single-reel installations. Film loading and threading is also faster, says Campak, underlining Barry Tucker's line of argument about downtime.

However, Ivan Reeve at Europack reckons that changeover on a continuous-motion machine collating unsupported packs can take up to 35 minutes, including the time taken to ramp the line up to full production speeds.

In contrast, he says, a similar change on a twin-reel machine might take just 10-15 minutes. Precisely those benefits which make the continuous machines efficient in production, such as linked servo drives for the various points in the film feed, can contribute to downtime during changeovers, he argues.

Return to full output

But the different numbers will at least in part depend upon whether they include the time taken to return to full output, and – of course – what type of single-reel machine is being discussed. A top-of-the-range continuous-motion machine, equipped with stepper motors and servo drives, will offer dramatically shorter size adjustment times than a less automated system.

From its central position in the mid-market, Aetna contrasts the potential of the different market segments.

"In the range of 20ppm upwards – up to Kisters systems reaching 100ppm – most of the quality food and drink companies needing this sort of technology are already well-equipped," Barry Tucker explains. "The chances of these people spending too much money on huge shrink lines is fairly slim. It's a small market at the moment."

Consolidation among customers has meant there are perhaps just a dozen companies in the UK using this high-output type of system in 24-hour production. The number of potential suppliers is also small, with names such as Kisters, Kettner and Ocme competing for the majority of installations.

The middle portion of the market, on the other hand, is served by up to a dozen suppliers around Europe. These companies compete for some 40 or 50 installations a year in the UK, Barry Tucker estimates, which means that typically, at least four different suppliers bid for each installation.

In this broad middle band, demand is increasingly for greater flexibility, with maybe



Single reel: Dimac Star 30 from Aetna UK, one of a range of single reel continuous motion machines extending from 20 to 80 packs a minute

six different sizes required from the same machine. At the same time, Aetna notes, budgets are not quite so flexible. Typically, a buyer may have £75,000 or £100,000 to replace a twin-reel system.

Proof of the pudding

As in other areas of packing technology, these end-user flexibility requirements are driven by the retailers' demands, such as a requirement in one case for shrink-wrapped collations of jars to be delivered in six-packs rather than the previous 12-pack.

The same trend towards six-packs, especially unsupported by a tray or board, is also clear in the petfood sector and at major food suppliers, Barry Tucker points out. In these cases, print-in-register is often required so that the six-pack can function as a multipack. Once again, he argues, this is an area where twin-reel cannot compete with single-reel.

But twin-reel systems have clearly been having their successes, too.

For example, YPS has now installed four machines at Zest Foods, a leading supplier of sauces in glass jars. The Rochman machines are 600mm-wide side-feed shrink-wrappers. Zest general manager Steven Mason says the company was influenced by the backup and service offered by YPS, as well as the performance of the machines themselves.

Also in food, Europack says it started something of a trend with its intermittent-motion machines when it installed one of its "tight-wrapper" shrinkwrap systems at an unnamed rice packer. The "tight-wrap" element derives from the angle at which the vertical sealing jaw is set, forming a seal much closer to the collation than standard methods, Europack argues,

and so consuming "up to 15 per cent less film".

In this case, the approach is being applied to bags of rice. "Bagged rice is a particularly unstable product, and will sag when wrapped and palletised if not very tightly wrapped," explain's Europack's Ivan Reeve.

Here, the results have been so good, he says, that the customer has been able to increase the size of the pallet load, and is now considering robotic rather than manual palletisation.

The installation handles bags of 500g, 1kg and 2kg. They enter the machine in single file, narrow edge leading. After travelling up a ramp, they are pitched and turned ready for collation, wide edge leading. Vacuum heads place the bags into collations of 4 x 1 x 2 or 3 x 1 x 2. Now, says Ivan Reeve, the same approach is being applied to other types of product.

Other companies with a story to tell, with twin-reel and single-reel respectively, include Adpak and Campak.

Unsupported wrap

Lancashire-based Adpak is one of those suppliers which have been pushing hard at the low-output end of the spectrum. The company places heavy emphasis on the role of unsupported shrink, notably in bottling. But it maintains that the move towards this type of format

has not been confined to high-output single-reel lines.

Adpak's A700 wrapper runs at speeds between 10 and 12 packs a minute, with or without base boards or trays. The semi-automatic A700SEL, in particular, has a major role to play in wrapping unsupported collations, says the supplier.

The operator places bottles into an adjustable



Twin reel: One of four new Rochman machines at Zest Foods

product pusher, which supports the collation during transport into the film web. Close coupling ensures a smooth transfer to the shrink tunnel, with automatic activation of the conveyor once the wrap is sealed. The A700SEL can handle glass and PET in sizes between 250ml and 3 litres.

The full Adpak range starts with the SW50 and SW70, with manually-operated speeds of just six packs a minute, and is topped off by those versions of the 700 machine with a fully-automatic bottle collating facility.

Campak's ASB 38 has found applications in

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sectors as diverse as pharmaceuticals, cosmetics, confectionery and general food, and can be used as either a shrink-wrapper or stretch-bundler. The wrapping module and infeed can be configured in different ways to cater for a variety of products and environments, with side or elevator transfers moving product inline or through 90deg before the finished collation is pushed through the single film reel.

Packs then progress to the CAM TRM shrink unit, operated by hot air guns. Again, unsupported containers, or collations with base boards or trays can be handled.

Finally, WT Foods, Corwen, has re-equipped its factory with three Meurer shrink-wrapping lines from UK agent Fords Packaging Systems to handle glass bottles of sauce and bags of cereal.

Among features required of the new machines by general manager Erfyl Roberts were energy savings, reduction in the film used, increased production speeds, flexibility to wrap products with or without trays and reliability in the sealing systems.

In fact, many previous problems at the factory were due to unreliable sealing systems,

“The Meurer constant heat solid metal seal-

ing jaw fitted with a serrated cold cut knife was so like the vertical form-fill-seal machines he was using that Mr Roberts immediately had confidence that these problems would disappear,” says Fords. “His first Meurer is more than two years old and is still fitted with the same sealing jaw and knife.”

Up to speed

Of course, when it comes to choices between continuous-motion and intermittent machines, it could be true both that customers in the replacement market are looking hard at single-reel options, and that they are just as often coming down in favour of twin-reel solutions in the end.

At Europack, this is certainly Ivan Reeve’s version of events: “More and more we are talking to people who want to make sure they’re up to speed in terms of technology.” But, he adds, once the various considerations have been taken into account, they realise that continuous motion may not be the right solution for them.

It may also be true that the differences between the various suppliers, in terms of basic cost, technical specification, efficiency and count for more than any generic contrast between the two broad approaches. ■

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