

Balancing costs to decide Shrink or fold?

A LARGE PROPORTION OF DISPLAY OVERWRAPPING APPLICATIONS CAN BE MET WITH EITHER SHRINK-WRAPPING OR TUCK AND FOLD METHODS. IT'S A MATTER OF PRODUCT SHAPE AND BALANCING MATERIALS SAVINGS AGAINST CAPITAL AND OPERATING COSTS.

Tuck and fold overwrapping has suffered from a widespread perception that it is more expensive than the shrink alternative. In many cases, the price of a new high-performance end-fold machine may have been higher than a shrink system capable of running at similar speeds. But the relative costs of fold-wrap BOPP and shrink film could soon even out any differences, and in fact mean that total costs for shrink were far greater over time.

Nonetheless, leading tuck and fold equipment supplier Marden Edwards has gone out of its way to discredit the "higher cost" myth still further with an entry level machine, which sells for under £20,000.

According to director Jeremy Marden, the Evo-Fold will run at speeds up to 45 packs a minute. "It does well for a number of reasons," he says. "It means we get new business in areas where customers assumed that end-fold would be too expensive. But it can also compete with refurbished machines."

Typically, a refurbished second-hand machine may cost £16,000 or £17,000 at auction, says Mr Marden. But often even a supposedly refurbished machine will need an additional overhaul, and this can bring total equipment costs up to the price of the new Marden Edwards Evo-Fold wrapper.

The system can also compete with shrink overwrappers which, in the 35-40ppm range would be the costlier side-seal type of machine. Marden Edwards itself supplies Kalfass shrink equipment in the UK, and a side-seal machine in this output range would sell at over £30,000, Mr Marden reports. A few Evo-Fold machines

have already been sold in the UK: two in pharmaceutical applications, one for medical devices and one wrapping blocks of paper.

Shrink tightener

Another development from Marden Edwards has been the shrink tightener for end-fold overwrappers. This uses belts to apply a controlled amount of heat to a special polypropylene film with only around 5 per cent shrink. The system was originally developed to meet the needs of cigarette producers looking for a skin-tight

and fold equipment. Its current expertise in a number of different consumer sectors began in the cosmetics and toiletries area, explains managing director Ian Bickerdike. The company's various overwrap systems still tend to go to this sector with its specific quality requirements, rather than others such as food.

High speed combined with high quality wrapping is said to be behind the success of Campak's RV/P machine, one of which has just been installed at a major Irish manufacturer of lotions and cremes. Wrapping and spot-sealing cartons at speeds up to 180ppm, this remains one of the fastest machines of its type on the market, Mr Bickerdike claims. The end-fold seals are formed by indexing sealing plates.

Campak's RV machine, on the other hand, uses continuous-motion heated sealing belts to achieve speeds up to 250 a minute. A new development available with this machine is a through-conveyor.

"If a customer doesn't need overwrapping on some cartons, these can be transported straight through the machine on a belt. Most of our competitors would typically use a bypass conveyor, occupying a larger footprint and costing more," says Mr Bick-

erdike. Using a straight-line belt can also avoid damage to premium cartons when conveying at high speeds, he adds.

At lower speeds, the RT/RP overwrapper can be specified in either spot-seal or sealing-belt versions. These can be tailored to the particular needs of products from vacuum-packed coffee to CDs, videos and confectionery.

As a lower-cost solution, Campak has the



Entry level tuck and fold: Marden Edwards' new Evo-Fold machine

overwrap, but interest has since been high from the confectionery industry.

Although the system has been available for some two years as a separate system, for the last few months the company has been building it into existing models, with no need to alter the machine frame.

When it comes to overwrapping, Campak is another company with a track record in tuck

Chiller stand-out for cheese

Alpma may be used to seeing its fold-wrap systems applying primary packs for cheese and meat-based chilled products, but it is now seeing interest in overwraps used to differentiate brands in the crowded cheese market.

The Cheese Company is taking this approach with its Tickler brand of mature cheddar. Aware of the need to make its products stand out against the "yellow wall" of cheddar and other hard cheeses, the company opted to use a laminate over the gas-flush-applied primary film wrap.

A customised Alpma V64wk machine takes gravure-printed paper-foil laminate from the reel. Consumers are invited to discard the

inner wrap once the pack is open, and reuse the outer laminate with its self-adhesive label which doubles as a reclosing device.

Consumer acceptance of the combination pack has been impressive, says Alpma, and the Cheese Company now expects to add further overwrapping capacity.

Alpma equipment is more commonly used for clear film wrapping of products such as soft cheeses, pies and sausages in combination either with direct printing or with self-adhesive labels.



number of UK lines for high-value confectionery currently using tuck and fold. There may be more opportunities in pharmaceuticals and cosmetics, he speculates.

Shrink overwrap systems

In addition, another range of Japanese equipment supplied by Selo, this time from Omori, includes shrink overwrap systems. The high-clarity bead seals do not affect the visibility of on-pack text and graphics, says the company.

Benefits of using shrink for overwrapping are often the cost of the machine and ease of setup, says Mr Dowling. "Ultimately, the choice of which type of system to use is likely to be marketing-driven," he says.

Another company which supplies both envelope-style and shrink overwrap systems is Burnley

AT/AP machine. One of these was installed recently by a tea packing operation, says Mr Bickerdike. Here, the factory had a competitor machine, but wanted to upgrade to using tear tape. The cost of this upgrade would have been considerable, so the customer opted instead to invest only a little more in a completely new AT/AP machine.

But because the company has its principal markets in cosmetics and toiletries, it is unperturbed by the availability of cheaper tuck and fold systems, whether manufactured in the UK or imported. "You pay for what you get, and most of these systems won't give the Procter & Gambles and L'Oreal's of this world the quality they demand," Mr Bickerdike argues.

Changeover times

One of the main accusations levelled against tuck and fold wrapping by shrink overwrapping machinery suppliers is that changeover times are too long and costly. Campak has addressed this issue with its CFR servo-driven size change facility so that a combination of electronic changes and manual size adjustments need only take 15 minutes, says the company.

While most tuck and fold machinery suppliers talk about "near hermetic" seals on their overwraps, Selo UK is not so coy about the machines from Tokyo Automatic Machinery (TAM), which it represents in the UK. Says Selo sales manager Tim Dowling: "To our knowledge, they produce the only hermetic envelope overwrapper available."

This type of hermetic seal is standard on TAM's FN4 machine, which is capable of speeds up to 120 packs a minute. Additionally, it is available as an option on other machines in



Shrink tightener: Marden Edwards system for end-fold wraps

the range, including the FN1 overwrapper, running at speeds up to 160 a minute with a tear tape option. Standard end-fold wrapping can be applied to individual items or collations, with or without easy-open features.

Although the system can be applied to products from DVDs and CDs to tissues and toilet rolls, the hermetic seal was first developed for medicines supplied to tropical or high-altitude destinations. Clearly, the microperforated films used in shrink systems would not have provided the same barrier.

As Mr Dowling explains, a similarly tight seal could have been achieved using a flow-wrap, but pharmaceutical companies wanted the same tidy, quality presentation provided with standard end-fold wrapped products.

Meanwhile, TAM has found additional markets in carton overwrapping for the confectionery industry. "The hermetically-sealed wrap can lengthen shelf life considerably," says Mr Dowling. "We are actively promoting the system in the UK." The problem is the small

ley Packaging Machinery. Managing director Stephen Booth says: "Burnley used to be better known as a shrink-wrapping company. But when we took the company over, we resurrected the Carrington range to take on the big names in tuck and fold.

"Now this part of the business is bigger than shrinkwrap. Part of the reason is the fact that people are saving on energy costs. And the shrink systems that we sell tend to be

more for transit than display."

Around a year ago, Burnley first presented its AM4 fully automatic tuck and fold wrapper which is able to run at speeds up to 40 packs a minute, wrapping cartons fed from a magazine via a chute. The machine is priced at under £20,000 and, significantly, says Mr Booth, changeparts are also relatively inexpensive at around £570 each.

Cost is an even greater benefit with Burnley's FK6 semi-automatic machine, launched around two years ago. Here, the cost of changeparts is as little as £470, says the company, while the machine itself costs under £10,000.

Since it has a manual element at the wrapping stage, the machine tends to run at speeds of 10-12 a minute, making it particularly suitable for offline repackaging and short-run batches of product. The low tooling costs are said to make a huge difference when smaller brands are overwrapping items which may have a short product life, and where dedicated investment needs to be contained.



Shrink overwrapper: DVDs and CDs are a principal market for the Beck Multiplex machine

Although Burnley's SD0400 servo-driven wrapper costs over twice as much as the AM4, the same changepart cost benefits are also available here, offering savings of around 30 per cent compared with major competitors, says Mr Booth. The servo system will achieve speeds up to 70 a minute, and is being used on several confectionery lines.

Giftwrap toiletries

Elsewhere, the SD0400 is being used to apply sheet-fed giftwrap to toiletry products with sealing either via a coating on the paper or separately-applied hot melt adhesive. One brand-owner wraps 14 different pack sizes on the same machine, says Mr Booth, with as many magazines feeding the different sized sheets. Changeover, including substitution of the folding box, takes just 15 minutes, he explains.

Yorkshire Packaging Systems (YPS), which

supplies shrink equipment from Rochman, Spain, is unconcerned by the prospect of low-cost tuck and fold machines upsetting the balance at the low-to-medium speed end of the overwrapping market.

Says sales director Glyn Johnson: "You're still limited to square or rectangular products, and you still have the issue of changeparts if you're wrapping different sizes of box. End-fold is great for boxes of teabags or cigarettes where you're churning out millions of the same pack. Shrink gives you far more flexibility."

Earlier this year, YPS installed two SMAF 4020 machines from Rochman at BT's Northallerton site. "The machines are overwrapping boxes containing the products that make up BT's HomeHub package, including the internet router and handset," says Mr Johnson. "In all, the lines have to cope with about half a dozen different carton sizes."

This flexibility, which the customer could not have achieved with tuck and fold, was the principal reason why this technology was chosen. Reliability of equipment and after-sales support are generally more important considerations for customers than machine cost, Mr Johnson adds.

The importance of reliability is underlined, he claims, by the fact that in the company's thirtieth year of trading some 40 per cent of sales come from repeat business.

High speed shrink-wrapping

The SMAF 4020 machines at BT are close to the high-speed end of the shrink overwrap market, managing outputs of 40-50 a minute. The machine incorporates a touchscreen display, and a split infeed belt, ensuring product detection of even the thinnest packs, says YPS.

As well as this high-speed side-seal machine, the company supplies semi-automatic L-sealers, achieving speeds up to ten a minute on A4-size packs. Then there are fully-automatic L-sealers covering the 20-25 a minute output range. Rochman is currently working on a wider side-seal machine to complement the 4020. While the 4020 has a cross-seal width of 400mm, the new machine will handle widths up to 600mm, says Mr Johnson.

He stresses that the market for wider products is a limited one. So with the YPS range of L-sealers, for instance, some 85 per cent of sales are of the 500mm x 500mm version, and only 15 per cent are of the wider model. Even so, Rochman and YPS are determined to cover this niche in automatic side-seal as well.

Dedicated high volume lines

As a further demonstration of the way in which product overwrapping markets divide up between end-fold and shrink, Mr Johnson cites the example of the DVD/CD market. Here, he argues, the logic of dedicated high-volume, high-speed lines for single-size products explains why the UK market uses tuck and fold for standard products. But he estimates that some 10 per cent of the market consists of a wider size range of boxed sets and novelty variants. Where these have to be handled, he says, shrink is the norm.

Friedheim International, which represents Beck Packautomaten in the UK, reports that the DVD and CD market is one of the largest worldwide for the German company's Multiplex range of shrink overwrapping equipment. In markets such as Germany and Austria, says

New materials, new opportunities

The current retailer-driven vogue for "sustainable" materials, including starch-based films, is providing new opportunities for tuck and fold overwrapping, says Marden Edwards.

Director Jeremy Marden believes the industry has come "full circle" since the 1950s, when wood-derived cellulose film was the material of choice for this type of wrapping. So it is no surprise that today's starch-based polylactide (PLA) and similar films run equally well. "Our type of film transport can

handle these materials with no need for modifications," he says.

Stephen Booth, managing director of Burnley Packaging Machinery, agrees that starch-based films perform well on tuck and fold machines.

In fact, he sees this as a significant factor in the resurgence of this technology. "There's been talk about a starch-based shrink film developed in the US, but if it exists, it's certainly not in production yet," he adds.

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area sales manager Stephen Hampton, it is almost the standard machine for these applications.

Certainly, Friedheim has no illusions about taking the UK disc market by storm. But according to Mr Hampton, potential customers in this area were among those which showed the greatest interest in a new addition to the Multiplex range at the Total show in May. Like the other models in the range, the MPX Pico uses a photocell system to adjust to the size of random-length products. But it has a significantly smaller footprint – and a smaller price tag.

All the Multiplex machines form three-side seals and have the option of a 99-product memory. The one-piece machine guard and sliding operator interface makes for especially good access when changing film, says Friedheim. Speeds range between around 20 and 40 metres a minute, helped by a servo-driven cross-seal station.

Also at the cross-seal stage, Beck has developed its 'kissing lips' conveyor system. Typically, where the seal is formed, the gap between the two conveyors can cause problems when small or irregularly-shaped products are being wrapped. But when this feature is activated, the

conveyors converge as the product passes from one to the other through the sealing area.

While the Multiplex is better for short to medium-length runs, says Mr Hampton, the Serienpacker four-side-seal overwrapping range is more suitable for longer runs. Using two rolls of film rather than one, these machines can again achieve speeds up to 40 metres a minute.

Other shrink systems suitable for primary or transit wrapping include the BVM Compacta,

supplied by Adpak. The company says it is being used by cosmetics companies with a wide size range of products to wrap although bigger markets are currently in homecare and DIY, where film typically replaces board rather than simply overwrapping it.

The range of intermittent and high-speed, continuous-motion trim sealers is increasingly being used to apply the only layer of point-of-sale packaging on products such as wooden shelves and doors, says the company. ■

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