

Print and product support put **Flexible formats** in demand for **shrink-wrapping**

PRINT-IN-REGISTER IS GROWING IN POPULARITY IN CONJUNCTION WITH SINGLE-REEL SHRINK-WRAPPING MACHINES, WHILE A MORE CAUTIOUS APPROACH TO UNSUPPORTED WRAPPING IS MAKING FLEXIBLE-FORMAT SYSTEMS INDISPENSABLE, WHETHER IN SINGLE OR TWIN-REEL DESIGNS. REPORT BY PAUL GANDER.

Unsupported collations of product in shrink-wrap film are no longer necessarily considered to be the answer to every issue facing every FMCG company – from the environment to production flexibility and packaging costs. Experimentation has made it clear that while some primary packs and outer pack sizes lend themselves to this approach, others do not.

It is, of course, a matter of horses for courses, as Aetna UK chairman Barry Tucker explains:

“By and large, big PET bottles can be wrapped unsupported up to an eight-pack. Because they bind together so well, you don’t usually need a tray or base board. A pack of 24 cans of petfood, on the other hand, slides together and, once you get any movement, you rapidly end up with a bag of cans. Can lids can also cut through the film during transit.”

Between these two extremes, in terms of the number of primary packs and the material type, there are products such as sauces and jams packed in glass where the viability of unsupported wrapping on different scales comes down to individual criteria such as handling requirements and pallet management.

Indeed at Cermex UK, managing director Dick South agrees that the suitability or not of unsupported shrink-wrap will depend on the market, how the particular pack combination travels and expectations at the end of the supply chain.

However, he notes, the need for a base board or tray may have more to do with the way product is handled in-store than with its ability to survive distribution. “When retailers take the film off, they may need to be able to place product directly on the shelf or build up a floor display,” he points out.



Flexible solutions: Trayed or unsupported wrapping on the Cermex single reel range

The same attention to the precise transport and handling needs of a given pack is necessary when determining the film gauge to use. “This is another side of the battle on the part of manufacturers to reduce pack costs,” points out Dick South. “The machines can get down to 30 micron film, but you have to look at the minimum strength that the customer needs.”

However, while packers are now warier about unsupported film, the benefits of using it wherever possible are clearer than ever – especially the branding benefits of printed film.

Manufacturers may protect and support the collation better during transit, but still see the value of a quality film wrap at the final destination, especially in a multipack sold as a single



Servo wrapper: Nestlé in Berlin has installed one of the new Kalfass Servo Jet 400 machines

unit. They are also, of course, increasingly likely to want a number of different options, including trays, base boards and film-only on the same machine.

Barry Tucker is proud of the fact that, when the company showed an Italian built Dimac line at the last PPMA Show, "it was the only big shrink-wrap line in the exhibition".

Full range of machines

Aetna UK introduced the first Dimac Star shrinkwrapper just over a year ago. Since then, what started as a single machine has expanded to a full range spanning speeds from 20 wraps a minute up to 60 a minute on a twin-track machine.

Most recently, at Salon d'Emballage in November, the Italian parent company showed the first twin-track model of the machine with the capability of running everything from unsupported packs through to tray-packed product. In other words, this is the model that takes the range to its logical conclusion in terms of both output and flexibility.

The last two or three shrink-wrap lines sold by Aetna in the UK have gone to contract packers. The petfood industry, it seems, and the contract packers which serve it, provide a good example of a sector which wants to have its cake and eat it. Manufacturers are desperate to

reduce costs, largely by pushing up line speeds, but also demand maximum machine flexibility, say suppliers.

Major manufacturers have increasingly been sub-contracting the wrapping of multipacks – especially in petfoods – to co-packers. These packs may include mixed selections and special offers, but whatever the application the importance of print registration is greater than ever.

Like Aetna, Cermex has been focusing attention on a range of single-reel machines which offer maximum output and flexibility. Managing director Dick South also emphasises the importance of printed film in register, especially in conjunction with unsupported product. "People have been using this to encourage consumers to take a whole pack," he says. "They've been biting on this quite hard."

Shrink patterns in the film

It is certainly true, says Aetna's Barry Tucker, that print-registered film is much sought-after in shrink-wrapping, and has been helped both by the quality of printing achieved and by the improved understanding of shrink patterns in the film. Indeed, Cermex points out that the ability to integrate essential data, including bar codes, into the film means that any potential problems with high speed label application can also be avoided.

Cermex OC in France first introduced its TS range a few years ago, but recent developments at the wrapping end have included faster size change and film reel change, as well as increased output, while at the shrink end, heat controls have been improved. Output can now reach 100 cycles a minute with machines available in versions with up to three lanes.

Cermex claims that its Dual Injection System (DIS) for changing film reels on its single-reel range of wrappers is unmatched by competitive equipment. "Others have claimed to be able to do this, but they've never really proved it in production," says Dick South. "It has been a major step forward for us, being able to change from one reel to another on the run."

Less accumulation conveyor

While the process does slow the machine slightly, he admits, it avoids any need for a manual changeover and in a new installation means that less accumulation conveyor is required. A manual change can take up to 20 or even 30 seconds, says Cermex.

Meanwhile, Nestlé Deutschland in Berlin has taken delivery of a new type of shrink-wrapping line in which, for higher speeds and ease of operation, the logic and motion control functions for the servo motors are combined in a single system.

The Kalfass Servo Jet 400 is overwrapping two different height trays of Wonderballs confectionery cartons and operates from a single reel of flat film, which is ploughed round the trays and held overlapped on the underside by ionisation prior to shrinking. Speed is up to 150 cycles a minute.

Control is via the Elau PacDrive system which combines all PLC functions and motion control in one system and so, explains Kalfass, offers a number of advantages.

These include speed of operation, easy external access via standard programming according to IEC 61131-3, open hardware and software architecture with few interfaces, and improved performance with reduced risk of error. The machine is able to store operating parameters for up to 250 products in memory for push-button recall and has an integrated modem allowing diagnostic checks to be made remotely. In the UK, Kalfass is represented by Marden Edwards.

When it comes to slower but more flexible twin-reel machines, performance expectations are clearly a lot lower. Wrapid Packaging Systems, for example, supplies the German-built

SHRINK-WRAPPING FOR TRANSIT

BVM wrapper, which can run at speeds up to 15 cycles a minute. As with any twin-reel system, the 'curtain' method is used to wrap product – even in random sizes – by combining and welding an upper and lower reel of film.

Wrapid has also formed a partnership with Italian machine builder SmiPack. Again, its BP700 range uses the twin-reel approach, and is capable of forming between 15 and 20 wraps a minute. Features include Teflon-coated pneumatic sealing bars and powered film feed, and the range includes both semi-automatic and fully-automatic versions.

Saving materials

Shrink-wrapping often provides a materials-saving alternative to case-packing when the goods are sufficiently rigid and stackable, such as sealed ready meals trays.

For example, the UK subsidiary of the American machinery manufacturer Polypack has recently supplied two of its high speed PH-24L collation-stacking and shrink-wrapping lines to a principal UK and European chicken processor, allowing trays to be stacked in two or three tiers and collated into bundles of six, eight or 12 at speeds up to 100 trays a minute.

Polypack points out that the materials savings achieved by eliminating cases have provided the customer with a 12 month payback on the investment.

For unstable bottles such as shampoos, liquid soaps and shower gels in oval, round or square containers, Polypack has developed a robotic pick-and-place feed system combined with a twin-reel shrinkwrapper in which the bottom reel unwinds onto the conveyor. There are back-plates to ensure positive control of each collation through the system, while sealing takes place through open areas in the conveyor, between collations.

Bottles arriving at the machine are gated off into the required number, picked up by the ROKH robotic arm and placed on the web of film. As the top sealing bar descends it pulls down the required amount of film from the top unwind to suit the height of the collation.

Polypack's latest UK installation of this system is for liquid soap in oval bottles with a



Above: Tray stacking station on the Polypack PH-24L shrinkwrapper
Left: Jacobs has installed a YPS shrink-wrapping line for Twiglets tins



pump, which are wrapped in an unsupported 2 x 6 collation at speeds of 100-120 bottles a minute.

Snack manufacturer Jacobs Bakery has also been

working hard to reduce packaging, at least partly due to retailer pressure to cut waste. Shrink-wrapping is now playing its part, with the installation of two Rochman lines at the company's Liverpool plant to wrap collations of 1kg and 500g biscuit packs, replacing outer cases. The 800mm-wide lines have been built to a slightly larger specification in order to accommodate the product, says supplier Yorkshire Packaging Systems (YPS).

Engineering manager at Jacobs, David Rome explains: "Shrink-wrapping has been a successful venture for us in terms of providing the best method of increasing production speeds, keeping costs down and maintaining pack integrity."

A third Rochman line, this time just 600mm wide, was installed to wrap Jacobs' trayless collations of Twiglets tins. YPS says it drew on its experience in the dairy industry when integrating its own product feeding and collating system here. The cylindrical tins are wrapped in a 2 x 3 format.

Corporate Packaging reports that the latest installation of one of Polypack France's Fast

shrink-wrap lines has been at Usval Dairy, part of the GLAC group. The wrapper marshals filled cartons into 2 x 3 and 2 x 4 collations, handling up to 10,400 cartons an hour. In this case, Polypack says a vertical divider can be inserted longitudinally into the collation, giving it extra top load strength for higher pallets while saving on the cost of larger trays or cases.

Stretch and shrink bands

It is not only the food and drink industry which is benefiting from higher-performing shrink-wrap lines. But when tobacco manufacturer Gallahers installed a Europack wrapping line, it was in response to its own end-of-line needs rather than retailer preferences.

The line applies two stretch bands at 90 degrees across a bulk collation of cigarette cartons before channelling them through a low-energy shrink tunnel. It typically handles 5 x 5 collations of 25 cartons, averaging 2.5 packs a minute.

Gallahers had installed automatic palletising which used pick-and-place robots. "We wanted a machine that could produce a more precisely wrapped, tidier finished product," explains project manager David Crothers. He says that this type of double wrapping greatly improves presentation when compared with the old 'tuck-and-fold' type, while still avoiding additional board costs.

Burnley Packaging is combining the benefits of having a name that is one of the oldest in the

SHRINK-WRAPPING FOR TRANSIT

shrink-wrapping business with a relaunched range which is one of the newest. The company's TSW machine handles around 20 wraps a minute, with or without layer pads, and Burnley says it has seen "numerous installations" over the last few months for wrapping cans, cartons and bottles. Pre-collation devices can be tailored to suit the application.

Burnley also offers the electrically powered ESW range, which provides complete mobility within a factory and quieter running by avoiding use of compressed air. Its PSW semi-automatic range has also been launched to meet entry-level needs: the combined sleeve sealer and tunnel is manufactured in Poland to compete with imports from Italy and Spain, explains co-owner Ian Pruchniewicz.

The move towards unsupported shrink-wrap is, of course, not confined to higher-speed single-reel lines. Adpak's semi-automatic 700 series wrapper runs at speeds up to ten packs a minute.

Collations of bottles

One of the strongest selling-points, says managing director John Farrow, is the machine's ability to handle collations of bottles without base boards or trays.

"Our customers are demanding ever more flexible shrinkwrappers to meet increasing market pressures for widely-varying bottle pack formations and reduced packaging costs," he explains. The machine can handle glass or PET bottles up to 3 litres.

For many machine companies, success in shrink-wrapping installations can be at least partly put down to an ability to supply full lines or sections of line. Dick South at Cermex puts the Cermex OC wrapping equipment in the context of the group's overall offering in case-packing and palletising.

Similarly, Campak recently installed a CAM line at NelsonBach in Wimbledon consisting of a PMM intermittent motion cartoner for tubes of ointment, an ASB film wrapper and a TRM shrink unit. The can also supply turnkey solutions, including case-packing and palletising.

Significantly, perhaps, CAM has opted for a single-reel system on its machine. This ensures

even film tension and consistent seal positioning, says the company, adding that it also avoids the need for skilled operators to track and tension twin reels. A further advantage of this single-reel approach is that size changes and film loading are fast and easy to implement, CAM



Extra support: Polypack France shrink-wrap line can add a divider

argues. Again, product can be wrapped on the ASB unsupported, on trays or on base boards.

Finally, the latest Kiener Skinetta servo operated collating and shrink-stretch banding machines for the personal care industry are able to run at speeds up to 40 bundles a minute and, says UK agent Propack Automation, are well suited to cartons, small bottles, jars or cans.

The newer servo machines can handle some 300-400 cartons a minute, securing the bundles with a stretched film band or a full shrinkwrap. ■

For further information:

Adpak Machinery Systems	enter 101
Aetna UK	enter 102
Burnley Packaging Machinery	enter 103
Campak	enter 104
Cermex UK	enter 105
Corporate Packaging	enter 106
Europack	enter 107
Marden Edwards	enter 108
Polypack	enter 109
Propack Automation Machinery	enter 110
Wrapid Packaging Systems	enter 111
Yorkshire Packaging Systems	enter 112

For full details of all PPMA members able to supply shrinkwrapping equipment for transit packaging, enter 401 on the free reader service card in this issue, or visit the PPMA web site: www.ppma.co.uk