

**R**otary pallet stretch-wrap systems continue to dominate in UK industry and logistics, above all in the fast-moving consumer goods (FMCG) sector. Hooding alternatives, on the other hand, rarely receive the attention that suppliers of such systems believe they deserve.

In fact, the arguments in favour of stretch, or in some cases shrink, hooding can be quite convincing.

One manufacturer which has been persuaded is Macaw (Soft Drinks) in Nelson, Lancashire. The beverage producer recently installed a second high speed stretch hood system from Danish manufacturer Lachenmeier, following the first in early 2002.

As a supplier of a wide range of soft drink variants to the multiples, Macaw was asked to load its 4 x 2 litre multipacks onto half Euro pallets which, the company estimated, would require at least two conventional stretch-wrapping systems.

Having run unsatisfactory trials combining the multipacks, separated by board layer sheets, with stretch-wrapping, Macaw turned for advice to Lachenmeier, which was able to demonstrate that stretch hooding would provide the speed, pallet stability and cost-effectiveness required. Working in conjunction with a Berchi palletising robot, the system can hood four different pallet configurations at speeds up to 100 pallets an hour, says Lachenmeier.

The machine gauges the dimensions of each pallet, produces a hood to fit, rolls it up, stretches and applies it to the pallet load, fitting it under the pallet base. Importantly, converts to hooding also say it gives greater stability to loads which might otherwise be unstable.

Macaw says it tends to be sceptical about 'new' packaging technologies. But a spokesman adds: "After a very rapid ascent up the stretch hood learning curve, we can positively say that the system is robust and simple to operate, delivering exactly what we need: high performance with maximum stability."

UK sales manager Tony Butler explains the effectiveness of this approach: "Stretch film developments have seen a continuing trend towards thinner film gauges exhibiting higher stretch rates, with increased holding forces. This has allowed Lachenmeier to compete successfully in markets which have so far always been dominated by conventional stretch-wrapping machines." Lachenmeier claims to make "zero profit" on the films used in its systems. "The machine itself is expensive, but that's for a reason," says Mr Butler.



**Stretch hooding:** Danish manufacturer Lachenmeier has installed machinery in the soft drinks industry

## Spiral dominates but... Hoods make new converts

SPIRAL STRETCH-WRAP MACHINERY MAY DOMINATE THE PALLET WRAPPING PROCESS IN THE UK, BUT HOODING SYSTEMS THAT OPERATE EITHER BY STRETCH OR SHRINK ARE MAKING PROGRESS

The hooding specialist says that brands in the soft drinks sector tend first to consider this technology for smaller loads such as half dollies, where there is a question over pallet stability with conventional wrapping.

### Carried out trials

Brands such as Gerber have carried out trials, says Mr Butler, and Coca Cola is interested in the system for the high-speed wrapping of smaller loads. But once they are convinced of the benefits for smaller pallet sizes, says Tony Butler, manufacturers such as Macaw will often extend the system to full-size pallets, too.

Stretch hooding may be making inroads into some FMCG areas, but the base of its success has been in the building, chemicals and plastics industries, where weather-proofing for outside storage can be a further benefit. In the white goods industry, hooding has won wide acceptance, says Mr Butler, largely for reasons of speed and product protection.

And Lachenmeier is expecting to build on its success in sectors such as food and drink with its latest generation of Multi Flex stretch hood machines. "This has a capacity of up to 180 pallets an hour, hypothetically replacing three stretch-wrapping systems," says Tony Butler, "and

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only requiring a film change every 1500 pallets."

Few conventional rotary stretch-wrap suppliers compete with stretch hood systems of their own. This is understood to be largely because of the number of patents protecting the Lachenmeier technology, as well as the perceived difficulty in breaking out of the established sectors for hooding and into FMCG markets.

But one company which, like Lachenmeier, does offer both stretch and shrink hooding, as well as fielding a complete stretch-wrap range, is Inpac UK. This supplier markets the Thimon hooding range in the UK. Up to around four years ago, this included only shrink hooding, but it now encompasses both types of hood technology.

Inpac MD Mark Parminter is clear that stretch hooding remains a niche technology, largely confined to the building industry. He describes cases of hooding being specified for food and drink and other consumer goods as "quite unusual".

Like Lachenmeier, Inpac reports some high-profile exceptions to this rule. One major soft drinks manufacturer had installed a ring style spiral stretchwrapper for pallet loads of 2-litre plastics bottles. But retailer concerns about bottles being crushed apparently drove the manufacturer to invest in stretch hooding as an alternative.

At around £120,000 for a Thimon system, Mr Parminter admits that the stretch hood technology compares unfavourably in cost terms with a £50,000 top-of-the-range Octopus ring stretch-wrapper. At the same time, he says, at around 80 pallets an hour, speeds are not as high.

Aetna UK does not supply hooding systems, but managing director Mark Tucker comments: "The big claim is that hooding gives enhanced pallet stability on the basis of similar costs. But in fact, the supplier will often up the gauge of the hooding material to get better stability, and frequently layer sheets will also be needed."

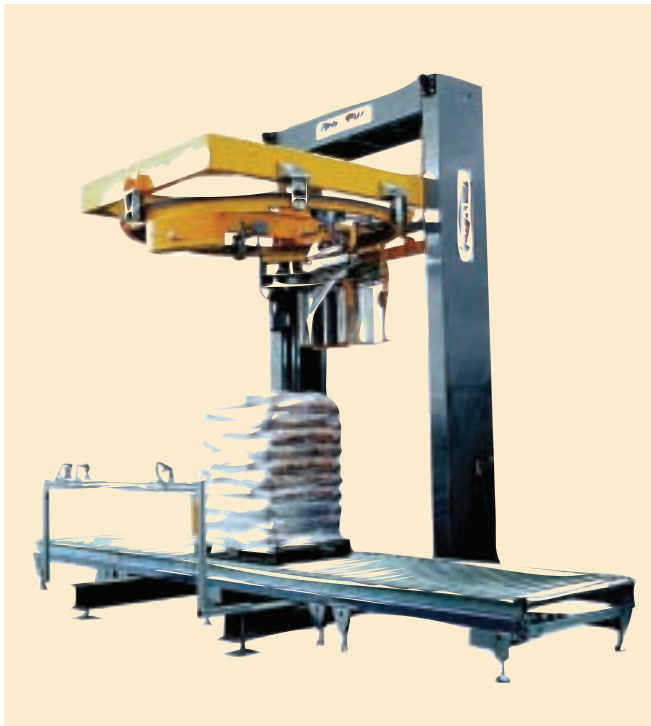
Mark Tucker claims that one unnamed soft drinks producer was encouraged to take the

hooding route, with initial specifications based on a thin film gauge and no layer sheets. "The reality is that the hood they finally settled on was much thicker, and layer sheets were required, so the capital costs were much higher," he reports. "But of course, if you don't mind the additional costs, you can achieve very good results with hooding."

Feedback from Aetna's customers shows that pallet load stability is a major concern among users of conventional spiral stretch-wrap. Like many issues connected with transit packaging, it has been exacerbated by the increasing trend towards warehouse automation.

### Issue of shifting loads

"One blue-chip customer raised the issue of shifting loads with bottles of liquid detergent packed in cases," explains Mr Tucker. "In a fully automated warehouse, the wrap around the base of a wooden pallet was restricted. The retailer wanted the pallet voids left as clear as



**Latest ring wrapper:** New A800 machine from Orion Packaging systems

possible, and what little film was attached tended to unhook."

Since then, Aetna's Robopac automatic stretch-wrappers can be fitted with automatic corner post applicators, and the stretch film can be "roped" to tether the load more securely.

Aetna believes this is a growing problem for suppliers of different products. "Initially, it was more of an issue for export markets, but it has subsequently become a request for companies supplying UK retailers," says Mark Tucker.

## Shrink-hooder for paper can treble throughput

Pallet packaging and logistics specialist MSK has received its first order from the UK paper industry for the MSK Flowtech shrink-wrapping system. The UK order – which is to replace a spiral stretchwrap system at Tullis Russell Paper Makers, Markinch, Scotland – follows installations on every continent including Sappi in the USA, and Nordland Papier in Germany.

The machine provides a pack in which the product can be clearly viewed and is said to give improved product stability as a result of both vertical and horizontal film tension.

MSK has designed the Flowtech specifically for the paper industry. After hooding, the machine at Tullis Russell will compress the paper with a pressure of up to 5 tonnes, between the shrinking and cooling processes, so that air between sheets is pressed out for optimum load stability.

"When wrapping our bulk paper using the spiral-wrap system, we have to strap it first to make the load stable, and then stretch-wrap to protect the load from moisture ingress, therefore using two operations," explains John Tindal, coated and industrial papers engineering manager at Tullis Russell.

"The Flowtech uses only one operation



**Smaller scale:** Octopus Compact wrapper from Inpac

Clearly, one option is to design a bespoke pallet which allows the film to be secured more effectively.

One UK manufacturer is understood to use a special pallet for transporting its graphic arts film materials, where a slot holds the stretch film in place. But with suppliers under pressure



**Protecting pallets of paper:** MSK Flowtech at Nordland Papier in Germany

because it abolishes the need for strapping, giving us the opportunity to increase our throughput from 30 pallets an hour to 90 pallets an hour regardless of pack size and order, an increase of 200 per cent.

"Another main factor in our decision was the overall lifecycle cost of the MSK shrink frame which only uses energy when required, a huge advantage over conventional shrink ovens."

To save energy costs the MSK machine uses an encapsulated shrink ring system which dispenses high volumes of air but with low temperature and low gas pressure. There is no open flame and no mechanical movement inside the shrink frame, allowing lower gauge shrink film to be used, as well as improving safety.

**T:** 01509 264338

**E:** info@msk-ltd.co.uk

to standardise their pallet systems for automated handling, the scope for using this type of bespoke solution is largely limited to internal supply chains.

The use of corner posts may not be new, but it is attracting renewed attention as retailer demands tug suppliers in different directions, and as automated solutions such as Robopac's become more widely accepted.

### **Stability and potential damage**

As Mark Tucker explains, the drive to reduce transit packaging and ship shelf-ready packs without additional protection or support is also focusing attention on stability and potential damage to loads. Today's 'outers' are more likely to be solid board, microflute or even unsupported shrinkfilm than a complete corrugated container. The prospect of retailers putting their weight increasingly behind hooding alternatives, regardless of cost to their suppliers, must be at least slightly concerning for stretch-wrap specialists.

Other additional stretch-wrap features have

been introduced in response to the particular conditions of automated distribution and handling. A few years ago, MJ Maillis brought in an infra-red seaming system on its Mancon ring-wrappers to counter the risk of leaving 'tails' on stretch-wrapped pallet loads.

Aetna too has developed a solution, as Mark Tucker explains: "When the stretch-wrap starts to unravel, it can trigger sensors in an automated warehouse, and can create chaos. Aetna is now among those to have developed patented solutions of their own, in this case a cut, grip and tail-welding unit."

Inpac UK is another company which has recognised the importance of tackling the problem of stretch-wrap 'tails' on its ring-style stretch-wrapping equipment. In this case, it was prompted to develop a solution when one major food industry customer had pallets of product repeatedly rejected by a retailer's automated distribution centre. Mark Parminter at Inpac explains: "A tail-tucking system has since been developed for the Octopus. It's just great to watch it in action!"

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When it comes to the highest speeds and most automated packaging lines, ring and rotary arm systems continue to hold their own in the market, and most of the major suppliers will offer both. This is true for Aetna, where Mark Tucker summarises the benefits of each approach.

"Generally speaking, our view is that the rotary arm is best at speeds up to around 70 pallets an hour. The more experienced blue-chip manufacturers, where they can, and where speed allows it, will specify this type of machine," he states.

### Sixth rotary arm machine

Aetna cites Silver Spring Mineral Water Company as an example of how the two technologies can sit side by side. The company has just purchased its sixth Helix HS40 rotary arm wrapper, but also operates a Genesis ring system for its highest speed requirements.

With a large number of moving parts, ring systems are sometimes seen as being potentially less reliable than the rotary arm alternative. But, says Mark Tucker: "If you want a waterproof covering for the pallet, a ring may give a better result." And, of course, in simple speed terms, a ring wrapper can now achieve rates of up to 120 pallets an hour. Again, evolving retailer needs may also favour ring systems, as demand for half Euro dollies grows, and faster wrapping speeds are required.

One supplier which has been swept up by the enthusiasm for ring systems is Orion Packaging Systems which now supplies a ring wrapper of its own – the A800 – as the high-speed option in its Autoline range. "The A800 can be programmed for a wide range of requirements from the light and fragile up to large awkwardly-shaped or heavy duty items," says Orion director Ann Williams. Speed is up to 120 pallets an hour.

### Easier installation

MJ Maillis still sells the Mancon range of ring wrappers in the UK, and is currently incorporating new features into its 2201 machine, now known as the 1710. Benefits are said to include easier installation and a lower cost of manufac-

ture. Steve Bates, sales manager of the stretch film division, points out that a new carbon composite ring further reduces inertia during wrapping, and offers greater controllability and longevity for the system. Other areas currently being worked on include greater ease of operation and potentially higher stretch levels in the film.

Maillis is wary of some of the higher wrapping speeds quoted by some suppliers, even on ring systems. "To achieve rates of 120 pallets an hour, all of the conditions have to be perfect, and that doesn't happen in a real environment," Steve Bates warns. He believes that a figure of 100 pallets an hour is more realistic for most ring wrappers.

Nonetheless, most suppliers happily agree that there is a gap between rotating arm and



**Robopac wrappers:** Above: Helix HS40 rotary arm machine as supplied to Silver Spring. Right: Office furniture is also protected by stretch wrapping

ring systems in terms of speed. Cost is another differential. Mark Parminter at Inpac contrasts the £50,000 price tag for an Octopus ring wrapper with around £30,000 for a fully automatic rotating arm machine. He puts the respective speeds of these machines in the Inpac range at 100 and 40 pallets an hour.

In fact, the company says that at one point it looked as if its rotating arm technology would not only catch up with ring wrapping speeds but overtake them, particularly since Inpac had a rotary system with two arms rather than one, able to achieve wrapping speeds up to 120 pallets an hour.

Mr Parminter recalls: "It was almost like a

helicopter: it wanted to take off. It was too fast for its own good." Since then, the company has found it is easier to present customers with a straightforward turntable, rotating arm, ring hierarchy.

Discussing the costs associated with stretch-wrapping, Mr Parminter estimates that some users of top-of-the-range ring systems will spend £2000 or £3000 a year on maintenance. He points out that this is very close to the purchase cost of many entry-level machines. Inpac's own Ecomat Easy core brake machine, for example, is priced at around £3,000.

### Fast payback machine

In fact, in terms of fast payback, Inpac claims that its slightly more expensive machine – the new Ecomat Plus, priced at around £5000 – gives better results. Because of the film savings from power pre-stretch on this semi-automatic machine, payback is put at less than 12 months. The corresponding period for the Easy machine would be closer to 3 years, says Mr Parminter. In the case of the Plus, 1 metre of film can be stretched to 3.6 metres, so reducing film consumption by up to 70 per cent.

With so many low-cost entry-level machines on the market, suppliers remain mystified by the large number of logistics companies still relying on hand-wrapping. As Mark Parminter puts it: "With the increased risk of physical



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strain and injury arising from manual handling, perhaps leading to a claim for compensation, many companies seem prepared to take the risk."

Machine costs at this end of the market are, of necessity, low. But sales at this level often provide the mainstay for suppliers, as Mr Parminter explains: "The entry-level machine is the volume seller for us. It is rather like a colour printer or a photocopier."

Aetna attaches similar importance to the entry-level market. Mark Tucker estimates that overall sales of small machines have grown by 15 or 20 per cent over the last two or three years. He also paints a rosy picture of Aetna's own small machine sales having doubled over the same period, largely through expanding market share.

But if demand for semi-automatic machines has risen, the other side of this story is less of a happy one for suppliers. "At the same time, demand for middle to top-of-the-range systems has slowed as UK manufacturing has declined," says Mr Tucker.

Steve Bates at MJ Maillis agrees with Mark Parminter that the reluctance of many companies to move from hand-wrapping to even semi-automatic wrapping is surprising.

"I walked into one major logistics company, and found they were hand-wrapping 1000 pallets a day," he remarks. In many cases, he says, the manual operation is combined with hand-picking for mixed pallet loads.

### Moving the pallet or the wrapper

At that point, he concedes, the question of whether you move the pallet to the wrapper or the portable wrapper to the load can be problematic. Others note that the amount of space allocated to pallet wrapping will often not allow even semi-automation.

Even so, the most capable hand-wrapper will not achieve the amount of film stretch attainable with an entry-level machine. This in turn has consequences for pallet stability. But purely on the basis of cost analysis, the arguments in favour of semi-automation are overwhelming.

Steve Bates explains: "A lot of people assume that hand-wrapping film is cheaper than machine film, but in fact the reverse is true, since an additional process is required to convert film for hand-wrapping. Companies will make a saving on film costs of at least 50 per cent when they move to wrapping by machines." Labour costs are, of course, most



**Entry level pallet wrapper:** PR202 machine from MJ Maillis

likely to be an additional consideration.

All of this accounts for the fast payback periods quoted by the likes of Inpac. This is especially the case where customers resist the temptation of taking the machine with the lowest price, and instead move straight to a power pre-stretch option. While a core-brake machine will offer stretch up to around 70 per cent dependent on the load, power pre-stretch will start at a figure of around 200 per cent.

Naturally, not all customers decide to pay the extra for a power pre-stretch unit. Glyn Johnson, sales director at Yorkshire Packaging Systems says that, although pallet wrapping is not the company's core business, it recently installed a turntable wrapper at Remploy in South Wales.

In this case, power pre-stretch was not specified. From this customer's perspective, low volumes, the reportedly higher film costs and the 30 per cent premium required for a machine with pre-stretch all constituted an argument in favour of a simpler entry-level machine.

### Prices from £2500

Another company offering entry-level machines is Adpak. Here, the best-selling model remains the WM983 semi-automatic. Prices start from £2500, says the company, with a successful design which has not had to be adapted over the last few years.

The changing nature of the customer base in the UK has had other impacts. Mark Tucker at

Aetna points out that training has become an important issue as workforces have tended to become less skilled. In fact, many of the logistics companies employ temporary or agency staff to operate equipment such as stretch-wrappers. "Our more enlightened customers do ask for training support, either for the operators themselves or for in-house trainers," he says.

These types of company are aware that they can fall foul of regulations if staff are not given adequate training. To some extent, the increasing amount of data and diagnostics that can be accessed through the operator display is also fuelling the need for training, Mark Tucker explains.

Additional benefits such as low-cost training can help a supplier differentiate itself in a crowded marketplace. Others, such as MJ Maillis, use their dual role as machinery and film suppliers in a similar way. "More companies realise that machine maintenance is important, and being able to link that to the film supply can be an advantage," says Steve Bates. "Because we offer a complete package, we can ensure that customers really do meet their targets." ■

### For further information:

#### Adpak Machinery Systems

T: 01282 601444  
E: info@adpak.co.uk

#### Aetna UK

T: 01234 825050  
E: brendas@aetna.co.uk

#### Inpac UK

T: 020 8848 2920  
E: sales@inpac.co.uk

#### Lachenmeier

T: 0161 205 3666  
E: info-uk@lachenmeier.com

#### MJ Maillis

T: 01773 539000  
E: info@maillis.co.uk

#### Orion Packaging Systems UK

T: 01432 851129  
E: enquiries@orionpackaging.co.uk

#### Yorkshire Packaging Systems

T: 01924 441355  
E: enquiries@yps.co.uk

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