

If cost wasn't an issue, bottlers would go for pressure sensitive labelling every time says Mark Heath, sales manager with Krones UK. "Pressure sensitive machines are easier to maintain, plus the labels look much better than wet glue – particularly where filmic labels are used – and don't peel off when the bottle is sitting in an ice bucket."

However, cost is an issue for every bottler, which is why, despite the obvious advantages of pressure sensitive labels, the economics of wet glue labelling have long assured its position as the label application method of choice for the bottling industry.

That was until a decision by one of the world's largest breweries, Heineken, to switch to pressure sensitive labelling for its complete range of bottled beers signalled a break in tradition. Two other major breweries followed suit, triggering an industry-wide shift towards self adhesive labelling.

While the main reason for this move is label aesthetics, improvements in bottle drying and label applicator technology have also made self adhesive labelling a more viable proposition.

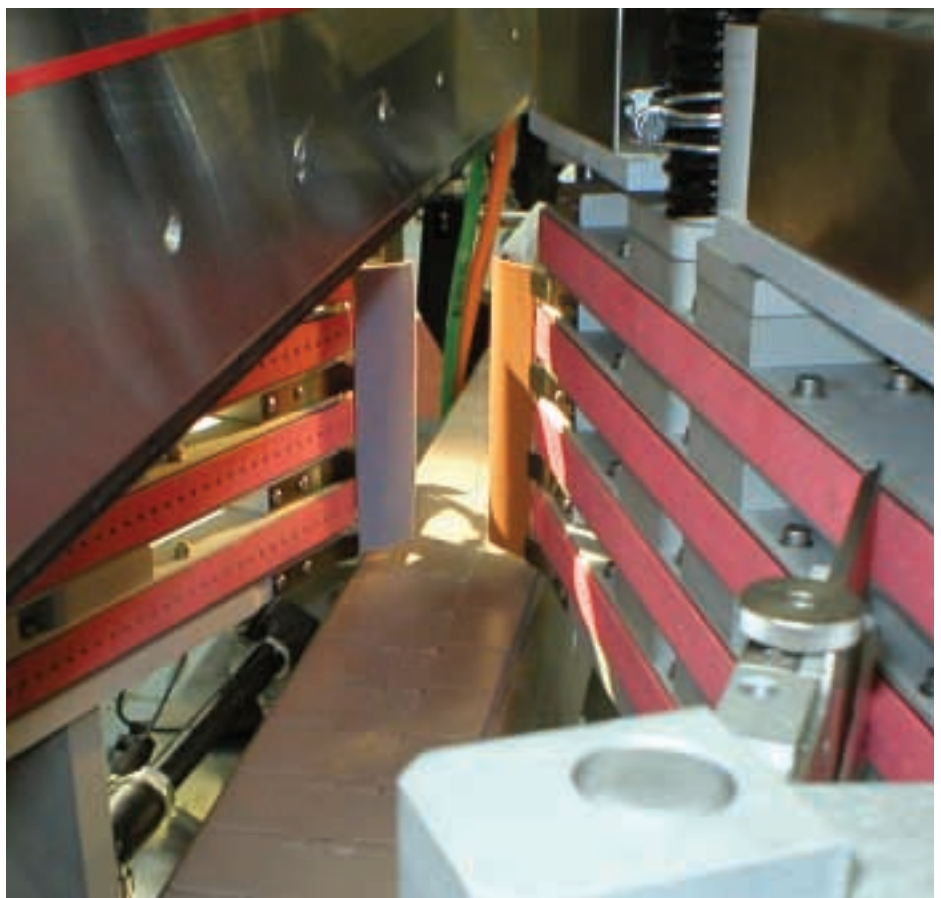
Historically, a 'wet' production environment prevented breweries from applying pressure sensitive labels on-line. "To put a pressure sensitive label on a bottle, the bottle has to be absolutely dry and in a brewery environment it isn't, so bottlers had to buy in bottles that were labelled by the glass manufacturer," explains Mark Heath. "Significant developments in bottle drying technology have now made it possible for bottlers to apply pressure sensitive labels on-line."

In addition, label applicators have become quicker. "One of the biggest disadvantages of pressure sensitive labelling versus wet glue labelling has always been speed," points out Mr Heath. "A wet glue labeller can produce 70,000 bottles an hour. Pressure sensitive labels are on a web, which makes them difficult to run at high speeds. However, web speeds have increased considerably in recent years and some applicators can now achieve in excess of 115 metres a minute compared with, say, 30 metres a minute three or four years ago."

A flexible labelling system introduced by Krones has also eliminated some of the risk associated with investing in pressure sensitive technology. The company's Modul concept allows wet glue labelling and pressure sensitive labelling to be combined using a plug-and-play design that allows the APS 2 applicators for pressure sensitive labelling and the wet glue

Thin is in for decorative labelling

A SHIFT FROM WET GLUE TO PRESSURE SENSITIVE IN THE BREWING INDUSTRY AND THE ADVENT OF LINERLESS LABEL APPLICATORS ARE AMONG KEY DEVELOPMENTS IN DECORATIVE LABELLING.



High speed: Harland Pulsar system applies ultra-thin labels at elevated speeds

stations to be easily interchanged. Users even have the option of using the pressure sensitive and wet glue stations simultaneously. A premium product could, for example, have a no-label look for body and back, plus a classic, wet glued neck ring.

Elsewhere in other industries, where the use of pressure sensitive labels is well established, manufacturers are looking to drive down costs by using thinner label materials.

However, downgauged materials present a number of problems, as Des Dunleavy, marketing manager with Harland Machine Systems,

explains. "You get a lot of static with thinner materials, so when they are dispensed off the beak, they are difficult to control."

Harland has developed its Pulsar continuous motion label applicator specifically for dealing with ultra-thin labels at high speeds. The label supply reel unwinds at a constant speed, reducing the effects of inertia within the system to the point where only a single dancing arm is required at the unwind, and none at all on the backing web rewind. Labels are taken up one at a time by an intermediate transfer belt which changes the on-reel pitch to product pitch.

DECORATIVE LABELLING

While label web unwind speed and delivery speed to the transfer belt is controlled to match labels to products in numerical terms, the transfer belt itself runs at the higher linear speed of the product feed. In this way, as labels are taken from the web, the normal 3mm interval between them is automatically increased and adjusted to the product pitch.

Once the label is picked up on the transfer belt, its position is sensed and adjusted momentarily up or down, to correct any deviation before product feed speed is resumed for application.

Because the label is controlled on the transfer unit, it no longer has to jump across an air gap while being accelerated for application, the point at which low gauge materials tend to misbehave.

Sessions of York says it overcomes dispensing problems with thinner materials by upgrading braking tension on the web, using powered unwind units to even out reel weight throughout a run, and using a glassine backing to inhibit web breakage. The company's machine division manager, Peter Haw, notes that thinner labels – in particular transparent labels either on opaque or transparent backing webs – also pose problems for scanning the label, both on the machine to arrest the web and after application to detect label presence on the product.

To address these issues, Sessions uses capacitance scanners, which detect the change in web thickness as opposed to visually scanning for end of label colour change. "This enables us to detect the label gap even when it can't be seen," explains Peter Haw. "To spot label presence when the label is clear we can coat it with an invisible ultra violet varnish and use UV scanners to detect it."

Peter Goff, UK sales manager with Herma UK, says the key to dispensing thin film labels is consistent, constant tension and sensors which are capable of detecting those materials. "The Herma applicator has always had a very straight web pass, so there's virtually nothing between where you unroll the labels and dispense them."

In addition, Herma's 400 range of applicators features a patented inductive label sensor, which measures the difference in thickness between a label and its carrier. Herma says this makes the unit ideal for sensing clear labels on a clear carrier – even at high speeds.

In common with some other labelling systems manufacturers, Sessions of York has gone one step further and pioneered a system which is



Handling clear labels: Herma 400 Series machines use an inductive label sensor

capable of applying linerless labels in both top and side mounted modes.

Perforated labels in web format are driven across a pair of twin conveyors. When the perforated joint reaches the point of the interface between the two conveyors, the first conveyor stops and the second accelerates, to break the perforation. The detached label is then transported to the end of the conveyor and waits there. When the product passes by, the conveyor starts and the label is applied.

Linerfree system

Similarly, Xact (a division of the Lawtons Group) has joined forces with Danish equipment manufacturer HM Labelling to bring the Linerfree system to the UK market. The first installation of the system was three years ago in Denmark, when Arla Foods installed one of the systems for carton and pallet labelling, and has since seen savings of 30 per cent on labelling costs – including indirect savings such as fewer stops, lower stock costs, faster label changes and minimal maintenance.

There's no denying that the linerless label proposition sounds attractive – particularly to the ecologically-minded manufacturer. However, as Sessions' Peter Haw concedes, linerless labels do have their limitations: "You are limited with shapes, in that you have to have sufficient common area between the shapes of labels to attach them together and keep them together. For example, a diamond shape would be difficult because you wouldn't have enough intrinsic strength in the web. So the majority are ovals, rectangles and squares."

A system that potentially offers greater flexibility is the Lightspeed LaserSoft, which is in development at Harland. By bringing together three technologies – digital printing, die-cutting and continuous motion application – the system

gives the end-user complete control over the labelling operation. "Users will be able to change the design of labels when they want to, include on their labels exactly what they want to, print on demand and die cut to the profile they want. It really lends itself to big users of pressure sensitive labels who run dedicated products, because the actual capital cost of the unit will be expensive," says the company.

At the heart of the concept is a laser die cutter which enables the system to cut the profile of the label while it is on the web, in contrast to more conventional systems that require die cutting to be undertaken on press. After die cutting, the line strips off the remaining matrix, accelerates the cut labels to product pitch and applies them using the Pulsar system.

Another current focus area for Harland is the integration of vision systems into the labelling operation. "We're seeing increasing demand from manufacturers of toiletries and cosmetics for systems that incorporate vision technology, because the look of their products is so key to customers. A lot of supermarkets will reject goods with poorly applied labels, so producers can't afford to get it wrong."

Harland can deliver systems which combine label application with on-line vision inspection, checking that batch codes are correct and that labels are applied accurately. It has also launched a bottle turning device which uses vision to check that bottles are correctly orientated before labels are applied.

For further information

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For full details of all PPMA members able to supply decorative labelling machinery, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit www.ppma.co.uk

Adding up the true cost of lost production

Companies using pressure sensitive labelling machines could be in for a shock if they calculated the complete cost of lost production as a result of both poor machine utilisation and reduced efficiency from unsuitable equipment and materials.

That's the conclusion of machinery and materials supplier Pago, which has developed a computer programme called Pago IQ to help analyse cost and performance issues with labels and labelling machinery.

"In one case involving a toiletry product and a rotary machine we calculated that a more appropriate label with better quality materials could have saved downtime costing around £300,000 in a year," explains a spokesman for the company.

The programme works from a series of inputs including basic data on the product being manufactured such as filling speeds, factory gate price, all value added factors including the cost of the packaging, actual post-labelling output and machine downtime.

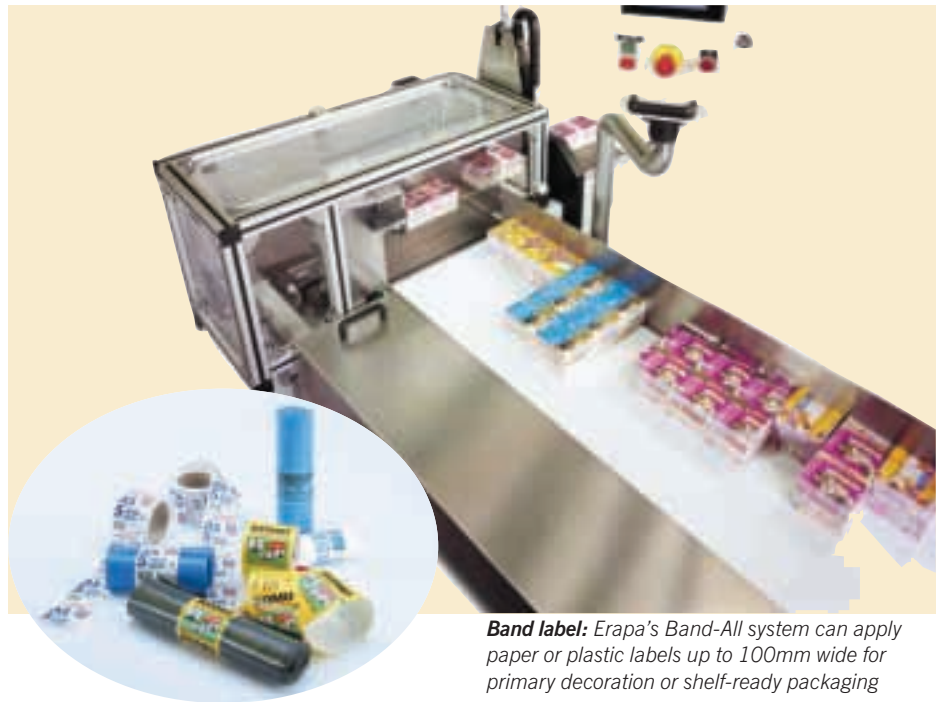
"That downtime can be caused by any number of things, but it gives a starting point to identify the line efficiency, versus the utilisation factor," explains Pago.

"If someone has a complex business in which there are a lot of changeovers, then their utilisation will be low because of the number of changes that they make. But they may be able to run very efficiently when they are running."

In Pago's experience, low utilisation as a result of high complexity means that lines rarely reach their theoretical efficiency levels anyway.

"In that sense it's a guide, helping people understand the basis of making decisions on what machines to purchase because obviously, if you've got a highly fragmented business you want machines that are extremely quick to set up – with minimum changeover time between sizes – and you want them to be capable of reaching maximum speed very quickly."

Nevertheless there is an inescapable link between machines and materials, points out Pago. A simple web threading path can, for example, eliminate risk of edge nicks in the reel and the possible consequence of web breaks.



Band label: Erapa's Band-All system can apply paper or plastic labels up to 100mm wide for primary decoration or shelf-ready packaging

"Very often what prevents the machine achieving its efficiency is that the materials are not specified correctly. But you can't solve a problem by putting expensive labels through an incorrectly specified machine, particularly if the often cheaper machine can't be set up quickly."

The Pago IQ programme also includes a complete checklist for operators, helping them identify some 54 different material-related problems although, as the company has found, just 15 label quality issues account for some 80 per cent of problems experienced with labelling machines.

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ERAPA (UK)

Banding system saves material

The range of Band-All banding equipment from Erapa can apply labels up to 100mm wide at speeds up to 35 a minute or, used with plain paper, create shelf-ready packaging or band products such as rolls of plastic sacks.

The range extends from a desktop model to fully automatic lines, with models available to apply bands to ready meals trays, reducing materials cost compared with board sleeves.

Bespoke arch sizes are offered to the user's specification and machines can be manufactured in stainless steel if required.

Paper or polypropylene film bands can be printed or plain and printed on line with variable information such as bar codes and best before dates.

For shelf-ready packaging, the desired number of items are banded together before case-packing and then removed as a single item at the point of sale.

Erapa points out that once the product is on the shelf, the shelf-stacker only needs to tear the band off, so avoiding use of knives or scissors.

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PREMIER LABELLERS

Five applicators for pharma

Premier Labellers has supplied Sauflon Pharmaceuticals with three Premier 200 pressure sensitive labelling machines while a further two units are now on order as well.

The machines are able to apply front, back and wraparound labels to most shapes of container and are fully adjustable, with a touch-screen control in which 500 label formats can be stored for immediate recall.

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Chosen for pharmaceuticals: Premier 200 pressure sensitive labelling machine

PAGO UK

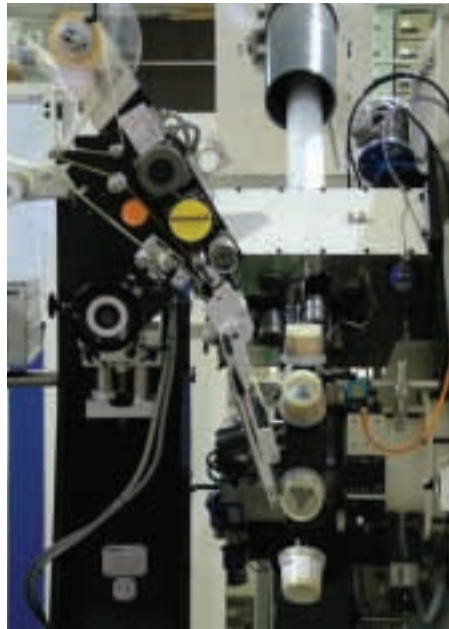
Wraparound or patch pot labelling

A rotary labelling system that allows conical and cylindrical pots to be decorated with full wraparound or patch labels at speeds up to 120 pots a minute, and then be restacked ready for transfer to a filling line has been developed by Pago and Dutch manufacturer Offset Machines.

At the heart of the system is an eight station wheel that indexes vertically to be fed with pots, rotates them on variable speed mandrels in front of the labelling head – or heads – and then brings them round to the restacker. Here, after optional check-counting, the pot stacks arrive on a buffer table for collection by the operator.

This indexing wheel – based on Offset's established pot printing equipment – is in fact capable of speeds up to 450 pots a minute, the limitation being label dispense speed and label length. Containers of 50-180mm diameter and a maximum height of 200mm can be handled.

The PagoMat labelling head has a heavy duty support within the pot handling machine, allowing it to be positioned to suit the product, and is



Pot labelling: Rotary system developed by Pago and Offset Machines

microprocessor controlled with memory for details of 99 products.

Offset's pot handling system can easily and quickly be set up for different pot dimensions. Feeder height, feeding screws, guiding bars and restacker belts are said to be capable of being set within minutes.

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TURPINS PACKAGING SYSTEMS

Sleeve labelling on a budget

Turpins has announced the latest version of the Sleevevit SleeveMaster SL sleeve labelling machine which is now equipped with servo drive and PLC control.

Aimed at lower volume users, the machine is able to apply sleeves to all types of products up to 100mm diameter – both round and non-round – using low cost change parts and can also register the sleeve to the container. Sleeves from 50 to 300mm in length can be applied.

Mounted astride a conveyor and housed in an integrated guarded enclosure, the SleeveMaster SL machine is said to provide all the necessary elements of product separation, timing, sleeve application and line control in a compact package.

A full range of preheat and final shrink-tunnels using recirculated hot air is available together with the Shrinkmaster 2000 unit which operates using steam.

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