

# Five point rating for the Retail-ready route

ACCELERATING INTEREST IN RETAIL-READY PACKAGING IS BEING ACCOMPANIED BY A FRESH SET OF IGD GUIDELINES TO HELP ASSESS THE POTENTIAL EFFECTIVENESS.

From humble beginnings, RRP – retail ready packaging – has grown to be an established part of the multiples and brand owners' assessment of both new and existing products. As James Tupper learning manager at the Institute of Grocery Distribution's Efficient Consumer Response (ECR) unit says: "RRP is here to stay.

"The challenge is to ensure that it is delivered in such a way that is fit for purpose," he tells *Machinery Update*. "The remit of ECR UK here is to provide guidance that delivers operational and environmentally efficient packaging which supports product availability and ease of shopping."

ECR UK has not been idle in this respect over recent months with a new version of the RRP Assessment Tool published in March this year. This is a free tool to help assess the potential effectiveness of any proposed RRP solutions against current and benchmark packaging.

For use in conjunction with ECR's *Retail Ready Packaging Functional Guidelines*, the RRP Assessment Tool features a simple-to-use Excel workbook format to provide comparative ratings against five key consumer and in-store operational criteria:

- How easy is the packaging to shop?
- How easy is the packaging to identify in the back of store?
- Can the packaging be easily opened?
- Can the packaging be easily merchandised to shelf?
- How easy is it to dispose of and recycle the packaging?

The IGD believes the output enables companies to understand the relative effectiveness of different packaging solutions, and highlight where further development work could deliver extra benefits.

In June, a new working group was set up by ECR to examine the environmental impact of RRP in the supply chain. The initial focus of the group will be to raise awareness in the industry



**Ready for display:** Clifford Packaging's RRP solution for wine at Tesco allows existing manual and automatic case-packing methods to be retained

and among the public about the high standards of recycling of corrugated board used in the retail industry.

"RRP already delivers benefits to the consumer, supplier, and retailer but we need to ensure that these are delivered in a format that reduces environmental impact," explains Brian Gibbs, RRP development manager at Asda and co-chair of the working group. "The core objective of the group is to integrate environmental thinking seamlessly into the overall ECR UK retail packaging strategy, and to share best practice across the industry."

The group represents the entire RRP industry as membership is drawn from the corrugated packaging industry through to retailers. The environmental sub-group plans to issue a project scope and set of objectives later this autumn, and is planning to publish an output document by late 2007.

"This document will focus on environmental best practice and will be used in conjunction with previously issued ECR UK guidelines on RRP," says Brian Gibbs.

Meanwhile, a brand new RRP format for wine that Clifford Packaging hopes will become a wine box industry standard is just going into production and was due to appear on the shelves this summer.

The brief to Clifford Packaging from Tesco was to create an RRP solution that could go directly on the shelf as well as gondola ends, to produce a multi-functional product to reduce the number of free-issue carriers currently given away, and to improve the presentation of the wine in-store. The '1066' design for the drop-in wine box market is said to meet all RRP criteria and includes an integral handle for easy in-store handling which also improves customers' shopping experience.

"Our design has many benefits including approval by leading UK retailers, the latest perforation technology, and it fits on all existing

## RETAIL READY PACKAGING

packing lines, either hand or automated," says Rowan Tinn, innovations development manager at Clifford Packaging.

"Recent transit trials with Tesco proved successful for one of its South African Finest range, in conjunction with a wine producer in Cape Town," he adds. The design is available in wine producing countries under licence.

DS Smith Packaging is encouraging customers to take a different approach to RRP and asking them to take a fresh look when designing new formats. The company says developing new RRP is an ideal opportunity to drive some cost out of the supply chain and reduce the carbon footprint.

"The first initiative we took was to create a supermarket," explains

director of DS Smith Terry Ousley. "The Impact Centre provides customers with an opportunity to see how their current and new packs work in a simulated retail environment."

Before introducing its new 1-litre Shape flavoured spring water into the market, Danone Waters consulted major retailers to understand their requirements for a retail ready pack before setting up a day's workshop with designers at DS Smith Packaging's Devizes plant.

During this workshop, the Danone Waters team was able to arrive at a design which both satisfied the retailers' brief and could be run on an existing Cermex wraparound machine at the Danone bottling plant at Blaen Twyni – an essential element of the brief.

Ease of handling throughout the store has been paramount in the design of the 12 x 1-litre bottle pack. Grab handles each side of the pack allow easy lifting from the roll cages, while to convert from a transit wrap to a display outer a removable panel is torn off with a single movement.

To achieve a clean cut opening feature able to withstand transit conditions without puncturing, yet easy to open by the store staff, DS Smith's design team introduced a series of diagonal perforations to reveal a display outer which can be easily loaded onto the shelf, eliminating the decanting necessary with conventional cases. The sloping side walls provide additional bill boarding to promote the brand,

while the remaining front panel continues the label design of the clear PET bottles.

Cheddar brand Pilgrims Choice has developed a new retail ready pack which is said to be unique to the dairy sector and likely to be taken up widely by other types of product. The retail display pack is designed and manufactured by



**Existing machinery used:** Shape water RRP can run on an existing wraparound case packer

DS Smith Packaging at Launceston.

Design director at Launceston Roger Wonnacott says: "The tearing mechanism is quite complex in terms of manufacturing, but avoids one of the pitfalls often associated with perforations. Because the new pack restricts the perforations to the top of the box, it has totally eliminated the problem of unsightly tears on the front and side of the pack which worries some retailers."

### Series of seminars

Smurfit Kappa is offering a series of seminars to encourage companies to include different disciplines, from purchasing, marketing and supply chain managers to packaging technologists in the development of RRP solutions.

Eye Opener is an introduction to RRP, while Shelf Assured is all about converting shelf ready into retail ready packaging – ready for the broader retailing operation rather than just the shelf – and finally, the company offers Retail Ready in One Day. This is a fast-track development process using the facilities and resources of Smurfit Kappa.

It was through attending a Retail Ready in One Day session that the Black Sheep brewery

was able to formulate an RRP solution acclaimed by both Asda and Tesco as "Best in its Class."

Smurfit explains that initially, manufacturers and suppliers were urged to convert to shelf ready designs that aided the transit-to-shelf process to improve availability, but RRP has now moved into a new realm where brand image is also a critical consideration.

Brand owners such as Black Sheep are taking into account a number of practical and aesthetic considerations when formulating RRP designs.

Ken Allen, Black Sheep Brewery national sales manager, believes that RRP is an essential sales tool to help create differentiation.

"As a premium bottled ale brewer we sell into a niche market, but it is a market where the competition is increasing," he says. "The RRP



**Sales tool:** RRP for Black Sheep lifts product differentiation

design we created with Smurfit Kappa has helped us to achieve shelf stand out from our competition by combining high impact graphics with visual appeal and practical application."

CRP Print & Packaging believes the trend for RRP means that as well as having to be structurally functional and economic, packs must be consumer friendly in appearance and therefore print plays a crucial role in its development. "At CRP we have both litho and pre-print available for our customers to choose from," says Dev Brahmachari, sales and marketing director.

"The developments in print mean that RRP can now be a cost effective way to add value by facilitating quick restocking of shelves and increasing visibility, thereby contributing to an increase in sales volumes in stores," he adds.

Recent projects include cases for Thorntons, used directly on shelf, especially at 'pester points' in store, as well as by the counter, and trays for Cadbury used in convenience stores on shelves or on counters. ■

# Retail-ready can use existing Machinery options

THERE IS A BROAD CHOICE OF MACHINERY TO PRODUCE RRPs, INCLUDING CONVENTIONAL CASE-PACKERS AND, IN PARTICULAR, MORE FLEXIBLE EQUIPMENT BASED ON ROBOTICS.

Whatever it's called – transit-display packaging, shelf-ready packaging, or the latest buzz term retail-ready packaging (RRP) – the concept of putting products in a corrugated transit pack that can go straight on shelf in a store with the minimum of fuss is well over 30 years old.

What has changed is the advent of more flexible machinery – particularly based on robotics – able to cope with more than one type of pack style and to be changed over quickly between different pack styles. Even so, there is a broad choice of machinery to produce RRPs, which is immediately narrowed once a decision is made about the style of pack that must be produced.

Typically the choices of case and tray based RRP will be:

- Shrinkwrapped trays.
- High wall trays.
- Two piece packs.
- Cases with perforations or tear tape.
- Returnable plastic trays.

Shrinkwrapped trays were the original RRP but while in the past the manufacturer could decide the size of the tray, based on the minimum number of products it wanted to sell at a time or the best fit for a pallet, the major retailers now want the size of the tray to match the size of their shelves and the number of facing products they want to display on that shelf.

So manufacturers are now being required to produce some unusual shapes of shrinkwrapped tray, often with fewer products per tray, which may require new tray-packing equipment.

The two most common machines for producing shrinkwrapped packs are a wraparound tray packer or a separate tray erector and tray loader. Wraparound tray packers lend themselves to producing the deep but narrow packs that major retailers are now requesting and many designs of wraparound machine are also able to produce wraparound cases as well as trays, allowing different pack styles to be pro-

duced, if necessary, for different markets or retailers.

In addition, some designs of wraparound tray packer give the user the flexibility to produce both shrinkwrapped trays and unsupported shrinkwrapped packs on the same machine for those retailers who are still more concerned about packaging waste.

For example, ten Bradman Lake Europack shrink/tray wrappers capable of different pack styles started work last year in a £1 million plus makeover of end-of-line packaging at Twinings' tea bag plant on Tyneside.

Each machine will collate cartons and produce tight film shrinkwraps or erect minimum depth trays, then load and shrinkwrap them in single or twin face packs at speeds up to 30 a minute. There are eight possible carton collations ranging from single face 1 x 4 to 2 x 6 twin-facing shelf ready formats. Changeovers, including changeparts for the tray forming tool, are said to take just 15 minutes.

Limited floor space at Twinings' plant led to a further innovation by Europack. Three different

operations are combined to give the smallest footprint: carton collation, tray forming and shrink-wrapping all take place in one unit.

## Loading cases and plastic trays

Generally, there now appears to be increasing interest in systems that use a separate tray erector and a tray robot or pick-and-place tray loader, because the same product loading machine can be used to fill not only trays of different dimensions but also returnable plastic trays or top load cases.

For example, the new Apsol RCP pick-and-place case-packing robot, available in the UK from Integrapak, is suitable for a variety of shelf ready packaging including display boxes, trays, and open top cases, in single or multiple layers.

The RCP can be supplied with various types of product infeed systems to suit products such as bottles, ready meals, bags, pouches and flow-wraps, and uses quick-change format parts. It can also operate with either a separate or monobloc case erection system.

High wall trays are generally used for prod-



**Three operations in one:** Europack shrink/tray wrappers have been installed at Twinings, Tyneside



**Wraparound or two-piece display:** Cama FW 749 Combi case packer can produce both styles

ucts such as bags or cartons that need the support of the high wall to give the pack adequate compression strength for stacking. However, the high wall can sometimes be a problem on the supermarket shelf because it can restrict the view of the product, especially if the tray is very deep.

As with shrinkwrapped trays, the two main types of machine for producing high wall trays are wraparound tray packers and separate tray erectors and tray loaders.

**Two piece packs**

Two piece packs are particularly favoured by the major retailers and marketing departments because the base tray can be shaped and printed to give the products the optimum shelf appeal and product branding, while the lid can provide the necessary protection and crush resistance to ensure that the products arrive at the store in good condition.

There are three main methods of producing two piece packs. The first method is with a machine designed specifically for making two piece packs, which incorporates separate magazines for the base tray and lid. The second method is to form the base tray in a wraparound tray packer and then apply a lid or top tray to this pack in a separate machine. The third method uses a wraparound tray packer with an extra lidding station which can be used when producing two-piece packs or turned off when producing packs without lids.



**Choice of pack style:** MAF Combimatic shown creating a wraparound solution using a perforated blank

For example, Italian manufacturer Cama has developed the FW 749 Combi case-packer that can produce both wraparound cases and display packs, through the combination of a wraparound case-packer operating at 30 cases a minute with a system that can make two-part display boxes, at speeds up to 20 a minute.

Also from Cama is the Monobloc case-packing machine which operates at speeds up to 50 display boxes a minute, combining different modules for product loading, forming and closing/lidding. Access can be gained to each without stopping the others by the use of small accumulations between the different work stations. Subject to the working area, manipulation speed and required payload the Cama two or three-axis robot can be integrated into the machine.

Full wraparound cases, high sided wrap-

around trays and two-part cases with a lid can be produced by the Combimatic 700, developed by German manufacturer MAF to allow a choice of transit packs to be produced on a single, compact machine.

Recently upgraded to full servo operation, the machine is able to handle bottles, cartons and similar conveyor-collatable primary packs at speeds up to 25 cases or trays a minute, depending on size and style. Changeover between each size or pack style takes less than ten minutes, according to MAF's UK and Eire agent Partners in Packaging.

The Combimatic 700 consists of a wrap-around tray and case-packing station and a lidding station combined within a single machine measuring 4 metres long by 1.2 metres wide.

In its first section, the machine employs conventional collation and wraparound case or tray packing technology, with a choice of either custom built or standard options based on existing MAF case-packing equipment.

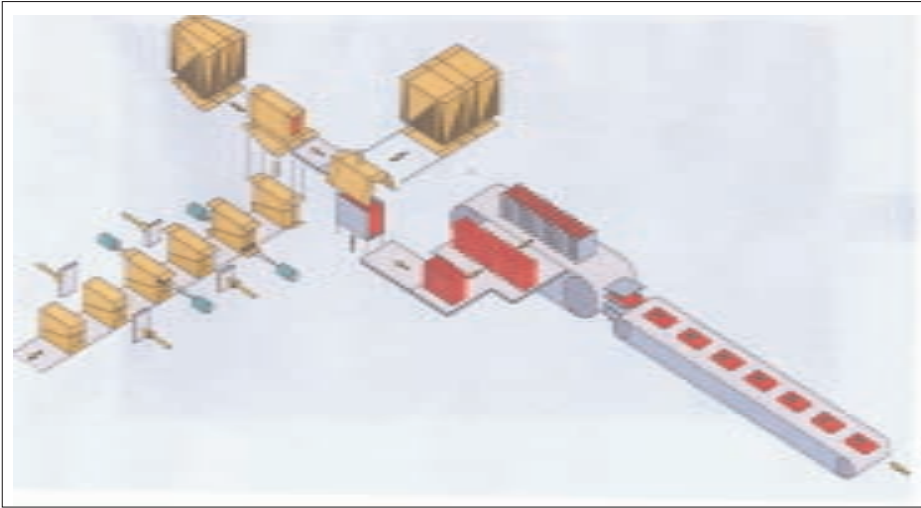
The wraparound can be complete, for a totally

enclosed case, or partial, providing a tray with high sides for full product visibility from the front for immediate on-shelf display. These high sided trays then pass immediately to the lidding station where a blank is wrapped tightly round the top and secured by hot-melt adhesive.

For food and dairy industry applications, the Combimatic is available in stainless steel execution and with electrical components sealed to IP65 for washdown.

German manufacturer Paal is also building machinery to produce two piece, full wrap-around cases or wraparound trays on the same machine.

UK and Ireland representative CC Automation reports that recent installations have included margarine, shampoo and other hair care products, as well as petfood and detergents,



**Handling pouches:** IWS uses this system for its Invopac two-piece case-packing machine

using wraparound, two-piece cases and also RSC cases with a tear-off lid. Further installations include machinery to handle cartons and flexible packs.

Some designs of two-piece packs call for the lid to be tucked into the base tray rather than being wrapped around the base tray. This type of pack can usually only be produced on a dedicated two piece pack machine, but an alternative is to pack the products upside-down into the lid and then form the base around the lid in a separate lid applicator.

A further alternative, in which a lidding station can be retrofitted to existing tray-packing machinery to produce a two-piece pack was demonstrated at May's Total exhibition for the first time by Smurfit Kappa Machine Systems.

Operating with flat blanks fed from a low level magazine, the system can work with both top-load tray packing equipment and also with wraparound case-packers when used to create trays, providing a wraparound lid secured by a combination of adhesive and tuck-in sections.

Shown working with a typical high-sided, low-front display tray, the machine first folds and tucks the lidding board into the tray at front and back, behind the facing strips, then folds and glues the lid sides to small pre-perforated areas on the sides of the tray.

In this way, with the lidding board tucked in and extending the full height of the tray, stacking strength is improved and there are no glue or tear lines on the facings.

Equally, as the tray is opened the small perforated sections at the side come away with the lid, leaving clean edged apertures that in most cases would, anyway, be hidden by adjacent trays.

The new lidding station operates on demand, with no control tie-in to the host machine, allow-

ing it to be readily employed with tray-packers of most makes.

Swiss manufacturer International Wrapping System (IWS) has developed a pouch infeed system for its Invopac intermittent two-piece case packer, allowing the machine to handle stand-up pouches as well as four-side-seal pouches and similar flexible packs that cannot easily be marshalled into the correct collation in the same way as cans, jars or bottles. Speed is up to 36 cases a minute and full wraparound cases can also be produced, explains UK representative F Jahn & Co.

The IWS system accepts the filled pouches arriving flat in single or twin file and brings them into an upright position in the required collation, such as 12 x 1 or 12 x 2 per case. The complete collation is then moved into the packaging machine where the case blank is wrapped around and glued.

### Wrapped around the base

In a tray and lid display case application the lid is first wrapped around the base of the pouches, held in guides, then the base blank is applied separately and wrapped around the lid.

The IWS machines are built on a modular basis and can be equipped with different pre-grouping systems to handle products such as pouches, chocolate bars, biscuits, yoghurt cups and so forth. F Jahn says the machines are particularly flexible, allowing a number of different formats in different case sizes to be handled on one machine and a changeover time of 5-30 minutes.

Case and display tray packers from J+P Dresden – represented by Propack Automation – are available to load flexible packs either standing up or laying flat, as well as more rigid

## Cat food line provides choice of RRP and multipacks

Butcher's Pet Care in Northampton has installed a purpose built line from German manufacturer Oli – represented in the UK by Allied Pharma Machinery – to create two sizes of retail ready packs for single serve cat food pots, measuring 20mm high and 110mm in diameter.

Able to handle up to 80 pots a minute the system will produce 6 x 1 multipacks – of two mixed flavours if required – loading four of these onto a shelf-ready tray, as well as a 12 x 1 wraparound case with tear-off lid. Trays are subsequently shrinkwrapped on a Sotemapack machine and palletised on an Oli-Pal machine.

"The line has proved a great success, given the level of performance we need," says Lawrence Dawson, project manager at Butcher's. "We particularly like the good accessibility of the machines, their compact designs and the amazingly quiet operation of the plant."

In operation, pots arrive at the line lying flat on two parallel conveyors and are fed alternatively from each into an Oli vertical race track

products such as cartons and household goods.

The J+P Model KVTF forms the trays from flat blanks and presents them for loading with product arriving lying flat on the machine infeed which, points out Propack, has the advantage that flexible packs can be equalised, lane-divided and marshalled, before being loaded into the trays.

Erected trays are presented to the product loading station standing almost vertically, open side facing towards the incoming products. As each product layer is grouped and transferred, the tray indexes downwards and a loading tongue enters the tray, above the completed layer. Gentle pressure from the loading tongue keeps completed layers slightly compacted, ensuring that space is available to load the remaining layers, until the tray is filled. Running speeds are generally up to 120 items a minute but can be higher, depending on the format in the tray.

The KVTF display packer can also be equipped with a lidding station where the lids are formed from flat blanks, sealed with hot melt adhesive, and applied to the filled trays.



**Shelf-ready tray:** The trays of 12 primary packs use push-in lugs to hold the product upright when part full

collator which turns them up on edge while allowing a two flavour mix to be assembled if required for the six-packs. The complete collation is then pushed across into an Oli wrap-around case-packer, which uses cartonboard for the six packs and corrugated for the 12 packs.

Six packs are then tipped backwards 90 degrees, so that the pots inside are penny-stacked for presentation – and on view through the open corner of the pack. They are then placed in 30mm high corrugated trays in a 4 x 6 format on an Oli wraparound tray loader and shrinkwrapped.

When 12 packs are being produced, and pots are on edge, the tray loader is by-passed and the wraparound case passes into a custom-designed station where perforated lugs in the base of the case are pushed in pneumatically, up between every third pot.

These prevent the pots falling over as product is removed from the shelf-ready tray, which is created in store by tearing off the top section of the wraparound case.

All completed display packs then pass to the Oli-Pal palletiser, which is equipped with a layer sheet inserting mechanism.



## Banding as handles

BandAll band applicators supplied by Erapa UK can be used to apply plain paper or plastic bands up to 100mm wide to secure primary packs within display trays and provide a handle for shelf-loading. Once the tray is in place on shelf or in a freezer compartment, the band can be easily removed without knives or scissors.

Other types of top closure are also available and the systems have tool-free changeover.

However French machine manufacturer Cermex has come up with a new variant on the two-piece pack theme, using two separate corrugated board blanks.

The F550 Multi-packaging erector is designed to handle full and half RSC cases, but also assembles a low tray and a half case, which

can then be detached so that products can be slid directly onto the supermarket shelf. Speed is up to 30 cases a minute.

Side-load case packers can also be equipped to provide a shelf ready pack as German manufacturer Focke & Co has demonstrated, with a machine delivered to a manufacturer of paper tissues. The machine loads wrapped packs of tissues into a pre-glued standard half open case

blank with a pre-cut aperture – for consumer access – and inserts a U-formed lid, one side of which is deep enough to blank off the aperture during transit. Conventional cases can be handled as well.



**Side-loaded case:** Tissue packs are loaded into this two-piece case on a Focke machine

## Cases with perforations or tear tape

However in many instances it is unnecessary to purchase new equipment to produce retail ready packs. Both conventional top load or end load cases can be converted into shelf-ready packs if the cases are die cut with perforations or equipped with tear strips. This means that both top load and end load case-packing machines can be used to produce retail-ready packs as well as conventional cases.

One of the problems can, of course, be retailer resistance to ragged edges caused by tear tape, although case design can reduce the effect considerably, as Fords Packaging Systems, UK representative of German manufacturer Meurer, demonstrated at the Total exhibition in May.

The wraparound case-packer employed was shown handling food trays, loading them horizontally for transit to retain maximum stacking strength. For display the case is turned 90deg to place the trays on edge and the tray section created via a tear tape.

However, case construction is such that the cut edge of the blank is maintained at the side of the tray and at its front facing panel, giving a clean finish and avoiding the ragged edges of a tape-cut, except at the very back which can remain hidden by product.



**Tray loading:** CPS machine handles fresh produce, meat and ready meals

Indeed cases incorporating tear strips can be employed to produce RRP's using simple case erectors and case tapers, provided the tape wipe up is less than the depth of the on-shelf display tray.

Most case tapers have a wipe-up height of 50-60mm, making them unsuitable for sealing cases that will be made into RRP's, because forming the display using the tear tape will remove the adhesive tape that holds the bottom of the pack together.

However, the latest Loveshaw LD 3SB side-belt case taper uses a new tape cartridge which produces a wipe up height of as little as 25mm, front and rear, avoiding the problem of over-taping the perforation or tear tape.

Loveshaw makes the point that substantial savings can be made with a tear-off lid box compared with glued shelf-ready packs and that its LD3SB machine is able to deal with cases or cartons as narrow as 85mm. The new 25mm tape cartridge can also be retrofitted to many existing Little David case sealers.

Endoline also is now able to offer tape heads with a wipe up of 30mm front and back, but can also modify the wipe-up on the trailing end of the case to bring it down to 20mm. Sales have increased significantly over the last year says the company, which sees the trend continuing.

### Returnable plastic trays

With the renewed enthusiasm for corrugated board shelf-ready packs it seems almost impolite to recall that only a couple of years ago the major retailers were calling for as many products as possible to be delivered in returnable plastic trays. Even so, returnable plastic trays remain the preferred RRP for many types of fruit and vegetables as well as bread.

Inevitably, plastic trays need to be loaded from the top using either drop packing techniques or pick-and-place and this makes plastic trays quite compatible with other packages that need to be loaded from the top, like high wall trays and conventional cases.

For example, Dutch manufacturer CPS Case Packing Systems, represented in the UK by Multipond, has developed a new case-packer to pack trays of produce, meat or ready meals in corrugated cases or crates ready for on-shelf display.

### Variety of patterns

The machine is able to rotate individual trays, which provides the opportunity for a wide variety of packing patterns and uses a pick-up head that places a complete layer of product into the crate, case or tray at a time. The CLP version handles rigid and semi-rigid products while the CL64 is for flexible packs. Speed is up to 120 primary packs and 20 cases or trays a minute.

Finally, Krones has launched a new X-ray inspection system to run a contents check on completed cases or trays at speeds up to 75 a minute.

The Checkmat VKX inspects open or closed packs made of board or plastic, verifying that the correct number of containers is present and, in the case of PET bottles, makes a rough check on the fill levels. A fill check can also be made through the width of four returnable glass containers or six non-returnables.

Inspection is performed through the side of the pack at right angles to the conveyor's direction of travel and the machine can be optionally equipped also to detect open flaps, pack colours and pack length. Up to six camera systems can be included to check logos, labels, barcodes, and overprinted dates. ■

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For full details of all PPMA members able to supply case and tray packing equipment, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit [www.ppma.co.uk](http://www.ppma.co.uk)