

COSMETICS AND TOILETRIES

REPORT

FROM FORMULATION TO FINAL PACKAGING, THE PERSONAL CARE SECTOR PRESENTS CHALLENGES TO MACHINERY MAKERS AND, AS ANDREW SMITH REPORTS, THE GAUNTLET HAS BEEN TAKEN UP.

Cosmetics and toiletries production represents a sizeable slice of UK manufacturing industry, with annual sales climbing above the £5 billion mark last year.

Like [pharmaceuticals](#), cosmetics manufacture and packing covers a whole range of product formats, from liquids and gels through to emulsions and solids, and is generally carried out in hygienic conditions to avoid microbial contamination. Unlike pharmaceuticals, the packaging materials also represent an unprecedented spectrum of quality levels, from cheap and cheerful own brands to foil embossed, over-wrapped cartons with hologram anti-counterfeit measures.

Such wide diversity in the nature of the products and their packaging makes this a challenging prospect for machinery makers, often involving custom solutions and tooling.

FORMULATION AND QA

Software systems put emphasis on traceability

Cosmetics and toiletries manufacturing typically involves dealing with a sizeable number of differing formulae which must be accurately recorded and be held readily available for production.

Mettler Toledo has a number of software solutions for this task and its latest system for the ID7 weighing terminal places particular emphasis on "traceability, certainty and efficiency". FormXP has a number of functions, including databases for raw materials, messages, formulae, reporting of batch and lot numbers and registering formula components by barcode reader.



Aiding traceability: Mettler Toledo's FormXP software is used with its ID7 weighing terminals

Formula weighing can take place either vertically, horizontally or after a specified number of batches and can be individually tailored to particular applications. The company says the software allows for convenient management of formula data and simplifies evaluation of production. It can be connected serially for standalone operation or integrated into an Ethernet network.

Mettler Toledo also produces a range of laboratory and production tools for manufacturers, including moisture analysis instruments to help maintain the percentage specified in the formula, which can be crucial for a product's stability and efficacy.

The company says analysis can now be carried out more cost-effectively with the availability of its "budget-priced" HB43 halogen moisture analyser which is suitable for both laboratory and production use.

This is said to offer extremely quick halogen drying, distributing heat evenly across the sample in seconds. Drying temperature can also be precisely controlled which ensures improved reproducibility and reduced measurement times. An RS232 interface connector is included for recording data on a printer or PC.

More information - enter 120

MIXING

Flexibility and short batch times top the wish list

Taking quality of build and reliability as given, it's a fair bet that most production managers in a batch manufacturing environment would put flexibility in use, then short batch times and ease of cleaning at the top of the wish list for their next piece of mixing kit.

Pressure to maximise productivity means use of production lines capable of running a number of different types of product, shorter processing periods and reduced downtime for cleaning between batches.

Romaco FrymaKoruma took this on board when designing its Dinx one-step vacuum processing unit. Introduced at Achema, the company claims it is ideal for manufacturing "hi-tech" skincare and cosmetics products in either suspension, emulsion or gel formulations as it can accommodate the often complex processes involved in the manufacture of such products.

As a one-step processing system the machine is said to offer advantages such as short batch times, high containment and a compact footprint, but also includes a new homogeniser. This operates on the rotor-stator principle but with axial adjustment of the stator to match the shear force to the characteristics of the product.

When the stator is placed in the shearing zone, the machine provides dispersing with good pumping characteristics. When the stator is placed outside the dispersing zone, the machine offers good pumping characteristics at a lower shear force, particularly suitable for sensitive products.

The agitation system inside the main vessel is

also new. It incorporates a helical ribbon agitator, which allows the direction of product flow against the vessel walls to be varied upwards or downwards, depending on direction of rotation.

In this way, points out Romaco, the user is able to vary the parameters of the mixing process to maximise product quality.

The agitator also includes conical mixing nozzles, which produce a horizontal and vertical macro mixing action. These, combined with the action of the helix, are said to produce optimum mixing – even for highly viscous products – with short batch times and rapid heating and cooling, for which a double-jacketed vessel is supplied.

Advantage for small batches

The capability to recirculate product both internally and externally contributes further to process flexibility. Internal recirculation allows feeding of the product beneath the fill level in the main vessel, a particular advantage where batch sizes are small. External recirculation complements the internal vertical mixing action.

Finally, Romaco says a streamlined and cost-effective installation is ensured by the fact that no additional pumps are required for either the CIP or discharge functions.

For applications where focused high shear in-tank mixing is required, Silverson Machines says its recently enhanced bottom entry mixers are being increasingly specified. Using its expertise in the design and manufacture of ultra-hygienic in-line and top entry batch mixers, the company has incorporated specific features in its bottom entry range, including a minimised number of product contact parts, a crevice-free design, electro-polished finish and special hygienic shaft seals.

The mixers can be used in conjunction with slow speed stirrer-scraper units, the action of the two being complementary. The rotor-stator workhead provides high shear, while the stirrer-scraper units distribute the homogenised output of the bottom entry mixer uniformly throughout the vessel.

Silverson says this combination is ideal for high viscosity products, for those which increase viscosity on cooling, such as creams, and where heat sensitive materials may only be added at low temperatures.

With lower viscosity products, the company says bottom entry units can be used without additional in-tank agitation which eliminates the problems associated with immersed shafts and difficult-to-clean scraper blades. This

improves process hygiene where large quantities of powder have to be dispersed into liquids using an in-tank mixer.

A range of interchangeable work-heads and screens provides the machines with versatility, allowing them to be adapted to perform a wide range of tasks including emulsifying, homogenising, disintegrating, dispersing, suspending, particle size reduction, reaction acceleration and de-agglomeration. Silverson suggests this makes them particularly suitable for R&D and pilot plant applications.

Südmo UK's stainless steel valves are said to be ideally suited to the personal care sector "where the secure separation of incompatible fluids is mandatory," such as mouthwash and toothpastes. The company says the valves enable automated multiple routing to be established "with absolute confidence" in hygienic and aseptic applications.

The double seal technology, as utilised on the D600 series, is said to guarantee that all process and cleaning fluids in complex routing systems remain separated even in the event of seal failure.

Automatic routing system

Where simultaneous filling, emptying and cleaning of storage or process vessels is required, a valve matrix can be designed to allow automatic routing from a number of vessels to multiple pipelines by directing fluids through both the upper and lower ports of individual valves. The space between the seats is open to atmosphere and if a seal fails, a preferential flow to the outside is established.

A variety of control and position feedback options are available with either pneumatic or electrical actuation. Inlets and outlets can be varied up to four way combinations and a modular design means they can also be modified to accommodate future requirements.

For further information:

- Romaco
- Silverson Machines
- Südmo UK



One-step processor: Romaco FrymaKoruma's new Dinex can mix a range of products

FILLING, CAPPING AND SEALING

Variety and changeover times set the challenge

The filling process in personal care products can throw up a number of challenges, not least the variety of products that need to be filled on a common line.

For example, at Meller Beauty Products an electronic Masterfil machine with servo drive is providing quick, de-skilled changeover between a range of hair and bodycare products, including shampoos, conditioners, creams, lotions and scrubs.

In all, Meller produces approximately 450 product ranges, so flexibility is the key when specifying equipment for the factory, as operations manager Brian Wyatt explains:

"We have to react very quickly – our lines have to be changed very quickly on customer demand. Apart from regular product runs, one of our customers might decide to put their product on special offer, which means they'll take everything we've got and then ask for more. Our product lines have got to be flexible; they've got to change over just like that."

Meller has installed a Masterfil Servo S500-

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Plastic or glass vial filler: Romaco Macofar LVI monobloc handles plastic or glass vials for skin serums and fragrance samplers



Flowmeter filler: Ronchi Exacta rotary is compact yet provides speeds up to 120 a minute

AS to meet these demands. Up to 50 different pre-set programs can be stored in the memory of the filler, which was developed by Masterfil specifically for the pharmaceutical and toiletries industries. At Meller, an engineer will programme the filler initially – after this, changeovers are carried out entirely by the line teams on the factory floor.

“Once a program is set, it stays in the memory for ever. The engineers need to help with the first setting but after that, it’s over to the teams on the line,” says Brian Wyatt. “We have 11 other filling lines on the factory floor which all need engineers to change them every time. However, because the line girls can change the Masterfil over themselves it saves us a lot of time.”

As an added time saving benefit, the Masterfil machine fills containers transported in pucks which allows a wide variety of container shapes and sizes to be handled without time consuming adjustments. Whatever the shape and size of container being handled, the guide rails on the conveyor remain in a fixed position, the heights of bottles are regulated and the nozzle centres are the same.

An external sensing system in the filler identifies those pucks which do not contain a bottle or where a bottle is incorrectly positioned and too high for filling.

“The puck system has a lot of advantages,” says Brian Wyatt. “It means the pitch of the neck stays the same, so there’s no need to

change the neck guide when changing over. This again saves time, and is an important consideration when you have to fill so many different types of bottles, often with awkward shapes.”

At the Meller factory, the Masterfil machine is filling ten different sized containers, ranging from 50ml to 400ml, with up to 25 different variants of filling for each bottle. Speed is up to 50 bottles a minute.

The Masterfil servo drive has been found to be accurate as well as fast. “Its filling capabilities are far superior to any other machine on the factory floor,” says Brian Wyatt. “Because it’s a bottom up fill, no air is introduced which gives a better, cleaner fill – important for the visual products of the toiletries industry.”

Dedicated to toiletries and cosmetics

Perhaps best known as a supplier of processing and packaging machinery to the pharmaceutical industry, IMA says it is now concentrating on raising its profile in the toiletries and cosmetics markets and has established a dedicated marketing division to address these sectors.

Some of the equipment manufactured by the company, such as tube filling, cartoning and end-of-line machinery, is of equal interest to both pharmaceutical and cosmetics manufacturers.

However, the new cosmetics marketing division will also handle a range of machines spe-

cially developed for cosmetics and toiletries, including liquid fillers and labellers.

The recently introduced IMA Electrofill rotary, net weight, monobloc liquid filling-closing machine is said to be particularly suitable for toiletry products. A compact unit equipped with an electronic control system, it can fill containers up to 1 litre and handle a wide range of products including liquids and creams.

IMA says any shape of bottle, in plastic or glass, can be accommodated as well as virtually any type of closure system including screw-caps, droppers, reducers and dispensers.

In standard form the machine can be equipped with 16, 20, 24, 32 or 36 filling heads plus 6, 8 or 12 capping heads and can reach a speed of 300 containers a minute, although customised configurations are available for higher outputs. The Electrofill also features automatic adjustment of the turret height via servo motor and can be equipped for CIP.

Propack Automation, UK agent for Ronchi, continues to work with the Italian manufacturer on the development of its flexible filling line philosophy based on the Exacta RX-8 flowmeter filler, which comes as a standalone machine or as a monobloc with servo capping.

Although relatively small, Propack says the RX8 is capable of outputs up to 120 a minute on 300ml fills and combines the advantages of flowmeter technology with the fast set-up of a rotary machine.

Flowmeter filling heads have no moving parts and can be cleaned as easily as a plain pipe. Flushing is said to take the minimum of time and produces very little effluent, while setting the machine up for a new container is "virtually instant". Once set up, no further adjustment is required to reach full running efficiency.

Recent UK installations include a puck line for a major personal care company which features unscrambling and puck loading. It handles a range of products from oils and lotions to shower gels with both push-on and screw caps which are monitored by a vision system for orientation. The compact nature of the line leaves space for a range of manual capping options which enables it to be used as a fully-automated operation running at 120 units a minute or for short runs and special products.

A number of the functions are programmable, from filling level to capper operation and all settings can be stored as a recipe for easy recall. Change parts are locked pneumatically and released at the touch of a button.

The machine checks each filling operation is started and completed in the time available, that fill level is within set tolerances and that a cap is fitted, fully applied and to the correct torque level for screw-ons.

Propack also represents the French perfume and cosmetics filling and capping specialist, PKB, and Italian manufacturer of cartoners, overwrappers and casepackers, Bergami.

Volumetric and net weight

French filling and capping specialist, Serac, has a range of volumetric and net weigh fillers reaching production speeds up to 600 containers a minute, with fill volumes from 0.5ml to 1500ml for liquid, powder and granular products. The tool-free changeover machines – available in the UK through Springvale Equipment – are said to allow a number of combinations of product and container format and cap type.

A major supplier of filling and cartoning equipment to cosmetics and toiletries manufacturers, Kalix, has recently introduced a new jar filler to replace the KX80 Redo and upgraded its KX1100 tube filler.

The KJ60 jar filler, which operates at speeds up to 60 a minute, is said to have a particularly robust construction and be easily integrated into new or existing lines. The ergonomics of the machine have been improved compared with its predecessor, with touch-screen operation, easy access and sight of all machine operations, simplified maintenance and an overall GMP design.



Heat sealing: Packaging Automation is supplying its PA182 machine for personal care products

Servo motors control the filling injectors and rotation of the jars for good quality filling, however complex the shape, while caps are pre-tightened before being fully tightened and there is torque and/or position control.

The new KX1101 tube filler operates at over 100 tubes a minute and the design offers complete access to all operations. The 14 station turntable also means other functions such as labelling and coding can be carried out at the same time. It has a new three stacker loader, said to increase unattended operating time by 70 per cent, and a new system for sealing metal tubes which features independent stations and servo control. There is also an option for overall servo motor control.

Kalix's most recent installation is for Yves Rocher where it has installed a complete packaging line that allows a number of different products to be handled.

Pucks to move products

Jars are placed manually at up to 60 a minute into pucks which move product through the line. The jar is labelled recto, verso and on the base by robots at three stations. Each robot applies all the labels, but partial redundancy allows operator intervention to change label reels without sacrificing line output.

The labelled jar enters a KJ60 filler which cleans the jar and fills it via bottom up and rotation movements, enabling deep shoulder containers to be filled without air inclusions. Prod-

uct sensing precedes shive placement and two-stage cap tightening stations. Rejects are diverted and good product continues to a vertical cartoner, then an overwrapper – for each carton – prior to collation and outer packaging.

Line efficiency is said to be optimised by the careful design of the joining conveyors to provide relevant buffering. Line blockers are used to control line pressure, ensuring that puck feed into each machine is regulated.

Unit dose presentation

The growth in recent years of products containing a variety of high value active ingredients – particularly in the "anti-ageing" product sector – has prompted demand for unit dose presentations of liquid topical serums, such as customised, shaped sachets and plastic vials.

For the latter, Romaco Macofar has just introduced a 6000 vial an hour LVI automatic monobloc filling machine to complement the existing 4000 and 8000-an-hour models.

The machine is designed for filling liquids into vials of varying shapes and subsequent closure with plugs, stoppers, dropper and pilfer-proof or screw caps. It is pre-engineered for the addition of a second closing station, if required.

The dosing system comes with a choice of either ball or rotating valve and CIP or SIP systems are available as an option. The LVI incorporates features such as individual adjustment of the pumps, height adjustment on all machine groups and the ability to carry out all adjustments from the operator's side.

Glass vials can also be filled for applications in the fragrance sampling field.

Capping equipment supplier, Cap Coder, has recently supplied a cosmetics company with a CC1160 triple torque head machine tightening 90mm diameter highly polished lids onto cream tubs at 45 a minute. Rubber-lined cap gripping jaws prevent damage to the closure.

The starwheel-based machine can be customised to fill, plug and cap and in another application is performing all three functions for small glass aromatherapy bottles where the set-up includes bottle feed and collating rotary tables to provide a self-contained unit.

Sealing is a relatively common operation in the cosmetics and toiletries sector, given the number of products which, for example, have to be foil lidded or are presented on blister-cards or in sachets. To this end, Packaging Automation, which is best known for its applications in the food industry, is now able to supply the personal care sector following a redesign of its

PA182 semi-automatic rotary table heat-sealing machine.

The redesigned machine is now said to be more robust, making it more stable in use. Due to a bigger sealing area, it can also now accommodate larger trays with a depth of up to 100mm as standard, which provides it with the capability to seal the largest heat sealable trays in use. Another new feature is its ability to carry out both atmospheric and modified atmosphere packaging (MAP).

Now easier to thread

Efficiency has also played a large part in the re-design and a simplified film feed path through the machine now makes it easier to thread, while simpler changeover has reduced the time taken to change film reels. Fewer fixings on the heat-sealing tool also reduce product change-over times – tools can be exchanged by an unskilled operator in less than 2 minutes.

Packaging Automation’s first ventures into this field are with Yves Rocher and a leading contract packer to the cosmetics industry. The French cosmetics giant is using a starwheel-based system for foil lidding round containers of a new face rejuvenating cream in two sizes: 45 and 70mm. The application for the contract packer involves sealing facial wipes.

Illig UK has been chosen by M&W to provide an HSP 35b-4 rotary heat sealing press for the relaunch of the original lipstick sealer, Lipcote and the Glitzy glitter range. As well as sealing the conventional blister to card, the machine can seal card to card with a captivated blister, which was the option chosen.

Lipcote was previously skin packed, but the HSP 35b-4 has enabled M&W to enhance the presentation while improving recyclability as the card and blister can be separated without cross contamination. Moreover, Illig says that with a separate front and back, multilingual instructions can be provided more cost effectively. The move has also made block foiling possible on the Glitzy pack.

For further information:

- Cap Coder **enter 125**
- Illig UK **enter 126**
- IMA UK **enter 127**
- Kalix **enter 128**
- Masterfil **enter 129**
- Packaging Automation **enter 130**
- Propack Automation Machinery **enter 131**
- Romaco **enter 132**
- Springvale Equipment **enter 133**



High speed wipes manufacture: Doyen line makes and packs up to 2400 products a minute

WET WIPES

Unit dose idea helps spur machinery development

Although a large part of the wet wipes market still revolves around their original cleansing function, they are becoming increasingly popular as convenient “unit dose” applicators of products such as moisturiser and sunscreen.

Popular packaging solutions attract activity in the machinery sector and Ilapak has now extended its Delta range of electronic, modified atmosphere packaging (MAP) machines with the launch of an entry level model specifically designed to suit small and medium-sized wet wipe manufacturers.

The Delta 2000 LD line is capable of producing up to 60, hermetically sealed packs a minute and includes features such as no-product/ no-bag, misplaced product detection and automatic size change. It also has a pneumatic die cutter and labelling stations to apply peel and re-seal labels while, for added efficiency, an integrated automatic feeder replaces the normal manual infeed, ensuring products are positioned accurately on the film.

The line is capable of handling products

between 100mm and 400mm in length, up to 200mm in width and 100mm in height, using a variety of laminated and co-extruded films.

Doyen Medipharm is traditionally a supplier to the medical and pharmaceutical sectors, but the growth of the cosmetic wipe market has prompted it to enter this market with a high speed machine which can dispense a small volume of cosmetic onto a wipe and then package it into sachets. Based on the company’s high speed, constant motion horizontal platen HDW machine, production speeds up to 2400 products a minute can be achieved. Products can be delivered as either individual packs or perforated strip packs.

Slit to required width

The machine uses Doyen’s constant tension technology to unwind the normally non-woven absorbent material and slit it to the required product width and length. The product is then transferred through a continuous vacuum transfer line at speed to the bottom half of the final pack material.

It passes through a continuous motion, non-drip dispensing station where the cosmetic substance is added to the wipe before the top half of the pack is introduced. Finally, the pack is sealed with the continuous motion platen sealing system before being perforated or cut off.

An integral quality system automatically removes faulty packs at the discharge and monitors for lack of cosmetic product being

dispensed, missing wipe, start up rejects and splices in the material rolls. The machine can also be supplied with one of Doyen's range of pack counting, collating and stacking systems and is configured to be directly linked to a downstream cartoner.

For further information:

Doyen Medipharm
Ilapak

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LABELLING

Maintaining the image with smaller pack sizes

Since image is sometimes crucial and almost always of high importance in cosmetics and toiletries, labelling has a big role to play. However, it can also raise problems since many products come in small, difficult to handle packs and there are also a wide variety of container shapes and materials used.

With toiletries, there is also the added consideration that there is a better than average chance the products will get wet.

To handle the size problem with lipsticks and mascara, Pago has extended its range of specialist cosmetic labelling machines with the new Pagosystem 131, able to label up to 120 round or oval containers a minute with both barcode body labels and end cap shade labels. Products are automatically loaded into pockets, on an intermittent servo motor driven roller conveyor.

New label application attachments have been fitted to the Pagomat label heads in order to accurately apply the small shade labels and to apply the bar code label in register to the print on the product. The machine is also able to accept product for re-work, using a re-work station which automatically drops product into empty pockets on the conveyor.

Also to address the size issue, Weyfringe Labelling Systems has developed the Apollo IS which has been specifically designed to print and accurately apply small labels to often fragile or delicate products.

The labeller incorporates a touch sensitive applicator head to ensure minimum pressure is applied to the product. In addition to protecting the product, the sensing action of the head allows varying height products to be labelled



Miniature print-apply: Weyfringe Apollo IS machine identifies very small containers on any face

without manual adjustment while flat, curved and even recessed areas can be readily labelled.

Print on demand

The company says it is ideal for serial numbering and batch coding as well as promotional labelling. It prints each label as required, as opposed to queuing them, which maintains accurate label-to-product allocation, allowing on-line label content changes to take place without downtime or label wastage. Bar code, multiple font text and logos can all be printed and the ability to operate with or without a PC

attached makes the Apollo IS suitable for all manufacturing environments.

Small containers do, of course, require gentle handling which, says Kronos UK, is a particular feature of its Autocol pressure sensitive labeller. Changeover is said to be easy and the container guidance system is said to ensure that labels are applied without risk of wrinkles or air pockets and that all labels are wet proof and not slanted.

Advanced Labelling Systems says its tool-free changeover ALS T-Series tube labeller offers a cost-effective alternative to direct tube printing and is capable of handling the latest labelling trends such as clear-on-clear, no label look and multi-page booklet labels. It can be used to apply either partial or complete wrap-around labels – the latter suitable for tamper-evidence – at speeds up to 90 tubes a minute.

Minimise inventories

ALS points out that unlike pre-decorated tubes, labelling allows manufacturers to minimise tube inventories for products that require customisation within the brand, such as short run promotions and individual price codes or bar codes.

For products such as foundation, where there may be 20 different shades each of which has to be translated into ten languages, the T-Series offers two labels in registration. For example, a generic pre-printed tube can be used and then the colour tone applied as a label onto the front and a corresponding bar code on the back, cutting both costs and wastage.

One recent installation by ALS is a bottle labeller at Smith & Nephew's Corby plant where it is applying wraparound labels to a new range of Simple skincare products. The toner and cleanser are packed in 200ml tapered bot-



Lipsticks and mascara: Pagosystem 131 handles body and end labels for up to 120 containers a minute

tles, the eye make-up remover in 150ml tapered bottles and the moisturiser in a 150ml straight-sided bottle.

The ALS 600 system was specified following packaging trials with a number of labelling system manufacturers. Because of the tapered nature of three of the four bottles, S&N identified a problem with attaching the wraparound label at the correct angle and achieving a smooth, even application.

The machine is installed in-line with the products being filled, capped and/or plugged, before passing to the labelling machine where a pre-printed, clear plastic label is applied. Depending on the product being labelled, the ALS 600 operates at speeds between 70 and 100 products a minute.

Identifying pallets

Logopak International has supplied 901T industrial print-apply labelling systems to Wella Group facilities at Hunfeld and Rothenkirchen in Germany, Lothringen in France and Mantova in Italy. The labellers are being used to apply 120mm by 80mm labels to pallets of haircare products.

Printed onto the label is an EAN-39 barcode which contains information such as product type and where and at precisely what time it was manufactured. This information is then used at the company's Darmstadt distribution centre to ensure the products are shipped in strict manufacture date order.

For further information:

Advanced Labelling Systems	enter 138
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Weyfringe Labelling Systems	enter 142

CARTONING

Complex lines load multi-component packs

Some of the more complex cartoning lines – certainly in terms of the number of items in a pack – are traditionally found in the personal care products industry.

For example, IWK has recently delivered the first of four hair dye kit packing lines to

L'Oréal in the USA to produce a pack with six different components: a glove with a leaflet, one metal and two laminate tubes, and a plastic comb. These are automatically fed from tube filling machines integrated into the line and from bulk containers.

Two Scada robots orientate and place the laminate tubes in the correct orientation into the IWK SC6 continuous motion cartoner's product infeed buckets, which are sectioned to ensure that the products are inserted into the carton every time in the same configuration. Speed is up to 200 kits a minute.



Multi-component pack: L'Oréal has bought four lines from IWK

Packaging security includes lasers employed for printing batch information on tubes and cartons, with OCR cameras for print verification explains UK representative IWKA PacSystems.

The latest addition to Romaco Promatic's range of intermittent motion horizontal cartoners is the P91, said to be particularly suited to cosmetics because of its flexibility and balcony design. The machine is also said to be a significant addition to the Romaco portfolio, in that it is engineered for straightforward integration with the company's tube or liquid lines.

The P91 has an output of up to 90 cartons a minute, with dimensions of 15-120mm, 12-80mm and 55-200mm (A-B-C). Its modular design allows use of a wide range of simple and reliable automatic feed systems, suitable for such diverse products as bottles, jars, sachets, tubes, lipsticks and mascaras. The design also accommodates ancillary equipment, such as leaflet and liner feeders.

In fact, the machine was developed in conjunction with one of the leading European producers of cosmetics and personal care products to fulfil a requirement to insert three lipsticks into a single carton.

A recently completed application for a hair colorant product proved even more complex with two bottles – one round, one square – plus a tube, leaflet and sachet needing to be fed into each carton. Orders have also already been taken for applications involving cartoning of tubes and jars.

Similar in concept to the Promatic P100 and

P150 cartoners, the key features of the P91 are a newly-designed carton belt and positive carton opening system, which the company says combine to provide highly reliable feeding and real tolerance of variations in carton quality.

Attention to the ergonomic aspects of the machine have provided good visibility while areas where stray product or packaging debris might collect have been eliminated.

The new Kalix KP600 cartoner originates from the previous generation KPS machines, but exploits the latest technological advances to improve production rates from 45 to 60 units a minute. Kalix says it also has a more solid

structure with reinforced mechanical elements and improved sealing stations with two distinct mechanical actions.

As with its predecessor, the KP600's conveyor belts are designed to prevent scratching of the cartons – a critical factor in the cosmetics sector – and Kalix says the positive opening and closing of cartons ensures high operational efficiencies. Format changes are said to take less than 10 minutes.

Liner feed system

Italian manufacturer CAM, represented in the UK by Campak, supplies a complete range of processing, packaging and end-of line equipment, and has developed a fully-automatic liner feeder system for its horizontal intermittent motion cartoner, running at speeds in excess of 85 units a minute.

The company's cartoner range also includes the AV vertical low-cost machine, the AVC

continuous motion vertical model and the HV/HG continuous motion horizontal system which has positive mechanical carton skillet opening devices and a range of automatic feed systems for products and additional items such as leaflets and gloves.

IMA's new cosmetics marketing division will be handling cartoners such as the Vertima, a vertical machine said to be specially developed to handle high quality products and packaging with delicate surface finishes. There are also several versions of IMA's Flexa horizontal car-toner suitable for this sector.

Its latest introduction, the Easy compact intermittent horizontal car-toner, is designed for low speed applications where large carton sizes may be required.

For further information:

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IMA UK	enter 144
IWKA PacSystems	enter 145
Kalix	enter 146
Romaco	enter 147

OVERWRAPPING

Shrink systems provide quality presentation for gift boxes

Adpak has developed shrink-wrapping machines specifically to meet the demand for high quality presentation of cosmetics, per-fumes and toiletries and has recently supplied equipment to companies wrapping products such as Estée Lauder gift boxes and Tommy Hilfiger cosmetics packs.

The company's EFK automatic in-line sealer range is said to ensure there is virtually no air within the wrap, presenting a clean presentation after shrinking without excess film forming unsightly 'ears or wrinkling'. The machines can be used as standalone wrapping units for moderate speed bagging operations or combined with an infeed conveyor and shrink tunnel as an in-line system for presentation or collation packaging.

Adpak says high quality display packs can also be produced on its automatic L-sealers at speeds up to 35 packs a minute while the Hugo Beck range of high speed machines operate with a vertical movement complete with trim



"Reasonably priced changeparts": An M60 was the fifth Sollas machine for a South Coast fragrance firm

seal at speeds in excess of 250 packs a minute.

IMA claims the BFB overwrappers produced by its end-of-line division are synonymous with the precision overwrapping of cosmetic cartons. Among the machines offered are the AC60 and the AC120, capable of wrapping 60 and 120 single cartons a minute respectively

The units are designed to handle cartons with a high gloss finish and the seal of the cross film overlap is situated at the back of the wrap to keep the other faces free of marks and wrinkles

Price and availability of changeparts were among the factors taken into account by a South Coast-based international perfumery manufacturer when deciding to buy a Sollas overwrapper for cartons. The fragrance company has now taken delivery of its fifth overwrapping machine from Sollas, with over 50 sets of changeparts – "very reasonably priced" says a spokesman for the company – being purchased in the past year.

Reduced changeover time

The latest machine, an M60, has a small footprint, independent product transfer through the system, touch-screen controls and film centring adjustment that operates on the run. This is said to reduce changeover times considerably and provide a swift means of accurately positioning the film around the carton for optimum presentation. At the request of the customer, the M60 has been built in stainless steel and has a specially pitched roof cover.

Down in the West Country, one of Europe's leading contract manufacturers for cosmetics and toiletries, Swallowfield, has increased its packaging capacity and production line efficiency following the installation of a Sollas 20 overwrapping machine.

The machine is being used to overwrap a large variety of cartons in heat sealable polypropylene film and change part cost was again cited as a factor in the decision to choose a Sollas machine.

For further information:

Adpak Machinery Systems
 IMA UK
 Sollas UK

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END OF LINE

Unstable bottles loaded directly onto shrink film

A frequent problems with bottles in the personal care industry is instability and irregular shape which can make collations difficult to sustain during the final packaging operation.

One solution in shrink-wrapping is to load the containers directly onto the bottom reel of film, which then carries



them through the initial part of the process. For example, the Polypack ROKH pick-and-place system puts collations directly onto the film, which is dispensed on top of a bucket conveyor.

All types of bottles and tittles can be handled because, once the collation has been placed in the bucket conveyor, it is maintained in the same position through the sleeving and shrinking process.

According to Polypack, this feature has proved particularly popular with contract packers, giving the flexibility and fast changeover they require, as well as the ability to handle unstable bottles.

Polypack's latest UK installation is for han-

dling liquid soap in pump action oval bottles, producing shrink-wrapped collations in 1 x 6, 2 x 3 and 2 x 6 formats.

Meanwhile, Cermex continues to develop its range of end-of-line equipment and has redesigned its SD39 combined function top loading case packer so that it can be adapted to a cantilever concept, which has involved the design of a new generation of numerical axes.

The machine features a case transfer arm to ensure case stability while positioning the case magazine parallel to the product infeed improves its compactness and accessibility for cleaning. The company also claims high



Above: Cermex SW erects, loads and seals cases on the one frame.
Left: Polypack ROKH places unstable bottles on the film, unwound onto the conveyor

mechanical performance, speed, smoothness and accuracy of the loading mast.

The concept has been introduced in an application in the personal care field handling bottles of shampoo. The combined function machine – collation, case forming, loading and gluing/pressing – runs at speeds up to 216 bottles a minute. It is based on the principle of a central beam supporting the case driving system – from the forming station to the gluing/pressing station – giving clear access at ground level to the case and product handling parts within the machine.

Cermex has also developed a new wrap-around case packer, again based on a cantilever structure which provides improved access. It features a low-level case magazine, automatic tripping of the bracket chain to enable quick,

easy format changeover and operates at up to 24 cases a minute.

Where possible, the company says it will propose a conventional machine, but if line speeds are high, or where the bottle or pack is very difficult to handle, packing robots are suggested. The latest, the 3-axis ER.63 packs at up to 550 units a minute and the machines can also be adapted to handle tubes.

Robotic case-packers

Recognising that floorspace is a constant problem, Cermex has introduced two integral case packers with robotic technology: the SD and faster SW models. These are said to be compact and easy to use, with the ability to erect the cases, load and seal them all on the one frame at speeds up to 25 cases a minute. The company also manufactures palletisers and shrinkwrappers, the latter with the ability to use print-registered film.

Cussons has installed a high speed, single reel shrinkwrapper from Europack. Operating at speeds up to 300 bottles a minute, the servo-driven machine was specially designed for the toiletries company as part of the relaunch of its shower gel range and is able to handle oval-shaped bottles, across

a range of formats, but primarily unsupported packs of six.

From a single infeed, the units are divided into lanes prior to arrival at a gating area. Cut to size film is wrapped around the packs which then move through a shrink tunnel. A programmable interface screen assists with size change to minimise production interruption and to comply with Cussons' specified 10 minute full system size change.

The project was managed for Cussons UK by Tony Jeffries, senior packaging engineer for Cussons International. He explains that Cussons' goal was to reduce packaging by eliminating the need for a support tray and improve line efficiencies.

"The success of the first installation was a key factor in our decision to order a second identical machine", adds Mr Jeffries. ■

For further information:

Cermex
 Europack
 Polypack

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enter 153