

# TOILETRIES AND COSMETICS

FROM PROCESSING TO CARTONING AND ROBOTIC END-OF-LINE OPERATIONS, VERSATILITY SEEMS TO BE FRAGRANCE OF THE MONTH FOR BRAND-OWNERS AND CONTRACT MANUFACTURERS IN THIS INDUSTRY.

MIXING AND PROCESSING

## Reducing stock with late stage customisation

As a concept, 'late stage customisation' or 'late stage particularisation' is more familiar in the pharmaceutical industry, and more specifically to variations in packaging and print rather than product. So can the idea be extended to toiletries and cosmetics, and can it work with product variants as well as with the pack and branding around them?

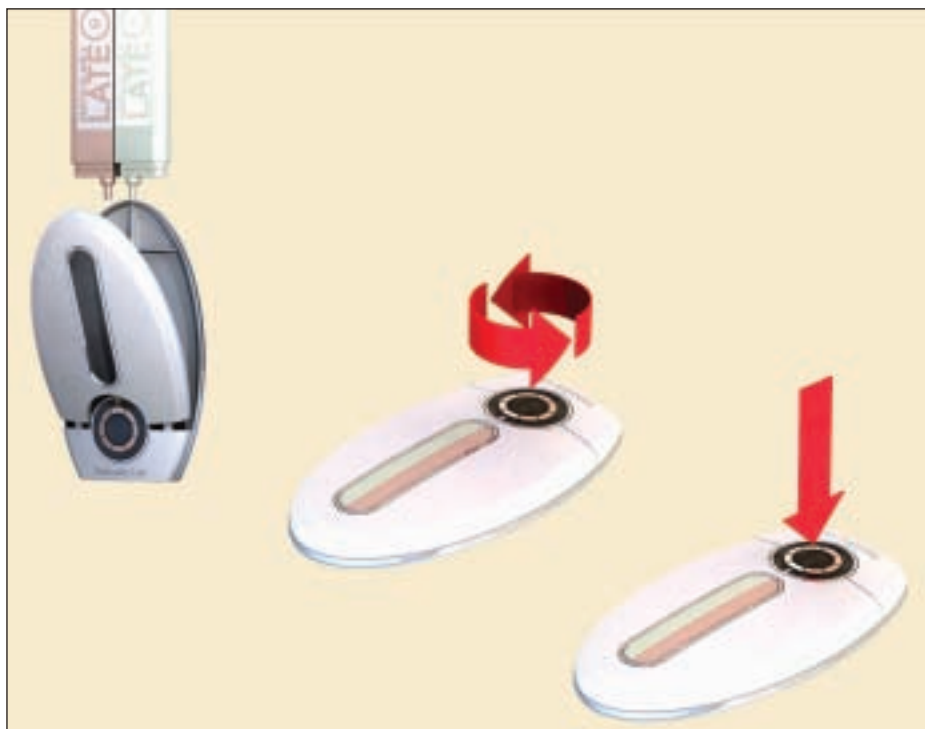
Molins company ITCM says it can. According to new business development director Simon Strothers, the concept is a simple one: "Do as much as possible without having to change the process. Then introduce any changes only at the final stage."

Evidently, the strategy is not going to work for every product when applied to the formulation itself, as Mr Strothers explains: "It comes into its own where there is a critical mass of common ingredients, but where the distinctive features come from one or two elements."

He adds: "Clearly, the science has to stack up, too." The quality and shelf life of the formulation must also be unaffected by late rather than early introduction of key ingredients into the mix.

Conventionally, with aerosol-filled anti-perspirant deoderants, for instance, the fragrance is often premixed with the bulk carrier. Changeover between brands or variants incurs a potentially large amount of downtime, given the persistent taint of many fragrances, Simon Strothers argues. To minimise these unproductive periods, the tendency is to mix and fill larger batches. This in turn means the operation is less agile and less responsive to the demands of own-label customers and supermarkets.

Says Mr Strothers: "In terms of the business,



**Late stage customisation:** Particularly Late foundation cream pack concept from ITCM and designers Smallfry allows users themselves to customise the product tone immediately before use

the major benefit is working capital reduction. With a two or three day call-off, it costs a lot of money to have that sort of finished goods stock tied up. But using this approach, stock can be reduced for the same level of service." Changeover times can also be dramatically reduced, says ITCM, so overall production volumes increase.

### Final colour for lipstick

ITCM specialises in customised equipment in the dosing, filling and packing of personal care and healthcare products, as well as food and drink. Other cosmetics operations which might advantageously adopt the late stage particularisation model include lipstick lines, says the company, where colour may be the final element added to differentiate products which otherwise use the same base ingredients.

Recently, ITCM worked with design agency

Smallfry on the Particularly Late blending and dispensing pack for foundation. This took the concept of late particularisation even further, putting it literally into the hands of the consumer.

Not everyone is sure that 'late' is necessarily going to be better. Nick Ruecroft, sales manager at Romaco UK, argues quite rightly that only a formulator can judge whether specific combinations of ingredients can be made later rather than earlier in the process. But up to now, he says, late stage customisation of product is not a concept he has encountered in toiletries and cosmetics. Then again, while Romaco works extensively with liquids and creams, it is not so active in the aerosols market, which ITCM cites as a prime contender for this approach.

Romaco, which supplies the FrymaKoruma range of conical vacuum processors for liquids and semi-liquids, has installed a Dinex system

at the new factory of Swiss contract manufacturer ASM. The Dinex has a vessel capacity of 5200 litres – giving a maximum batch size of 4000 litres – and is installed over two floor levels, separating technical and production areas.

Its advanced homogenisation system makes the Dinex particularly suitable for complex formulations, says Romaco. It combines the proven toothed rotor-stator homogeniser with axial adjustment of the stator, allowing regulation of the shear force exerted on the product. The shear generated is said to deliver optimal dispersion, with droplet and particle size reduced to less than one micron.

Batch size flexibility is improved by the option of recirculating product either via an internal or external route. As Romaco points out, overall flexibility and fast cleardown are clear requirements of contract manufacturing.

Among the mixing systems available in the UK for cosmetics and toiletries formulations, Adelphi Coldstream designs and manufactures vessels up to 1000 litres capacity. They can be mobile, jacketed for heating or cooling, and fitted with air-powered or electric mixers. Electronic controls for temperature and mixer speed can be incorporated.

As well as customised mixing vessels, Adelphi has a range of stock equipment including the 316L and 304 stainless vessels, with volumes up to 240 litres. These can be supplied with lids and frames on castors, as well as toggle clamps for the recessed lids, inlets and taps.

Stainless steel or plastic break tanks can be manufactured to meet customer requirements, says Adelphi. These can act as a buffer between the bulk tank and the filling machine to ensure constant product height within the tank. Removable spray balls are available for clean-in-place (CIP) in both the break tanks and mixing vessels.

FILLING

## Pharma standard machinery suits industry needs

French supplier PKB has applied servo drive technology to the particular needs of the cosmetics and toiletries industries in the design of its Virtuo volumetric in-line filler. Along with the balcony-type construction, redesign of the filling and cleaning circuits now means that these products can be filled to the exacting



**Vacuum processing:** Lower floor section of the FrymaKoruma Dinex system at ASM, Switzerland

standards of the pharmaceuticals industry, says PKB.

The machine can be equipped with between five and 12 filling heads, each pump controlled by its own servo drive, so it can be adjusted on the run. This means that a standard model can easily handle two or even three-phase products, says PKB, making it the most versatile volumetric in-line filler on the market, the company claims. Output is typically in the 40-120bpm range, says export manager Pascal Renaudin.

### Optimising speed

The drives control the movement of the dipping nozzles, optimising the speed of their up-down action in accordance with bottle geometry and product properties while an industrial computer allows easy changeover between formats and products. Applications include shampoos and conditioners, soap and shower gel, hair dye and suntan lotion.

As much as accuracy, the use of servo drives is also aimed at providing ease of use to customers. "There are no armies of on-site technicians any more to maintain machines and adjust them for product changeover," says Mr Renaudin. "By incorporating servo drives into the Virtuo, we have reduced the time for changeover, excluding cleaning, to around five minutes." This is of vital importance when brand owners will expect to fill scores of different products on the same machine.

PKB, which supplies all the major French perfumery and cosmetics houses, has also made CIP standard on the Virtuo.

But as PKB notes, different customers take different approaches to cleardown. So L'Oréal

is happy to use the CIP system, while a brand owner such as Clarins prefers to take a more traditional approach to cleaning. "The Virtuo offers different options, and these include dismantling all the key wet parts, the pistons and nozzles, and taking them off on a trolley for a thorough washdown," says Mr Renaudin.

He highlights another machine in the PKB range, the Synchro, which was shown at last year's Emballage exhibition in Paris. "This is a completely servo-driven monobloc filler and capper, offering the quality of an in-line filler but with the control of intermittent motion," he explains. Designed to fill perfumes and lotions at speeds of 50-90bpm, it can be specified as a modular system with options including flow meter and level filling.

Meanwhile, the debate about the merits and shortcomings of turnkey installation rumbles on. A company such as PKB can project manage the specification and purchase of a new line, arguing that it is able to choose the best supplier and optimum machine for each operation. A larger company offering complete lines of its own will not have the same freedom to cherry-pick the best systems, the French company maintains.

Many of the arguments for and against the turnkey approach in cosmetics and toiletries are familiar from other sectors such as food and drink. But IMA UK, one of the key providers of full line installations, says that the time taken for validation and Factory Acceptance Tests for individually-sourced machines continues to be a particularly thorny issue for cosmetics and personal care operations.

"Customers want to be able to validate the



**Servo driven:** APKB Virtuo in-line liquid filler



**Diagonal loop:** IWK's latest tube filler, the TFS 80-1, uses the company's established system

line in one go," says sales manager Barry Chadwick. "Otherwise the whole thing can be a nightmare. You have to integrate the controls and machine interfaces, and if one machine is delayed it can put the entire project out."

Mr Chadwick quotes the example of a turnkey tube-filling line, where the CO.MA.DI.S CP240 filler with robotic feeding can be linked to an IMA cartoner. This line will run at speeds up to 220 tubes a minute he says, suitable for some toiletries and cosmetics. For lower-speed tube lines, IMA has the C960, capable of filling up to 60 aluminium, polyethylene or laminate tubes a minute, with fold, hot

air or hot jaw sealing as appropriate. Electronics on the machine have been brought up to date, says IMA, with touch-screen control and servo control on the filling nozzle. The dosing pump can be dismantled without tools.

Oystar-IWK's latest tube filler is the TFS 80-1 for speeds up to 100 containers a minute, both plastic and metal. This machine is based on the same principle as the servo driven IWK TFS 80-2, TFS 80-4 and TFS80-6 tube filling machines, able to reach speeds of 180, 340 and 510 tubes a minute respectively.

The TFS 80-1 is similarly servo driven and employs the same orbital track to accept empty

tubes horizontally, raise them to vertical for filling and return completed tubes to horizontal for cartoning.

In addition, Oystar-IWK continues to manufacture conventional rotary turret machines, offering economic, mechanically driven alternatives in the speed range 50-160 tubes a minute, both plastic and metal.

For bottle filling, IMA is actively marketing the King range of filling equipment which it acquired with the Swiftpack business. Says Barry Chadwick: "We have a fantastic, broad range of fillers now, including the Kingfisher modular machines which can be expanded to match requirements. Every customer filling shampoos, for instance, knows the King machines." A great many customers use the gear-pump, clutch-brake type of technology found in the King Technofill range. Swiftpack's addition of servo controls has further enhanced the performance of the King range, he says.

Servo controls also make a massive difference to IMA's F840 rotary filler, says Mr Chadwick. This volumetric machine offers dynamic adjustment of height and volume while, for product changeovers, a full CIP regime can be completed in 25 minutes. In fact, even for a medium-speed line, the lack of CIP represents a real hidden cost which end users need to be aware of, he argues.

Excel Packaging Machinery supplies turnkey lines from its principals BCM for bottle unscrambling and orientation, Omas for filling and capping machines, Omag for stick-packing and Axomatic for tube-filling machinery.

Omas has recently added a new range of semi-automatic machines to its existing range

## A compact case for robot assembly

International Packaging Systems, the specialist automated packaging subsidiary of Schubert, has produced a robotic assembly and packing line for make-up compacts produced at cosmetics manufacturer Noiro's factory in Finland.

It has five stations which are capable of handling a wide variety of formats and at speeds up to 33 compacts a minute.

Closed, empty compacts are fed into the Schubert TLM-F44 machine where they are opened, scanned and placed on a central conveyor belt by a TLM-F4 robot. At subsequent stations, the pressed powder trays are inserted into the cases along with make-up applicators which are supplied from a storage hopper and multi-track vibratory conveyor.

The compacts are then checked by an optical quality control scanner before they are closed and transported to the labelling station.



IPS says switching between different packaging configurations can be completed in a matter of minutes thanks to the system's user-friendly software programming facility and quick-change tooling capabilities.

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of filling and capping machines, including a new semi-automatic vacuum filler aimed at perfumes, fragrances and essential oils. With no moving parts and a small footprint this machine is said to be well suited to small production runs and where a level fill is essential for cosmetic appearances.

Earlier this year Excel supplied L'Oreal UK with a BCM bottle unscrambling machine to handle 200ml and 250ml containers and load them automatically into pucks at speeds up to 170 a minute.

As part of the turnkey contract, the company also supplied a de-pucker that transfers the bottles from the pucks to the conveyor for labelling, as well as all the puck return conveyors and cross overs.

Recent installations of Adelphi Manufacturing filling equipment include a semi-automatic Response system for Eve Taylor (London), producer of aromatherapy and essential oil-based skin and bodycare ranges. The machine was originally for filling creams, lotions and liquids into bottles, jars and tottles but is now also being used for filling carrier oils for Taylor's range of aromatherapy products.

According to Adelphi, the company is so pleased with the versatility of this first filler that it is planning to invest in the Response automation system, where up to four Response machines are housed in a single array, essentially forming a four-head inline filler.

Eve Taylor is also using a TGM E250 plastic tube filler from Adelphi, dosing creams into a range of tube sizes. The Italian TGM range can fill metal or plastic tubes at speeds of 1500 to 24,000 tubes an hour and be complemented with a cartoner and leaflet inserter.

Adelphi has supplied Potter & Moore Innovations with two dual-system Response fillers, including automatic hopper-filling systems fitted over its conveyors. Adelphi quotes Potter & Moore director of engineering Steve Williams as saying that these are the most efficient lines in the factory. They have increased output and reduced downtime, he says.

Adelphi claims that the "revolutionary" filling head on the Response means that, unlike most fully automatic systems, it is able to dispense anything from free-flowing liquids to thick pastes.

An operator can run a single-head machine at speeds of 50-70 units a minute, says the company, when filling lotions and creams into jars and bottles. When filling smaller jars, dispensing speeds for creams can be up to 80 a minute.



**Starwheel capper:** Cap Coder machine solves a contract packing problem for Cosmetica

CAPPING AND SEALING

## Starwheel capper solves orientation problem

**C**ontract fillers sometimes face tricky calculations when new business opportunities bring with them the likelihood of new equipment requirements. When Eastbourne contract packer Cosmetica won new business from Germany, it found that the spinning head on its existing capper caused the trigger spray on the new pack to foul the machine. If it was going to avoid recurrent stoppages, Cosmetica had to find an alternative capping solution.

The German customer also needed the trigger spray caps to be tightened to the unusually high torque of 600N/cm, and aligned with the flask, neither of which could be achieved with the installed capper.

Simon Harding, technical manager at Cosmetica, explains: "We needed someone to supply in a few weeks a new capping machine to a tricky specification. We approached one potential supplier who could meet the specification, but found that their machine was far too expensive for our budget."

When Cosmetica went to Cap Coder, a quotation was supplied within a week, and once the sale had been confirmed, the CC560 was delivered in just eight weeks.

The starwheel-based machine has twin Tri-Torque capping heads, and is designed to operate in conjunction with an existing slat conveyor. The system can apply screw or push-on

caps to bottles in the 100ml to 5 litre range at speeds up to 40 containers a minute.

Cosmetica is placing the polypropylene trigger-spray caps onto its PET flasks of hair-care product by hand although the CC560 can be fed from bowl feeders or rotary tables. The machine is controlled by a PLC with servo indexing and either electronic or pneumatic capping.

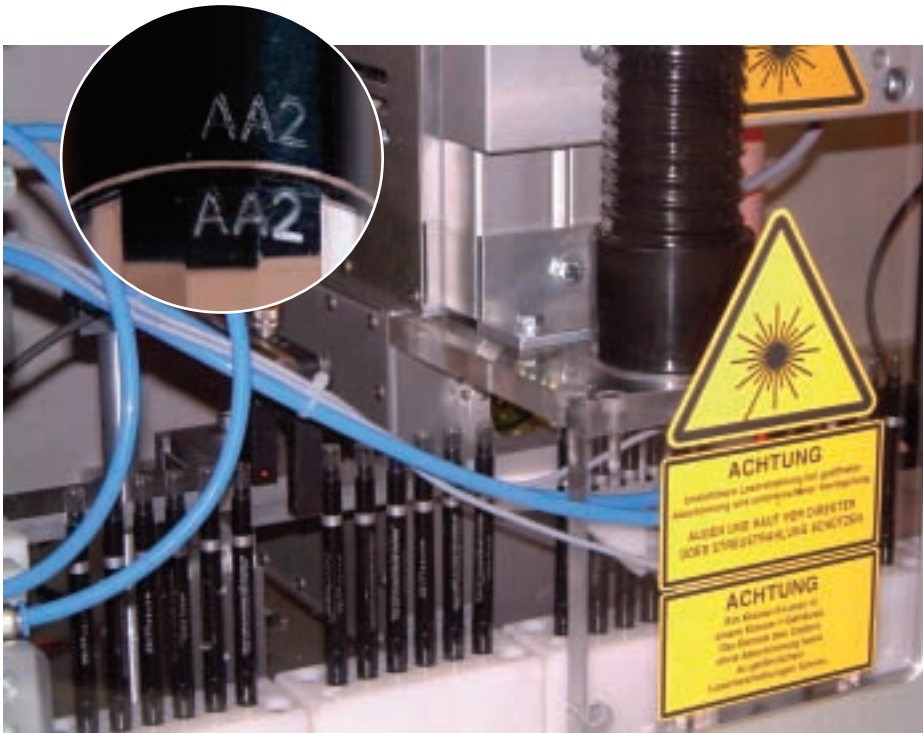
For Cosmetica, the machine has also been customised so that the starwheel indexes twice before tightening the caps two at a time. The second head then orientates the trigger spray within the cap.

### Spray cap orientation

Orientation is also important with spray caps, and this can be challenging especially where floorspace is at a premium. RNA Automation's ZE Feeding Unit can handle a wide range of components, including caps and closures, feeding items such as spray caps at speeds of up to 2000 a minute in eight lanes from a low-level bulk hopper. The lanes then merge to one via a centrifugal disc. As RNA explains, the number of lanes can be scaled down to suit lower volume operations.

According to RNA, there is no need for compressed air for orientation, and the system takes up much less floorspace than a conventional multiple bowl feeder installation.

A growing number of cosmetic and personal care products now require a membrane seal before the capping stage, principally for reasons of tamper evidence. However, suppliers of induction heat sealing equipment are now adding Climate Change Levy minimisation to their list of reasons for users to prefer this



**Laser coding:** Faber-Castell in Germany is using a Domino system to code its cosmetic crayons

system over conduction-based alternatives.

As Paul Rollason, sales manager at Relco UK explains, induction heat sealing uses around 10-15 per cent of the total power required by an equivalent conduction system, and so also generates lower operating costs. Supply of energy to the sealing head is intermittent rather than constant and is directed at the weld rather than being lost through conduction, he points out.

Relco machines cut and seal the foil laminate from the reel, in some cases running single reels for more than an entire day's production. This is cheaper and incurs shorter changeover times than the use of magazine-fed pre-cut discs, says the company. A PLC is said to guarantee precise consistency in terms of the amount of energy applied to the seal and dwell time in the induction field, allowing reliable control of seal quality and strength.

Relco has supplied the system to many cosmetics companies, including L'Oréal, and is currently completing two fully automatic machines for another customer.

## Pharmaceutical checkweigher monitors tube line

Personal care and pharmaceuticals contract packer Universal Products (Lytham) Manufacturing (UPL) is now using an S2 Pharma checkweigher from Mettler Toledo to monitor output from its new tube filler.

Tubes exiting the Norden 'design-a-seal' machine can be of any weight between 4.5g

### CODING AND LABELLING

## Variable coding faces more complex demands

Increasingly centralised production in international cosmetics has placed more complex demands on variable information coding and labelling in this industry.

Markem reports that its longstanding relationship with L'Oréal's Productos Capilares (haircare products) business in Burgos, Spain, first took off when multilingual labelling requirements were implemented. SmartDate coders were initially installed on tube labelling machines, replacing slower units and improving print quality.

Later, L'Oréal also installed Markem SmartLase coders on its carton lines, and specified Cimjet print-apply labellers for the shipping unit line. Production manager Gonzalo Sedano

and 400g and from 45mm to 225mm in length. Other stipulations were an ability to provide confirmation of reject for incorrect weight, and mean value monitoring to allow for the effects of humidity on product density.

Primary reasons for UPL's choice of the S2 were its precision and high-speed operation. Full statistics and production records are logged for each individual batch and product, allowing a reduction in giveaway to be achieved, says Mettler Toledo.

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says: "Again, we needed to meet the needs of an international market. Instead of just a simple product code, we now print a customised design for each sector, in various languages, complete with a barcode and the appropriate L'Oréal logo."

All Markem print systems across three production units are linked via Ethernet to the supplier's image design and networking software, which in turn is linked to the plant's central database.

As at the cartoning and overwrapping stages, coding equipment can sometimes damage the high-quality cartons used in the cosmetics and fragrance sectors. Rotech has tackled this problem with hot foil overprinting at one multinational cosmetics customer using its Feeder 150. The machine uses a PTFE-impregnated, hardened top-plate and Tufnol feeder plate, which ensures that cartons remain unmarked as they are fed through the machine. As a major bonus, says Rotech, the feeder generated a six-fold increase in output.

Sauven Marking says its 6000Plus ink jet coder is a "smart alternative" to CIJ, and can generate six different character heights between 2 and 17mm over up to eight lines of print. It can also include bar codes and logos specific to the cosmetics industry. It is low-cost, and without the maintenance and shutdown procedures of CIJ, the company argues.

Both the 6000 and 6000Plus offer the option of an additional remote printhead for marking small surfaces. Both use fast-drying non-MEK inks, says Sauven.

Not all products for this sector are produced in a typically 'cosmetic' environment. German pencil manufacturer Faber-Castell has supplied a range of cosmetic crayons since the late 1970s and, since 2004, has been coding every crayon with a Domino DSL high-speed laser scribing coder for traceability. This replaced a stamping process using dies, which were subject to wear and required frequent replacement.

Being laser, the alpha-numeric code is indelible. But at the same time, the code is low-contrast and discreet. A Domino DPX extraction unit removes fumes and dust particles during coding.

Given the wide variety of pack types used for toiletries and cosmetics, it is hardly surprising that customised coding and labelling systems are often required.

Sovereign Labelling Systems recently installed a combined labelling and sleeving line designed to run at speeds of over 80 packs a

minute on a range of lip balm containers. Top and base labels are first applied using Sovereign 140 servo-driven labelling heads and an Aegis applicator then fits the full-body sleeve, which is shrunk in a compact radiant heat tunnel. The system includes overprinting and sleeve-on-product detection.

CARTONING AND DISPLAY OVERWRAPPING

## Adaptability in cartoning scores for Laleham

**A**daptability at the cartoning stage is just as vital as upstream flexibility, especially for contract packers in the cosmetics and toiletries sectors. One such co-packer, Laleham Healthcare, bought the UET cartoning machine which Springvale Equipment exhibited on its stand at the Total Exhibition in May. As Laleham production and engineering manager Don Johnson put it: "It is perfect, as the core of our business is flexibility."

As an example of this versatility, Laleham says that with some minor adjustments to the carton infeed and outfeed it has been able to run five-sided cartons. No change parts were required for this.

Springvale describes the 50-a-minute UET machine as "compact, adaptable and priced right". With a footprint of just 1sq metre, it features an adjustable starwheel, automatic leaflet inserting, embossing, hot-foil or inkjet coding and hot-melt closing. Infeed systems for bottles, jars, tubes and other formats are also supplied.

Keeping pace with low to medium-speed jar and small bottle filling, the Vertima in-line vertical cartoner from IMA will run at speeds up to 60cpm. The company says it is especially suitable for cream jars, lotions and perfume bottles. It includes a feeding system for liners, sachets, spatulas and protection rings. Sales manager Barry Chadwick says: "Handling liners can be a problem for many machines, but not for the Vertima." In fact, standard and irregular liners can be inserted on the machine.

### Order for 20 change part sets

Over 15 Vertima machines have been installed globally during the past year, he says, and one cosmetics customer ordered 20 sets of change parts. In this case, the intention was to operate short runs with fast changeover.

Bottles can be fed into the Vertima either in

pucks – which are automatically recirculated – or without them. Options for integrated coding include ink jet, hot foil or embossing.

Feeding flexible packs such as sachets and pouches to secondary packing operations such as cartoning can be particularly challenging. Intellifeed, represented in the UK by RNA Automation, offers conveyor systems which separate and orientate using what is termed Intelligent Roller Module Technology.

Bulk components are loaded into a storage hopper, from which they are elevated and fed onto a system of self-adjusting rollers at speeds up to 500 a minute. The pre-determined gap achievable with this system makes it especially suitable as an infeed to robot pick-and-place type packing stations, says RNA.

For end-fold overwrapping of cartons, Marden Edwards has the TM range of machines, specifically designed with the perfume and cosmetics industry in mind. Where so much importance is given to flawless appearance at point-of-sale, the ability to place the back seal out of sight is a distinct advantage, says Marden Edwards.

### Integral slitter

But the flexibility of the machine is also said to make it an especially valuable piece of equipment for contract packers. The majority of TM machines supplied to this sector have gone to the demanding French market, according to the company. Indeed, the latest version of the TM100 will handle cartons up to 120mm high and an integral slitter means that the machine can be fed with a single reel of film for different pack sizes. Waste is automatically wound up on another reel.

Current models require cartons to be fed from either the left or right, but Marden Edwards says it will soon launch an in-line variant. This allows for even more gentle handling of the carton as it approaches the wrapping station, says the company.

When it comes to overwrapping, IMA has the AC60, which will run at speeds of up to 60ppm. One of these machines was installed at Boots, Nottingham, earlier this year. Key features include the adjustable folding box, allowing different carton sizes to be run with only minimal adjustment and quick changeover times. This design also means that change part costs are less than they would otherwise be. As with current IMA cartoning systems, handling is designed to avoid marks and scuffing on the pack.

Adpak's range of L-sealers, operating at

speeds of up to 35 packs a minute, has been used for display and gift presentations in the cosmetics industry. Customers include Estee Lauder, which uses the system to obtain a quality finish on perfume and cosmetics gift packs, and Tommy Hilfiger, where the wrapper is used for a range of cosmetics.

END-OF-LINE

## Robotic systems play increasingly important role

**F**rom shrink-wrapping to case-packing and palletising, robotic systems are playing an increasingly important role in end-of-line operations for toiletries and cosmetics.

Around a year ago, production began on a new end-of-line installation at Swedish healthcare and toiletries company Cederroth International. The line, installed by Skinetta Pac-Systeme – represented in the UK by Logic TPS – had to be able to handle 14 different cosmetics bottle formats, 12 in trays and two trayless. Robots proved to be essential in providing this flexibility.

As ABB Robotics UK explains, the line relies on an IRB 1600 robot to pick up the various bottles from different positions. The vacuum gripper then places the collation either into trays or straight onto the infeed of the film-wrapping machine, with the robot synchronised to the speed of the belt. The belt is able to move continuously rather than intermittently, so increasing productivity.

### Pallet labels face outwards

On the far side of the shrink tunnel and after labelling, an IRB 6600 robot from ABB places each transit pack onto a pallet. As it does so, it ensures that the labels are all facing outwards.

The long reach of the IRB 6600 means that it can also stretch to lift and position layer pads. By tilting the layer pad through 15deg after lifting, it ensures that if more than one pad has been picked up, any extra ones drop back onto the magazine. This small but important motion is where a six-axis robot comes into its own, points out ABB.

Product protection for transit takes many different guises in this sector, and has to cater for a wide range of pack sizes.

One cosmetics company recently ordered 15 Pester Pewo-pack stretchwrappers, each of



**Top-load case-packer:** Elematic 6000 EFC from Paal Packaging Machinery

them wrapping small jars, compacts, pencil and brush products in collations of twos and threes. The cantilevered Pewo-pack 250 Compacts have replaced older machines, and wrap the items in polyethylene film, says UK company Pester Pac Automation. They are capable of wrapping 60 collations a minute, but are currently running at lower speeds to allow for potential future increases in demand.

The Pewo-pack250 Compact is better-known in the pharmaceutical industry, where it is typically used to handle small, delicate items gently but at relatively high speeds. With its footprint of just 1.5sq metres, it is well-suited to applications where space is at a premium. Each unit is equipped with film-splicing, automatically switching to a fresh reel of film when the previous one finishes. Pester says it has introduced a mirror version of the 250, so that it can fit in with any line configuration.

On a larger scale, a new generation of Pewo-pack 450 collation shrinkwrap machines has been launched by Pester. Cosmetics and personal care bottles and tipples can be collated and wrapped in polyethylene film at speeds up to 300 bottles, or 30 collations, a minute.

Bottles are turned through 90deg by a screw mechanism, before a multi-axis robot picks up as many as 12 bottles at a time and places them at the machine infeed. Collations move on a knife-edge conveyor through the film curtain, and then on to the shrink tunnel. A window in the tunnel wall means that product can be monitored at every stage of the process.

Pester Pac Automation also supplies the Pewo-Form top load casepacker, which again uses a robot picking head, this time to load either cartons or tubes into cases on the same unit. Changeover is said to take 15 minutes, and the machine can load 180 cartons, or 30 cases, a minute.

In case-packing, Cermex has identified a particular challenge in the trend towards smaller consumer packs for cosmetics and toiletries. The rationale behind this trend may be anything from portability to in-flight security restrictions, but it means that bottle shapes that were already difficult to handle are now being replicated in much smaller versions.

### Handling unstable bottles

Cermex has supplied a customer with an adapted SD69 numerical axis case-packer, capable of loading unstable oval-profile 50ml and 100ml bottles into standard RSC cases. Each collation had to be of 85 products, as opposed to the normal six or 12 in cosmetics. The speed required was 200 products a minute.

Products arrive on a single-lane conveyor with a scroll infeed, spacing them and turning them through 90deg. Each row is put in a collating rack and separated by a guide. Then a lift extracts the complete collation from the rack. Cermex met the challenge of lifting a collation of 85 products through the specific design of the gripping head.

In side-load case-packing, Cermex says that the cosmetics and personal care sector is one of those being targeted by its SW machine, for both RSC and wraparound cases. Systems installed to date load cartons into RSC cases. But these customers have the option in future of switching to wraparound blanks or even handling both types of case. The servo-driven side-loading, and sealing using either hot-melt or tape, can achieve an output of 12 cases a minute.

CC Automation, which represents Paal Packaging Machinery in the UK, says it has seen growing interest in robotic end-of-line solutions for toiletries and cosmetics. A number of Elematic 6000 EFC top-loading case-packers have been supplied to a leading UK personal care product manufacturer. The continuous-motion pick-and-place system is believed to be the first of its kind, says CC, placing collations of four or six bottles of different shapes and sizes into RSC cases.

The case erector and pick-and-place unit are synchronised to allow loading at speeds up to 45 cases a minute. Depending on product, says CC, that output could be more than doubled.

The Elematic 6000 F-6 is another Paal top-loader, this time for tubes of hair gel and similar products. Tubes can be loaded standing or laid flat into cases or thermoformed trays. ■

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