

confectionery & snacks

Pick and Mix



If some of the impressive pick & place technology displayed at Total Processing & Packaging last month is an indicator of trends in confectionery and snack production, then the sector seems to be embracing it and associated automation and vision technologies with open arms.

It seems perverse that in straitened times the confectionery and snacks industry should enjoy something of a boom, but it is less of 'back to basics' and more of a little of what 'you fancy'.

However, when we talk of confectionery and snacks these days we have to take account of a much broader offering than the crisps, nuts and chocolate treats we over 50s remember. The trend in recent years has been towards more 'healthy' options such as cereal bars or reduced fat and salt options. The mix has expanded widely.

Cereal bars

The cereal bar was the brainchild of those companies making traditional cereal products looking for expansion in a stagnant market, in much the same way as ice cream makers tapped into the confectionery bar options a decade ago. Cereal bar sales are now worth £310m according to the UK Food and Drink Report 2009 from Leatherhead Food Research. This represents a growth of 8 per cent on the previous figure.

But another report, this time from Mintel, sees a big opportunity to expand this market still further in the 15 – 24 age group where only 50 per cent, or 2.6 million consumers, eat the bars regularly. By toning



down sweetness, the report says, the market could increase dramatically.

Chocoholics

Chocolate continues to be the star performer among confectionery products. "It is a small, affordable indulgence for shoppers who are cutting back on spending elsewhere. Even in countries not known for chocolate consumption, sales are on the rise," comments Marcia Mogelonsky, global food and drink analyst at Mintel.

In the UK sales of chocolate have certainly defied the recession with an up lift of 5.9 per cent in 2009. Even Belgium the



'home' of chocolate could manage only 3.2 per cent. China, on the other hand, increased its consumption by 18 per cent in the same period. The Swiss still spend most per capita each year, currently US\$206, the Brits by comparison are half as indulgent at \$106, while Americans only gobble up \$55.

But chocolate confectionery manufacturers are casting a greedy eye to other markets where double digit expansion is predicted. They are launching more new products in Latin America, Asia, the Middle East and Africa than anywhere else, says Mintel.

Crisps and nuts

So what of the humble crisp, so long a mainstay of the UK snacks market? Sales overall appear to be stagnant and are likely to remain so through 2013, believes Mintel. However, within that picture are some interesting changes to the market's

dynamics. In particular the growth of the premium product, using high quality ingredients and 'hand cook' techniques is an attempt to re-position the crisp as a more up market snack, commanding a higher price.

This is a similar scenario to the nut market where the salted or dry roasted peanut now has to vie for space with the cashew, almond and macadamia.

In good shape

All this is good news for machinery suppliers as more and more confectionery and snack manufacturers are turning towards automation and high speed handling technologies to replace their manual operations.

In particular pick & place robots are now being used extensively to pack individual assortments into primary packs as well as bar shaped products into secondary packaging. The benefits of these are many: fewer damaged products, elimination of mistakes due to the repetitive nature of the work and, not least, a huge increase in productivity.

Add to this the improved inspection technologies which MU covered extensively in the last issue, and there is a full set of affordable high speed, reliable production equipment now available.

www.foodanddrink.mintel.com
www.leatherheadfood.com

The short review which follows outlines some of the current offerings from PPMA members.



confectionery & snacks - round-up

Bagging combos from PFM

PFM has introduced two bagging machine and weigher combinations for the confectionery and snacks market. One is a high speed system competing with existing machinery for snacks while the other is an

entry level unit for automation in smaller or start-up businesses.

Its Super Nova high speed vertical bagger allows high volume snacks such as crisps to be packed in a stable modified atmosphere

for extended shelf life. It is capable of achieving gas-tight hermetic seals at speeds up to 250 bags/minute.

"The long dwell rotary sealing jaw is driven by a gear-based cam system in place of the usual springs that hold the sealing bars against the film," explained PFM sales director Chris Bolton.

The bagger is fed by PFM's latest high speed multihead weigher, the MBP C3, capable of speeds in excess of 300 weighments/minute.

To handle lightweight products that tend to string out as they drop, losing the separation necessary for the bagger to make a secure seal, the weigher incorporates



C3 weigher and SuperNova combination

specially designed flaps that momentarily arrest the falling product stream.

Aimed at the smaller, or start-up business the new ZC1 machine handles dry snacks and confectionery at up to 80 bags/minute bringing together the company's Zenith bagger and its new C1 multihead weigher, which is mounted on the bagger.

The new weigher software cuts the time needed to replenish each weigh hopper, allowing the contents of more hoppers to be combined for a more accurate dose at speeds up to 60 weighments/minute.

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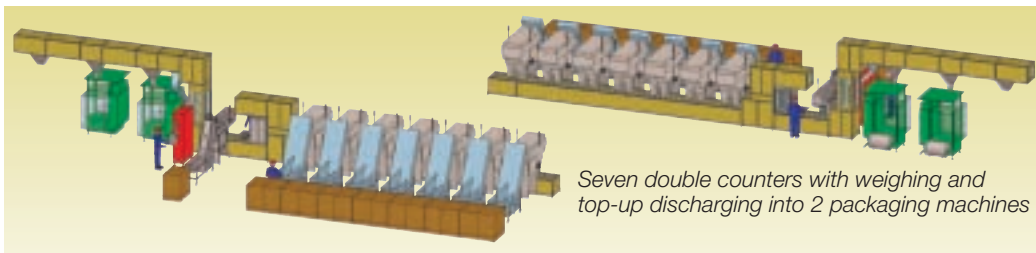
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METTLER TOLEDO

confectionery & snacks - weighing



Seven double counters with weighing and top-up discharging into 2 packaging machines

Sorting out assortments

A new counting and weighing line has been delivered by Cremer to one of the world's largest confectionery companies which produces assorted twist and foil wrapped products.

Assortment counting lines have usually fed the counted products to a separate weigher but Cremer has engineered an integrated system including weighing, top-up and other additional features.

The bulk density of assortment confectionery is variable and generally manufacturers count to ensure the correct number of each product. However, the final package is commonly sold by weight so the system needs to ensure a correct count with a top-up mechanism to ensure the correct weight.

Cremer's customer has 12 different products in the mix and counts at up to 75 discharges/minute for 14 counts and 60 discharges/minute for 72 counts of individual products. The line uses six

double counting machines to tally the required quantity and drop the products into the bucket conveyor/elevator.

After the last counter has completed the mix, the products are dropped into a double weighing unit. The weight of the mix is checked and then dropped back into the bucket conveyor. If the weight is too low then a top-up counter drops the required amount of extra products into the specific bucket. The system also detects the weight trend of the product and individual counters can automatically add a piece or two of one of the make-weights for even greater weight accuracy.

Cremer says its confectionery assortment lines can count into multiple packaging machines, for example bagger and cartoner, simultaneously with different counts/mix in each.

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Fast weigh for minibags

Mederer Süßwarenvertriebs, a German supplier of fruit-flavoured gelatine-based confectionery under the Trolli brand, has ordered three additional MULTIPOND MP 28-400/400-H weighing systems.

Owner and CEO Herbert Mederer said that higher speed bagging production is required to meet the trend towards smaller packages such as the minibag.

Capable of more than 450 weighments/minute, the machine is one of the fastest combination weighers of its kind in the world, Multipond claims.

Mederer called for systems that can run at rates of 420 minibags/minute in production but said: "It was always difficult to find suitable F/F/S machines to meet these performance requirements".

The weigher has a compact design for production areas with limited headroom, says Multipond. Thanks to the small (0.4 litre) weighing hopper, developed for the weigher, the system is suitable for use in minibag applications.

The 28-head weigher operates according to the combination of partial portions principle. Product changes are simple and all product-carrying parts can be replaced without tools. Product-specific adaptation of the parts makes possible weighing of even the most difficult products, it says.

Combining this weigher with the patented Multipond high speed product transfer system, 'timing hopper TDSE', up to 40 per cent higher speeds can be achieved compared with conventional timing hopper concepts.

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Every cashew nut can count

Handling of high value nut products has become easier for a German nut processor which has switched from volumetric methods to multihead weighers, supplied by Ishida Europe.

Felix GmbH & Co said it had cut average giveaway on its can lines by 80 per cent from 2g to 0.4g per 200g can of nuts following installation of the equipment.

Multihead weighing is particularly efficient when

the piece weight is larger than the norm, for example, for cashews and macadamias, says Ishida.

Two weighers are installed in a paired parallel configuration on the nut packing line at Felix's Schwerte plant. Product can be fed to one or both weighers, and each machine can double-discharge, functioning as two separate weighers, which release measures into two cans simultaneously, for added speed. The two streams of filled cans, one from each weigher, then converge for sealing under modified atmosphere, followed by coding.

Ishida adapted its usual weighers to include a 'paired hopper' design. While each has 12 weighing heads and 12 pool hoppers, each pool hopper feeds two weigh-hoppers, making 24 in all. The weighers, with 0.8 litre hoppers, are suited for the relatively small target weights involved.

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special feature

confectionery & snacks - round-up

Schubert takes the biscuits ...

Schubert demonstrated its confectionery packing know-how at Total Processing and Packaging 2010, including the first UK showing of its new energy saving Transmodule intelligent carton transport technology.



only requires power when accelerating from a standstill to its travel speed of 5 metres/second. When they decelerate the drive motor switches to generator mode, thereby supplying electricity stored in capacitors.

A major feature of an automated line installed at Italian biscuit maker Asolo Dolce, Florence, three Transmodule devices are being used to move cartons along a rail system that links the line's component machines, which undertake product grouping, carton erecting, filling and closing applications.

Each Transmodule unit consists of vacuum suction cups for holding the erected boxes in place, a drive motor and control electronics. It

The technology replaces Schubert's previous vacuum conveyor scheme and offers wireless data and power transfer capabilities.

The Asolo Dolce line is designed to pack up to 80 bags/minute and can be converted to handle different pack sizes and quantities, says the company.

Schubert plans to extend the use of the device for its new automatic tool change facility which is set for launch next year.

... and no chipped chocs at Thorntons

Flexibility, speed, accuracy and damage free products are major benefits of a new Schubert automated packaging line chosen by confectioner Thorntons to pack assorted chocolates, says the company.

The system packs up to 73 trays/minute in the 24/7 operation and is specially designed to handle a large range of carton sizes for product weights from 100g up to 685g.

Up to 20 chocolate varieties can be accommodated as the line comprises 20 product in-feed conveyor belts and 10 high-performance robotic arms that perform up to 110 picks/minute.

Trays are transported along the line's chain

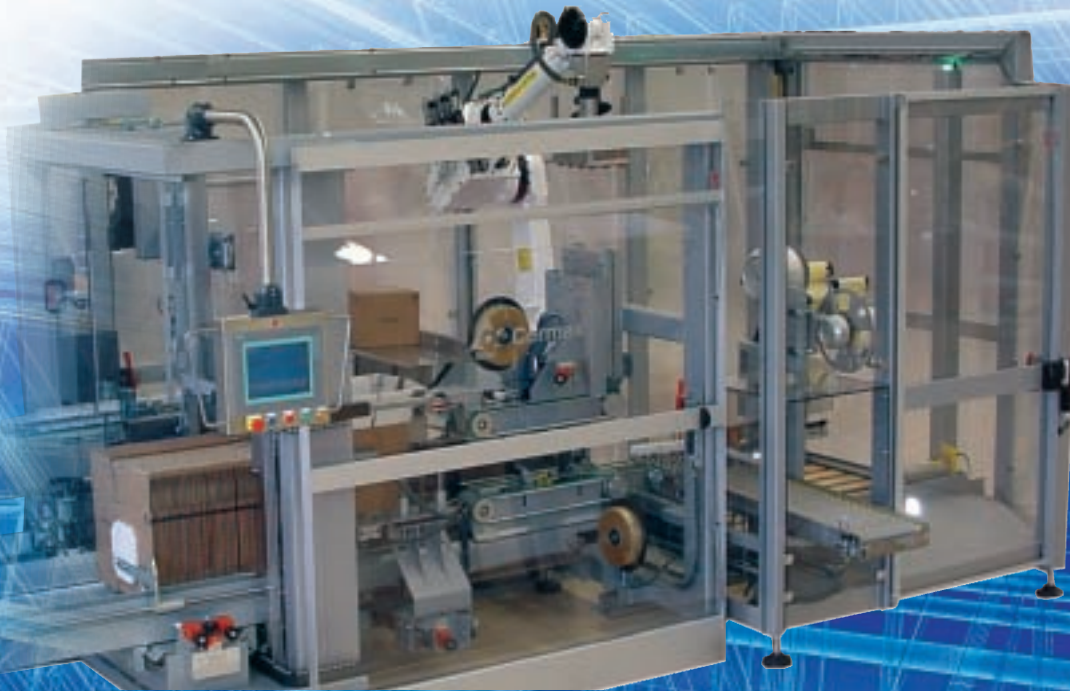
conveyor and fed into a series of 5 TLM-F44 sub machines which each comprise four product in-feed belts. The chocolates are located via the vision system and then filled by the F4 robot units, featuring a pair of in-feed belts.

Thorntons previously packed the products by hand which required three manual lines to produce the equivalent quantity. "The Schubert line has improved our productivity and reduced the requirement for temporary labour," commented the company's factory manager Joanne Talbot.

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confectionery & snacks - round-up

Chocolate out of the pink with new pumps



Fruit bars shape up

RNA has developed a system to load fruit bars into cartons for a leading snack bar manufacturer. It replaces a manual loading operation using flighted pockets on an in-feed conveyor.

Three types of bars – one of 25g (A); 20g (B); and an elongated shape bar with five flavour varieties (C) – needed to be loaded. A major issue was the inconsistent shape of each product due to the packaging wrapped around a typically soft chewy bar. The system had to ensure bars were in the correct position for loading onto the indexing conveyors.

Another challenge was balancing the feed from each bowl and loading the products two at a time into flighted pockets. The edges of the wrapper overlapped and might tangle if not separated. The customer also required a completely automated solution to allow each feed system to be used independently.

A five bowl system was required to feed 80 fruit bars/minute to give a loading speed of 40 cycles/minute with 2 bars/cycle. Sensors control the flow of products through the system, re-circulating over feed and checking they are separated correctly.

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Watson-Marlow Masosine MR and SPS series positive displacement pumps have been installed at the Fakenham, plant of chocolate makers Kinnerton. The first pump was introduced to replace a gear pump that was damaging product on an Easter egg production line. A second model supports a newly installed caramel line.

An ageing gear pump for an inclusion mixer on one line producing a white chocolate Easter Egg containing a dried raspberry mix 'squashed' the fruit causing the chocolate to turn pink, explained engineering supervisor, Phil Barwick. Kinnerton trialled a Watson-Marlow MR125 gear pump, having previously seen one in operation at an exhibition, which did not damage the fruit. The company subsequently introduced biscuit pieces which were also damage free, added Barwick.

The MR series is a range of medium duty sanitary pumps offering flow rates up to 91,000 litres/hour and pressures up to 10.3 bar. Typical applications include chocolate, cheese, curd, yoghurt, concentrates, yeast, batter and stews.

When Kinnerton wanted to establish an in-house caramel production line it again turned to Watson-Marlow. A problem with caramel is its viscosity when cool, which can cause problems for certain pumps. The recommended Masosine SPS 2 sanitary/industrial pump provided a successful answer, said Barwick. It has a capacity up to 4 m³/hour and pressures up to 15 bar, and is suitable for viscous applications such as caramel, gelatine and glucose.

An added benefit of the three SPS 2 pumps



installed is that they are easy to clean. "Even after pumping glucose, a simple flush-through with water is all that is required," he concluded.

Kinnerton, part of Zetar, produces an extensive confectionery range employing about 600 people and processing over 7,500 tonnes of chocolate, to make 1,200 different products.

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A beauty for confectioners

Marden Edwards has responded to demand from customers in confectionery and beauty markets with the introduction of a fully flexible, reliable, SEMI-AUTO overwrapper featuring an adjustable tooling system.

Ideal for small batch runs and high frequency change over, common in the confectionery industry where selections in a wide variety of shapes and carton sizes are common, it handles formats from 40x40x25mm up to 300x200x100mm. Size changes, without any need for change part tooling, take less than 10

minutes, and outputs of up to 10 wraps/minute can be achieved.

Fitment of a film slitter offers the user a simple way to manage film supplies; and the wrapper can operate with any reel-fed OPP film using an external side loading film reel. An inverter drive handles the film length and can be digitally adjusted to aid rapid change over and set up.

SEMI-AUTO was launched at Beauty World Middle East in Dubai this month.

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