

BISCUITWORLD

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Getting into shape

Performance and flexibility are key aspects in the critical stages of baking extruding and depositing – and no more so than in biscuit making. **Andre Erasmus** looks at some players in this field.



There is little that can beat the pleasure a nicely shaped and delicately filled biscuit (or cookie) can give as a snack with a cup of tea or coffee.

Biscuit, pastry, cake, confectionery and sandwich manufacturers find extruding and depositing to be an essential – and crucial – stage in their production which requires equipment that is efficient, reliable and flexible.

And it is in these fields that French company SG2C plays a prominent part.

With its wide experience in depositing processes (through its links to SOGEM FL, one of the market leaders for turnkey biscuit, bakery and confectionery production lines) SG2C has had a large number of depositors and cappers delivered worldwide over the last 15 years.

Through this, Concept Capper technology made its name mainly on difficult applications for either high speed, large plants, layer deposit on rectangular biscuits or multi-size applications.

Thanks to a modular concept, SG2C can supply a wide range of solutions from basic dosing machines into moulds or directly on oven bands (from open hopper or manifolds), up to intensive 24-hour operating tartlets and/or sandwiching machines with several servo-driven heads in series.

“A single head can be used for several recipes just by changing nozzles.”



PART OF A SG2C LINE.

The depositing in continuous mode on or into bakery items is by far the most difficult aspect to achieve with synchronisation of the production flow, as it requires an accurate product handling, aligning, pitching with sometimes turning of all or every alternate rows.

The main advantages of a Capper, claims SG2C's sales and export manager Valerie Olivier, is the flexibility and simplification of the product presentation along the entire line – from the oven discharge through cooling tunnels and up to packaging equipment – contrary to stencil creamers requesting lane reduction upstream and multiplication downstream.

In recent times, the company had moved away



from traditional pressurised manifolds to independent pneumatic driven depositing valves, firstly presented at Interpack in 2002.

The main motivation at that time, said Olivier, was the ability to memorise optimum opening times directly from the HMI without opening the safety doors as it used to be necessary before in order to adjust the manual valves.

It is even more practical to be able to make slight adjustments to the settings during production when needed.

One single head can be easily used for several recipes, just by changing the nozzles and select the corresponding programme on the touch screen.

A recently patented device allows the permanent circulation through the double jacketed head. This option avoids the fat separation, viscosity increase or solidification of the material in the head or inside the nozzles (pure chocolate can be recycled to the temperer). Associated with a better pressure control inside the head, this facility increases the weight balance reliability across the width to achieve similar results as on volumetric heads but with a much faster operation, more compact, lighter and cheaper design.

Olivier added that the design has been optimised to meet additional requirements such as the CIP facility, either just using a hot water rinse or with a real acid/base cleaning programme thanks to a mix of stainless steel construction (when running milk or egg based fillings).

The individual valves give another fundamental advantage 'no product – no deposit' by keeping a valve closed when a missing biscuit is detected.

Says Olivier: "It saves money on the cost of material which can be recycled without increasing the weight of neighbour lanes and keep a clean process with no cream deposited on the belt or rotary moulder or oven band.

"Recently we have combined those advantages to more efficient photo-electric cells and even vision system in order to detect partially broken or non-conforming products.

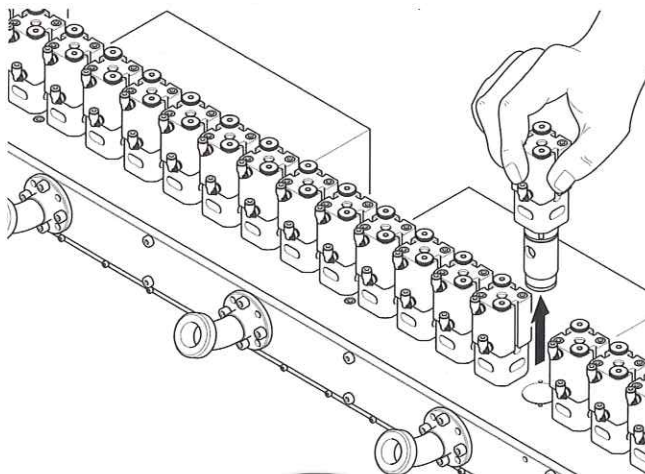
"The addition of individual reject systems after the machine is a must to send only conforming biscuits to packaging machines and it's better to reject bad dry shells rather than creamed ones."

DEPOSITING OPTIONS

SG2C's depositing heads can be designed with several distribution chambers in order to develop recipes with multi-flavoured creams or jams co-deposited side by side, on top of each other or even encapsulated with similar final shapes as co-extruded products.



SG2C'S VERTICAL INJECTION DEPOSITING SECTION AND (BELOW) THE INTERCHANGEABLE VALVES.



The accurate flow regulation enables to make regular layer deposits along bars or rectangular biscuits. The low pressure infeed system is suitable for fragile biscuits to be realigned with or without accumulation (macaroons, sponge cakes, almond cat's tongue biscuits...). SG2C has managed successful projects using pressurised manifolds even with aerated fillings (cream, batter, marshmallow and chocolate). In some extreme case or very fragile doughs, SG2C can also propose alternative mono- or multi-piston hopper systems.



HAND-FILLING IS A SLOWER OPTION.