

Press Release

German technology convinces in the Australasian hemisphere

BEHN + BATES supplies baking ingredients and starch producers in Australia and Thailand

Last autumn the German packing machine specialist BEHN + BATES succeeded in winning 2 interesting projects in Australia and Thailand. Both projects deal with the packing of powdery products into open-mouth bags. The Australian customer requests to fill baking ingredients into 10 to 25 kg bags at an hourly rate of 180 to 240 bags. The Thai company produces tapioca starch that has to be filled into 50 kg bags at an hourly rate of 220 bags. For both projects the Westphalian machine building company based in Münster will deliver its TOPLINE packing system in spring 2010.

Hermetically tight bags for optimum product protection and competitive bag cost, robust and steady machine technology that is easy to clean, can be put into operation fast and corresponds to modern food standards – these all were demands specified by the customers for the realisation of their projects. First project studies revealed quickly that only open-mouth bags are really hermetically tight thus offering optimum product protection. In comparison even a multi-layer paper valve bag with internal PE layer is never 100 % tight as it must be aerated and de-aerated in the process of filling for optimum packing results. With regards to cost the open-mouth bag also prevails. It is more cost-effective than the valve bag. Thus, the rough direction was clear for both projects. Considering the requested hourly outputs of up to 240 bags with bag weights of 25 or 50 kg BEHN + BATES offered its TOPLINE system with gross weigher.

The TOPLINE is a modern machine design launched by BEHN + BATES in 2005 and marketed successfully since then. The aim of the machine development has been that customers producing food and pet food can be offered an efficient technology for the clean powder filling into open-mouth bags according to modern GMP and HACCP hygiene standards. Powders, however, confront packing machine manufacturers with special challenges: They are partially extremely dusty not mentioning the resulting dust explosion risk. Only a filling technology that is designed to meet these challenges can guarantee optimum filling results. The relation between low-air filling, dust-tight filling spout and efficient product de-aeration or densification is of utmost importance.

The TOPLINE system has been continuously refined over the years. Thanks to sophisticated innovations the machine design was optimised in such a way that:

- the time needed for the individual work steps, e. g. the empty bag application, was reduced.
- the number of pneumatic and mechanical components was minimized.
- the energy supply cables were completely laid on the machine roof.

Bag processing in the machine starts with the empty bag feed designed according to the needs of the customer and the specialties of the handled bag. The design of the empty bag separating station also considers the bag type as well as the requested output. The bag applicator arm driven by a servo motor securely positions the singled bag underneath the filling spout. Both the Australian baking ingredients and the Thai starch product are filled by the dust-tight hexagonal filling spout. It encloses the bag entirely during the whole filling process. At the same time venting channels integrated in the filling spout assure the clean product filling without dust occurrence. The product is compacted during the filling process by a bag bottom vibrator supplied in dust-tight design especially for the food industry. The filled bag is taken off the filling spout by a pair of grippers, optimally spread and transferred to the discharge unit at the same height. Then, the filled bag is closed according to the closing method requested by the customer.

In spite of many parallels both projects are different in essential design features as different products with different specialities and different bags with different closures are handled:

Baking ingredients project in Australia

A coarse and fine-flow auger is provided for the dosing of the various baking ingredients containing different binding portions of fat, cocoa powder and unskimmed milk. The servo motors of the augers are adjusted to the different flow characteristics. These parameters are stored and recalled upon use according to recipe.

The customer processes multi-layer paper bags made of paper with PE inliner. The bag is separated by a vacuum system and transferred to the bag aligning unit in a linear motion. There, it is centred, opened and optimally shaped for the following application.

The internal PE bag is sealed hermetically tight after the filling described beforehand and the de-aeration. Then, the upper bag edge is folded and closed tight by hot-melt reactivation. This technology is trend-setting in the food industry as humidity, foreign bodies and vermin or similar cannot penetrate the packed product. Due to this optimum product protection even storage times can be extended.

Tapioca starch project in Thailand

The tapioca starch is dosed – without adding any additional air – by the proven impeller system combined with the scissors type seal for coarse and fine flow feed.

Bags made of woven propylene or polyethylene, as used in this project, are separated from the bag bundle at their bottom. A rotating transport grid system driven by a tooth belt takes over the empty bag being centred on its way to the bag opening station. Thus it is for sure that bags do not load electrostatically nor get stuck.

BEHN + BATES will deliver to the Thai customer a sewing machine for sewing the filled woven PP bags. Especially for hygienic reasons the sewing machine is integrated in the machine frame. Thus, the bags are not sewn outside the machine as it is usually done in many companies.

In both projects optimally shaped bags that can be easily palletised and perfect pallet patterns are the result what is of utmost importance to the product marketing.

The severe hygienic standards applied in the food industry are the basic rule for the construction of all TOPLINE systems: They are suspended from the top. Thus, the machine bottom is easily accessible for cleaning purposes. In addition, the cleaning process is made easier by the completely closed design of the machine bottom and the cabling laid outside the dust area. The access doors equipped with safety glass are flush with the machine frame. Possible dust deposit areas are reduced to a minimum. The entire packing area remains clean. Cleaning and maintenance works are minimized.

In order to avoid even the smallest risk of residual product deposits the Australian customer will clean the product ways with water in regular intervals.

Excursus: High-capacity filling of powders with the ORBIS system

In the international food industry an increasing number of companies are inquiring the hygienic filling especially of powdery products into open-mouth bags at hourly rates of more than 250 bags. The ORBIS packing system made by BEHN + BATES is the further development of the TOPLINE and fills powdery products into open-mouth gusseted bags or flat bags made of paper, PE or

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material combinations at hourly outputs of up to 600 bags. It can be equipped with 3, 4 or 5 filling spouts. Thus, it is possible to carry out the individual filling steps of empty bag application, coarse and fine flow dosing as well as product compaction and/or bag discharge simultaneously. Shorter cycle times and higher machine capacities are the result. Thus, BEHN + BATES is well prepared for future market challenges.

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Press photos

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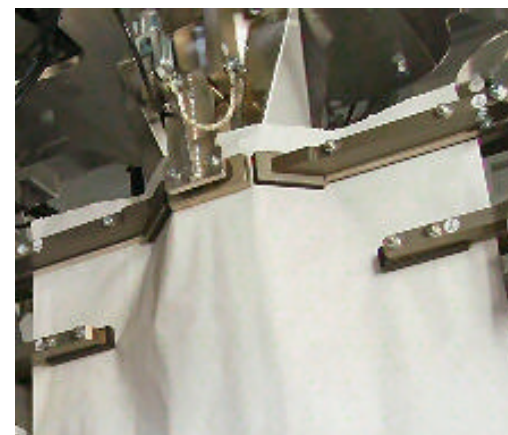
General view of the compact TOPLINE system from „behind“ with empty bag magazine designed according to project with a small platform for the easy re-filling of empty bags



Filled bag in the closing station, in this case: sewing machine



Interior view of the TOPLINE with suspended machine components for easy access and cleaning of the machine



The dust-tight hexagonal filling spout encloses the bag entirely from all sides during the whole filling process.