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HÜGLI UK

Belt-weigher does the job for Hügli Group

Cotswold Mechanical's belt-weighing machine has boosted productivity by 50% on Hügli Group's bulk powdered soup operation. *Lynda Searby* looks at the food producer's successful packaging line transition

Who Hügli UK
What Turn-key line based on Cotswold Mechanical's CMW5000BF belt weighing and filling system
Why To automate the filling of tubs with powdered soup without crushing dried particulates or creating too much dust.
When March 2015

Challenge

Redditch-based dry blended food producer Hügli UK, part of the £250m Swiss headquartered Hügli Group, has undergone significant growth in recent years – particularly on the foodservice side of its business.

"Over the last three years we've seen double digit growth in food service and catering packs," says Chris Hurt, managing director of Hügli UK.

One of the in-demand products was 2.25kg catering tubs of powdered soups, and this was resulting in capacity and efficiency issues.

"Our old packaging line was heavily reliant on manual labour. It needed to be replaced with an automated line for productivity and demand reasons," explains Hurt.

Filling was being carried out by hand, supplemented by an auger – usually the filling method of choice for powdered products. However, the auger caused the product to compact, crushing or damaging particulates such as dried vegetables and noodles.

"Our soups contain ingredients that make them difficult to fill using conventional volumetric filling systems. We needed a system that could accurately fill products with varying bulk," says Hurt.

Strategy

At the PPMA show in September 2014, representatives from Hügli paid a visit to Cotswold Mechanical's stand to see whether it could come up with a solution.

"We knew from experience that we couldn't run the product on a standard vibratory linear weighing machine as this would just compact the product. A multihead weigher wasn't an option either, as this would create clouds of dust, so we decided to run trials on one of our belt-fed weighing machines," recalls Doug Phillips, sales director at Cotswold Mechanical.

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> **Chris Hurt**
> **Hügli UK**

Another feature of the powdered soups was that they contained entrapped air, which resulted in the product 'peaking' above the tub, and potentially spilling down the sides.

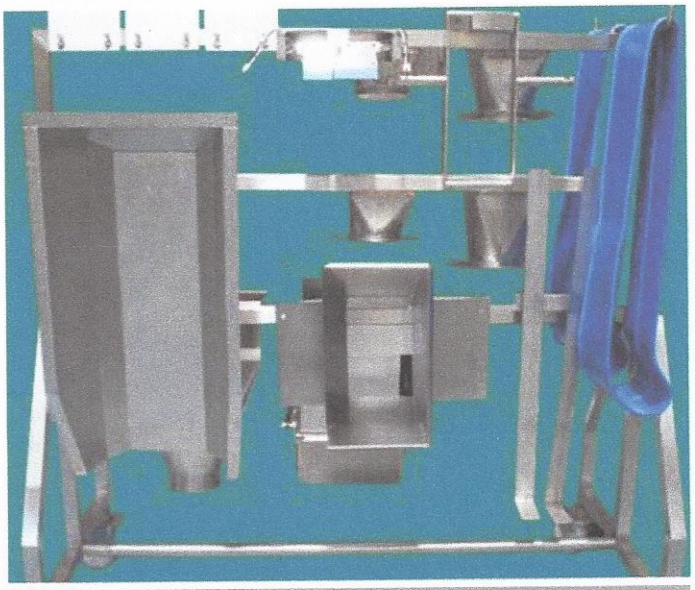
"Effectively, you need to shake the tub to settle the contents as you fill it, but it isn't possible to weigh and shake at the same time," says Hurt.

To overcome this problem and contain the dust from within the tub during the filling operation, Cotswold Mechanical designed a pneumatic rise and fall filling chute.

"This unit automatically 'dips' into the tub during the filling operation while at the same time a pneumatic cylinder taps the bottom of the container to settle the product below the fill line," explains Phillips.

Convinced that the system specified by Cotswold Mechanical was capable of running this challenging product, in November 2014 Hügli UK placed its order.

"Cotswold Mechanical was very approachable, easy to deal with, receptive to our suggestions for design features, and offered quite a short lead time. The machine itself was simple and easy to use, and, most importantly, able to fill the soups efficiently," says Hurt.



The complete filling line designed and built by Cotswold Mechanical

Implementation

In March 2015, the turn-key automatic filling line was installed.

A triple head denester deposits three containers directly into three individual pockets of a flighted indexing conveyor. The containers are then automatically indexed one at a time into position under the outfeed chute of the CMW5000BF belt weighing and filling machine.

The weighing machine pre-weighs the correct amount of product and deposits it into the tub through a pneumatically operated rise and fall chute. Once the product has been deposited, the rise and fall chute lifts clear to enable the next container to be indexed into position. After every third index of the pocketed conveyor, the denester deposits another three containers into the next three pockets.

The next section of the system is the automatic lidding area, where a pneumatically operated arm takes the lid from a preloaded stack and places it onto the filled tub. The conveyor then indexes the tubs along to the lid pressing station where a pneumatic cylinder presses the lid firmly onto the container.

The final station is where a pneumatic 90 degree transfer unit pushes the filled and lidded containers off the main indexing conveyor and onto the infeed of an inline metal detector.

Frequent changeovers are a feature of the soup filling line, so it was imperative that the system was easy to strip down for cleaning.

To achieve this, all contact parts – including the belt of the linear weigher – were designed to be quick release. Consequently, a complete system strip-down takes no more than five minutes.

Results

According to Hurt, productivity on the line has increased by 50% since automating this operation.

"We no longer have capacity issues," says Hurt.

The line is future-proofed not just for capacity expansion, but also for changes in container shapes and sizes.

"The system was designed such that the denester, filling chute, and lid placing and lid closing systems can be changed to run other shapes and sizes of containers if required in future," explains Phillips.

Hurt added that weighing accuracy had improved significantly, and that the line had gone from being a largely manual operation to a "single-person" operation.

Hügli expects to see a return on the investment in less than three years. ■