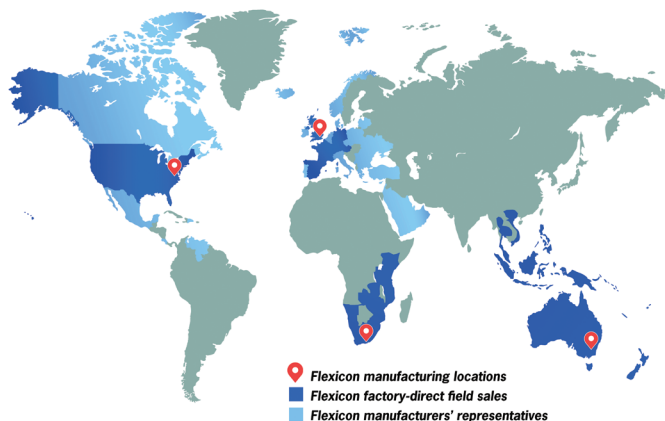




Re-Bagging Of Granular Sugar Improved With Bulk Bag Weigh Batch Discharger

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flexicon®

USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
E-mail: sales@flexicon.com
Web: www.flexicon.com

UK

FLEXICON (EUROPE) LTD
Tel: +44 1227 374710
E-mail: sales@flexicon.co.uk
Web: www.flexicon.co.uk

AUSTRALIA

FLEXICON CORPORATION
(AUSTRALIA) PTY LTD
Tel: +61 7 3879 4180
E-mail: sales@flexicon.com.au
Web: www.flexicon.com.au

SOUTH AFRICA

FLEXICON AFRICA (PTY) LTD
Tel: +27 41 453 1871
E-mail: sales@flexicon.co.za
Web: www.flexicon.co.za

SPAIN

FLEXICON EUROPE SPAIN
Tel: +34 930 020 509
E-mail: ventas@flexicon.es
Web: www.flexicon.es

FRANCE

FLEXICON EUROPE SAS
Tel: +33 7 61 36 56 12
E-mail: ventes@flexicon.fr
Web: www.flexicon.fr

GERMANY

FLEXICON EUROPE GmbH
Tel: +49 173 900 78 76
E-mail: vertrieb@flexiconeurope.de
Web: www.flexicondeutschland.de

SINGAPORE

FLEXICON SINGAPORE PTE LTD
Tel: +65 6778 9225
E-mail: sales@flexicon.com.sg
Web: www.flexicon.com.sg

INDONESIA

FLEXICON SINGAPORE PTE LTD
Tel: +62 81 1103 2400
E-mail: sales@flexicon.co.id
Web: www.flexicon.co.id

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HUTHWAITE, NOTTINGHAMSHIRE, UK — Welcome Food Ingredients Ltd required a more efficient system to re-bag granular sugar used to manufacture their sauces, pastes, dressings and dips for food industry customers.

Food hygiene procedures require sugar and other granular ingredients to be decanted into food quality plastic bags weighing 10 kg, but previous methods proved complex and time consuming.

The company now accomplishes the task in one-third less time with less labour while meeting ATEX requirements using an automated bulk bag weigh batching system with integral flexible screw conveyor from Flexicon Europe.

Re-bagging was labour intensive

“With the old process, we received sugar on 1 tonne pallets, comprised of forty 25 kg bags,” says Tony Swann, Welcome Food Ingredients’ Safety, Health & Environment Manager. “We used a combination of vacu-lifters and manual handling in an eight-stage process to transfer the sugar into appropriately sized plastic bags before they could be loaded into the cookers. The new transfer system has reduced re-bagging to just three stages.”

Bulk bag discharger simplifies operation

One tonne bulk bags are positioned alongside a Flexicon BULK-OUT® BFC-S-X stainless steel bulk bag discharger, which has an integral cantilevered I-beam with an electric hoist and trolley. The bag straps attach to a cross-shaped lifting frame, and the hoist lifts the bag into position on the discharger frame. An ATEX-rated earth clamp is then attached to the bag.

The operator attaches the clean side of the bag spout to the clean side of the discharger by means of a SPOUT-LOCK™ clamp ring, which is mounted atop a TELE-TUBE™ telescoping tube that maintains constant downward tension on the bag as it empties and elongates, promoting material flow into the 110 L hopper.

Flexible screw conveyor transports sugar to weigh hopper

From the hopper a flexible screw conveyor that is 3.0 m long and 115 mm in diameter, transports sugar to a 40 L capacity conical stainless steel weigh hopper resting on three load cells.

A gain-in-weight control system meters sugar into the weigh hopper at maximum feed rate. The load cells transmit weight gain information to the controller which steps-down the feed rate to a trickle and stops the conveyor immediately before reaching the target weight to compensate for material-in-flight.



A flexible screw conveyor moves granular sugar from the bulk bag discharger to a gain-in-weight hopper.



Operator attaches strap to one of four Z-CLIP™ bag strap holders before the lifting frame and bag are hoisted and rolled into the discharger.



Electric hoist raises the lifting frame and bulk bag, which are rolled into position by a trolley.



Here, the operator pneumatically raises the TELE-TUBE™ telescoping tube prior to securing the bag spout using a SPOUT-LOCK™ clamp ring.

Weighments of sugar are discharged dust-free through a slide gate and downspout into a 10 kg capacity blue plastic bag that is clamped beneath the weigh hopper. Once filled, the bag is manually tied off and placed in a plastic storage stillage. The weighing and filling cycle is repeated for subsequent bags.

Discharger, filler improve operating efficiency

“The bulk bag discharger and filling system has simplified and improved what was a complex, multi-stage handling process,” explains Tony Swann. “Each week we typically re-bag around 30 tonnes of sugar, sometimes operating for 20 hour per day. With our old method, we were handling the equivalent of 100 tonnes of sugar per week.”

He says, “Our staff disliked having to manually handle 25 kg bags and are now more comfortable with packing 10 kg bags using the new equipment. It also offers benefits for the future as it can be extended if required. Additional items of equipment like sieves can be incorporated if our customers request their use.”

“The fact that Flexicon could supply an ATEX-rated food quality handling system with all stainless steel components was of great importance to Welcome Food Ingredients. We’re pleased with the operating improvements it has allowed us to achieve.”



Once the bag spout is secured by a SPOUT-LOCK™ clamp ring, the operator releases the drawstring (red). Constant downward tension is maintained by a TELE-TUBE™ telescoping tube as the bag empties and elongates.



The system controller starts, slows and stops the flexible screw conveyor according to the amount of sugar gained by the gain-in-weight receiving hopper suspended on load cells.



The flexible screw conveyor is driven beyond the point at which sugar is discharged, preventing material contact with bearings or seals.



Operator ties off and removes filled 10 kg plastic bag for storage.



Sugar, a hygroscopic granular product, is a key ingredient in Welcome Food Ingredients Ltd's manufacturing process.

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USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
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