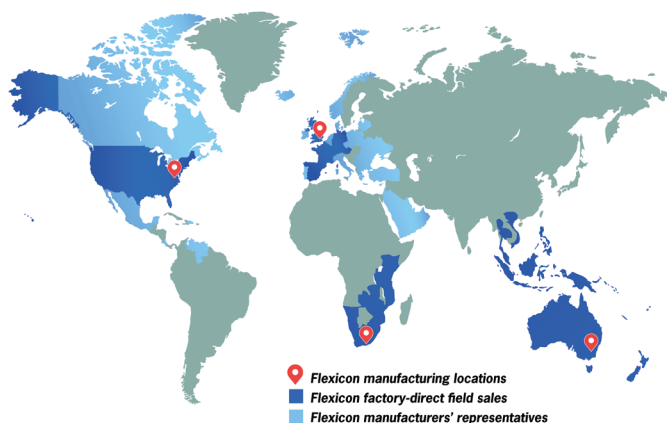




Fully enclosed system, comprised of bulk bag discharger, receiving hopper, flexible screw conveyor, and transfer bin, dramatically reduces operator exposure to airborne dust.

Bulk Bag Weigh Batch System Cuts Labor, Dust, Disposal Associated with Manual Bag Dumping

Q-0179



● Flexicon manufacturing locations
■ Flexicon factory-direct field sales
■ Flexicon manufacturers' representatives

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

Bulk Bag Weigh Batch System Cuts Labor, Dust, Disposal Associated with Manual Bag Dumping

STAFFORDSHIRE, UK — Nutec Ltd., a contract manufacturer and packager of animal feed and medicinal products, converted from manual dumping of 44 lb (20 kg) bags of raw material to automated, dust-free discharging of 1.1 U.S. ton (1 metric ton) bulk bags using a bulk bag weigh batch discharger.

Previously, pallets of bags containing the raw material were forklifted onto a 10-ft (3 m) high mezzanine, adjacent to a receiving hopper into which the bags were emptied. A 6" (150 mm) diameter Flexicon flexible screw conveyor transported the material 15 ft (4.5 m) to a 2.2 U.S. ton (2 metric ton) capacity blender. Because bags varied by up to 0.2 lb (0.1 kg), the amount of additive fed to the blender was adjusted by a controller receiving weight gain signals from load cells that supported the blender. The blended compound was then conveyed for packaging into 22-55 lb (10-25 kg) bags.

Components of Product Transfer System

The new system, capable of transferring 13.2 U.S. tons (12 metric tons) per day of material supplied in bulk bags, is comprised of the following components:

1. Bulk bag discharger frame
2. 8 cu ft (0.2 cu m) capacity hopper
3. 6.6 ft (2m) long, 4-in diameter flexible screw conveyor housed in a UHMW polyethylene tube
4. 28 cu ft (0.8 cu m) capacity transfer bin, free standing on a platform scale
5. Dust collection system
6. Control panel for gain-in-weight weigh batching of raw material

Dust-Tight Connection at Bag/Hopper Interface

The straps of a 1.1 U.S. ton (1 metric ton) bulk bag are hooked to a lifting frame that is raised by forklift and set into receiver cups comprising the top of each discharger post. The bulk bag/hopper interface consists of a manual SPOUT-LOCK® clamp ring positioned above a pneumatically actuated TELE-TUBE® telescoping tube, which facilitates dust-tight connections between the bag spout and hopper, and automatically elongates the bag as it empties to promote flow and evacuation.

The telescoping tube pneumatically raises the clamp ring assembly allowing connection to the bulk bag spout, sealing the clean side of the bag spout to the clean side of the telescoping tube. It then lowers until the bag spout is pulled taut. Once the spout is untied, the telescoping assembly exerts



SPOUT-LOCK® clamp ring and pneumatically actuated TELE-TUBE® telescoping tube allow dust-tight connections between bag spout and hopper, and automatic elongation of the bag as it empties for total evacuation of material.



The transfer bin is mounted on a platform scale, which transmits gain-in-weight signals to a controller that runs, slows, and stops the conveyor, achieving rapid batching cycles and +/- 0.04 percent batch weight accuracy.

continual downward tension on the spout, elongating the bag as it empties. The dust-tight seal between bag spout and clamp ring allows full-open discharge from the bag with no dusting.

Air and dust in the hopper displaced by bulk material discharging from the bag are fully contained by a remote dust collection unit. From the receiving hopper, material gravity feeds into the intake adapter of the 4-in (10 cm) diameter, 6.6 ft (2m) long flexible screw conveyor and is conveyed at a 45° incline for discharge into the 28 cu ft (0.8 cu m) capacity transfer bin.

Gain-in-Weight Control Achieves Batch Accuracy

The transfer bin is mounted on a platform scale that transmits gain-in-weight data to a controller. When the operator initiates a cycle, the first set point runs the conveyor at high feed rate for rapid fill. Immediately prior to reaching the target batch weight, the second set point reduces the feed rate to dribble speed, stopping the conveyor when the precise batch weight of 880 lb (400kg) has been achieved within +/- 7 oz (200 gm).

A forklift truck lifts the bin to the 10 ft mezzanine, lowering it onto the hopper. A manually opened butterfly valve allows raw material to drop through the hopper into a flexible screw conveyor that feeds batches of precise weights into a blender where it is compounded with an additive.

To clean the flexible screw conveyors, an operator removes the outer tube screw cap and reverses the drive, evacuating any residual material prior to thorough flushing of the unit's crevice-free interior surfaces using a cleaning solution.

Fitting into a small, available space, the system enabled a major changeover in production techniques with minimal disruption. In addition to reducing labor, it eliminated the need for bag disposal and dramatically reduced operator exposure to airborne dust.



USA

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