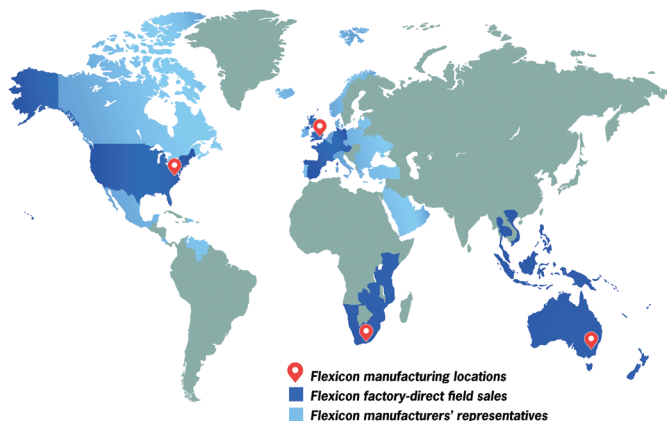




Hannah's Sweets Improve Manual Sack Dumping, Plant Hygiene, with Material Handling System

HH-1078



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

Hannah's Sweets Improve Manual Sack Dumping, Plant Hygiene, with Material Handling System

JOHNSTONE, SCOTLAND — Established in 1962, Scottish confectionary maker Hannah's Sweets produce an array of sweets including their well-known Jazzies and Snowies — chocolate discs covered in coloured candy pieces.

Each week the company process 50 to 60 tonnes (55 to 66 tons) of sugar, milk powder, whey powder, wheat flour and other dry ingredients received in 25 kg (55 lb) bags. This equates to about 300 bags per day emptied at the rate of 1,675 kg/hour (3,350 lb/hour).

To reduce manual bag handling and dust, and prevent pallets from entering the hygienic mixing room, the company installed a Flexicon bag dump station and pneumatic conveying system integrated with an outsourced roller conveyor and vacuum sack lifter.

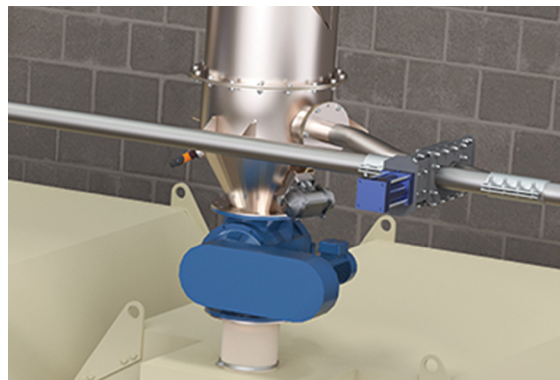
The delivery system needed to handle material with bulk densities from 208 kg/m³ (13 lb/cu ft) for milk powder to 705 kg/m³ (44 lb/cu ft) for granulated sugar.

Tom Munro, Hannah's Managing Director, says, "Flexicon offered a turnkey system to handle all ingredients, whereas others could only supply parts of what we were looking for."

Automation, safety and capacity redefine manual dumping

Using the vacuum lifter, an operator moves the sacks from pallets onto the roller conveyor, which transports them through a wall into the mixing room where the Flexicon bag dump station is located. Equipped with a high velocity vacuum fan, the unit draws airborne dust generated by the manual dumping process away from the operator onto two cartridge filters having a combined surface area of 9 m² (97 sq ft). Dust accumulation on outer filter surfaces is dislodged on a timed cycle by alternating blasts of air from nozzles located within each filter, maintaining dust collection efficiency. Dislodged dust falls into the unit's 140 l (5 cu ft) capacity hopper, eliminating waste.

Material is then fed through a pickup adapter mounted below the base of the hopper, into the PNEUMATI-CON® pneumatic conveying system, also from Flexicon. Powered by a 7.5 kW (10 HP) blower, it transports ingredients through a 12 m (39.4 ft) long, 75 mm (3 in.) diameter line with three pneumatically-actuated diverter valves that sequentially feed three 450 mm (18 in.) diameter filter receivers, each feeding a separate mixing tank. Once separated from the airstream, material is metered through the filter receiver's rotary valve into a 28 l (7.4 gal) surge hopper that discharges into a mixing tank, where dry ingredients are blended with vegetable fats. The resulting liquid chocolate compound is formed into



Sacks of dry ingredients are delivered via roller conveyor to the bag dump station that draws airborne dust away from the operator. Manually dumped ingredients – and accumulated dust – are pneumatically conveyed in sequence to three filter receivers, each feeding a different mixing tank where dry ingredients are blended with vegetable fats.



Under PLC control, the pneumatically-actuated diverter valves of three filter receivers open and close in sequence. The PLC also starts and stops rotary airlock valves according to signals received from high and low level sensors of the mixing tank surge hoppers.



Hannah's Sweets produce a range of chocolate candy products for the UK and export markets.

various shapes using automatic moulding equipment.

The system is controlled by a PLC that opens and closes each diverter valve, starts and stops each rotary valve as signals are received from each hopper's high level sensors, and stops the conveying system's blower when a signal is received from the bag dump station's low level sensor. The mixing tanks are filled to a combined batch weight of 2 to 3 tonnes (2.2 to 3.3 tons) of liquid chocolate.

System evacuation cuts waste, cleaning time

The enclosed system precludes contamination of the product and plant environment, while the pneumatic blower evacuates the conveying line. This eliminates the need to flush the system during material changeovers, and ensures all batch ingredients reach the mixing tanks, eliminating waste.

"We have a clean-as-you-go policy but the new delivery system requires only a wipe down by the operators each day," says Munro.

Since installation, the system has been highly reliable, delivering consistent performance. "The lines have been running a year and we haven't had to do any maintenance," Munro adds.



The bag dump station and pneumatic conveying system deliver sugar, milk powder, whey powder, wheat powder and other dry ingredients to mixing tanks that blend liquid chocolate.

Hannah's Sweets

+44 1505 321131

Johnstone, Renfrewshire, Scotland PA5 8AB

tom@hannahssweets.co.uk

flexicon®

USA

FLEXICON CORPORATION

Tel: +1 610 814 2400

E-mail: sales@flexicon.com

Web: www.flexicon.com