

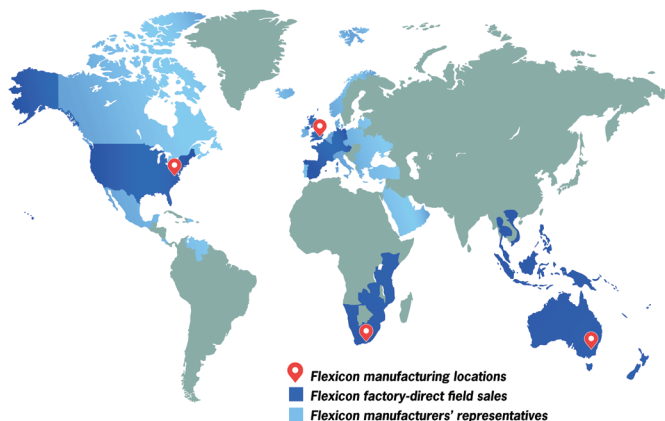
FLEXICON CASE STUDY



Diced and broken peanuts are emptied from bulk bags into the 80 liter (2.8 cu. ft.) hopper from which the 3.25 m (10.66 ft.) long flexible screw conveyor transports the stock to a peanut mill. The portable frame permits a quick move to the cleaning area during product changeovers.

Producing Peanut Butter without Jamming

T-1278



📍 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

Producing Peanut Butter without Jamming

NEW SOUTH WALES, AUSTRALIA — As is typical of peanut butter manufacturers, Sanitarium Health Foods blends several peanut varieties to give their brand a distinct flavor and aroma. The company purchases shelled and cooked peanut stock, empties it into a bin, and conveys it to a porcelain peanut mill, where it is ground and blended to the desired consistency.

The company switched from buying whole peanuts, to diced and broken peanuts, which reduced costs with no sacrifice in quality of the finished product. But according to Plant Engineering Manager Carl Caldwell-Cook, “The (rigid-auger) conveyance system that had been satisfactory for transporting whole nuts, was turning the broken nut stock into peanut butter even as it was being augered to the mill.”

Replacing the conveyor with a pneumatic or a gravity feed system was too complex, and would lack the necessary control to prevent frequent blockages of the mill's infeed side. Nor could the company just dump peanut stock directly into the mill's inlet. Says Cook, “At the quantities involved, we cannot simply dump nuts straight from a bag into the mill. There has to be a controlled rate of feed, or else the nuts clog the mill inlet.”

Sanitarium employs flexible screw conveyors in its seven production sites, and asked the manufacturer, Flexicon Corporation (Australia) Pty Limited., to design a conveyor for the peanut butter production line.

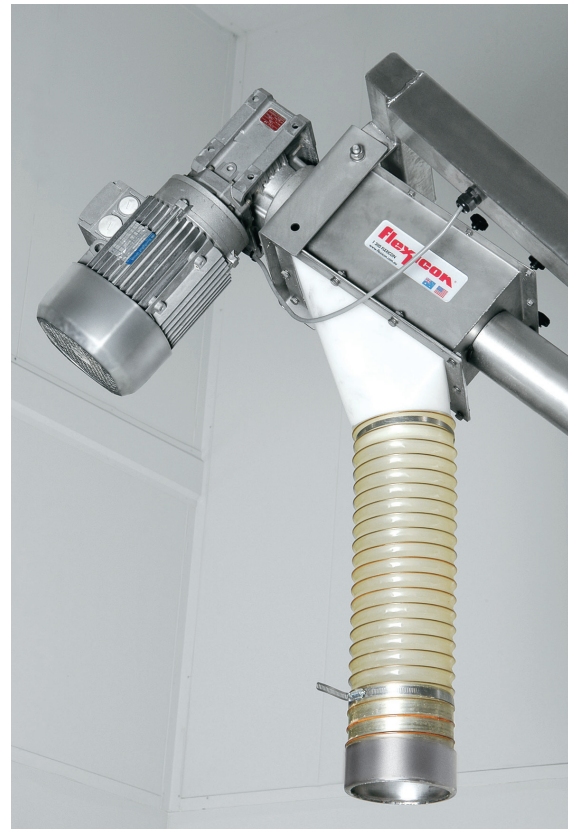
In today's peanut butter process, the diced and broken peanuts are emptied from bulk bags into an 80 liter (2.8 cu. ft.) hopper from which a 3.25 m (10.66 ft.) long, 90 mm (3.5 in.) diameter flexible screw conveyor transports the stock, at a 45° incline, to a height of 3.45 m (11.32 ft.) above the floor. The material gravity feeds through a charging adapter and downspout into the mill. Conveying rate is 2.46 cu m (87 cu. ft.) per hour.

Between the peanut mill and final packaging, ingredients such as salt and sugar are added. Sanitarium provides peanut butter in smooth and crunchy versions as well as no-added salt or sugar versions.

Screw geometry and enclosed tube prevent degradation, contamination

The peanut stock has a bulk density of 480 kg/cu. meter (30 lb./cu. ft.), medium oil content and an angle of repose of 60 degrees. As such it is non-free-flowing and prone to packing, caking, bridging and cavitation in a conventional flexible screw conveyor and hopper.

Sanitarium employed Flexicon's BEV-CON™ flexible screw for conveying materials that tend to pack, cake, smear, seize or break apart. It imparts high directional forces and minimal radial forces while significantly reducing the residence time of material in the conveyor, eliminating or minimizing product degradation.



Because the conveyor's drive motor is coupled to the upper end of the flexible screw above the point at which material is discharged, material does not come in contact with seals or bearings. The peanut stock exits through a discharge adapter and downspout.



Sanitarium blends several varieties of diced and broken peanuts to give its brand a distinct flavor.

The enclosed conveyor system also maintains product moisture and temperature levels during conveying and prevents contamination of the material and plant environment. Because the conveyor's drive motor is coupled to the upper end of the flexible screw above the point at which material is discharged, material does not come in contact with seals or bearings.

Mobility speeds cleaning, changeovers

The Sanitarium conveying unit consists of the hopper and flexible screw conveyor on a caster-mounted frame to roll between the mill and the cleaning area during product changeovers. Sanitarium removes the clean-out cap on the bottom end of the tube and reverses screw rotation to evacuate residual material and flush the internals. The screw is also removed for sanitizing and inspection. With the exception of the plastic outer tube, all material contact surfaces are of stainless with food grade finish.

The conveyor's electrical controls are mounted on the mobile frame in a stainless steel enclosure, consisting of a safety relay; start, stop, jog and reverse controls; and an illuminated reset button. A capacitive-type proximity level switch, mounted in a food-grade Teflon sheath inside the hopper, warns of low levels of the peanut stock.



USA

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