

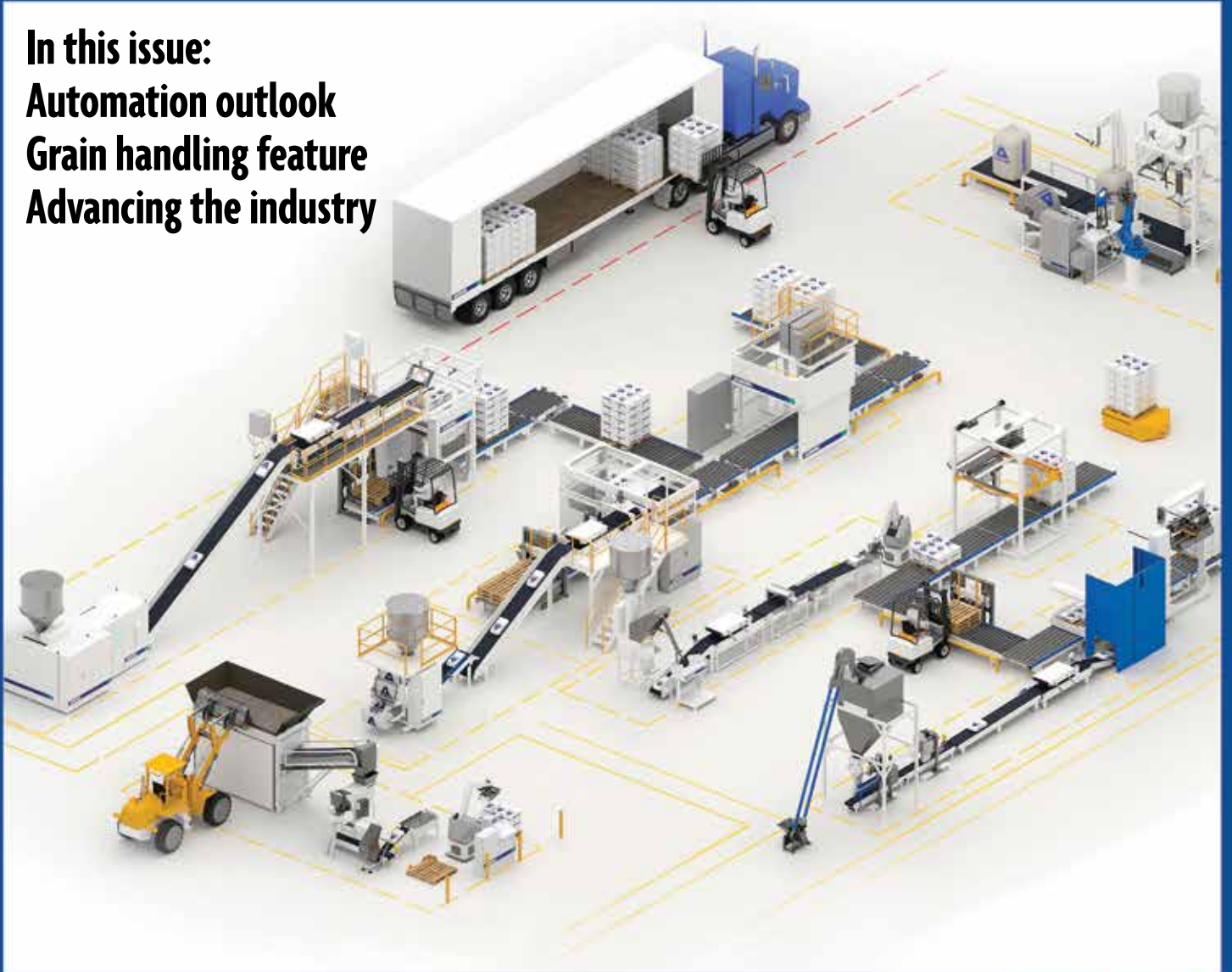
AUSTRALIAN

# BULK HANDLING REVIEW

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## REVIEW

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# Globepak produces hundreds of products on just seven bulk handling lines

The South African company has installed Flexicon equipment to help it keep up with a growing international demand.

*Operators attach bag loops to the lifting frame with Z-Clip bag strap holders and hoist it into the discharger using a pendant.*



**WITH THE POPULARITY OF** nutrition products booming, Globepak, a subsidiary of the USN Group of Companies, needed to keep pace with growing demand.

However, the intermediate bulk containers and rigid auger conveyors at the company's former 4000m<sup>2</sup> facility were unable to transfer mixtures from blenders to packaging machines at required rates.

"They were starving the packaging lines," said Jose Da Costa, head of DC Weighing and Control, the firm that

engineered and built Globepak's new 14,000m<sup>2</sup> plant.

Completed in 2021, the facility employs larger blenders and high-speed packaging machines, which are fed by a new automated bulk transfer system supplied by Flexicon Africa.

Each of the plant's seven lines spans 15m and relies on a Flexicon model BFC Bulk-Out bulk bag discharger with a 250L capacity hopper and a 4.5m long flexible screw conveyor to transfer mixed ingredients from bulk bags to packaging machines.

"All are under automated control for continuous filling and accurate package weights," Waldo van der Walt, Globepak general manager, said.

## **'No-touch' process faster, easier**

To prevent cross contamination, the bulk handling lines and their dedicated operators are separated from adjacent lines by a curtain. Each BFC bulk bag discharger is equipped with a cantilevered I-beam with electric hoist and trolley that suspends a bag lifting frame above the bag for connecting



bag loops to Z-Clip bag strap holders at floor level. The operator then hoists the bag into the discharger frame using a hand-held pendant, eliminating the need for a forklift.

At the bag spout interface, the operator secures the clean side of the bag spout to the clean side of a Spout-Lock clamp ring positioned atop a Tele-Tube telescoping tube, which applies continual downward tension as the bag empties and elongates, directing material through the bag spout to completely discharge into the floor hopper below.

From the hopper, the 4.5m long Bev-Con flexible screw conveyor transfers material to the packaging line at a 45° incline. The conveyor's 90 mm diameter plastic tube houses a self-centring, flexible stainless-steel screw, which is the only moving part contacting the material. The screw is driven beyond the point of discharge, preventing material contact with seals or bearings.

"We now have a no-touch process. The material remains completely sealed during the entire transfer from bulk bag to packaging machine,

assuring no contamination up to the filling point," van der Walt said.

### Feeding packaging lines without interruption

Low- and high-level sensors on each packaging machine surge hopper signal a PLC when to start and stop its respective flexible screw conveyor, allowing non-stop operation.

An alarm sounds when a bulk bag becomes empty, alerting the operator to load a full bag and press restart.

"The flow to the packaging lines is continuous, with consistently accurate package weights," van der Walt said.

The system handles USN's line of 360 different products—mostly whey protein based—whose characteristics range from sticky to free-flowing to fine and dusty.

"The Bev-Con spiral design accommodates all of the materials very well," Da Costa said.

Cleaning and product changeovers proceed smoothly. In 15 minutes, an operator can clean the conveyor tube and spiral and load a new bulk bag with a different flavour.

"GlobePak can run chocolate



An automated packaging line, with bulk bag discharger and packaging machine. It is one of seven identical lines.

powder, for example, and then quickly switch to strawberry flavour, with no issues," Da Costa said.

To clean, the operator opens the conveyor tube end cap, pulls out the spiral, and blows it off with compressed air. "No product sticks to the tubes," he said.

The cleanliness of the bulk handling system and its operation complies with Good Manufacturing Practices, meeting pharmaceutical specifications, as nutritional supplements in South Africa are recognised as pharmaceuticals.

### Expanding markets and production capacity

With its diverse range of products and newfound production capacity, USN are eyeing additional European, UK and US markets, and looking at launching a plant in Kenya to service central and west Africa.

Da Costa adds that Globepak has seen "massive improvements" with the bulk handling system, all the while keeping running costs low and conserving floor space – and with ample capacity to accommodate future growth. "The packaging machines are never hungry." **B**



The flexible screw conveyor's drive is located beyond the point of discharge, preventing material contact with seals or bearings.