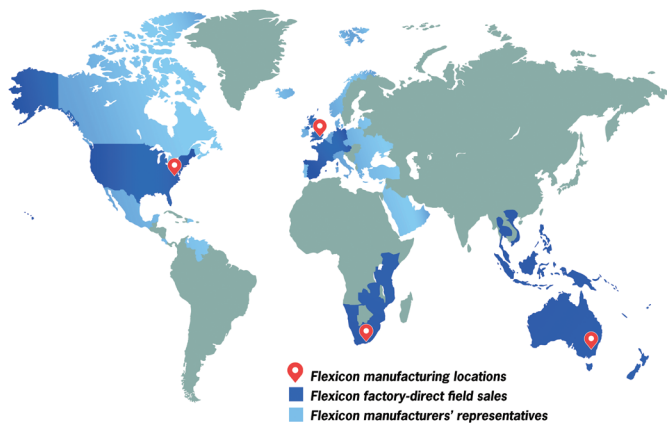




Bulk Bag Discharger Ups Efficiency of Cocoa Powder Line

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GRESIK, EAST JAVA, INDONESIA — From locally grown cocoa beans, Singapore-listed JB Cocoa manufactures and markets cocoa butter, cocoa powder and cocoa mass. Located 30 km (19 miles) from the port of Surabaya in the province of East Java, Indonesia, JB Cocoa's facility can process 50,000 metric tonnes (55,000 tons) of cocoa beans annually.

The beans are cleaned, roasted and winnowed to separate the cocoa nibs, which are treated to enhance flavour and colour. The nibs are then ground into cocoa liquor, which is squeezed by a "butter press" to yield cocoa butter used in making chocolate, and crumbled cocoa "presscake" that is pulverised into cocoa powder.

A portion of the presscake is shipped directly to customers in 1 tonne (1.1 ton) bulk bags, but most is processed into cocoa powder and packaged in handheld sacks.

Rapid discharging from bulk bags dust-free

To increase efficiency of the cocoa powder line, the plant installed a Flexicon BULK-OUT® BFC-C-X bulk bag discharger to handle loose cocoa presscake being put in storage before being reduced to powder and packaged for customers.

The discharger is configured with an electric hoist and trolley that ride on a cantilevered I-beam, allowing bulk bags to be loaded into the frame without the need for a forklift.

To connect a bag, the operator slips the bag straps into four Z-Clip™ strap holders of a bag lifting frame, and uses a pendant to hoist the bag into the discharger frame. A Tele-Tube™ telescoping tube pneumatically raises a Spout-Lock™ clamp ring, allowing an operator to make a high-integrity sealed connection between the clean side of the bag spout and the clean side of the equipment.

With the bag spout secured, the operator pulls its drawstring, allowing presscake to discharge into the surge hopper.

Releasing the telescoping tube's air pressure allows the clamp ring to maintain constant downward tension by gravity as the bag empties and elongates to promote material flow. Additional flow promotion is provided by Flow-Flexer™ bag activators that raise and lower opposite sides of the bag bottom to promote complete discharge through the bag spout.

The 226 l capacity surge hopper with top-mounted enclosure is vented to a side-mounted Bag-Vac™ dust collector that creates negative pressure within the sealed system to prevent displaced air and dust from escaping into the plant environment.



Operator attaches bulk bag to Z-Clip™ strap holders of a bag lifting frame.



An electric hoist and trolley on a cantilevered I-beam enable an operator to raise and position the bag using a pendant, eliminating the need for a forklift.

The enclosure also serves to contain spillage that might otherwise escape through seams in the bag and folds in the spout, and is equipped with a hinged access door and folding bag shelf, allowing manual dumping of under-filled sacks.

A rotary valve at the hopper outlet meters the presscake into a pneumatic conveying line that moves it to a storage silo. From there, it is mixed and milled into six different recipes of cocoa powder and packed into 25 kg (55 lb) bags.

Cocoa powder from any under-filled bags is re-introduced into the system at the surge hopper, which is equipped with a hinged access door, folding bag shelf and the aforementioned dust collection, enabling it to double as a manual bag dump station.

Achieving plant hygiene and efficiency

Constructed of stainless steel finished to sanitary standards, the discharger is certified for operation in food-grade environments. “The use of the Flexicon bulk bag discharger provides a safe and hygienic way to unload cocoa cake from bulk bags.” said JB Cocoa’s Redi Koerniawan. “It ensures efficient unloading with little to no dust released into the processing environment.”



The clean side of the bag spout is secured to the clean side of the discharger by a Spout-Lock™ clamp ring. Constant downward tension is maintained by a Tele-Tube™ telescoping tube as the bag empties and elongates.



A rotary valve meters presscake into a pneumatic conveying line that discharges into a storage silo.





The surge hopper is equipped with a hinged access door, folding bag shelf and dust collection, enabling it to double as a manual bag dump station for under-filled sacks.



A BAG-VAC dust collection unit keeps the sealed system under negative pressure while discharging and/or dumping, containing cocoa dust and maintaining a healthier plant environment.

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