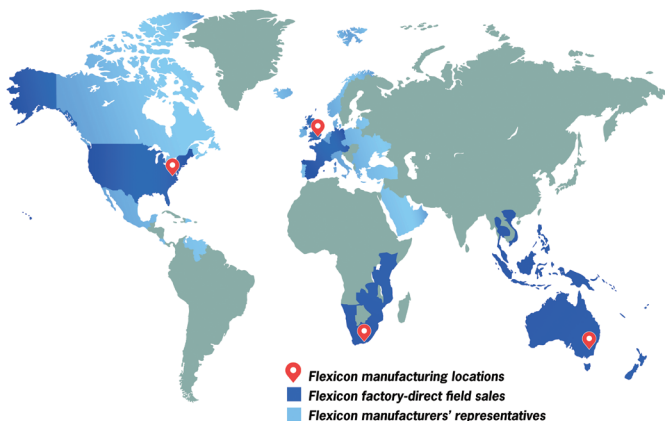




Goya Foods Ups Output with 16 Automated Bulk Bag Dischargers

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SECAUCUS, NEW JERSEY — Founded in 1936, Goya Foods has become the largest Hispanic-owned food company in the US. It imports ingredients from around the world to create more than 2,500 food products of Latin cuisine traditional to Mexico, Spain, Central and South America, and the Caribbean.

In 2015, the company opened its new headquarters and distribution center in Jersey City, NJ. At the same time, it invested in its existing distribution center in Secaucus. At 240,000 sq ft (22,300 sq m), the new site is four times larger than the previous facility and relieves several long-standing bottlenecks, said Luis Valencia, the new site's Plant Engineer.

"We had run out of capacity for rice mixtures at our previous site. In fact, all of the existing lines, including the bean and flour lines, were over-utilized. We were overdue for a change."

Higher capacity equipment in four times the space

To prevent supply disruptions, Goya continued operating all 12 of its rice, bean and flour lines at the previous site while outfitting the new site with a new high speed pouch filling rice line, and more efficient bulk handling and packaging equipment, including 16 bulk bag and rigid tote IBC discharger systems supplied by Flexicon.

"We had Flexicon equipment here already, so we knew they were reliable systems," Valencia said.

Efficiency is the focus because the product and process demand it, Valencia said. The processes are relatively uncomplicated, so the simpler the process, the higher our efficiency must be. We're always looking to increase quality, safety and efficiency."

Cutting bulk bag unloading times

Goya receives rice, beans, dry vegetables and flour in 2,200 lb (998 kg) bulk bags, while the spice mixtures are mixed into rigid 1,100 lb (498 kg) totes. Ingredients are batched to the packaging machines by gain-in-weight control.

To increase productivity, Goya needed to accelerate its handling of bulk bags. The Bulk-Out® BFC bulk bag dischargers load bags quickly by means of a cantilevered I-beam, hoist and trolley. Valencia says the fast-loading units allow just two forklift drivers to serve the site's 16 bulk bag dischargers. A single operator can load and discharge bulk bags across several product lines.

In operation, a forklift places a palletized bulk bag in front of the discharger. The operator connects the bag loops to Z-Clip™ bag strap holders on the lifting frame and, using a pendant, hoists the bag into the discharger.



Bucket conveyors move material from 12 bulk bag dischargers through the wall of a packaging room.

Rice mixes batched to high-capacity pouch filler

To match the production capacity of a new high speed pouch filler for rice mixes, Goya installed a gain-in-weight batching system for the rice, vegetable and spice components. For rice, palletized bulk bags are delivered by fork truck to side-by-side BFC bulk bag dischargers that unload into two large 5,000 lb (2,268 kg) capacity floor hoppers. The hoppers feed a common 20 ft (6 m) long bucket conveyor leading to a weigh hopper which empties into the pouch filler. Each discharger unloads a 2,200 lb (998 kg) bulk bag of rice in 4 minutes.

Similarly, dry vegetables move from their respective bulk bag discharger to the pouch filler via bucket conveyor and weigh hopper.

Each weigh hopper rests on load cells that transmit weight-gain signals to a controller that stops each conveyor once the target weight is reached for each ingredient, automating and expediting a process that previously required manual verification that batches reach the pouch filler.

Spices for the rice mixes are supplied in rigid totes, which are hoisted above a Model BFH-C-X half frame discharger mounted on a 2,500 lb (1134 kg) capacity hopper. From the hopper outlet, a 25 ft long (7.6 m) flexible screw conveyor, also from Flexicon, is inclined at 32 degrees, moving the spices to a weigh hopper which discharges to the pouch filler.

A flexible screw of specialized geometry for difficult-to-handle spices rotates within a 4.5 in. (11.4 cm) polymer outer tube of the flexible screw conveyor. The screw is the only moving part contacting material and is driven beyond the point of discharge, preventing material contact with seals or bearings.

“Goya Foods Secaucus has received an A++ rating by the British Retail Consortium’s certified auditors, the highest, for two years in a row,” says Valencia, adding, “In this case the conveyor is sanitized daily by disconnecting the flexible screw from the drive shaft and removing the screw for cleaning.”

The plant specified Flexicon flexible screw conveyors for both the rice mix spices and flour lines because they are enclosed, simple, dust-tight and prevent the separation of blends.

Bean and flour lines operate at high capacity

The bean line deploys six BFC model bulk bag dischargers, mounted over 5000 lb (2,268 kg) capacity floor hoppers and arranged in three pairs. Each pair shares a bucket conveyor that feeds a weigh hopper which discharges into a pillow-bag packaging machine.

The flour line employs three BFC bulk bag dischargers, each with Flow-Flexer® bag activator plates that increasingly raise and lower opposite bottom edges of the bag on timed cycles, ultimately forming a steep “V” shape that promotes total discharge.



Flexible screw conveyors transfer flour from bulk bag dischargers, and rice mix spices from a rigid tote discharger, through small openings in a wall separating the warehouse from a packaging room.

Dialing it in

Goya Secaucus packages products of 50 different varieties of beans and 30 different flours. Each has slightly different flow characteristics. “We change over constantly, and when you change a bean or a flour or a rice mix, there’s a lot of fine-tuning,” Valencia said. Fine flours are among the tougher products.

“It’s a challenge to dial it in; the higher the speed, the more precision is required. Flexicon helped us with upgrading our electronics. They made sure the dischargers were feeding correctly and the controls were reading the hopper levels correctly. We control the weights better now and avoid process loss,” Valencia said.

Goya Foods

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A cantilevered I-beam with hoist and trolley allows bags to be raised and rolled into the discharger using a pendant.



Flexible screw conveyors transfer ingredients from bulk bag dischargers in the warehouse, through a packaging room wall, and transfer into horizontal flexible screw conveyors that feed packaging machines. The screws are driven beyond the point of discharge, preventing product contact with seals or bearings.



Seasoning packets for rice mixes.



Filled and sealed packages of Goya's Spanish Rice and Mexican Rice proceed to a cartoning line.



Goya foods packages beans, rice mixes, corn meal and other dry products of the highest quality at its new facility in Secaucus, New Jersey.

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