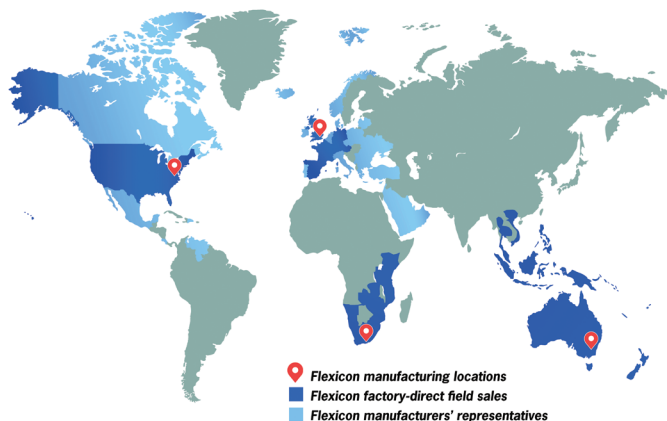




The flexible screw conveyor at left transfers roasted coffee beans from the bulk bag discharger to the grinder, while the conveyor at right moves ground coffee to the bulk bag filler.

Coffee Conveyed from Bulk Bags to Roaster to Packaging

JJ-0379



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Coffee Conveyed from Bulk Bags to Roaster to Packaging

MIAMI, FLORIDA — Mayorga Organics produces 30 different coffee roasts, and supports local organic farming methods by working directly with small, family-owned coffee growers in Mexico, Bolivia, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Peru.

“We produce a product that is sustainable, not only for the planet, but for the people growing it as well,” says Erin Dall, president and COO. Mayorga sees its direct purchases, without complex supply chains, as an important factor to reducing poverty in Latin America.

Founded in 1997 and headquartered in Rockville, MD, the company opened a new 42,000 sq. ft. (3,900 m²) roasting and packaging facility in Miami to produce its premier product, Café Cubano Roast organic coffee, in vacuum-sealed brick packs.

To transfer the coffee beans from roaster to grinder to packaging line, the company installed a bulk handling system comprised of two bulk bag dischargers, three flexible screw conveyors and a bulk bag filler, all from Flexicon Corporation.

Roasted coffee beans are discharged from the roaster into open-top bulk bags and delivered to a BFF BULK-OUT® bulk bag discharger. A forklift then positions a bag-lifting frame immediately above the bag, allowing an operator to slide the bag's four lifting straps into Z-CLIP™ strap holders, and the forklift to lift the frame — with suspended bag — into receiving cups atop the discharger's frame posts.

The discharger houses a bulk bag spout interface chute with an integral access door. With the bulk bag in position, the operator opens this door to gain access to the bulk bag spout tie. Once the spout has been untied, the access door is closed while roasted beans are discharged from the bulk bag.

Conveying of whole and ground beans

The beans flow from the bulk bag into an 8 cu ft (226 L) floor hopper, which charges a 15 ft (4.57 m) model 1350 flexible screw conveyor inclined at 45° to feed the grinder. The 3.5 in. (90 mm) diameter enclosed conveyor tube prevents product and plant contamination. The inner screw is the only moving part contacting material and is driven by an electric motor positioned beyond the point at which coffee beans exit the conveyor, preventing material contact with seals.

From the grinder, ground coffee gravity discharges into a 4 cu ft (113 L) floor hopper that charges a second 15 ft (4.6 m), 3.5 in. (90 mm) diameter flexible screw conveyor, this one equipped with a spiral designed to efficiently propel the fine-ground material to a Flexicon model BFB bulk bag filler.



Flexible screw conveyor (top right) transfers beans to the grinder, from which a second flexible screw conveyor moves ground coffee to the bulk bag filler (rear).



At floor level, an operator attaches bulk bag straps to Z-Clip™ strap holders of a bag lifting frame held in position by a forklift.



A forklift loads the lifting cradle with suspended bulk bag onto the discharger's receiving cups.

A palletized open-top bulk bag is placed inside the filler frame, which can be adjusted to accommodate bulk bags ranging from 36 to 72 in. (914 to 1,828 mm) high. Strap hooks, mounted on each of the four corners of the fill head, hold the bag open and stabilize it during filling.

Feeding the packaging line

Filled bulk bags are forklifted into a second discharger which unloads coffee into an 8 cu ft (226 L) floor hopper charging a 15 ft (4.7 m) long, 2-5/8 in. (51 mm) diameter flexible screw conveyor to feed the packaging line.

Low- and high-level sensors on the packaging machine hopper signal the system's PLC when to start and stop the conveyor.

Dall says the bulk handling system improves productivity and plant cleanliness. "Flexicon provided a solution that fits within our space limitations, allows immediate packaging, and provides for future production expansion."

Mayorga Organics
301-315-8093
www.mayorgacoffee.com



Coffee conveyed from bulk bags to roaster to packaging.



Mayorga Organics produces and sells organic coffee and other products sourced directly from local farmers in Latin America.

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Operator opens access door and pulls the bag outlet spout through the sealing ring before untying the spout's drawstring.



Flexible screw conveyor transfers ground coffee from the grinder through downspouting to the bulk bag filler.



Bag strap hooks hold the bag open and stabilize it during filling.



Bulk bag discharger unloads ground coffee into a floor hopper, charging a flexible screw conveyor that feeds the packaging machine.