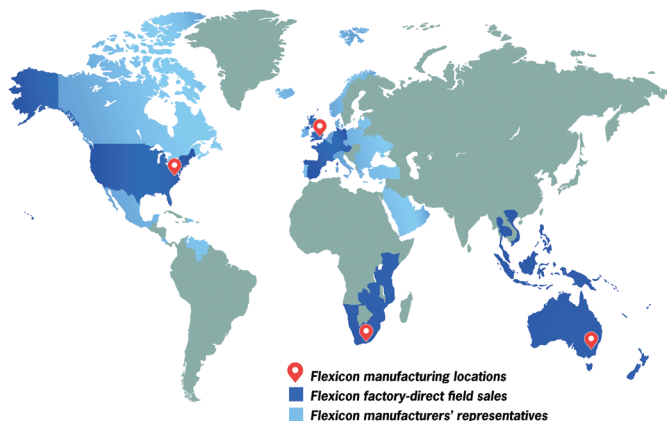




Twin Flexible Screw Conveyors at Tequila Producer Casa Cuervo, Boost Efficiency, Safety, Quality

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MEXICO CITY — One of the leading producers of tequila is Casa Cuervo, whose signature brand, Jose Cuervo, is highly regarded by connoisseurs of the beverage around the world.

Distilling tequila in Mexico is a process that blends tradition with technology. Mexican law mandates that all tequila must be distilled from blue agave plants in a region of the country called, not surprisingly, Tequila. Each manufacturer, though, has its own proprietary process and formulation techniques that give a brand like Jose Cuervo distinctive taste and enhanced aroma.

Casa Cuervo's process, which produces not only tequila, but also rompopo (eggnog), sangria wine and margarita mix, got a boost in efficiency, safety and quality with a simple but effective material-conveying system from Flexicon that was installed in its Guadalajara, JAL distillery.

Twin Conveyors Boost Efficiency, Fit Tight Space

Previously, operators manually dumped bags of sugar and powdered milk directly into the inlet port of a large mixing tank for tequila and other beverages. This created handling, safety and ergonomics concerns, as well as the potential for contamination of the mix from bag scraps.

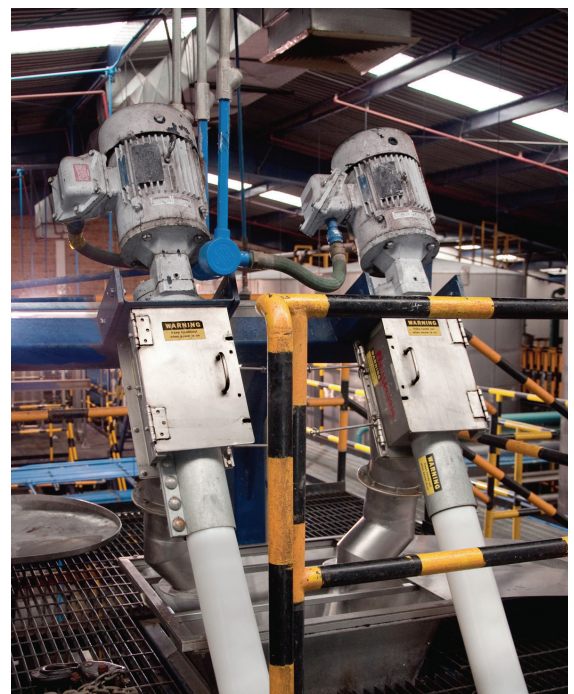
The new system employs twin flexible screw conveyors to transport material to the large mixing tank from a floor-level hopper.

Installed side-by-side, the Model 1450 flexible screw conveyors have outer diameters of 4.5 in. (11.4 cm) and rise 30 ft (9.1 m). The conveyors, which are engineered for straight or curved routing with no effect on performance, exit the feed hopper at 45 degrees and arc towards vertical, allowing installation within a restricted space of 20 sq ft (1.85 sq m).

The conveyors attach to a dual charging adapter at the base of each hopper — Type D models designed for powdery, semi-free flowing materials — with capacity of 8 cu ft (226.5 L). Sugar or powdered milk flows to the screws, each powered by a 5 hp (3.7 kW) electric motor mounted on the upper end of the assembly.

Material is discharged through a transition adapter and 10 in. (25.4 cm) flexible downspout that empties into the tank at approximately 330 lb (150 kg) per minute — a dramatic increase over previous methods.

The design works so well, says Pedro Castro, Quality Assurance Manager for Casa Cuervo, that the company specified a second twin conveyor system to feed a larger tank.



Twin flexible conveyors transport granular sugar or powdered milk from hopper to 23 ft (7 m) high tank for beverage mixing. Twin configuration increases throughput.

Process Mixes 2- to 5-Ton Batches

Tequila and other beverages are mixed in batches of 2 to 5 tons depending on recipe.

Workers now dump 110 lb (50 kg) sacks of sugar or powdered milk at floor level into the feed hoppers. Each is equipped with: a pneumatic turbine vibrator to promote material flow into the conveyor charging adapters; a hopper screen for worker protection; and a low level switch to stop the conveyors when the hopper is empty.

The first twin conveyor installation carries material to a mixing tank that is 13 ft (4 m) high with a capacity of 2,600 gal (10,000 L). The second twin conveyor feeds a mixing tank 23 ft (7 m) high with capacity of 7,800 gal (30,000 L).

Castro says that as soon as a batch is mixed, the flexible screw conveyors are shut down and cleaned along with the hoppers. The screws are reversed to purge material and then cleaned with special detergent foam, preventing bacterial growth and cross contamination.

"The flexible screw conveyors have few moving parts, which facilitates installation, simplifies cleaning and reduces maintenance," he says.



Open cleanout doors reveal the flexible screws, which are driven by electric motors at the discharge end.



Footprint of the system is reduced by the curvature of the flexible conveyors, which are charged by a dual intake adapter at base of the hopper.

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