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Centrifugal Screeners Boost Powdered Beverage Mix Output, Quality

Federal regulations and consumer fears concerning allergens in food products prompted Compact Industries, a co-packer of powdered beverage mixes, to sanitary its processing equipment more frequently, and devise ways to more than compensate for the resulting sacrifice in productivity. Founded in 1963, the company blends and packages powdered cocoa, cappuccino, spray- and freeze-dried coffees, smoothie mix, non-dairy creamers, punch mix and other powdered drink mixes that sell through retail and foodservice outlets under the Sun-Up, Ghirardelli and other brands. Compact's marketing slogan, "If it's powder, we can pack it," is the guiding principle of the plant which operates two 10-hour shifts four days a week in this suburb of Chicago.

Screening after blending
"Matching powder consistency with product use is central to success in the powdered-beverage business," explains Steve Metzger, Compact's maintenance manager, adding, "Consistent powders are not only easier to package, they meet the expectations of consumers who do not want to open a pouch and find a clump. But if the powder is too fine, it's going to float in water and take longer to dissolve."

Maintaining tight particle size control with beverage powders is a challenge due not only to foreign matter, but to sugars that agglomerate with friction, heat or moisture, and fats that tend to clump. To remove these oversize particles, the company positions a screener below each of its nine blenders. These screeners were all horizontal-bed vibratory type units that barely kept pace with output requirements—until the increased wash-down protocols went into effect.

"Overall plant production was limited to the capacity of our screeners which were already at 100 percent utilization," says Metzger, "so the added downtime for sanitizing incurred unacceptable losses in output..." he added that "Because bed screeners utilize vibration and gravity, separating oversize particles from on-size particles passing through the screen is a relatively slow process, and the finer the screen mesh, the slower the rate of screening," he points out.

To overcome the bottleneck, the company replaced five of its nine horizontal-bed vibratory screeners with Centri-Sifter™ centrifugal sifters from Kason Corp., with each of the new screeners doubling the capacity of the one it replaced. The centrifugal separator contains revolving helical paddles that accelerate and propel powders through the apertures of a horizontally-oriented, stationary cylindrical screen. The paddles do not contact the screen, but they propel over-sized agglomerates and foreign particles through the open downstream end of the screen cylinder and eject them through a discharge spout. "The design creates more dynamic sifting and helps break up agglomerated clumps," says Larry Lindberg, Compact's vice president of operations. "The way these units operate has significantly improved our ability to capture 'overs'—the particles and elements we want filtered out of the powder." Between production runs, the wedgewire basket and helical paddle assembly of the screeners are removed, allowing sanitizing of the machine's internal components and screening chamber interior.

Masterfil ATEX Capping Machine

Masterfil has recently supplied an ATEX approved single head capping machine to a major soft drinks company. The Mastercap ATEX single head inline indexing capping machine incorporates a host of innovative features, providing a versatile, reliable capping operation at a maximum speed of up to 60 per minute, dependent on product, container and cap type. The capper comes equipped with an elevator cap feeder and with 304 stainless steel cladding as standard.

The machine comes with a foil cap detector, which rejects caps without foils prior to capping and a 'No cap' detector with warning lamp, which detects high and 'cocked' caps. This means that on detection of any uncapped container, no further containers will leave the capper and the conveyer will stop to allow easy removal. The control cabinet is ATEX approved and made from stainless steel. All electric motors and components in the hazardous area are ATEX approved to correct ATEX zone and wired in armored cable.

Changeovers between cap styles and sizes are made quick and easy by innovative features including, push button height adjustment of capping heads and programmable control systems. A range of color coded change parts for the 4 containers (1, 4, 5 and 10 liter) and 3 caps has also been supplied. All of these features allow the end user to minimize downtime, effectively allowing for greater production outputs.

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