'C' Is for Cookie ... & Conveyor

Brothers William and Robert founded W & R Jacob’s Ltd in 1851. The first Cream Cookie was produced in 1885 and the first now famous Club brand cream chocolate-coated cookie in 1919.

In 2004, United Biscuits (UB) purchased Jacob’s. The savory cookie and snack range acquired by UB includes such well-known favorites as Club, Iced Gems, Fig Rolls, Cheddars and Twiglets.

The full range from Jacob’s, combined with United Brand’s existing brands such as Carr’s, makes United Biscuits the United Kingdom’s No. 1 cookie producer.

The Jacob’s Bakeries plant of United Brands is situated on 50 acres at Aintree near Liverpool and has over 800 employees. Current production output is 50,000 tons of cookies a year.

For 14 years, Jacob’s Bakeries at Aintree has been using a Type 6 bulk bag discharger (BBD) from Spiroflow Ltd. with an integral flexible screw conveyor (FSC). Spiroflow’s partner company for North and South America, Spiroflow Systems Inc., is located in Monroe, North Carolina.

The Type 6 BBD has an integral hoist that enables delivery of the 2,200-pound (1,000 kg) bulk bags to the discharger by an electrically powered pallet truck. Since the BBD at Jacob’s is sited on an upper floor, a passenger/freight elevator is used to transport the bulk bags and the pallet truck from the ground level. Transfer from

the BBD to the mixer is through the FSC. The FSC loads brown oat flour into the mixer through a storage silo.

The Type 6 BBD with optional 304 stainless steel contact parts was tailored to suit the exact specifications of Jacob’s Bakeries. The unit has a 1-ton hoist controlled by one operator that positions the bulk bag into the discharger. The hoist runs along a fully load-tested integral I lifting beam.

To compensate for the capacity/weight of the bag, innovative bag tensioning supports stretch it to ensure total discharge. Each discharger has a dust-tight material collection hopper with an integral locking access door and viewing port. The door is amply sized to enable the operator to untie/re-tie the bag spout and liner.

In order to produce other products in the same mixer, Jacob’s needed a way to bypass the storage silo and load alternative flours directly into the mixer. To achieve this, Jacob’s decided to install a second Spiroflow FSC directly adjacent to the existing Type 6 Spiroflow BBD. Start-up was in June 2009.

The second FSC directly feeds bags of brown flour through an existing bag dump hopper into the mixer that produces the base of Jacob’s world famous Club brand sandwich-layered cookies, Gold brand cookies and some cookies for company’s Cheese brand label.

Operating 14 hours a day, seven days a week, the mixer now produces a new batch of cookie dough every 30 minutes. That’s a challenge for the two Spiroflow FSCs since they have to continuously keep the mixer fed.

The newly installed FSC is 36 feet (11 m) long and is used to lift the brown flour 16 feet (5 m) at approximately a 45-degree angle. An agitator prevents any bridging of the coarse blown flour above the inlet of the FSC. A magnet is also supplied to prevent tramp metal from getting into the mixer. Both the conveyor and controls are designed to operate in a European CE ATEX Zone 22 Equipment Directorate for hazardous areas.

According to Spiroflow, the customer is extremely pleased with the new system in expanding their range of cookie production.

Nine different models of FSCs from Spiroflow are available with throughputs from 10 to 88,000 pounds/hour (4 to 40,000 kg/hour) depending on the material being conveyed and the angle of operation.

The new FSC at Jacob’s Bakeries has a simplified direct electric motor-driven spiral screw that rotates the conveyor at high speeds. With few parts to wear, the Spiroflow FSC is lower in cost since there are no unnecessary components resulting in a more sanitary modular design for greater flexibility.

Maintenance is simple since the only moving part is the spiral screw that rotates material within a sealed tube and moves it along by its revolutionary homogenizing

conveying action.

With its sanitary design, the FSC meets most hygienic conveying needs since spiral screws are available in ultra-high grade and heat-tempered stainless steel or heat-treated spring steel for longer life.

Three types of spiral screws are available: a standard round screw that handles most applications, a flat screw for certain light or aerated products, and a beveled screw for conveying difficult materials, such as iron oxide or products that smear such as chocolate.

For more information, please e-mail info@spiroflowsystems.com *[1] or visit* www.spiroflowsystems.com *[2].*

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