

How the Cookie Didn't Crumble

Flexible Screw Conveyor, Discharger Aid Cookie Producer

Brothers William and Robert Jacobs 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 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 per year.

For 14 trouble-free 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). The Type 6 BBD has an integral hoist that enables delivery of the 2,200-pound bulk bags to the discharger by an electrically-powered pallet truck. Since the bulk bag discharger at Jacob's is located on an upper floor, a passenger/freight elevator is used to transport the bulk bags and the pallet truck from ground level. Transfer from the BBD to the mixer is through the flexible screw conveyor. 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 one-ton hoist controlled by an 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 access to the bag spout and liner.

In order to produce other products in the same mixer, Jacob's needed a way to by-pass the storage silo and load alternative flours directly into the mixer. To achieve this, Jacob's decided to install a second FSC directly adjacent to the existing bulk bag discharger. 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 Club brand sandwich-layered cookies, Gold brand cookies and some cookies for the 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 FSC's since they have to continuously keep the mixer fed.

The newly installed FSC is 36-feet-long and is used to lift the brown flour 16-feet 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. Jacob's is extremely pleased with the new system in expanding their range of cookie production.

Nine different models of flexible screw conveyors are available with throughputs from 10 to 88,000 lbs/hr, 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 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.

Spiroflow Systems

704-291-9595, www.spiroflowsystems.com

Write In **203**