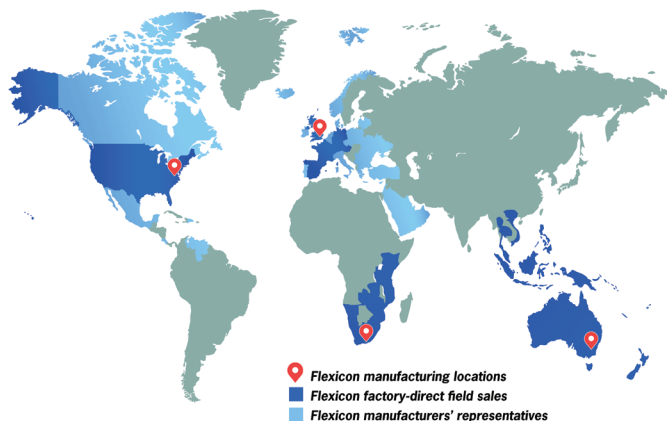




Three identical BFC Series dischargers from Flexicon eliminated health and safety risks associated with dust emissions and spillage, and increased productivity by simplifying the process of manually tying off partially filled bags.

Bulk Bag Unloading System Ends Dust, Improves Productivity of Dishwasher Tablet Line

S-0945



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BARROW-IN-FURNESS, UK — When Robert McBride Ltd, one of Europe's largest private label and contract manufacturers of laundry, household cleaning, and personal care products, planned the installation of a dedicated, triple-layer, dishwasher tablet line at its Barrow-in-Furness facility, it was determined to eliminate health, safety and productivity concerns associated with its existing vacuum method of unloading bulk bags. The process allowed dust and spillage, as well as slowdowns due to tying off of partially filled bags at the end of a session—a task that required two operators.

After extensive consultation and in-house testing, the company purchased and installed three Flexicon BFC Series bulk bag unloading systems. In addition to containing dust and spillage, and allowing partially empty bags to be retied more easily, the system offered McBride greater manufacturing flexibility; with three identical dischargers, up to three layers of different formulae can be simultaneously pressed into single-, double-, or triple-layer tablets.

Bag Spout Interface Eliminates Dust Emission and Spillage, Improves Efficiency

The heart of the BFC system's design is a bag spout interface that creates a dust-tight seal and promotes material flow and total evacuation of the bag. It also allows for easy retying of partially filled bags and can collapse empty bags—free of spillage and dust.

The bag-to-conveyor interface is comprised of two sections, the uppermost of which contains a manual SPOUT-LOCK® clamp ring positioned atop a pneumatically actuated TELE-TUBE® telescoping tube. The clamp ring is fully accessible and manually operated using quick-release handles for rapid and safe, yet dust-tight connections between the bag spout and hopper.

The telescoping tube raises the clamp ring assembly that seals the clean side of the bag spout to the clean side of the telescoping tube, and then lowers until the bag spout is pulled taut. Once the spout is untied, the telescoping assembly exerts continual downward tension on the spout, elongating the bag as it empties. As a result, the spout is kept taut at all times, preventing excess spout material from bulging outward to create dead pockets or falling inward to create flow restrictions.

Material can be released to fall freely into the hopper rapidly and dust free. The positive connection eliminates the need for flow control valves, which are required only during retying of partially empty bags — a task that has been made far simpler on McBride's new line.

Flexicon's POWER-CINCHER® pneumatically actuated flow control valve contains a series of curved, articulated stainless steel rods that cinch the



A fold-down step provides access to the telescoping tube assembly, while a dust hood prevents dust emission in the event of a system failure at the point of discharge, or damage to a bag during transportation.

spout concentrically on a horizontal axis for easy tie offs and vertically in a tight zigzag pattern to prevent leakage of fine powders. With this new system, only one operator is required to tie off partially filled bags, greatly increasing productivity efficiency.

Though the BFC system's sealed design prevents dust throughout the entire discharging process, an enclosed dust hood was added to the McBride system as a failsafe should there be a system failure at the point of discharge or damage to a bag during transportation. The dust hood incorporates two dust extraction valves in each system. The valves align to a third party dust extraction unit. On its existing systems, McBride uses LEV (local exhaust ventilation) extraction systems to control dust emissions. However, the LEV system can potentially extract product as well as dust if the bag is not properly seated. With the BFC system this is not an issue because the telescoping tube prevents the bag from being improperly aligned.

Bag Activators Ensure Total Evacuation, Proper Material Flow

McBride's new BFC dischargers are also equipped with FLOW-FLEXER® bag activators that raise and lower opposite bottom edges of each bag at timed intervals, loosening compacted materials and promoting material flow into the bag discharge spout. As the bag lightens, the stroke of the bag activators increases, raising the bag into a steep "V" shape to eliminate dead spots and promote total evacuation of material with no manual intervention.

The system incorporates a cylindrical floor hopper with a low-level sensor. A low energy, Flexi-Finger pneumatic flow assister promotes the flow of powder through the feeder auger. Material is transferred by vacuum vertically to a mezzanine, passing first through a metal detection/discharging system, and then entering a receiving hopper above the tablet pressing line.

The system starts and stops on demand of the downstream packaging line. When the system stops transferring product, a line purge valve ensures that all material in flight prior to shut down is delivered, and that the line remains clear and ready for the next product cycle.



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