Bulk Bag Conditioner Prevents Blockages, Downtime
Read more on page 14

Dry Screw Vacuum Pump
Designed and manufactured entirely in the U.S., the KDS425 vertical flow dry screw vacuum pump is available for industrial or process applications. Features include: vertical cantilever design keeps process condensable from collecting in the pump process chamber; process seal design with gas purge eliminates process chemical migration to atmosphere; high nickel content rotor construction is inherently corrosion resistant; the absence of external seals ends leaky driveshaft mess; variable pitch offers better efficiency compared to straight pitch designs; dry running operation stops pump oil contamination; thermostatic temperature control automatically adjusts for wide variations in heat load.
Tuthill Vacuum & Blower Systems, Springfield, MO 800-825-6937 www.tuthill.com

Piston Pneumatic Impact Vibrators
Vibra-Might (VMR/VMS) one-piece, piston pneumatic impact vibrators are built tough with a double diameter piston that enables starts at any mounting angle with minimum air pressure, and without a piston return spring. With models ranging from 1 1/4 to 9 in. in piston diameter sizes, this series provides performance and selection for industrial applications that depend on consistent material flow and discharge of bulk solids in bins, hoppers, or chutes. VMR and VMS models feature rugged, ductile cylindrical housings that are lighter in weight than competitive models, making the vibrators ideal for use in virtually any application. Cleveland Vibrator Co., Cleveland, OH 800-221-3298 www.clevelandvibrator.com
Personal products manufacturer Fillcare Ltd., of Pontyclun, U.K., was unable to discharge a waxy, non-flowing material from bulk bags, a problem it solved by installing a bulk bag conditioner.

A subsidiary of France's Pareva, Fillcare is a formulator and packager of cosmetics, pharmaceuticals, food, and home care products. Its Pontyclun plant is a third-party manufacturer of shampoos, hair conditioners, and skincare products.

The company had installed a bulk handling system consisting of a bulk bag discharger with a pneumatic vacuum system to transfer materials to a mixer. Compared with its previous method of dumping of 55-lb bags manually, the semi-automated system promised to reduce raw material and labor costs, while improving quality.

The system performed as expected with one exception: a fatty alcohol in the form of wax flakes could not be discharged consistently from the bulk bags in which it was received.

The flakes have a minimum angle of repose of 60 degrees, and soften at room temperature, forming clumps. During shipping and storage in bulk bags they also pack, cake, and solidify. As a result, the pneumatic flow promotion devices integral to Fillcare's bulk bag discharger proved unable to loosen the material, prevent bridging, or otherwise cause it to flow consistently through the bulk bag spout into a surge hopper. Additionally, the material would not flow consistently into the hopper and rotary airlock valve and into the pneumatic conveyor.

Workers were frequently required to stop production in order to manually dislodge blockages at the bag discharge spout, negating a portion of the new system's intended benefits.

**Conditioner Breaks Bottlenecks**

Fillcare solved its material flow problem by installing a Block-Buster bulk bag conditioner manufactured by Flexicon (Europe) Ltd. of Herne Bay, Kent, U.K. The equipment consists of a robust, freestanding frame equipped with two hydraulic rams, and a platform that raises, lowers, and rotates.

Located in the warehouse where palletized bulk bags are stored, the conditioner is equipped with a four-sided safety cage with interlocks preventing operation when the doors are open.

*The conditioner is equipped with a four-sided safety cage with interlocks preventing operation when the doors are open.*

Hydraulic conditioning plates on opposing sides of the bag loosen the material.

Block-Buster bulk bag conditioner loosens non-free-flowing, waxy material that caused blockages and downtime.
controller enables operators to set ram pressure, number of pressing cycles, turntable height, and the number of 90-degree rotations, to ensure that all bag contents are sufficiently loosened to flow from the bag.

Conditioned bulk bags are transferred from the bulk bag conditioner directly to an adjacent area of the plant where they are loaded into the bulk bag discharger. With the waxy material fully conditioned, the pneumatic flow promotion devices of the bulk bag discharger are now effective at raising and lowering opposite bottom sides of the bag into a V shape, directing material through the bag spout and promoting complete discharge from the bag, while ensuring the flow of material into the conveyor inlet, with little or no manual intervention.

Flexicon Corp., Bedminster, NJ 07921-3200 www.flexicon.com

"Go Long"

The number and pressure of hydraulic ram actuations, the height of the turntable, and the number of 90-degree rotations are adjustable, allowing the user to maximize efficiency according to material characteristics.

The platform raises the bulk bag hydraulically to a user-selected height before counterrotating conditioning plates on the hydraulic rams press opposing sides of the bag, loosening the material. The turntable then rotates 90 degrees, allowing the rams to press the adjacent sides of the bag. The

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