

VIBRA SCREW

CASE HISTORY



CH-260

Bulk Bag Unloader Reverses effect of Diatomaceous Earth's Long Journey

Customer

Casco, Inc. Cardinal, Ontario, division of Corn Products, produces corn sweetener and corn starch through wet milling.



Casco, Inc. saves time handling DE at its corn sweetener processing facility.

Problem

As a commercial supplier of corn sweetener to food processors, Casco makes extensive use of diatomaceous earth (DE) as a filter medium in its wet milling of corn. Casco purchases and handles up to three million pounds per year, and in its 3000 mile rail and truck journey from California to the Casco plant, diatomaceous earth compacts within its bulk bags. Compaction called for an unnecessary amount of worker time and exposure to assure complete discharge.

Casco had long used 50 lb paper sacks, an extremely labor intensive practice. Plant managers wanted to convert to the more efficient 1000 pound bulk bags but wanted to guard against airborne DE dust. DE is a "designated" substance according to Ontario law, as it contains approximately 60% silica.

In an early experiment with bulk bags, Casco constructed a custom made unloading device. This proved unsuitable to the packing properties of DE and required considerable operator attention.

Solution

The Vibra Screw Bulk Bag Unloader with vibration assist.

Casco employed a California-based DE expert who recognized the need for vibration assisted discharge and recommended Vibra Screw. The Vibra Screw Bulk Bag Unloader is a fully assembled unit incorporating a variety of flexible options for user selection. Casco chose to add its own hoist and dust collection system, but specified Vibra Screw's on-board trolley for accurate bag placement on the unit's unique dual slope discharge hopper. They also called for Vibra Screw's oil-lubricated gyrator for the necessary vibrated assist.

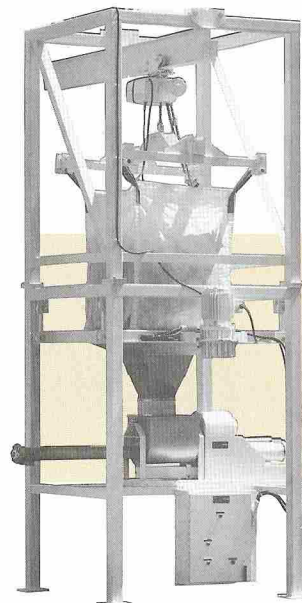
The Vibra Screw gyrator, guaranteed for 20,000 hours of continuous use, was the key to Casco's purchase decision.

Results

Casco initially installed the unit outside its principal processing area for temporary evaluation. Complete success in overcoming the problems of diatomaceous earth soon saw the equipment relocated to a permanent position in the process.

The Bulk Bag Unloader discharges its DE completely and with little worker involvement into a fluidizing column. This is a 12" diameter, 24" high tank where air is injected into the filter medium to maintain its fluidity. A powder pump sucks the DE from there to a precoating slurry tank before final use in the plant's rotary vacuum filters.

With the Bulk Bag Unloader there's no bridging, no ratholing and no airborne dust.



The Bulk Bag Unloader speeds discharge and ends dust from hard-to-handle diatomaceous earth.