

VIBRA SCREW CASE HISTORY



C-232

Live Bottom Bins End Erratic Flow of Salt and Trace Minerals

Customer

International Salt Company, Cleveland, Ohio, a part of Akzona. Major producer of agricultural and ice-control salt.

Problem

International Salt uses crushed salt and trace mineral ingredients to make its agricultural salt. Uniform feed rate is critical in order to stay within specified limits. Both the salt and the trace minerals flow erratically or not at all, often bridging over the outlet of the storage bins. The system used a belt scale handling the salt as master, and the flow of trace minerals as slave. Erratic flow of both materials made proper mixing difficult. Pneumatic vibrators were tried on the stainless steel hopper containing salt, but they were ineffective, causing fatigue and cracking of the stainless steel. On the hopper containing trace minerals, a centrifugal pneumatic vibrator was previously used, but it was not effective. Disjointed flow resulted in inconsistent mixing of the product.

Solution

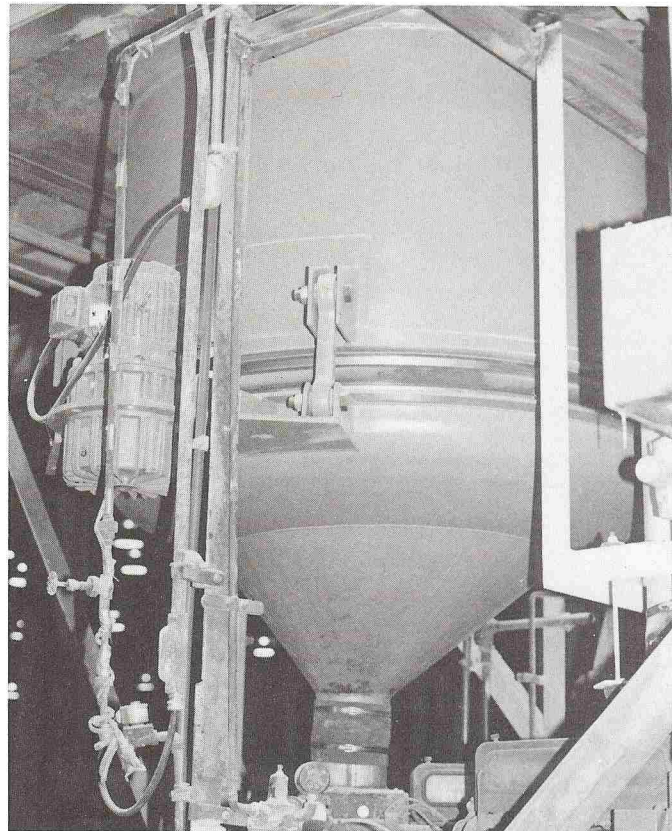
1 Vibra Screw 5-60 Live Bottom Bin, carbon steel construction. 1 Vibra Screw 20-5 Live Bottom Bin, carbon steel construction.

To solve the two flow problems, the company decided to use Live Bottom Bins. The LBB 5-60, which has a 60 cu. ft. capacity and a 5 ft. diam. Bin Activator, was used to handle the salt, and the LBB 20-5, with a capacity of 5 cu. ft. and a Bin Activator diameter of 20 in., was used to handle the trace minerals. The Live Bottom Bin is a self-contained unit combining a static cylindrical bin and a Bin Activator which is subjected to controlled vibration. Just above the discharge outlet is an integral baffle which relieves headload. It also directs vibrations up into the bin, keeping the material in the bin mobile, and eliminating bridging and ratholing. The combination of the vibrating bin bottom and integral baffle assures mass flow, keeping both the salt and the trace minerals flowing freely as needed.

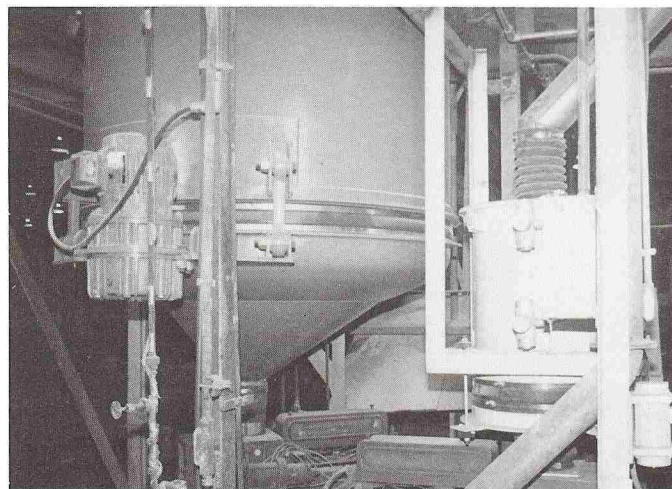
Results

Consistent mixing now keeps the product well within FDA limits without the constant double-checking previously required. In addition to improved flow, a better quality product results

because of closer control than possible before. The company is well satisfied with the end result, which is continuous, trouble-free operation.



The Live Bottom Bin is a self-contained unit combining a static cylindrical bin and a Bin Activator which is subjected to controlled vibration.



To solve two flow problems, International Salt decided to use Live Bottom Bins. The LBB 5-60 (left) handles salt, the LBB 20-5 (right) handles trace minerals.