

VIBRA SCREW CASE HISTORY



C-223

Bin Activator enables charcoal plant to use hard-to-handle waste material

Customer

Humphrey Charcoal Corporation, Brookville, Pennsylvania. Maker of charcoal lump and charcoal briquettes for the barbecue trade, for industry in water purification and for the carbonization of steel.

Problem

Wet sawdust is available to the Humphrey Charcoal Corp. as a waste material which can be carbonized to make charcoal. While the material is relatively inexpensive, it is very hard to handle. It is stored in a welded, carbon steel storage bin which is 10 ft. in diameter and 25 ft. high, with an internal transition to 8 ft. in diameter. The bin is pneumatically filled with sawdust, which has a bulk density of around 23 lbs. per cu. ft., and a moisture content from 35 to 65%. The company realized that, unless substantial assistance was supplied to make the wet sawdust flow, it would not be possible to move it without frequent hang-ups and bridging.

Solution

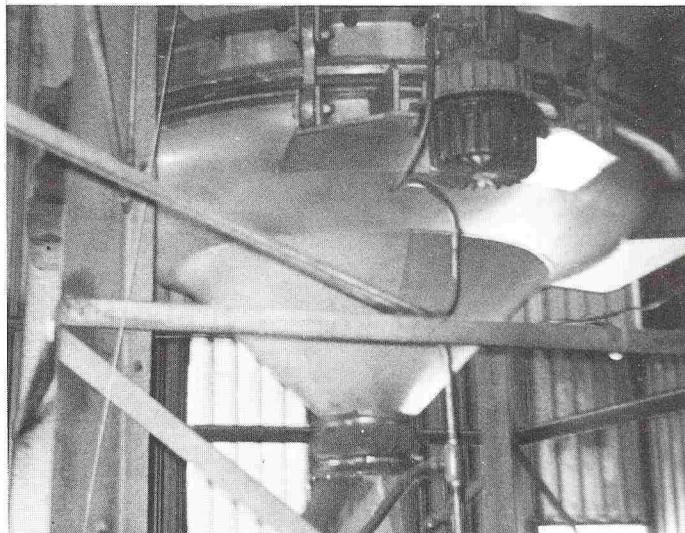
1 Vibra Screw Bin Activator, 8 ft. diameter, carbon steel construction, preassembled mounting ring.

After investigation, the company decided to install a Vibra Screw Bin Activator to keep the sawdust moving. The Bin Activator is a vibrated bin bottom which replaces the converging bottom of a static bin, thus removing the compaction area which is the major source of flow problems. A gyrator assembly attached to the Bin Activator produces powerful vibratory thrusts throughout the stored material to assure positive withdrawal without bridging or compaction. A special integral baffle, exclusively designed by Vibra Screw, relieves

headload from the outlet while directing vibrations far up into the bin to discourage overhead bridging. A positive flow of the sawdust results. From the bin, the sawdust goes to a 12-in. screw conveyor, and from there to a rotary retort vessel, the only one of its kind in the world, where the sawdust is carbonized. The retort vessel is a prototype unit which has been in operation at Humphrey for about a year now.

Results

Since the installation of their Bin Activator, the company has had effective flow of sawdust; without it, flow would not be possible. The Bin Activator has enabled Humphrey to profitably use an inexpensive waste material to create jobs and make a useful product.



Since installation of their Vibra Screw Bin Activator, Humphrey Charcoal Corporation has had effective flow of sawdust; without it, flow would not be possible.