

VIBRA SCREW CASE HISTORY



C-243

Live Bottom Bin Speeds Flow in Cake Mix Packing Line

Customer

The Ogan Company, Revere, Mass. New England's leader of full line bakery supplies, manufacturing prepared mixes, fruit toppings, and fillings for both national and international markets.

Problem

At their plant in Salem, Mass., The Ogan Company prepares mixes for doughnuts, bread, muffins, and cakes. The mixes consist principally of flour and sugar, and with a shortening content ranging from 6% up to 20%. The cake mix, which has a bulk density of 40 lbs. per cu. ft., has the highest fat content—up to 20%, and it is an unusually difficult material to handle. It is highly compressible, and when a handful of it is squeezed, it forms a solid ball. It cakes, packs under pressure, and bridges in bins, causing costly production delays. The company wanted to change over from a manual to a semi-automated packing line, but it could only do so if the mix could be made to flow on demand.

Solution

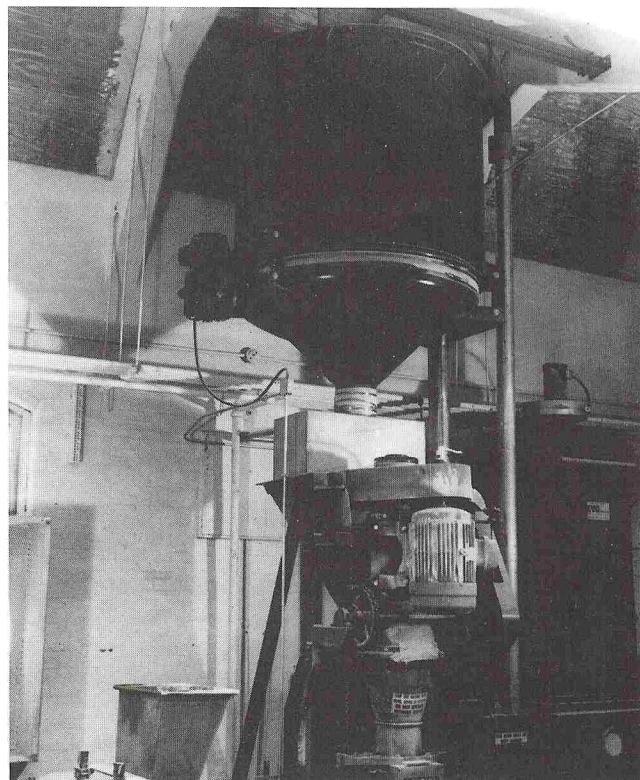
Vibra Screw Live Bottom Bin, LBB-5-100, 5 ft. diameter bin, 100 cu. ft. capacity, carbon steel food grade epoxy coated construction, pre-assembled mounting rings, food grade Nordel sleeve.

Formerly, the required ingredients were mixed in a blender, and the final product was packed manually in 50 lb. bags for shipment to customers. In order to accomplish the changeover, the company installed a Live Bottom Bin directly above the package machine. The Live Bottom Bin is a self-contained unit which combines a static cylindrical bin with a vibrating live bin bottom—a Vibra Screw Bin Activator. The 5 ft. Bin Activator is the same diameter as the static bin, and it is flexibly attached to the bottom of the bin. An oil-lubricated gyrator, mounted to the Bin Activator, supplies vigorous horizontal thrusts which vibrate the Bin Activator, an integral baffle, and the contents of the bin, but not the bin. The integral baffle, mounted directly above the discharge outlet, relieves headload over the outlet, and also

resolves the horizontal vibrations into strong vertical impulses which penetrate up into the material in the bin and prevent bridging. With the new semi-automated packing line, material now is conveyed pneumatically from the blender to the Live Bottom Bin, and from there it flows uninterruptedly to the packaging machine which has a discharge rate of 24,000 lbs. per hour.

Results

Production has greatly increased with the addition of the Live Bottom Bin, which keeps material flowing as it never could before. The Live Bottom Bin also facilitates production by acting as a surge hopper. Blending is done by batch, and when a batch is finished, it is conveyed pneumatically to the Live Bottom Bin. The blender is immediately free to run again, since it no longer has to be tied up while the material is being packaged.



Cake mix is batch conveyed into the Vibra Screw Live Bottom Bin, where it then flows uninterruptedly to the packaging machine.