

VIBRA SCREW CASE HISTORY



C-222

New, Improved System for Plaster Molds at Atlantic Casting

Customer

Atlantic Casting and Engineering Corporation, Clifton, New Jersey, specialists in castings of non-ferrous alloys for mechanical, structural and electrical applications.

Problem

It takes three different sizes of molds to handle the castings made at Atlantic in plaster mold casting. If the operator could automatically feed the correct amount of plaster (a gypsum-based material) for each mold being made as it passed by on the production line, efficiency would be increased. To do this, the operator would need 1) a uniform supply, and 2) a way to feed that supply accurately, by batch, to make successive, but differing slurries of molding plaster. This would ordinarily be impossible because plaster flows erratically from hoppers, due to bridging, jamming, or ratholing, and is difficult to meter with precision. A low ceiling further complicates the situation because it necessitates some horizontal movement of the plaster in the process.

Solution

Vibra Screw Bin Activator, 3 ft. diam.; Live Bottom Bin, 30-15; Vibra-Metric 8-100.

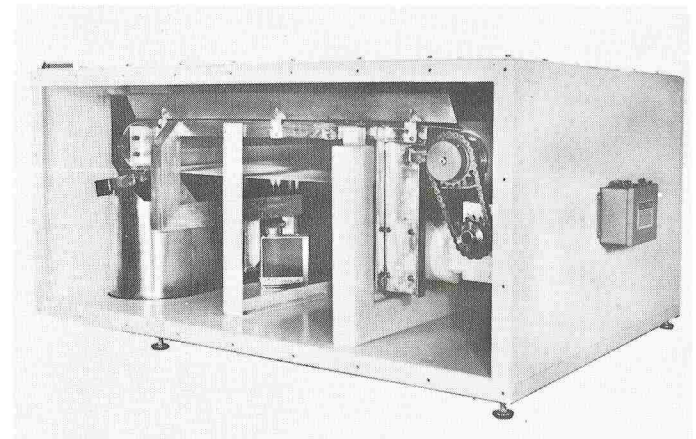
Atlantic solved its plaster storage hopping problem by using a 3 ft. diam. Bin Activator on its 32 cu. ft. supply bin. To increase efficiency and feeding accuracy, they installed a Live Bottom Bin and Vibra-Metric weigh belt feeder with three pre-set totalizers.

The Bin Activator on the supply bin ensures a steady flow of plaster to an inclined bucket conveyor. The conveyor eliminates the difficulty caused by the low ceiling by carrying the plaster overhead to the Live Bottom Bin feeding the weigh belt. A vibrating supply nozzle is attached to the

Live Bottom Bin, thereby ensuring a steady, uniform flow of plaster to the weigh belt. The Live Bottom Bin contains level probes which sense when it needs more material and activates the Bin Activator on the supply bin. As selection is made of any of the three molds, the Vibra-Metric automatically turns on the water. After the right amount of water has been added, a signal turns on the weigh belt and it feeds the pre-set amount of plaster for the proper mold. The weigh belt speeds up or slows down as deviations occur from the set point, maintaining constant discharge off the belt at $\pm 1/4$ to $1/2\%$ feed accuracy. The feeder, which has an 8 lb. load cell, delivers up to 100 lbs. per minute of material on its 12-in. belt. When the mold is filled, it moves on for baking and final casting.

Results

The new system is semi-automatic and its greater efficiency and accuracy permit savings of both time and material. Greater control of material flow has also resulted in improved plant housekeeping.



The Vibra-Metric weigh belt feeder at Atlantic Casting and Engineering delivers up to 100 lbs. of plaster per minute at accuracies of $\pm 1/4$ to $1/2$ percent.