

VIBRA SCREW CASE HISTORY



C-242

Flow Power for Sealed Power: 18 Years of Bin Activator Service

Customer

Sealed Power Corporation, Seal Cast Division, Muskegon, Michigan. Worldwide supplier of a wide variety of precision-engineered metal parts and components which are cast, molded, stamped, forged or machined.

Problem

The Seal Cast Division of Sealed Power operates a centrifugal spinning foundry which manufactures gray iron castings primarily of high-alloy liners for piston rings, and cylinder liners for heavy-duty engine applications. These include trucks, and off-the-road equipment such as earth movers, bulldozers, cranes, graders, and tractors. The foundry process uses centrifugal force to spin the material to the outer surfaces of the product, which is, of course, the inside of the mold. Centrifugal spinning is only applicable to round parts, which can be produced in this manner with superior metallurgical structure. During processing, boring machines produce a quantity of iron borings which are collected in a boring bin for a furnace-charging application. The borings have a bulk density of about 90 lbs. per cu.ft., and the small borings interlock and form a bridge over the discharge outlet. The company had originally tried various types of vibrators with sand hoppers in their conventional foundry but they had been unsatisfactory.

Solution

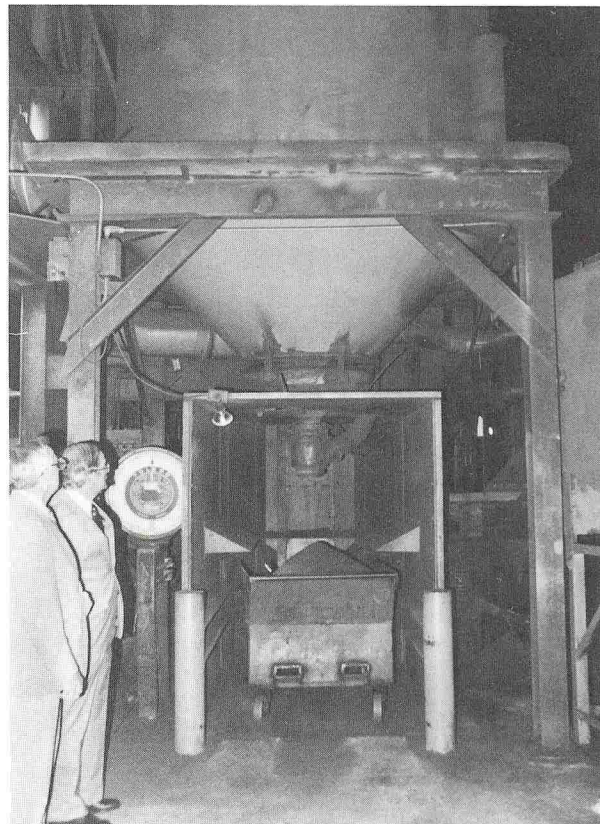
Vibra Screw Bin Activator, 3 ft. diameter.

At the request of Mr. Overway, general manager of the Seal Cast Division, Vibra Screw ran a laboratory test in 1963 on the feasibility of using a Bin Activator to keep the iron borings flowing without bridging in the storage hopper. The test was successful, and the company purchased and installed a Bin Activator in 1964. The Bin Activator is flexibly mounted to the bottom of the boring bin, and its gyrator provides powerful horizontal thrusts which vibrate the Bin Activator, its integral baffle, and the material in the bin, but not the bin. The baffle transmits the horizontal thrusts into vertical impulses which extend far up into the material in the bin, and eliminate bridging. Rugged construction of the Bin Activator and its low energy requirements both lead to long life-expectancy. For maximum support and safety, the Bin Activator uses one-piece forged steel hangers, and the sealed, oil-lubricated gyrator avoids bearing chatter and premature wear.

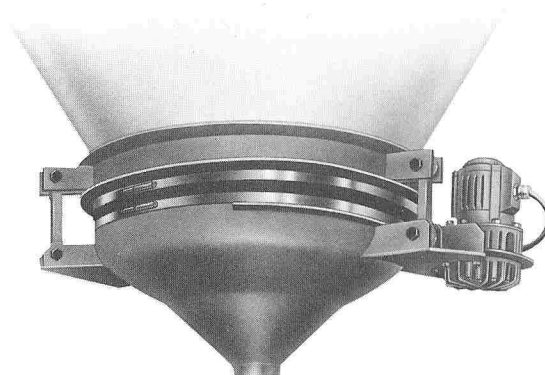
Results

The Bin Activator at Seal Cast Division of Sealed Power has been in continuous service since it was installed

in 1964, and during that time, it has never been down, and the company has never had to make an adjustment to it. It has run for 18 years now without change or modification.



Mr. B. Harrison, Manager of Engineering, and Mr. G. Bonifield, Manager of the Centrifugal Foundry, inspect the Vibra Screw Bin Activator upon completion of another charge of borings being prepared.



The Bin Activator at Sealed Power Corporation has been in continuous service since 1964, discharging iron borings without bridging.