

Live Bottom Bin and Screw Feeder Solve Fine-Coal Flow Problems

Customer

K.V.B. Engineering, Research & Development
Combustion Laboratory, Santa Ana, California

Problem

The California R&D laboratory wished to determine the relative efficiencies of various grades and types of fine coal, in a coal gasification research study it had undertaken.

To do so, it employed a process in which finely pulverized coal would be fed to a test boiler at precisely regulated feed rates.

Pulverized coal is extremely difficult to handle, frequently bridging and clogging in the supply hopper and moving erratically with frequent flow stoppages.

Key

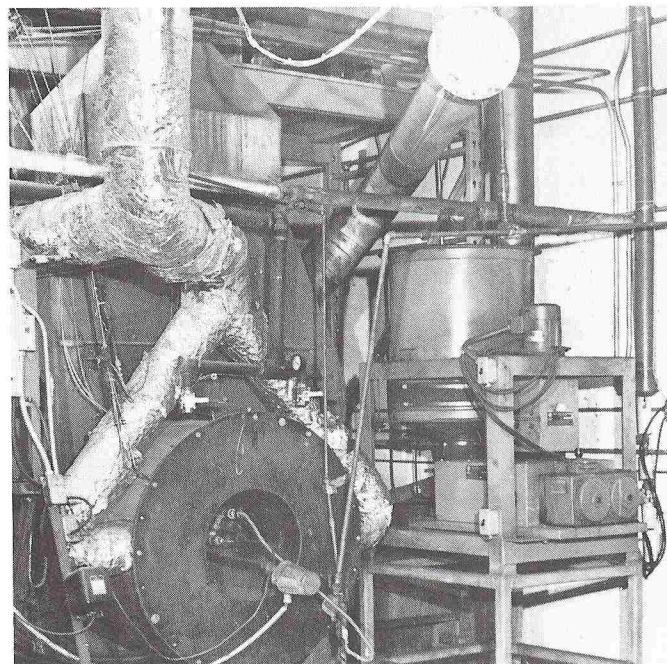
Vibra Screw Controlled-Vibration Equipment
One 2" Volumetric Screw Feeder with 8 cu. ft.
Live Bottom Bin supply hopper.

Solution

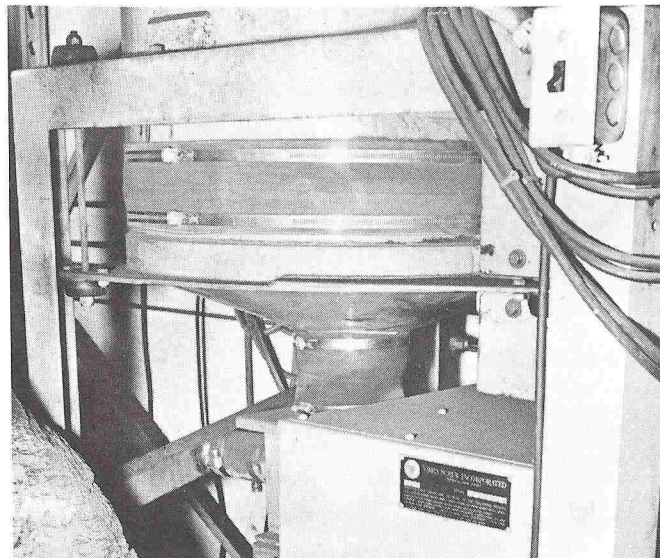
Installation of the feeder, with 2" diameter screw and 8 cu. ft. Live Bottom Bin, effectively solved the KVB laboratory's coal flow problems. The unique bin incorporates a Vibra Screw Bin Activator. Flexibly hung from the upper bin and vibrated by the action of a special gyrator, it insures positive material discharge without hang-ups to the feeder below. The feeder, operating on a patented vibrating-feed principle, insures that each screw flight is uniformly filled as it rotates toward discharge. Coal is thus delivered to the test boiler with accuracies of ± 1 to 2 percent of the desired flow rates.

Results

The Vibra Screw Live Bottom Bin and Volumetric Screw Feeder have become an integral part of KVB's laboratory operation. The research facility finds the equipment to be both accurate and trouble-free in metering precise volumes of fine coal over a wide range of flow rates.



Accurate feeding of fine coal is achieved with Vibra Screw Live Bottom Bin and Volumetric Screw Feeder.



Closeup of Live Bottom Bin and Feeder at KVB.