

# VIBRA SCREW CASE HISTORY



## C-269 Loss-in-Weight System Controls Lime Dispersion For Snack Foods

### Customer

A major snack foods manufacturer and its equipment supplier, Quality Fabrication & Design, Inc. of Irving, Texas.



A Vibra Screw Loss-In-Weight Screw Feeder is the heart of new systems to feed and distribute lime over corn kernels.

### Problem

The food manufacturer uses a small but precise amount of lime to soften and remove skins from corn kernels prior to processing and cooking. The snack food manufacturer had been adding lime to the kettle feed stream by hand, resulting in wide fluctuations in accuracy in a process that requires extremely critical ratios of lime to corn. Because lime tends to settle and not stay suspended, the manual operation resulted in lumping and balling in the kettle. Operators often had to beat lumps out of the mix.

The process was used, and its problems encountered, at several of the company's South American locations.

### Solution

A feed system based on a Vibra Screw Loss-In-Weight screw feeder

With design assistance from Century 22 Engineering, Quality Fabrications assembled a system that includes a loss-in-weight feeder with a vibrated hopper; a horizontal, flexible screw auger and PLC controls for loss-

in-weight operation. Vibra Screw's unitized gyrator provides the controlled vibration, eliminating any possible bridging of the lime in the feed hopper. As a manufacturer of process equipment, Quality Fabrications has built many systems for this manufacturer. They manufacture weigh feed equipment, but not in the smaller, more accurate size supplied by Vibra Screw for this application.

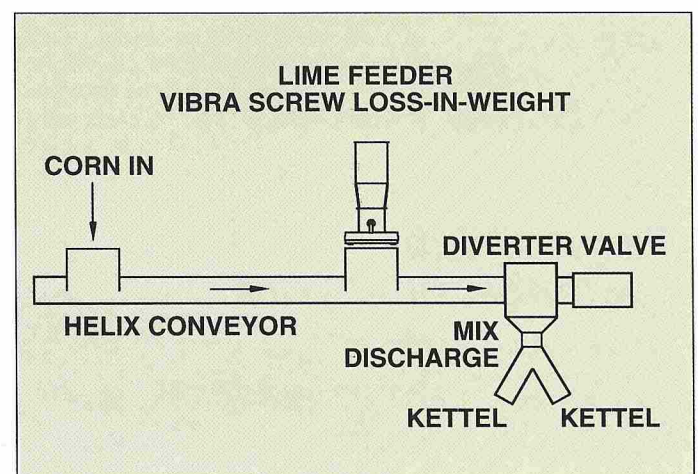
The system feeds from 50 pounds of lime to approximately 300 pounds of corn per batch -- a small amount of lime evenly distributed. Flows are intermittent, as required, usually twice per hour for approximately four minutes per batch.

### Results

With one system already in place, lime feeds accurately and automatically. The system provides consistent dusting of every corn kernel in intermittent batches. The result is a small amount of lime, accurately and evenly distributed on the corn before it is whetted out in the kettle.

With each corn kernel evenly coated in the feed stream prior to whetting out, lumping and lime settling have been completely eliminated. The first system has been installed in Brazil with three additional systems scheduled for Mexico.

The PLC controller is programmed to respond and dispense 15 pounds of lime per batch. The system operates 24 hours per day with little operator intervention or supervision.



Vibra Screw Loss-In-Weight Feeders provide accuracy of  $\pm 1\%$  at rates of 50 pounds of lime per batch.