



***Replacing a Troublesome Screw Feeder with
A Geomate™ Loss-in-Weight Feeder
Extremely Low Feed Rates***

Manufacturer – 3Sigma

Product – Corn Starch

Case History # 114

Background

A Southeastern Fortune 100 firm contacted us to replace an existing loss-in-weight feeding system due to yearly mechanical issues and expensive repairs.

Existing Problem

- The customer had been using a Brabender Loss-in-Weight feeder for a number of years. Each year maintenance costs would be in the thousands of dollars plus the extreme cost of downtime for a facility that is completely “sold out”. Any downtime translates into huge profit losses.
- This feeder is the final pH adjustment before product goes to the client’s load out silos. Any error in feed rate accuracy can be devastating.

The Solution

Based upon previous work with 3Sigma’s parent firm, Carolina Material Technologies, the customer asked us to review the Brabender installation and offer a solution. Their requirements were straight forward:

- Provide an accurate and reliable continuous loss-in-weight system.
- The system must follow an input signal from downstream equipment to properly adjust the feed rate, hence the pH level, based upon the amount of product in process.
- Feed rate range of 0.05 to 0.07 PPM.

To meet these requirements 3Sigma provided:

- A Geomate™ loss-in-weight system which consisted of a 4” GeoTray™, a platform scale and a LIW control system.
- The Geomate™ feeder is a mass flow system that operates with *no moving parts*.



Loss-in-Weight Control w/ Manual Control

Mass Flow Design + No Moving Parts = Highest Reliability, Period



GeoMate™ Loss-in-Weight Dry Material Feeder

Results

- The Loss-in-Weight Dry Material Feeding System was designed, built and delivered in 4 weeks to meet customer's year end fiscal requirements.
- The Loss-in-Weight Dry Material Feeding System was installed in 2012.
- To date the system has met all requirements without any downtime.

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