



Replacing a Troublesome Screw Feeder with A GeoMate™ Loss-in-Weight Batching System for Titanium Dioxide

Manufacturer – 3Sigma

Product – Titanium Dioxide

Case History #115

Background

A Southeastern manufacturer of high grade titanium requires the addition of a very small amount of titanium dioxide into each and every batch produced. As titanium dioxide is extremely cohesive and adhesive it presents a myriad of dry material handling problems.

Existing Problem

- **Reliability Issues.** The customer had been using a Best Equipment brand screw feeder for a number of years. As the screw rotates the friction created causes buildup between the screw and the discharge tube. Over time this hardens. A loud screeching noise could be heard every time the feeder started. Eventually the screw would break or twist up like pretzel inside the feeder.
- **Inaccuracy.** With every single batch an operator needed to adjust the amount added as the feeder was incapable of meeting their stringent batch accuracy requirements.

The Solution

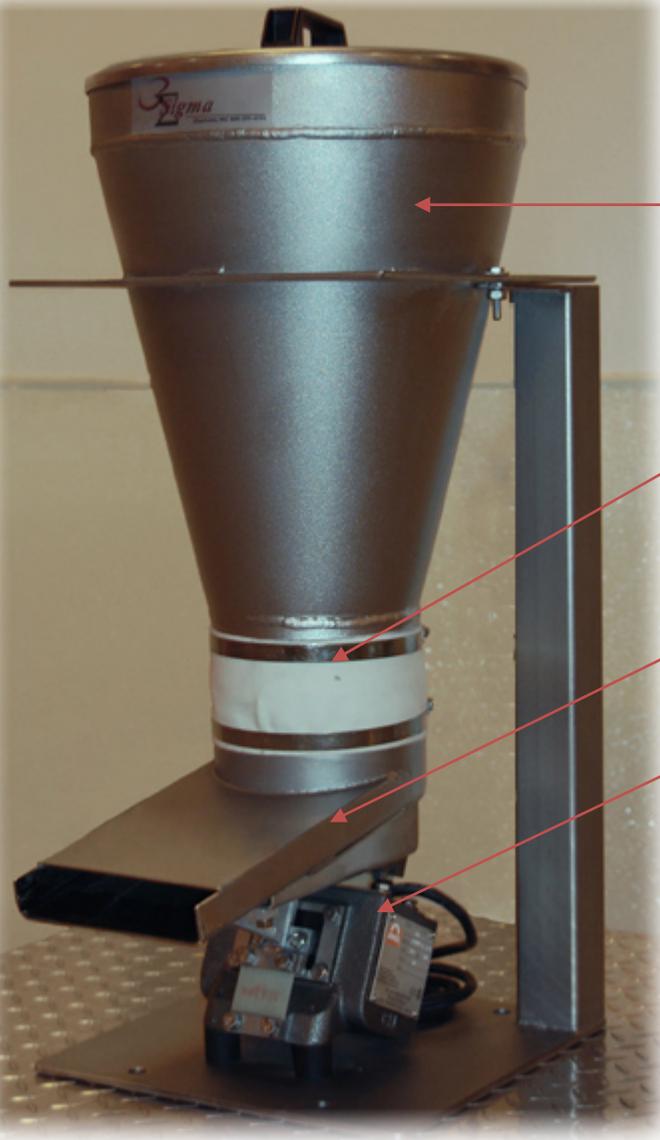
Our local rep firm, Carolina Material Technologies, was asked us to review the existing Best Equipment installation and offer a solution. Their requirements were:

- Provide an accurate and reliable batching feeder to work with their existing Gain-in-Weight scale and control system.
- The feeder must batch the precise amount without operator interface.
- The feeder must operate reliably with minimal maintenance issues.
- Batch range of 0.10 to 1.5 lbs within 30 seconds.

To meet these requirements 3Sigma provided:

- A 6" GeoMate™ dry material feeder with a 0.5 CF hopper. The unit is manually refilled.
- The MassMate™ hopper has been designed for mass flow with the sized larger than the material's arching dimension to eliminate flow problems.
- The feeder and hopper have both been electro-polished to provide for best flow conditions.
- A local control to interface with our client's existing control system.

GeoMate™ Dry Material Feeder
Exterior -Glass Bead Finish
Interior - Electropolished



MassMate™
Mass Flow Hopper
To be Manually Refilled

Seal Skirt to Isolate the
Hopper from the FeedTray

GeoTray™
Dry Material Feed Tray

Electromagnetic Drive

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



[Watch Presentation Video](#)
[Watch Feeding Video](#)

Results

- The first GeoMate™ Dry Material Feeder was installed in 2012.
- The second GeoMate™ Dry Material Feeder is awaiting installation.
- The dry material feeder operates within the customer's accuracy requirements freeing the operator from constant rework.
- No more squealing. No more "pretzeled screws". No more maintenance.
- To date the system has met all requirements without any downtime.

Due to confidentiality agreements we cannot provide detailed customer information.
We may be able to schedule a conference call upon request.

Experience the 3Sigma Difference



www.3Sigma.biz
704-846-1617

07/12