



Replacing a Troublesome Screw Feeder With a Reliable Batching System

Manufacturer – 3Sigma

Product – Tungsten Powder

Case History #108

Background

A southeast manufacturer of highly abrasive metal powders contacted Carolina Material Technologies, our parent company, to duplicate a dry material batching system. **The original system was installed in 1997 and is still operated daily.**

The Solution

The company contacted CMT in search of a solution that would:

- Store one tote of tungsten powder (150-250 PCF).
- Transfer from the tote to the hopper in a dust tight fashion.
- Allow for the integration of the client's roll conveyor. This is used to manually advance the empty "tubs" to the filling station and then roll them off when filled.
- Properly batch the tungsten powder to the "tubs".
- Minimize maintenance - no screw feeders - as they had much poor experience with screw feeders and their fine, heavy product working its way past all types of seals and literally shutting the system down.

To Meet These Requirements 3Sigma Provided

- A 24" GeoMate™ Dry Material Feeder to properly batch their product. This is the same size as the original 1997 unit.
- A 25 CF MassMate™ mass flow hopper. The slopes are steep enough to ensure mass flow and the outlet larger than the product's arching dimension, thereby ensuring mass flow.
- A volumetric feeder with an A-B VFD and foot pedal to allow the operator to fill each "tub" by volume.
- As this unit operates with no moving parts there are no screws, seals, bearings, bushings, etc to affect and maintain.

24" GeoMate™ Dry Material Feeder Post Testing



“Cups” to set Client’s Tote
onto the Feeder Frame

25 CF MassMate™ Mass
Flow Hopper

Seal Skirt to Isolate
the Hopper from
the FeedTray

24" Dia. GeoTray™
Feed Tray with 6" outlet

59" Clearance for Client’s
Roller Conveyor

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



Results

- The dry material feeder was installed in early 2012.
- The feeding system runs identically to the original 1997 unit with the exception that this feedtray is “offset” allowing for easier operator interface.
- The customer is pleased with the system.

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



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