



Batching Feeder

Manufacturer – 3Sigma Product – Iron Powders Case History #112

Background:

A southeast manufacturer of automotive systems was looking for a more reliable batching system to meter product to their mixer. They had used a screw feeder to batch for years, but due to maintenance issues and the desire to automate the system they contacted CMT in a search for a solution.

Existing Problem:

- The customer used an AccuRate screw feeder to batch product to his mixer. Due to the very fine nature of the metal powder (150-200 PCF @ 1 micron) it would work its way past the screw feeder's air purge seal which would result in a system failure. The fine metal powder would degrade the seal, heat and brazen causing the screw to "lock up". On other occasions the screw would twist up like a pretzel within the feeder.
- The system was manually loaded, at grade, and then raised with a scissors lift to batch to their mixer.

Customer Need:

- Dust tight filling of an IBC, at ground level with an existing drum dumper, to provide storage above the GeoMate™ feeder.
- Proper loading of the IBC, atop the GeoMate™ feeding frame, without operator interface/ error.
- Dust tight discharging from the IBC to the GeoMate™ LIW feeder.
- Accurate batching/feeding without constant maintenance issues.
- Nitrogen purge on the entire system, including the IBCs.

The Solution:

- A cone valve IBC system that allowed for dust tight filling at the drum dumper; dust tight transfer of the product and a consistent and complete emptying of the IBC without the need for vibrators, hammers, air, operator interface, etc.
- A column lift which allows the cone valve IBC to be placed atop the feeder without the need for a fork truck in this production area.
- A SS12 GeoMate™ Feeder to properly batch their product. As this unit operates with no moving parts there are no screws, seals, bearings, bushings, etc to affect and maintain.



IBC being set in place by Column Lift

The IBC is set atop the GeoMate™ LIW batching feeder to refill it upon demand.

The Column lift sets the IBC in place, thereby eliminating a fork truck in the area.



IBC docked atop GeoMate™ Feeder

Results:

- **The system was installed in 2005. To date we have not received a single spare parts order.**
- As the customer supplied their own PLC to control the system we did work together to resolve one control bug, which was erratic and intermittent.
- The customer is extremely pleased with the system. We are awaiting their expansion for the addition of another GeoMate™ system.

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

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