



## ***Replacing a Troublesome Screw Feeder With a Reliable Batching System***

***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.

### **The Solution**

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

- Allow for dust tight filling of an IBC, at ground level with an existing drum dumper, to provide storage above the GeoMate™ feeder.
- Allow for the 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.
- Allow for a nitrogen purge on the entire system, including the IBCs.

### **To Meet These Requirements CMT and 3Sigma Provided:**

- 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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