



www.3SigmaSystems.com
704-846-1617

**Fork Truck - Split Frame Bulk Bag Unloader
Gain-In-Weight Feeder System
Product – Zinc Pellets
Case History #3S-1218**

Background:

An integrator, working for YKK, was looking to automate a process and needed a new system installed. The plant needed a system that would accurately batch zinc pellets to create the proper ratio with the other raw ingredients, which varies with every single batch. YKK originally desired a BBU with a belt conveyor to deliver the product at a 4.5' elevation. We suggested a gravity, inline system which offered numerous advantages and minimized the capital investment. Advantages of 3Sigma's system: no moving parts and mass flow design, led the customer to choose 3Sigma to provide the desired equipment.

Customer Needs:

- Reliable feeding of the 3/8" zinc pellets
- Highly accurate batching – amount changes with each batch, ranging from 4 to 64 lbs.
- Safe bulk bag discharging
- Minimal maintenance issue
- System must fit within 20' with a 4.5' discharge height

Solution:

- 3Sigma supplied an agitation-free bulk bag unloader, as the pellets flow freely
- A split frame unloader was provided to fit within 20' headroom while discharging 4.5' off grade.
- A 12" GeoMate™ mass flow, vibratory feeder accurately batches 4 to 64 lbs., with no moving parts. No pinch points, no wear parts.
- The client determines the amount required, per batch, communicates this to the feeder as required. The feeder batches to a weigh hopper and discharges via the gate valve, to the client's robot upon demand.



**Split Frame Bulk Bag Unloader
GeoMate™ Mass Flow Feeder, Weigh Hopper**



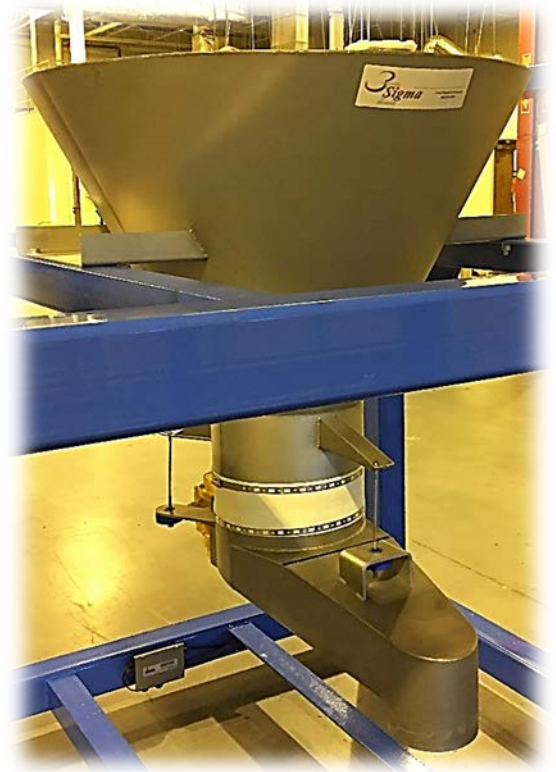
[Click to View](#)

Sequence of Operation

1. Load the bag hanging frame.
2. Lift and set bag hanging frame atop the flow frame.
3. The fork truck mast is now below the bag/bag adapter thereby saving approx. 3' of head room.
4. The bulk bag is opened. A mechanical brace ensures the bag is supported to protect the operator.
5. Client sends batch size required – i.e. 33.5 lbs.
6. Our batch control chooses the correct fast and dribble speed (based on batch size ranges) and runs.
7. When batch setpoint is hit, the feeder stops. A signal is sent to client's PLC – "Read to Discharge".
8. Client robotically places his plate under the weigh hopper and signals, "Discahrge".
9. The valve opens and closes.
10. Repeat.



Top Half of Bulk Bag Unloader



Mass Flow Feeder

BETTER BY DESIGN™

**Made in
America**

