



**CMT**  
*Process Solutions*



## **Bulk Bag Unloading Systems Featuring Contain-It™ Technology**

# TURNKEY SYSTEM SUPPLY

CMT is both a manufacturer and integrator who has been providing bulk material handling systems since 1996. With a full range of bulk material handling solutions, as well as over 30 years of hands on industry experience we are well positioned to recommend the best solution, to meet your goals.

## We Offer:

**Dust Collection** - Cartridges, Bags, Horizontal & Vertical mounts, Dust detectors, Level controls, Flow aids, BBU mounted

**Mechanical Conveyors** - Flex Screw, Industrial Screw, Aeromechanical, Tubular, Vibratory, Belt, Drag, Bucket Conveyors

**Pneumatic Conveyors** - Dilute phase, Dense phase, Vacuum, Pressure, Venturi systems.

**Feeders** - Batch, Continuous, Volumetric, Gravimetric, Screw, Vibratory, Rotary



## Turnkey Supply Weigh-Mix-Convey-Feed

- ▶ 11 BBUs
- ▶ 6 Gain-in-Weight Feeding Systems
- ▶ One Mixer
- ▶ 3 Day Tanks
- ▶ Vacuum Conveying to 14 Extruders
- ▶ 70 Filter Receivers, Cyclones
- ▶ 48 LIW Feeders

## Complete System Design

- ▶ 7 BBUs
- ▶ 2 Crushers
- ▶ 7 Refill System
- ▶ 7 LIW Feeders
- ▶ 1 Bucket Conveyor

**AVOID  
Square Peg-Round Hole  
Scenarios**



As a true integrator, with a myriad of proven solutions available, we offer you the best solution in meeting your project needs.





# BAG AGITATION METHODS

Proper bag agitation is crucial in discharging your product. 3Sigma offers three methods of agitation, recommending the proper bag agitation system for your products, with a guarantee of product discharge.

## Shape-It™ Discharging System

The compacted, flat bottomed bulk bag is set into the bag shaping platform. Vertical Vibration is then used to properly shape the bulk bag to the steep sloped platform prior to opening the bag. Once set the bag spout is easily accessed and the vertical vibration is used periodically, if needed, to discharge product.



**Shape-It™  
Vertical Vibration**

- ▶ Vertical Vibration Shapes the Bulk Bag to the Steep Sloped Platform Prior to Opening the Bag and is Cycled as Necessary for Discharge
- ▶ No Moving Parts
- ▶ Bulk Bag Seal is Not Moved or Broken
- ▶ Provides the highest degree of dust control due to this design.



**Shaped Bag  
Titanium Dioxide**

## Massage-It™ Agitation System

Dual mechanical paddle agitation is used with the most difficult-to-discharge products. Heavy duty pipe agitators are used to ensure product discharge, with Massage-It agitators pivoting a full 90 degrees.



Massage-It™ Dual Agitators Driven with either 5" or 6" cylinders to ensure proper discharge. Paddles agitate on a timing cycle.



Massage-It™ Agitators push material from the outer edges of the bag to the center, while breaking apart compacted material.



Push-It™ Dual Agitators placed above Massage-It™ or Shape-It™ on two sides for enhanced agitation. Used on wet sand or similar applications.

# CONTAIN-IT™ ACCESS CHAMBER

## The Heart of Dust Containment

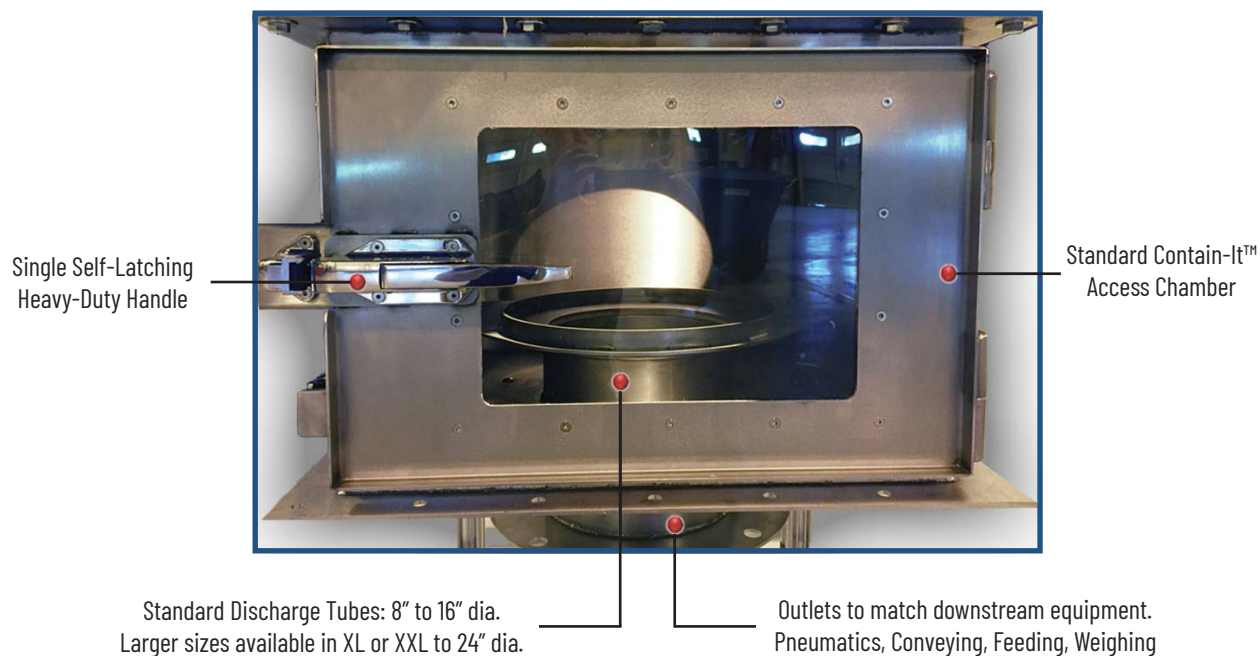
Designed with the operator in mind, the Industrial Duty Contain-It™ System provides the most spacious user-friendly access chamber available on the market, while providing an extremely high degree of mechanical dust control and flexibility.

Access chambers should be just that - a safe place for your operator to access and manipulate the bag spout while protected from the weight of the bag and its dust at all times. Some manufacturers use the hopper as an access point to untie the bag.

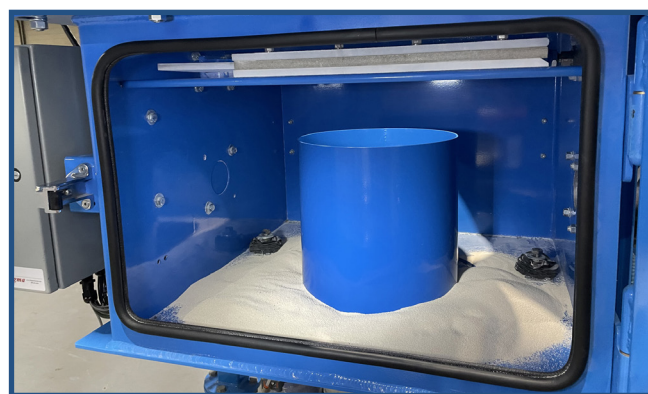
This ALWAYS leads to spills and can present dangerous situations to your operators and plant environment.

## Safety First - Operator Protection

- ▶ A safe place for the operator to interface with the bag
- ▶ Transient dust is pulled away from the operator when the door is open
- ▶ Never used for material storage
- ▶ Contains the inevitable spills from the bag



The Access Chamber is just that - Access to your bulk bag spout. This is never used as storage, providing true safety for your operators.



Access Chamber is designed to Contain Spills



**Spills Happen... Contain-It™**



# TOTAL CONTAINMENT SYSTEM OPTIONS

## Dust Containment is Key in Most Bulk Bag Unloading Applications

Mechanical containment is properly addressed before looking at an external dust collection system.

Six Levels of Dust Control are offered to meet your specific application and plant needs.

- ▶ Sealed bag bottom on support shaping platform
- ▶ Tube-It™ Discharge Tube
- ▶ Clamp-It™ or Seal-It™ Bag Spout Seal
- ▶ Close-It™ Bag Spout Closure System
- ▶ Vac-It™ Dust Collection Valve
- ▶ Collapse-It™ Bag Evacuation System

### Tube-It™

Dust Control: Very Good

The bag spout is placed into a discharge tube which is designed with a smaller diameter than your bag spout. A seal is created both against and within the discharge tube once material begins to discharge.



The Tube-It™ is very simplistic, featuring no moving parts and a very good seal— all within the Contain-It™ chamber. This feature can be used with the Close-It™ system for added dust control.

### Clamp-It™

Dust Control: Best

Pneumatically operated clamp ensures total containment by positively sealing the bag spout to the Tube-It™ discharge tube.

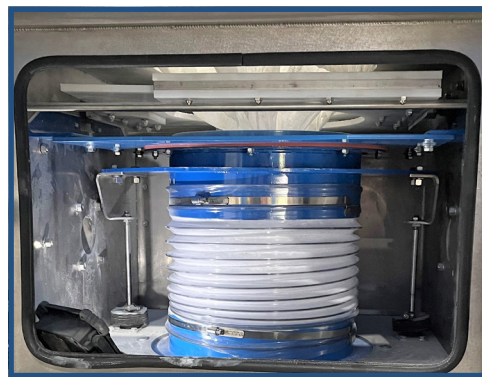


Once the bulk bag spout is clamped and sealed via the Clamp-It™, product is then discharged to the process below. Spout length, diameter and tie point must be evaluated.

### Seal-It™

Dust Control: Better

This is an upgrade to the Tube-It™. While not a positive seal like the Clamp-It™, this provides a higher degree of dust control than the Tube-It™ due to a greater surface area of sealing provided.

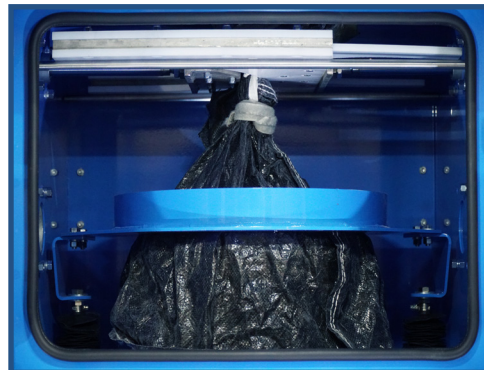


The tied bulk bag spout is sealed with the Close-It™ valve assembly. The Seal-It™ is then raised and the Close-It™ is opened for discharge to the downstream equipment below.

### Close-It™

Flow Control and Bag Closure

Pneumatically actuated valve utilizes a UHMW plate within a dual plate to concentrically close off the entire bulk bag outlet spout on demand



The Close-It™ Valve can be positioned anywhere from fully open to fully closed, allowing a greater degree of flow rate control in addition to closing off the bag spout to allow for re-tying.



**Spills Happen... Contain-It™**

# DUST COLLECTION SYSTEM OPTIONS

## Combining the Vac-it™, Collapse-It™, and Contain-It™ Systems for Maximum Dust Control

The Vac-it™ and Collapse-IT™ Systems are used in conjunction with the Contain-It™ system and dust collection to provide further dust control by utilizing either an in-plant dust collector or a collector provided with a new system to pull any dust that may be present due to leakage, spills or accidents. New collectors can be mounted to the bulk bag frame or can be stand-alone and are fitted with appropriate valving.

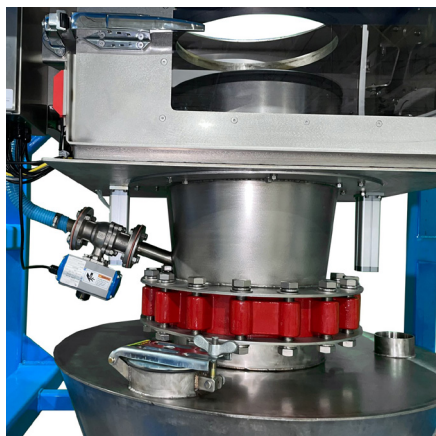
**Vac-It™**



Vac-it™ Valve opens/closes with door position to use dust collection only when needed.

Note: 350 CFM required for proper Dust Collection on Contain-It™ chamber.

**Collapse-It™**



Special Valving provided to evacuate and collapse the empty bulk bag.

Note: The Clamp-It™ system is required with the Collapse-It™ feature.

**Dust Collectors**



Industrial-Duty Dust Collectors are provided when maximum dust-control is required.

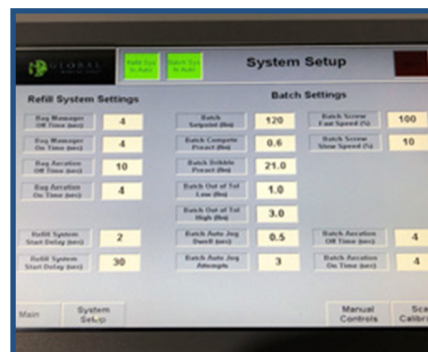
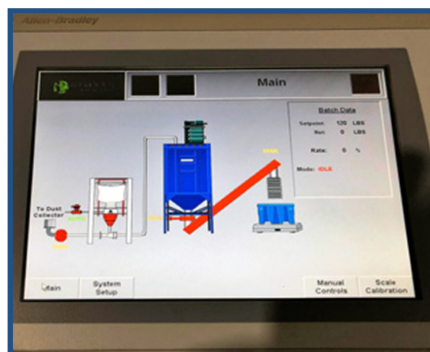
## Controls & Control Systems

All Bulk Bag Unloaders come complete with an Allen-Bradley PLC and Rockwell HMI Touchscreen as standard.

Optional Compactlogix and Contrologix PLCs can be provided with complete systems, based upon your needs and plant standardization requirements.

Features are based upon the options purchased while additional features can be added in the field, without requiring a control panel upgrade.

Custom panels are provided for complete system control. NEMA 4, 4X, 7, 9 and purged panels are available.





# BAG COMPACTION METHODS

## COMPACT-IT™

CMT's constant tension compactor provides an affordable and effective solution to the myriad of problems of 'storing' and disposing of used, empty bulk bags. This small workhorse reduces your waste removal costs by up to 75% while transforming your work space, providing a myriad of benefits to your operations.

*Constant tension ensures the tightest roll possible = minimal labor costs.*

### Ergonomic Design for Ease-of-Use



Manually feed bags into the mouth of the Compactor. Other products can be automatically fed.

### Constant Tension Compaction



The unit maintains a constant tension on the bags, whether running or stopped. Safety systems keep operators safe at all times.

### Up to 120 Bulk Bags on Single Pallet



Result: A single pallet, holds 72-120 empty bulk bags, which are safely transferred to the plant exit, reducing fork truck traffic.

### Compact-It General Benefits

- ▶ Transforms work areas
- ▶ Compacts 6-10 bulk bags into one roll
- ▶ Reduce waste removal by 75%
- ▶ Reduce injuries – work in one's 'power zone'
- ▶ Minimize Fork Truck Traffic

### Bag Recycling Specific Benefits

- ▶ Recycler's Desired Product
- ▶ Separate your Recyclables into rolls/pallets
- ▶ Does not damage bulk bags
- ▶ Clean product

## BALE-IT™ AUTOMATIC BALERS

Automatic balers are provided for various applications that require no operator interface in loading the waste material. These are generally specified for high rate production. The system works on 100 year old hay baling technology. Automatic balers pull product into the unit and output a wire wrapped bale for disposal. This system can be used with CMT's BBU to provide automated bag disposal, eliminating potential employee exposure.



### Bale-It™ Benefits

- ▶ Automatic Baling from one or multiple sources
- ▶ High Capacity - up to 1,000 bags/hour
- ▶ Transforms work areas
- ▶ Reduce waste removal by >75%
- ▶ Minimize Fork Truck Traffic
- ▶ No Hydraulics – Fully Mechanical System
- ▶ No operator assistance required. Totally Automated

### Compactable Products

- Bulk Bags • Paper • Paper Bags • Plastic • Plastic Bags • Shrink Wrap • Bubble Wrap
- Film • Cardboard • Fabric • Trim • Matting • Sheet • Other

# TEST-IT™

## CMT Maintains a Dust-Free, State-of-the-Art, Testing Facility for Your Use

- ▶ Dust tight/ containment will be demonstrated with your worst products
- ▶ All three agitation systems are available for testing
- ▶ Empty Bag, Waste Compacting
- ▶ All features are available for testing: Contain-It™, Tube-It™, Clamp-It™, Seal-It™, Close-It™, Vac-It™, Collapse-It™
- ▶ Batch Feeding, Gain-in-Weight or Loss-in-Weight in our mass flow feeders. Stand Alone Feeder Testing or with Feeders Attached to BBU Discharge
- ▶ Testing will be performed, written feedback provided, including recommendations based upon our findings.
- ▶ Process warranties are always integrated in the purchase of a CMT system

### In Person Demonstrations



### Live Stream Demonstrations



### Video Recordings



*"Due to new OSHA standards we had no choice but to replace our existing bulk bag unloading equipment at our six US facilities. We tested at 9 different bulk bag unloading suppliers to ensure we made the best decision in this upgrade. After all this evaluation I can say that CMT truly offers the most dust-tight unloader in the industry. In fact, they are the only supplier that had zero design flaws". — Major CMT Client*

### WHY TEST

For Confirmation, For Peace of Mind, For your Operator's Safety  
Testing your product, with the exact equipment you may purchase, will enhance your decision-making process more than anywhere else in your evaluation and purchasing process.

### TESTING GUARANTEE

If you are not 100% satisfied with your visit to our facility we will pay your travel expense.  
Call your contact to take advantage of our no obligation testing and learn about our testing guarantee.

Intelligent  Design