



**NATIONAL BULK
EQUIPMENT**

**BULK
BAG DISCHARGERS**

Like every piece of equipment that bears the NBE name, our **Bulk Bag Dischargers** are the product of **forward thinking** and designed to deliver **real results**. When you receive your raw materials in bulk bags, the equipment used to discharge the material needs to be regarded as an **integral first step** in your process and not just another independent piece of material handling equipment. And, in doing so, you will quickly realize that your entire production facility is at the mercy of the **performance and reliability** of your bulk bag discharger. NBE is a market leader in the supply of bulk bag discharging systems to various industries because we are **acutely aware of the importance** of providing our customers **the best first step** money can buy. NBE dischargers perform their tasks with superior precision and reliability. How? Read on. You'll discover that what you get **out of your process** is the direct result of what we put **into our bulk bag discharger**.

WHO MAKES THE BEST BULK BAG DISCHARGER? THIS SHOULD
CLEAR THE AIR.

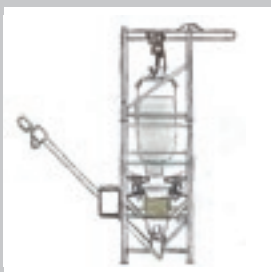




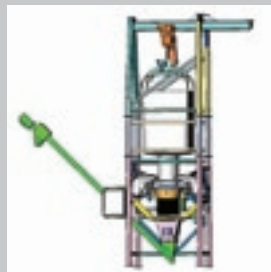
KNOWLEDGE & TEAMWORK | Before we make the first weld on your bulk bag discharger, a wealth of materials handling experience and process knowledge is already built in. Ours is a decades-long legacy of innovative thinking, dynamic collaboration, intelligent engineering and rock-solid construction. In addition, all of these disciplines are housed within our state-of-the-art Holland, Michigan facility. This is especially important for highly customized units. Keeping the entire building process under one roof means maintaining control of quality and project timing throughout the entire design and fabrication process. And, as you well know, smooth process flow is critical whether your building a bulk bag discharger or producing and packaging a product.

AROUND NBE, FORESIGHT IS 20/20

Optimizing an NBE discharger for your application could be as simple as adding a PLC controller, or could mean extensive customization. Even the roughest napkin sketch can serve to get our engineering team started toward another intelligent, efficient solution.



One of our most valuable resources is our extensive use of 3D modeling. Your equipment selection team can preview your virtual piece of equipment from every angle and make well educated modifications prior to construction.



The foresight provided by the 3D model helps eliminate typical installation problems and hindsight wish lists. However, NBE goes one step further by fully assembling and testing the equipment with your material prior to shipping. This ensures the performance of the discharger within your system.



RELIABLE CRAFTSMANSHIP | Of course, designing in all the smarts in the world is useless if it isn't built right. Once an approved design makes its way to our manufacturing floor, creativity meets craftsmanship. Again, the 3D rendering now guides our manufacturing team. It's here that the fruits of our vast experience are most apparent. Many of our welders, fabricators, and foremen boast decades of experience in building the finest industrial strength custom equipment. Add to this our close partnerships with only the top vendors in the industry, and you can rest assured, your discharger will be constructed with unparalleled attention to detail, and a constant eye toward maximum ruggedness and durability.



Forward
Thinking.
Real
Results.

Four little words that will mean a lot once you purchase a National Bulk Equipment product. We think forward always considering the unit's function within the larger process to ensure that your NBE equipment won't just fit in, it will greatly enhance your production line, right to your bottom line. Once you experience the effects of **Forward Thinking**, you can call it what you will: increased productivity, consistent product flow, maximized efficiency and reduced operating cost. We simply call it **Real Results**.



MODULAR COMPONENTS | Three decades of experience in designing and manufacturing bulk bag dischargers has certainly taught NBE one thing - **no two materials or applications are the same**. The wide variety of available **bulk bag styles**, specific **material characteristics**, **process demands** and **application constraints** make it impossible for most bulk bag manufacturers to **optimize their equipment** to meet your specific process demands when they only offer limited models. This is why **NBE pioneered** the modular designed bulk bag discharger many years ago. A **bulk bag discharger** is not “just a bulk bag discharger,” it is the **first step in your process**. Think of it this way and you will **maximize** your entire system’s performance and **long term profitability**.

BULK BAG CONSIDERATIONS

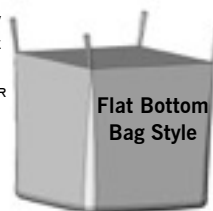
How do I place the bag into the discharging system’s framework?

What do I use to pick up the bag from its loops, promote complete material discharge from the bag and retain a lined bag’s inner liner while discharging?



How do I get material to flow from the bag that has become packed above the discharge spout during transportation or has agglomerated into one large hardened block?


























How do I interface with the bag spout and provide a dust free discharge?



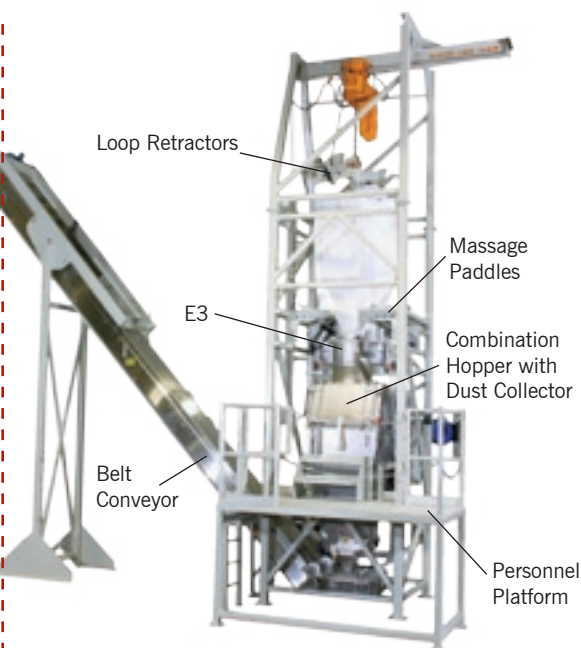
Once the material is flowing out of the bag, how do I make sure it is consistently transferred to my process in a reliable and repeatable manner?

How do I ensure that operator safety is considered every step of the way?

CONSIDERATIONS

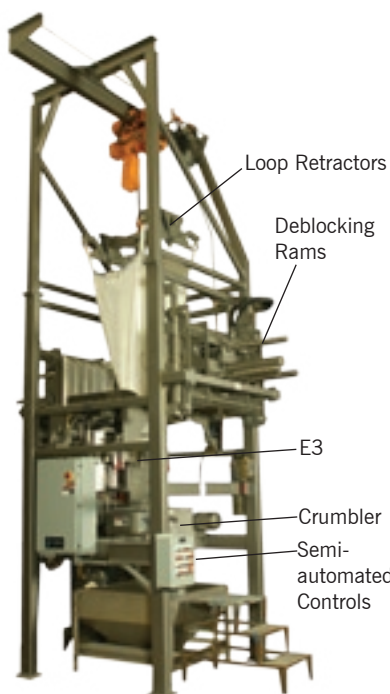
BAG SUPPORT FRAMEWORKS	
How do I place the bag into the discharging system’s framework?	  <p>Fork Lift (FL) Loading</p> <p>Dedicated Hoist (DH) Loading</p>
BAG HANGERS	
What do I use to pick up the bag from its loops, promote complete material discharge from the bag and retain a lined bag’s inner liner while discharging?	     <p>FL Standard</p> <p>FL Loop Retractor</p> <p>DH Standard</p> <p>DH Loop Retractor</p> <p>DH Low Profile</p>
BAG FLOW AIDS	
How do I get material to flow from the bag that has packed above the discharge spout during transportation or has agglomerated into one large hardened block?	    <p>Massage Paddles</p> <p>HD Massage Paddles</p> <p>Deblocking Rams</p> <p>Spout Lump Deblocker</p>
BAG SPOUT INTERFACE	
How do I interface with the bag spout and provide a dust free discharge?	     <p>Untie Box</p> <p>E3 Discharge System</p> <p>Support Pan</p> <p>Bag Piercing Hopper</p> <p>Inflatable Bladder</p>
CONVEYING AND PROCESS INTERFACE	
Once the material is flowing out of the bag, how do I make sure it is consistently transferred to my process in a reliable and repeatable manner?	     <p>Surge Hopper</p> <p>Agitator Hopper</p> <p>Crumbler</p> <p>Combo Hopper</p> <p>Feeder</p>
SAFETY FEATURES	
How do I ensure that operator safety is considered every step of the way?	    <p>Safety Interlock Switch</p> <p>Bag Present Sensors</p> <p>Frame Mounted Hoist Controls</p> <p>Exceeds structural codes</p>

COMMON CONFIGURATIONS | Safe, efficient, dust free and complete discharge of materials from bulk bags are always going to be critical **material handling** design factors. However, NBE's **Forward Thinking** philosophy brings bulk bag discharger design up to the **process integration level**. NBE's dischargers consistently provide a **reliable and repeatable material supply** as your system demands. By **looking downstream into your system**, we will apply our vast materials and process knowledge to configure all the **required discharger features** that will **optimize** your entire systems' **performance**. From the simplest discharging station to a completely automated system, the **Real Results** obtained everyday by NBE's customers include: **increased** throughput and productivity; **improved** system controls integration; **reduced** operating costs through savings in direct labor and material losses due to spillage, incomplete bag discharge, and foreign material contamination.

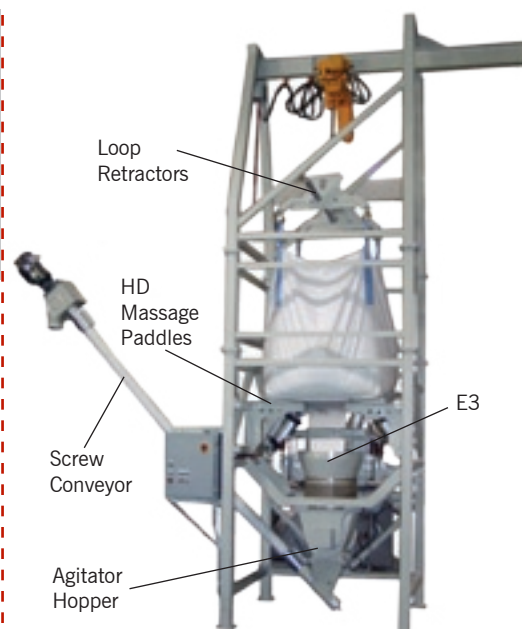


Dusty and agglomerated material supplied in bulk bags and 50 lb. bags are discharged from the bags and transferred through a screener into different containers in a dust free manner. The integral dust collector returns the captured dust directly back into the process.

MARKETS SERVED
NBE serves a wide range of markets including food, chemical, plastics, personal products, pharmaceutical, pet food, dairy, rubber and water treatment.



A single hardened block of material is reduced to lump sizes that will discharge out of the bag and is then further reduced to a pneumatically conveyable particle size.

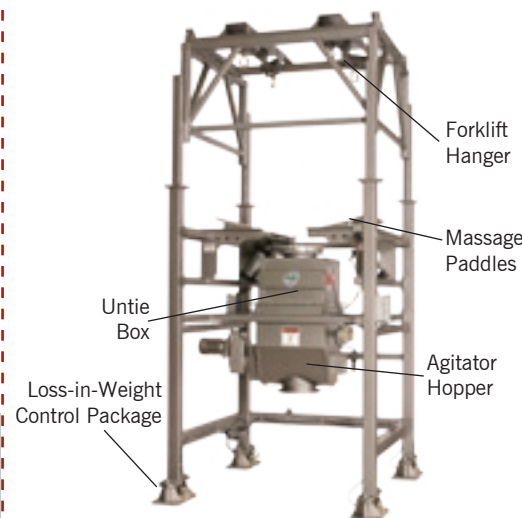


Non-free flowing material is consistently supplied on a Gain-in-Weight basis to the customer's process without bridging or rat holing above the transfer conveyor.



Extremely light and dusty material is completely discharged from the bag directly into the customer's process without causing dusting into the plant's atmosphere or loss of product due to incomplete bag discharge.

MATERIAL TESTING
NBE highly encourages customers to test their materials for free at our facilities as the ultimate way to ensure the right mix of components are selected that optimize their process.

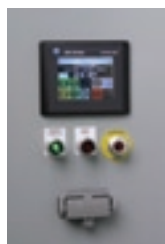


Non-free flowing material is supplied on a Loss-in-Weight basis to the customer's process without bridging or rat holing above the transfer conveyor.

AUTOMATION

At NBE we believe intelligent automation makes all production processes safe, user friendly and just plain more efficient. Current advances in PLC control technology makes automating processes more economical than ever before and directly reduces manual labor costs. That's why, at NBE we offer our products with everything from simple automated tasks to fully automated systems. The real result of intelligent automation from NBE is a drastic reduction in long term operating costs while increasing throughput due to the speed and timeliness of repetitive tasks.

Our bulk bag dischargers allow for a wealth of automated functions throughout their operational cycles. Optional



PLC controls automate a range of operations from simply starting and stopping material transfer conveyors, to automating the entire sequence of operations based on downstream

process demands. Indeed, when integrated with material conveying, feeding and weighing technologies, our most complete automated systems can reduce human involvement to literally placing full bags into the discharging system and removing empty ones. All at a rate that optimizes the capacity of the entire process.

Now that's Forward Thinking!

INTE

NBE doesn't just sell integration. We live it. Consideration of the unit's function within the larger process is built into everything we make. And we think beyond the simple stuff like ensuring bag fit within the discharger or considering discharge height, available floor space and ceiling height. We ask the deeper questions. How will material be introduced to the unit? What material characteristics might alter the method of discharge? What is the best method of transferring the material from the discharger to the process? What is the optimal processing rate, plant sanitary requirements, opportunities for automation and other considerations necessary for successful integration of the bulk bag discharging equipment into the process? Regarding the transfer of your



GRATION

material from the discharger to your process, NBE will select the best method to fit your process needs. For applications where it's impossible to discharge material directly into your process, NBE first analyzes your material and downstream system. We then select the optimal conveying system to transfer the material from the bulk bag to the heart of your process. Screw conveyors, pneumatic conveyors, belt conveyors, bucket elevators, drag conveyors, etc. can all be seamlessly integrated into your process with an NBE Bulk Bag Discharger. Regardless of the type of machine linked to your new NBE unit, our goal is to improve your bottom line through the improved efficiency of your overall process. And, to

further ensure that your custom designed NBE discharger will be perfectly tuned to your process, it is extensively factory tested using your product and containers prior to shipment. Of course, your best first step in researching a bulk bag discharging system is to put NBE's skilled application engineers and designers to work on your toughest production challenges. Our staff is uniquely qualified and equipped to build you an ideal system from the ground up. Intelligent. Inventive. And always attentive to your desires and goals; the NBE team stands ready to apply their expertise and experience to deliver Real Results for you and your company.



FORWARD THINKING

throughout our product line means

REAL RESULTS

on your production line. (And, ultimately on your bottom line.)



Let's get started today!



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EQUIPMENT**

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Represented By:

Forward Thinking. Real Results.

