NATIONAL BULK EQUIPMENT

BULK BAG FILLERS

Like every piece of equipment that bears the NBE name, our Bulk Bag Fillers are the product of forward thinking and designed to deliver real results. When you package your materials in bulk bags, the equipment used to fill the material needs to be regarded as an integral step in your process and not just another independent piece of material handling or packaging 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 filler. NBE is a market leader in the supply of bulk bag filling systems to various industries because we are acutely aware of the importance of providing our customers the best equipment money can buy. NBE fillers 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 fillers.

WHO MAKES THE BEST BULK BAG FILLER? NO DOUBT, NBE IS

LEADING THE PACK.

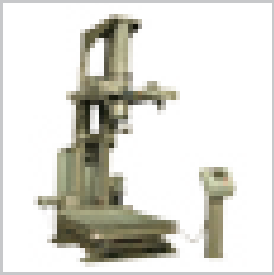
KNOWLEDGE & TEAMWORK | Before we make the first weld on your Bulk Bag FIller, a wealth of materials handling experience and process knowledge is already built in. Ours is a decades-long legacy of innovative thinking, dynamic collaboration, intelligent engineering and rock-solid construction. In addition, 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 FIller or producing and packaging a product.

AROUND NBE, FORESIGHT IS 20/20

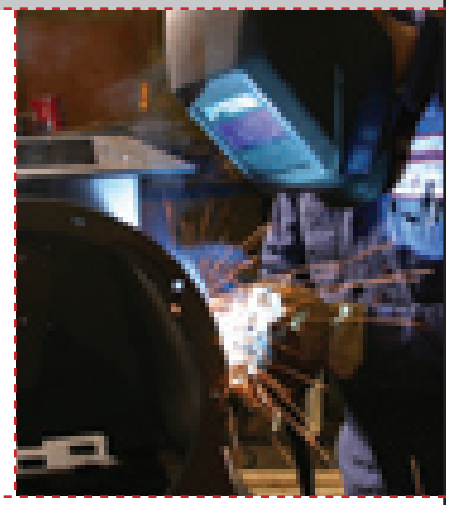
Optimizing an NBE filler for your application could be as simple as adding a PLC controller, or could mean extensive customization. Even the roughest napkin sketch can serve to get our engineering team started toward another intelligent, efficient solution.

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 filler 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 filler 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 and throughput, a reliable and consistent product flow, improved plant safety and system controls integration, maximized efficiency and reduced operating cost. We simply call it Real Results.

FEATURES

A stable filled bag that is the outcome of safe, accurate and dust free filling equipment is always going to be the end result of NBE's critical material handling design factors. However, NBE's Forward Thinking philosophy brings bulk bag filling design up to the process integration level. The wide variety of customers' bag styles, specific material characteristics, process demands and application constraints has driven NBE to design a comprehensive range of bulk bag filler options. By looking upstream into your system, we will apply our vast materials and process knowledge to configure all the required filler features that will optimize your system's performance and budget. From the simplest Bulk Bag Filler to a completely automated system, the Real Results obtained every day by NBE's customers include: increased throughput and productivity; improved system controls integration; reduced operating costs through savings in direct labor and material loss due to inaccurate filling equipment and excessive dusting.

BAG SUPPORT FRAMEWORK DESIGNS

4 Post, Cantilevered, and Fill Head Only frame designs are the available filler framework options. All three are constructed in either General Industrial Construction or Sanitary Washdown Construction and are designed to withstand the harshest plant environments while safely supporting 4000 lb. capacity bags.

Cantilevered fill head frames - provide unobstructed access from three sides of the filler for attaching and detaching bags. Cantilevered frames are generally used in medium to high capacity bag per hour filling capacities due to the ease of integrating indexing and accumulating roller conveyors. Additionally, cantilevered filling system can be automated to a degree that the only operator intervention required is to hang and spout empty bulk bags.

Powered height adjustment - cantilevered models come standard with a hydraulic system to quickly raise and lower the cantilevered mast. This feature provides flexibility to accommodate a range of bag sizes, provide ergonomic access for varying operator heights, as well as help square up filled bags. The increased operating speed and power of the hydraulic system vs. traditional ball screws greatly increases the bag per hour capacity of the fill station while allowing the fill head frame to safely hang a 4000 lb. load when required.

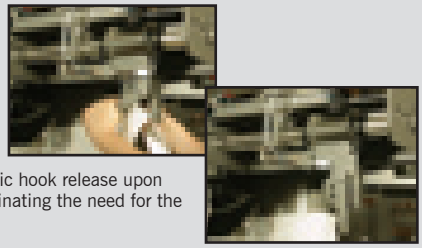
The 4 post frame - is an economical base frame from which many available options can be added to improve filling speed, accuracy and bag stability. The main framework features 32" of manual height adjustment in 4" increments to allow proper positioning for various sized bulk bag. 4 post frames are generally used for low to medium bag per hour filling capacities.

Fill head only frames – unsupported fill head frames are used when customers are going to mount the fill head assembly directly from existing equipment. They are generally used for low to medium bag per hour filling capacities.

BAG HANGERS

Manually adjustable front and rear bulk bag support hooks are spring loaded to ensure bag loops are securely held during operation. Unique to NBE's patent pending hook design is the improved operator safety that results from the spring loaded safety clasp tightening as weight is applied to them. This design eliminates the potential for the bag loops to inadvertently slip out of the hook during the filling sequence. The bulk bag support hook position is adjustable to accommodate various size bags.

Manual hooks - NBE's exclusive radial hook design securely hangs bags of various sizes and weights up to 4000 lbs.



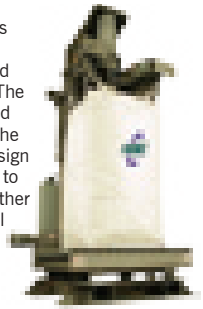
Automatic hooks – pneumatic actuated bag hooks allow automatic hook release upon completion of the filling cycle eliminating the need for the operator to manually detach bags.

Traversing rear hooks -pneumatic actuated, linear bearing guided rear bag hooks automatically position the rear bag hooks at the front of the filler allowing an operator to hang and spout an empty bag without the need to lean into or walk around the machine.

BAG WEIGHING OPTIONS

A range of completely integrated scale systems are available in hang weigh, base weigh, or pre-weigh configurations. Most designs incorporate adjustable load cell mounts that can be easily trimmed for the best overall scale performance. Additionally, the load cells are mounted in a manner that does not weigh the entire machine. This results in increased scale accuracy as the load cells transmit weight gain information to the digital scale controller mounted to the main control enclosure.

Base Weigh - the load cells are mounted to the lower framework, and are isolated to lengthen load cell life. The bag is completely supported by the weigh deck during the final filling phase. This design also provides the flexibility to accurately fill drums and other rigid containers with the fill station.



Hang Weigh - the load cells are mounted to the fill head mast and integrated with a weigh bridge assembly. The bag hangs from the weigh bridge's bag hangers by taut straps and remains on center during the filing process. This design is the perfect solution for filling potentially unstable, tall bags.

Pre-Weigh - weigh hoppers can be positioned directly above the bag filler which provides the ability to achieve high filling rates by simultaneously recharging the hopper while the operator spouts a new bulk bag.

Note - Platform scales are available on some 4 post models and volumetric filling is also available when accurate weighments are not necessary

BASE OPTIONS

The fill station base typically consists of a platform top or roller conveyor depending on the application requirements. Densification options are available to be integrated with either base style.

Platform top - provides a stable flat surface for the bag, slip sheet or pallet to sit on during the filling sequence

Roller conveyor- allows the indexing of bulk bags into and out of the fill station to be automated for more efficient filling cycles.

Densification table - a base mounted adjustable vibratory densification system is designed to settle the product in the bag during the filling cycle to produce a more dense and square package. The high amplitude, medium frequency vibration is isolated from the main framework by airbags during operation.

FILL HEAD DETAILS

The fill head assembly system includes a concentric tube design that has an 8" diameter product feed tube located within a 12" diameter outer fill spout. The feed tube is connected to the outer tube with quick release knobs for easy cleaning between batches. The standard fill head also comes complete with an inflatable bladder seal, 3" inlet for optional bag inflation devices, and a 3" exhaust vent port.

Blower - a 1 HP electric blower package provides rapid bag inflation prior to filling material in order to properly shape the bag for maximum stability and filling capacity.

Concentric tubes – an annular gap between the concentric tubes on the fill head allows air from the blower to enter during bag inflation and displaced air and dust to exit during bag filling.

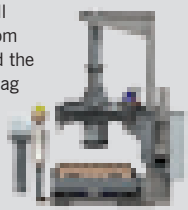
Inflatable bladder - an inflatable bladder holds and seals the bag spout ensuring dust free operation. A manual Inflate/ Deflate selector switch is located on the upper carriage for ease of spouting the bulk bag to the fill head.

Dust collection – an air displacement outlet allows for connection to a dust collector system, vent sock, or filter cartridge.

Drum & box fill adapters – are available options that allow the conversion from filling bags to filling drums and other rigid containers. Adapters easily mount to the existing fill head for accurate and dust free filling.

Material flow control valves -bulk and dribble feed rates can be achieved by utilizing pneumatic actuated slide gates or other types of valves based on material flow characteristics and application requirements.

Traversing fill head -the fill spout traverses forward from the machine center toward the operator. This brings all bag and operator interface points well within arms length for ease of spouting the bag inlet.



Hanging and spouting the bag with the fill head mast in a horizontal orientation, as apposed to vertically, provides the quickest and easiest method for spouting new bags. New bags are stiff and typically folded length-wise which makes them difficult to handle in a vertical spouting orientation.

Once the bag is attached to the cantilevered mast the operator presses the start fill button to automatically position the bag in the ideal bag fill location while inflating it to remove any creases. The end result is the most ergonomic, efficient and accurate bag fill station.

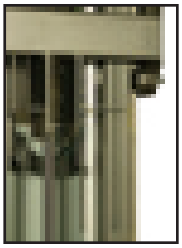
CONTROL SYSTEMS

An assortment of control options ranging from manual to fully automatic are available to integrate with any of the selected weighing options, filling system features and upstream equipment. The controls can be mounted to the filler frame or any remote location. Control systems can be designed using NEMA 12, 4, 4x, 7, 9 and purged enclosures.

Manual and semi-automatic systems - utilize a combination of manual switches and digital scale controller I/O to complete the bag fill sequence of operations. All operator settings and controls, including the scale settings, can be accomplished through the HMI.

Automatic systems - utilize a programmable PLC and panelview HMI to automate the filler sequence of operations. Tasks that are typically automated include moving the traversing fill head and hooks forward and back, raising and lowering bag, inflating bag, filling bag, densifying bag, releasing hooks, closing slide gate, starting and stopping upstream conveyors, deflating seal and indexing the filled bag out of the fill station.

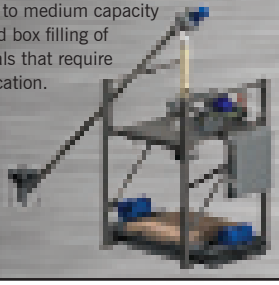
Height adjustment - a linear transducer provides infinite adjustability for the cantivered mast within the 36" range of travel. Height setpoints are easily entered into the HMI eliminating the need to manually adjust position switches on the machine.



COMMON CONFIGURATIONS

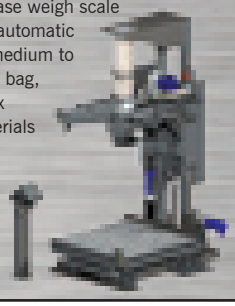
NBE manufactures the most rugged, user friendly, feature rich, bulk bag fillers available anywhere. From simple manual fillers to fully automatic systems, NBE's comprehensive range of options can be combined in various ways to meet the specific filling needs of every customer. Below are four common configurations of available options that meet the needs of many customers.

Configuration 1: economical 4 post frame with base weigh scale system for low to medium capacity bag and box filling of materials that require densification.

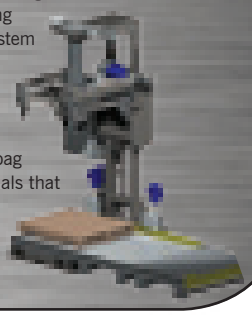


Configuration 2: economical 4 post frame with hang weigh scale system for low to medium capacity bag filling of materials that do not require densification.

Configuration 3: ergonomic cantilevered frame with base weigh scale system and automatic controls for medium to high capacity bag, drum and box filling of materials that require densification.



Configuration 4: ergonomic cantilevered frame with hang weigh scale system and semi automatic controls for medium to high capacity bag filling of materials that do not require densification.



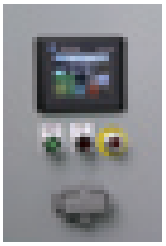
AUTOMATION

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 different bags fit within the fill station or considering 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 filling? What is the best method of transferring the material from the process to the filler? What is the optimal fill rate, plant sanitary requirements, opportunities for automation and other considerations necessary for successful integration of the bulk bag filling equipment.

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 FIllers allow for a wealth of automated functions throughout their operational cycles. Optional

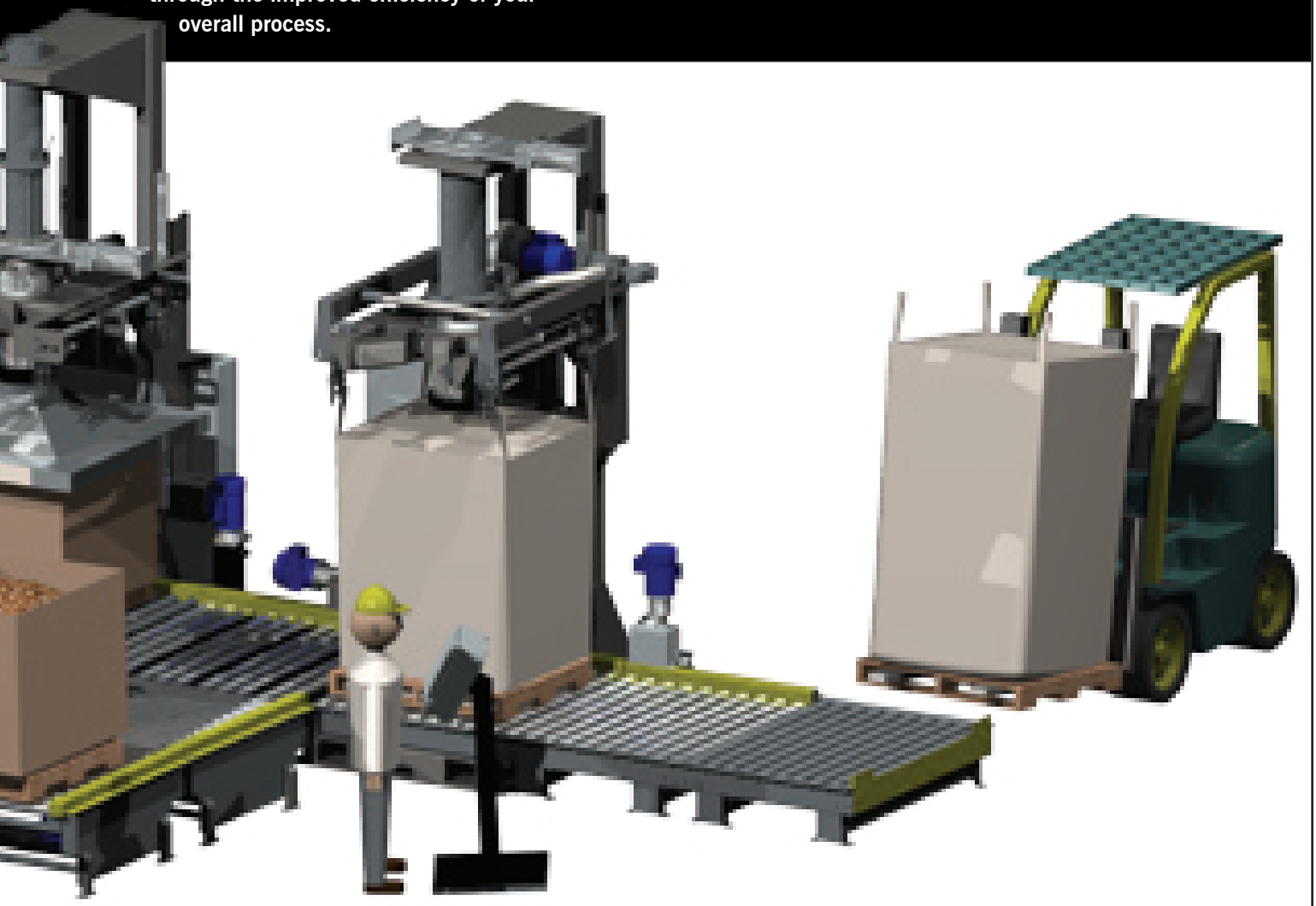


PLC controls automate a range of operations from simply starting and stopping material transfer conveyors, to automating the entire sequence of operations based on downstream process demands. Indeed, when integrated with material conveying, feeding and weighing technologies, our most complete automated systems can reduce human involvement to literally just placing new empty bags into the filling system and removing filled ones. All at a rate that optimizes the capacity of the entire process. Now that's Forward Thinking!

GRATION

A variety of performance enhancing equipment is commonly integrated with the NBE fill station including pallet & slip sheet dispensers, powered & gravity roller conveyors, and box and drum fill adapters. Regarding the transfer of your material from the process to your filler, NBE will select the best method to fit your material characteristics and process needs. Screw conveyors, pneumatic conveyors, belt conveyors, bucket elevators, drag conveyors, vibratory feeders, weigh hoppers, etc. can all be seamlessly integrated into your process with an NBE Bulk Bag FIller. 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.

To further ensure that your custom designed NBE filler 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 filling 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!

National Bulk Equipment
12838 Stainless Drive
Holland, Michigan 49424
616.399.2220 phone
616.399.7365 fax
sales@nbe-inc.com

www.nbe-inc.com

NATIONAL BULK EQUIPMENT

Represented By:

Forward Thinking. Real Results.