

# Container Filling Systems

## 6" x 4" x 5/16" Structural Tubing, Heavy Gauge Sheet and Plate

Carbon or stainless steel construction extends equipment life cycles, optimizes performance in harsh, high duty cycle, and sanitary environments.

## UL Listed Panels Designed and Built by NBE



508A or Class I, Div. 1 and 2  
Groups A-D, F, and G

NBE is a single-source provider of custom programmed, process-specific PLCs and HMIs, easily integrating legacy systems from Ethernet to PROFIBUS and more.

## NTEP-certified Weighing for Hang, Base & Check Weigh Applications



NBE NTEP-certified weigh systems measure material fill weight to an accuracy of +/- .01%, up to a 4,000 pound container capacity. Accurate, repeatable filling reduces material wastes, improves total line productivity.

## Control Multiple Process Functions from One HMI



NBE process automation centralizes system control, sensing, monitoring, and reporting to a single HMI; improving process efficiency and diagnostic operations.

## Deck-only Vibratory Densifier; Single Container Mode



When in the single container controls setting, NBE deck-only densification isolates 3 Gs of vertical vibration force to the deck of the unit rather than vibrating the entire base of the station. Isolated vibration concentrates the vibratory effect to only the container, enabling precise package weight accuracy. Hand leveling of material and possible material contamination are eliminated.

## Vibratory Densifier Arm and Pad; Multiple Container Mode



When in the multiple container controls setting, multiple containers on a pallet are safely and accurately densified using the automated, vibratory densifier arm and pad. Independent of the deck base, the arm and pad extend to densify one container at a time. When complete, the pallet deck rotates to repeat the cycle on each drum on the pallet; eliminating empty drum bounce and unsafe operator interaction common with conventional densifiers.

## Variable Container, Single-station Filling for Drums, Cartons, Totes, Gaylords and Bulk Bags



The NBE variable container filling system enables containers of various types and sizes to be processed through a single fill station. This design advances beyond conventional rotating fillhead designs to ensure precise fill volume, weigh accuracy, optimal line performance, and reduced material waste.



**Forward Thinking. Real Results.**

NATIONAL BULK EQUIPMENT

## Integrated Automation

- **Ensuring Process Accuracy and Consistency**  
NBE automated container filling systems fully integrate with upstream material feed and downstream package handling systems to ensure on-going process operations.
- **Accurate, Repeatable, Automated Batch Filling**  
NBE NTEP-certified gain-in-weight systems communicate directly with the material feed source, through a single controller, to deliver accurate, repeatable batch processing.
- **Single-source Automation Design & Construction**  
From custom programming to construction and testing, NBE performance-proven process automation optimizes line throughput, increases material delivery accuracy, and improves labor utilization.
- **Trouble-free System Start-up, On-going Line Performance**  
NBE 3-D modeling, process flow planning, and thorough factory acceptance testing enable field start-up operations to quickly reach optimal performance.

## Performance-proven Construction

- **Built for Extended Duty Cycles and Harsh Process Environments**  
Thick-wall structural tubing, heavy gauge sheet and plate, the industry's highest motor HP and torque rating on gear reducers and drives, and the largest standard hydraulic and pneumatic cylinder bore sizes.
- **UL listed Panels, Designed and Built by NBE**  
508A or Class I, Div. 1 & 2, Groups A-D, F, & G. Available with Type X purge.
- **ISO 9001:2000-certified Production Procedures**  
NBE equipment and process systems are produced using fully-integrated MRP-driven operations and ISO 9001:2000-certified production procedures.
- **Single-source Manufacturing and Production**  
NBE operations cover over 70,000 square feet, including dedicated equipment and process R&D facilities, testing lab, and fully enclosed electrical panel build facility.



To view in-use application videos of the NBE Variable Container Filling System, visit: [www.nbe-inc.com/video](http://www.nbe-inc.com/video)



Bulk Bag Fillers



Bulk Bag Dischargers



Drum & Container Fillers



Drum & Container Dischargers



Agitator Hoppers



Bag Dump Stations



Bulk Material Mixers



Storage Bins & Hoppers



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## Application Profile: Container Filling

### Variable Containers, Repeatable Accuracy.

A worldwide producer of industrial chemicals and performance additives secured multiple, long-term, high-volume orders for one of its acrylic products. Customer requirements dictated the material was to be packaged in drums, octabins, or standard gaylor containers. The customer also required weigh accuracy to be within a +/- .05% tolerance, regardless of container type.

The producer's previous fill station was designed for octabins only. The station was also unable to accurately or repeatedly fill containers to within tolerance without significant operator involvement. Accuracy and speed of the fill cycle was heavily dependent on the operator's visual monitoring of the fill level and manual start and stop of the densification step.

**+/- .01%**

NBE Fill station weigh accuracy

**4,320 lbs.**

Annual material waste reduction

**2.4 hours**

Daily operator labor savings

Performance based on one 8-hour shift per day.

### Integrated Automation Reduces Material Waste and Labor Allocation

The NBE variable container fill system was designed to enable multiple and varied container types to be processed through the same fill station. When a fill cycle is started, a single, UL listed, menu-driven controller, designed and built by NBE, meters material feed rates based on container type, material recipe, densification cycles, and finished package weight. The NBE NTEP-certified weigh system, together with the fill/densification program, ensure each container is processed to a fill weight accuracy of +/- .01%. Hand leveling of material is eliminated. Operator interaction is now limited to controller operation and container loading and unloading.

