

NECOSORT-III

High Speed Plastic Bottle Unscrambler

The "Featherlight" bottle unscrambler™

nalbach

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Nalbach Engineering's Next Generation High Speed Plastic Bottle Unscrambler

The NEXT GENERATION NECOSORT-III High Speed Plastic Bottle Unscrambler reduces maintenance & downtime, handles the lightest weight bottles being used today, and has the smallest footprint in the industry. The NECOSORT-III high speed plastic bottle unscrambler's unique design consists of a rotating vertical drum and only two moving parts. With no reciprocating motions, complicated mechanisms, hard to adjust container handling parts and tolerant of damaged bottles, the NECOSORT-III provides low maintenance, high reliability and carries a three (3) year warranty!

Only two moving parts in the whole system. One of which sorts and moves all of the bottles to the discharge starwheel and the second being the discharge starwheel itself. Only two moving parts means significantly less maintenance and downtime.

The NECOSORT-III has been designed for high speed, high uptime applications. The system is tolerant of damaged bottles keeping high speed production lines such as soft drink, juice and water filling lines in operation. Damaged bottles typically don't cause the NECOSORT-III to jam and shut down unexpectedly. Damaged bottles tend to accumulate and are removed at convenient times such as during changeovers, breaks or shift changes.

Benefits

- **Reduced Maintenance and Downtime**
- **Simple Design**
- **Damaged Bottle Tolerant**
- **Superior Lightweight Bottle Performance**
- **Small Footprint**
- **High Bottle Yield**
- **Easy Access**
- **Tool-Less Changeovers**
- **Three (3) Year Warranty**

With the industry's push to "lightweight" bottles in an effort to reduce cost and reduce their ecological footprint, traditional methods such as depalletizing / single filing or the use of older technology unscramblers becomes problematic. The design of the NECOSORT-III insures that bottles are positively held, moved and controlled throughout the unscrambling process and do not rely solely on gravity. This provides a system that reliably handles the lightest bottles.

The NECOSORT-III's unique design employs a sorting drum that is turned vertically, significantly reducing the overall footprint of the system for easy integration into tight production areas.

The NECOSORT-III's design provides a "queue" of bottles for each sorting "pocket" insuring very high bottle yields. Where most unscramblers have a bottle yield of 70 - 80%, the NECOSORT-III has a bottle yield over 95% for most bottle types.

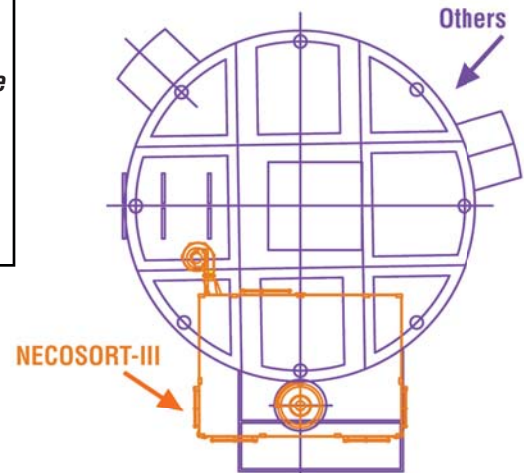
The drive system and all other major components are easily accessible for routine maintenance. Maintenance personnel are not required to get down on hands and knees to service the NECOSORT-III.

The NECOSORT-III comes standard with an easy to use touch screen machine controller with speed settings for each bottle type.

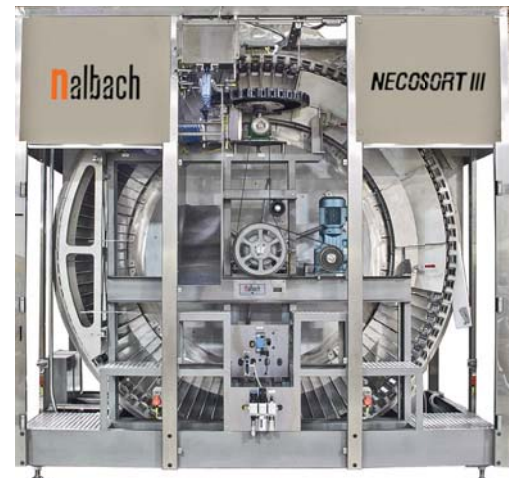
Changeovers from one bottle size to another are completely tool-less.



Superior Lightweight Bottle Performance. Running 9.0 gram 500 ml water bottles.



The NECOSORT-III has the Smallest Footprint in the Industry. Size comparison of a 1,000 bottle per minute NECOSORT-III versus the competition.



Easy Access to the drive system and all other major components.

Plastic Bottle Unscrambler

weight bottles being used today, and has the smallest footprint in the industry.



The NECOSORT-III sorts a range of bottle shapes

Theory of Operation

The machine's unique design consists of a rotating vertical drum.

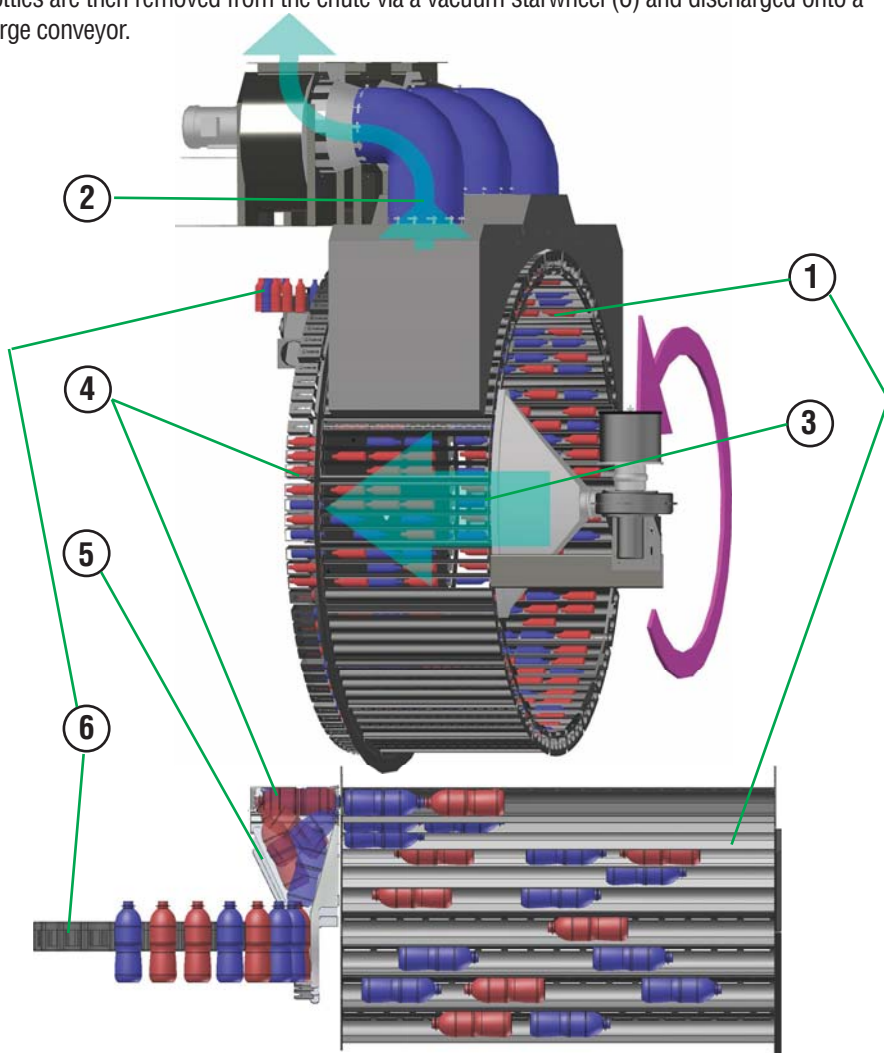
Around the inside circumference of the drum is a series of bottle slats (1). The bottle slats pickup bottles as they rotate. The slats are sized to be able to hold more than one bottle.

As the vertical drum rotates, the bottles are held in the slats via a vacuum flow (2) as they become inverted.

As the bottles continue to rotate, they are carried past a transfer blower (3). The transfer blower moves the bottle from the vertical drum into a bottle receiver (4) outside the vertical drum.

The bottles, now in the receivers, continue to rotate. And, whether or not the bottle is neck leading (red color) or bottom leading (blue color) as it enters the receiver, the bottle pivots on the neck and orients bottom down into a chute (5).

The bottles are then removed from the chute via a vacuum starwheel (6) and discharged onto a discharge conveyor.



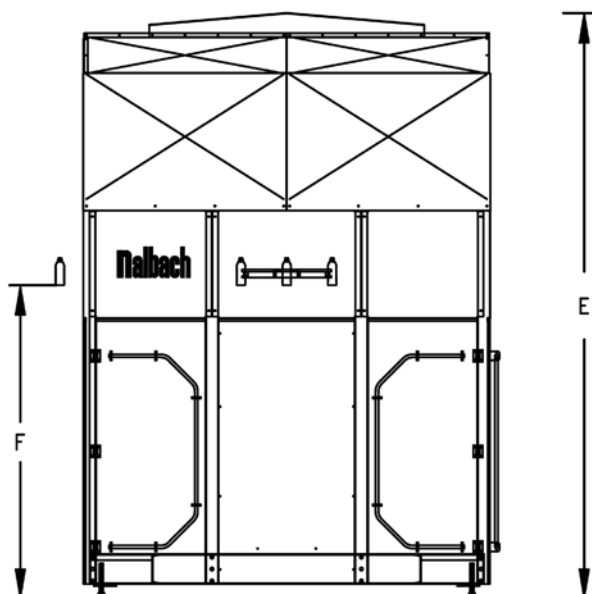
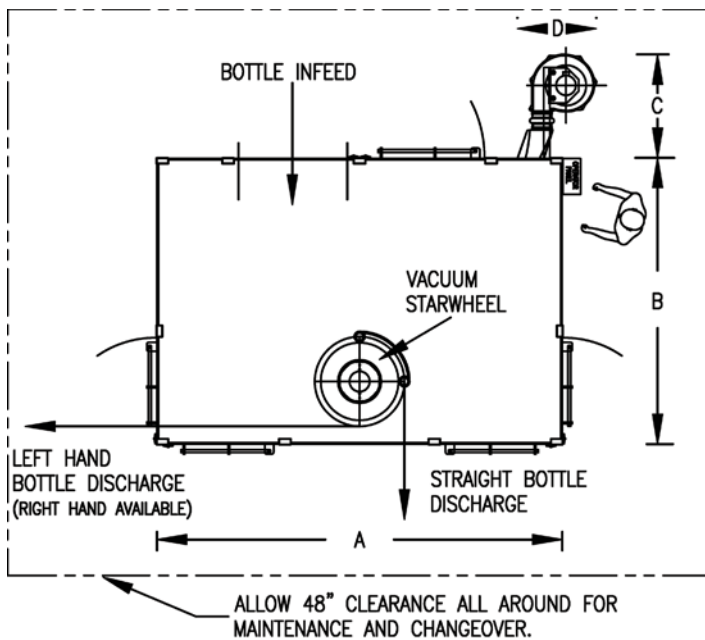
NECOSORT-III Bottle Infeed with Bulk Hopper

About Nalbach Engineering Company

Founded in 1945, our Company has earned its dominant reputation for quality and performance in the design and manufacture of a complete line of plastic bottle unscramblers and powder filling equipment. In addition, we offer aerosol fillers, turnkey packaging lines, and system integration services. A member of PMMI since 1958, Nalbach Engineering has developed equipment for a widely diverse client roster of Blue Chip companies and has installed systems in 45 countries around the globe.



Dimensions



NECOSORT-III Model

Dimension Inches (mm)	72	86	108	120	132
A	88 (2235)	100 (2540)	124 (3150)	136 (3454)	146 (3708)
B	80 (2032)	96 (2438)	96 (2438)	96 (2438)	96 (2438)
C	35 (889)	35 (889)	35 (889)	35 (889)	35 (889)
D	29 (737)	29 (737)	29 (737)	29 (737)	29 (737)
E	124 (3150)	160 (4064)	173 (4394)	196 (4978)	213 (5410)
F	70 (1778)	76 (1930)	96 (2438)	112 (2845)	124 (3150)

Specifications subject to change without notice.

Specifications

U.S. patent 7,117,987

Electric and Controls

Electrical Utilities:

System voltage and frequency configured to meet customer specifications. Typical

Voltage: 480/400 VAC

Frequency: 60/50 Hz

Phase: 3 phase

Amperes: 30 amps

System Controls:

System controls configured to meet customer specifications. Typical

PLC/PAC: Allen Bradley (SLC 505, CompactLogix, ControlLogix)
Siemens (SIMATIC S7-300)

HMI: Allen Bradley (Panelview 1000 plus)

Siemens (MP 277 10" Touch)

VFDs: Allen Bradley (Powerflex 40)

Siemens (MicroMaster MM420)

Enclosure: NEMA 12 or Optional NEMA 4

Compressed Air Utilities

Air: 90 psi

Flow: 40 cfm

Filtered, clean dry air for bottle contact.

1/2" NPT

Software Features:

Recipe control for all machine parameters.

Construction:

Stainless Steel and other FDA approved Product Contact Parts.

Speed

Bottle Speed

Varies depending on bottle dimensions and machine size. Smaller bottle diameters run faster, larger bottle diameters run slower. Larger machine diameters run faster. Smaller machine diameters run slower.

Speeds for a typical 500 ml water bottle (8.4" tall x 2.5" diameter).

Machine Model	Typical Speed BPM (500 ml bottle)
NECOSORT-III Model 72	355
NECOSORT-III Model 86	500
NECOSORT-III Model 108	700
NECOSORT-III Model 120	1,000
NECOSORT-III Model 132	1,160

Optional Accessories

Complete range of infeed systems including bulk hoppers, bottle storage systems and depalletizers.



The NECOSORT-III can be certified UL/CE/CSA on request.

Nalbach Engineering Company, Inc.

621 East Plainfield Road, Countryside, IL 60525 U.S.A.

Phone: 708/579-9100 • Fax: 708/579-0122

www.nalbach.com

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NS-III-B