

## NBS WPC EVO

### *300 mm automated wafer packing/unpacking/sorting equipment*

The semiconductor industry manufactures wafers that need to be sorted, documented and packed (or unpacked) for shipment to different manufacturing facilities - front-end, back-end, or external customers. The NBS WPC EVO provides the lowest cost of ownership process for automatically sorting, packing and unpacking wafers, without damage, with complete traceability.

WPC EVO quickly and safely sorts and transfers 200mm and/or 300 mm silicon wafers between a variety of industry standard cassettes and "coin stack" horizontal wafer shippers. The WPC EVO automatically manages every step of the packing process including verification of each wafer handled and manipulation of all wafer packing materials. NBS WPC EVO is the smallest, safest, fastest and most reliable solution for your automated wafer storage and shipment needs.

NBS WPC EVO provides many benefits:

- minimum COO/maximum OEE
- manages the logistics process (100% traceability)
- thick or thin wafer handling
- significant reduction in wafer shipping costs
- significant reduction in packing material storage costs
- significant reduction in wafer breakage and cosmetic defects caused by manual handling processes
- operates in a fully automated environment (SECS/GEM300 Standard)

For the past 14 years, NBS Technologies has been developing automated wafer packing and backside inspection tools for wafers down to 140µm. NBS is at the forefront of wafer sorting, HSMS/SECS/GEM/300 mm communication, and ultra-thin wafer handling. NBS tools can handle wafer sizes of 125 mm, 150 mm, 200 mm, or 300 mm. NBS is the unquestioned market leader for automated wafer packing equipment. NBS customers include the largest semiconductor manufacturers, foundries and IC package sub-contractors in each of their respective markets. At NBS, we strive to exceed your expectations. To learn more about the industry leader in wafer handling, sorting, packing, unpacking and backside inspection please contact NBS Technologies today.

***Fast, safe, automated  
wafer packing/unpacking/sorting  
tools with full traceability  
and SEMI compliance***



# NBS WPC EVO *Specifications*

## Features

- The smallest footprint in the industry
- State of the art robotic platform with demonstrated 10 year MTBF
- High performance vacuum/Bernoulli based material handling system
- SEMI compliant
- 200mm and 300 mm capability
- SEMI HSMS/SECSII/GEM/300 mm communication - full compliance
- Sort, split, merge, kit and other standard processes

## ARCHITECTURE

- Four axis, high performance, high reliability robot with single arm (Translation axis optional in expanded configurations)
- 1-4 input/output load ports (FOUP/FOSB or 200mm cassette)
- Integrated 200/300mm cassette for reject wafers
- Material handling module including two HWS load ports, insert & foam ports and patented high performance material handling system
- 1 wafer identification unit (OCR, Datamatrix, Barcode)

## STANDARD CAPABILITY

- Wafer handling (non-active side) using a proprietary mechanically-compliant robot end-effector for both 300 mm wafers & 200 mm wafers
- FOUP/FOSB mapping using Class1 laser scanner
- Non-contact wafer alignment (notch & flat finding)
- Front & backside wafer identification (OCR, Data Matrix & Barcode)
- SEMI Standard Communication with Host system (SECS/GEM/300mm)
- Protective insert & foam handling to/from the HWS with a patented vacuum/Bernoulli material handling system

- Robot arm flips wafer without releasing the wafer during the flip
- Opening, closing, & RFID tag reading of the FOUP/FOSB on the load ports
- Detection, RFID tag reading, & labeling (option) of HWS

## OPTIONS

- 200 mm wafer compatibility
- RFID and bar code readers
- Additional load ports
- Wafer backside inspection of silicon micro-cracks peripheral damage, cosmetic defects, etc.

## GENERAL CHARACTERISTICS

### Performance

- Throughput with scribe read:
  - 165 WPH sorting mode
  - 150 WPH packing mode
  - 135 WPH unpacking mode
- Thickness: 180µm to 750µm for 200 mm wafers
- Thickness: 280µm to 750µm for 300 mm wafers
- Breakage rate: <1/100,000 wafers
- MTBF: 2000 hours
- Up-time: >99 %
- MTTR: 2 hours
- HSMS/SECS II/GEM/300 mm compliant
- Class 10 compatible
- CE compliant - Semi S2 & S8 compliant

## CARRIER COMPATIBILITY

- 25 slot FOUP/FOSB
- 25 capacity "coin stack" Horizontal Wafer Shipper
- 200 mm compatibility (minimal conversion from 300 to 200 mm and back)

## UTILITIES

- Electrical: 110 & 230 VAC - 50/60 Hz
- Vacuum & compressed air



TECHNOLOGIES

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