

# 300 mm Automated Wafer Packing/Unpacking/Sorting

By NBS Technologies

## WPC™ EVO

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.



# FAST, SECURED, AUTO-WAFER PACKING, UNPACKING AND SORTING

## FULL TRACEABILITY AND SEMI S2/S8 COMPLIANCE

### THE WPC™ EVO OFFERS THESE KEY FEATURES AND BENEFITS:



#### WAFER SIZE AND HANDLING

- 200 mm and 300 mm silicon wafer capability
- 200 mm and 300 mm wafer insert/ring separator handling
- Sort, split, merge, kit and other standard processes



#### PROFITABLE SOLUTION

- Lowest Cost of ownership in the industry with demonstrated 6 month ROI
- The smallest footprint in the industry
- Industry leading OEE: maximum throughput, minimum downtime, and MTRR



#### EASY-TO-USE

- State of the art robotic platform with demonstrated 10 year MTBF
- Efficient vacuum/Bernoulli based material handling system
- User friendly GUI with touch screen management.
- Full automation via host computer SEMI/SECS/GEM300

CONSULTING

SOFTWARE

HARDWARE

SEMICONDUCTOR SOLUTIONS



Semiconductor Solutions

WWW.NBSTECH.COM

## 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 (optional)
- Material handling module including two HWS load ports, wafer insert or wafer ring separator ports and patented high performance material handling system
- One or two wafer identification units for front and/or backside scribe. (OCR, Datamatrix, Barcode)

## STANDARD CAPABILITY

- Wafer handling (non-active side) using a proprietary mechanically-compliant high-flow end-effector for both 300 mm wafers & 200mm wafer
- 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 wafer insert or wafer ring separator 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 (up to 4 FOUP/FOSB ports)
- Class 10 fan filtration unit
- SEMI E-84 capability for auto placement of FOUP/FOSB via OHT or AGV
- Wafer backside inspection of silicon micro-cracks peripheral damage, cosmetic defects, etc.
- Ionizers directed at LP
- Integrated cassette
- Camera insert/ring detection systems

## GENERAL PERFORMANCE SPECIFICATIONS

- Throughput with scribe read:
  - 185 WPH sorting mode
  - 145 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: < 250,000 wafers
- MTBF: 2000 hours
- Up-time: > 95 %
- MTTR: 2 hours
- SEMI SECS/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



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