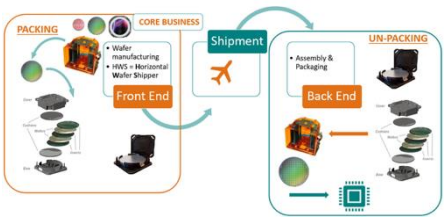
WPC EVO 2

Wafer Packing Unpacking Collective

The NBS WPC EVO2 provides the lowest cost of ownership process for automatically sorting, packing and unpacking wafers, without damage with complete traceability.

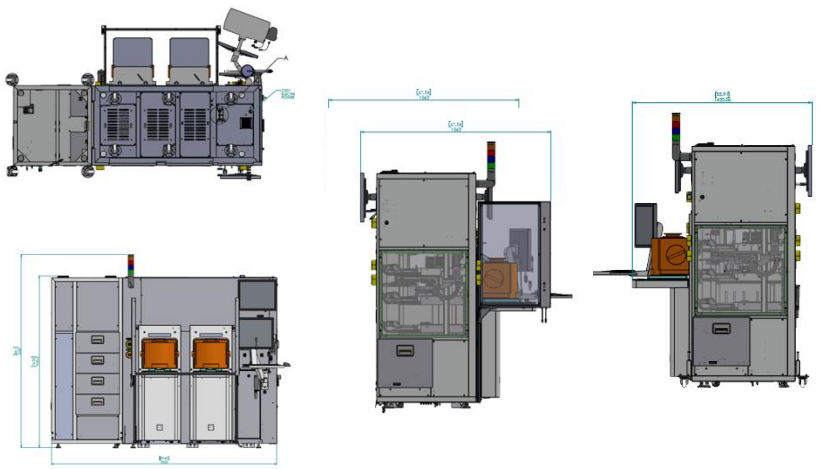
WPC EVO 2 quickly and safely sorts and transfers 200 mm and/or 300 mm silicon wafers between a variety of industry standard cassettes and “coin stack” horizontal wafer shippers.



The WPC EVO2 automatically manages every step of the packing process including verification of each wafer handled and manipulation of all wafer packing materials. NBS WPC EVO2 is the smallest, safest, fastest and most reliable solution for your automated wafer storage and shipment needs.

CONFIGURATION 1:

WPC EVO2 – 4 Load ports
- 2 FOUP/FOSB/Cassette Load port
- 2 HWS Load ports

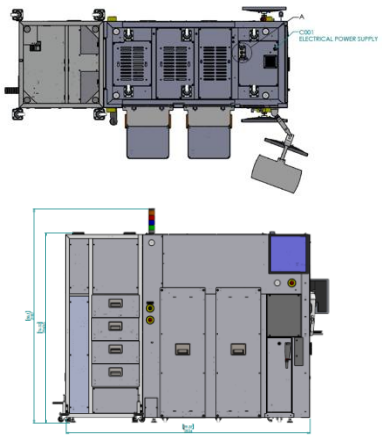


Footprint: 2524 x1420 x 2187 (L x W x H) mm
Footprint: 86 x 55.91 x 99.37 (L x W x H) in

Upgradable to Configuration 3

CONFIGURATION 2:

WPC EVO2 – 4 Load ports
- 2 FOUP/FOSB/Cassette Load port
- 2 HWS Load ports



Footprint: 2524 x1420 x 2187 (L x W x H) mm
Footprint: 86 x 55.91 x 99.37 (L x W x H) in

Upgradable to Configuration 4

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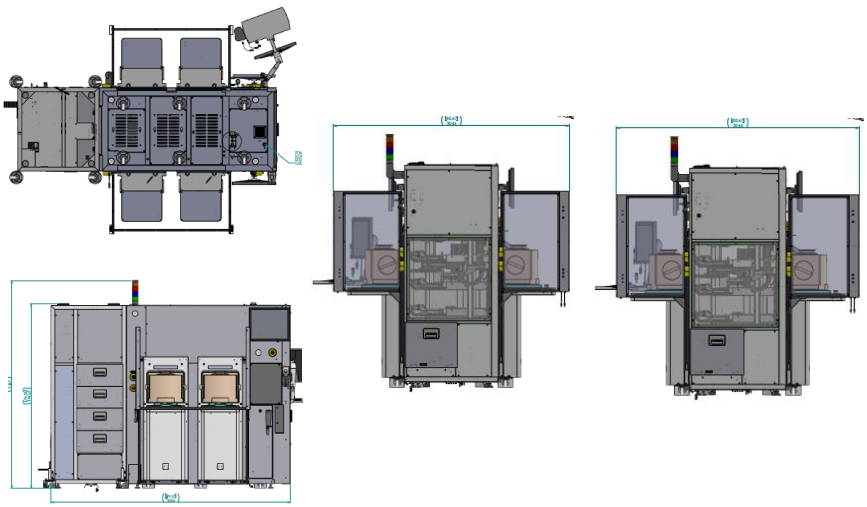
CONFIGURATION 3:

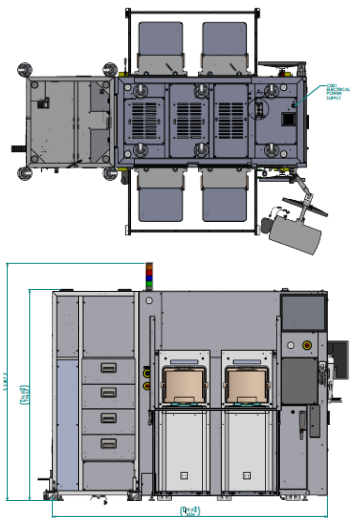
WPC EVO2 – 6 Load ports
- 4 FOUP/FOSB/Cassette Load ports
- 2 HWS Load ports



Footprint: 2524 x2044 x 2187 (L x W x H) mm
Footprint: 86 x 80.47 x 99.37 (L x W x H) in

CONFIGURATION 4:

WPC EVO2 – 6 Load ports Backside command
- 4 FOUP/FOSB/Cassette Load ports
- 2 HWS Load ports



Footprint: 2524 x2044 x 2187 (L x W x H) mm
Footprint: 86 x 80.47 x 99.37 (L x W x H) in

WPC EVO2 FUNCTIONALITIES:

WAFER HANDLING
(non active side)) using a proprietary mechanically compliant robot end-effector for 300 mm wafer diameters.

FOUP/FOSB
mapping using Class1 laser scanner

ALIGNMENT
Non-contact wafer ALIGNMENT (notch and/or flat finding)

IDENTIFICATION
Wafer IDENTIFICATION (OCR and Data Matrix) on active or back side of the wafer

COMMUNICATION
COMMUNICATION with Host system (SECS/GEM/300mm)

HANDLING
Protective insert and foam or ring HANDLING to/from the Horizontal Wafer Shipper (HWS) with a high-speed proprietary material handling system separate from the wafer handling robot

FLIP
Wafer FLIP for wafer using the robot (No release of the wafer from the robot end-effector during the flip)

OPENING, CLOSING
of FOUP on the Load Ports

CLAMPING, DOCKING
of FOUP/FOSB on the Load Ports

CLAMPING
of HWS on the dedicated HWS Loaders

OPTIONAL:

WAFER BUFFERING
Wafer BUFFERING into a 25 wafers capacity cassette for special process or wafer rejection.

RFID READERS
RFID tag READING of FOUP/FOSB/HWS

CAPABILITY
200 mm wafer handling

BAR CODE READER
Handheld BAR CODE READER input

FAN FILTER
Class 10 Fan Filter Unit

E84 MODULE

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STANDARD PERFORMANCE

WAFER HANDLING:

- 200 mm wafer diameter: from 180 µm to 750 µm thickness **(Optional)**
- 300 mm wafer diameter: from 280 µm to 750 µm thickness
- Wafer bow and warp <1mm
- non-contact pre-alignment for automated notch or flat detection and position identification

COMPATIBILITY WITH SEMI-STANDARD CARRIERS:

- 300 mm FOUP, 25 slots
- 300 mm FOSB with manual door or auto door
- 200 mm Open Carrier 25 slots **(Optional)**

COMPATIBILITY WITH HWS/INSERTS/FOAM/RINGS (200MM REQUIRES OPTIONAL 200MM INTERFACE):

- 300mm or 200mm Horizontal Wafer Shippers, standard height, automatable, subject to evaluation and approval by NBS Technologies
- 300 mm or 200mm Insert type: Various materials subject to evaluation and approval by NBS Technologies. Smooth carbon interleaves adhere to wafer surface and should be avoided to improve unpacking performance, throughput, and wafer damage/breakage.
- 300 mm or 200mm Foam type: Various closed cell foam materials subject to evaluation and approval by NBS Technologies.
- 300mm Rings: Various designs subject to evaluation and approval by NBS Technologies

Equipment instantaneous throughput, Schematic 1 in 300mm mode (see note 1 and 2 below):

- Packing mode: up to 145 wafers / hour
- Unpacking mode: up to 135 wafers / hour
- Sorter mode: up to 185 wafers / hour

Equipment Yield:

- Maximum breakage rate: 1/250,000 wafers based on standard thickness range
- MTBF: 2000 hours
- MTTR: 2 hours
- Up-time: 99%
- Clean Room: Class 1000 compatible

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