

WAFER SORTER

-  High Cleanliness
-  High Compatibility
-  High Capacity



- ◆ Wafer thickness support: 100 - 1500μm

◆ Workstations 2 to 8 are optional

◆ Supports the transportation of wafers of various sizes

◆ Various feeding methods are available

◆ Compact design
- ◆ SECS/GEM

◆ Safety curtain

◆ OCR (top or bottom)

◆ N2 purge LP

Specification parameter

- ◆ Fortrend wafer sorters are mainly used for wafer transfer, sorting, and merging operations, and can compatible with wafers ranging from 3" to 12".
- ◆ Adopting a modular design, the internal cleanliness can achieve ISO Class 1, and it can accommodate wafers of various sizes and types. It features independent integrity, high cleanliness, high compatibility, and other characteristics.
- ◆ It is compatible with all SEMI-standard FOUP (Front Opening Unified Pods), FOSB (Full Open Shuttle Bays), SMIF POD (Standard Mechanical InterFace Pods), and Cassette .
- ◆ Highly advantageous COO and COC help customers reduce costs and increase efficiency.

Specification parameter	
Rated voltage	Phase AC 220V 50/60 Hz
Rated power	3.52kW(Decide by config)
Comm interface	RJ45
Comm protocol	ASCII/HEX/HSMS&SECS 1I
Software	Fortrend independently developed software
Cleanliness	ISO 14644-1 class 1 / ISO class 3
WPH	≥700 (Without Aligner and OCR) ≥300 (With Aligner and OCR)
Uptime	≥99%
MTBF	≥4000 hours
MTTR	≤2 hours
MTBA	>100 hours
MTTA	<10 hours
Wafer Breakage Rate	≤1/1,000,000
OCR Accuracy Rate for Bare Wafers	≥99.8%
Repeatability of Positioning Accuracy	±0.1mm

Wafer Sorter Standardized product series

SORTER-2 Loadport
1605mm (L) ×1237mm(W)×1886mm (H)



SORTER-3 Loadport
2155mm (L) ×1237mm(W)×1886mm (H)



SORTER-4 Loadport
2600mm (L) ×1237mm(W)×1886mm (H)



Independently Developed Core Module



Wafer/Frame Loadport



150/200mm Loadport



Open Cassette Stage



Wafer transfer Robot



Vacuum Pre-Aligner



Edge-grip type Aligner



Independently Developed Software



Reversing Mechanism



Reversing Mechanism

Optical Character Recognition (OCR)



Centralized Stage

Marble Platform

Sorter Standardized(Dual-sided Multi-station)

- Integrated layout
- Agile design
- High throughput



- The dual-sided multi-station wafer sorting equipment is designed with wafer carriers on both sides of the frame. This design not only meets various loading and docking requirements but also provides a compact layout, reducing the equipment footprint and improving the utilization rate of the facility space.
- Double measurement two-station equipment dimensions: 1650mm (Length) × 1662mm (Width) × 1886mm (Height).

Case Presentation



Sorter Customized(Taiko Wafer)

- Customized Solutions
- Special Wafer Processing
- Support Lifting/ Bernoulli Fingers



Reversing Mechanism



Edge-grip type Aligner



Clamp type/Contact Bernoulli

- The Taiko Wafer Sorter minimally supports 6-inch, 8-inch, and 12-inch wafers with a minimum dimension of 50μm. It supports lifting/Bernoulli pick-and-place methods and provides a high-precision alignment and flipping mechanism.

Case Presentation



Sorter Customized(OM loader)

-  Dexterous Design
-  Paired with a fully automated microscope
-  Equipped with macro/ microscopic inspection capabilities



显微镜

宏观检机构

- ◆ The OM Loader Sorter is designed for multi - size wafer handling (6", 8", 12"). It supports mapping before wafer loading into the chamber and is compatible with various wafer transfer, sorting, and merging. It performs wafer scanning, alignment, sorting, batching, and reading wafer IDs in a micro - environment. Additionally, it enables semi - automatic and manual wafer surface inspection on both the micro - and macro - inspection platforms.

Case Presentation



Sorter Customized(Packaging Machine)

-  Integrated design
-  Applied to automated packaging
-  Capable of supporting cake box shipping packaging



Bernoulli Robot

Packaging Mechanism

- ◆ The packaging machine can automatically complete the wafer packaging process, supporting various wafer box formats (Foup/Smif Pod/cassette to Coin Stack Box), and is suitable for 6-inch, 8-inch, and 12-inch wafers and Taiko Wafer.

Case Presentation



Core Module(Wafer Pre-Aligner)

 Self-Developed

 Customization

 High Versatility
High Compatibility



Efficient operation, locating the wafer notch position in less than 7 seconds (excluding the time for wafer handling), quickly completing the correction of the wafer center and angle.

It supports both translucent and opaque wafer applications, suitable for silicon wafers and silicon carbide wafers with diameters ranging from 150 to 300mm.

Integrated design with a built-in controller, eliminating the need for an additional controller and wiring space, achieving an ultra-compact size.

The system is equipped with real-time monitoring capabilities, allowing for the live detection of the status of motor drive control systems, vacuum systems, detection systems, and circulation systems.

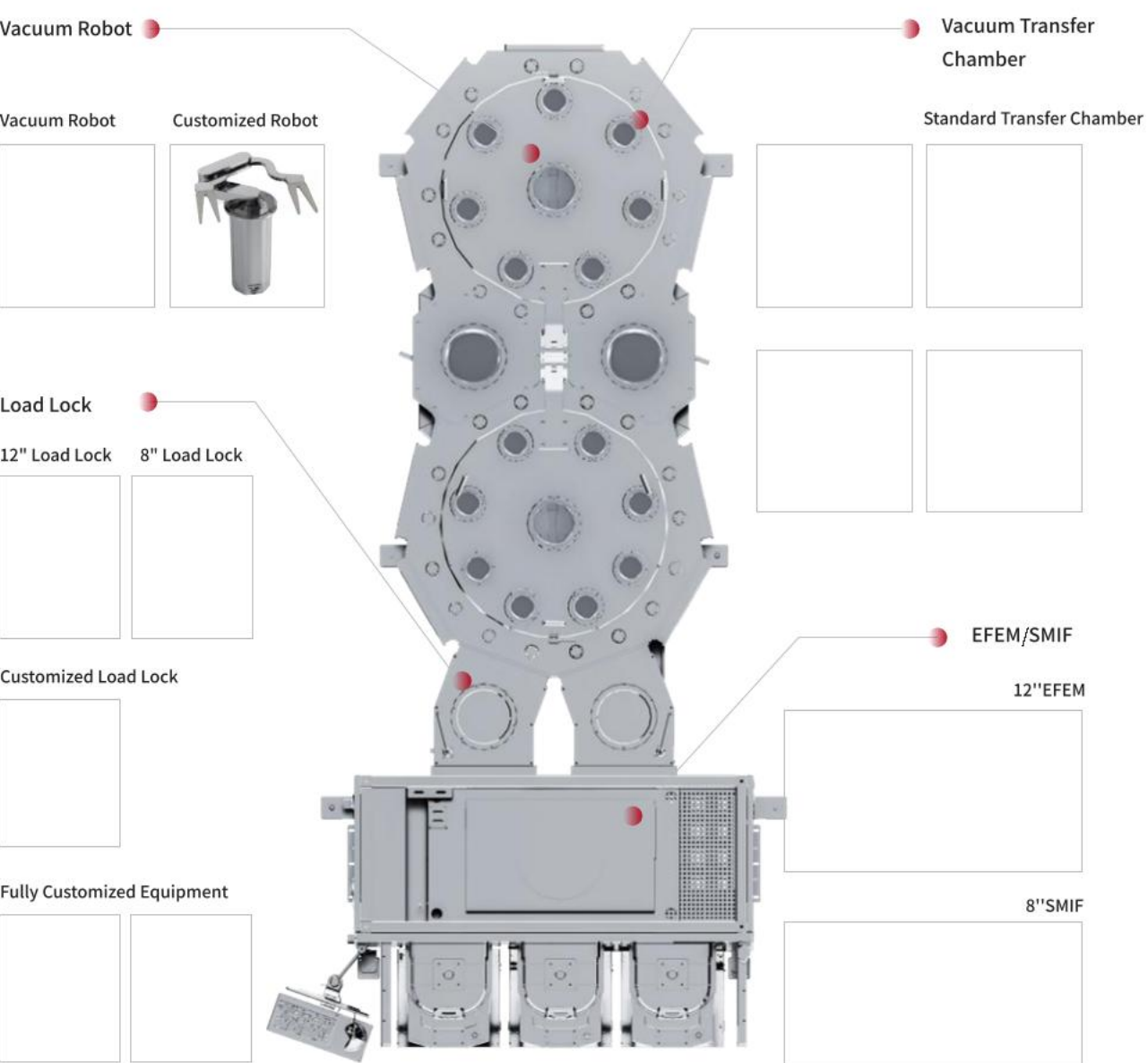
♦ The FPA series wafer edge finder is a four-axis controlled device that uses a miniature single-axis robotic module, characterized by high rigidity and small size. It achieves high-speed, efficient, and high-precision wafer edge detection and center position calibration. (Wafer position $\leq \pm 0.1\text{mm}$; Wafer notch/flat $\leq \pm 0.1^\circ$)

Centralized Stage



- Compatible with 6, 8, and 12-inch Frame rings.
- Capable of configuring QR code reading functionality.
- Repeat positioning accuracy $\leq \pm 0.1\text{mm}$, rotation angle $\leq \pm 0.1^\circ$.
- Adjustment time < 6 seconds.
- Maximum initial offset $\pm 7\text{mm}$.

Three-stage Integration Plan



- The equipment front end can optionally be equipped with an EFEM or SMIF, The EFEM is available in both standard and customized types;

The Load Lock is available with different structures and transfer methods;

Customized transfer chambers can be designed to meet the specific requirements of the process chambers;
- Vacuum robots can be selected in different models and end effectors based on actual operating conditions;

The transfer chamber and Load Lock can be optionally equipped with built-in modules for orientation, cooling, and preheating.

Optional AWC (Automatic Wafer Centering) function, Buffer function, and wafer storage module.