# 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 | ASCI/HEX/HSMS&SECS 1I |
| Software | Fortrend independently developed software |
| Cleanliness | ISO 14644-1 class 1 / ISO class 3 |
| WPH | ⩾700（Without Aligner and OCR）<br>⩾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

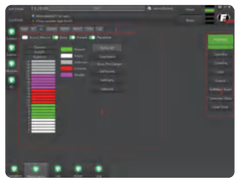
150/200mm Loadport

Open Cassette Stage

Wafer transfer Robot

Vacuum Pre-Aligner

Edge-grip type Aligner



Independently Developed Software

Optical Character Recognition (OCR)

Reversing Mechanism

Reversing Mechanism

Marble Platform

Centralized Stage

# 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).

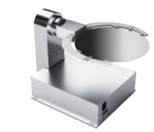
## Case Presentation

# 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 automatedmicroscope

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 ⩽ ±0.1mm; Wafer notch/flat ⩽ ±0.1°)

## Centralized Stage

Compatible with 6, 8, and 12-inch Frame rings.

Capable of configuring QR code reading functionality.

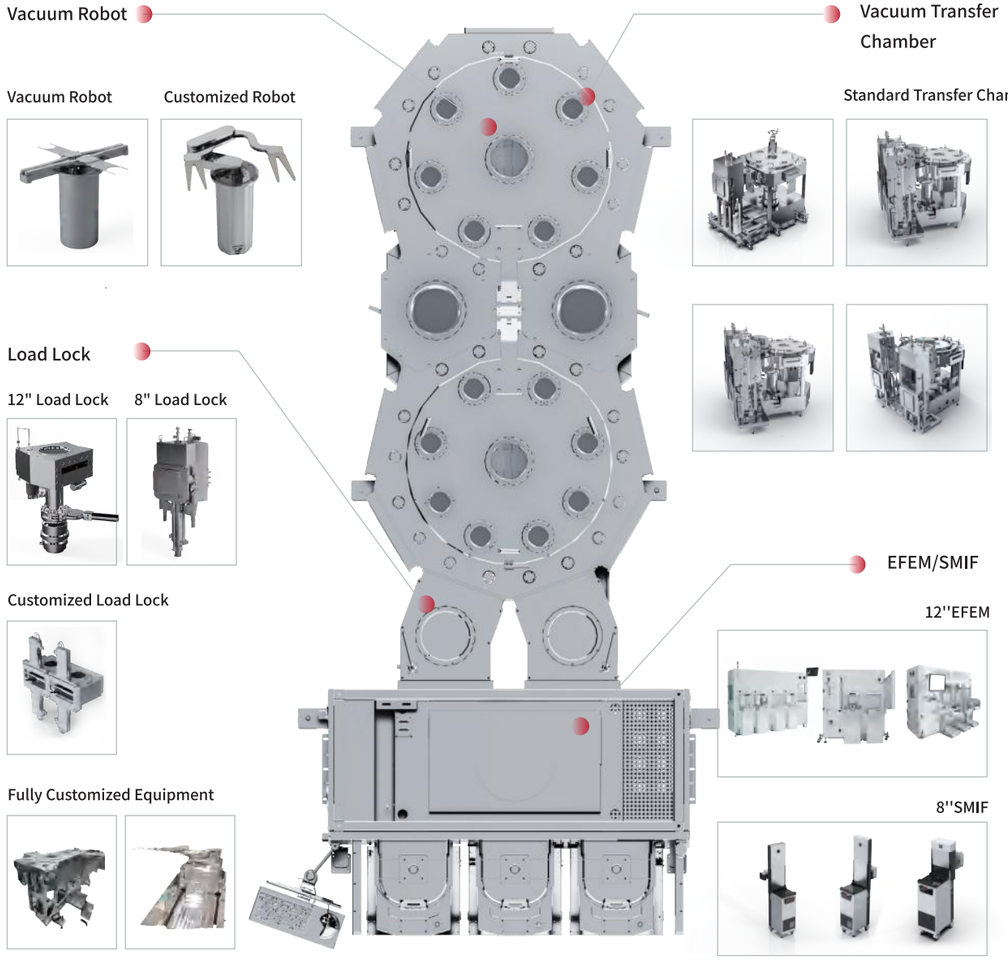
Repeat positioning accuracy ⩽±0.1mm, rotation angle ⩽±0.1°.

Adjustment time < 6 seconds.

Maximum initial offset ±7mm.



# 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.