QES®

Assuring you our best, always!

WPS3800

Wafer Packing System

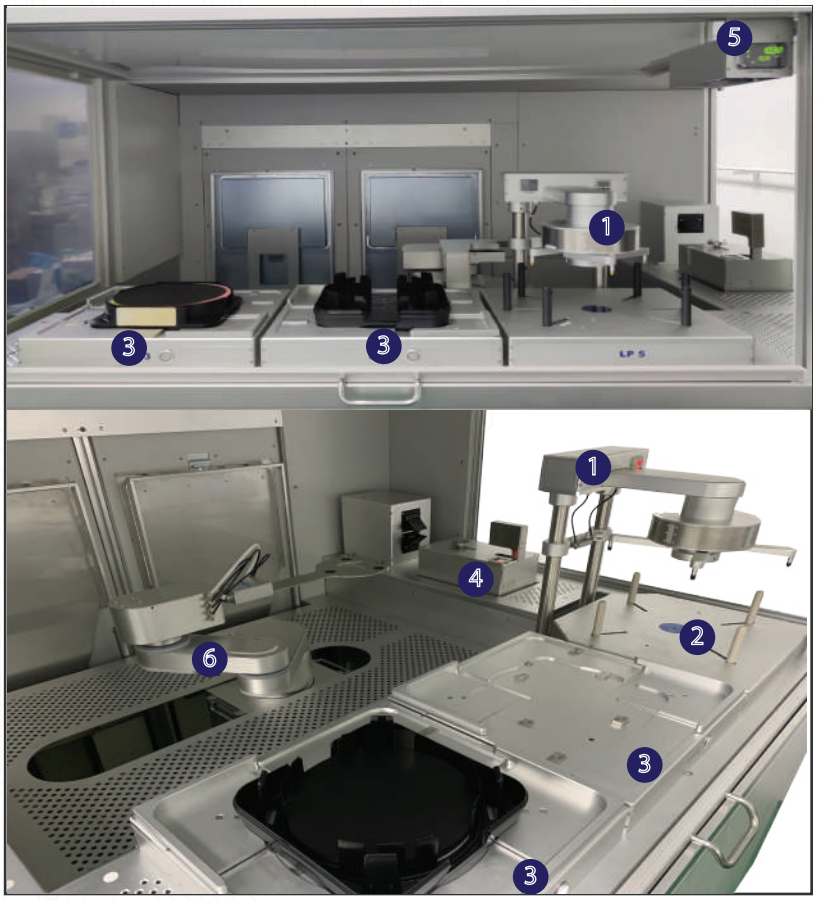
Highlights

WPS3800 is designed to handle 8" & 12" wafer size for packing & unpacking process from various type of shipping carriers. The system equipped with Hirata wafer pre-aligner (8" & 12" wafers) for wafer positioning and orientation check, as well as OCR reader for OCR and 2D matrix code reading. It comes with 4-axis robotic arm (radius-theta-height-flip axes) and 2-axis Cartesian robot with pick and place mechanism for wafer handling from/to wafer jar. WPS3800 built with the height sensor for picking up and placing accuracy of the wafers and vision sensor to differentiate the wafer, interleaf paper or spacer.

Key Features

- 2x Hirata FOUP Ports
- 2x Wafer Canister/Jar Station
- 1x Interleaf Station
- Hirata 4-Axis ATM Robot (Radius-Theta-Height-Flip Axes)
- 2-Axis Cartesian Robot with Bernoulli Technique
- Hirata Wafer PreAligner
- IOSS WID120 OCR Reader
- Vision Sensor for Wafer, Paper or Spacer Detection

Wafer Handling



1 Cartesian Robot

Assists in transferring the wafer in linear motion which it is able to pick up wafer or interleaf using the Bernoulli technique from the canister or jar.

2 Interleaf Paper Port

Auto-conversion between 8" and 12" paper.

3 Universal Load Port

Detect various type of canister & wafer jar, and to differentiate the wafer size of either 8" or 12".

4 Prealigner

To carry out wafer alignment before being packed/unpacked.

5 Height Sensor

Built-in height sensor for accurate robotic handling.

6 4-Axis ATM Robot

High throughput is achievable by the precise and fast robot.

Load Port

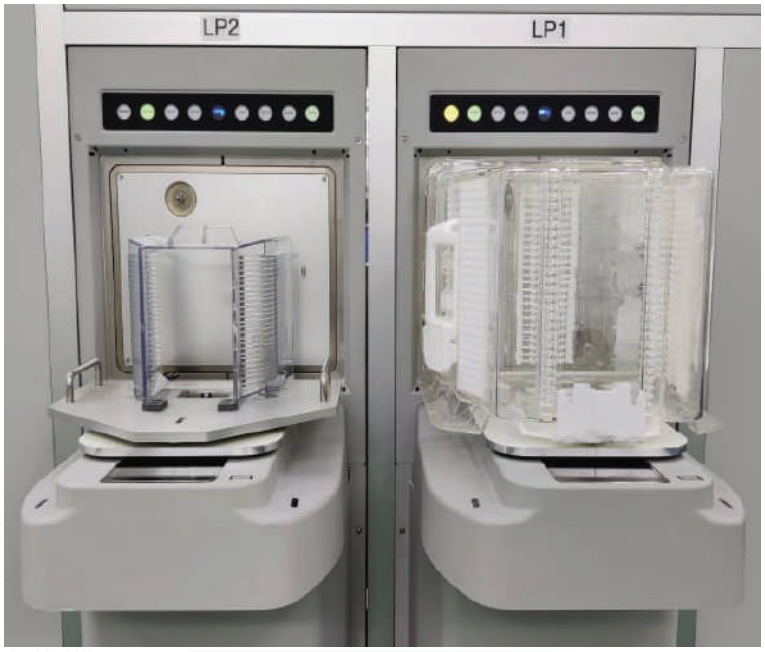
Hirata FOUP Port

Safe and simple opening and locking of FOUP for the wafer transfer. Integrated together with high precision mapping sensor to detect double or crossed wafers. Hirata FOUP ports are designed to accomodate FOUP, FOSB and open cassette. 8" open cassette can be used with special adapter.

FOUP

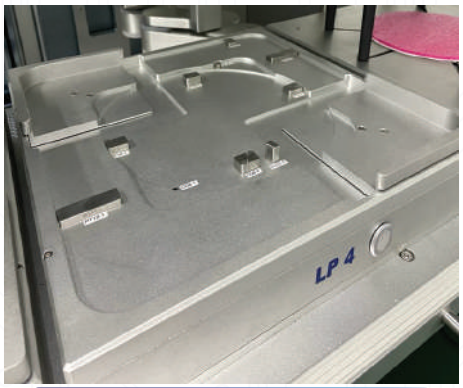
FOSB

Open Cassette



Hirata FOUP Port

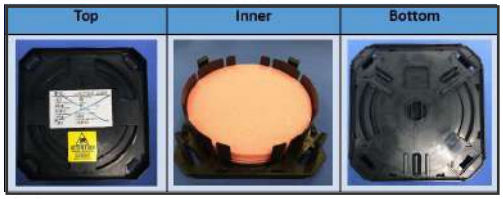
Universal Load Port



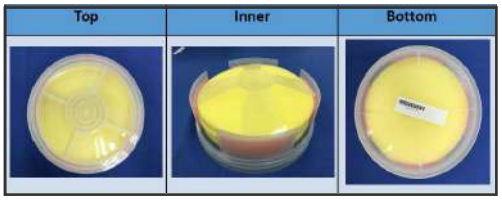
Universal Load Port

The Universal Load Port integrated with sensor to accommodate various types of wafer carrier for both 8" and 12"; canister and wafer jar.

Example of Canister



Example of Wafer Jar

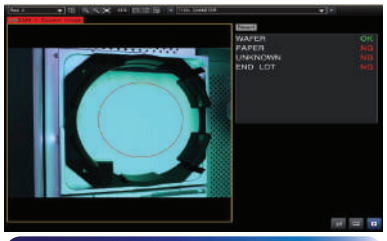


Vision System

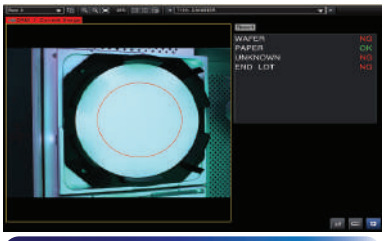
Vision System

Innovative system with simple setup for a user and easy to use features. Vision sensor is used to identify the object whether it is a wafer, paper, foam or others. It is also able to detect wafer breakage of >1mm gap and wrong wafer placement when the pattern surface of wafer is facing upward.

Example of Vision System

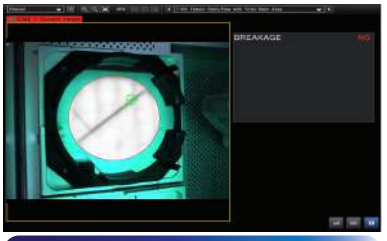


Wafer Detection



Paper Detection

Foam (End Lot) Detection



Wafer Breakage Detection

Operation Mode

Packing

Will transfer wafer from cassette to canister or wafer jar.

- 8" Open Cassette to 8" Canister
- 8" Open Cassette to 8" Wafer Jar
- 12" FOUP/FOSB to 12" Canister
- 12" FOUP/FOSB to 12" Wafer Jar

Sorting

Will transfer wafer from one cassette to another cassette.

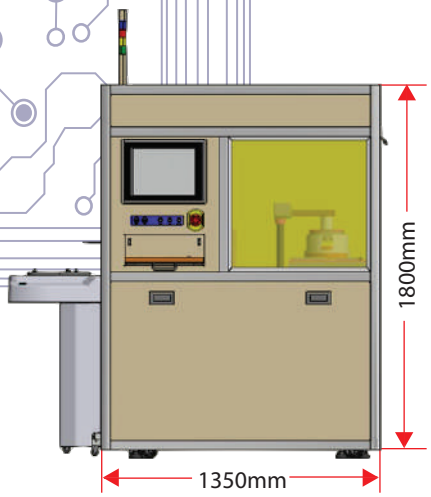
- 8" Open Cassette to 8" Open Cassette
- 12" FOUP/FOSB to 12" FOUP/FOSB

Unpacking

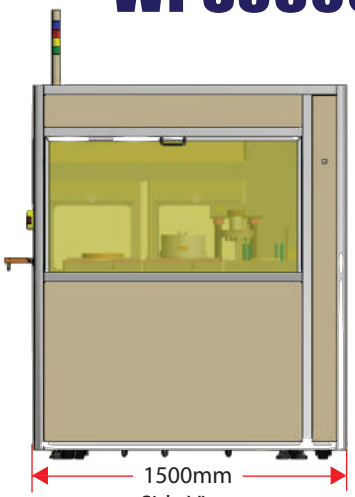
Will transfer wafer from canister or wafer jar to cassette.

- 8" Canister to 8" Open Cassette
- 8" Wafer Jar to 8" Open Cassette
- 12" Canister to 12" FOUP/FOSB
- 12" Wafer Jar to 12" FOUP/FOSB

WPS3800



Front View



Side View

Technical Specification

Wafer	
Size/ Thickness	8" Wafer Size / 250µm-800µm
	12" Wafer Size / 300µm-800µm
Loading Port	
Load Port	2x 12" FOUP/ FOSB & 8" Open Cassette
	2x 8" & 12" Canister/ Wafer Jar Port
	1x 8" & 12" Interleaf/ Separator Port
Wafer Cassette	SEMI Standard 8" Open Cassette
	SEMI Standard 8" Wafer Canister
	SEMI Standard 8" Wafer Jar
	SEMI Standard 12" FOUP/ FOSB
	SEMI Standard 12" Wafer Canister
	SEMI Standard 12" Wafer Jar
Load Port Sensors	Integrated with Photoelectric Sensor to Identify 8" & 12" Open Cassette, Canister and Jar
	Present or Absent & Orientation Detection
Wafer Handling	
Wafer Warpage	Up to 1mm *(Sample Required for Engineering Test)*
Robotic Handling	4-Axis Wafer Robot (Radius,Theta, Height & Flip Axes)
	2-Axis Cartesion Robot for Pick & Place Mechanism
Pre-Aligner	Wafer Centering & Configurable Notch or Flat Orientation
Cassette Mapping	Mapping Sensor Integrated into FOUP Port
	Wafer Protrusion Detection (FOUP Port)
	Wafer Cross Slot & Double Wafers Detection
Vision Sensor	Standard Wafer Detection
	Ring Spacer Detection (Optional)
Height Sensor	Standard Wafer & Interleaf Paper Detection
	Shining Wafer Height Detection (Optional)
Wafer ID Reader	
Model	IOSS WID 120
Code Types	Alphanumeric: SEMI M12,T7, M1.15 Compliance
Standard Accessories	
Monitor Display	Touch screen LCD Panel
Keyboard	Flip-up Keyboard Tray with Track Ball
Status Indicator	4-Tier Tower Light with Adjustable Buzzer Volume
Facilities Requirement	
Power Supply	200-240VAC%, 50/60 Hz Single Phase
Compressed Air	4-6 Bar
Vacuum	-80kPA
Dimension	
Foot Print	1350mm (L) x 1500mm (W) x 1800mm (H)

** The information in this catalogue is correct at the time of printing. QES Mechatronic reserves the right to make design changes or improvements. Specification are subject to changes without prior notice*

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