

QES[®]
Assuring you our best, always!



Corporate Headquarters
QES Mechatronic Sdn.Bhd

No. 2, Jalan Jururancang U1/21,
Hicom Glenmarie Industrial Park,
Seksyen U1, 40150 Shah Alam,
Selangor, Malaysia.



Headquartered in Hicom-Glenmarie (Malaysia) and BS EN ISO 9001:2015 certified. Staff strength of 80 people providing sales and service support together with our sales channel partners and distributors covering primarily ASEAN and China.

We currently have more than 500 machines installed globally. QES Mechatronic Sdn. Bhd. was founded in June 1999 and started operating in year 2000. Strong R&D and technology partnerships allows us to be a global manufacturer of inspection, measurement and automated handling equipment. QES Mechatronic Sdn. Bhd. is a wholly owned subsidiary of QES Group Berhad.

Historical Sales Revenue



COMPANY INFORMATION

Ultimate Holding Company
QES Group Berhad

Nature Of Business
R&D and manufacturing of inspection, measurement and automated handling equipment for semiconductor industry

Executive Management
Chew Ne Weng, Managing Director/President
Liew Soo Keang, Executive Director
Lim Chee Keong, Executive Director

Share Capital
RM 9,000,000

External Auditors
Moore Stephens Associates PLT
(AF 002096)

Principal Bankers
HSBC Bank Malaysia Berhad
Malayan Banking Berhad
RHB Bank Berhad
United Overseas Bank (M) Berhad



CORE COMPETENCIES

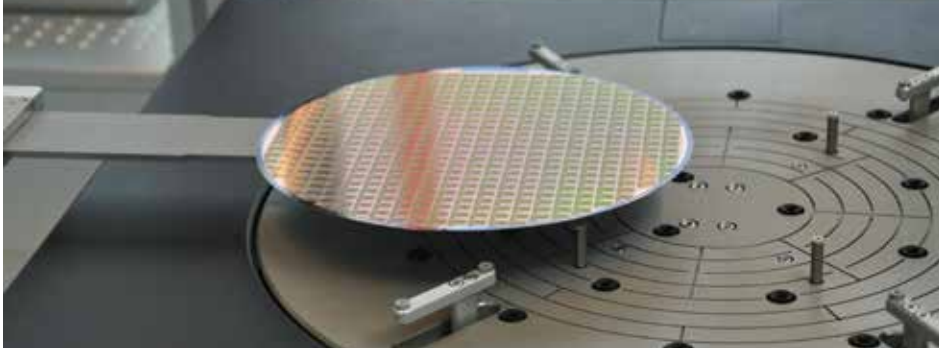
Precision Motion Control

QES Mechatronic Sdn. Bhd. has extensive knowledge in the field of precision motion control. We developed and manufactured our own PC based 4 axis motion controller and multi-channel IO controller. We have at least 20 years of experiences building precision X-Y-Z stages being the OEM manufacturer of a major Japanese measuring microscope brand. Our products are developed base on this core technology of precision motion control.

Sensors

Sensors are parts of our core technology. We have the flexibility to attach various types of sensors to our products based on application. QES Mechatronic has the expertise to configure a system based on optics, camera vision, laser or tilt sensing to provide a total integrated solution in the field of inspection, testing and measurement.

MANUFACTURING



Quality

All critical parts fabricated in-house or from outsource partners are subjected to dimensional measurements utilising our own metrology laboratory. This ensures all dimensions comply with the specifications.



Design and Development

We have a team of experienced mechanical, electrical and software engineers that are working closely with our customers and partners.



Precision Machining

Our machining capability and accuracy is up to 5 micron flatness. This is achieved by using high end grinding machines in a temperature controlled room.



Manufacturing

We have extensive know-how in high mix and low volume manufacturing and constantly driving cost down projects through effective localization and outsourcing.



Assuring you our best, always!



OIS
series

Optical Inspection Series

- 1. 1st Optical Inspection System
- 2. 2nd Optical Inspection System
- 3. 3rd Optical Inspection System
- 4. 4th Optical Inspection System

AOI
series

Automated Optical Inspection Series

- 1. Post Probing Inspection System
- 2. Post Wire Bond Inspection System
- 3. Post Molding Inspection System
- 4. Post Die Attach Inspection System

AHS
series

Automated Handling Series

- 1. Wafer Sorting System
- 2. Wafer Packing System
- 3. Wafer Weighing Sorter System
- 4. Wafer Transfer System
- 5. Barcode Printing & Labelling System
- 6. Wafer Batch ID Reader

AMS
series

Advance Metrology Series

- 1. Wafer Thickness & Roughness Measurement System
- 2. Wafer Roughness Measurement System
- 3. Wafer Surface Measurement System

Optical Inspection System (OIS Series)



WIS1000

1st Optical Inspection System

WIS1000 is designed to handle 6" wafer and 8" wafer size. The standard design comes with one standard load port which can accommodate the 6" SEMI Standard Open Cassette and 8" SEMI Standard Open Cassette. The system capable for inspection, wafer mapping and defects classification management. WIS1000 integrated with Nikon Wafer Auto-Loader and programmable XY indexing table for macro and micro inspection. It can perform macro inspection not only for front wafer as well as back wafer and micro inspection. Inker module can be integrated with the system for the defect marking during inspection.

Key Features

- Designed for 150mm & 200mm Wafer
- Micro & Macro Inspection (Including Back Macro)
- Bright-Field Dark-Field and NIC Modes
- Integrated with Nikon Autoloader & Microscope
- Motorized Objective Lens With 4 Objectives Lens (5x, 10x, 20x, 50x)
- Wafer Alignment & Wafer Mapping Capability
- User-defined Reject Code & Summary Lot Report after Inspection
- Integrated with Inker For Defects Marking (Optional)
- Software UI with Recipe Control Module, Wafer Map, Cassette Map and Microscope Components Control

Optical Inspection System (OIS Series)



WIS1100

1st Optical Inspection System

WIS1100 is designed to handle 4" and 6" wafer size for the optical inspection, wafer mapping, and defect classification management for semiconductor industry. The system comes with high performance macro inspection system for front and back wafer including micro inspection system. Besides, micro inspection system integrated with Nikon Eclipse L200N with 5 motorized objective lens. Pre-aligner is to ensure the wafer centering and orientation accuracy before unloading and OCR reader is for mapping retrieval from the host server to improve the process efficiency.

Key Features

- Designed for 100mm & 150mm Wafer
- Micro & Macro Inspection (Including Back Macro)
- Bright-Field, Dark-Field and NIC Modes
- Motorized Objective Lens With 5 Objectives Lens (2.5x, 5x, 10x, 20x & 50x)
- Integrated with Wafer Ionizer and Programmable XY Indexing
- Wafer Alignment & Wafer Mapping Capability
- User-defined Reject Code & Summary Lot Report after Inspection
- Integrated with Inker For Defects Marking (Optional)
- Software UI with Recipe Control Module, Wafer Map, Cassette Map and Microscope Components Control
- TCP-IP & RS232 Data Interfaces/ SECS/GEM Data Communication (Optional)

Optical Inspection System (OIS Series)



WIS8000

1st Optical Inspection System

WIS8000 is designed to handle 8" wafer and 12" wafer size. The standard design comes with two standard load ports which can accommodate the 12" SEMI Standard FOUP, 12" SEMI Standard FOSB and 8" SEMI Standard Open Cassette. It can be upgraded to three load ports. During the wafer handling, the system is using the robotic arm to transfer the wafer to/from pre-aligner or inspection chuck. Besides, WIS8000 comes with wafer gripper with the tilting capability for front and back wafer inspection (macro inspection) and high-power microscope with 5 objectives for the micro inspection.

Key Features

- Designed for 200mm and 300mm Wafer
- Comes with 2x Hirata FOUP Ports that can accommodate FOUP/ FOSB, need Hirata Adapter for 8" Open Cassette
- R-Theta Wafer Handling System
- Hirata Wafer Pre-Aligner (8 & 12" wafers)
- Programmable Motorized Stage with Vacuum Chuck
- Wafer Mapping System
- Anti-Vibration Isolation Platform
- IOSS WID120 OCR Reader
- TCP-IP & RS232 Data Interfaces

Optical Inspection System (OIS Series)



DIS8000

2nd Optical Inspection System

DIS8000 is mainly designed to handle the frame wafer after the wafer dicing process. The system able to handle the 8" wafer size with frame/ring and 12" wafer size with frame/ring. Inspection of the wafer is conducted after the wafer dicing process to inspect for defect that is observable prior to dicing and also die defect resulted after dicing process. In general, most of the incoming wafers come with two type of defect identification method; inker system on the defective die and wafer mapping system that contain the location of defective die with classification.

Key Features

- Single Wafer Autoloader for 200 and 300mm Wafer Size
- One Load Port for Standard Open Cassette
- High Power Microscope with Five Objectives (In the Range of 2.5x to 50x) Motorized Stage for XY Movements
- Decoding on Customer Wafer Map to QMC Mapping System
- Image Capturing System
- User-Defined Reject Code & Summary Lot Report after Inspection
- Built-in Barcode Scanner for Wafer Map Download/Upload Process from Server

Optical Inspection System (OIS Series)



ISP3100

3rd Optical Inspection System

ISP3100 is a manual optical inspection system which is able to handle to inspect the lead or substrate. The system comes with programmable magazine loader and programmable XY stage with the high accuracy up to +/-25 micron. Besides, ISP3100 comes with the auto-conversion system that able to handle different width of lead frame or substrate package. It is capable to perform physical marking with various types of reject identification module such as puncher, wire breaker, bristle, scriber, inker and laser system.

Key Features

- Simple and Reliable Handling System to handle Lead Frame or Substrate
- User-friendly 2D Visual Inspection and Yield Management System
- Programmable XY Stage for flexible Indexing
- Programmable Recipe Control and Strip Map Capability
- Programmable Adaptable Magazine Elevator and Motorized Loader
- User-friendly ISP Control for Recipe Setup Mapping Capability, Real Image Capturing and Reporting
- Various types of Reject Identification Module

Optical Inspection System (OIS Series)



MPI3000

4th Optical Inspection System

MPI3000 is designed for inspection of molded strip (visual inspection by operator using microscope). The system comes with flipping mechanism for molded strip front and backside inspection. The inspection result can be recorded on the lead frame mapping by operator via software. MPI3000 equipped with 2x input magazines and 2x output stack magazine. Auto-conversion rail mechanism for different size of molded strip, up to maximum dimension of 300mm(length) and 100mm (width).

Key Features

- Inspection System for Molded Strip up to Maximum Dimension of 300mm(L) x 100mm(W)
- Flipping Mechanism for Molded Strip Front and Backside Inspection
- Programmable 2x Input and 2 Output Stacked Magazine
- Equipped with Nikon Microscope 0.67x to 5x, a pair of 10x Eyepiece
- Programmable XY Motorized Stage
- Auto-Conversion for Different Size of Molded Strip
- Strip Mapping Capability
- Standby Station for Rejected Molded Strip
- Easy to Operate Software and Recipe Control Functions
- TCP-IP and RS232 Data Interface / SECSGEM Data Communication (Optional)

Automated Optical Inspection System (AOI Series)



PWB1000

Automated Post Wire Bond Inspection System

The technology of high resolution of line scanning vision system is implemented in PWB1000 for visual inspection and yield management after the die attached process and wire bonded process. It comes with user friendly software interface, image processing with Cognex based vision system, strip mapping process and it able to handle up to 5 magazines at one time. Moreover, it is designed with dual scanning track mechanism with the high scanning speed of 75mm/s.

Key Features

- Stereoscopic Line Scanning Camera System at 7300 pixel (Dual Sensor)
- Multiple Magazine Loader & Dual Scanning Track Mechanism
- Capable to Store Maximum up to 5 Magazines (90mm Width Each)
- High Speed 3D Image Reconstruction with 5700 Line per Second
- Fast Scanning Speed of 75mm per Seconds. (Max at Line Rate 20kHz)
- 3D Height Map & Color Image Simultaneously
- High Brightness LED Illuminator with Patented Reflection Technology
- Cognex Based Image Processing System
- Defect Classification based on 4 Vision Tools

Automated Optical Inspection System (AOI Series)



PWB2000

Automated Post Wire Bond Inspection System

High resolution and speed of vision inspection system, PWB2000 is automated, reliable and effective solution for post die attach and post wire bond inspection. The system comes with the area scanning camera that capable to capture defects by using the 2D vision system. Integrated with programmable dual XY stage and on-the-fly scanning method, the system can accommodate multiple magazines at one time operation and eliminate the waiting time.

Key Features

- Auto 2D Vision Inspection Tool for 3rd Optical Application
- Multiple Magazine Loader & Dual Scanning Track Mechanism
- Capable to Store Maximum up to 5 Magazines (90mm Width Each)
- Capable to Handle the Maximum Dimension of Sample up to 100mm (Width) x 300mm (Length)
- High Resolution of Camera Up to 8.9MP
- Defect Classification based on 4 Vision Tools
- Lighting Type of using Dome Light Ultra Bright for Stroboscope
- On-the-Fly Vision Scanning with Stroboscopic Control
- Programmable Recipe Control and Strip Mapping Capability

Automated Optical Inspection System (AOI Series)



PMI2000

Automated Post Mold Inspection System

PMI2000 is an automated 2D vision inspection system for molded device. It's come with top and bottom vision inspection capability, by using high resolution camera, lens and illumination. System capable to provide wide field of view area capture vision system which results in faster image processing and higher UPH yield. System consists of configurable input and output loader for stacked magazine. It's also come with auto-conversion inspection track for molded lead frame dimension up to 300mm(L) x 100mm(W).

Key Features

- Automated Post Molding 2D Vision Inspection
- Input/Output Loader for Stacked Magazine
- Auto-Conversion Inspection Track for Molded Lead Frame up to 300mm(L) x 100mm(W)
- Top & Bottom Vision Inspection Equipped with High Resolution Camera, Lens and Illumination
- Wide FOV Area-Capture Vision Inspection System with Minimum Defect Size of 5mils x 5mils
- 2x LCD Screen for Mapping & Image Display, Keyboard and Mouse
- 2D Matrix Code Reader for Strip Mapping Solution
- Windows 10 Pro Operating System
- TCP/IP Networking For Interface With Host Map Server & Storage Of Map Data Over The Network
- SECSGEM Communication Protocol (Optional)

Automated Optical Inspection System (AOI Series)



PMI3000

Automated Post Mold Inspection System

PMI3000 is an automated 2D vision inspection system for molded device. It's come with top and bottom vision inspection capability, by using high resolution camera up to 20MP, lens with 0.5x to 1.3x magnification and illumination. System capable to capture small defect size up to 10x10 micron under 1.3x lens magnification. System consists of configurable input and output loader for both stacked magazine and shipping box. It's also come with auto-conversion inspection track for molded lead frame dimension up to 250mm(L) x 100mm(W).

Key Features

- Automated Post Molding 2D Vision Inspection
- Input/Output Loader for Stacked Magazine & Shipping Box
- Auto-Conversion Inspection Track for Molded Lead Frame up to 250mm(L) x 100mm(W)
- Top & Bottom Vision Inspection Equipped with 20MP Camera, 0.5x-1.3x Lens and Illumination
- 2x LCD Screen for Mapping & Image Display, Keyboard and Mouse
- 2D Matrix Code Reader for Strip Mapping Solution
- Windows 10 Pro Operating System
- TCP/IP Networking For Interface With Host Map Server & Storage Of Map Data Over The Network
- SECSGEM Communication Protocol (Optional)

Automated Optical Inspection System (AOI Series)



PWB500V

Automated Post Wire Bond Inspection System

PWB500V is designed to inspect and quality check on lead frame and substrate after the die attach and wire bond process. The system comes with the high-speed camera with global shutter with 2D vision inspection platform. It is equipped with stroboscopic controller that synchronizes with encoder and camera. It is using the on-the-fly scanning method with stroboscopic control that is able to eliminate the waiting time of inspection process.

Key Features

- Programmable XY Stage for flexible Scanning
- Programmable Adaptable Magazine Elevator and Motorized Loader
- High Resolution Camera Up to 5.0MP with 2D Vision System Capability
- Dual Magazine Loader with One Input & One Output
- Defect Classification based on 4 Vision Tools
- User Friendly Software Control for Recipe Setup and Strip Mapping Capability
- Various type of Reject Module such as Puncher Module, Wire Breaker Module, Laser Module, and etc (Selectable for One Type Only)
- TCP-IP & RS232 Data Interface/SECS/GEM Data Communication (Optional)

Automated Optical Inspection System (AOI Series)



PPI3300

Post Probing Inspection System

The PPI3300 is an ideal solution for detecting defects on 8-inch and 12-inch patterned wafer surfaces such as scratches, ink dot smear, probe marks, water marks, and die edge cracks. High Speed CMOS camera with resolution of 26.1MP & CoaXPress interface is used in the system. The combination of 5120 x 5120 high resolution, high speed at 90 FPS and global shutter create a new standard for the inspection application. The CF objective was used to extend the working distance while maintaining a high NA, resulting in images that are crisp and clear, with high contrast and resolution. The micro wafer station has been integrated with a rotary table and an anti-vibration platform to provide accurate and high throughput inspection. Auto loading, wafer ID reader for OCR and 2D matrix code reading, and auto defect inspection are all part of the standard system configuration.

Key Features

- Automated 2D Vision Inspection for Wafer
- 26MP High Resolution Camera
- Bright Field Inspection with Nikon High Magnification Microscope
- Laser Auto Focus Module
- High Accuracy Motorized XY Stage using Linear Motor
- Vibration Isolation Platform
- Hirata 3-Axis ATM Single Arm Robot
- Hirata Wafer Pre-aligner
- IOSS WID120 OCR Reader
- HEPA / ULPA Filter (Optional)
- TCP-IP and RS232 Data Interface
- SECSFEM Data Communication (Optional)



PDA100K

Post Die Attach Vision Inspection System

With elegant and innovative design, PDA100K is made for automated optical inspection system towards die on ceramic panels. The system comes with 2D inspection on die placement and cosmetics defects, as well as 3D inspection on stack height. Using simple yet effective loading/unloading module, ceramic panels are transferred onto/from the inspection stage with high smoothness and precision control. The combination of 2D & 3D laser profile ensures the optimal inspection accuracy covering all possible detections on the die. PDA100K comes with smart and user-friendly software for easy operation and fast recipe setup with user friendly GUI.

Key Features

- Auto 2D Vision Inspection Tool for Ceramic Die Attach Panel
- Die Height Measurement via Laser Profiler Module
- Cassette Slot Mapping System for Cross-Slot Detection
- Capable to Handle the Sample with Dimension of 100mm(Width) x 100mm(Length)
- High Precision Stage Indexing Movement up to $\pm 1\mu\text{m}$
- High Resolution 5MP Colour Camera
- Multiple Unit per Capture for Improvised UPH
- Laser Profiling Length up to 15mm
- Programmable Recipe Control & Strip Mapping Capability



PDA1000

Post Die Attach Vision Inspection System

The automated vision inspection system, PDA1000 is designed for handling new power switches based on SiC and GaN material such as IGBT and MOSFET device handling. With the implementation of dual-track mechanism, different IGBT or MOSFET devices can be handled and inspected in one single system. Integrated with 6-sided camera acquisition design, inclusive of the inspection for 4 lateral sides, top and bottom of the unit. The PDA1000 provides highly reliable result as well as clear resolution images for customer to conduct post-inspection reviews. Standard system configuration covers from auto loading, device ID reading, inspection and up to physical reject module. PDA1000 is the ideal solution to handle multi-dimensional inspection of IGBT or MOSFET power switching devices.

Key Features

- Auto Vision Inspection Tool for Dual Side Cooling (DSC) Package Handling
- Multiple Magazine Loader
- Dual Track Mechanism for DSC-1D & DSC-2D/3D Respectively
- Smooth Conveyor Track Mechanism for Multiple Devices Loading In for Minimal Waiting Time
- DSC-1D Track Consists of 21MP Camera (Top View), Height Sensor, and Inker Reject Module
- DSC-2D/3D Track Consists of 6MP Cameras with 6-Sided Views
- Reject Bin for DSC-2D/3D Defected Units
- User Friendly Software GUI under Windows 10 Professional Operating System
- 2D Matrix Code Reader Integration

Automated Handling System (AHS Series)



WID100R

Wafer Batch ID Reader System

WID100R is mainly designed for 4" wafer size. It is designed with single port for 4" SEMI standard 25 slots open cassette. The system enable wafer alignment and wafer ID reading of complete batch in a cassette. With its multi touch panel PC and easy-to-operate system, the user can read any wafer ID and slot position inside the carrier in just few seconds. The compact design of the WID100R comes with the cassette presence and tilted sensor for cassette placement and wafer ID placement. The mapping, wafer alignment and wafer ID reading are controlled by the recipe created.

Key Features

- Designed for 100mm Wafer
- 1x Open Cassettes Station (Based on Sample Cassette Provided)
- Cassette Orientation Sensors (Detect Reverse Placement of Cassette), Cassette Presence and Cassette Tilt Sensors
- In-Cassette Wafer Slot Mapping Function
- Wafer Orientation Flat Alignment Mechanism Integrated
- Programmable Wafer Rotation for Various Wafer ID Locations (Front & Back wafer ID on Orientation Flat Area)
- Recipe Controlled Mapping, Alignment & Wafer ID Reading
- SECS/GEM Communication Tools (Optional)

Automated Handling System (AHS Series)



WID150R

Wafer Batch ID Reader System

WID150R is mainly designed for 6" wafer size. This system suitable for 6" SEMI standard 25 slots open cassette. It's come with built-in programmable wafer orientation flat alignment in order to ensure the wafer in a right orientation before scanning the ID. Moreover, WID150R equipped with multi-touch panel pc & GUI customization. The user-friendly system and easy-to-operate system assist the user to operate the easily.

Key Features

- Designed for 150mm Wafer
- 1x Open Cassettes Station (Based on Sample Cassette Provided)
- Cassette Orientation Sensors (Detect Reverse Placement of Cassette), Cassette Presence and Cassette Tilt Sensors
- In-Cassette Wafer Slot Mapping Function
- Wafer Orientation Flat Alignment Mechanism Integrated
- Programmable Wafer Rotation for Various Wafer ID Locations (Front & Back wafer ID on Orientation Flat Area)
- Recipe Controlled Mapping, Alignment & Wafer ID Reading
- SECS/GEM Communication Tools (Optional)

Automated Handling System (AHS Series)



WID8000

Automated Barcode Printing and Labelling System

WID8000 is designed to handle either 6" and 8" wafer size or 8" and 12" wafer size. This system comes with auto-conversion system that enable it to handle two sizes of wafers. WID8000 have two main functions as OCR reader and the barcode printer. The wafer ID read by the OCR reader, the system will then convert the wafer ID to the barcode format, print it on the sticker label, and place it on the wafer tape. The main purpose of WID8000 system design is to replace labour force and reduce human error that may occur during the process of placing the sticker label (wafer ID) on the frame wafers.

Key Features

- Designed to handle 6" and 8" Wafer Size/ 8" and 12" Wafer Size (Auto-Conversion)
- 6" SEMI Standard Open Cassette Type/ 8" SEMI Standard Open Cassette Type and 12" SEMI Standard Open Cassette Type
- Fully Automatic Barcode Printing and Labelling System
- Eliminating the needs of Labor Forces
- Reducing the Faulty caused by the User
- High Throughput and Improve the Efficiency
- Reliable Handling Machine

Automated Handling System (AHS Series)



WPS3200

Wafer Packing & Unpacking System

WPS3200 is designed to handle 6" & 8" wafer for packing & unpacking process from various type of shipping carriers. The system equipped with wafer pre-aligner for wafer positioning and orientation and wafer ID reader for OCR and 2D Matrix Code reading. Besides, WPS3200 comes with built-in vision sensor for wafer, interleaf paper or ring spacer detection and built-in height sensor for robotic handling accuracy. Mapping sensor integrated into robotic arm to detect any wafer cross slot and double wafers during operation.

Key Features

- Designed for 150mm Wafer
- Mettler Toledo High Precision Weighing Module, WXT Series with Custom Designed Enclosure
- Hirata 4-Axis Dual Arm ATM Robot
- IOSS WID120 OCR Reader Integrated into Hirata Pre-Aligner Module for 6" Wafer
- 3x Work-cells with 4 Load Ports (LP1 for Peek Cassette, LP2, LP3 & LP4 with Universal Design to accept Clamshell or Half-Height Open Cassette with Conversion)
- Touch-screen HMI with Customized Software for Weight Sorting
- TCP/IP Network Interface or SECS/GEM Data communication (Optional)

Automated Handling System (AHS Series)



WPS3800

Wafer Packing & Unpacking System

WPS3800 is designed to handle 8" & 12" wafer size for packing & unpacking process from various type of shipping carriers. The system comes with two load ports for 8" SEMI standard open cassette and 12" FOUP cassette or 12" FOSB cassette, two load ports for 8" canister and 12" canister (configurable to 1x canister and 1x wafer jar with optional cartesian robot module) and one port for interleaf paper (auto-conversion for 8" and 12" wafers). WPS3800 comes with built-in vision sensor for wafer, interleaf paper or ring spacer detection and built-in height sensor on canister & wafer jar loading port for robot's accuracy during pick and place process.

Key Features

- Comes with 2x FOUP/FOSB for 12" Wafer and Open Cassette for 8" Wafer with Integrated Wafer Protrusion Detection Sensor and Thru-Beam Wafer Mapping
- 2x Universal Shipping Carrier Station for Various Type of Canister and Wafer Jar with Auto-Detection for 8" & 12" Wafer Size
- 1x Interleaf Paper Port (Auto-Conversion between 8" & 12" Paper)
- Hirata 4-Axis ATM Robot with Flip Axis (Radius-Theta-Height-Flip Axes)
- Built-in Vision System for Wafer, Interleaf Paper or Spacer Detection and Built-in Height Sensor for Robotic Handling Accuracy

Automated Handling System (AHS Series)



WSS8000

Wafer Sorting System

WSS8000 is designed to transfer wafer from the input cassette to output cassette. The machine is designed with two standard load ports that able to fit 8" SEMI standard open cassette, 12" FOUP cassette and 12" FOSB cassette. The mapping sensor in the system capable to detect any wafer presence, absence, cross slot, double wafers inside the cassette. Robotic arm integrated with the end effector which is using Bernoulli or vacuum suction type (depending on the wafer features) to transfer the wafer to output cassette. WSS8000 capable to perform wafer transfer with five sorting method which are wafer ID sorting, sequential sorting, drag & drop sorting, sub-lot wafer sorting and slot to slot sorting.

Key Features

- Capability to Handle 200mm & 300mm Wafers
- Wafer Transfer with Five Sorting Method
- Two FOUP Load Ports for 8"/12" Wafer Size
- Wafer Pre-aligner for Orientation Check & Wafer Alignment and Programmable Wafer ID Reader
- IOSS WID120 OCR Reader
- Communication between Host and Equipment
- High Accuracy Wafer Aligner for Both Flat and Notch Wafer
- (SECS/GEM) Compatibility Customized Software for Wafer Map
- Upload/Download and Easy Retrievable from the Server

Automated Handling System (AHS Series)



WSS2200

Wafer Sorting System

WSS2200 is designed with standard of four load ports that can support for 6" and 8" wafer size. The ports are designed to handle 6" SEMI standard open cassette and 8" SEMI standard open cassette. During wafer sorting process, the robotic arm moves to designated input load port for wafer loading process. The movement of X, Y and Z axis are controlled by the Hirata robot controller. Loaded wafer from input load port transferred to pre-aligner for wafer orientation check and alignment wafer ID read by OCR and recorded into pc/server through TCP/IP or SECS/GEM. The wafer transferred from input to output load port by using recipe control.

Key Features

- Designed for SEMI Standard of 150mm & 200mm Open Cassette Comes with Four Load Ports
- Dual Arm Hirata Automatic Wafer Loader/Unloader (Robot) with Built-in Wafer Mapping Sensor
- Wafer Pre-aligner for Orientation Check & Wafer Alignment and Programmable Wafer ID Reader
- Programmable Wafer Sorting Recipe & Robot Controller
- Programmable Sorting Method such as Wafer ID Sorting, Sequential Sorting, Slot to Slot Sorting, Drag and Drop Sorting and Sub-Lot Sorting
- TCP-IP, RS232 Data Interface & SECS GEM Interfaces (Optional)

Automated Handling System (AHS Series)



WSS3200

Wafer Sorting System

WSS3200 is designed for 8" wafer size handling. It comes with 2 SMIF Pod opener as load ports which allows wafer transfer and sort in between cassettes. The system used Hirata dual arm atmospheric wafer robot and come with a pre-aligner unit for accurate wafer transfer and wafer alignment. All wafer sorting modes can be easily selected by operation personal via recipe selection. OCR and barcode cassette modules are available as option for ease of operation and lot identification. The system available to build with host communication via SECS/GEM protocol that enable the total system integration.

Key Features

- Designed for 8" Wafer Handling
- Comes with 2x 8" SMIF Pod Opener Ports
- Comes with 2x Adapter for non-SMIF Pod Cassette Option
- Hirata 4-Axis Dual Arm ATM Robot with Build in Wafer Mapping Sensor
- Hirata Wafer Pre-aligner for Wafer Orientation Check and Wafer Alignment
- IOSS WID120 OCR Reader
- Programmable Sorting Method Include Wafer Selection Sorting,
- Sequential Sorting & Slot-to-Slot Sorting
- TCP/IP Network Interface or SECS/GEM Data communication (Optional)
- HEPA / ULPA Filter to Meet ISO Class 5 & 6 (Optional)

Automated Handling System (AHS Series)



WTS100G

Wafer Batch Transfer System

WTS100G is designed for transferring, splitting, merging or flipping the 4" wafer and 6" wafer from the input cassette in batch mode. It consists of two load ports which one input load ports and one output load port. The load port equipped with high precision sensor for wafer mapping detection and cassette placement detection. The sorting method for this tools, the wafers transfer from 4" SEMI Standard Open Cassette to 4" SEMI Standard Open Cassette/Clamshell or 6" SEMI Standard Open Cassette to 6" SEMI Standard Open Cassette/Clamshell.

Key Features

- Designed for 100mm & 150mm Wafer Size
- Cassette Type: SEMI Standard Open Cassette & Clamshell
- Consists of Two Load Ports (One Input and One Output)
- Built-in Programmable Wafer Orientation Flat Alignment
- Batch Wafer Transfer from Input Cassette to Output Cassette
- Single Wafer Sorting (Sequential Wafer Arrangement)
- Batch Wafer Merging (Odd + Even Slots)
- TCP/IP Networking With Host Map Server, and Storage Of Map Data Over The Network
- SECS/GEM Communication Tools (Optional)

Automated Handling System (AHS Series)



WTS300G

Wafer Batch Transfer System

WTS300G is designed for transferring, splitting, merging or flipping the 6" wafer and 8" wafer from the input cassette in batch mode. Input cassette type is SEMI standard open cassette with 26-slots, 25-slots and 13-slots. It consists of four load ports which three are the input load ports and one output load port. The system equipped with high accuracy reflective sensor for wafer protrusion detection.

Key Features

- Designed for 150mm and 200mm Wafer
- Four Load Ports Available for Wafer Sorting with Vertical Placement of Open Cassette
- Motorized Gripper Module equipped with 25-Slots Combs for Wafer Transferring,
- Splitting, Merging and Flipping process
- Equipped with Reliable Cassette Mapping Sensor, Wafer Protrude Sensor and Cassette Placement Sensor
- Product Recipe Managed by User Friendly GUI Software
- TCP/IP Networking For Interface With Host Map Server, and Storage Of Map Data Over The Network
- SECS/GEM Communication Tools (Optional)

Automated Handling System (AHS Series)



WSS2150 Wafer Weight Sorting System

The WSS2150 Wafer Weight Sorting System allows to determine the weight of each wafer before it be sorted into few of the clamshells or half-height open cassette. It is designed for 6" of the wafer sizes. Wafer is transferred from open cassette to clamshell for Spin-Rinse-Dry (SRD) process. Weight of each wafer in clamshell for Pre-Rough process is determined. The wafers sort to the clamshell/half-height open cassette according to their weight loss range. All the wafers will be transferred back to the open cassette once all of wafers achieve the weight required after going through repeating SRD process.

Key Features

- 2x Open Cassettes Station with Integrated Wafer Protrusion Detection Sensor (Universal for both 6" & 8" wafers)
- 2x Wafer Canister Station (Configurable to 1x Canister and 1x Wafer Jar with Optional Cartesian Robot Module)
- 1x Interleaf Paper Port (Auto-Conversion between 6" & 8")
- Hirata 4-Axis Robotic Arm with Wafer Flipping Feature
- Built-in Color Sensor for Wafer, Interleaf Paper or Ring Spacer Detection and Built-in Height Sensor on Canister & Wafer Jar Loading Port for Robotic Handling Accuracy (1x Height Sensor on "Separator Canister" Port)

Advance Metrology System (AMS Series)



WSM1200 Wafer Surface Measurement System

WSM1200 is designed for measuring the areal and surface of 6 and 8 wafer surface System comes with one load port, 3 axis Hirata single arm ATM robot, wafer pre aligner module and mapping sensor to provide higher performance and effective wafer handling. It is equipped with non-contact type 3D optical profilometer which consists of high technology measurement feature such as Confocal, Interferometry and Ai Focus Variation, along with excellent analysis feature It's also integrated with vibration isolation platform to deliver accurate and fast measurement process.

Key Features

- Designed for 150mm and 200mm Wafer
- One Load Port for SEMI Std. Open Cassette
- Hirata 3-Axis Single Arm ATM Robot
- Hirata Wafer Pre-aligner for Wafer Orientation Check and Wafer Alignment
- IOSS WID120 OCR Reader
- Sensofar S-Neox Non-Contact Type 3D Optical Profilometer
- Objective Lenses at 10x and 20x
- Vibration Isolation Platform
- TCP/IP Networking For Interface With Host Map Server, and Storage Of Map Data Over The Network
- SECS/GEM Communication Tools (Optional)

Advance Metrology System (AMS Series)



MPT1000

Wafer Thickness & Roughness Measurement System

Laser based Wafer Thickness and Roughness Measurement System designed by Chapman Instrument Inc., USA and OEM by QES Mechatronic Sdn Bhd. A non-contact measurement system measures several parameters in a single system. (wafer & tape thickness, roughness, TTV, bump height, bow and warp measurements)

Key Features

- Thickness resolution (0.1µm) providing uniform TTV for production control of wafers
- Measurements after back grind or dicing provides flexibility for thickness uniformity control
- Small focused laser spot (1 µm) provides the resolution required for measuring bumped wafers and via features

Advance Metrology System (AMS Series)



MPS2100

Wafer Roughness Measurement System

The MP2100 is Chapman Instruments' latest high-resolution profiler. Specially designed for surface measurements and analysis, it can be used as both a production tool for inline quality inspection, as well as a research and development tool for establishing standards and researching tolerances. The MP2100 utilizes the same non-contact measurement technology as other Chapman profilers. Users can make either high-resolution linear or circular scans quickly. The powerful, yet user-friendly, Windows® based operational software can be programmed to execute a series of routines and report the data off-line for further analysis. Password security and event viewer/error logging are standard with Chapman software. Robotic handling for 150 mm, 200 mm and 300 mm wafers is available as an option.

Key Features

- Fast, complete circular scans (360° around wafer surface)
- Nomarski Viewing System for high definition visual inspection
- Scan lengths ranging from µm to complete circumferences (200 or 300 mm wafer)
- Roughness and waviness data from a single scan
- Non-contact 3D scans
- Automated sample positioning (X, Y, theta)
- Customized measurement sequences with multiple scans implemented with a single keystroke
- Automated focus acquisition
- Closed loop auto-focus system allows focus to be maintained while scanning over samples with varying topography
- Optional robotic handling



MPS3000R

Wafer Roughness Measurement System

Laser based Wafer Roughness Measurement System designed by Chapman Instrument Inc., USA and OEM by QES Mechatronic Sdn Bhd. A non-contact measurement system measures several parameters in a single system. (wafer surface roughness, wafer bevel roughness (Across and Along Bevel), Wafer Edge Roughness (Across and Along Edge Roughness).

Key Features

- Helium-Neon Laser with 633nm Wavelength
- Auto Focus Mechanism Measures Wafer Surface Roughness
- Long Range Scan Length up to 100mm
- Measurement Data Accuracy up to 50nm
- Capable to Handle 6 8 and 12 Inch Wafers
- Possess Different Measurement Functions such as Wafer Surface Roughness, Wafer Bevel Roughness and Wafer Edge Roughness
- TCP-IP Network Interface or SECSGEM Data Communication (Optional)

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