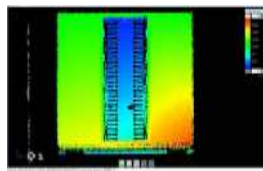
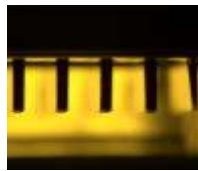


# 晶圓盒自動檢測設備

Automatic FOUP/FOSB Inspection Equipment



門板翹曲



排骨架變形



螺絲狀態

## 產品簡介

針對12吋晶圓盒(FOUP/FOSB)進行外部及內部構件檢查，檢查項目主要為尺寸、缺件、形變、異物...等。

## 產品特色

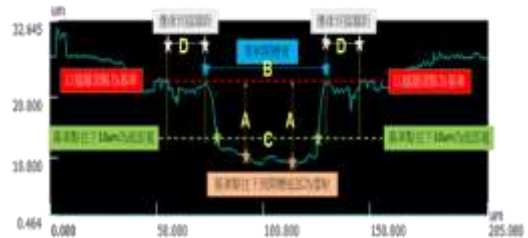
- 全自動化非接觸光學檢測
- 可客製化檢測項目
- 符合SEMI S2認證
- 支援SECS/GEM通訊

## 產品規格

- UPH  $\geq$  17
- Class 10 mini environment (Optional)
- Equipment Size:  
2800mm(L)\*1900mm(W)\*2200mm(H)

# 晶圓雷射切割道形貌自動量測設備

Automatic Wafer Laser Grooving Profile Measurement Equipment



## 產品簡介

在晶圓切割(Dicing Saw)前，進行雷射開槽(Laser Grooving)後，針對雷射切割道進行三維形貌尺寸**全自動化**量測。

## 產品特色

- 整合 **Keyence VK-X3000**系列三維形貌顯微鏡
- 自動晶圓對位及對焦功能
- 8吋及12吋共用晶圓框匣自動上下料
- 支援SECS/GEM通訊

## 產品規格

- Objective Magnification: 2.5X ~ 150X (Optional)
- Measurement Repeatability:  $\leq 0.5\mu\text{m}$
- Measurement Item: Laser Grooving Depth/Width/Shift
- Equipment Size: 2200mm(L)\*1400mm(W)\*1900mm(H)

# 晶圓光學顯微鏡自動檢測設備

Automatic Wafer Optical Microscope Inspection Equipment



## 產品簡介

具備人眼巨觀檢查及自動化微觀缺陷顯微鏡檢查，並搭配智能化缺陷影像自動判別軟體，有效提升檢測速度並降低人為誤檢率。

## 產品特色

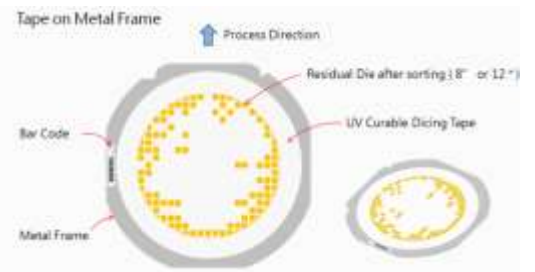
- 可選擇單或雙晶圓盒自動入料載台系統
- 具備尺寸量測及AOI軟體缺陷檢測功能
- 可客製化手動舊機設備改造為自動化設備
- 支援SECS/GEM通訊

## 產品規格

- Objective Magnification: 5X, 10X, 20X, 50X, 100X (Optional)
- Auto Focusing: Imaging or Confocal
- Other Function: OCR, Recipe Setup, Defect AOI
- Equipment Size:  
1900mm(L)\*1704mm(W)\*1800mm(H)

# 晶圓鐵框膠膜自動拆卸設備

Automatic Wafer Metal Frame Tape Disassembly Equipment



Ring Mapping

Barcode Read

UV Curing



Disassembly

Tape/Spacer Stacking

Ring Stacking

## 產品簡介

針對晶圓鐵框進行自動拆卸膠膜，並具備殘留晶片檢測、自動清洗及自動鐵框裝袋等選配功能。

## 產品特色

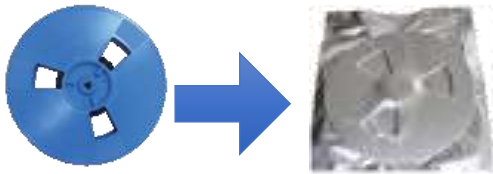
- 結合乾式清潔設計有效去除殘膠
- 可選配晶粒自動光學檢測功能，確認晶粒殘留數目
- 支援SECS/GEM通訊

## 產品規格

- Wafer Size: 8" , 12" , or both
- UPH > 100
- Equipment Size: 2450mm(L) x 1920mm(W) x 2200mm(H)

# IC 捲帶自動包裝設備

## Automatic IC Tape-on-reel Packing Equipment



### 產品簡介

應用於半導體封裝測試產業，在IC出貨至客戶端前進行IC捲帶(Tape-on-reel)自動包裝作業。

### 產品規格

- 適用在7 & 13吋捲帶包裝出貨
- 適用包裝袋種類：鋁袋、抗靜電袋、透明袋
- 真空腔體式熱封確保真空密合度
- 可對應四種類以上包裝袋, 濕度卡, 乾燥包, 標籤列印需求
- 標籤列印正確性檢測
- 自動標籤/濕度卡/乾燥包位置設定及放置檢測
- 補料不停線
- 流程記錄可追溯

# 全自動包裝/拆包機

Full Automatic Packing & Unpacking Equipment



FOUF / FOSB



HWS



Tray



## 產品特色

- 適用半導體晶圓製造、封裝、測試等產業
- 適用場合：FOUF/FOS8 & Tray & HWS 出貨及廠間製程轉移
- 適用包裝袋種類：鋁袋、抗靜電袋、透明袋
- 上下流串接OHT/AGV
- 雙層包裝提升真空密合度
- 抱箱入袋避免產品表面磨損
- Bar Code/RFID 帳料比對
- RFID自動拆卸/裝載功能
- 自動標籤/濕度卡/乾燥包位置設定
- 補料不停線(包裝袋/濕度卡/乾燥包)
- 流程記錄可追溯

# 雙層晶圓盒自動包裝機

Double Layers FOUP/FOSB Automatic Packing Equipment



## 產品特色

- 適用半導體晶圓製造、封裝、測試等產業
- 適用場合：8 & 12吋晶圓出貨及廠間製程轉移
- 適用包裝袋種類：鋁袋、抗靜電袋、透明袋
- 上下流串接OHT/AGV
- 雙層包裝提升真空密合度
- 抱箱入袋避免產品表面磨損
- Bar Code/RFID 帳料比對
- RFID自動拆卸/裝載功能
- 自動標籤/濕度卡/乾燥包位置設定
- 補料不停線(包裝袋/濕度卡/乾燥包)
- 流程記錄可追溯

# 晶圓探針卡光學檢測設備

Automatic Probe Card Optical Inspection Equipment



Cantilever



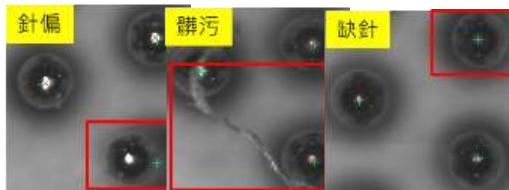
Vertical - Pogo



Vertical - Cobra



Vertical - MEMS



## 產品簡介

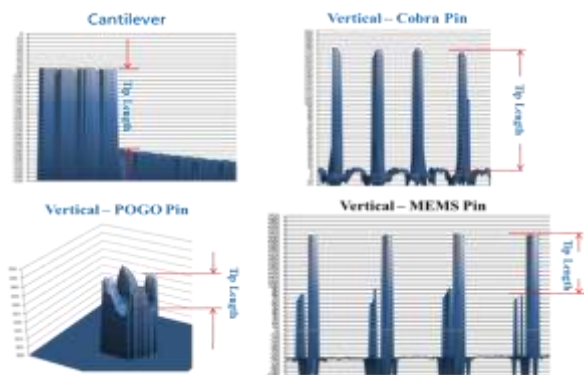
針對晶圓點測用探針卡進行自動光學檢量測分析，並具備人工調針光學顯微影像平台，整合自動化檢測及探針卡調針修復功能。

## 產品特色

- 整合高解析度2D+3D量測技術
- 支援各式樣探針卡量測分析功能
- 支援SECS/GEM通訊

## 產品規格

- 2D Measurement Resolution:  $\leq 1 \mu\text{m}$
- 3D Measurement Resolution:  $\leq 0.1 \mu\text{m}$
- Measurement Item: Tip Alignment, Diameter, Co-Planarity, Length, Screw Height, PCB components defect.





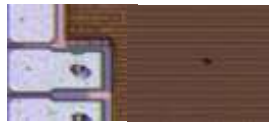
# 複合光學檢量測系統

## Hybrid Optical Metrology and Inspection

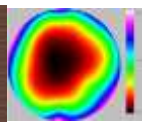


### 產品簡介

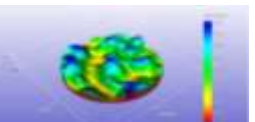
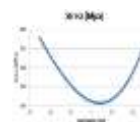
- 共光路微型模組設計
- 全自動晶圓檢量測



Defect Inspection



Warpage/ Stress



Film Thickness

### 產品規格

#### Optical 3D Profile Metrology

<ul style="list-style-type: none"> <li>• Bump (Diameter, Height),</li> <li>• RDL ( Line Width/Space),</li> <li>• Roughness,</li> </ul>	Objective Magnification	20X, 50X ,(optional 10X, 100X)
	Measuring Range (z)	Max. 200 $\mu\text{m}$ ,(optional up to 400 $\mu\text{m}$ )
	Step Height Repeatability ( $\sigma$ )	$\leq 0.1\%$
	Step Height Accuracy	$\leq 0.5\%$ @ 1.8 $\mu\text{m}$ VLSI SRM
	Field of View (FOV)	563 $\mu\text{m}$ x 563 $\mu\text{m}$ ~ 281 $\mu\text{m}$ x 281 $\mu\text{m}$ @ 20X
	Ra Measuring Repeatability ( $\sigma$ )	$\leq 0.5$ nm

#### Optical Thickness Metrology

<ul style="list-style-type: none"> <li>• Thin-Film Thickness (Oxide, PI)</li> </ul>	Measuring Range	30 nm ~ 70 $\mu\text{m}$
	Measuring Repeatability ( $\sigma$ )	$\leq 1$ nm @ 500 nm Oxide on Silicon
<ul style="list-style-type: none"> <li>• Through Silicon Via (TSV)</li> </ul>	Aspect Ratio	$\leq 30$
	Depth Repeatability ( $\sigma$ )	$\leq 0.2$ $\mu\text{m}$
	CD Repeatability ( $\sigma$ )	$\leq 0.5$ $\mu\text{m}$

#### Warpage/Bow/Stress Metrology

<ul style="list-style-type: none"> <li>• Silicon Substrate</li> <li>• Cu Film Stress</li> </ul>	Height Measuring Range	$\leq 1.5$ mm (optional for Higher Range)
	Stress Measuring Repeatability ( $\sigma$ )	$\leq 0.1$ MPa

#### Defect Inspection

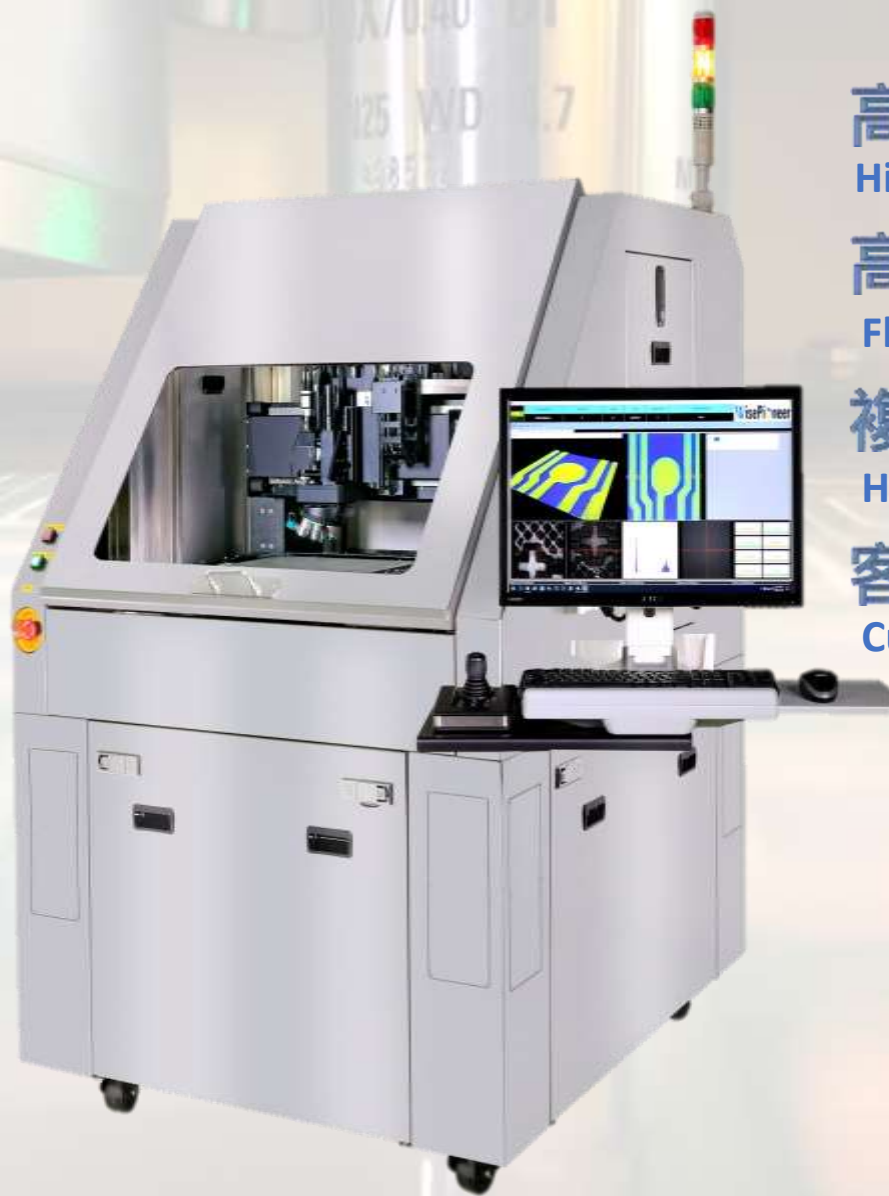
<ul style="list-style-type: none"> <li>• Wafer Inspection</li> </ul>	Objective Magnification/NA	2.5X/0.075, 5X/0.15, 10X/0.3, 20X/0.45, 50X/0.8, 100X/0.9 (optional)
	Defect Size	4 $\mu\text{m}$ @ 2.5X, 2 $\mu\text{m}$ @ 5X, 1 $\mu\text{m}$ @ 10X
	Light Source	Bright-field, Dark-field

# WisePioneer

SHUZHONG MACHINERY INDUSTRIAL CO., LTD.

The Professional Supplier Of Machine And Equipment

## 三維形貌光學量測系統 Scanning 3D Optical Profiler



高解析  
High Resolution

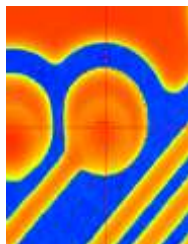
高彈性  
Flexible

複合功能  
Hybrid

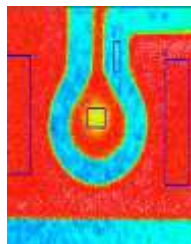
客製化  
Customization



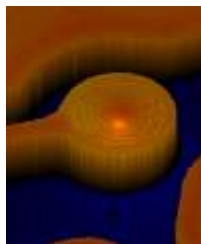
線寬/線距  
Line/space



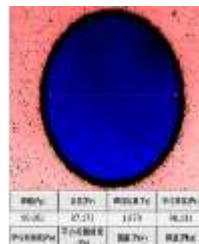
直徑量測  
Diameter



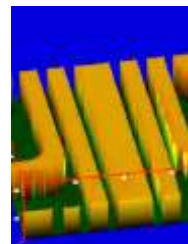
高度量測  
Height



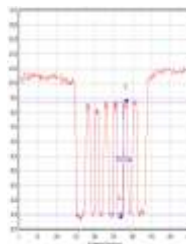
Dimple檢測  
Dimple



粗糙度量測  
Roughness



3維檢視  
3D View



分析工具  
Analyze tool

# WisePioneer

SHUZHONG MACHINERY INDUSTRIAL CO., LTD.

設備應用 Equipment Application		
基板規格 (Substrate Specification)	尺寸 (Size)	Lx H= 496~510x 496~510mm
	厚度 (Thickness)	< 3mm
量測項目 (Measurement Item)	<ul style="list-style-type: none"> <li>• Thickness (Cu),</li> <li>• Dimple,</li> <li>• Trace (width, space, thickness),</li> <li>• PAD (diameter, thickness),</li> <li>• Via (CD, depth),</li> <li>• Roughness (Ra,Rz,Rq,Sa,Sz,Sq),</li> <li>• Etching (width, space, depth), ...etc.</li> </ul>	

系統規格 System Specification		
光學量測系統 (Optical metrology system)	物鏡 (Objective lens)	2D : 5X, 2.5X, 10X 3D : 10X, 20X, 50X 可選擇適用倍率物鏡 (Optional by demand)
	垂直量測範圍 (Vertical Measure Range)	≥50mm (w/ Z stage)
	空間解析度 (Lateral Spatial Resolution)	0.11 μm (@50X)
	階高分辨率精度 (Step Height Accuracy)	≤ 0.5% @ 1.8 μm VLSI SRM
	CCD Camera Resolution	2048*2048 pixels
	Vertical Scan Speed	≥25μm/sec (Max)
XYZ軸平台 (XYZ Axis Stage)	移動行程 (Travel Range)	XY: 600mm ; Z: 50mm
	位置重現性(Repeatability)	±1μm
	Vacuum Chuck Flatness	≤0.5mm
	Encoder Resolution	≤ 0.1μm
	Maximum speed	XY:≥300 mm/sec ; Z: 10 mm/sec (for auto run)
結構、廠務 (Architecture, facilities)	機台尺寸(Machine size)	WDH:1220x1420x1685 ( Machine Housing )
	機台重量(Weight)	1350kg
	電力需求(Power Requirement)	220V 1Φ/12A
	空壓需求(Air Requirement)	100 L/min
	防震 (Vibration proof)	Anti-vibration table(P.)*4 / Granite architecture
便利使用功能 (User-Friendly Function)	<ul style="list-style-type: none"> <li>• 大視野量測影像及ROI功能 (Wide FOV image and Regions of interest Function)</li> <li>• 客製化Dimple量測分析功能 (Customized Dimple inspection and analysis function)</li> <li>• 載入CAD/Gerber檔案功能 ( Load CAD/Gerber file function)</li> <li>• 客製量測結果報表格式及上拋數據輸出 (Customized measurement report format and upload data output)</li> </ul>	



旭東機械工業股份有限公司



file record

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