

EM SERIES

the EVerbEST multi-functional SMD pick & place

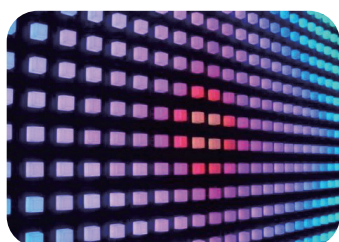


everbEST

元利盛精密機械

<http://www.everbESTcorp.com>

SMT泛用型貼片機 multi-functional placer



LED Lighting Solution Inside
內含 LED SMD 元件貼裝方案



在產業標準化已行之有年的 SMT 製程中，您需要100%符合標準SMT 製程的經典精密取置設備，您更需要具高度生產及新進製程對應彈性的配套方案，滿足您在SMT 生產過程中的那麼一點點與眾不同的需要。

As SMT production equipments has becoming industrial commodity, enterprises are striving to differentiate themselves in blending personalized process know-how into the standard processes.

經典與專業 classic & professional

EVEST EM系列是您最經典的泛用型取置設備方案，系統可配置 3~6套的視覺系統，協助您全自動化的高速且精密置件需要。可貼裝的元件小至0201 大到大型 Fine Pitch 的 IC 特殊元件，都可輕易完成。

EM系列的各個模組是由數十位中日技術合作開發而成，每一組件的選製，無不經過多年驗證及測試，可以確保設備的耐久性。

Evest EM series are a SMT pick/place classic in providing crucial pick and place functions. The system supports 3~6 vision systems, more than 12 types of feeding systems, 3 types of pick/place head modules, plus high-end optimizing software. We aim to support your mounting needs for SMD ranges form small chips such as 0201 up to large fine pitch IC or odd shape components.

Nevertheless, the system is a join development effort by a group of Taiwan-Japan formed professionals, who spent years in design, produce and validate each critical modules.

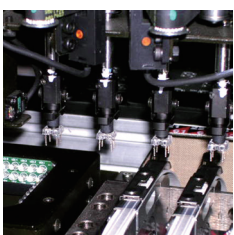
彈性與服務 extensive service and support

EVEST EM系列高彈性的取置平台更是您與眾不同的產品方案的點睛之鑰。我們有專業原廠技術團隊，協助您實現設備的最佳效益，並可針對您特殊的製程需求，量身開發關鍵模組。

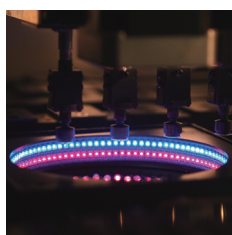
此外，元利盛在大中國區提供原廠第一線的安裝/保固/維修服務。

Evest provides direct service in Greater China areas to ensure best customer care and solution quality.

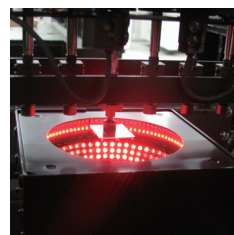
More over the Evest multi-disciplined team offers a flexible personalization service to address your unique requirements.



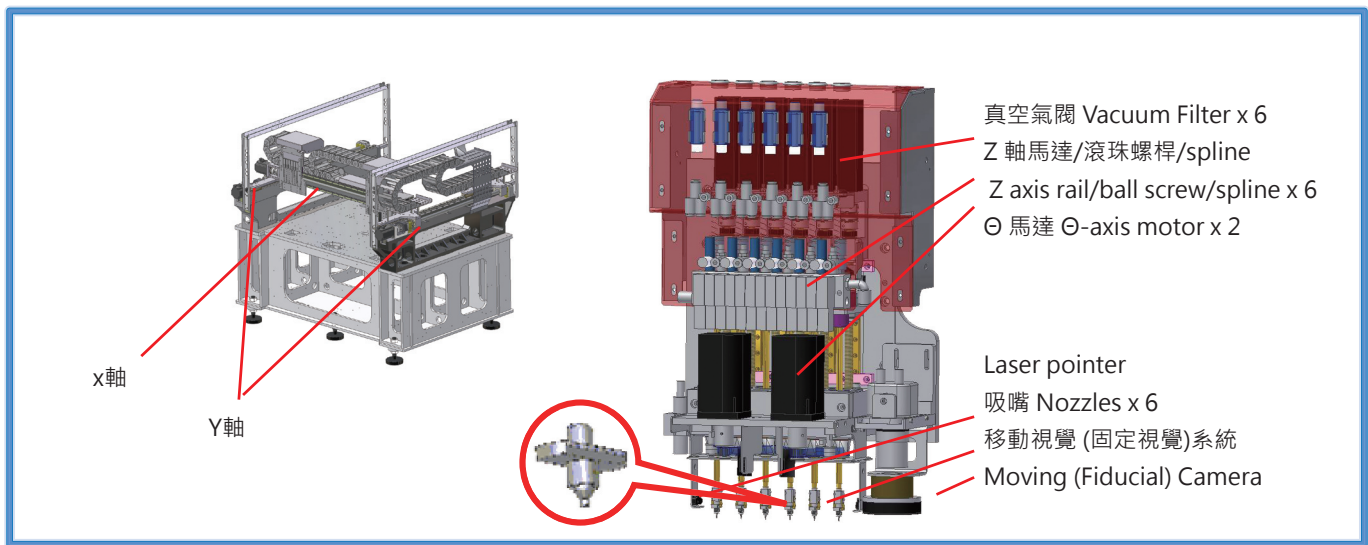
食人魚插件搭載
Shark Type LED Placement



高亮度LED Lens 組裝
HB LED Micro Lens Placement



屏蔽蓋貼裝
Shielding Case Assembly



本體 / 取置頭模組 base / head

速度及穩度兼重 High Speed and High Reliability

- Y軸採雙馬達同動架構，確保高速運轉下實裝搭載的穩定性
- 最佳化取置路線設計，確保最快搭載速度
- 採一級品牌 X-Y 軸承驅動元件，原廠品質保證機台運作的耐久性

- Y-axis applies dual-servo motor drive, ensures the base firmness during high speed robot-arm movements
- Optimized pick/place routing design, ensures best end speed
- 1st tier X-Y motion drivers, high quality and durability guaranteed

高剛性及耐用性 High Rigidity and Durability

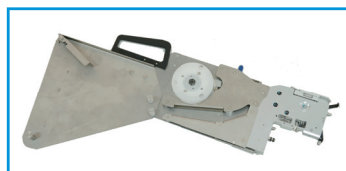
- 機台一體性鑄鑄而成
- 採蜂巢式本體結構，減少機身總重量，降低機身承載負荷
- 採FEM (有限元素分析法)模擬，防範機身高速運轉震動風險

- FEM simulation makes sure the rigidity and durability
- Welded as a monologue form, prevents decomposing under high speed motion
- Cellular framework reduces the total weight of the machine

不同取置模組搭配不同搭載需求 Assorted Head Modules for Different Application Needs

- 每個取置皆配獨立Z軸全伺服馬達控制升降，可同時吸著/辨識/貼裝高度大小不同之零件
- Θ軸採雙伺服馬達獨立控制；不同零件在同一時間可以用不同角度置放

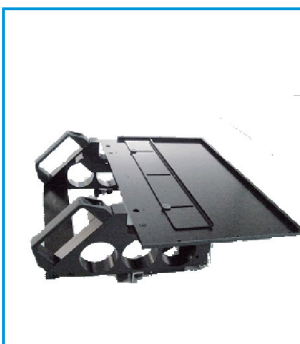
- Each Pick-and-place head has its own Z-direction servo motor, which is designed for vertical motion
- The design can support all the nozzle pick/recognize/ place components at same time.
- The system equips more than one θ motor, which ensures the system can rotate more than one component to different angles at the same time.



捲帶式供料器
Tape Feeder



管狀供料器
Stick Feeder



盤狀供料器
Manual Tray



盤式供料機構
Multi-Tray Feeder

吸料/供料系統 nozzle / feeding system

名稱 MODEL	規格 SPEC.
捲帶式供料器 Tape Feeder	8mm ~44mm
盤狀供料器 Manual Tray(L×W×D)	322.6×135.9×12.91mm(JEDEC)
管狀供料器 Stick Feeder	電動震動式供料 Vibrating based
盤式供料機構 Multi-Tray Feeder	20 層 20 layer
	自動供料 Auto Feeding

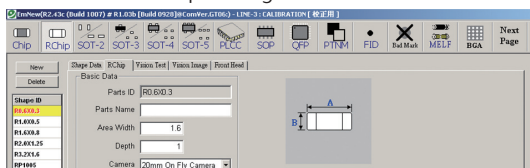
Nozzle	AN1	AN2	AN3	AN4	AN5	AN6	AN7
Applicability	0603~1005	1005~3216R	1608~3216	3216 Tantalum Diode SOT	Cylinder Cap. Tantalum Diode SOT SOP QFP~□10mm BGA~□10mm	SOP QFP~□32mm BGA~□32mm	QFP~□45mm BGA~□45mm

Nozzle For LED

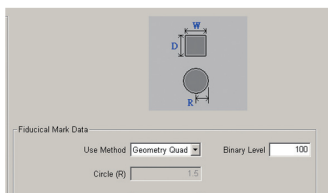
Nozzle	AL1	AL2	AL3	AL4	AL5	AL6	AL7	AL8	AL9	AL10
內徑	φ2.2	φ2.8	φ4	φ4.3	φ5.3	φ3.5	φ5.5	φ5.8	φ6.15	Connector或其他 異型(特殊吸嘴)
外徑	φ2.8	φ3.15	φ5	φ5	φ5.8	φ7.8	φ7.8	φ8	φ8	

※關於LED吸嘴詳細規格及其對應，請洽詢元利盛當地業務窗口

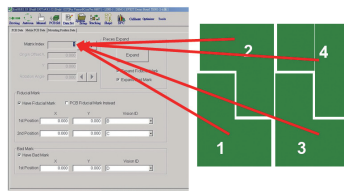
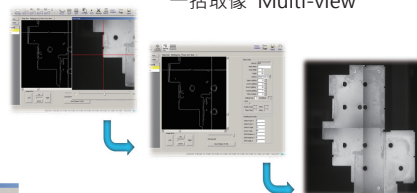
SMD 元件辨識 Shape Recognition



機板原點辨識 Fiducial Mark Recognition



一括取像 Multi-view



多聯板對應
Matrix Board

取像與視覺辨識 optical and image

多款取像及照明模組

- 系統座標校正
- 外觀辨識輔助SMD元件履歷資料建立
- 機板原點座標辨識/對位
- 快速影像擷取
- 精密取置等用途

專屬影像處理功能

- 一括取像
- 小割機板座標對應

Multi-Functional Image/Optical Module

- System Coordination Calibration
- SMD Shape Recognition/Database Setup
- PCB Origin Recognition /Alignment
- Trigger-based Snapshot Image Grabbing
- Fine Pitch SMD Mounting

Patterned Image Processing Algorithm

- Multi-View Shape Recognition
- Matrix PCB Handling



On-fly Camera

高速連續取像
High-speed continuous image capturing
白光
White Light



Fixed Camera

高解析取像
High-definition image capture system
紅光/藍光/白光
Red/Blue/White Light



Fiducial Moving Camera

機板/元件對位
White Light
Fiducial marks alignment / Position teaching

FOV	對應部品	Corresponding component
□ 13×10mm	RC 0603(mm)~	□ 11×8 mm CHIP/SOT
□ 26×20mm	RC 1005(mm)~	□ 24×18 mm CHIP/SOT/SOP

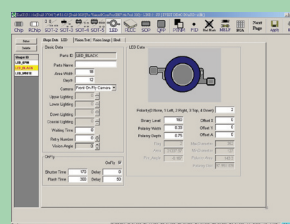
FOV	對應部品	Corresponding component
□ 15mm	RC1005~ □25mm SOP, PLCC, BGA, Connector P0.3 □25mm, 表面反射部品 (如 Shielding Case)	
□ 20mm	RC1005~ □35mm SOP, PLCC, BGA, Connector P0.4 □35mm, 表面反射部品 (如 Shielding Case)	
□ 25mm	Fix Camera 固定式視覺辨識鏡頭 (RC1005~ □45mm SOP, PLCC,BGA,Connector ,P0.5 □45mm, 表面反射部品 (如 Shielding Case)	

FOV	對應部品	Corresponding component
□ 8mm	機板 Fiducial Mark	

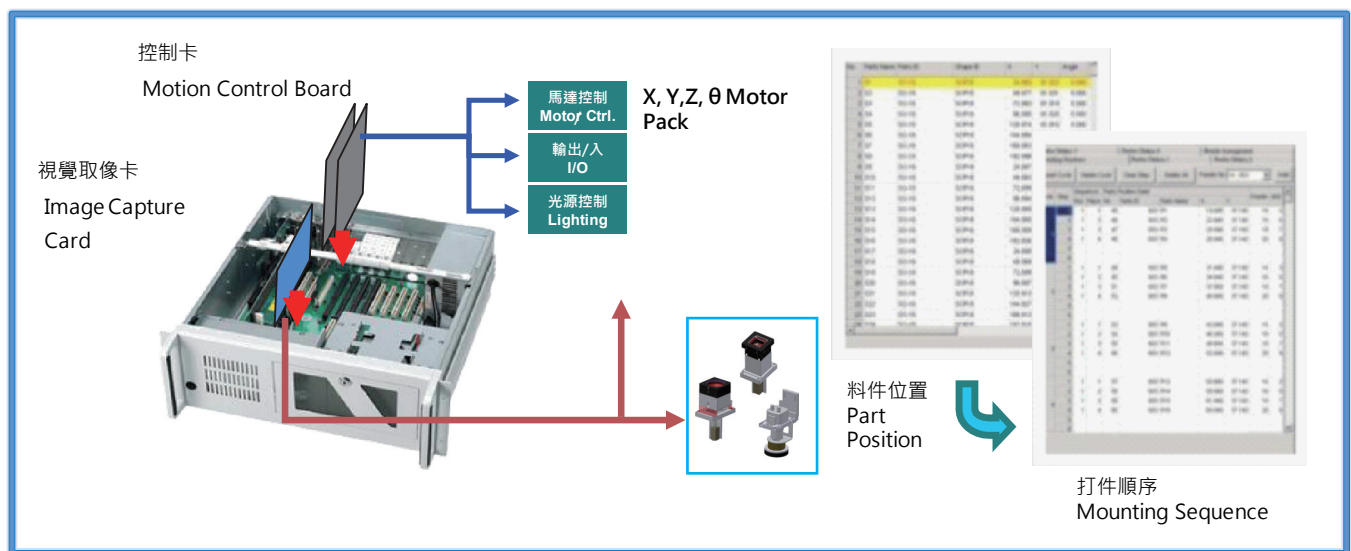
LED 取像辨識方案 Optical and Image For LED

搭配特製高亮度LED光源，針對較大LED SMD 元件仍可高速連續取像，快速搭載。

Unique lighting design supports high speed on-fly vision capture and component placement.



※詳細規格及其對應方式，請洽詢元利盛當地業務窗口



控制與排程管理 control / production management

模組化I/O控制

主機採工業級電腦開放式架構，內建模組化控制卡，可快速診斷並排除異常狀況。

可選單/3相 AC 220/380/420V

功率3KVA

- 符合CE 標準迴路保護裝置模組化控制卡
- 運轉控制卡
- 影像控制卡

Modular I/O Control System

Industrial PC based control system with module-based motion control system

Optional 1/3-phase AC 220/380/420V 3KVA.

- CE Conforming Safety Protection Modular Control Card
- Motion Control
- Image Control

最適化排程管理

內建CAD 資訊匯入功能，便於機種搭載資訊收集全自動化，機台配件配置建議，包含

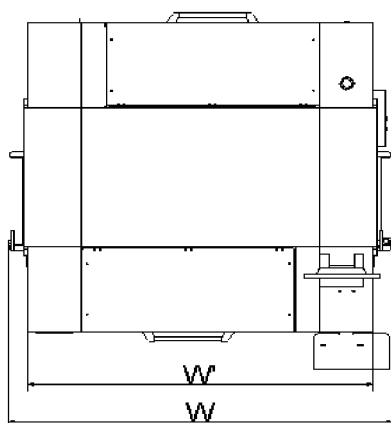
- 吸嘴
- 供料器
- 捲帶式供料器 Tape Feeder
- 手動/全自動盤狀....
- 震動式(管狀 / 盤狀)

Real-time 參數調整功能。使系統搭載中，可即時調整搭載參數

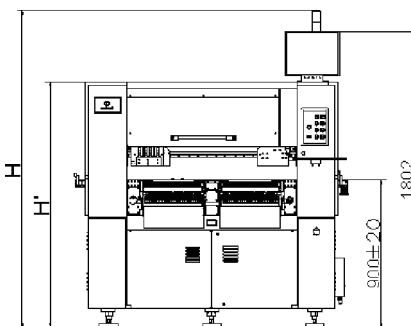
Opt. Process Management

Embedded CAD Converting Function
Auto Seq. Generator

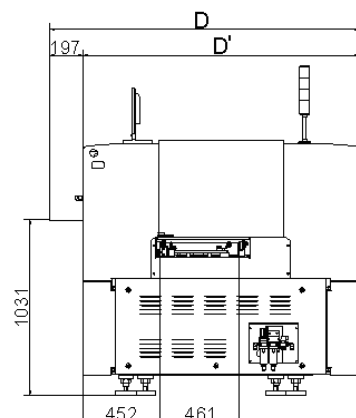
- Ease of use
 - Flexibility
 - Nozzle selection
 - Feeder selection
 - Parameter tuning
- Real-time adjustable



Top



Front



Side

規格 spec.

EM-Series Specifications:

	Model 機種 Spec. 規格 Feature 特色		EM-560M	EM-760L	EM-780L
1	Head 取置頭		6	6	8
2	Componet Height Max. 最大部品高度		15mm	15mm	10mm
3	Board Size (WxDxT) 對應基板尺寸	SMT	330 x 250 x 2 mm~50 x 50 x 0.5 mm	510 x 460 x 2 mm~50 x 50 x 0.5 mm	
		LED (註)	600 x 250 x 4mm~ 50 x 50 x 0.5 mm Option選配) (最大載重：5公斤)	1200 x 460 x 4mm~ 50 x 50 x 0.5 mm (Option選配) (最大載重：5公斤)	—
4	Feeder Lanes 使用站數		80Lanes x 8mm Tape	120Lanes x 8mm Tape	
5	Component Supply Configuration 供料方式		8~44mm Tape Feeder, Stick, Tray		
6	Tact Time(Opt.) 最佳搭載速度		0.2 sec/Chip	0.2 sec/Chip	0.12 sec/Chip
7	IPC-9850(CPH)		13,000	13,000	25,000
8	SMD Componnet Size 對應部品範圍		Chip: RC0603~3216 IC:QFP-P0.3□<20mm；QFP-P0.5□<45mm		
9	Accuracy (mm) 搭載精度(mm)		Chip±0.06mm		
			IC±0.05mm		
10	Power Supply 使用電源		3-Phase AC 200~440V ± 10% 50/60Hz		
11	Rated Power Supply 使用電力		3KVA		
12	Supply Air Source 使用氣源		0.5~1.0MPa		
13	Air Consumption 空氣消耗量(ANR)		5.0~10 kgf/cm ² approx. 150L/min Dry & Clean Air 5.0~10 kgf/cm ² 大約 150L/min乾燥、清淨空氣		
14	Actual Dimension 實際尺寸(W'x D' x H')mm		1285 x 1680 x 1833	1784 x 1811 x 1932	
15	Packing Dimension 包裝尺寸(W x D x H)mm		1250 x 1510 x 1450	1603 x 1614 x 1497	
16	Weight 設備重量(kg)		Approx. 1,300	Approx. 1,700	

※關於LED貼裝詳細規格及對應方式請洽元利盛當地業務窗口。

※為了提昇產品品質，有可能更改收錄於此型錄中的規格及內容，恕不另行通知。

