

標準規格 Standard Specification

MODEL		ECO-DM6E	ECO-DM6NE	ECO-RM6E	ECO-RM6NE
軸數	Number of stations	6	6	6	
加工範圍	Working area	560 mm x 772 mm (22**30")	635 mm x 820 mm (25**32")	560 mm x 772 mm (22**30")	635 mm x 820 mm (25**32")
主軸轉速	Spindle rotation range	200,000 (Option 300,000 rpm)		60,000 (Option 80,000 rpm)	
桌面 仕様	Table	Pin clamp System		Vacuum Table System	
壓力腳 仕様	Pressure foot	Standard : 二位置壓力腳裝置 Two position pressure foot Option : 三位置壓力腳裝置 3 Position auto tool bush change system		Standard : 毛刷式壓力腳 Brush pressure foot Option : 三位置壓力腳裝置 3 Position auto tool bush change system	
TOOL 容量/軸	Tool magazine capacity	2 Position : 300 pcs/Mag. 3 Position : 250 pcs/Mag.	300 pcs	Standard Brush P.F : 300 pcs/Mag. 3 Position : 250 pcs/Mag.	
TOOL 直徑	Tool diameter	鑽針 : 0.1~6.35 mm		鑽針 : 0.1~6.35 mm 銑刀 : FR06 0.6~3.175mm	300 pcs F80P 0.3~3.175mm
X-Y軸 位移速度	X-Y axis rapid traverse speed	Linear Motor 80 M/Min			
Z軸 位移速度	Z axis rapid traverse speed	Linear Motor 50 M/Min + Air Housing		B.S + Servo Motor 30 M/Min	
定位精度	Positioning accuracy	±0.005 mm			
加工精度(Verla條件)	Drilling accuracy	±0.015 mm		±0.015 mm	
	Routing accuracy	N/A		±0.030 mm	
	Depth accuracy	Blind hole : ±0.012 mm Back drilling : ±0.050 mm		DSFi Sensor : ±0.015 mm Probe Gauge : ±0.030 mm	
控制器	Controller	Sieb & Meyer CNC 84 Advanced S			
空壓	Pneumatic pressure	6.0~7.0 kg/cm ²			
空氣消耗量	Air consumption	800 L/min		300 L/min (Ball Bearing Spindle) 600 L/min (Air Bearing Spindle)	
集塵需求	vacuum requirement	3600 L/min , 1650mmAq			
電源需求	Power requirement	23KVA(Avg. 15KVA)	25KVA(Avg. 15KVA)	23KVA(Avg. 15KVA)	25KVA(Avg. 15KVA)
機械尺寸	Dimension(L×W×H)	4577x2543x2349 mm	5011x2623x2349 mm	4577x2543x2349 mm	5011x2623x2349 mm
機械重量	Weight	12,700 KG	14,000 KG	12,700 KG	14,000 KG

◎規格變更不另外通知。 Specification may be changed without prior notice.

標準配備 Standard Accessories

控制器	Controller : Sieb & Meyer CNC 84 Advanced S
CCD CAMERA補正機能	CCD camera compensation function
DSFi 即時斷針與板厚檢出機能 (ECO-DM)	Direct SurFace inspection (DSFi)
接觸式深度規Probe(ECO-RM)	Contact Depth Gauge (ECO-RM)
雷射式針長、針徑檢出裝置	Laser tool measurement system for length and diameter detect.
集塵閥門	Vacuum shutter
冷卻式乾燥機 (ECO-DM)	Air dryer
水冷卻裝置	Water Cooling Unit

選購配備 Options

單機集塵裝置 Stand-alone vacuum Unit
三位置壓力腳裝置(3P ATBC) for ECO-DM 3 Position auto tool bush change system(3P ATBC) for ECO-DM
三位置壓力腳裝置(3P ATBC) for ECO-RM 3 Position auto tool bush change system(3P ATBC) for ECO-RM
真空桌面 for ECO-DM Vacuum table for ECO-DM
Pinclamp 夾板裝置 for ECO-RM Pinclamp for ECO-RM
自動R點 for ECO-RM QUIK System for ECO-RM
CCD Camera 三色光源 CCD Camera R.G.B light source

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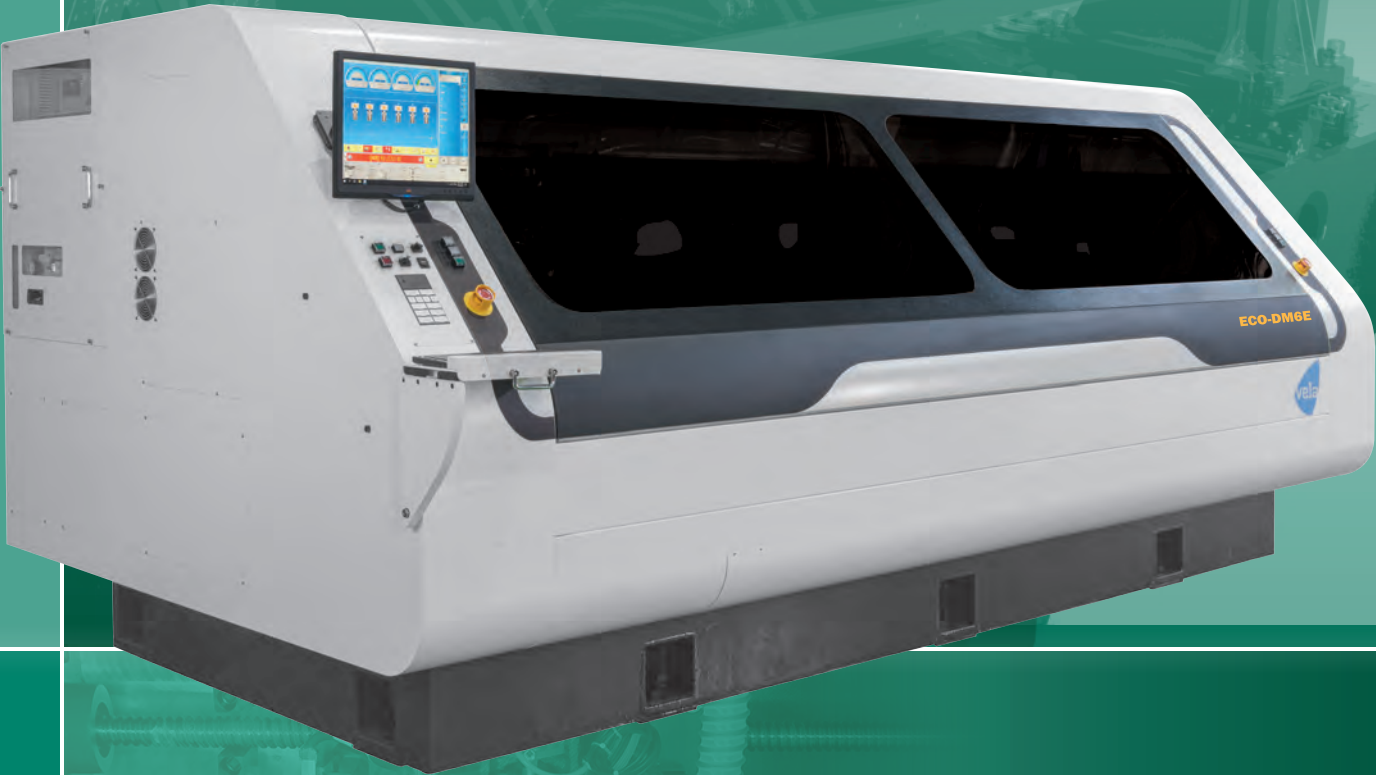
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PCB 各軸獨立CCD對位
鑽孔/成型機

PCB Drilling/Routing with
Independent Working Station Machine

ECO-DM/RM Series
Performance & Accuracy



[我們提供最佳信賴性製品]



ECO-DM/RM Series

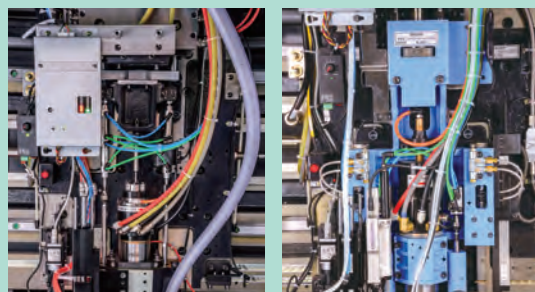
獨立線性驅動系統+獨立桌面 Independent Linear Driver System & Station

◆ECO-DM Series Z軸機構：線性馬達 + Air Housing

◆ECO-RM Series Z軸機構：伺服馬達 + 螺桿+高精度第2光學尺

ECO-DM Series Z Axis Structure: Linear Motor and Air Housing

ECO-RM Series Z Axis Structure: AC Servo Motor with Ballscrew and High Precision Linear Scale

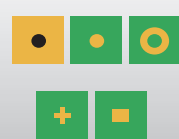


高精度 CCD Camera 自動對位 High Precision CCD Camera Automatic Alignment

◆CCD Camera 多種形狀自動對位(靶點&校正機能)

CCD Camera Support Multi-Shape (Target and Correction Function)

多種形狀 自動對位識別 能力



2個 / 4個 / 板邊 靶標

對位精度 $\pm 5 \mu m$

有效視野 10X8 mm

高精度SLM機能深度控制 +DSFi Sensor High Precision SLM Depth Control with DSFi

◆高速DSFi 檢測裝置

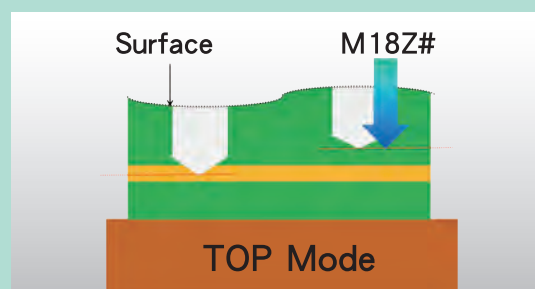
Rapid Response Detector DSFi Sensor

◆深度工法 多模式選擇SLM機能 Multi-Mode for Depth Control Function

ECO-DM Series : DSFi Sensor

ECO-RM Series : Probe Sensor

DSFi Sensor (Option) for F80P



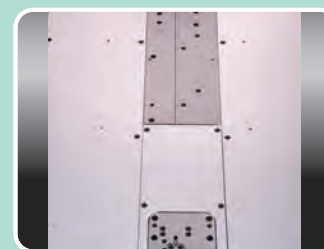
高剛性、低振動床台結構設計 High stiffness、low vibration Construction

使用高級鑄鐵為主要材質，經多次電腦有限元結構及模態分析，機械剛性高，吸震性良好，床台不易變形，本體結構全部為鑄鐵一體成型，膨脹係數相同，可確保小孔徑高加工精度。

The main material is high grade cast iron. Utilizing FEM structural analysis and modal analysis, our structure conforms to the high rigidity and excellent vibration-damping properties. The bed is not easy to deform. The one-piece MEEHANINT casting structure provide the same coefficient of expansion to ensure high accuracy of small holes.

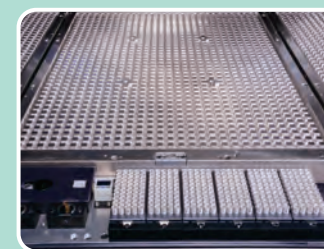


完備的機能式樣 Complete the functional style



定位銷夾持機構(ECO-DM)
Pin Clamp System

板面不易隆起，加工穩定提高
Board face is not easy uplift.
Improve processing stability.



真空桌面 (ECO-RM)
Vacuum Table

加工基板可容易固定
Fix the PCB more easily.



DSFi即時斷針與板厚檢出機能
Direct SurFace inspection (DSFi)

加工中能即時斷針檢出與基板厚度檢出(導電層)，可對應鍍膜鑽針，鍍膜層不會撥離。(不導電的鑽針則無法使用)
Broken tools will be instant detection in the processing Detecting coated drill bits, The coating will not be removed. (Non-conductive drill bits cannot be used.)



雷射測徑系統
Laser Station

非接觸式鑽針檢測(鑽徑、刃長、偏擺)
The diameter, length and runout of tool can be measured with non-contact laser sensor.



CCD CAMERA補正機能
CCD camera compensation function

使用CCD CAMERA補正漲縮、偏移及角度
Use CCD camera to compensation the scaling, offset and rotation.



盲鑽、背鑽加工機能
Depth drilling / Back drilling Function

DSFi Sensor 和 Z軸光學尺組合高精度定深加工
High precision depth control with DSFi sensor and Z axis linear scale.



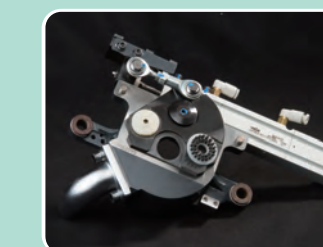
CCD CAMERA三色光源(選購)
CCD Camera R.G.B light source

可對應不同材質的表面提高對位精度
Can correspond to surfaces of different materials Improve alignment accuracy



三位置壓力腳裝置(選購)
FOR 30萬轉
3 Position auto tool bush change system(3P ATBC)

具有氣浮軸襯的三位置壓力腳裝置(大徑軸襯/換針位/小徑軸襯)
Three-position pressure foot device with hovering bush (Large diameter bush / Tool change / Small diameter hovering bush)



三位置壓力腳裝置(選購)
FOR 8萬轉
3 Position auto tool bush change system(3P ATBC)

具有毛刷與軸襯的三位置壓力腳裝置(毛刷/換針位/軸襯)
Three-position pressure foot device with (brush/Tool change/Bush)