



臺灣龍門加工中心
Awea Double Column Machining Center



鑽床
Boring Machines



加工中心
Machining Centers



強力銑床
Heavy Duty Milling Machines



高頻處理
Heat Treatment



裝配綫
Assembly Line



平面磨床 Surface Grinder



臺灣龍門導軌磨床
Taiwan Double Column Precision Grinder 2



臺灣龍門導軌磨床
Taiwan Double Column Precision Grinder 1



鑄造廠
Foundry

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• 本公司保有產品設計變更權力。當產品規格變更時恕不另行通知。
All specifications and designs are subject to change without prior notice.

上海建亞
Shanghai Jianya
福建鑄造廠 Fujian Foundry
金浦機械 Jinpu Machine
山鋒機械
SAN Machine
建亞工業有限公司
KINAH(HK)

SP2009
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KINAH
建亞



CE

創新 · 可靠 · 實用
Innovative · Reliable · Practical

設計印刷: 卓馬廣告 0755-82911878

本公司機床主軸和絲杆為100%臺灣製造
All spindles and leadscrew sets are 100% Taiwan imported.

- 選配:
- 所有機型X軸行程可加長到1000mm(包含走刀器)。
 - 所有機型高度可加高150mm。
- Optional:
- All models X-axis travel can be extended to 1000mm(w/power feeder).
 - All models height can be increased by 150mm.



主要參數 Specifications:

以上圖片包含一些特別附件 Some optional accessories are included in above pictures

型號 Model				M2		M3			M4A			M4		M5		M6					
工作臺 Working Table	面積 Dimensions	標準 Standard 加長 Extended	mm	(228×1067)9" ×42" 9" ×50"		(254×1270)10" ×50" 10" ×52" /10" ×54"			(254×1270)10" ×50" 10" ×52" /10" ×54"			(254×1320)10" ×52" 10" ×54"		(280×1370)11" ×54"		(305×1370)12" ×54" 12" ×58"					
	縱向行程 (X-axis) Max. Longitudinal Travel	自動 Auto 手動 Manual	mm	607 ▲ 727 ▲	810 ▲ 930 ▲	730 ▲ 850 ▲	780 ▲ 900 ▲	830 ▲ 950 ▲	730 ▲ 850 ▲	780 ▲ 900 ▲	830 ▲ 950 ▲	750 ▲ 870 ▲	800 ▲ 920 ▲	770 ▲ 890 ▲	770 ▲ 890 ▲	870 ▲ 990 ▲					
	橫向行程 (Y-axis)Max. Cross Travel		mm	305 ▲		400 ▲			400 ■			430 ■		455 ■		460 ■					
	垂直行程 (Z-axis)Max. Vertical Travel		mm	350 ▲		400 ▲			400 ▲			430 ■		460 ▲		460 ■					
	滑枕行程 Ram Travel		mm	340		550			550			550		610		620					
主軸 Spindle/Quill	主軸錐度 Spindle Taper Type			R8		R8(可選配NT30/NT40 optional)												NT40			
	主軸行程 Quill Travel		mm	127																	
	主軸進給 Quill Feed		mm/rev	0.04, 0.08, 0.15																	
主軸轉速 Spindle Speed	雙速級數 Step Number		steps	16														16			
	低 速 Low Range		rpm	70, 110, 180, 270, 600, 975, 1540, 2310														80-650			
	高 速 High Range		rpm	140, 220, 360, 540, 1200, 1950, 3080, 4620														660-5440			
T型槽 T-Slot	槽數×寬×間距 Slot No.× Width × Pitch		no.×mm×mm	3×16×63														3×16×76		3×16×80	
主電機 Motor	電壓 Voltage		V	220 / 380 / 415 / 440																	
	頻率 Frequency		Hz	50 / 60																	
	功率 Horsepower		HP	3												5					
其它 Other	機床外型尺寸(長×寬×高) Machine Dimensions(L×W×H)		mm	1340×1680×1950		1500×1680×2140			1500×1680×2140			1600×1730×2210		1500×1780×2300		1600×1780×2400					
	淨重Net Weight		Kg	1050		1200			1310			1400		1500		1650					

• 注: 上述各型號銑床伸縮臂、床身、底座改為箱體結構, 升降臺改為雙壁結構, 整機剛性增強; 升降臺軌道加寬, 滑枕座、鞍座加長, 提高了整機精度。
The above machines RAM, COLUMN, BOTTOM and KNEE are modified with box and double wall structure respectively to increase rigidity; Extended SLIDEWAYS, TURRET, SADDLE increase machine precision.

▲ 燕尾導軌 Dovetail Way ■ 方形導軌 Square Way



M3-Top



M4-Top



M6-Top



加長型滑枕座
Extended Turret

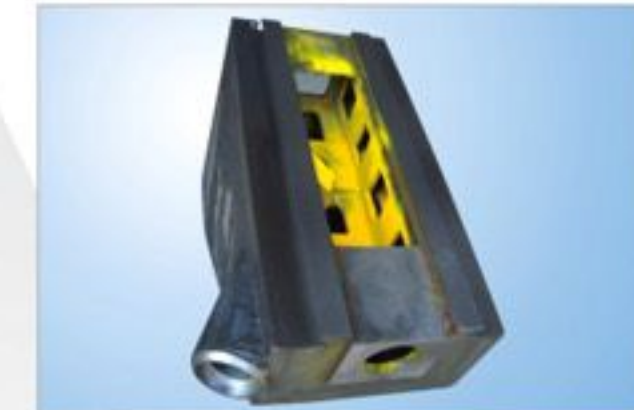


升降臺寬軌
Extended Slideways

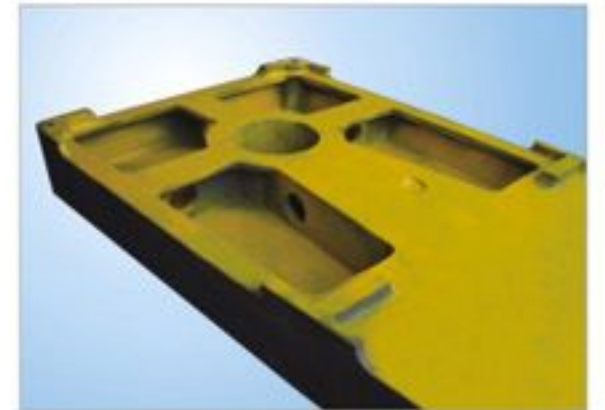


加長型鞍座
Extended Saddle
M3:540mm
M4:570mm
M5:600mm
M6:600mm

床身箱體結構，增加鋼性
COLUMN:box structure,increase rigidity



升降臺雙壁結構，增加鋼性
KNEE:double wall structure,
increase rigidity



底座箱體結構，增加鋼性
BOTTOM:box structure,
increase rigidity

無段變速機頭
Variable Speed Head



立鋼型機頭
Side Brake Heavy Duty Head



These machines are fully loaded with following additional accessories

Upgrade to Variable Speed Head
Upgrade to X/Y Ballscrew Set
Power Drawbar
3-axis ES-11 Easson DRO
Spindle Protection Shield
X/Y Align Power Feeders
Z-axis Auto.Elevationg System
Automatic Lubrication System
Coolant System
52pcs Clamping Kits
6"Machine Vise
Collet Set
CE compliance Electrical Cabinet



自動升降系統(M6為標準)
Automatic Elevating System(Standard for M6)



三臺包裝
3 Machines on a pallet



裝車
Loading



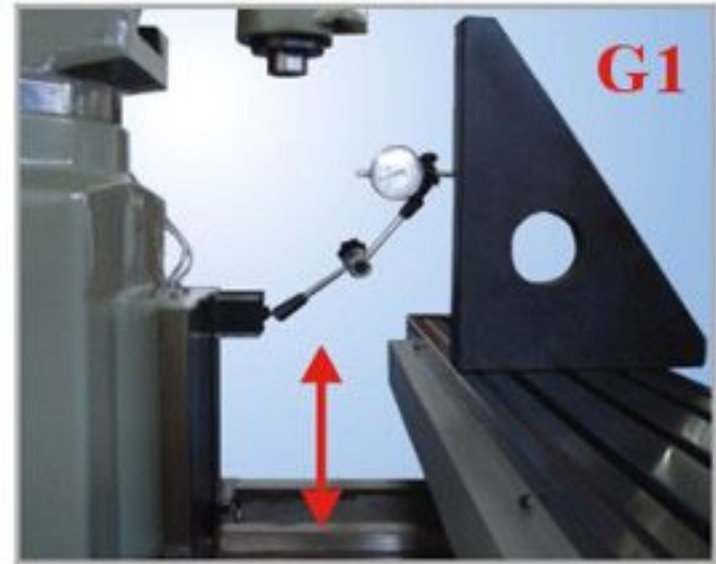
木包裝

特點 Characteristics:

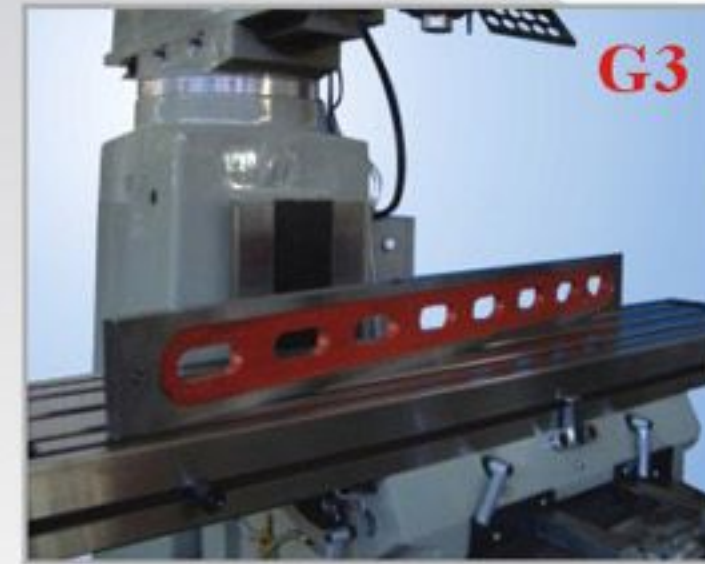
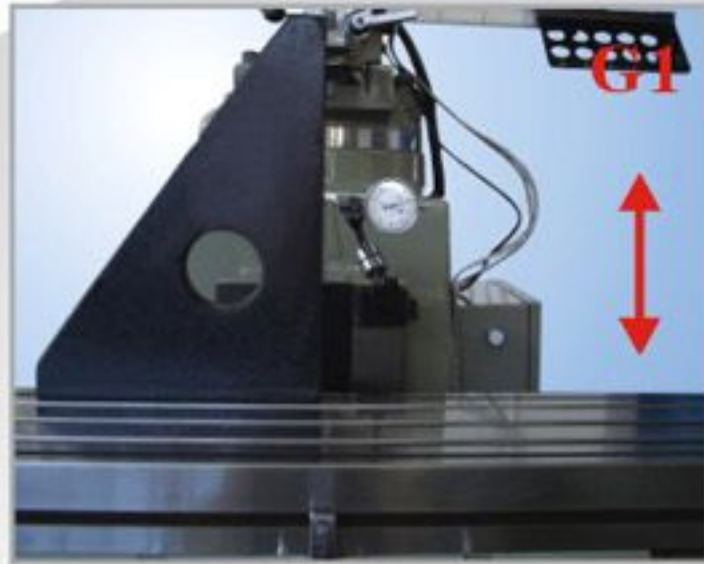
- ▶ 本機結構緊湊，體積小，靈活性高，銑頭能左右回轉 90°，前后回轉 45°，滑枕不僅能前后伸縮，並可在水平面內作 360° 回轉，因而大大擴大了機床的有效工作範圍。
- ▶ 機臺採用 SC250 鑄鐵，結構剛強，不變形，穩定性佳。主軸採用 40 鎢合金鋼制作，經調質熱處理精密研磨后，配以精密級斜角滾珠軸承組合，切削力強，精度特佳。
- ▶ 三軸角牙座螺母採用高級磷青銅 [PBC-2] 制作，耐磨性佳，使用年限長。
- ▶ X、Y、Z 軸滑道貼附 TURCITE-B 耐磨片，操作輕巧，磨損率低，經久耐用。
- ▶ 工作臺面，工作臺、升降臺、床身三軸導軌面經淬火加硬后精密研磨，不易磨損。配備手動油泵，對工作臺，升降臺集中潤滑。
- ▶ 配備改進型電氣箱和控制櫃，帶有 110V、220V 輸出插座。
- ▶ 主軸可選用 R8, NT30, NT40。

- ▶ The machine is of excellent configuration with wide working range and small area requirement. Head swivel angles are 90° left/right and 45° front/back. Ram not only is movable in front and back direction but also can be rotated 360° horizontally to greatly extend the machine's working range.
- ▶ The machine body is made of SC250 Casting with maximum rigidity and reliability. Spindle is made of Chrome Molybdenum Steel, tempering and carburizing heat treated. Spindle is assembled with precision Ball Bearing that provides wide cutting range and high precision.
- ▶ Three axes Nuts on the screws are made of PBC-2 for maximum wear resistance and long lifetime.
- ▶ X, Y, and Z axes slideways are laminated with wear resistant material, Turcite-B for easy operation, minimum wear out and long durability.
- ▶ Working Table and Slideways are treated with Inductive surface hardening and precision ground for maximum wear resistance. Equipped with manual oil lubrication system for concentrative lubrication on Working Table and knee.
- ▶ Equipped with modified Control Panel and Electrical Cabinet with 110V and 220V output sockets.
- ▶ R8, NT 30, NT 40 Spindle Tapers are available.

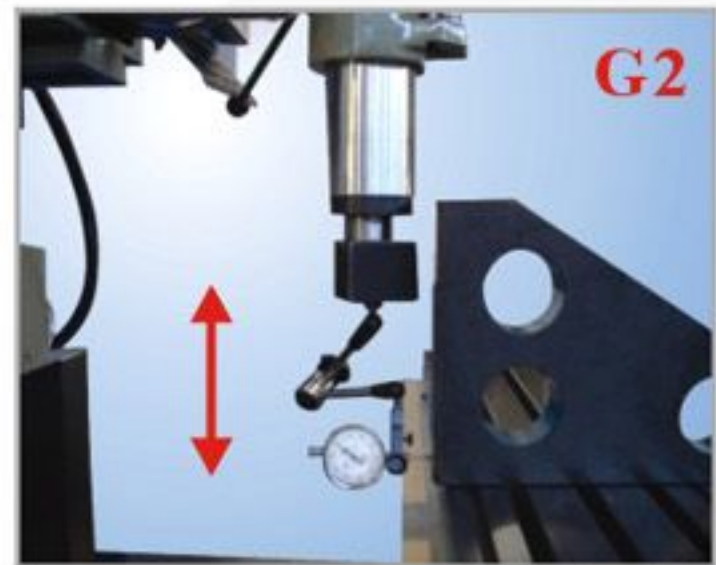
檢驗 Inspection



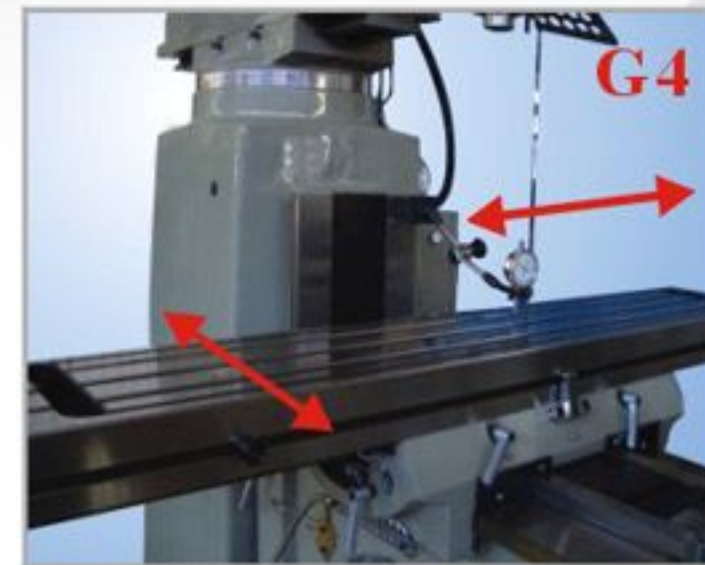
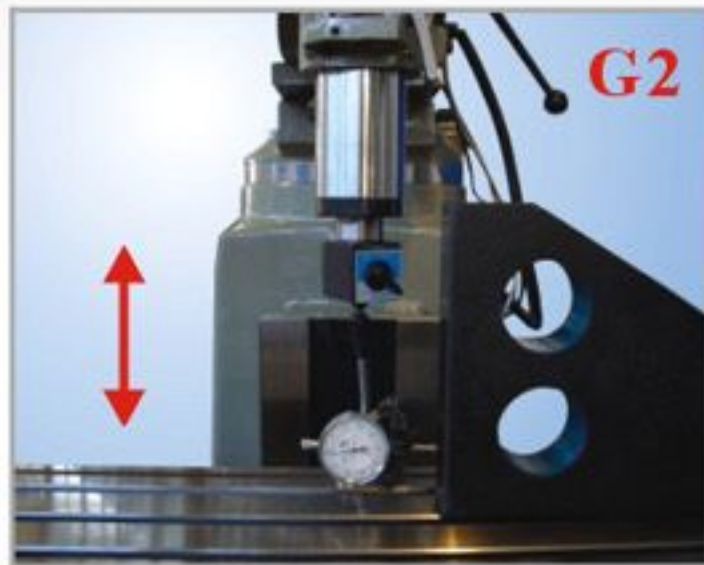
工作臺面對床身垂直導軌面的垂直度
Vertical movement of knee to work table surface
a.0.025/300mm b.0.025/300mm



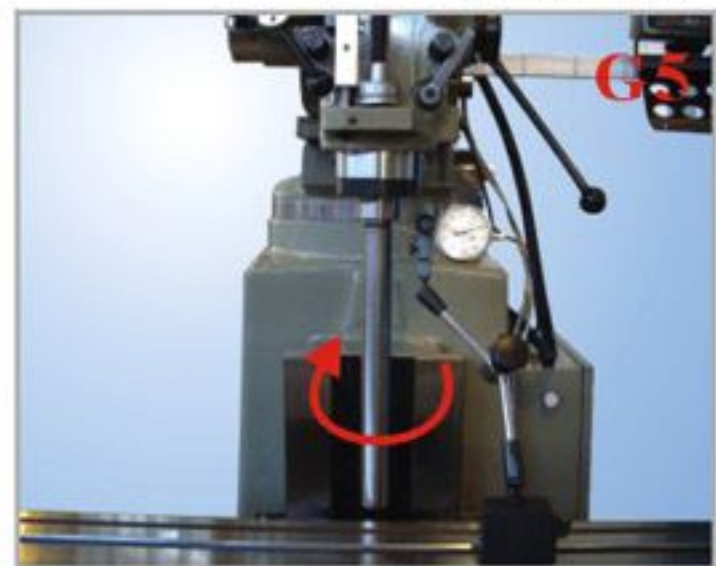
工作臺面的平面度
Parallelism of work table surface
a.0.040/1000mm b.0.020/300mm



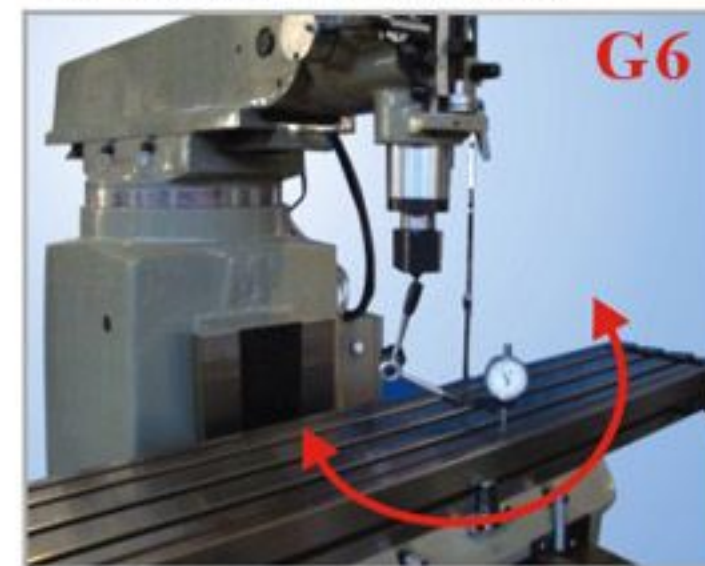
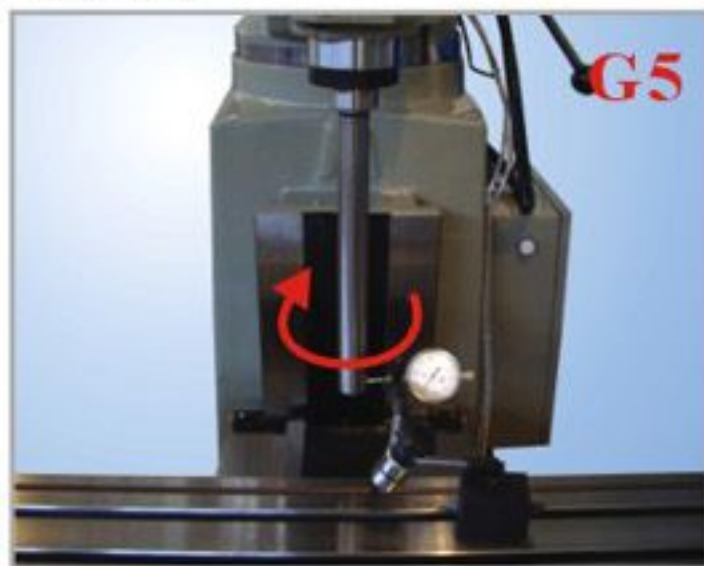
主軸套筒垂直移動對工作臺面的垂直度
Squareness of Quill travel to work table surface
a.0.020/125mm b.0.020/125mm



工作臺移動對工作臺平面的平行度
Parallelism of work table to its movement
a.0.025/300mm b.0.025/300mm



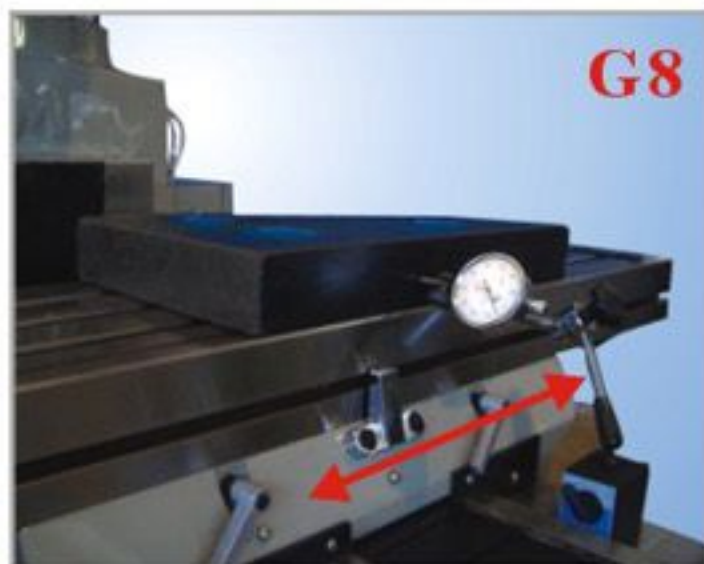
主軸錐孔軸綫的徑向跳動
Spindle nose & face run-out
a.0.010mm b.0.035mm



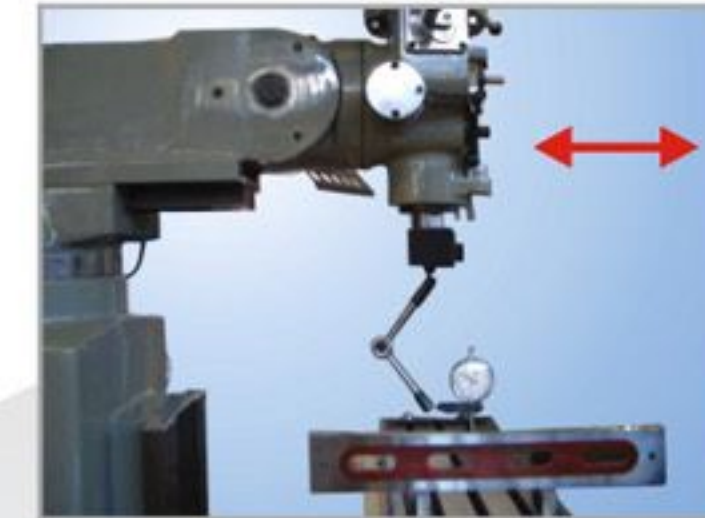
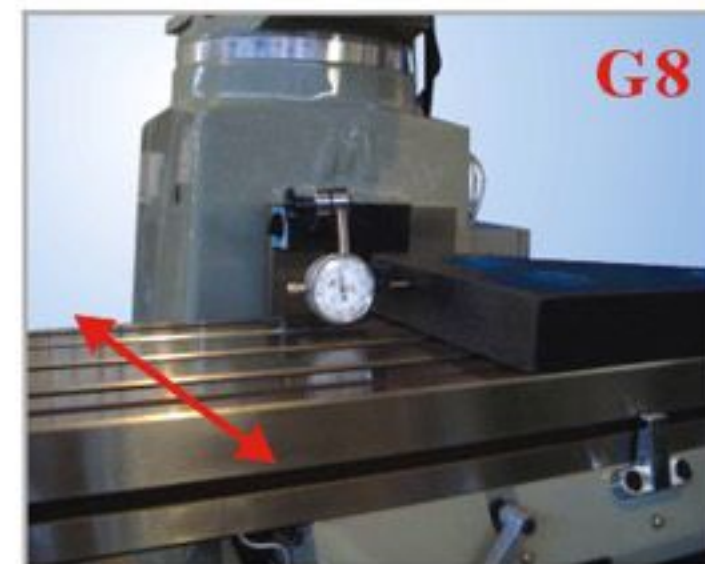
主軸旋轉軸綫對工作臺面的垂直度
Perpendicular of spindle rotation to work table surface
a.0.025/300mm b.0.025/300mm



工作臺縱向移動對中央或基準T形槽的平行度
Parallelism of table longitudinal movement to T-slot surface 0.015/300mm



工作臺橫向移動對工作臺縱向移動的垂直度
Squareness of table cross movement to longitudinal movement 0.020/300mm



滑枕與工作臺面平行度
Parallelism of ram travel & work table



手感度
Torque testing



噪音計測試機頭聲音
Detecting noise with noise-meter



轉速計測試主軸速度
Checking spindle speed with digital tachometer



X軸試切削
X-axis Test Cut



Y軸試切削
Y-axis Test Cut

配件 Accessories



橫銑裝置
Horizontal Milling Attachment



主軸防護罩
Protection Shield



配件
Accessories

標準配件

- 拉杆
- 工具箱及調整工具
- 前后擋渣橡皮
- 電氣箱和控制器
- 手動油泵
- 標準石英燈

Standard Accessories:

- Draw Bar
- Tool Box and Tools
- Front and back Machine Guards
- Electrical Cabinet & Control Panel
- Manual Oil Lubrication System
- Standard Halogen Work Lamp

特別配件

- 電子自動進刀器
- 數顯尺
- 平口鉗
- 嗦咀
- 碼鐵
- 豪華石英燈
- 冷卻系統
- 接水盤
- 自動油泵系統
- 氣動換刀系統

Optional Accessories:

- Power Feeder
- Digital Readout System
- Machine Vise
- Collet Set
- Clamping Kits
- Luxury Halogen Work Lamp
- Coolant System
- Chip Pan
- Auto-Oil Lubrication System
- Power Drawbar System



M7

此電子尺為特殊附件
This DRO is additional

臺灣製造

臺灣製造

電器箱
Electrical Cabinet後視圖
Far View From The Back臥主軸轉速手柄
Handle for Horizontal
Spindle SpeedISO40齒輪立銑頭
Gear Type Vertical ISO40
Milling Head

機型 Model Number		M7S 有段型 Step-Pulley	M7V 無段型 Vari. Spd.	M7H 立鋼型 Heavy Duty	M7G 齒輪型 Gear
工作臺 Work Table					
工作臺尺寸 Work Table Size	mm	305x1370	305x1370	305x1370	305x1370
T型槽(數x寬x距) T-Slot(No. x W x Pitch.)	mm/min	3x16x80	3x16x80	3x16x80	3x16x80
機床最大負荷 Max. Load of Table	kgs	500	500	500	500
X軸自動進給速率 X-axis Feedrate	mm/min	0-2000	0-2000	0-2000	0-2000
Y軸自動進給速率 Y-axis Feedrate	mm/min	0-2000	0-2000	0-2000	0-2000
Z軸升降速率 Z-axis Feedrate	mm/min	1150	1150	1150	1150
左右行程 X-axis Travel	mm	950	950	950	950
前後行程 Y-axis Travel	mm	400	400	400	400
上下行程 Z-axis Travel (Knee)	mm	400	400	400	400
伸出懸臂 Ram Travel	mm	450	450	450	450
主軸 Spindle					
主軸速度(炮塔型立銑頭) Vertical Spindle Speed	rpm	80-5440 (16段變速/16steps)	60-3750 (無段變速/infinity)	60-3620 (10段變速/10steps)	75-3600 (16段變速/16 steps)
側主軸速度 Horizontal Spindle Speed	rpm	60-820 (9段變速/ 9 steps)	60-820 (9段變速/ 9 steps)	60-820 (9段變速/ 9 steps)	60-820 (9段變速/ 9 steps)
主軸錐孔斜度 Spindle Taper		ISO40	ISO40	ISO40	ISO40
主軸升降行程 Spindle Travel	mm	125	125	150	140
主軸每轉進給速度(炮塔型立銑頭) Spindle Feedrate		0.045/0.086/0.142	0.045/0.086/0.142	0.05/0.10/0.15	0.035/0.07/0.14
橫主軸馬達 Horizontal Motor	kw	4	4	4	4
立主軸馬達 Vertical Motor	kw	3.75	3.75	3.75	3.75
套筒直徑 Quill Diameter	mm	φ 105	φ 105	φ 105	φ 110
頭部旋轉角度 Angle of Head Movement		± 45°	± 45°	± 45°	± 45°
工作臺與主軸之距離 Distance btw. Table & Spindle End	mm	250-700	250-700	250-700	250-700
主軸中心至機身距離 Distance btw. Column & Spindle Center	mm	180-630	180-630	180-630	180-630
電機 Motor					
工作臺左右移動(X軸) X-axis Servo Motor	kw	1.3(Yaskawa)	1.3(Yaskawa)	1.3(Yaskawa)	1.3(Yaskawa)
工作臺前後移動(Y軸) Y-axis Servo Motor	kw	0.85(Yaskawa)	0.85(Yaskawa)	0.85(Yaskawa)	0.85(Yaskawa)
升降(Z軸) Z-axis Motor (Knee)	kw	0.75	0.75	0.75	0.75
冷却泵浦 Coolant Pump	W	90	90	90	90
潤滑泵浦 Oil Pump	W	80	80	80	80
其它 Other					
機械尺寸(長×寬×高) Machine Dimensions	mm	2200 × 2140 × 2500	2200 × 2140 × 2500	2200 × 2140 × 2500	2200 × 2140 × 2500
淨重 Machine Weight	kgs	3000	3000	3000	3000

X、Y軸伺服電機
X & Y Servo Motor (Yaskawa)自動升降系統/自動油泵系統
Rapid Z (Induction Motor) / Auto-Lube Sys.特別配件—電子尺
Optional DRO / Swing Bar Control Panel

CNCM3



CNCM4



CNCM5



CNCM6



能真正長久保持精度的數控(搖臂)銑床
A truly long-lasting accurate CNC milling machine

專利產品

專利號(Patent No.): ZL 2006 20200398.4
真圓度(Roundness): 0.02mm
重複定位精度(Repeatability Accuracy): 0.01mm



CNCM6EX

CNCM6鞍座加長型
CNCM6 Extended saddle

型號 Model			CNCM3	CNCM4	CNCM5	CNCM6	CNCM6EX
工作臺 Working Table	面積 Dimensions	mm	254 × 1270	254 × 1320	280 × 1370	306 × 1370	306 × 1370
	縱向行程 Max. Longitudinal Travel	mm	700	720	740	740	750
	橫向行程 Max. Cross Travel	mm	340	380	400	420	420
	垂直行程 Max. Knee Travel	mm	380	400	445	450	450
	槽數及寬度 Slot No. X Width	No.x mm	3 × 16				
	槽間距 Pitch	mm	63		76	80	
	允許最大承載 Max.Load	Kg	250		300		350
主軸 Spindle	行 程 Max.Spindle Travel	mm	100		120		
	主軸錐孔 Spindle Taper Type		R8 (NT30 optional)		NT40		
主軸轉速 Feed Speed	有段 Step-pulley	rpm	70-4620		80-5440		
	無段 Variable Speed	rpm	50-4200		60-3750		
	伺服 Servo	rpm	80-5000				
滑枕 Ram	行 程 Max.Ram Travel	mm	500(伸縮臂 Ram & Turret Type)				
進給速度 Feed Rate	銑削進給速度範圍 Cutting Feed Rate	mm/min	0-2000				
	快速移動速度 Rapid Feed Rate	mm/min	0-7500				
主軸電機 Main Motor	電壓 Voltage	V	220/380/415/440				
	頻率 Frequency	Hz	50/60				
	功率 Power	Kw/HP	3.7/5				
X、Y軸電機 X/Y Motor	功率 Power	Kw	1.2(標準 standard),0.85(安川 Yaskawa)				
	扭矩 Torque	N.m	6(標準 standard),5.39(安川 Yaskawa)				
Z軸電機 Z Motor	功率 Power	Kw	1.2(標準 standard),0.85(安川 Yaskawa)				
	扭矩 Torque	N.m	4(標準 standard),5.39(安川 Yaskawa)				
定位精度 Accuracy	單 向 Positioning	mm	0.02/300				
	重 復 Repeatability	mm	0.01				
外型尺寸 (長 × 寬 × 高) Dimensions (L × W × H)	有段 Step-pulley	m	1.9 × 1.9 × 2.35	2 × 1.9 × 2.35	2 × 2 × 2.45	2 × 2.1 × 2.5	2 × 2.1 × 2.5
	無段 Variable Speed	m	1.9 × 1.9 × 2.4	2 × 1.9 × 2.4	2 × 2 × 2.5	2 × 2.1 × 2.55	2 × 2.1 × 2.5
	伺服 Servo	m	1.9 × 1.9 × 2.45	2 × 1.9 × 2.45	2 × 2 × 2.55	2 × 2.1 × 2.6	2 × 2.1 × 2.6
淨重 Net Weight		Kg	1450	1650	1750	1900	2050

控制器 Controllers:



廣數 GSK 928/983



凱恩帝 KND 1000M II



寶元 LNC 310i/M520H



新代 Syntec 940i



Fanuc oi-mate MC

機頭例子 Milling Heads Examples:

機型 Models	方套筒 Quill Version	主軸變速 Machine Head	機頭掛置 Turret/Fix	共60種 60 models
CNCM3 CNCM4 CNCM5 CNCM6 CNCM6EX	綫軌L Linear Guideway - L 硬軌B Boxway - B	有段S Step Pulley - S 無段V Variable Speed - V 伺服F Servo - F	伸臂型T Turret - T 固定型F Fix - F	

例如: CNCM4- 綫軌 有段電機- 伸臂型 編號: CNCM4-LS-T For example: CNCM4 with linear guideway, step-pulley and turret. Model No.: CNCM4-LS-T



BS-T(R8/NT30)

硬軌B Boxway - B
有段S Step Pulley - S
伸臂型T Turret - T



LV-F(NT40)

綫軌L Linear Guideway - L
無段V Variable Speed - V
固定型F Fix - F



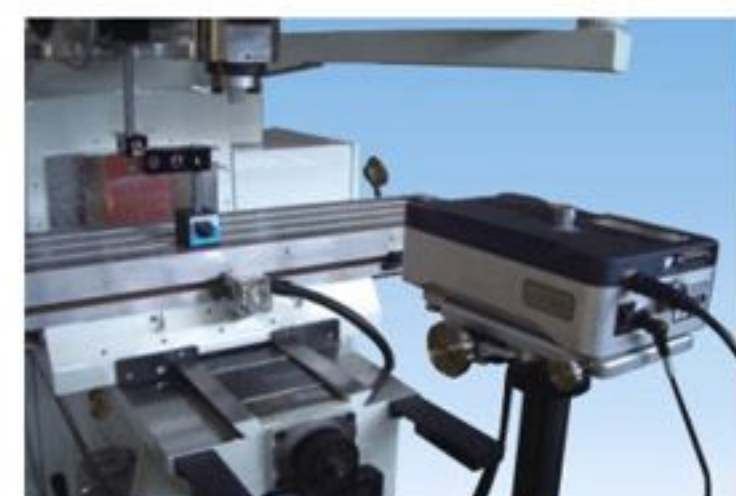
LF-T(R8/NT30)

綫軌L Linear Guideway - L
伺服F Servo - F
伸臂型T Turret - T
氣動換刀系統 Power Drawbar System

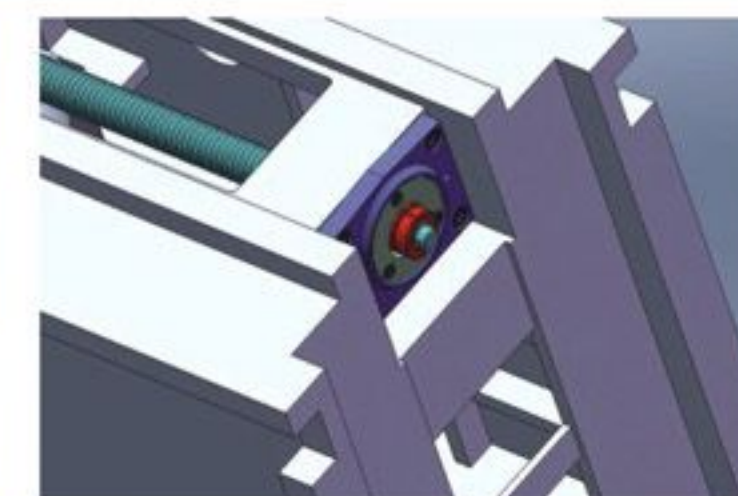
其它 Other:



固定型
Fix Type



英國雷尼紹XL-80激光干涉儀
Renishaw XL-80 laser measurement system.



X/Y軸滾珠絲杆預拉式設計
Pre-loaded X/Y-axis ballscrew.



高壓及低壓電器箱分開-減少電波干擾, 避免過熱。High and low voltage Electrical cabinet-Reduce interference & avoid components overheat.



本公司專利產品— 數控(搖臂)銑床性能介紹

本公司經多年的自主研發, 開發出的數控銑床徹底摒棄了機頭圓套筒結構(圓套筒與頭殼體直接磨擦—易磨損, 改為數控銑床根本無法保持精度), 機頭改為方套筒并配綫軌或硬軌, 完全滿足了精加工或重切削, 同時機身結構也做了很大的改變, 整臺機床的精度都大幅度提高了, 具體優點如下:

一、機頭改變

- 採用方套筒配綫軌—適合精加工, 可長期保持精度。
- 採用方套筒配硬軌—不但適合重切削, 精度和耐用遠比圓套筒高。
- 方套筒上下升降採用臺灣滾珠絲杆和預拉結構, 保證了Z軸精度。
- 方套筒升降(主軸升降)採用伺服馬達—運動精度可靠。
- 機頭主軸電機全部配5匹馬達—不論是綫軌或硬軌, 切削力全面加大。
- 主軸電機也可採用伺服馬達—可以鑽孔、剛性攻牙、鉸孔、搪孔。

二、伸臂改變

- 本公司在伸臂加工方面也下了功夫—採用精銼刮, 鑲條可調鬆緊(如同工作臺精度), 伸臂配合面的精度大幅度提高, 既防止振動又大大提高了切削力。
- 選用伸臂及圓盤座—可保留萬能搖臂銑床頭部騰前騰後以及圓盤座擺左擺右的功能, 擴大加工範圍。
- 也可選擇伸臂和圓盤座改用固定頭(彎頭)—提高機頭的精度和剛性。

三、機身改變

- X軸(左右移動), Y軸(前後移動)全部採用臺灣雙螺母預拉結構滾珠絲杆, 精度高, 經久耐用, 不跑精度。
- X、Y軸全部採用伺服馬達—運動精度可靠、不失步。

四、機體結構改變

- 機身採用十字筋—箱體結構, 剛性好。
- 升降臺採用雙層壁—防止中間內縮、精度可靠。
- 鞍座加長和圓盤座加長—擴大了左右移動、前後移動的加工精度。

五、潤滑系統改變

- 整機潤滑(機頭、機身)改用電動—自動定時潤滑。

六、防護及擋水裝置

- 升降臺面配伸縮防護罩—保護軌道面。
- 大型接水盤、床身兩傍大型擋水板、工作臺面防水罩—有效控制冷卻液回收。

七、電控裝置

- 床身兩傍分掛兩個電控箱—強電弱電分開, 電控系統免受幹擾。
- 吊掛式操作箱—使用方便。
- 日本系統、臺灣系統、國產系統根據需要選配。

八、機型有60種—任選擇(見圖表)。每機種可選用氣動換刀

機型	方套筒	主軸變速	機頭掛置	共60種
CNCM3 CNCM4 CNCM5 CNCM6 CNCM6EX	綫軌L 硬軌B	有段S 無段V 伺服F	伸臂型T 固定型F	

例如: CNCM4- 綫軌 有段電機- 伸臂型
編號: CNCM4-LS-T

九、價廉質優

- 上述數控銑床可根據用戶的不同需要配置, 不但可以重切削, 也可以精加工, 機床精度可以長期保留, 完全可攀比加工中心機, 不論是作為批量零件加工或開模具均適用, 可以說: 目前全國還找不到如此價廉質優的數控銑床, 本公司是首創。

Introducing the CNC Milling Machines(knee-type)

After years of effort on Research & Development, we are proudly presenting a series of innovative new design CNC Milling Machines. Rather than converting a conventional milling machine into a CNC milling machine with the existing quill and housing, we have pushed forward to change the milling head design completely. Our patented quill is designed with option for linear guideway or boxway versions have a square geometry for maximum rigidity to reduce wear and increases accuracy. It is much more suitable for more precision machining and heavy cutting than conventional knee mills converted to CNC. Additionally, the internal structure of the body has been re-enforced to provide rigidity and durability.

1. Milling Head Design

- Square-shaped quill with precision linear guideways. Excellent for precision work and sustainable accuracy.
- Square-shaped quill with boxway design. Excellent for heavy cutting and accuracy far better than conventional round-shaped quill design.
- Ballscrew on quill is pre-loaded and fixed at both ends to provide superior accuracy.
- Z-axis (Quill) is equipped with servo motor.
- All main motor is 5HP standard to provide the best cutting force.
- Servo motor for main motor is optional and the machine can be used for drilling, tapping, reaming, and boring.

2. Ram Design

- We have made some modifications on the ram as well. The ram is precisely hand-scraped by experience technicians and the gibs are adjustable, similar to the work table. Because of its increased contact plane area, the machine is suitable for heavy cutting and vibration is reduced significantly. Turret and ram motion designs are maintained for extended cutting range.
- Turret and Ram can be replaced by optional fixed head design to increase accuracy and rigidity.

3. Body Design

- Both X and Y axis ballscrews are pre-loaded with double locknuts. The ballscrews are from Taiwan for consistent accuracy grade and to assure proven durability.
- Both X and Y axis ballscrews are equipped with servo motors.

4. Body Structure Design

- Column is designed with cross-ribs structure to increase rigidity.
- Knee is designed with double-wall structure to avoid deformation in the middle guideway.
- Saddle and turret are extended to provide better support of work table and ram. Accuracy is maintained during movement.

5. Lubrication System Design

- Automatic lubrication system is standard.

6. Shield Design

- Telescopic cover is used for Y-axis to protect guideway.
- Large chip pan and semi-enclosure shield are used to keep work area clean and coolant is efficiently collected for recycling.

7. Electrical Cabinet Design

- Dual cabinets are used; one for low-voltage components and another for high-voltage components to reduce interference.
- Pedant design controller box for easy operation.
- Wide choices of controllers to choose from to fit the customers' habit.

8. Machine models: 60 different types to choose. (Power drawbar can be installed in every model.)

Models	Quill Version	Machine Head	Turret/Fix	60 models
CNCM3 CNCM4 CNCM5 CNCM6 CNCM6EX	Linear Guideway - L Boxway - B	Step Pulley - S Variable Speed - V Servo - F	Turret - T Fix - F	

For example: CNCM4 with linear guideway, step-pulley and turret.
Model no.: CNCM4-LS-T

9. Excellent quality with economic price

- The above CNC Milling Machines can be built according to customers preferences. The machine is not only good at heaving cutting, but also excellent in precision work with consistency. It performs similar to machining center in terms of batch production of small parts and molds. Without doubt this is one of the finest CNC milling machines in the market with its price advantage and innovative design.



型號 Model			BM-2V	BM-3V	XK714
工作臺 Work Table	尺寸 Dimensions	mm	1470 × 406	1470 × 406	1470 × 406
	T型槽尺寸 T-slot: Slot No. × Width × Pitch	mm	4 × 16 × 68	4 × 16 × 68	4 × 16 × 68
	工作臺最大負荷 Maximum Load	Kg	400	800	500
行程 Travel	X軸行程 Max. Longitudinal Travel (X-axis)	mm	800	1000	1000
	Y軸行程 Max. Cross Travel (Y-axis)	mm	500	500	500
	Z軸行程 Max. Vertical Travel (Z-axis)	mm	500	500	500
	主軸端面至工作臺面距離 Distance from Spindle Nose to Table Surface	mm	100-600	140-640	140-640
	主軸中心至立柱導軌面距離 Distance from Spindle Center to Column Guideway	mm	510	520	520
主軸 Spindle	主軸錐孔 Spindle Taper Type		NT40	NT40	BT40
	主軸轉速 Spindle Speed	rpm	L:78-870 H:620-6980(20 steps)	L:78-870 H:620-6980(20 steps)	80-6000
套筒 Quill	套筒進給 Quill Feed	mm/rev	0.13, 0.08, 0.04	0.13, 0.08, 0.04	—
	套筒直徑 Quill Diameter	mm	105	105	—
	套筒行程 Quill Travel	mm	125	125	—
電機 Motor	主軸電機 Main Motor	HP	5	5	5
	X/Y電機 X/Y Motor	kw	0.75	0.75	0.75
	Z軸電機 Z Motor	kw	0.375	0.375	0.375
其它 Other	外型尺寸 (長 × 寬 × 高) Machine Dimensions L × W × H	mm	1750 × 1800 × 2100	1900 × 2200 × 2300	2200 × 1900 × 2400
	機床重量 Net Weight	Kg	2800	3000	3000
	系統 Controller		—	—	GSK-990, KND-1000M, Syntec 940i, LNC-M520H

立式加工中心機 VERTICAL MACHINING CENTER



VMC640



VMC850



VMC-1060

機床型號 Model			VMC640	VMC850	VMC1060
工作臺 WorkTable	面積: 標準/加寬 Dimensions	mm	700 × 320/ 700 × 360	1000 × 400	1300 × 600
	T型槽: 槽數 × 寬度 × 間距 T-slot: slot no. × Width × pitch	mm	3 × 18 × 100	3 × 18 × 120	5 × 18 × 100
	最大承重 Max. Work Load	kg	250	300	1000
三軸行程 與 加工範圍	X軸行程 Max. Longitude Travel	mm	600	800	1000
	Y軸行程 Max. Cross Travel	mm	450	450	600
	Z軸行程 Max. Vertical Travel	mm	500	500	600
Travel Distance & Machining Range	主軸端面至工作臺距離 Spindle End to Work Table	mm	100-600	100-600	150-750
	主軸中心至立柱導軌距離 Center of Spindle to Column Slideway	mm	500	500	750
主 軸 Spindle	主軸轉速(交流主軸電機) Spindle Speed	rpm	8000	8000	6000
	主軸錐度 Spindle Taper Type		BT40	BT40	BT40
三軸進給 Feed Rate	快速移動速度 Rapid Feed Rate	mm/min	15000	15000	15000
	切削進給速度 Cutting Feed Rate	mm/min	1-4000	1-4000	1-4000
電 機 Motors	主軸電機 Spindle Motor	kw	3.75/5.5	5.5/7.5	7.5/11
	三軸交流伺服電機 X/Y/Z Servo Motor	kw	1	1.2	2.5
	切削液電機 Coolant Motor	w	90	90	90
刀 庫 ATC	刀庫容量(門筌式刀庫) Tools Capacity	tool	10	10/12/16	16/24
	換刀時間 Change time	sec	7	7	7
精 度 Accuracy	定位精度 Positioning Accuracy	mm	± 0.015	± 0.015	± 0.015
	重複定位精度 Repeatability Accuracy	mm	± 0.008	± 0.008	± 0.008
其 他 Other	機床電源 Power	KVA	15	15	22
	機床淨重 Net Weight	kg	3500	4250	7500
	外形尺寸(長 × 寬 × 高) Machine Dimensions(L × W × H)	mm	2100 × 2000 × 2300	2700 × 2200 × 2400	3200 × 2400 × 2700
控制器 Controller	經濟型: KND-1000MII, GSK 983 普及型: FANUC Oi MATE, HNC-21M 世紀星, Syntec 940i 全功能型: FANUC Oi-MC, Siemens 802D				



豪華型防水防油面板



模塊化面板及電控系統, 增加系統可靠性。內部線路經嚴謹設計及規劃, 具高科技水平。



高速伺服馬達配合台灣聯動器直接聯結滾珠導螺桿, 背隙最少, 長保精度。



Fanuc 系統



以精密的激光儀來保證每台機器的定位及重複定位精度。精確的對螺距及背隙補償。最新款 XL-80 Renishaw 激光干涉儀。



循環檢驗。校正真圓精度及機器幾何精度, 確保機床3D加工精度及圓滑度。



垂直度量測光學系統。保證3軸之間互相垂直。



日本100%進口 Tosoku手輪。