

## 線軌研磨機 Rail Grinding Machine

- 龍門結構之定柱定樑式設計，充分發揮阿貝原理的效用，將定位基準線與導軌的距離縮至最小限度，擁有極佳的結構剛性與降低熱效應的優勢，使機台長期保持極穩定的精度。
- JL-50400CNC滑軌研磨機，採2組立式研磨頭與1組臥式研磨頭可同時加工線軌之三面。
- 工件左邊有一組鑽石滾輪修整器，鑽石滾輪可逆旋轉，一次修整修銳一顆砂輪，主軸旋向固定，順銑或逆銑由鑽石滾輪旋向決定，雙砂輪用同一組鑽石滾輪修整、修銳，確保雙砂輪形狀、尺寸相同，研磨滑軌使兩側形狀、尺寸、表面粗糙度完全相同。
- 雙跨型門柱與矩形結構橫樑的組合，加上底座內部為「八」字傾斜肋設計，將軌道承受的力量分流到地腳螺絲，可獲得穩固性較佳的支撐補強構造，令加工機底座之雙軌道達到結構性更加穩固不易變形厚實的底座。
- The double column structure is designed with two fixed columns and one fixed beam to fully develop the effect of Abbe principle. The distance between the positioning reference line and the guideway is reduced to a minimum, enabling the machine to possess outstanding structural rigidity and reduced thermal growth. Thereby, the machine can obtain long-term accuracy.
- The JL-50400CNC linear guideway grinding machine is constructed of two vertical spindles and one horizontal spindle, enabling three-surface grinding on a linear guideway at one time.
- The dresser of diamond roller is mounted at the left side of the workpiece. The diamond roller can rotate in clockwise or counter-clockwise direction. One grinding wheel is dressed and sharpened at a time. As the spindle running direction is fixed clockwise or counter-clockwise, dressing direction is determined by the running direction of the diamond roller. Two grinding wheels are dressed and sharpened the same diamond roller, which ensures the profiles and sizes of both wheels are the same as well as the profile sizes and surface roughness of linear guideway.
- The structure design of traddle type double column, rectangular beam structure, and the slanted-rib design in the base can effectively distribute the forces borne by the guideways to the foundation bolts. This outstanding structure provides more stable support, and higher stability on the two guideways of the base without deformation.

### ▶ JL-2020CNC / JL-2040CNC

- 龍門型
- 線軌三面成型研磨機
- Fanuc / Siemens / Syntec 控制器
- 成型鑽石滾輪修砂
- 研磨微型滑軌(15型以下)
- Double column type
- Three spindles for three-sided profile grinding
- With Fanuc / Siemens / Syntec control
- With diamond roller dressing device
- For grinding miniature linear guideway (<size 15)



### ▶ JL-50400CNC

- 龍門型
- 線軌三面成型研磨機
- Fanuc / Siemens / Syntec 控制器
- 成型鑽石滾輪修砂
- 研磨15型以上滑軌
- Double column type
- Three spindles for three-sided profile grinding
- With Fanuc / Siemens / Syntec control
- With diamond roller dressing device
- For grinding bigger linear guideway (>size 15)



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## HIGH PRECISION CNC PROFILE SURFACE GRINDING MACHINE 高精密CNC成型平面磨床



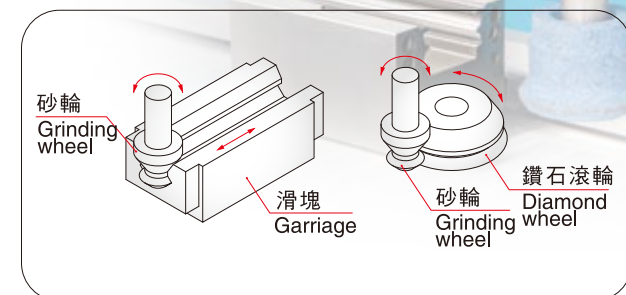
▶▶ 滑塊研磨機  
Carriage Grinding Machine

▶▶ 線軌研磨機  
Rail Grinding Machine

## 滑塊研磨機 Carriage Grinding Machine

- 動柱結構之倒T型式。
- X左右軌道單獨運動，可避免因其他軌道重疊而互牽引，能確保加工運動時之精度，最符合研磨滑塊時之所需特性。
- 厚實的一體式底座設計，可加大機台的本體剛性，不因地基及機械水平變化而影響精度以及避免搬運時的變形。
- 熱對稱的結構設計，能平衡溫昇的熱變形量。
- 主結構以FC30高級鑄鐵材質鑄造，經過回火處理(退火)、自然季化，徹底消除鑄件內部應力，確保機械加工精度。
- 主軸、鑽石滾輪軸、光學尺配備有氣密式密封系統，水氣、切屑不會進入軸承、玻璃尺，確保使用壽命更長。
- 全密封式的防水護罩。

### 加工方式 Machining of Carriage



- Sliding column structure with reverse T type.
- Both rails on the X axis run independently to avoid the influence of the overlap of other rails. It can ensure the running accuracy during process and it also most conforms to the property required when grinding carriages.
- Solid one body design of machine bed can increase the rigidity of machine. Accuracy won't be influenced by ground and the level changes of machine and deformation can be avoided during moving.
- Thermally symmetrical design of machine structure can balance the thermal deformation of temperature raise.
- Main structure is die-cast by premium FC30 material. With tempering treatment (annealing) and natural stress relief to eliminate the internal stress of diecast completely, it can make sure the accuracy of mechanical process.
- Spindle, shaft of diamond roller and linear scale are equipped with sealing system. Vapor and chips won't enter into bearing and linear scale to ensure a longer survive life.
- Fully enclosed splash guard.

### ▶▶ 微型滑塊研磨機(15型以下滑塊) Miniature Carriage Grinder (<size 15)



▲ JL-2080CNC

### ▶▶ 滑塊研磨機(15型以上滑塊) Standard-sized Carriage Grinder (>size 15)



▲ JL-3080CNC

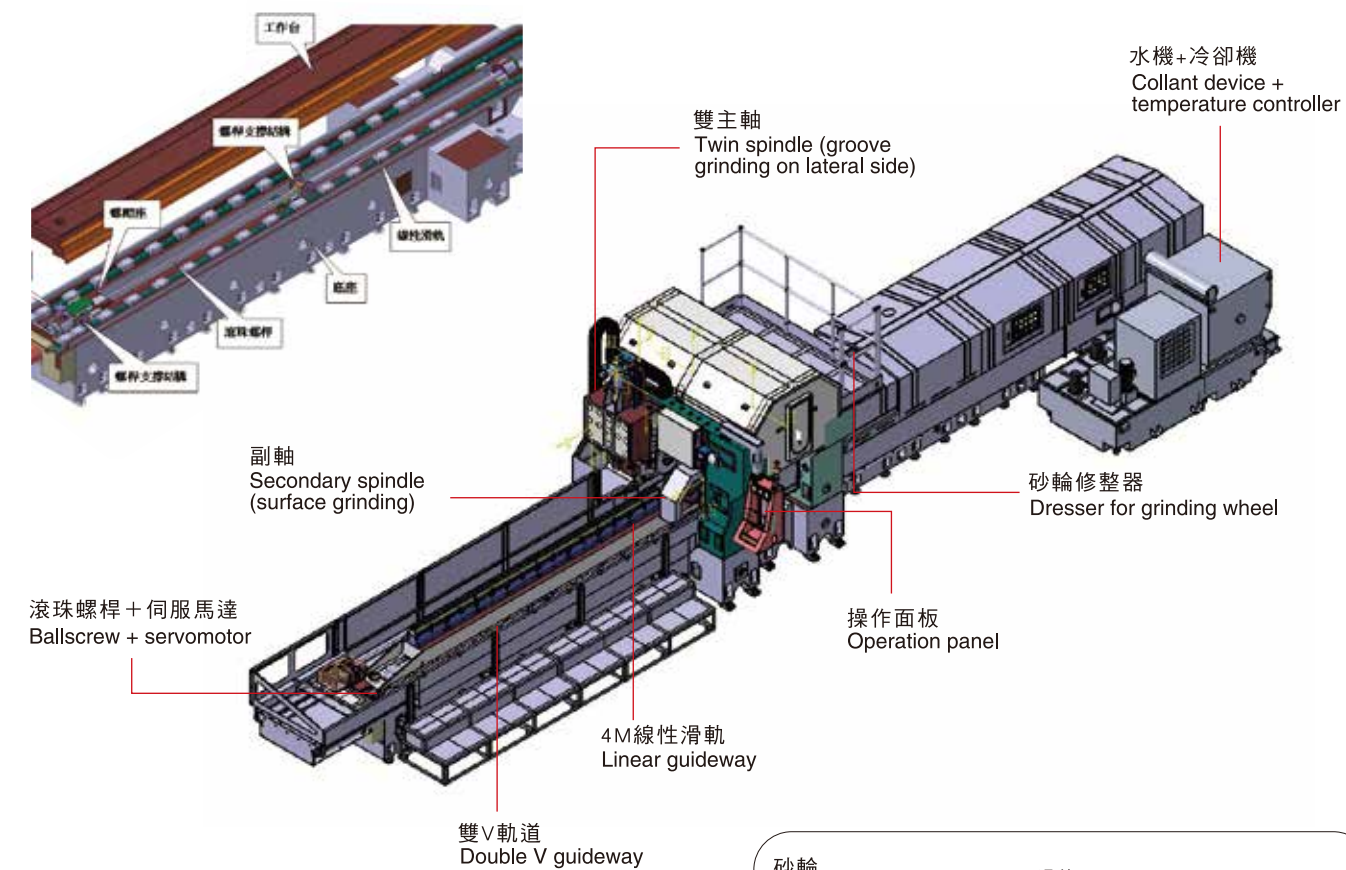


▲ JL-30200CNC / JL-30400CNC



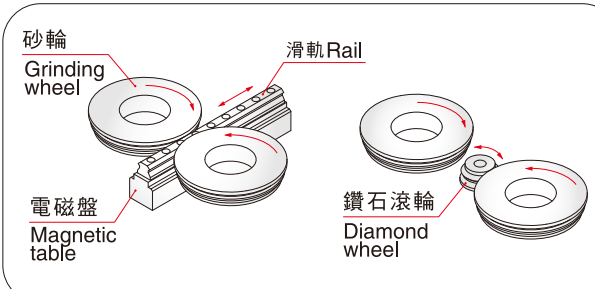
▲ JL-3080CNC II

### ▶▶ 滾珠螺桿加伺服馬達驅動 Longitudinal is driven by ballscrew + servomotor



### ▶▶ 工件尺寸 Workpiece dimensions

Spec	Height	Width	Length
15~65	14~53 mm	15~63 mm	Max. 4000 mm



# 線軌機器規格

適用線軌 Size of Rail (Linear Guideway)

# 滑塊研磨機規格

適用滑塊 Size of Carriage (Linear Guide Block)

機型 Model	單位 Unit	JL-50400CNC (15型以上 > W / 15 mm)	JL-20200CNC (15型以下 < W / 15 mm)	JL-20400CNC (15型以下 < W / 15 mm)	機型 Model	單位 Unit	JL-3080CNC (15型以上 > W / 15 mm)	JL-2080CNC (15型以下 < W / 15 mm)	JL-30200CNC (15型以下 < W / 15 mm)			
加工能力 General Capacity	工作台面積 (W x L)	Table size (W x L)	400 x 4100	230 x 2250	230 x 4250	加工能力 General Capacity	工作台面積 (W x L)	Table size (W x L)	230 x 2250			
	最大研磨面積 (臥式副軸)	Max. surface ground (horizontal secondary spindle)	400 x 4875	230 x 2250	230 x 4250		工作台面最大行程 (W x L)	Max. stroke (W x L)	210 x 2100	400 x 3100		
	磁盤面積 (前後 x 左右)	Surface of magnetic (W x L)	80 x 4080	80 x 2040	80 x 4080		磁盤面積 (前後 x 左右)	Surface of magnetic (W x L)	300 x 600	80 x 1000	300 x 2000	
	工作台最大承載重量 (含磁盤)	Max. tableload (magnetic chuck included)	2000	1000	1000		主軸中心至工作台最大距離 (Z軸)	Distance from spindle to table (Z axis)	最小 Min.: 115 ~ 最大 Max.: 455	最小 Min.: 135 ~ 最大 Max.: 245	最小 Min.: 50 ~ 最大 Max.: 220	
	T槽 (尺寸 x 個數 x 間距)	T-slot (size x number x pitch)	mm	14 x 2 x 350	-		工作台最大承載重量 (含磁盤)	Max. table load (magnetic chuck is included)	Kgs	-	170	110
	雙主軸間距	Distance between two spindles	mm	最小 Min.: 315 ~ 最大 Max.: 675	最小 Min.: 245 ~ 最大 Max.: 565		最小 Min.: 245 ~ 最大 Max.: 565	主軸數量	Number of spindles	1	2	2
	砂輪下緣至工作台面距離 (副軸)	Distance from wheel bottom to table (axis)	mm	最小 Min.: 0 ~ 最大 Max.: 390	最小 Min.: 338.5 ~ 最大 Max.: 443.5		最小 Min.: 338.5 ~ 最大 Max.: 443.5	主軸形式	Spindle type	內藏式 Built-in type	直結式 Direct-drive type	內藏式 Built-in type
	砂輪上面至工作台面距離 (Z軸)	Distance from wheel top to table (Z axis)	mm	Min. 355 ~ Max. 480	Min. 201 ~ Max. 311		Min. 201 ~ Max. 311	安裝外徑	Outer diameter	mm	Ø120 ~ Ø150	-
雙立式主軸 Two Vertical Spindles	磁盤面至工作台面最大距離	Distance from magnetic chuck to table	mm	260	240	240	主軸轉速	Spindle speed	rpm	30000 ~ 120000	1000 ~ 3600 (砂輪最大轉速 grinding wheel max. speed 33m/s)	40000
	伺服馬達 (連續 / 30分鐘)	Servomotor (continuous / 30 mins)	Kw	15	5.5 / 7.15	5.5 / 7.15	馬達	Motor	Kw	7 ~ 13	2.25	10
	主軸轉速	Spindle speed	rpm	1260 ~ 1735	2000 / 3600	2000 / 3600	砂輪 (外徑 x 厚度 x 內徑)	Dimension of wheel (OD x W x B)	mm	搭配主軸轉速 Match spindle speed	Ø255 x 19 x Ø76.2	搭配主軸轉速 Match spindle speed
	砂輪 (外徑 x 厚度 x 內徑)	Dimension of the wheel (OD x W x B)	mm	Ø510 x 50 x Ø203.2	Ø455 x 25 x Ø127	Ø455 x 25 x Ø127	行程	Stroke	mm	860	2100	3100
X軸左右進給 X-axis Longitudinal Movement	行程	Stroke	mm	5500	3100	5100	伺服馬達	Servomotor	Kw	2.5	4	3.3
	伺服馬達	Servomotor	Kw	6	3.3	4	工作台移動速度	Table speed	mm / min	30	25	25
	工作台移動速度	Table speed	mm / min	0~25	0~25	0~25	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway	行程	Stroke	mm	320	210	400
Y軸前後進給(雙立軸) Y-axis Cross Movement (Vertical spindles)	行程	Stroke	mm	180	160	160	伺服馬達	Servomotor	Kw	1.6	1.6	1.57
	移動速度	Table speed	mm / min	5.0	4.5	4.5	工作台移動速度	Table speed	mm / min	5	4.5	2.14
	最小設定單位	The least input increment	mm	0.001	0.001	0.001	最小設定單位	The least input increment	mm	0.001	0.001	0.001
	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
Z軸上下進給(雙立軸) Z-axis Vertical Movement (Vertical spindles)	行程	Stroke	mm	125	110	110	行程	Stroke	mm	350	110	170
	伺服馬達	Servomotor	Kw	2.85	3	2.14	伺服馬達	Servomotor	Kw	1.6	3	1.48
	移動速度	Table speed	mm / min	0.50	4.5	4.5	工作台移動速度	Table speed	mm / min	1	4.5	5
	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway	最小設定單位	The least input increment	mm	0.001	0.001	0.001
臥式副軸 Horizontal Secondary Spindle	行程	Stroke	mm	440	90	90	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	伺服馬達	Servomotor	HP x P	10 x 4	3.7 / 4.8	3.7 / 4.8	行程	Stroke	mm	350	110	170
	主軸轉速	Spindle speed	rpm	3200 ~ 1570	2000 / 7600	2000 / 7600	伺服馬達	Servomotor	Kw	1.6	3	1.48
	砂輪尺寸 (外徑 x 厚度 x 內徑)	Dimension of the wheel (OD x W x ID)	mm	Ø405 x 50 x Ø127	Ø255 x 13 x Ø50.8	Ø255 x 13 x Ø50.8	工作台移動速度	Table speed	mm / min	1	4.5	5
Y軸前後進給(臥軸) Y-axis Cross Movement (Horizontal spindle)	行程	Y-Stroke	mm	440	90	90	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	伺服馬達	Servomotor	Kw	1.57	0.5	0.4	行程	Stroke	mm	350	110	170
	移動速度	Table speed	mm / min	20	5	5	伺服馬達	Servomotor	Kw	1.6	3	1.48
	最小設定單位	The least input increment	mm	0.001	0.001	0.001	工作台移動速度	Table speed	mm / min	1	4.5	5
Z軸上下進給(臥軸) Z-axis Vertical Movement (Horizontal spindle)	行程	Z-Stroke	mm	410	105	105	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	伺服馬達	Servomotor	Kw	1.57	0.82	0.82	行程	Stroke	mm	350	110	170
	移動速度	Table speed	mm / min	0.5	5	5	伺服馬達	Servomotor	Kw	1.6	3	1.48
	最小設定單位	The least input increment	mm	0.001	0.001	0.001	工作台移動速度	Table speed	mm / min	1	4.5	5
砂輪修整器 Wheel Dresser	行程	Y-Stroke	mm	440	90	90	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	伺服馬達	Servomotor	Kw	1.57	0.5	0.4	行程	Stroke	mm	350	110	170
	移動速度	Table speed	mm / min	20	5	5	伺服馬達	Servomotor	Kw	1.6	3	1.48
	最小設定單位	The least input increment	mm	0.001	0.001	0.001	工作台移動速度	Table speed	mm / min	1	4.5	5
重量 Weight	機器重量 (不含水機等附件)	Machine net weight (excluding optional coolant system ect.)	Kgs	29300	18000	25000	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
	裝箱重量 (不含水機等附件)	Packing weight (excluding optional coolant system ect.)	Kgs	32900	20000	29000	行程	Stroke	mm	350	110	170
	機器尺寸 (不含水機等附件)	Machine dimension (excluding optional coolant system ect.)	mm	14485 x 2610 x 2890	6842 x 2781.4 x 2462.2	12323 x 2781.4 x 2462.2	伺服馬達	Servomotor	Kw	1.6	3	1.48
	機器作業空間	Machine floor space	mm	14880 x 4263 x 2890	6320 x 2200 x 2462.2	10320 x 2200 x 2462.2	工作台移動速度	Table speed	mm / min	1	4.5	5
空間 Space	裝箱尺寸 (不含水機等附件)	Packing size (excluding optional coolant system ect. )	mm	11100 x 2610 x 2890	9180 x 3300 x 3200	11240 x 3350 x 2880	最小設定單位	The least input increment	mm	0.001	0.001	0.001
	機器作業空間	Machine floor space	mm	14880 x 4263 x 2890	6320 x 2200 x 2462.2	10320 x 2200 x 2462.2	軌道	Guideway		線性滑軌 Linear guideway	線性滑軌 Linear guideway	線性滑軌 Linear guideway
					<p>* JL-4080CNC-344 深切緩進給研磨滑塊的直角。工件打角度，砂輪修砂成直角，同時研磨滑塊的兩側(直角)，滑塊平面研磨完後再拿去JL-3080CNC或JL-2080CNC成型研磨。 * JL-4080CNC-344 is able to carry out creep feed grinding of carriage angular. By fixing angel of workpiece and dressing the wheel based on the angles, JL-4080CNC-344 can grind two sides of carriage at one time. Then the profile grindind of carriage is carried out with JL-3080CNC or JL-2080CNC.</p>							



本公司對產品樣式及規格不斷研發創新，如規格變動，恕不另行通知。  
Machine specifications and design characteristics are subject to change without prior notice.

\* JL-60200CNC-H & JL-60400CNC-H 動柱型CNC磨床用來研磨導軌的基準面，導軌的基準面研磨好後，再拿到50400CNC線軌研磨機進行三面成型研磨。

\* The reference surface of linear guide rails is grinded with JL-60200CNC-H and JL-60400CNC-H before three-sides profile grinding on JL-50400CNC.