



Manual
Surface Grinder

手動精密
成型平面磨床



Semi-Automatic
Surface Grinder

半自動精密
成型平面磨床



Fully Auto
Surface Grinder

全自動精密
成型平面磨床



Double
Column Series

龍門磨床



CNC Surface &
Profile Grinder

CNC成型磨床



Rotary
Table Series

晶瓷加工機



Cantilever Series

懸臂平面磨床



High Precision
5axes Milling &
Grinding Center

五軸CNC成型磨床

**High Precision
Saddle / Column Series**
超精密鞍座及動柱系列

FULLY AUTO SURFACE GRINDER



- 最佳化結構和高剛性床身確保穩定的精度
- 左右、前後為雙 V 滑軌，貼附耐磨片「Turcite B」及手工鍍花使軌道上油膜變化最小化有助於滑軌移動時之穩定性及確保滑軌之精度。
- 高精密主軸：彈筒式設計主軸採用高精密 (P4) 軸承、全密封式油脂潤滑、壽命長、精度高。
- 上下軸精密進給：上下軸採高精密線性滑軌並結合高精密滾珠螺桿傳動，提高研磨之順暢度及更佳的研磨精度。
- AC 伺服馬達升降傳動，扭力大、速度快、定位精度高，配合全自動控制系統，進給精度可達 0.0001" (0.001mm)。

- 上下進給採用 MPG 電子手輪設計，取代傳統機械式手輪控制並配合伺服馬達驅動，提供更高的控制精度及更便利之操作。

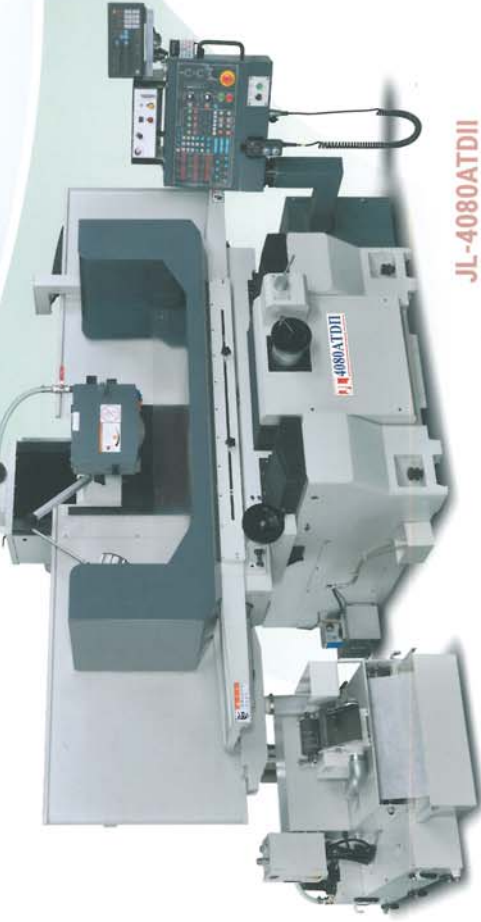
- 前後連續進給研磨功能：前後連續進給研磨可涵蓋寬廣的研磨面積，增加研磨效率。

- 動平衡校正功能 (選配)：依據手動調整平衡塊，可降低低砂輪震動，除零件表面震紋，提高品質。

- 通過調整設備環境，可以進行超精密加工和鏡面精加工。(平面度 1 μ m 以內，面粗度 0.02 μ m 以內)

JL-2550ATDII
JL-63ATDII
JL-4080ATDII

超精密鞍座系列 High Precision Saddle Series



JL-4080ATDII

超精密動柱系列 High Precision Column Series

- Optimized structure and high rigidity castings ensure stable accuracy.
- X & Z axis travel on double V slide ways, coated with "Turcite B" and hand scrapped to minimize the change of oil film on the track, ensure the stability and accuracy of the slide ways.
- High-precision spindle: The cartridge-type design spindle uses high-precision (P4) bearings and fully sealed grease lubrication, long life and high precision.
- Precise infeed of vertical axis: linear guide way and ball screws are used on vertical, which improve the smoothness of grinding and realize better accuracy.
- Vertical is driven by AC servo motor, high torque, high speed and high positioning accuracy. With the automatic control system, the feed accuracy can reach 0.0001" (0.001mm).
- MPG is used for vertical, driven by servo motor to provide higher control accuracy and more convenient operation.



JL-63ATDII

- Crisscross Grinding: Continuous feed grinding in cross can cover a wide grinding area, increase grinding efficiency.
- Dynamic balance correction function (optional): manually adjust the balance block according to the data, which can reduce the vibration of the grinding wheel, remove the surface ripples of the parts, and improve the quality.
- Ultra-precision machining (grinding) and mirror finishing can be performed by adjusting the environment. (Flatness within 1 μ m, surface roughness within 0.02 μ m)



JL-5010ATDII

機械結構 Machine Construction

Wheel Spindle

The high precision cartridge type spindle is supported by two precision angular contact ball bearings - at the front and rear ends. Bearings are preloaded and carefully assembled in a constant-temperature environment. Special grease spindle is employed without need of further lubrication and combined with non-contact labyrinth type seals, ensuring an excellent lubrication effect. Spacing collars are precision measured and preloaded before fitting. They are fixed at the front end and removable at the rear end. This allows thermal strain transfer to the rear end to minimize transmission error while assuring long service life and high accuracy.



砂輪主軸

高精密炮筒式主軸，前後端各以 2 個超精密斜角滾珠軸承支撐。軸承預壓後在恆溫室裝配。主軸潤滑採用高級油脂，不需再額外潤滑，就能永保最佳潤滑效果。間隔環經精密測量後，再現場預壓量，且前端為固定式，後端為活動式。因此可將主軸溫昇熱變形量傳導到後端，將機構傳動誤差降到最低程度，提升主軸的使用壽命和精度。



One-Piece Fabricated Base

The massive base is one-piece constructed, providing a solid support for the saddle, table and column. This greatly upgrades stability and rigidity.

特殊一體成型設計的床台基座

大而一體成型的底座足以支撐鞍座，工作台，立柱等重量，大幅增加機台的穩定性及剛性。



Longitudinal Mechanism

To reach the dressing position, a specially designed hydraulic buffer is used to ensure the positive stop of table at the exact position. The "Right End Stop" function allows for releasing the hydraulic cylinder. Extremely smooth movement of the table is achieved through manual operation.

右端停止功能

具獨特設計的「右端停止」功能，及油壓缸脫離。手動操作時，工作台運作輕快。

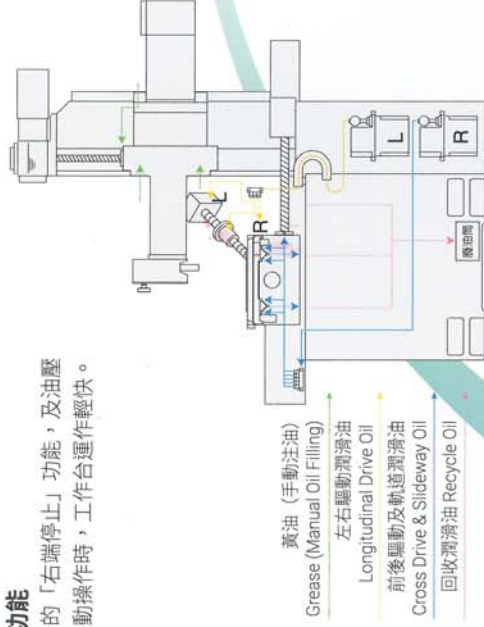


Longitudinal Mechanism

The table travels on double V guideways, is coated with low-friction Turcite-B anti-friction material and precision scraped for extremely smooth table movement. The table longitudinal travel is driven by hydraulic system, combined with flow control, provides variable speed change for the table.

左右工作台

滑軌為雙 V 設計，滑軌面採用最先進，低摩擦，耐磨耗之 Turcite-B (耐磨片)，並經精密刮花作業處理，使工作台運動輕快。工作台左右移動採油壓系統驅動，配合流量控制，提供工作台的無段變速。

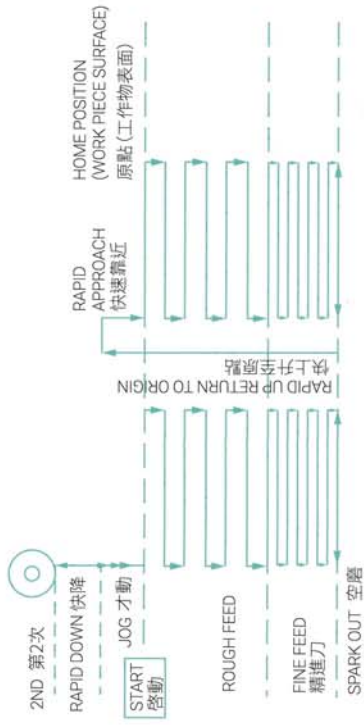


Automatic Lubrication System

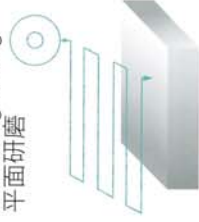
Each Joen Lih machine is equipped with an automatic lubrication system as standard equipment. The lubrication system employs a magnetic pump. Oil shot is automatically controlled to meet the travel distance set through PLC. Oil is delivered to all slideways, table, saddle, gears and screws for reducing friction, extending parts service life and ensuring machining accuracy. (In case of no oil, the lubricator will sound an alarm.)

自動潤滑系統

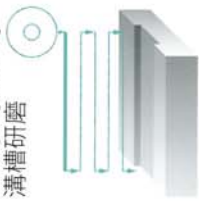
所有準力高精磨床均標準配備自動潤滑系統。採用電磁泵浦，並由 PLC 程式自動控制依據其設定移動距離注油，潤滑所有的滑道、工作台、鞍座、及齒輪、螺桿減少磨損，可耐久使用，以確保機器之精度。(潤滑器無油時會發出警報)



Surface grinding
平面研磨



Plunge grinding
溝槽研磨



**COMPUTERIZED
AUTO DOWN FEED**

Joeh Lih combines the latest Mitsubishi PLC Control to provide you with enormous gains in productivity. The specially designed PLC is applied on the Joeh Lih ATD II series fully automatic surface grinders. It enhances user-friendly operations and optimizes the grinder's performance. This results in an extra-competitive edge for your production. The PLC features easy setting of parameters, three working sections, self-diagnosis and alarm system. With the advanced micro-computer control, you get full capabilities to achieve superior finish part accuracy and increased efficiency.

電腦上下自動進刀

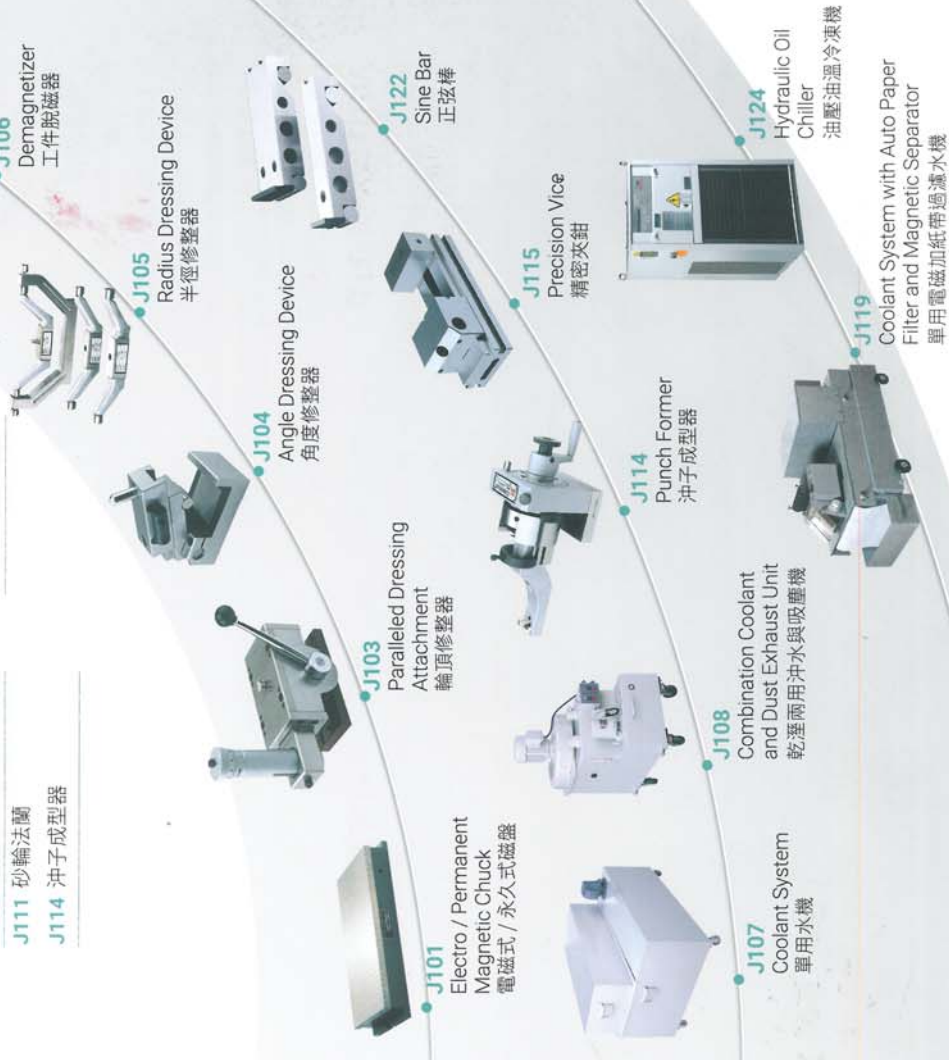
準力公司採用先進的三菱 PLC 控制器，為客戶創高產能與高利潤。準力 ATD II 系列全自動超精密成型平面磨床，採用特殊設計的 PLC 控制器。具有簡易的操作特性，以及最佳化的磨床性能。讓客戶的生產作業更具競爭優勢。此外，PLC 控制器在參數設定極簡易，三段加工區域並且具有自我診斷與警報功能。ATD II 系列搭配先進的微電腦控制器，讓您輕易達到精細的研磨表面效果與效率提升。

附件 Equipment

特殊附件

- J101 電磁式 / 永久式磁盤
- J102 可傾式永久磁鐵吸盤
- J103 輪頂修整器
- J104 角度修整器
- J105 半徑修整器
- J106 工件脫磁器
- J107 單用水機 (無過濾裝置)
- J108 乾溼兩用沖水與吸塵機
- J109 吸塵裝置
- J110 砂輪平衡台
- J111 砂輪法蘭
- J114 沖子成型器

- J115 精密夾鉗
- J116 石英工作燈
- J117 單用電磁過濾水機
- J118 紙帶過濾水機
- J119 單用電磁加紙帶過濾水機
- J120 整流器
- J121 光學尺
- J122 正弦棒
- J123 變頻器
- J124 油壓油溫冷凍機



ATDII Series

ATDIII Full Auto. Type Series
Easy Operation Full Auto

High Precision
High Efficiency

ATDII PLC-Controller Type Series

1. The newest Mitsubishi PLC controller and integrated types of varied grinding functions.
2. The motor control of the vertical shaft of elevating movements.
3. The speed adjustable system of vertical shaft.
4. The preset parameters of the lifting and space setting of varied grinding wheel.
5. The preset parameters of single in-put of varied feeding amount.
6. Automatic grinding system divides into three working sections of initial step of grinding, precision grinding and zero step of grinding (spark out).
7. Automatic stop positioning selection function of the work head.
8. The hold-off grinding function for deep groove cutting.
9. The complete feeding amount of automatic feeding: 450 / 600mm.
10. Self-detecting and alarm system
11. Automatic stop function.
12. The detecting function of magnetic force. (selected item)
13. Vertical function and cross feed speed control are concentrated on the operation panel for easy operation.
14. Minimum increment 0.001mm (0.0001").



功能 附件 Equipment

Standard Equipment

1. Grinding Wheel _____ 1 pc
2. Grinding Wheel Flange and Puller 1 set
3. Wheel Balancing Test Arbor _____ 1 pc
4. Diamond Dresser with Diamond 1 set
5. Machine Lamp _____ 1 set
6. Levelling Screws Set _____ 1 set
7. Shackles _____ 4 pcs
8. Necessary Tools with a Tool Box 1 set
9. Lubrication Oil _____ 1 set
10. Operator's Manual _____ 1 copy
11. Test Report _____ 1 copy

標準附件

1. 砂輪 _____ 1 個
2. 砂輪法蘭及拔取工具 _____ 1 組
3. 砂輪平衡棒 _____ 1 支
4. 砂輪修整座反鑽石刀具 _____ 1 組
5. 工作燈 _____ 1 組
6. 地腳螺絲及座 _____ 1 台份
7. 吊鈎 _____ 4 支
8. 工具箱及工具 _____ 1 組
9. 潤滑油 _____ 1 組
10. 使用說明書 _____ 1 冊
11. 精度檢查記錄表 _____ 1 冊

Optional Equipment

- J101 Permanent Magnetic Chuck and Electro Magnetic Chuck
- J102 Inclinable Permanent Magnetic Chuck
- J103 Paralleled Dressing Attachment
- J104 Angle Dressing Device
- J105 Radius Dressing Device
- J106 Demagnetizer
- J107 Coolant System (without filter)
- J108 Combination Coolant and Dust Exhaust Unit
- J109 Dust Suction System
- J110 Wheel Balancing Stand
- J111 Grinding Wheel Flange
- J114 Punch Former
- J115 Precision Vice
- J116 Halogen Work Lamp
- J117 Electromagnetic Separator Filter
- J118 Coolant System with Paper Filter
- J119 Coolant System with Auto Paper Filter and Magnetic Separator
- J120 Rectifier
- J121 Digital Scale
- J122 Sine Bar
- J123 Inverter
- J124 Hydraulic Oil Chiller



ATDII 系列

ATDII 全自動系列

全自動簡易操控

高精度

高效率

微電腦控制 ATDII 系列

1. 先進三菱 PLC 控制器。完整的各種研磨功能
2. 垂直軸升降採用步進馬達控制
3. 垂直軸速度為可調式
4. 各種砂輪回升尺寸選擇功能
5. 各種單步進給量參數設定
6. 自動研磨可分為 3 段進行，包括粗磨，精磨與零研磨（空磨）
7. 工作頭自動停止定位選擇功能
8. 深槽切削延遲進刀功能
9. 自動進刀總進給量：450mm / 600mm
10. 自我診斷與警報功能
11. 工作中自動暫停功能
12. 磁力檢知功能（選配）
13. 上下及前後進給速度控制集中於操作面板，提升操作之方便性
14. 最小進給量 0.001 mm (0.0001")



JOEN LIH MACHINERY CO.,LTD.
準力機械股份有限公司

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427 台中市潭子區大豐路一段 240 之 1 號



General Capacity 加工能力

	JL-5020ATDII	JL-6020ATDII	JL-7020ATDII	JL-5030ATDII	JL-6030ATDII	JL-7030ATDII	JL-5040ATDII	JL-6040ATDII	JL-7040ATDII
Table size 工作台面積 (WxL) (mm)	500 x 2000	600 x 2000	700 x 2000	500 x 3000	600 x 3000	700 x 3000	500 x 4000	600 x 4000	700 x 4000
Max. stroke 工作台最大行程 (WxL) (mm)	560 x 2100	660 x 2100	760 x 2100	560 x 3100	660 x 3100	760 x 3100	560 x 4100	660 x 4100	760 x 4100
Surface of magnetic 磁盤面積 (WxL) (mm)	500 x 2000	600 x 2000	700 x 2000	500 x 3000	600 x 3000	700 x 3000	500 x 4000	600 x 4000	700 x 4000
Max. distance from center of spindle to table (mm) 主軸中心至工作台面最大距離	600	600	600	600	600	600	600	600	600
Max. tableload (electro magnetic chuck is included) (Kgs) 工作台最大承載重量 (含電磁盤)	1800	2000	2200	2200	2400	2600	2600	2800	3000
T slots (dia. x number) (mm x No.) (x mm) 工作台 T 溝 (公稱尺寸 x 溝數)	14 x 3	14 x 3	14 x 3	14 x 3	14 x 3	14 x 3	14 x 3	14 x 3	14 x 3

Spindle 主軸

Motor 馬達 (HP x P)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)	10 x 4 (optional 選配 15 x 4, 15 x 6, 20 x 6, 25 x 6, servo 伺服 20 Kw)
Speed 轉速 60Hz/50Hz (rpm)	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min	1740 / 1450 (4P) / linear velocity 線速度 < 2000 m/min
Dimension of the wheel (ODxWXID) (mm) 砂輪 (外徑 x 厚度 x 內徑)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)	405 x 50 x 127 (optional 選配 505 x 50 x 203.2)

Longitudinal Movement 左右進給

Stroke 行程 (mm)	2300	2300	2300	3300	3300	3300	3800	3800	3800
Hydraulic pump motor 油壓馬達 (HP)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Servo motor 伺服馬達	5	5	5	5	5	5	10	10	10
Table speed 工作台移動速度 (m/min)	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25	Hydraulic 油壓 1~25 / Screw 螺桿 0~25

Gross Movement 前後進給

Stroke 行程 (mm)	680	680	780	580	580	780	580	680	780
Motor sensor 馬達感應 (kw x P) servo 伺服 (Kw)	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61	0.75 x 61
Powered crossfeed 移動速度 (mm/min)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)	1500 (60Hz) / 1250 (50Hz) / 2500 (Servo 伺服)
Per revolution hand wheel 每轉一圈手輪 (mm)	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1	50.001 / 0.01 / 0.1
1 Graduation hand wheel 每格刻度手輪 (mm)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01

Wheelhead Vertical Intfeed 上下進給

Stroke 行程 (mm)	470	470	470	470	470	470	470	470	470
Servo motor 伺服馬達 (Kw)	2	2	2	2	2	2	2	2	2
Rapid power head elevation 移動速度 (mm/min)	750	750	750	750	750	750	750	750	750
Per revolution MPG 每轉一圈 (mm)	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1	0.001 / 0.01 / 0.1
1 Graduation MPG 每格刻度 (mm)	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01	0.0001 / 0.001 / 0.01

Sound Pressure Level 噪音值

Sound pressure level 噪音值 dB(A)	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下	Below 78dB (A) • 低於 78dB (A) 以下
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Weight 重量

Machine net weight 機器重量 (Kgs)	12500	12500	13300	16000	16000	16800	19500	19500	20300
Packing weight 裝箱 (Kgs)	13300	13300	14100	16900	16900	17700	20500	20500	21300

Size 尺寸

Machine dimension 機器尺寸 (LxWxH) (mm)	6190 x 3300 x 2400	6190 x 3300 x 2400	6190 x 3500 x 2400	8500 x 3300 x 2400	8500 x 3300 x 2400	8500 x 3500 x 2400	10720 x 3300 x 2400	10720 x 3300 x 2400	10720 x 3500 x 2400
Machine floor space 佔地面積 (LxW) (mm)	6190 x 3300 x 2400	6190 x 3300 x 2400	6190 x 3500 x 2400	8500 x 3300 x 2400	8500 x 3300 x 2400	8500 x 3500 x 2400	10720 x 3300 x 2400	10720 x 3300 x 2400	10720 x 3500 x 2400
Packing size 裝箱尺寸 (LxWxH) (mm)	6390 x 2300 x 2550	6390 x 2300 x 2550	6390 x 2300 x 2550	8700 x 2300 x 2550	8700 x 2300 x 2550	8700 x 2300 x 2550	10920 x 2300 x 2550	10920 x 2300 x 2550	10920 x 2300 x 2550