



JOEN LH

We Work Hard Today to Upgrade Your Service Tomorrow.



準力精密 CNC 成型平面磨床
HIGH PRECISION CNC PROFILE
SURFACE GRINDING MACHINE

HIGH PRECISION CNC PROFILE SURFACE GRINDING MACHINE

JOEN LIH

FEATURES:

Joen Lih Hi-Precision CNC profile grinders are designed to meet current and future grinding requirements.

The machines are engineered and manufactured to the highest industry standards starting from the raw castings right up through quality testing. This ensures optimal surface grinding accuracy and finish. Our goal is to exceed customer expectations for quality and investment.

機械特點

準力高精密CNC成型磨床乃針對現在及未來各種高難度及高精度研磨加工要求而設計

。從原料製造，裝配，檢驗，出貨均以國際標準之品質系統做有效的管制，以確保精度。適用於各種產業，是提供產業自動化生產與促進產業升級的最佳選擇。



WITH FANUC CONTROL Oi-MC **JL-2550CNC**

HIGH PRECISION AND HIGH RIGIDITY

All Joen Lih Surface Grinders start from the finest Meehanite processed fine grain grey iron castings (FC30) selected for their outstanding strength and inherent vibration dampening characteristics. Heavy and solid with extensive ribbing throughout, they minimize any possible grinding vibrations from the grinding wheel to the workpiece. Relative design in the right and left frame structure which makes the regular change in distortion by temperature. The advanced software is used to analyze the stress of structure, the condition of distortion and vibration of the frame accurately and makes the perfect design for the frame.

HIGH EFFICIENCY

Ball screw and linear guide way are used, and AC servo motor which drives the ball screw directly and intelligent software servo can realize high speed consistent machining with high frequency response.

EASE OF OPERATION & PROGRAMMING

Close-loop feedback provided by linear scales on Y and Z axis locating accuracy to increase machining assures increased machining accuracy and efficiency. The SIEMENS 810D CNC control system has an extremely wide range of field application and was conceived for 2 to 5 simultaneously controlled axes. Through programming it provides full automatic grinding of many multi-shaped work pieces. With this control system, wheel dressing with auto compensation and fine grinding can be accomplished in one cycle. With the optional automatic overhead diamond dresser, the grinding wheel will always be dressed for optional performance to increase machine grinding accuracy and efficiency.

高精度及高剛性結構設計

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，以徹底消除鑄件內部應力，永久確保機械加工精度。

依力學原理設計強固的結構與肋骨，提供最佳的動剛性及振動吸收能力，強化研磨時之穩定性。左右結構對稱的設計，使溫昇熱變形呈現規律的變化。

使用先進工具分析的軟體準確地分析結構之應力，變形與振動的狀況，使結構設計最佳化。

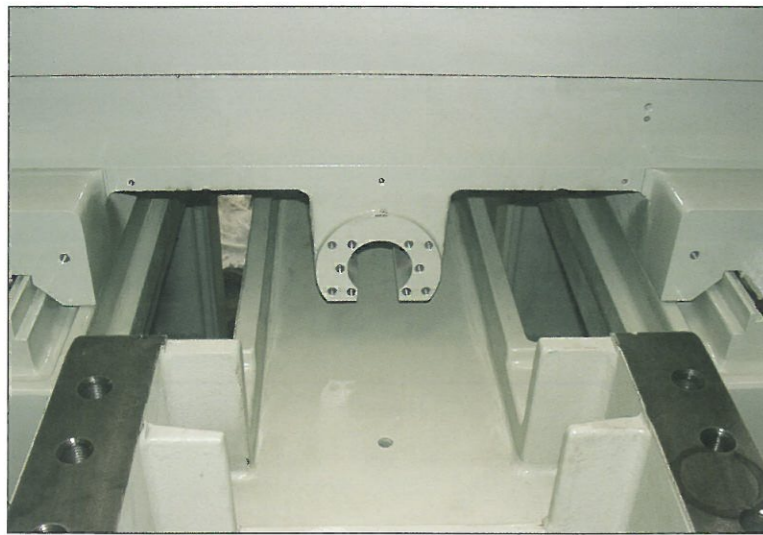
高加工效率之達成

採用滾珠螺桿及線性滑軌，AC伺服馬達直接驅動滾珠螺桿，靈敏的伺服系統可做高頻反應之持續加工，充分發揮機器的效率。

功能齊全，操作簡易

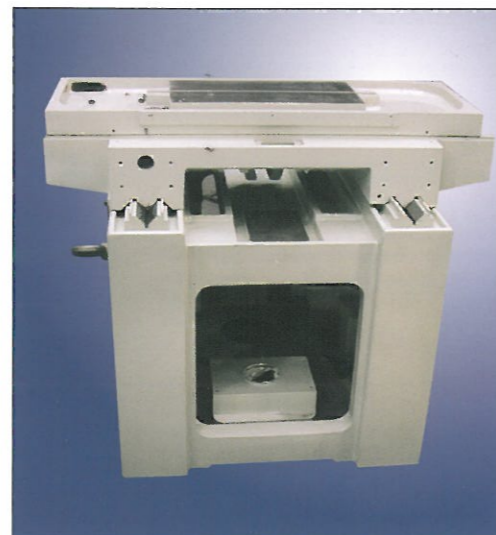
本機Y及Z二軸均採用光學尺回饋之全閉迴路設計，故能使定位精度，加工精度及效率大幅提升。搭配先進功能強大的西門子全數位化控制系統，可控制2-5軸同動，搭配準力獨家開發之操作程式，親和性高，操作簡易。適用於各種多變的研磨需求。針對高難度，形狀複雜的加工和高精度要求而設計。內建豐富多樣的加工方法以達成高效率之加工。

修砂輪條件可程式參數調整控制，維持固定所需之周速度，粗精修一次完成，並能自動補償，搭配自動鑽石輥輪修整裝置(特殊附件)可使砂輪保持最佳研削狀態，以增加研磨精度及效率。



Single Piece Base Casting

The large all cast iron, single piece base provides a 'rock-solid' wide stance footprint to support the entire saddle, table, and column assembly and offers superior rigidity.



特殊一體成型設計的床台基座

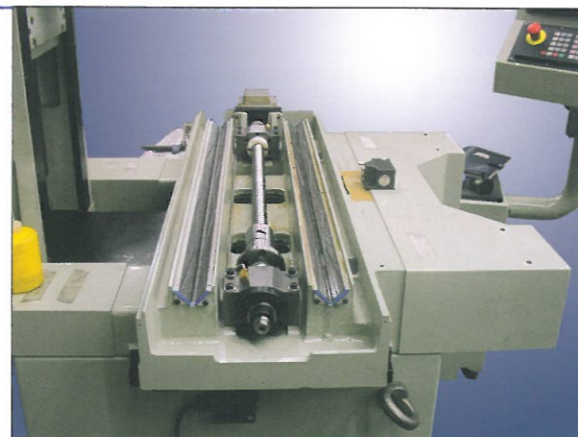
大而一體成型的底座足以支撐鞍座，工作台，立柱等重量，大幅增加機台的穩定性及剛性。

Longitudinal Mechanism

Longitudinal, X axis table travels on double -Vee guide ways, coated with Turcite-B antifriction material. The hand scrapped and precision fitted table and saddle provide the utmost in flatness, parallelism and perpendicularity. Driven by precise ballscrew, with dual anti-backlash nuts, this mechanism ensures positioning accuracy for many years.

左右工作台

滑軌為雙V設計，滑動面採用最先進，低磨擦，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，採用精密滾珠螺桿及AC伺服馬達直接驅動滾珠螺桿以確保移動位置精度之品質。



Fully Enclosed Splash Guard

A forced flood coolant system accompanied by a totally enclosed work area, provides safety, protects the machine from contaminants and cools the workpiece efficiently. It additionally aids the prevention of damage and thermal distortion, while prolonging the life of the machine.

全罩密閉式的防水護罩

可使用強力注水裝置來做工件之冷卻，潤滑和排屑的功能，以確保砂輪隨時保有最佳的研磨品質，同時對於環境污染有很大改善。

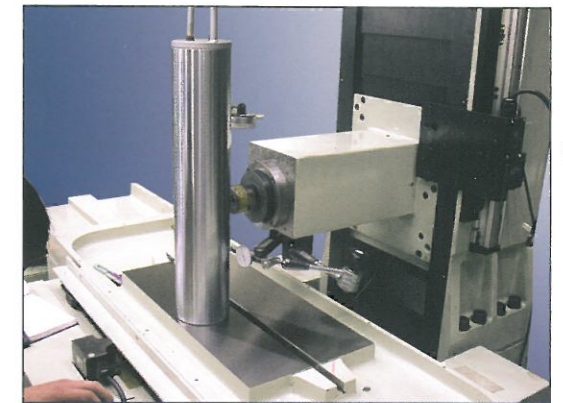


Spindle

The spindle cartridge assembly is a lifetime greased, sealed type with special ultra-precision angular contact bearings. It is dynamically balanced and Pre-loaded for high performance with minimal vibration and run-out. Specially designed Labyrinth type seals keep contaminants out of this spindle cartridge assembly for long life and enduring precision.

砂輪主軸

高精度彈筒式主軸前後端各二個超精密斜角滾珠軸承，在恆溫以最佳狀況預壓裝配，採用CNC主軸專用高級油脂，不需添加潤滑油就能確保潤滑效果，並配合非接觸式迷宮油封，間隔環經精密的量測後再現配預壓量，且前端為固定端，後端為活動端，可將溫昇熱變形傳導到後端，以減少機構傳動誤差，確保更長的使用壽命和精度。

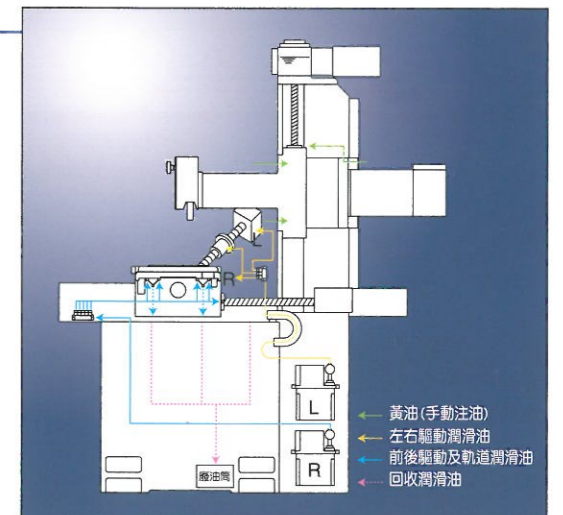


Lubrication System

All Joen Lih Precision Surface Grinders provide, as standard equipment, an electrically driven automatic lubrication system that delivers pressurized lubricating oil to all table; saddle; and spindle slideways, to maintain the precise accuracy of these performance grinders.

自動潤滑系統

所有準力高精度磨床均標準配備自動潤滑系統，採用電磁邦浦，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。

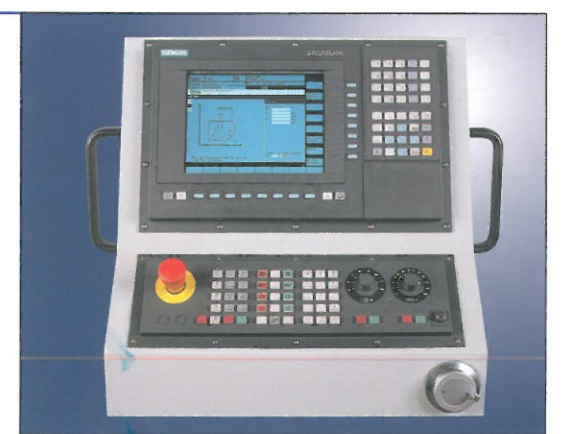


CNC Control

The siemens control system SINUMERIK 810D has an extremely wide range of field application and was designed for 2 to 5 simultaneously controlled axes. The top-quality software developed by Joen Lih is very user friendly. It is easy to program and simple to use. Making control for frequent changing of grinding tasks, by the operator, no trouble.

控制系統

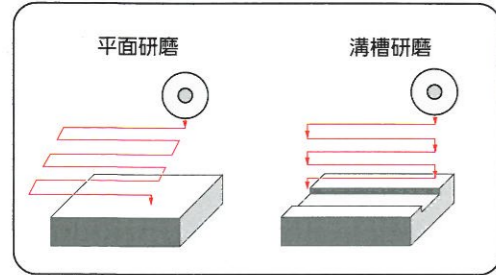
先進功能強大的西門子Siemens 810D 全數位化控制系統，可控制2-5軸同動，搭配準力開發之操作程式，親和性高，操作簡易。適用於各種多變的研磨需求。



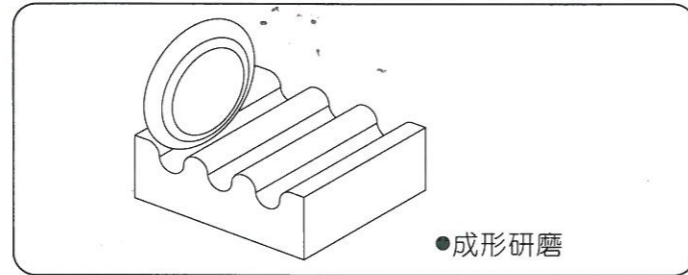
GRINDING FUNCTIONS: 研磨功能



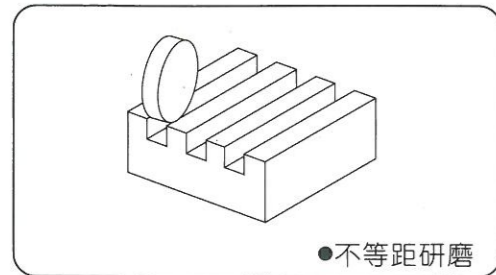
● SURFACE GRINDING



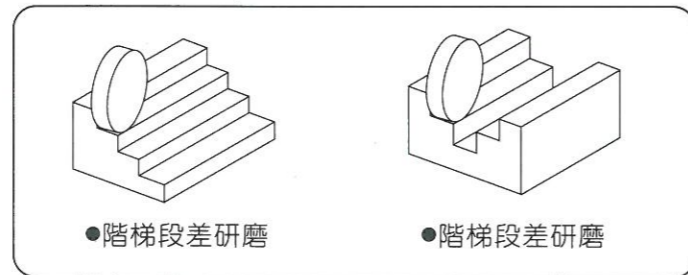
● PROFILE GRINDING



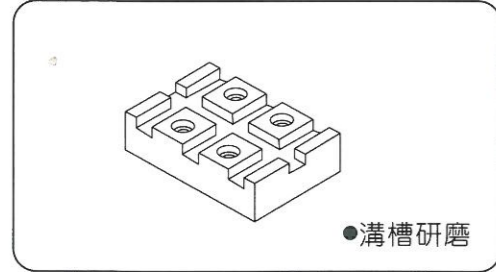
● FORMING GRINDING-PITCH



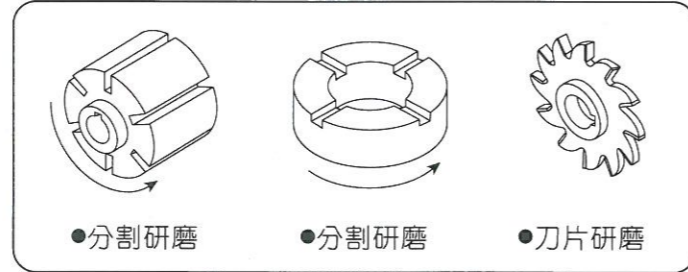
● STEP



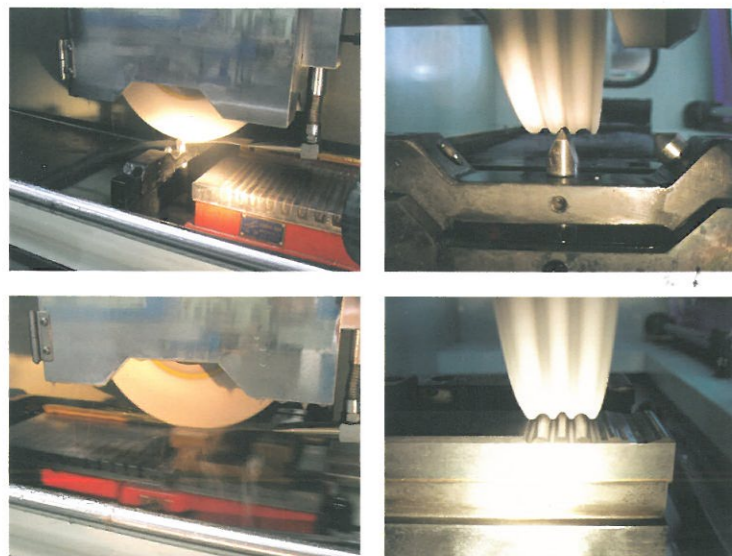
● SLICE GRINDING



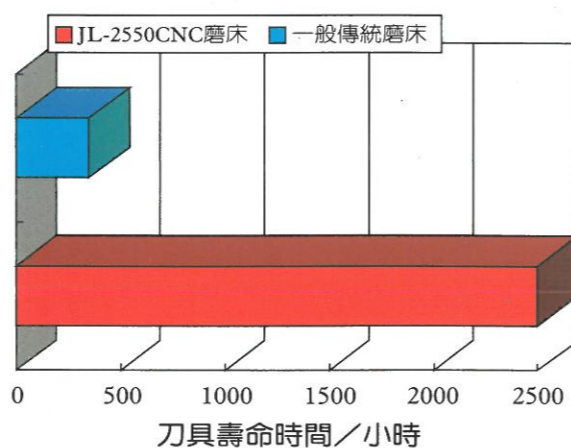
● INDEXING



● MACHINING SAMPLES: 加工實例



材料: SKD11
 牙深: 0.6MM
 牙寬: 0.7MM
 牙長: 70 MM
 一般預期研磨
 時間(含修砂): 180min
 CNC磨床實
 際研磨工時: 25 min



SPECIFICATIONS: 規格

DESCRIPTION 項目 / MODEL 機型	JL-2550CNC	
General Capacity 加工能力	Max. Grinding Length 最大研磨長度	500 mm (20")
	Max. Grinding Width 最大研磨寬度	250 mm (10")
	Table Working Surface 工作台面積 (寬x長)	250 x 500 mm (10" x 20")
	Max. Distance from Table Surface to Spindle Centerline 工作台面至主軸中心最大距離	470 mm (18.8")
Longitudinal Movement 左右進給	Max. Table Travel 工作台最大行程	290 x 550 mm (11.6" x 22")
	Table speed infinitely variable 工作台速度	0-25 m/min
	T-slot Size x Number T型溝槽尺寸及數量	14 mm x 1(0.56" x 1)
Cross Movement 前後進給	Max. Crossfeed Movement 前後最大行程	290 mm (11.6")
	Crossfeed Rapid Feedrate approx 快速進給	3000 mm/min (120" / min)
	Least Input Increment 最小設定單位	0.0001 mm (0.00001")
	Cross Feed on Hand Wheel 手輪進刀量 一圈 rev. 每一刻度 div.	0.1-1-10 mm (0.01"-0.1"-1") 0.001-0.01-0.1 mm (0.0001"-0.001"-0.01")
Wheelhead Vertical Infeed 上下進給	Rapid Vertical Rate 快速進給	500 mm/min (20"/min)
	Least Input Increment 最小設定單位	0.0001 mm (0.00001")
	Auto Infeed 手輪進刀量 一圈 rev. 每一刻度 div.	0.1-1-10 mm (0.01"-0.1"-1") 0.001-0.01-0.1 mm (0.0001"-0.001"-0.01")
	Grinding Wheel 砂輪	Wheel Speed 主軸轉速 Grinding Wheel Size 砂輪尺寸
Drive Motors 馬達	Spindle Motor 主軸馬達	12 HP (9.25KW)
	Auto. Gross Feed Motor 左右、前後伺服馬達	1.9 HP (1.4KW)
	Rapid Head Elevation Motor 升降伺服馬達附煞車裝置	1.9 HP (1.4KW)
Weight 重量	Machine Net Weight 機器重量	1800 Kgs
	Packing Gross Weight 裝箱毛重	2000 Kgs
Size 尺寸	Machine Floor Space (L x W x H) 機械操作空間	2350 x 1800 x 2100 mm
	Packing dimension (L x W x H) 包裝尺寸	2400 x 2280 x 2200 mm

NOTE: The specification is for JL-2550CNC with Siemens control system SINUMERLK 810D. The contents of this brochure are for reference only and the manufacturer reserves the right to modify the design specifications, mechanisms...etc. without notice.
 附註: 此規格表是依搭配西門子SINUMERLK 810D之數據。本公司隨時進行研究改善工作, 因此保有隨時更改、設計規格之權利, 不另行通知, 本目錄之規格僅供參考。

CNC CONTROL

- 10.4" TFT -LCD
- MMC 103 Interface
- 19" Control panel
- Pcmcia card 8MB
- RS232 Interface interput/output
- M.P.G.(Manual pulse generator)

CNC 控制器

- 10.4" 彩色液晶螢幕
- MMC 103人機操作介面
- 19" 機械控制面板
- 程式儲存卡
- 傳輸介面
- 電子手輪

CNC STANDARD SPECIFICATIONS

1. Controlled axes (X, Y, Z)
2. Simultaneous controllable axes 2-5axes
3. Least command increment 0.0001mm
4. Inch/Metric conversion
5. Machine lock
6. Emergency stop
7. Servo off
8. MDI operation
9. Dry run
10. Single block operation
11. M.P.G. (Manual pulse generator)
12. Linear Interpolation
13. Circular Interpolation
14. Dwell
15. Skip function
16. Manual reference point return
17. Automatic reference point return
18. 2nd reference point return
19. Rapid positioning
20. Automatic acceleration / deceleration
21. Feed rate override 0-150% (10%per)
22. Manual continuous feed
23. Macro B
24. RS-232 interface
25. M.P.G. interruption function
26. EIA/ISO automatic recognition
27. Self-diagnosis function
28. X, Y, Z, B axes servo motor
29. Wheel automatic dressing & compensation
30. Dresser auto. Position
31. Programmable control dresser
32. Automatic tool diameter correction
33. Backlash compensation
34. Automatic coordinate system setting & conversion
35. Part program storage length (640m)
36. Spindle
37. Custom macro
38. Program protection
39. Wheel speed protection
40. Status display
41. Lubrication alarm
42. Program display protection
43. Language display
44. PMC-L ladder search
45. Magnetic chuck voltage display
46. Programmable control magnetic force
47. Instruction display
48. Run hour display
49. G codes menu display
50. 10.4" TFT Colors display
51. Programmable control, Siemens PMC-L

控制系統規格

- 控制軸數X, Y, Z三軸
- 同動控制2-5軸
- 最小設定0.0001mm
- 公/英制轉換
- 機台鎖定
- 緊急停止
- 過載保護
- 手動輸入操作模式
- 程式空轉試跑
- 單節操作
- 電子手輪M.P.G.
- 直線插補
- 圓弧插補
- 暫停功能
- 指定功能滑跳
- 手動原點復歸
- 自動原點復歸
- 第二原點復歸
- 快速定位
- 自動加減速
- 進給調整
- 手動連續進給
- 客戶指令執行Macro B
- RS-232傳輸介面
- 電子手輪中斷功能
- EIA/ISO反動判別
- 自動診斷功能
- X, Y, Z, B軸伺服馬達
- 砂輪自動修正及補償
- 鑽石修整點定位
- 修砂條件可程式參數設定
- 刀具半徑自動補正
- 背隙補正
- 座標系統自動設定及轉換
- 工件程式儲存長度640m
- 主軸功率顯示
- 客戶指令撰寫
- 程式保護
- 主軸轉速安全保護
- 狀況顯示
- 潤滑系統警示
- 程式顯示保護
- 文字顯示
- 執行階梯顯示
- 磁盤電力顯示
- 電磁盤可程式控制
- 指示顯示
- 操作時間顯示
- G碼顯示
- 10" TFT採色螢幕
- 可程式控制Siemens PMC-L

STANDARD ACCESSORIES

- Grinding wheel
- Wheel flange
- Flange extractor
- Wheel balancing arbor
- Levelling screws
- Levelling pads
- Tool box and tools
- Working lamp
- Totally enclosed splash guard

標準附件

- 砂輪
- 法蘭
- 法蘭拆具
- 平衡棒
- 水平調整螺絲
- 腳墊
- 工具箱及工具
- 工具燈
- 全罩式防水罩

OPTIONAL ACCESSORIES

- J101 Electro magnetic chuck
- J102 Inclinal electro magnetic chuck
- J103 Table mounted dresser
- Table mounted single diamond disc (Diamond disc is not included)
- Table mounted double diamond disc (Diamond disc is not included)
- J104 Angle Dressing attachment
- J107 Coolant system
- J112 Precision vise
- J117 Coolant system with magnetic separator
- J118 Coolant system with paper filter
- J119 Coolant system with paper strip filter and magnetic separator

特殊附件

- 電磁盤
- 電可傾磁盤
- 砂輪修整器
- 單頭鑽石輥輪修整器(安裝在工作台上)(不含鑽石輥輪)
- 雙頭鑽石輥輪修整器(安裝在工作台上)(不含鑽石輥輪)
- 角度修整器
- 冷卻裝置
- 精密虎鉗
- 單用電磁過濾水機
- 紙帶過濾水機
- 磁性附紙帶過濾水機



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