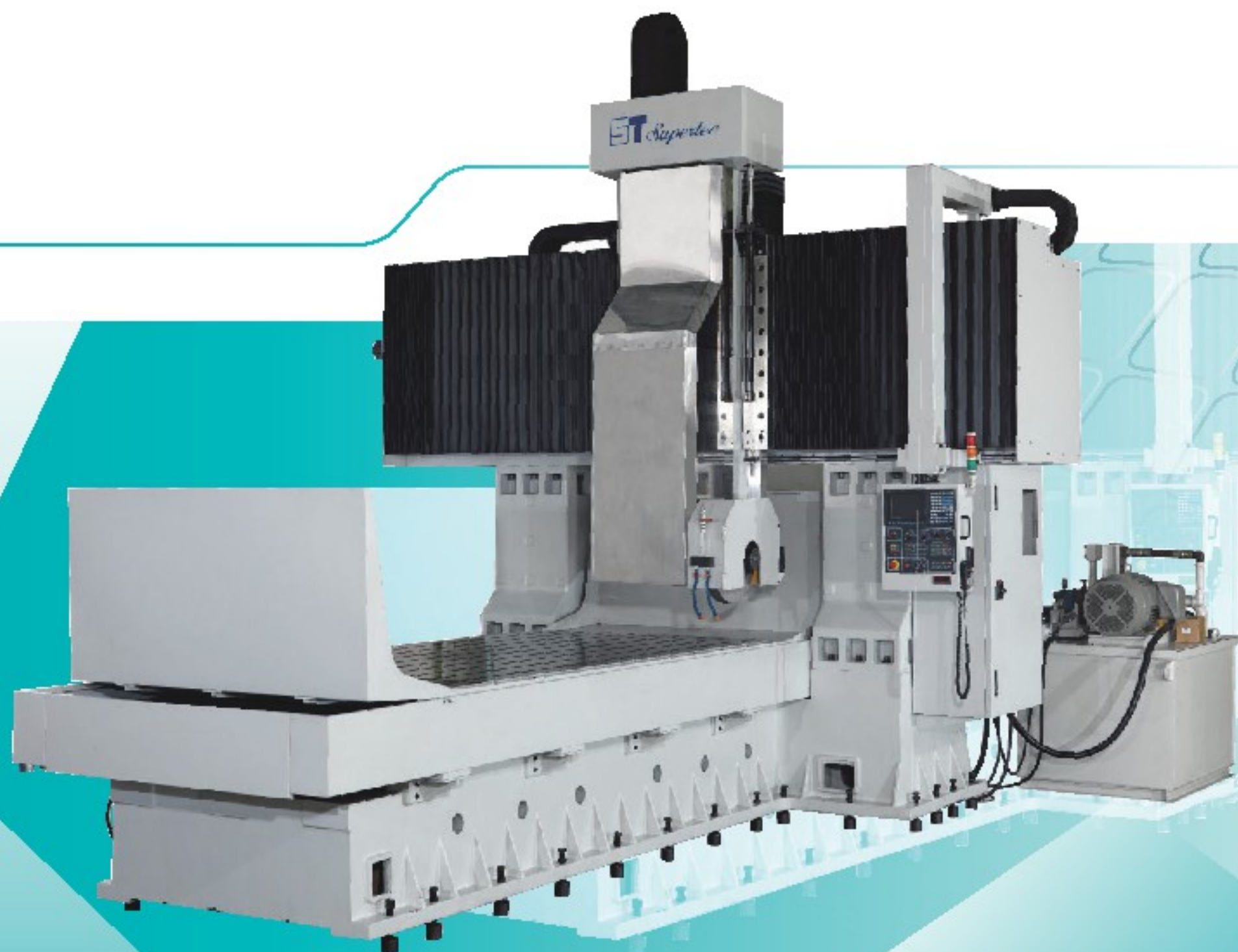


ST SUPERTEC[®] *Since 1954*

主新德科技股份有限公司



CNC DOUBLE COLUMN SURFACE GRINDER
CNC龍門平面磨床

Features 特點

所有主要機械元件皆為鑄造體 (FC300 鑄件，熱處理完成)
All major parts are casting (FC300, heat treated).

工件床座採用整體鑄造
Machine base is a one-piece casting.

床座之內部加強肋，使鑄件有極高之剛性
Several brackets inside the base contributing to great rigidity.

機器基礎採用螺絲調整腳座，可微調精度
Machine leveling can be as easy as turning a bolt on the adjustable pad.

以伸縮防塵遮布保護滑軌
Bellows to protect the guide ways.

主軸頭使用無間隙連接器傳動，免除運轉時之顫動，且提高傳動效率避免打滑
High precision couplings on the wheelhead prevent slip and vibration.

工作臺 (X 軸) 前後移動滑軌，雙 V 結構設計，動壓連續潤滑方式，避免磨耗
X axis: Hydrodynamic lubrication on the double V guide ways assuring non-wear out.

左右移動 (Y 軸) 軌道及上下軌道 (Z 軸) 採方型軌道，強制性潤滑，具有高剛性、高精度、低摩擦係數之特點
Y & Z axes: Box guide ways with forced lubrication ensuring precision, rigidity, and less friction.

電氣箱安裝在機床側邊採用獨立密封電氣櫃，電氣箱配冷卻機及照明燈
Independent electrical cabinet with heat exchanger and light.

機床冷卻水箱裝有磁性分離器和紙帶過濾裝置
Coolant system is equipped with paper filter and magnetic separator.

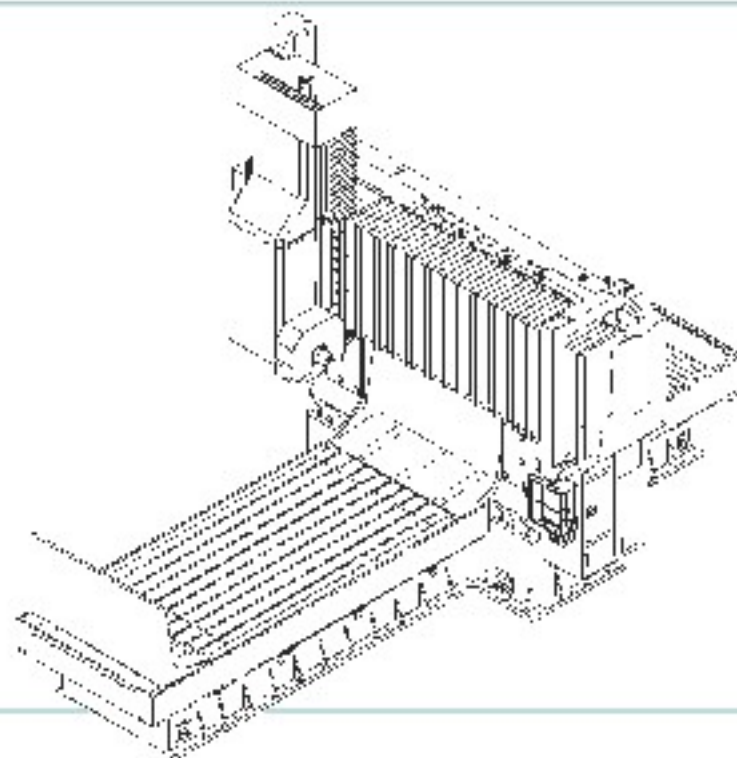
機床滾珠螺桿螺母附自動定時定量潤滑
Auto oil feeder on ballscrews provides timed lubrication.

機床床身為一體鑄造而成，不可能有漏水或油現象
Machine base is a one-piece casting. Leaking is out of the question.

數控系統有與手提電腦或臺式機直接通訊的資料介面 (RS232) 以及 CF 卡插槽，確保數控系統內的資料能有效的存儲於手提電腦或臺式機中
The CNC control has both RS232 and CF port. Data could be saved outside of the machine.

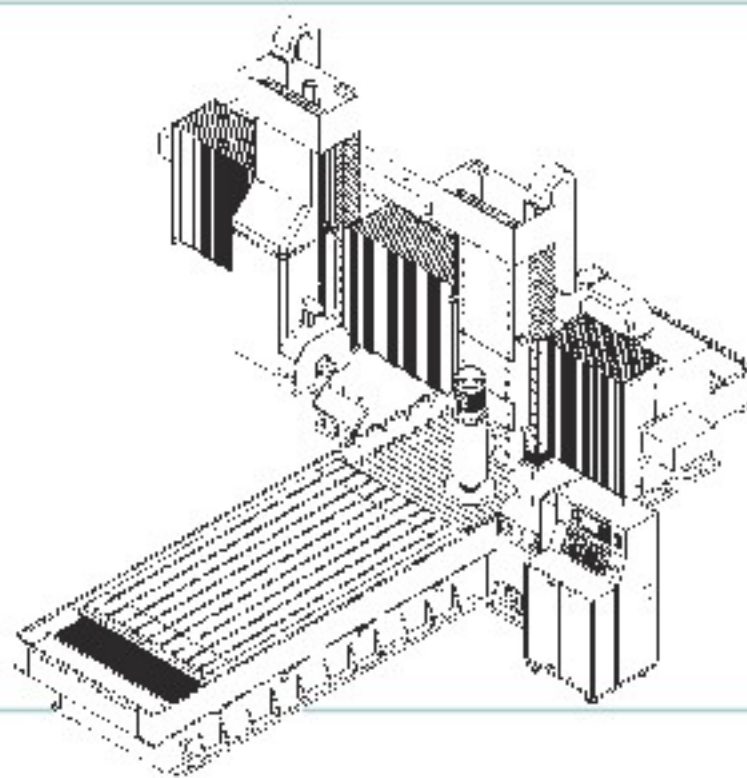
CNC 系統具有完全研磨程式
Various CNC grinding programs packed in.

SPG-1530



SPG-1530B

Two wheelheads 雙頭 (選配 Opt.)



The lubrication of the guide ways 潤滑滑軌

本機工作床台 (X 軸) 採用動壓潤滑滑軌，貼附特殊耐磨片 TURCITE-B 減少摩擦力，以獲得最佳滑動效果，提供最佳的定位精度以及最精確的進給率精確度。動壓潤滑滑軌，在滑台在滑座之導軌上尚未移動時，即以動壓方式給油，使之相互間產生潤滑油膜，而無直接接觸；整個滑軌充滿潤滑油，當滑板在滑座之導軌上依照所需方向移動時，經由所設計之油溝回路。

The hydrodynamic guide way method is applied to the table (X axis). The Turcite-B strip on the guide way surface ensure the best positioning and feeding precision. Lubricant oil is pumped up onto the guide ways before they even start moving, forming oil film that counteracts the direct contact of the guide ways. The oil is circulating through the small carved grooves on the guide ways and then recovered at both ends of the base.

Hydrodynamic wheel spindle 動壓複合潤滑砂輪軸

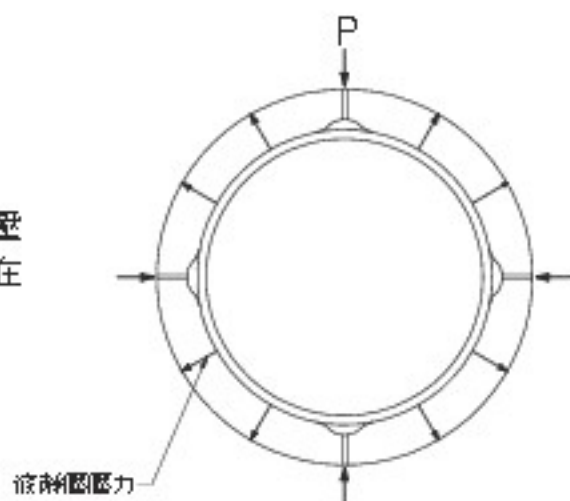
砂輪主軸採用鎳鉻合金鋼材質，經由正常化處理消除內應力、硬化熱處理、精密研磨、精密表面拋光、動態平衡校正等處理製造而成。砂輪心軸潤滑系統採用動壓複合潤滑設計，此種系統易於達成很高的油膜支撐壓力。這個設計正是一般所謂的高速度動壓潤滑法，不必特別依靠純靜壓潤滑方式來控制壓力的均衡。動壓潤滑部分以油泵壓送潤滑油至砂輪軸承油室中使心軸維持於中心位置。如果供油側油壓不能到達設定之安全工作壓力時，備有安全壓力偵測開關阻止砂輪軸的啟動。當砂輪頭停止前亦有延遲時間裝置，讓主軸確實停止後，才中斷軸承潤滑供油。避免金屬間之直接接觸，利用純液體磨擦方式來防止心軸與銅承軸雙方的磨耗發生。本磨床的砂輪主軸轉速具有很大的變速範圍，並附有潤滑油溫度控制用冷卻裝置，防止油溫太高時油品粘度降低而影響油膜正常壓力的維持。要達到良好的研磨表面而無顫痕產生，基本要件就是砂輪心軸要有高度的旋轉剛性，本機採用之設計可達成下列各項要求：

The wheel spindle is made of chrome-nickel steel. It goes through the normalization process to clear the stress, heat treatment to get hardened, precision grinding, polishing, and dynamic balancing calibration.

The spindle adopts a design called hydrodynamic complex lubrication. The method easily allows high supporting pressure of oil film. The design is actually the so-called high speed dynamic lubrication. It doesn't merely rely on the pure hydrostatic lubrication to equalize the pressure.

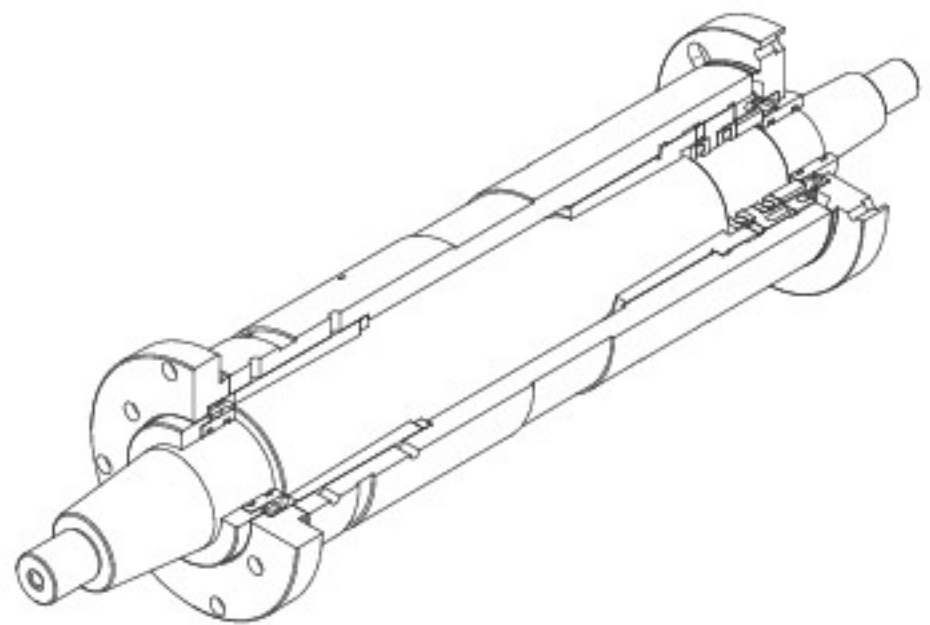
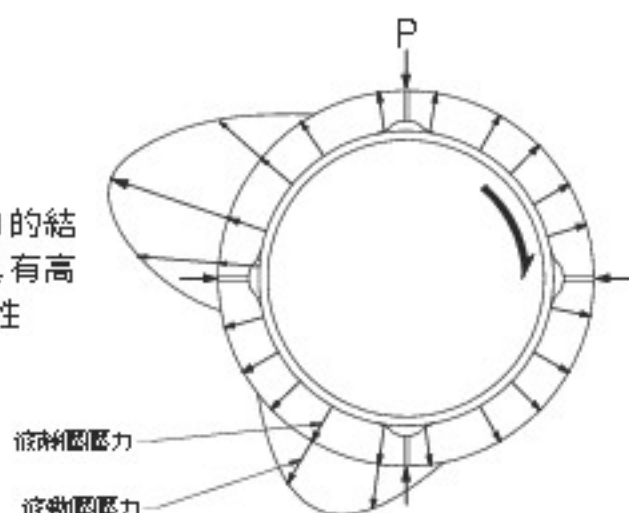
液靜壓壓力

砂輪軸靜止時液靜壓壓力將砂輪軸穩穩保持在軸受的中心位置上



砂輪軸旋轉時

液靜壓及液動壓力的結合提供砂輪主軸具有高剛性及高阻尼的特性



The oil is pumped up into the spindle to keep the inner spindle in the center. If the hydraulic pressure on the pump side cannot reach the pre-set value, a pressure switch will stop the spindle from rolling. There is also a mechanism to stop pumping the oil only after the spindle comes to a full stop. With purely liquid in between, there is no direct contact between the inner spindle and copper bushing. The RPM of the spindle has a wide range and with an oil temperature regulator the lubricating oil won't get too hot to affect the oil film pressure. In order to have an excellent surface finish and ensure no vibration marks, a high rotating-rigidity spindle must be secured.

Our design of the grinder can secure the following:
本機採用之設計可達成下列各項要求：

高度穩定的潤滑壓力 Stable lubricant pressure.

無顫痕的研磨表面 No vibration marks on ground surfaces

避免純靜壓系統（低壓力）所產生的遊移傾向
Preventing moving tendency resulting from hydrostatic pressure (low pressure).

無磨耗的長期運轉 Non-wear out, long term spinning.



SPG-2040CNC



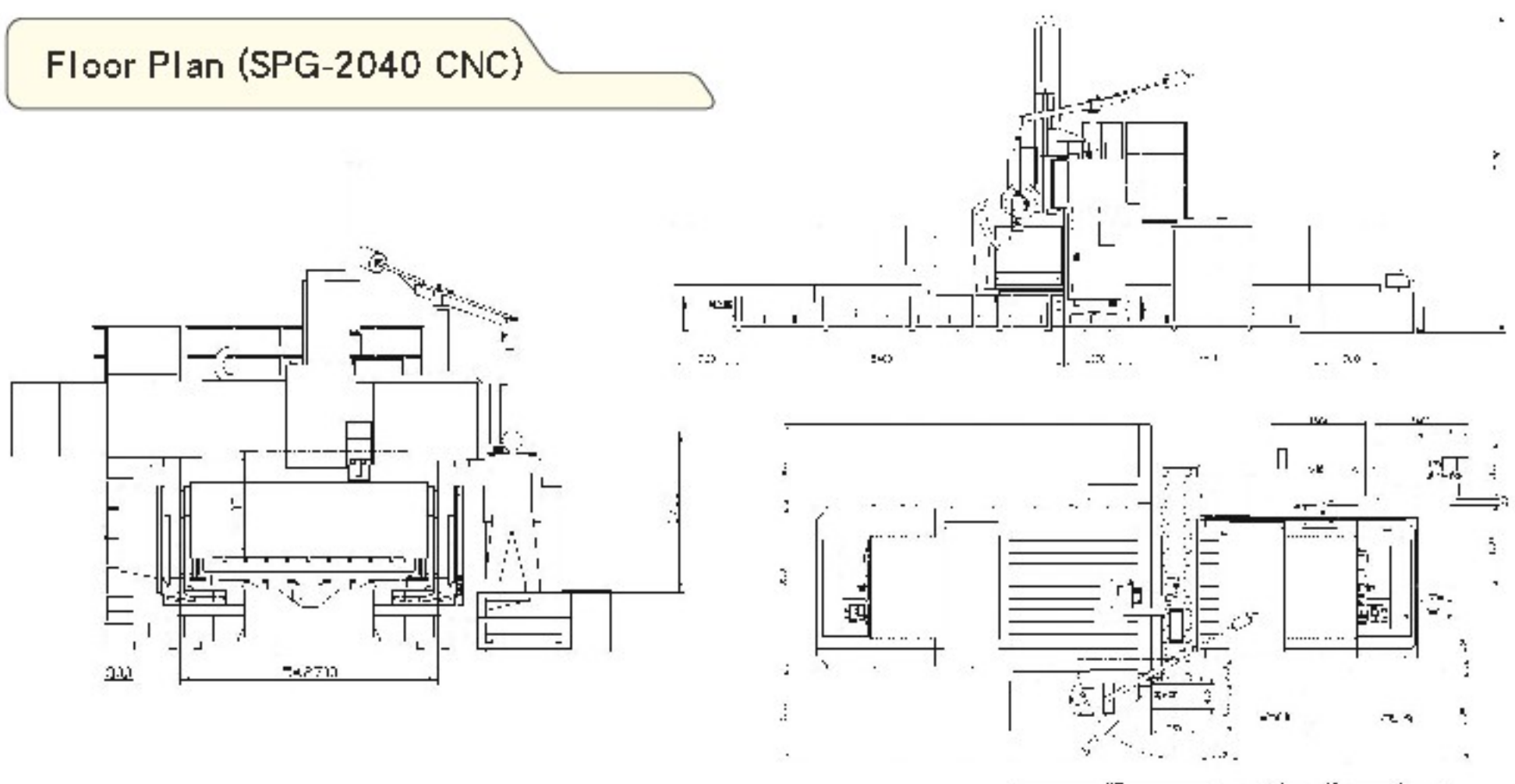
Y 軸金屬伸縮護罩
Y-axis metal bellows



油壓缸油溫冷卻機
Oil temperature regulator for hyd. cylinder



Floor Plan (SPG-2040 CNC)



油壓缸油箱
Hydraulic tank for hyd. cylinder



電磁鐵
Magnetic chuck (選配 opt.)



動壓主軸砂輪頭
Hydrodynamic spindle wheelhead



可拆卸式不銹鋼視窗門
Detachable stainless steel window door (選配 opt.)



STANDARD ACCESSORIES 標準附件

配套件 Accessories	數量
動壓式主軸 Hydrodynamic spindle	1 set
滾珠螺桿支撐軸承 Bearing for ball screw	2 set
滾珠螺桿 Ball screw	2 set
CNC 數控系統 Fanuc CNC	1 set
交流伺服兩軸驅動馬達 AC servo motors for the two axes	2 set
變頻器 Inverter	1 set
油壓缸油箱 Hydraulic tank for hyd. cylinder	1 set
油壓系統油冷卻機 Oil temperature regulator for hyd. cylinder	1 set
砂輪主軸馬達 Wheel spindle motor	1 set
X 軸伸縮護布 X axis bellows	1 set
水平調整座 Adjustable leveling pad	50 set
Y 軸伸縮護罩 Y axis metal bellows	1 set
工具 & 工具箱 Tools and tool box	1 set
鑽石筆 Diamond dresser	1 set
砂輪拆卸器 Wheel Extractor	1 set
平衡台 / 平衡樑 Balancing arbor and stand	1 set
操作手冊 & 零件手冊 Operator's manual and parts list	1 set
電磁紙帶過濾水箱 Coolant system with paper filter and magnetic separator	1 set
砂輪套 Wheel flange	1 set

CNC Double Column Surface Grinder

精密 CNC 龍門平面磨床

Item/Model		SPG -1525	SPG -1530
加工能力 Capacity	工作台尺寸 (Max. Table Size)	1500x2500	1500x3000
	電磁鐵尺寸 (Max. Chuck Size)	1500x2500	1500x3000
	X 軸行程 (X-axis Stroke)	2800	3300
	Z 軸行程 (Z-axis Stroke)		
	工作台面到砂輪底端間距 (Dist. from Table Top to Wheel Bottom)		
	門柱間距 Distance Between Columns	1900	
	電磁鐵 重量 kgs/ 高度 mm (Mag. Chuck Weight Height)	2500 / 88	3000 / 88
	工作台最大承載重量 kgs(Max. Loading of Table)	10000	
X 軸 X-axis	油壓行程 (Hydraulic Stroke)	2900	3400
	油壓缸規格 (Hydraulic Cylinder Spec.)		
	主壓力源 kg/cm ² (Main Pressure Source)	15	
	吐出量 Q L/min(Hydraulic Pump)		
	工作台最大移動速率 M/min(Max. Table Speed)		
Y 軸 Y-axis	快速移動速率 M/min(Rapid Traverse Speed)		
	Y 軸行程 (Y-axis Stroke)		
	電子手輪每刻度 (MPG per Graduation)		
	伺服馬達輸出功率 KW(Servo Motor)		
Z 軸 Z-axis	快速移動速率 M/min(Rapid Traverse Speed)		
	電子手輪每刻度 (MPG per Graduation)		
	伺服馬達輸出功率 KW(Servo Motor)		
Z 軸砂輪頭 Z-axis Wheel head	砂輪尺寸 (Grinding Wheel Size)		
	主軸馬達輸出功率 HP(Spindle Motor)		
	主軸轉速 RPM(Spindle Speed)		
切削液系統 Coolant Sys.	水箱容量 L (Tank Volume)		
	處理量 L/min (Processing Volume)		
	馬達輸出功率 HP(Motor)		
油壓系統 Hyd. Sys.	油箱容量 L (Tank Volume)		
	馬達輸出功率 HP(Motor)		
潤滑系統 Lube Sys.	油箱容量 L (Tank Volume)		
	馬達輸出功率 HP(Motor)		
重量尺寸 Machine	淨重 kgs(Net Weight)	35000	38000
	包裝尺寸 (長 x 寬 x 高)cm(Packing Dimension LxWxH)	720x460x490	820x460x490

備註：製造廠保有更改設計規格機構等權利，以改良機器性能而不需預先通知。

We reserve the right to modify the specifications relating to any of the above machines without notice.

Unit : mm

	SPG –1540	SPG –2030	SPG –2040	SPG –2050	SPG –2060
	1500x4000	2000x3000	2000x4000	2000x5000	2000x6000
	1500x4000	2000x3000	2000x4000	2000x5000	2000x6000
	4300	3300	4300	5300	6300
850					
800(Ø510)opt.750(Ø610)					
	2700				
	4000 / 88	4000 / 88	5300 / 88	6600 / 88	7900 / 88
	15000	15000			20000
	4400	3400	4400	5400	6400
Ø125 x Ø90					
	20				25
226 / 189 (60Hz / 50Hz)					
2 ~ 30					
10					
1800					
0.001					
1.8					
5					
0.001					
1.8					
Ø510x100xØ254 Opt. Ø610x100xØ254					
15HP/Opt. 20HP					
1250 / 1050					
600					
360					
1 HP					
1200					
15					
40					
1					
	43000	40000	45000	50000	55000
	1020x460x490	820x510x490	1020x510x490	1220x510x490	1420x510x490



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