



中威機械股份有限公司
CHUNG WEI MACHINERY CO., LTD.

GREAT PRECISION

中威高精密 · 定樑式龍門磨床

Fixed Crossrail Double Column Type Surface Grinder

RUGGED AND STRESS-FREE CAST IRON COMPONENTS

中威龍門磨床為達到高精密、重切削、高效率的研磨成果，採用定樑式門軌設計，全部鑄件皆採用高強度鑄鐵且經過徹底的應力消除退火處理，而且定樑及門柱特別強化設計，以確保機械精度壽命的維持。門軌並採用獨特的大型硬軌及滾柱軸承之複合式設計，不但能達到重切削、高精度且可以做精密的微進給。

The GREAT Fixed Crossrail & Double Column Surface Grinder is constructed by rugged and stress-free cast iron components such as base, table, column, crossrail and wheel head, which provides the high precision and heavy duty grinding. Suitable for precious grinding of large size mold base or wide plate material.



GSDC 2050 PNC



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橫式主軸頭

- 高剛性砂輪主軸由6個大型超精密(CP4)斜角滾珠軸承支持，並施予適當的預壓及密封式永久性潤滑，不需另作潤滑保養。且主軸採彈簧式設計，更換保養容易。
- 主軸頭座上下及左右進給均由AC伺服馬達配合大型精密滾珠螺桿，可做自動或用電子手輪(MPG)手動精密進給。

HORIZONTAL SPINDLE HEAD

- The horizontal spindle unit is supported by super precision bearings.
- The saddle slideways are coated with low friction Turcite B and combine with roller chain bearings, Accurate Vertical and horizontal feed of grinding head is controlled by AC servo motors and precise ball screws, which can be achieved the smooth movement and a minimum increment in Y & Z axes.



雙V床台軌道及液靜壓潤滑系統

- 床台及工作台採用全支持式設計，工作台完全在床台滑道內運行，軌道是由雙V型滑道組合而成，並貼附低摩擦係數的特殊耐磨材料，經過高精密研磨及劃花處理，配合高效率的液靜壓特殊潤滑系統，工作台與床台軌道幾乎完全不接觸，工作台在高速或低速運行皆非常滑順，且液靜壓系統及油壓系統均提供冷凍式油溫控制，不論研磨精度或使用壽命皆可數倍提昇，且可降低油壓系統所需動力達30%以上。

DOUBLE-VEE SLIDEWAYS AND HYDROSTATIC LUBRICATION SYSTEM

- The machine base and table ways are two-vee designed and they are precision ground and hand scraped, The table is fully supported on the base even in overall running.
- The slideways are coated with low friction fluoro-plastic plates and also are lubricated with hydrostatic system, and interlock with the hydraulic system for safety operation and long life.
- The hydrostatic lubrication has lowest friction practically even at low speed and maximum load, so that the low power is needed only to drive the table and work pieces in hydraulic system.
- The hydrostatic lubrication oil of table slideways is controlled by temperature control device.



Double Column Surface Grinder



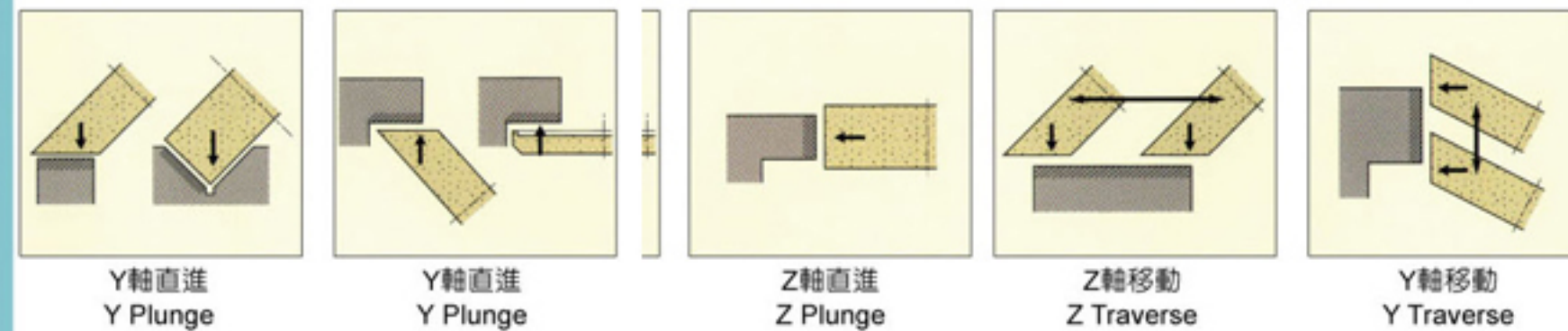
萬能立軸頭裝置【特別附件】

- 中威龍門磨床可選擇裝置萬能立軸頭，以作軌道側面、下方、斜面或鳩尾軌道研磨。
- 萬能立軸頭之上下及左右進給均以伺服馬達(Servo Motor)配合精密滾珠螺桿做精密進給。
- 立軸頭旋轉是由伺服馬達經由高精度減速機驅動角度達 $\pm 75^\circ$ ，可由觸控面板上設定或電子手輪(MPG)，做自動或手輪旋轉控制。
- 立軸頭旋轉角度之設定及讀取解析度可達千分之一度(0.001°)，精密準確，可做精密角度之研磨。
- 立軸頭角度控制電子手輪進給每刻度備有0.001°、0.01°或0.1°三種模式可供選擇，可做最適當而有效率的操控。

UNIVERSAL SPINDLE HEAD [OPTION]

- Universal spindle head rotation is driven by AC servo motor, It is indexed, precisely and automatically, steplessly.
- The rotation angle of universal spindle head can be set directly on the touch screen control panel.
- The swivelling range of head is ± 75 degree, and the minimum setting and read-out angle is 0.001 degree.
- Accurate vertical and horizontal feed of the grinding head is controlled by AC servo motors and precise ball screws.

研磨範例 GRINDING PATTERN



比例式油壓控制系統

- 工作台驅動採用比例式控制油壓系統，不論啟動、停止、方向切換或是速度調整及手動、自動操作，皆可由操作箱上控制面板直接操作，符合最佳人體工學設計，操作容易、效率高，並有冷凍式油溫冷卻裝置。

PROPORTIONALLY CONTROL HYDRAULIC SYSTEM FOR TABLE SPEED ADJUSTMENT

- The table speed is controlled infinitely by proportional valve, which is adjusted from the knob on the control panel.
- The hydraulic oil is cooled by refrigerator, so that the hydraulic oil is operated in low temperature and ensure the grinding machine operations in precision condition.

懸吊式可移動控制箱

- 精密龍門磨床控制系統採用最符合人體工學的可移動懸吊式控制箱設計，操作方便迅速。
- 控制系統為最容易操作的人機觸控面板，配合雙軸三菱(MITSUBISHI)伺服馬達與精密滾珠螺桿，簡單明瞭的多種圖形及對話式操控軟體，操作人員易懂易學。
- 控制箱並有分離式電子手輪，使手動操作更為方便。
- 電器箱同時備有隔離式冷卻器。

PENDANT CONTROL BOX

- The NC control panel is built into a pendant control box, from which all operations of the machine are controlled.
- These include all manual operations such as grinding head feed, table driving and automatic grind cycle setting. The manual pulse generators (M.P.G) are moveable, which easily to operate.
- There are some software of standard grinding modes such as surface grinding, plunge grinding, etc.. are built with figure into the touch screen control panel, It is a great convenience for operations.
- Electric cabinet is equipped with air cooler.



Moveable Control Box



Soft Ware In Touch Control Panel



Electric Cabinet



規格表 SPECIFICATIONS

型式 MODEL (PNC)	GSDC-1220	GSDC-1230	GSDC-1240	GSDC-1530	GSDC-1540	GSDC-1840	GSDC-1850	GSDC-2040	GSDC-2050
最大研磨面積(寬×長) Maximum grinding(width × length) mm	1200x2000	1200x3000	1200x4000	1500x3000	1500x4000	1800x4000	1800x5000	2000x4000	2000x5000
主軸中心至台面距離 Distance between spindle center and table mm	225-1000/525-1300 (option)					225-1200/525-1500 (option)			
工作台左右最大行程 Table Max. travel mm	2300	3300	4300	3300	4300	4300	5300	4300	5300
兩門柱間之距離 Distance between the columns mm	1572	1575	1575	2075	2075	2390	2390	2590	2590
最大工作物高 Maximum height of work piece mm	800					1000			
工作台左右速度 Longitudinal table speed M/min	3~32					3~32			
前後連續速度 Cross feed speed continuous M/min	0.3~1.5					0.3~1.5			
前後自動進給量 Cross feed intermittent mm/time	1~50					1~50			
前後進給每轉 Cross feed per revolution(M.P.G) mm	0.1、1、5					0.1、1、5			
前後進給每刻度 Cross feed per division(M.P.G) mm	0.001、0.01、0.05					0.001、0.01、0.05			
上下快速進給速度 Rapid down feed(Servo motor) mm/min	500					500			
上下進給手輪每轉 Down feed per revolution(M.P.G) mm	0.1、0.5、1					0.1、0.5、1			
上下進給手輪每刻度 Down feed per division(M.P.G) mm	0.001、0.005、0.01					0.001、0.005、0.01			
上下自動進刀 Auto down feed mm	0.001、0.099					0.001、0.099			
主軸砂輪尺寸(外徑×內徑×寬) Horizontal grinding wheel size (O.D × I.D × width) mm	ø510 × ø203.2 × 75 / ø510 × ø203.2 × 100(option)					ø510 × ø203.2 × 75 / ø510 × ø203.2 × 100(option)			
主軸頭座上下行程 Horizontal head vertical travel mm	800					1000			
主軸馬達馬力 Horizontal spindle motor power(60HZ/4poles) KW/HP	15KW(20HP) / 18.5KW(25HP)(option)					15KW(20HP) / 18.5KW(25HP)(option)			
主軸砂輪轉速 Horizontal spindle speed(60HZ/50HZ) RPM	1150					1150			
立軸旋轉角度 Universal head swiveling angle(degree) (°)	±75°					±75°			
立軸馬達馬力 Universal spindle motor power(60HZ/4poles) KW/HP	7.5KW(10HP) / 11KW(15HP)(option)					7.5KW(10HP) / 11KW(15HP)(option)			
立軸砂輪轉速 Universal spindle speed(60HZ/50HZ) R.P.M	1750 / 1450					1750 / 1450			
立軸砂輪尺寸(外徑×內徑×寬) Universal grinding wheel size (O.D × I.D × width) mm/in	ø355 × ø127 × 38 / ø14" × ø5" × 1 1/2"					ø355 × ø127 × 38 / ø14" × ø5" × 1 1/2"			
立軸角度手動旋轉每刻度 Universal head swiveling angle (degree)(M.P.G) (°)	×0.001、×0.01、×0.1					×0.001、×0.01、×0.1			
立軸頭座上下行程 Universal head vertical travel mm	800					1000			
淨重 NW Kgs	22500	25000	28000	31500	36000	43000	48000	48500	54000
工作物最大重量 Maximum weight of work piece (include chuck) Kgs	5000	6500	8000	8000	9500	11000	13000	15000	17000

標準附件 STANDARD ACCESSORIES

- 砂輪 Grinding wheel
- 法蘭 Wheel flange
- 冷卻系統 Coolant equipment
- 工具及工具箱 Tools with box
- 平衡軸 Balancing arbor
- 砂輪拔取器 Wheel extractor
- 電子手輪 Manual Pulse Generator
- 液靜壓系統油溫控制器 Hydrostatic oil cooler (冷凍式) (refrigeration type)
- 油壓系統油溫控制器 Hydraulic system oil cooler (冷凍式) (refrigeration type)

特別附件 OPTIONAL ACCESSORIES

- 立軸裝置 Universal spindle grinding equipment
- 電磁鐵 Electro magnetic chuck
- 備用法蘭 Spare wheel flange
- 平衡台 Balancing base
- 石英工作燈 Halogen machine lamp
- 紙帶式濾清機 Band filter coolant clarifier
- 橫軸頭主軸變頻器 Horizontal spindle inverter
- 立軸頭主軸變頻器 Universal spindle inverter
- 磁式濾清機 Magnetic dust separator

尺寸圖 DIMENSIONS

Model (PNC)	GSDC-1220	GSDC-1230	GSDC-1240	GSDC-1530	GSDC-1540	GSDC-1840	GSDC-1850	GSDC-2040	GSDC-2050
Height of machine(MAX.H) (mm)	4100	4100	4100	4100	4100	4700	4700	4700	4700
Height of table surface(H1) (mm)	920	920	920	920	920	1020	1020	1020	1020
Width of machine(W) (mm)	4200	4200	4200	4700	4700	5000	5000	5200	5200
Width of establishment(W1) (mm)	2585	2585	2585	3085	3085	3490	3490	3690	3690
Length of machine(L) (mm)	7100	9400	11400	9400	11400	11400	13400	11400	13400
Length of base(L1) (mm)	5800	7800	9800	7800	9800	9800	11800	9800	11800

