

## 高精密型 旋轉台磨床 High Precision Rotary Grinders

銅翌公司生產之旋轉台磨床

不論是硬脆材料研磨加工，一般金屬加工、模具加工，在半導體、太陽能光電產業、IC、Wafar、TFT-LCD、PASS製造之陶瓷製品而氧化鋁(Al<sub>2</sub>O<sub>3</sub>)、氧化鋯(ZrO<sub>2</sub>)、氮化矽(Si<sub>3</sub>N<sub>4</sub>)、碳化矽(SiC)、矽晶(Si)、石英(Quariz)、石墨(Graphite)、玻璃陶瓷(MACOR)、複合陶瓷(ZTA)、極其貴金屬靶材釘(Ru)，均括用本公司提供磨床加工應用設備所生產，提供客戶最佳加工利器。

**Dowell's rotary grinders are capable of working hard, brittle, general metal and mold materials.**

These machines can also be used for following variety of materials, semi-conductor, solar photonics, IC, Wafar, TFT-LCD, PASS ceramic products, aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), Zirconium oxide (ZrO<sub>2</sub>), Silicon nitride (Si<sub>3</sub>N<sub>4</sub>), Silicon carbide (STC), Silicon (Si), Quariz, ZTA Graphite, MACOR, Ru, etc. The variety of materials capable of being processed provides customer best value.

### 機械特性

- 完美研磨精度
- 鏡面級表面加工效果
- 自動砂輪修整補償功能
- ON LINE砂輪主軸振動狀況監視
- 高剛性結構及床台全支撐設計
- YZ軸及轉盤動力採用AC伺服馬達驅動

### Feature:

- Precision grinding machine
- Surface finishing to mirror class
- Automatic Trim Compensation
- On line spindle vibration monitor
- Machine base fully supported design creating high rigidity structure
- Y, Z axis and rotary driven by AC servo motor



**RS-300ANDII**

本機台含特別配件  
Picture includes optional accessories.



研磨工件範例  
Workpiece Sample



全支撐雙V底座  
Fully Supported Double V Base Design



高剛性結構立柱  
High Rigidity Column



自動修整補償功能  
Automatic Trim Compensation



密閉式防水罩  
Closure Type Water-proof Guard



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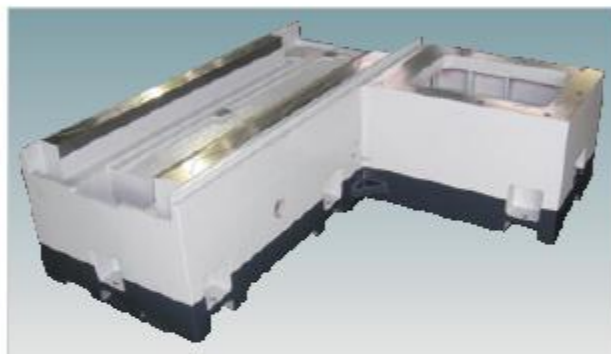
### 機械特性 Feature:

- 米漢納高級鑄鐵(FC30)高剛性、高耐磨性之滑道可使機器精度永久保持。
- 側向設計之主軸頭在重切削時，具有高穩定性。
- 主軸馬達採用西門子V3級馬達，防水性佳可抵抗高潮濕水氣。
- 昇降進給軌道採用3支高剛性滾柱型線性滑軌，使上下進給順暢，亦兼顧高剛性。
- 工作台採用細目電磁盤，吸力特強，利於小工件吸附。
- Meehanite Class FC 30 casting with slide way provides high stiffness and wear resistance maintaining the accuracy of the machine.
- Spindle lateral design creates stability during heavy cutting.
- Spindle Siemens V 3 Grade motor provides good water proofing resisting moisture.
- Vertical feeding uses 3 high stiffness and rigidity linear roller guides allowing smoothly vertical feeding whilst maintaining high stiffness.
- Small workpiece suction is accomplished by fine electrical magnetic chuck.



### 高剛性蜂巢式立柱 High Rigidity Column

立柱採用蜂槽式設計依力學原理，強化研磨時之穩定性能承受重負荷研磨。  
Column uses honeycombed structure providing high rigidity and accuracy.



臥式砂輪 Horizontal Grinding Wheel

### 超強度L型結構 High Rigidity L Type Structure

床台、立柱主要鑄件均採用米漢納高級鑄鐵，並經由退火處理及自然變化，徹底清除內應力，避免日後之變形，確保機械加工精度持久性。  
Machine main castings use Meehanite Class FC 30 and aged naturally through time allowing longtime structural stability.

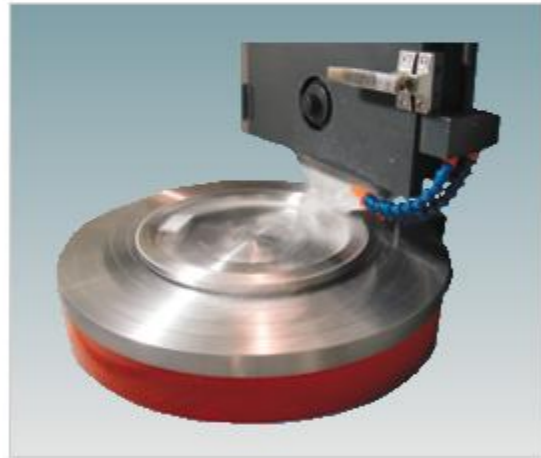


本機台含特別配件  
Picture includes optional accessories.

HR-400AND  
HR-500AND  
HR-600AND



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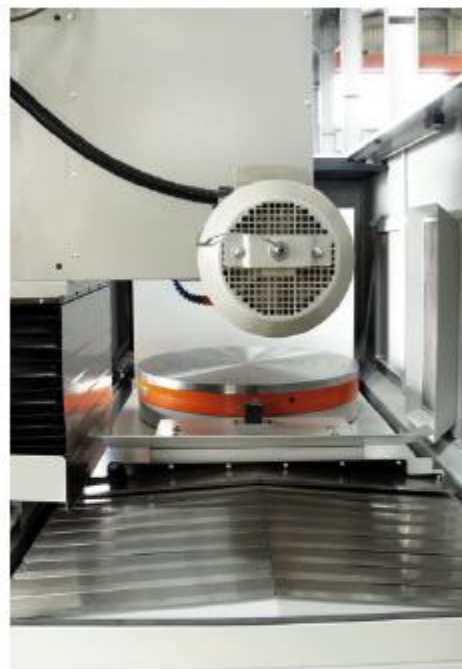


精密磨床主軸與旋轉磁盤  
Precision grinding spindle  
and rotary magnetic chuck



### 砂輪主軸 Spindle And Motor

主軸採用六個超精密斜角滾珠軸承支撐，能承受重負荷研磨。  
The large spindle is support by CP6 precision angular contact ball bearing.  
10HP **SIEMENS** motor ensures powerful accurate cutting.



良好的排水系統，  
易於污泥清洗  
Excellent drainage system,  
easy to clean



可調式操作面板  
Adjustable operation panel



供油系統  
Automatic lubrication system

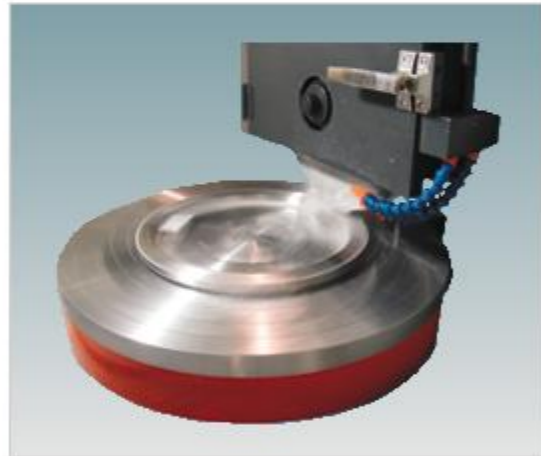


**HR-800AND**

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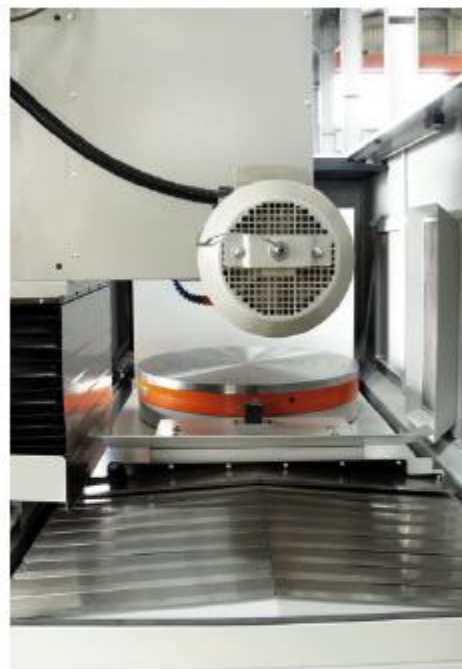


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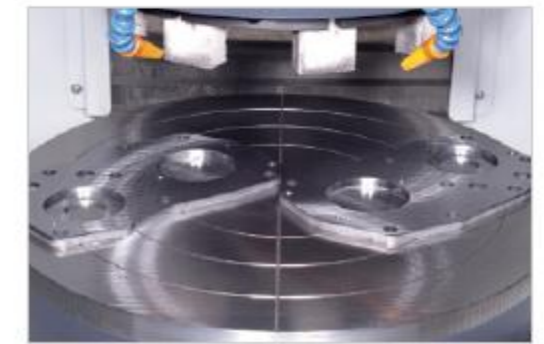
## 高剛性高效率 立式旋轉磨床 High Rigidity and Efficient Vertical Rotary Grinders



VR-1000AND



VR-600AND



研磨狀態  
Grinding Operation



本機台含特別配件  
Picture includes optional accessories.



## 控制系統 (AND II): AND II Control System PLC

簡易式的對話操作模式能讓使用者輕易選擇研磨方式依據設定畫面輸入研磨數據，既能進行自動研磨。  
 不需有20年加工實務經驗，不需要有高智慧、高學歷，就算是不懂機械操作的一般女性，也可掌握一手不同凡響的精密研磨加工技藝。  
 User-friendly control allows inexperienced, female or any operators to master operation very ease.  
 Simple Dialogue control only requires a size input to start grinding cycle.



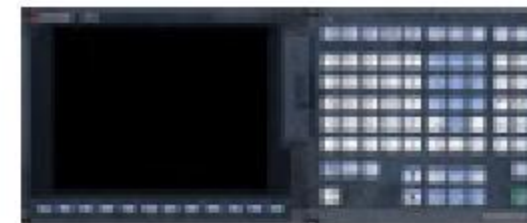
## CNC控制系統可選擇 CNC Controls Available (OPT)



SIEMENS



FANUC



MITSUBISHI



SINTEC

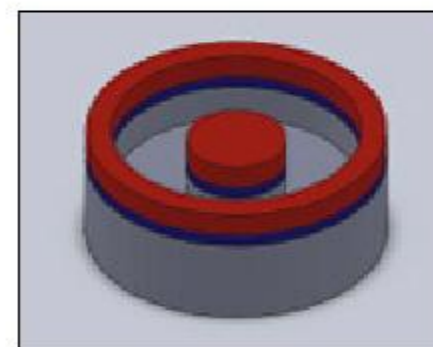


線上砂輪平衡系統(選購配件)  
 On line wheel balance system. (OPT.)

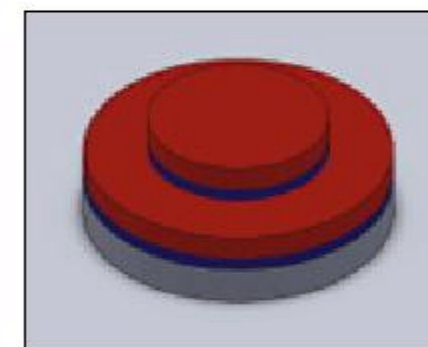
## 研磨範例 Workpiece Sample



平面研磨  
 Surface Grinding



凹槽研磨  
 Plunge Grinding



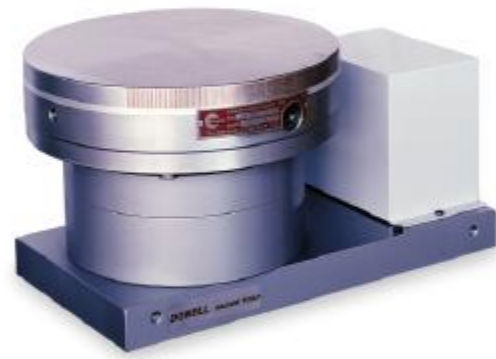
階段研磨  
 Step Grinding



複合研磨  
 Multeity Grinding



## 選購配件 Optional accessories



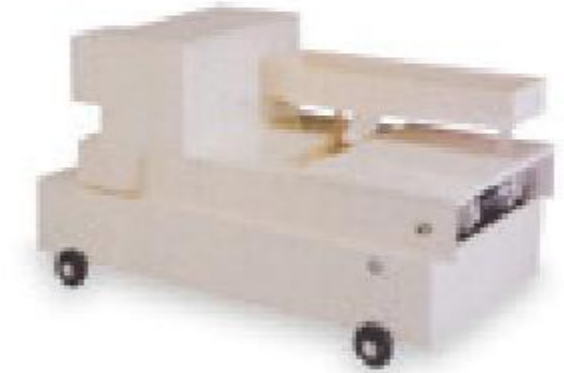
可調速旋轉台式磁盤座  
Magnetic rotary table



單用水機  
Coolant system



磁鐵式過濾水機  
Magnetic filter



紙袋式過濾水機  
Auto. paper strip filter



電動紙袋附磁鐵過濾水機  
Auto. paper strip filter  
with magnetic separator  
and coolant system



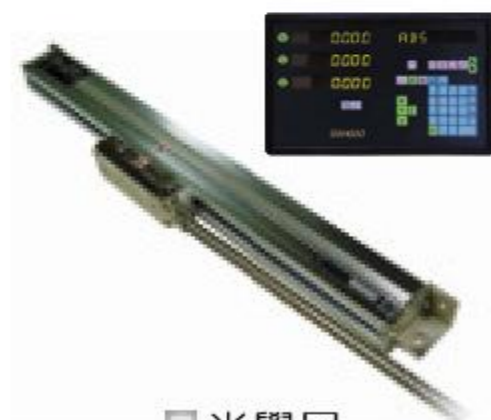
油霧回收機  
Oil mist collector



變頻器  
Inverter



退磁器  
Demagnetizer



光學尺  
Digital readout



線上砂輪平衡系統  
On line wheel balance system



鑽石修整座  
Diamond wheel dresser



電控空調冷卻機  
Air-Conditioner



項目 DESCRIPTION	RS-300ANDII	HR-400AND	HR-500AND	HR-600AND	HR-800AND	HR-1000AND	VR-600AND	VR-1000AND
研磨台面直徑 Rotary magnetic chuck dia.	300mm	400mm	500mm	600mm	800mm	1000mm	600mm	1000mm
磁盤最大研磨半徑 Maxi grinding radius.	175mm	225mm	325mm	325mm	425mm	525mm	325mm	525mm
工作台面至主軸中心距 Distance of table surface to spindle surface center.	360mm	450mm	480mm	480mm	500mm	500mm	325mm	400mm
旋轉台轉速 Rotary magnetic chuck speed .	20-250rpm	20-250rpm	10-150rpm	10-150rpm	10-80rpm	10-60rpm	5-50rpm	5-20rpm
旋轉台馬力 Rotary magnetic chuck horse power.	750W	1KW	2KW	3KW	4.5KW	5.5KW	3KW	5.5KW
主軸馬達 Spindle motor.	2HP	5HP/7.5HP(OPT.)	5HP/7.5HP(OPT.)	SIEMENS, V3 10HP	SIEMENS, V3 10HP/15HP(OPT.)	SIEMENS, V3 10HP/15HP(OPT.)	SIEMENS, V3 10HP/15HP(OPT.)	SIEMENS, V3 40HP
主軸轉速 Spindle speed (50/60Hz)	3000/3600rpm	1450/1750rpm	1450/1750rpm	1450/1750rpm	1450/1750rpm	1450/1750rpm	1450/1750rpm	1450/1750rpm
自動進給動力來源 Auto downfeed horse power.	Servo Motor 500W	Servo Motor 500W	Servo Motor 500W	Servo Motor 500W	Servo Motor 1KW	Servo Motor 1.5KW	Servo Motor 500W	Servo Motor 2KW
上下手輪進給(每轉) Vertical hand wheel downfeed per revolution.	x1, x5, x10 (MPG) / 0.1, 0.5, 1mm							
上下手輪進給(每刻度) Vertical hand wheel downfeed per graduation.	x1, x5, x10 (MPG) / 0.001, 0.005, 0.01mm							
砂輪尺寸(直徑x寬x孔徑) Wheel size (dia x width x bore)	180x13x31.75mm	355x38x127mm	355x38x127mm	355x38x127mm	405x50x127mm	405x50x127mm	150x50x25x8mm	150x50x25x8mm
淨重/毛重(大約) Net weight / gross weight (approx)	1600/1800kg	3200/3800kg	3500/4000kg	4600/5200kg	6200/7000kg	7800/8700kg	4300/5000kg	9500/10500kg
裝箱尺寸(長x寬x高) Packing size (LxWxH)(mm)	1820x1450x2020	2400x1900x2100	2400x2100x2100	2800x2200x2200	2800x2100x2500	3200x2800x2500	3000x1500x2300	4500x2000x2500

※HR-800AND以上規格接受訂製

※HR-800AND Above specifications are available to be changed.

※本公司保留變更設計. 規格. 機構. 外觀等之權利, 恕不另行通知。

※ The manufacturer reserves right to modify the design, specification mechanisms etc. without notice.

### 標準配件

- 砂輪
- 法蘭
- 砂輪平衡棒
- 砂輪修整座及鑽石修刀
- 工作燈
- 標準工具

### Standard accessories

- Grinding wheel
- Wheel flange
- Balancing arbor
- Diamond dresser and base
- Working lamp
- Standard tools



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