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**鉅業精機股份有限公司**  
**JIUH-YEH PRECISION MACHINERY CO., LTD.**

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**VERTICAL MACHINING CENTER**

**BMV** *Box Way*  
**850 / 1000 / 1200 / 1600 / 2200 / 2500**



ISO 9001:2015

**MILLSTAR DEVELOPED FOR CHALLENGING VERTICAL OPERATIONS**

# BMV 850/1000/1200/1600

## 4 BOX WAYS BUILT FOR THOSE WHO REQUIRE HEAVY CUTTING AND OUT PUT

### 大四硬軌系列 提昇您的重切削加工能力 呈現更優質的成品



**FOR HEAVY DUTY**  
BT-50 (Belt / Gear Head opt.)  
BT-40 (Belt Drive)



**BMV-850/1000**  
BT40

/ FEATURES 機械特性



**BMV-1200**  
BT40/BT50



**BMV-1600**  
BT40/BT50



**/ FOUR BOX WAYS**  
四硬軌底座

- The massive base construction has 4 box ways. The wide way surfaces, combined with extra large span between box ways, provide firm heavy workpiece support.
- 厚實機台底座採四硬軌結構，寬大滑軌接觸面上加上較大跨距，提供大型工件穩固支撐。



**/ DOUBLE SCREW TYPE CHIP CONVEYOR**  
雙螺旋排屑裝置 (BMV-1600)

- Machine is made of Meehanite Casting with internal ribs running throughout each section, featuring long term metallic rigidity and stability.
- The 4 slideways design base is a one piece casting, the slideways are coated with Turcite B, and all mating surfaces are precision hand scraped to increase the flatness and improve geometric accuracy of the whole assembly.
- Air curtain function prevents cutting chip and coolant from damaging spindle bearing.
- High precision ball screws on three axes are pre-loaded to eliminate thermal displacement. The ball screws are modularly assembled, the parallelism and squareness accuracy are calibrated within +/- 0.01 mm. in full length.
- LASER Check, Ball Bar Test and Spindle Dynamic Balance are performed to ensure the optimum static dynamic accuracy.

- 機器以米漢納鑄鐵製成，各主要結構內部為內肋強化之箱型設計，確保長時間金屬剛性及穩定度。
- 一體成型底座四滑軌設計，並貼以滑道襯墊Turcite B，主要精度接合面都精密銼花，提昇機台整體之平面度及幾何精度。
- 空氣氣簾有效保護主軸避免鐵屑及切削液損壞主軸軸承。
- 三軸預拉高精密滾珠螺桿能有效消除熱變位問題，模組化組裝，確保螺桿在機器全行程內之平行度及直角度都在±0.01 mm之範圍。
- 雷射、循圓及主軸動態平衡校正確保機器最佳靜態及動態精度。

- Floating tool knocking (BT-50)
- Air blast curtain around spindle prevents chips entering and protects bearings (optional)
- Coolant jet around the spindle end provides effective cooling on workpieces (optional)
- Major casting parts are box-type in structure for outstanding rigidity and stability.
- The standardly equipped heat exchanger features excellent heat dissipation that reduces the possibility of trouble and extends the service life of the electronic components.
- A laser unit, ball bar tester and spindle dynamic balance tester are employed to ensure high precision, superior dynamic and static accuracy and machining quality.
- Chip flushing devices on both sides combined with a screw chip conveyor, allow chips to be delivered to the front chip tank.
- Uniform lubrication points on the slideways. A volumetric oil distributor is employed for uniform lubrication on all slideways.

- 浮動打刀 (BT-50)。
- 在主軸外圍設氣幕吹淨，防止切屑入侵可保護軸承(選配)。
- 主軸前端環狀沖屑，使加工物達到最好冷卻效果(選配)。
- 機體鑄件皆採用箱形結構，剛性與穩定性特佳。
- 熱交換器為標準附件，散熱效率佳，可降低故障率及延長內部電子元件的壽命。
- 使用雷射定位儀、循圓測試裝置及主軸動平衡校正儀等來實際檢驗，以確保機器動態、靜態與加工精度。
- 兩側沖屑系統搭配螺旋式除屑裝置，可將切屑排至前方之鐵屑箱內。
- 滑軌潤滑點平均分配佈置，採用容積式配油器，各注油點均等，確保滑動面潤滑均勻。

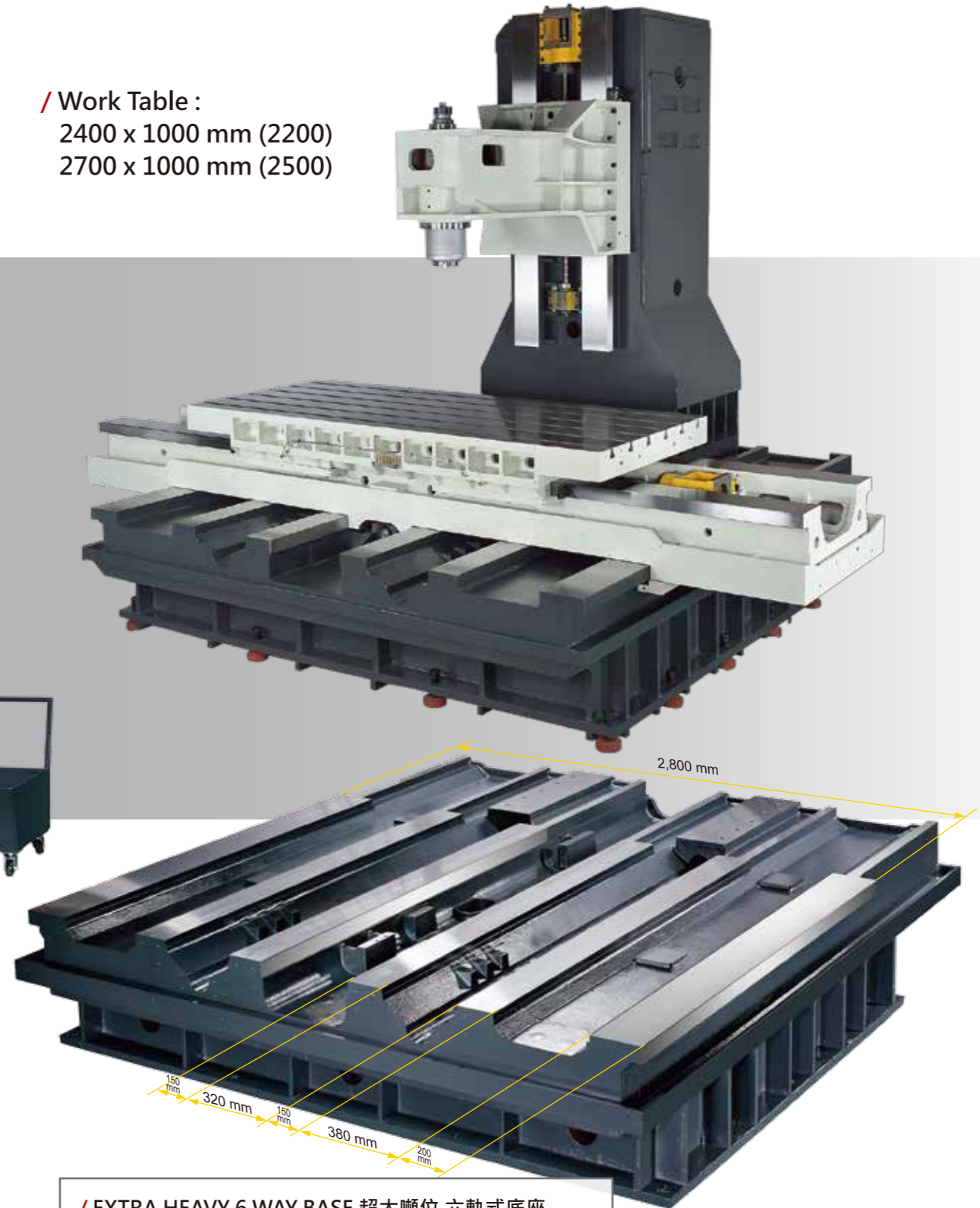
# BMV 2200/2500

## 6 BOX WAYS EXTRA HEAVY DUTY & LOADING MACNINING

### 重型六硬軌 締造加工中心機穩定性極致



/ Work Table :  
2400 x 1000 mm (2200)  
2700 x 1000 mm (2500)



/ X / Y / Z (2200) : 2200 x 1100 x 900 mm  
/ X / Y / Z (2500) : 2500 x 1100 x 900 mm  
/ Work Piece Max. loading : 3500 kg

#### / FEATURES 機械特性

- The gear-type spindle is transmitted by a gearbox with high/low speed change, featuring greater torque for heavy duty machining.
- Massive base weighs 9 tons combined with extra wide 6 box ways (span between ways up to 2,800 mm) providing solid support for the entire machine. 25-ton total machine weight features unmatched structural rigidity.
- Big table surface measures 2,400 (L) x 1,000 (W) mm permitting maximum load up to 3,500 kgs, making the machine ideal for medium and large mold machining. (L x W : 2,200 mm x 1,000 mm)
- Extra large Y-axis (1,110 mm) and throat depth (1,050 mm) provides increased working capacity.
- Comprehensive Chip Removal System : Two chip augers are provided at the right and left side of the machine combined with powerful flushing device and screw-type or link chain-type (optional) chip conveyor at front of the machine. All these ensure that the machine is clean at all times.
- 齒輪式主軸採用高低速變換齒輪箱傳動，提供更高的扭力輸出，耐重切削加工。
- 重達九噸的底座結構與超大跨距六硬軌設計(跨距寬達2800 mm)，提供全機最佳的支撐穩定性。機台總重量25噸重，提供整機最佳的剛性結構。
- 大面積工作台設計：2400 mm (L) x 1000 mm (W) (Model : 2200) ; 2700 mm (L) x 1000 mm (W) (Model : 2500) ; 最大負重可達3500 kgs，適合中大型模具業之精密加工。
- 超大Y軸(1100 mm)與喉深(1050 mm)設計，提供客戶較大的加工範圍。(長 x 寬：2,200 mm x 1,100 mm)
- 完善的除屑系統：左右雙螺旋除屑螺桿，配合左右兩邊之強力沖屑裝置與機械前面的螺旋或履帶式(選配)切屑輸送機，隨時確保機台之清潔。

#### / EXTRA HEAVY 6 WAY BASE 超大噸位 六軌式底座

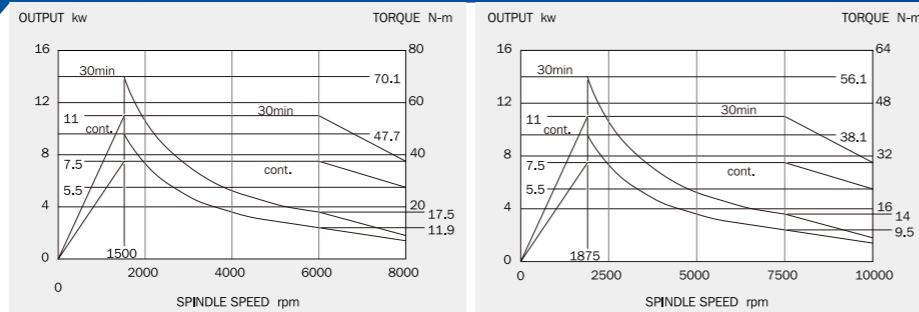
- The oversized base structure weight 9 tons with 6-ways on the base to achieve the best possible stability for heavy workpieces. It fully eliminates overhang problems on the table travel, while assuring deformation-free operations, year after year.
- 總重高達9噸的超大底座，搭配6軌式硬軌，對於大型工件展現最佳的穩定性。工作台全行程移動無懸垂問題，結構長久不變形。

# / HIGH PRECISION SPINDLE A KEY TO PRECISION MACHINING

## 高精密 高剛性主軸達到全新加工效益

- / The spindle is supported by P4 class precision angular ball bearings with superior radial and axial load capacity.
- / The spindle speed range from 8,000~15,000 rpm (BT-40) ; 4,500~6,000 rpm (BT-50) and is suitable for various machining applications.
- / The spindle is equipped with air blast through inside of spindle to prevent accumulation of dust.
- / 主軸軸承為P4級組合式斜角滾珠軸承，徑向及軸向止推力優異。
- / 主軸轉速 8,000~15,000 rpm (BT-40) ; 4,500~6,000 rpm (BT-50) · 適合各種材質之加工。

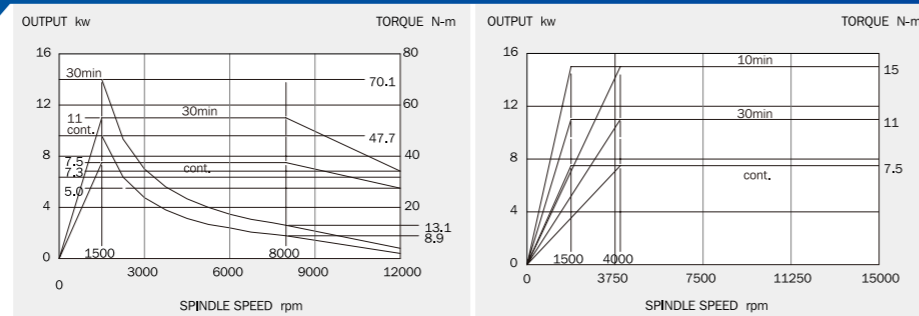
### BELT DRIVE / BT40 皮帶式 8,000 / 10,000 rpm



/ α 8i 8,000 rpm

/ α 8i 10,000 rpm

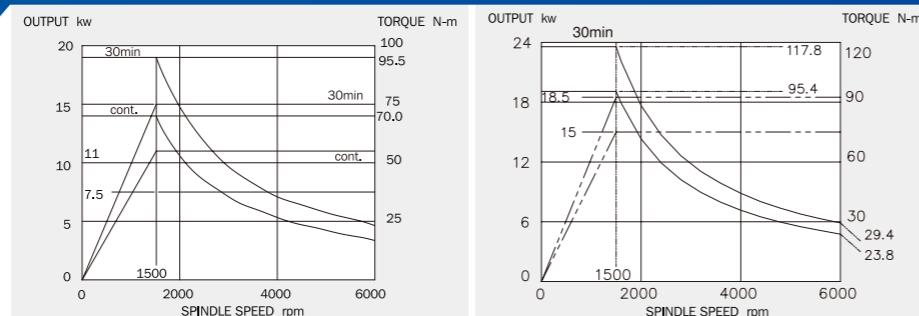
### DIRECT DRIVE / BT40 直結式 12,000 / 15,000 rpm



/ 12,000 rpm

/ 15,000 rpm

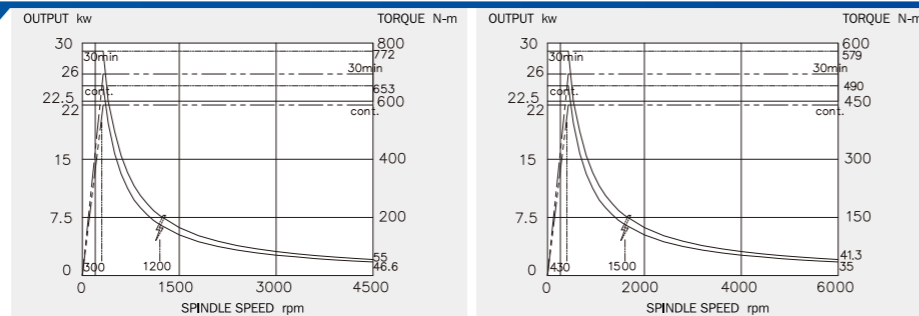
### BELT DRIVE / BT50 皮帶式 6,000 rpm



/ α 12i 6,000 rpm

/ α 15i 6,000 rpm

### GEAR HEAD / BT50 齒輪式 4,500 / 6,000 rpm

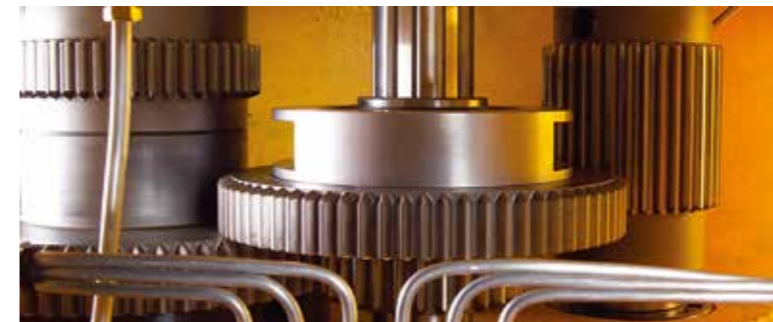


/ α 22i 4,500 rpm

/ α 22i 6,000 rpm

# / JAPAN HAMADA HIGH PRECISION HIGH/LOW SPEED GEAR HEAD (OPT.)

## 日本濱田 高低速變換齒輪頭 (選配)



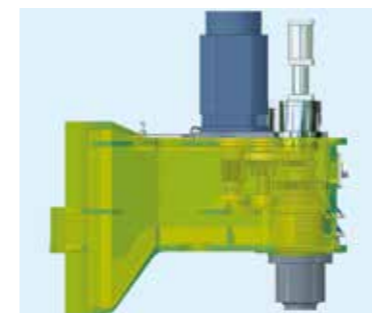
/ HIGH TORQUE GEAR BOX (OPT.)  
高扭力齒輪頭



/ HIGH TORQUE ZF GEAR BOX (OPT.)  
高扭力ZF齒輪箱 (適用BT-40選配)

## / SPINDLE FEATURES 主軸特性

- The spindle is supported by P4 class precision angular contact ball bearings, featuring superior radial and axial thrust capacity.
- The spindle is carefully assembled by highly experienced technicians and tested long time before mounting to the machine.
- The spindle is available to equip with an optional "coolant through spindle" device which effectively reduces spindle temperature growth while increasing chip flushing effect. (OPT.)
- Coolants jets around spindle. (OPT.)
- 主軸採用P4級精密斜角滾珠軸承，徑向及軸向止推力優異。
- 主軸由專業技術員組裝，裝配到機器經長時間運轉測試。
- 主軸可依客戶需求增加"主軸中心出水"功能，有效降低主軸溫昇及沖屑效果 (選配)。
- 主軸環狀噴水 (選配)。



- 齒輪式主軸採用高低速變換齒輪箱傳動，提供更高扭力輸出耐重切削加工。
- 採用日本進口齒輪，具低噪音、高精度、耐磨耗及使用壽命長等特性。
- 齒輪箱採噴油式迴流過濾，確保輪滑油清潔。
- 高低速變換經由電腦控制。
- BT-40 轉速可達 8,000 rpm (ZF) / BT-50 轉速可達 6,000 rpm (GEAR HEAD)。

- The gear-type spindle is transmitted by a gearhead providing greater torque output for heavy duty machining.
- The gearhead consists of high quality gears imported from Japan which feature minimum noise, high accuracy, maximum wear resistance and long service life.
- The gearbox employs splashing type circulated filtration to keep lubrication oil clean.
- The high/low speed change is automatically controlled through the computer.
- Circulated cooling on motor base.
- 8,000 rpm for Bt-40 spindle. / 6,000 rpm for BT-50 spindle.

# / QUALITY AND DEPENDABILITY THROUGH COMPREHENSIVE INSPECTIONS

完善嚴格的精度檢驗



/ Substantial Processing Test



/ Frequency / Balance detect



/ Work piece testing



/ Laser inspection is applied for every machine after installation to ensure perfect quality.  
• 每座機台均以雷射進行定位校準，確保最佳品質。



/ High precision ball bar circle inspection.  
• 高精度循圓測試。



/ Dynamic Vibration Inspection  
• 主軸動態振動檢驗。



/ SPINDLE OIL COOLER (STD.)  
• 主軸油溫冷卻機 (標配)。



/ ELECTRICAL CONTROL BOX (COMPLIED WITH CE STANDARDS)  
• 電器箱 (符合CE標準)。



/ UNIFORM AND RELIABLE SLIDEWAY LUBRICATION  
The machine is equipped with an oil distributor combined with uniform lubrication points to assure added uniformity of slideway lubrication. It results in extremely smooth axial movement.  
• 更均勻、更可靠的滑道潤滑  
本機採用高性能配油器，配合滑道潤滑點平均分配設計，保證滑道面潤滑更均勻，行程動作順暢。

# / AUTOMATIC TOOL CHANGER

## 自動換刀機構

- / ARM TYPE MAGAZINE (STD.)
  - The loading capacity for the arm-type magazine is 24 tools.
  - The magazine accepts BT-40 / CAT40 or BT-50 / CAT-50 tool shanks.
  - Tool selection method is bi-directional and random.

- / 刀臂式刀庫 (標配)
  - 刀庫容量為24支刀
  - 可使用BT-40 / CAT40 或 BT-50 / CAT-50刀柄規格。
  - 選刀方式為雙向、任意選刀。

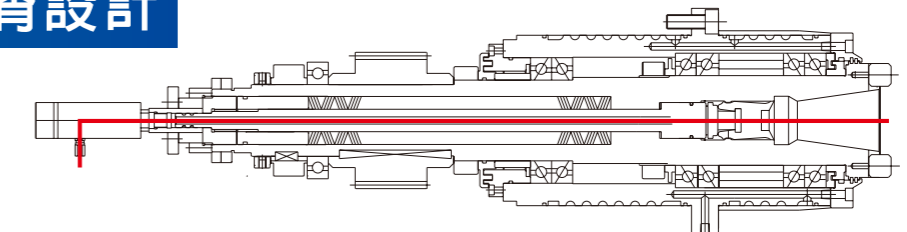
- / CHAIN TYPE MAGAZINE (OPT.)
  - The loading capacity for the chain-type magazine is 32 tools.
  - The magazine accepts BT-50 tool shanks.
  - Tool selection method is bi-directional and random.

- / 鏈條式刀庫 (選配)
  - 刀庫容量為32支刀。
  - 可使用BT-50刀柄規格。
  - 選刀方式為雙向、任意選刀。



# / COMPREHENSIVE CHIP FLUSHING DESIGN

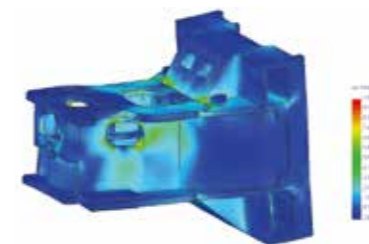
## 齊全的沖屑設計



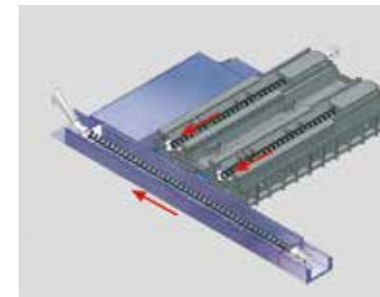
- / COOLANT THROUGH SPINDLE (OPT.)
  - The specially-designed coolant through spindle device ensures constant temperature on the spindle and tool thereby increasing machining accuracy.
  - / 主軸中心出水 (選配)
    - 特殊設計的主軸中心出水裝置，可確保主軸及刀具的常溫，提昇加工精度。



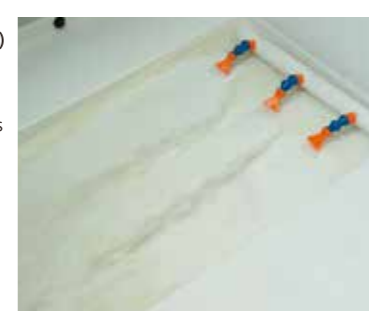
- / COOLANT GUN
  - Replaces previous air gun, effectively prevents chips jumping into spindle and causing damage (opt.)
  - / 冷卻液噴槍
    - 此冷卻液噴槍可取代一般的空氣噴槍，可有效避免切屑侵入主軸，造成主軸損害。



- / FINITE ELEMENT ANALYSIS
  - The major structural parts of MILLSTAR machines are all manufactured from high quality cast iron and tempered to relieve stress. In addition, high-tech 'Finite Element Analysis' is applied to simulate the stress/strain conditions throughout the computer. This will assure excellent machine rigidity, stability and dampening capabilities.
  - / 有限元素分析
    - 鉅業機械的主要結構鑄件，除了採用高級鑄鐵製成，經回火處理，消除內應力；再採用先進科技的有限元素分析，以電腦模擬結構應力情況，確保最佳的機械剛性、穩定性及抗震能力。



- / COMPREHENSIVE CHIP REMOVAL DESIGN (STD.)
  - The chip augers provided at both sides of the base are combined with powerful chip flushing devices to deliver chips to the front-mounted chip conveyor. This keeps the machine clean at all times.
  - / 完善的除屑系統
    - 底座左右兩邊裝有除屑螺桿，配合兩邊之強力沖屑裝置，可將切屑輸送至機械前面的切屑輸送機，再排出機外，隨時確保機械之清潔。1600~2500 (標配)



- / COOLANT FLUSHING DEVICE
  - The high-pressure coolant flushing device provides efficient removal of chips (opt.)
  - / 高壓沖屑裝置
    - 高壓沖屑裝置，具有強勁的沖屑能力。(選配)

# BMV Series / SPECIFICATIONS 機台規格表

型式 / MODEL	BMV-850	BMV-1000	BMV-1200	BMV-1600	BMV-2200	BMV-2500
<b>TABLE</b> 工作台尺寸 Work Table	1010 x 550 mm	1200 x 550 mm	1400 x 630 mm	1800 x 800 mm	2400 x 1000 mm	2700 x 1000 mm
<b>TRAVEL</b> 行程 三軸行程 Three Axes Travel	850 x 600 x 620 mm	1000 x 600 x 620 mm	1200 x 600 x 650 mm	1600 x 900 x 700 mm	2200 x 1100 x 900 mm	2500 x 1100 x 900 mm
<b>SPINDLE</b> 主軸 主軸端至工作台面距離 Spindle Nose to Table Surface	130~750 mm	130~750 mm	150~800 mm (BT-40) / 250~900 mm (BT-50)	BT40 300~1000 mm / BT50 200~900 mm	240~1140 mm	240~1140 mm
<b>FEEDRATE</b> 快速移動 三軸快速移動率 3 axes Rapid Feedrate	20 m/min	20 m/min	X, Y: 20 m/min / Z: 18 m/min	15 / 15 / 12 m/min	12 / 8 / 8 m/min	8 / 8 / 8 m/min
<b>ATC</b> 備刀倉 換刀機構 Tool Magazine type	刀臂式 / Arm type	刀臂式 / Arm type	刀臂式 / Arm type	刀臂式 / Arm type	刀臂式 / Arm type	刀臂式 / Arm type
<b>MOTOR</b> 驅動馬達 主軸驅動馬達(連續 / 30分) Spindle Motor (cont. / 30 min.)	7.5 / 11 kw	7.5 / 11 kw	11 kw / 15 kw	15 / 18.5 kw	15 / 18.5 kw	15 / 18.5 kw
<b>MISCELLANEOUS</b> 一般規格 外型尺寸(長 x 寬 x 高) External Dimensions (L x W x H)	2550 x 2238 x 2650 mm 2870 x 2280 x 2550 mm	2810 x 2238 x 2650 mm 3130 x 2280 x 2550 mm	3220/2215/3020 mm 3220/2215/3210 mm	4450 x 3680 x 3500 mm 4800 x 3200 x 3550 mm	6000 x 3915 x 3740 mm 40" FR + 40" HQ	6600 x 3915 x 3740 mm 40" FR + 40" HQ
<b>STANDARD ACCESSORIES</b> 標準配件	三菱 M80 控制器 8.4" 彩色螢幕 地墊及水平調整螺絲 工具箱及工具 主軸轉速 10000 rpm, 皮帶式, BT-40 BMV-850 / 1000 / 1200 / 1600 / 2200 / 2500 主軸轉速 6000 rpm, 皮帶式, BT-50 BMV-1200 / 1600 / 2200 / 2500 主軸鬆口吹器系統 切削液系統 主軸油冷機 自動斷電系統 熱交換器 自動潤滑單元 刀臂式 24 把刀 (BT-40 / BT-50) 剛性攻牙 螺旋排屑裝置 (含集屑車) M 碼吹氣 RS232 介面 全罩式鋁金 石英工作燈 變壓器 (外銷專用)	三菱 M80 控制器 8.4" 彩色螢幕 地墊及水平調整螺絲 工具箱及工具 主軸轉速 10000 rpm, 皮帶式, BT-40 BMV-850 / 1000 / 1200 / 1600 / 2200 / 2500 主軸轉速 6000 rpm, 皮帶式, BT-50 BMV-1200 / 1600 / 2200 / 2500 主軸鬆口吹器系統 切削液系統 主軸油冷機 自動斷電系統 熱交換器 自動潤滑單元 刀臂式 24 把刀 (BT-40 / BT-50) 剛性攻牙 螺旋排屑裝置 (含集屑車) M 碼吹氣 RS232 介面 全罩式鋁金 石英工作燈 變壓器 (外銷專用)	發那科 0iMF / 三菱 M800 / 西門子 / 海德漢 / 控制器 10.4" 彩色螢幕 主軸轉速 12000 / 15000 rpm BT-40, 直結式 主軸轉速 8000 rpm BT-50, 皮帶式 ZF 齒輪箱 (BT-40) 強力齒輪頭 (BT-50) 第四軸介面 (不含馬達及驅動器) CNC 第四軸分度盤含伺服器馬達 主軸中心出水 20 / 30 / 50 / 70 bar 電氣箱冷氣機 鏈條式 32 把刀 BT-50, (BMV-1600 / 2200 / 2500) 鏈板式 / 刮板式鐵屑輸送機含集屑車 高壓沖屑裝置 CE 標準 油水分離機 自動刀長量測 自動工件量測 海德漢 3 軸光學尺			

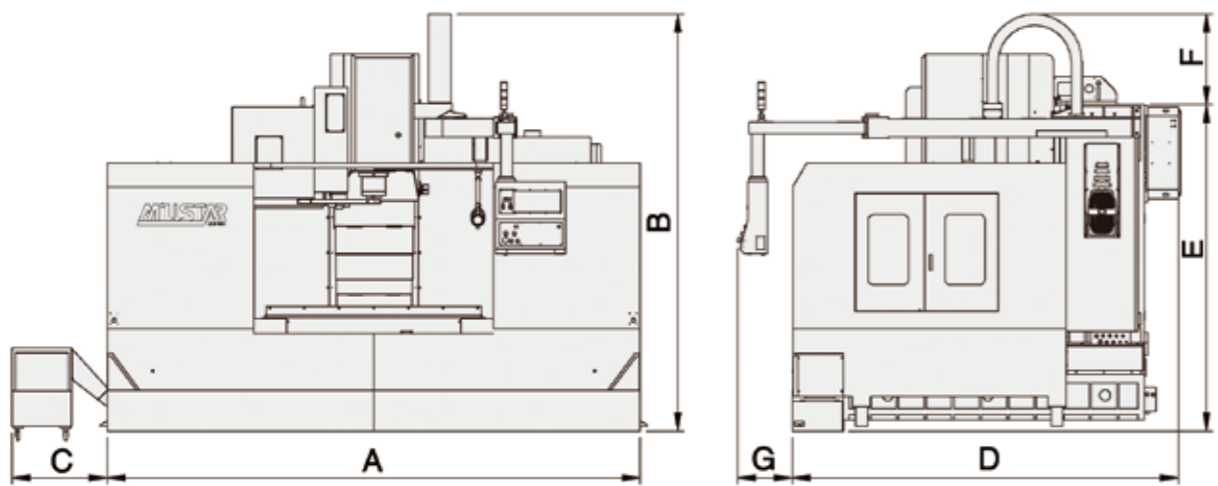
型號	尺寸	單位	A	B	C	D	E	F	G
BMV-850	mm	2550	2650	800-1200	2238	2200	450	/	/
BMV-1000	mm	2810	2650	800-1200	2238	2200	450	/	/
BMV-1200	mm	3220	3020 (40#) 3210 (50#)	800-1200	2215	2410 (40#) 2720 (50#)	610 (40#) 490 (50#)	/	/
BMV-1600	mm	4450	3500	800-1200	3230	2630	870	450	450
BMV-2200	mm	6000	3740	670	3915	3105	635	1130	1130
BMV-2500	mm	6600	3740	670	3915	3105	635	1130	1130

## Model Dimension:

型號	尺寸	單位	A	B	C	D	E	F	G
BMV-850	mm	2550	2650	800-1200	2238	2200	450	/	/
BMV-1000	mm	2810	2650	800-1200	2238	2200	450	/	/
BMV-1200	mm	3220	3020 (40#) 3210 (50#)	800-1200	2215	2410 (40#) 2720 (50#)	610 (40#) 490 (50#)	/	/
BMV-1600	mm	4450	3500	800-1200	3230	2630	870	450	450
BMV-2200	mm	6000	3740	670	3915	3105	635	1130	1130
BMV-2500	mm	6600	3740	670	3915	3105	635	1130	1130

All machine floor plan data shown above subject to change without prior notice, Actual product specifications will be based on the delivery.  
由於本公司不斷的研究改進，本型錄所示之機械佔地面積圖規格本公司有變更之權利恕不另行通知，實際仍需以出貨為準。

## / MACHINE FLOOR PLAN 佔地面積示意圖



MILLSTAR 機台規格表 / 佔地面積圖 SPECIFICATIONS