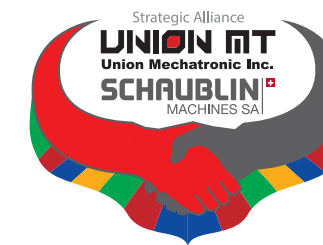




UNION MT
Your Choice Of Partner



High Performance Compact Vertical Machining Center

高性能立式加工中心機

MV300/500/600/700 Series 系列

Agricultural life depends on farming to bring economic benefits. The unique Taiwan water buffaloes symbolize diligence, steps by steps and contribution. What Switzerland cows with bell bring to people life is just coincident with the spirit of the unique Taiwan water buffaloes. In Switzerland, there are more precisions for life attitude in the industrial age. The allied cooperation between UNION MT and SCHAUBLIN, combining the excellent characteristics of both sides, means not only the reliance of professional technologies, but more warmth and passion.

在農業生活仰賴農耕帶來經濟效益，台灣有著象徵勤勞、腳踏實地、貢獻與付出的特有水牛，如瑞士滿山遍野搖曳牛鈴的乳牛，為人們帶來的貢獻，不謀而合的在經濟和精神上，連動著人們的生活態度。進入工業時代的瑞士更多了精密與精準的生活態度。國合與 SCHAUBLIN 的聯盟合作，結合雙方優異的特質，除了專業技術的互信，更在人與人之間的相處，多了溫度和情感。

UNION MT
Your Choice Of Partner

Union MechaTronic Inc.

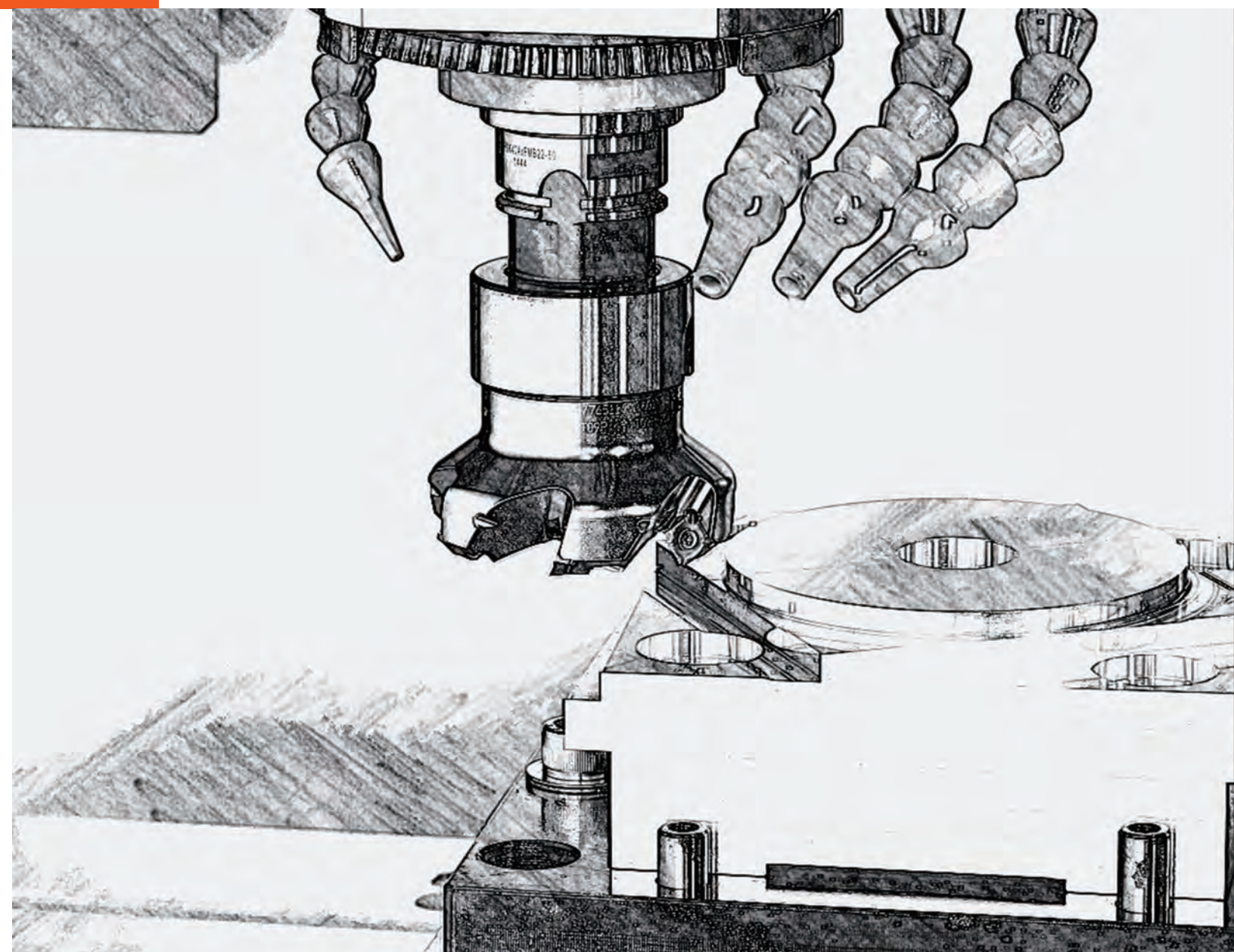
國合科技股份有限公司
41262台中市大里區國光路一段206-12號

TEL+886-4-2485-3708 FAX+886-4-2485-1500

E-mail union@unionmt.com

No.206-12, Sec. 1, Guoguang Rd., Dali Dist., Taichung City 41262, Taiwan

· Please be aware of the continuous performance improving policy, UnionMT reserves the rights to change product specifications, data, options, appearances and etc. without notice.
· 本公司致力於提升產品性能，國合科技保留機床規格、配備、外觀變更及停用之權利，恕不另行通知。
Note: Some specifications, accessories, pictures, appearances and etc. are optional accessories according to different model.
· Please consult your Sales Representatives for our latest specifications.
· 本型錄上的圖片部分為選配附件，依據不同機型，與實際有所差異。最新機床規格，請與我們的業務窗口聯繫。
Version : MVB105B3



www.unionmt.com

High Performance Compact Vertical Machining Center 高性能立式加工中心機

· MV300, MV500, MV600 and MV700 series feature the largest working range, superior accuracy and longevity from excellent scrap skill available for higher precision and operating efficiency.

· MV300、MV500、MV600及MV700各機型系列之高性能立式加工中心系列，擁有同級機床中最大的工作區域；高精密度，並以精密劃花工藝，提升您的生產精度及效率。

High Productivity 高產能

· Standard coupling spindle speed 15,000 rpm, available options as high spindle speed 24,000 rpm providing both high speed and torque machining capability, motor spindle 40,000 rpm for higher speed machining applications.

· Standard turret ATC 20 tools features max tool diameter 80 mm with adjacent tool and 150 mm without adjacent tool feature for milling, drilling and tapping. Fast tool exchange time 1.6 sec for operation efficiency; swing arm ATC 20 tools with max tool diameter 75 mm and 150 mm; tool exchange time 3.5 sec.

· 標準直結式主軸轉速 15,000 rpm，選配附件高轉速 24,000 rpm 適用於高轉速及低轉速仍能提供最大馬力輸出之切削能力；內藏式主軸馬達 40,000 rpm 適用於高轉速切削加工。

· 標準輻射式儲刀倉 20支刀，最大相鄰有刀直徑 80 mm，最大相鄰無刀直徑 150 mm，適合銑削、鑽孔及剛性攻牙；快速換刀時間 1.6 sec 提升加工效率。換刀臂式儲刀倉 20支刀，最大相鄰有刀直徑 75 mm，最大相鄰無刀直徑 150 mm，快速換刀時間 3.5 sec。

High acceleration 1.5G 高加速度加工 1.5G

X/Y/Z-axis 1.5/ 1.5/ 1.5 G

High rapid feed rate 60m/min 快速移動率 60m/min

X/Y/Z rapid rate 60 m/min

Robust Machine Structure 高剛性結構

· Heavyduty and high precision roller linear guide 30/ 30/ 30 mm on X/ Y/ Z axis and preload 32 mm diameter ball screws for transmission rigidity and provide heavy duty machining and stability.
· Headstock symmetrical and enhanced ribs design for reducing vibrations, thermal displacement and cutting stability.
· Large, heavily ribbed column and wider guide ways presents rigid structure assure minimal overhang and better distribution of cutting forces.
· Machine structure with Meehanite cast iron and enhanced rib layout assures the best stability.

· 重載型高精密級滾柱線軌 X/Y/Z 三線軌規格分別為 30/30/30 mm，高精密預拉大尺寸滾珠導螺桿直徑 32 mm 增加傳動系統剛性，提供高切削能力及可靠度。
· 主軸箱對稱性設計及加強肋強化設計，有效提高切削穩定度、降低震動及熱變位。
· 立柱加強肋佈置及寬跨距滑道設計，提高剛性以確保最小懸垂及作用力。
· 機台鑄件採用高級米漢納鑄鐵，確保機床精度長期穩定度。



Reliable DDS-Direct Drive Spindle 高可靠度直結式主軸

· DDS-Direct Drive spindle is directly coupled to spindle motor feature least noise and vibrations issues.
直結式主軸，確保低噪音，低振動及減少熱變位。

· Wide spindle bearing span design with P4 angular contact bearings to solidly provide more cutting stiffness.

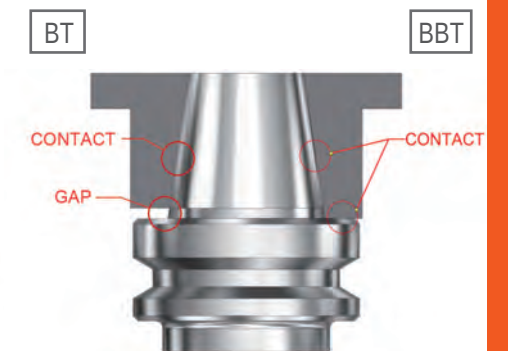
· Spindle nose run out 0.001 mm and 0.006 mm at measuring length 250 mm of test mandrel.

· Standard BIG-PLUS or HSK spindle taper assures higher rigidity and machining accuracy through dual contact faces precisely contact suitable for high speed and heavy duty cutting.

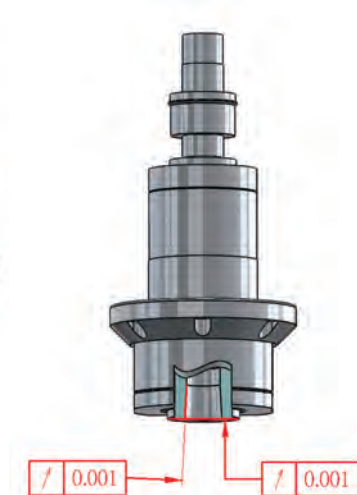
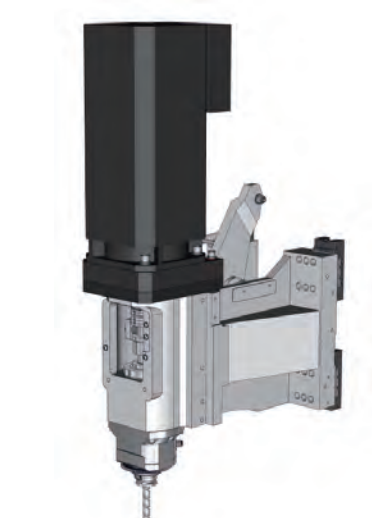
· 主軸軸承大跨距設計及P4級高精密斜角滾珠軸承設計，主軸套筒緊密與主軸箱結合，大幅增加切削剛性。

· 主軸鼻端偏擺精度 0.001 mm，主軸測試棒 250 mm 長偏擺精度 0.006 mm。

· BIG-PLUS 或 HSK 兩面接觸主軸為標準附件，兩面拘束確保主軸兩面的確實接觸，提高切削剛性，加工精度；適用於高速切削及重切削加工。



Standard Dual Contact Faces BBT or HSK
兩面拘束主軸，BBT 或 HSK 為標準附件



Reliable Spindle and Headstock
高可靠度主軸及主軸箱

· Photo shown including some options as chip conveyor etc..
圖示部分為選配附件，如除屑機等。

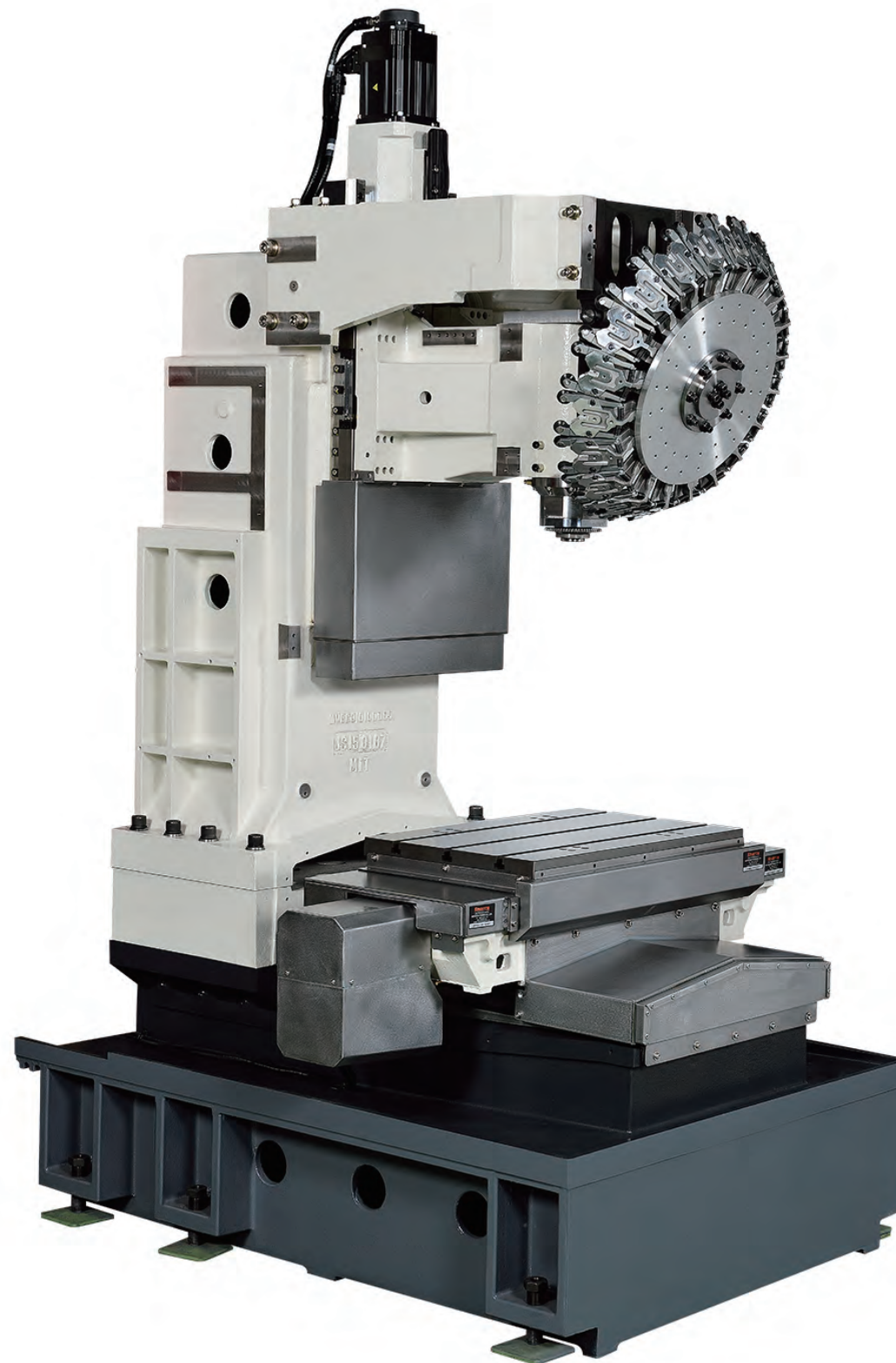
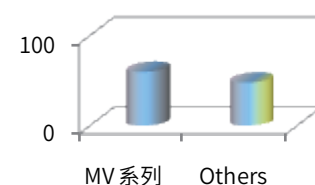
· Low gravity center base, wide six points leveling assure machining stability.
低重心及寬跨距，六點基礎螺絲底座，確保加工穩定性。

Rigid & Longevity Spindle Technology 高剛性及高可靠度主軸技術

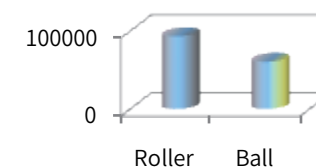
- Direct drive spindle provide better transmission efficiency, enhanced dynamic balancing for high speed drilling, tapping and high tolerance machining capability.
- High efficiency thermal isolated coupling Germany KTR reduce potential heat transfer, vibration and noise feature accuracy and stability.
- Standard 15,000 rpm coupling spindle, options 24,000 rpm coupling spindle, or 40,000 rpm motor spindle is available for various applications.
- Spindle air purge is standard to prevent spindle bearings from coolant and chips contaminated.
- Thermal cooling control as spindle motor cooling system is available as an option to efficiently reduce spindle and spindle motor temperature rise.
- Better spindle dynamic balancing 0.7 mm/s; precision draw bar and disc springs suitable to 7 days and 24 hours operation for and life above 1.5 M under normal operation.
- 直結式主軸提供更好傳動效率，高偏擺精度提升主動動平衡等級，適合高速加工，鑽孔，攻牙等高精密加工。
- 使用高效率德製 KTR主軸聯軸器，減少震動，並採用熱隔絕技術降低熱變位，提升加工精度，穩定性及可靠度。
- 直結式主軸標準轉速 15,000 rpm，選配附件 24,000 rpm 或內藏式主軸馬達 40,000rpm 適合多種不同加工條件。
- 主軸氣幕為標準附件，有效防止切削水及切屑進入主軸，提高主軸壽命及可靠度。
- 可選配熱冷卻系統，如主軸馬達冷卻系統，搭配馬達板等循環冷卻，有效控制主軸及馬達等溫度，以提升加工精度。
- 高精密級主軸動平衡 0.7 mm/s，精密拉桿及碟型彈簧，正常使用壽命達 150萬次以上，適合 7天 24小時加工。

Robust Transmission Structure 高剛性傳動結構

- Unique spindle transmitted ATC construction provides excellent tool exchange time and solid support on column and headstock with less vibration.
- X, Y and Z axes feed mechanism are direct driven to assure the transmission efficiency and high precision. C1 ball screw provides superior positioning accuracy without backlash errors.
- High torque, acceleration/deceleration 1.5 G and feed rate up to 60 m/min, reduce the non-cutting time and improve the operation efficiency.
- NSK oversized RA30 mm roller linear guide features more stiffness than general 25% and ball type 54% for more machining capability.
- 主軸傳動式儲刀倉提供快速換刀性能，儲刀倉強力固定於立柱，降低換刀時對主軸箱及立柱的震動。
- 直結式傳動三軸導螺桿，確保傳動效率精密，採用高精密級C1預拉大尺寸滾珠導螺桿直徑 32 mm增加傳動系統剛性，提供高精度切削能力及減少背隙誤差。
- 三軸高扭力，高推力，高加速度 1.5G及 60 m/min 快速移動率，降低非切削時間，提升效率。
- NSK RA30 滾柱線軌較同級剛性高出25%及較滾珠線軌剛性高出54%，提供較佳加工能力。



Large Linear Guide Way Stiffness Improve 25%.
RA30滾珠線軌提高剛性25%



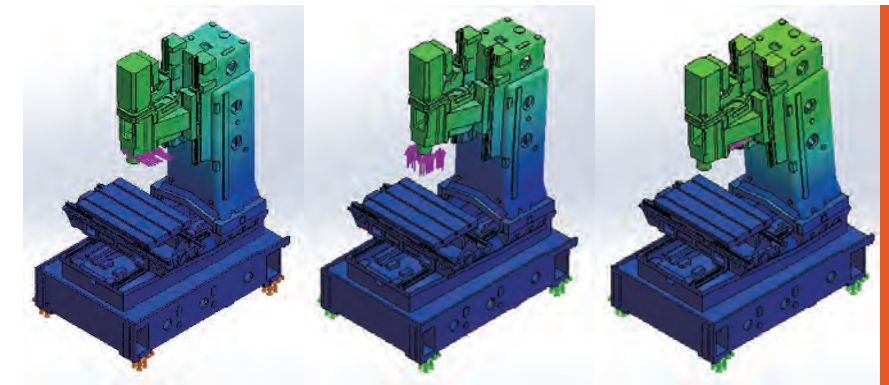
Linear Guide Way Stiffness Roller vs. Ball Improve 54%
滾柱線軌剛性比滾珠高 54%

Complete Engineering Analysis 全機工程分析

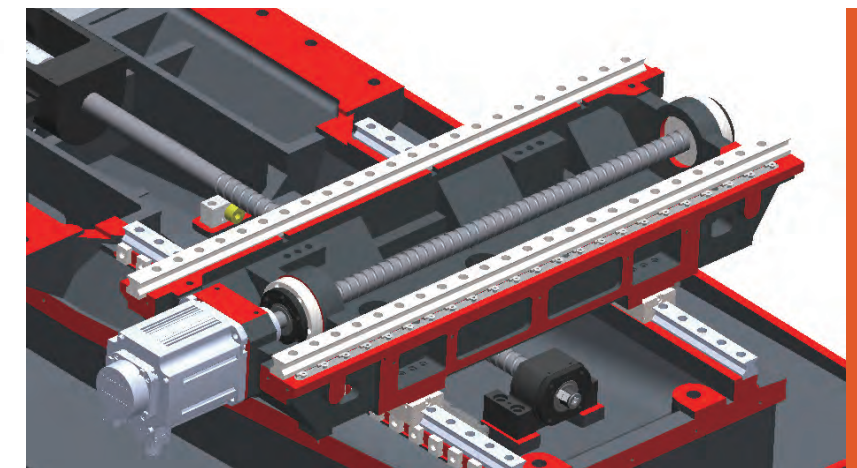
Complete engineering FEA analysis features higher machine stiffness rather than usual stiffness 2.5 kgf/um. FEA techniques are used to analyze the structure deformation, stress and etc. to assure excellent and optimum structure.

全機FEA工程分析，整機剛性值超出一般剛性值2.5 kgf/um以上，FEA 經驗技術分析，確保最佳化機床結構。

- Higher spindle pull force 300 kgf (BBT30), 780 kgf (HSK A40 and HSK E40) and higher spindle axial stiffness above 15 kgf/um feature the rigidity and heavy duty machining.
- X/ Y/ Z axis thrust Mitsubishi 4,712/ 4,712/ 4,712 N, matched with spindle motor output 15kW to increase milling and drilling capability.
- FANUC X/ Y/ Z axis thrust 3,142/ 4,712/ 4,712 N, matched with spindle motor output 15.6 kW.
- X/ Y/ Z axis rapid travel 60/ 60/ 60 m/min, acceleration 1.5/ 1.5/ 1.5 G for greatly reducing non-cutting time.
- 高主軸拉力 300 kgf 以上(BBT30)，780 kgf 以上 (HSK A40 及 HSK E40)，主軸軸向剛性 15 kgf/um以上；確保主軸剛性及加工可靠度。
- X/Y/Z三軸進給推力 MITSUBISHI 4,712/ 4,712/ 4,712 N，搭配主軸馬達最大馬力輸出 15kW，有效提高銑削及鑽削等加工切削能力。
- FANUC 3,142/ 4,712/ 4,712 N，搭配主軸馬達最大馬力輸出15.6 kW。
- X/Y/Z三軸進給 60/ 60/ 60 m/min，加速度 1.5/ 1.5/ 1.5 G，大幅減少非切削時間，提升效率。

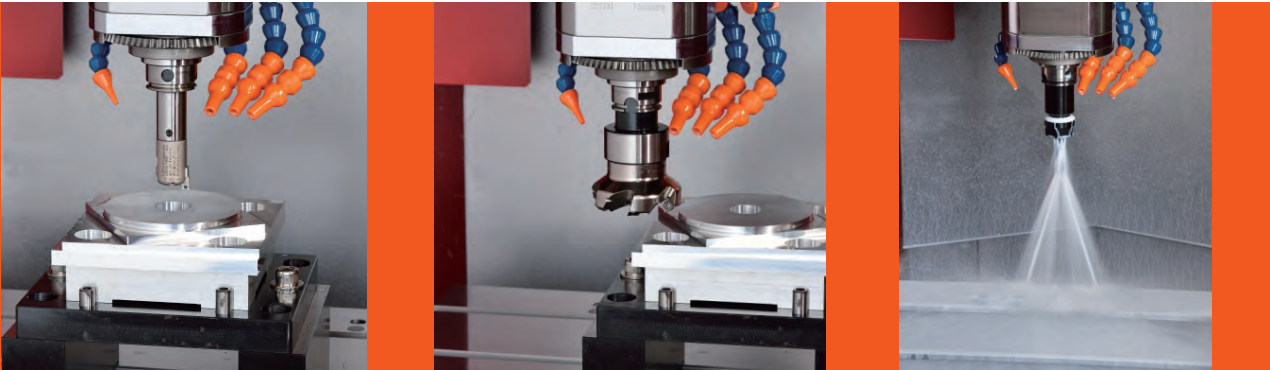


Experienced FEA technology FEA (有限元素)資深工程分析技術



Experienced analysis technology 資深工程分析技術

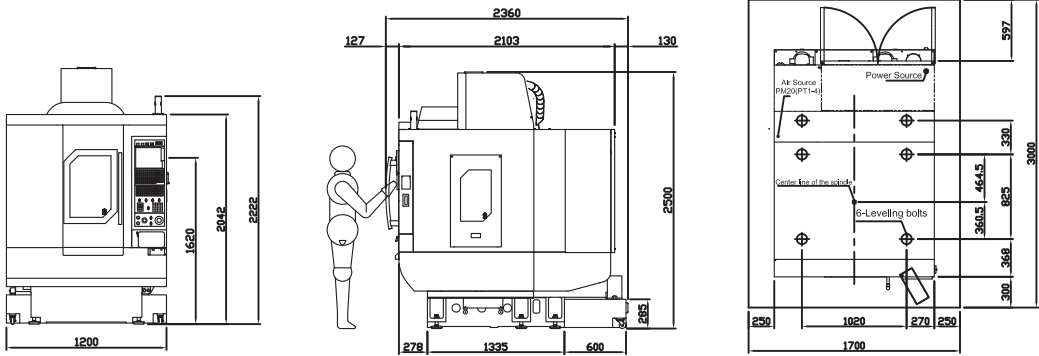
Heavy Duty Cutting Capability 切削實力



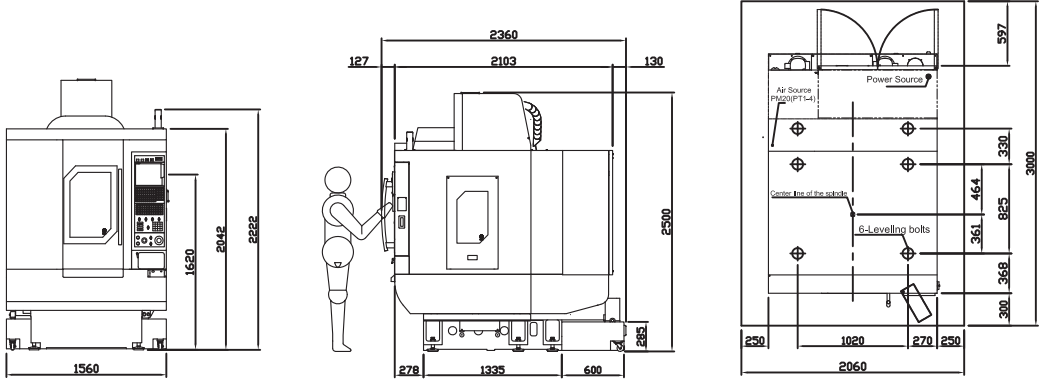
Spindle type 主軸形式	15000 rpm Spindle High Torque Spindle			24000 rpm Spindle High Acceleration Spindle		
	Drilling Tool Dia x Feed 鑽孔	Tapping Tap 攻牙	Milling Face 面銑	Drilling Tool Dia x Feed 鑽孔	Tapping Tap 攻牙	Milling Face 面銑
S45C	Ø30 mm x 0.15 mm/ rev	M24 x P2.5	180 cc/min	Ø20 mm x 0.20 mm/ rev	M16 x P2.0	152 cc/min
FC200	Ø30 mm x 0.30 mm/ rev	M27 x P3.0	215 cc/min	Ø20 mm x 0.30 mm/ rev	M16 x P2.0	191 cc/min
ADC12	Ø32 mm x 0.40 mm/ rev	M30 x P3.5	536 cc/min	Ø28 mm x 0.25 mm/ rev	M24 x P3.0	756 cc/min

Compact Footprint 精簡佔地面積

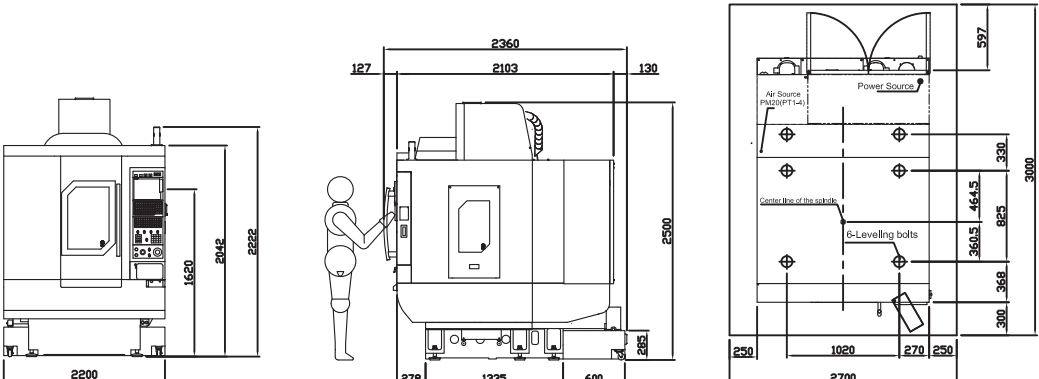
MV 300



MV 500



MV 600 / 700



Standard/ Option 標準 / 選配項目

		500P	600P	700P	300M	500M	700M
FANUC OiMF	發那科 OiMF 控制器	○	○	○	○	○	○
Color LCD monitor	彩色 LCD 螢幕	8.4"	8.4"	8.4"	10.4"	10.4"	10.4"
AICC II (Look-ahead 200 blocks)	AICC II (預讀單節 200)	○	○	○	●	●	●
FANUC - data server	發那科資料儲存	○	○	○	○	○	○
SIEMENS 828D	西門子 828D	○	○	○	○	○	○
MITSUBISHI M70 (package A)	三菱 M70 (套裝 A)	●	●	●	●	●	●
Tooling	BBT30	●	●	●	●	●	●
	HSK A40 / HSK E40	○	○	○	○	○	○
Pull stud for BT tooling	刀柄螺栓	●	●	●	●	●	●
Balance tooling for spindle warm up	平衡刀具	○	○	○	○	○	○
Thermal cooler	主軸馬達熱冷卻	○	○	○	○	○	○
Spindle oil chiller	主軸油冷卻機	○	○	○	●	●	●
Nozzle coolant & flush	主軸環噴/沖屑	●	●	●	●	●	●
20 position tool turret magazine spindle drive	20 支輻射式主軸驅動刀庫	●	●	●	●	●	●
20 position tool turret magazine servo drive	20 支輻射式伺服驅動刀庫	○	○	○	○	○	○
20 position tool swing arm magazine	20支換刀臂式刀庫	○	○	○	○	○	○
Auto door / Auto door with light curtain	自動門/光柵自動門	○	○	○	○	○	○
4th axis preparation	第四軸預備介面	○	○	○	●	●	●
Ø255 mm rotary table & tail stock	Ø255 mm 旋轉工作台 & 尾座	○	○	○	○	○	○
Remote MPG	分離式手動脈衝產生器	●	●	●	●	●	●
Transformer	變壓器	○	○	○	○	○	○
Linear encoder	光學尺	○	○	○	○	○	○
Coolant through ball screw	中空導螺桿冷卻系統	X	X	X	○	○	○
Work probe	工件量測	○	○	○	○	○	○
Tool length / breakage measurement	刀具長度/破損檢出	○	○	○	○	○	○
Chip wash down & wash gun	沖屑 & 水槍	●	●	●	●	●	●
Top chip wash down	天井沖屑	○	○	○	○	○	○
8 bar through spindle coolant	主軸中心出水 8 bar	○	○	○	○	○	○
20 bar through spindle coolant	主軸中心出水 20 bar	○	○	○	○	○	○
50 bar through spindle coolant	主軸中心出水 50 bar	○	○	○	○	○	○
Cutter air blast	刀具吹氣裝置	○	○	○	●	●	●
Chip conveyor	除屑機	○	○	○	○	○	○
Mist collector	油霧收集器	○	○	○	○	○	○
Documentation	電子檔手冊	●	●	●	●	●	●
Foundation bolts & blocks	基礎螺絲 & 墊塊	●	●	●	●	●	●
Work light	工作燈	●	●	●	●	●	●
Machine status light	三色工作指示燈	●	●	●	●	●	●
CE & EMC	CE & EMC 認證	○	○	○	○	○	○

● 標準 ○ 選配 X 不提供
● Standard ○ Option X N/A

High Perfomance Controller 高效能控制器

- MV line is equipped with advanced and high performance controller; Mitsubishi M70 V series; flexibility and support functions, high quality smooth machining through more look ahead blocks to improve the operation efficiency.
- The Ethernet provided for direct and prompt network; USB & CF card slot is available for more program memory.
- MV 系列採用三菱高新效能控制器 M70 V 系列，並具備多樣應用工具及輔助功能，預讀單節數達 337 提供高品質及高精度加工，提升工作效率。
- 乙太網路提供直接即時性的網路連結；並提供USB & CF 卡插槽。



Mitsubishi M70 VA
10.4" color LCD
High speed and high accuracy
Thermal compensation
Look-ahead blocks
Up to 337 blocks
More flexibility and support
Allow more switches/ functions
Faster Processing
Menu programming
G code guidance
Navi Mill
Nesting structure display
Tool length measurement
Part measurement
Control signals turned on and off
Screen configuration
Manual speed command
Geometric command
Ethernet
USB & CF card slot

Mitsubishi M70 VA
10.4" LCD 彩色螢幕
高速高精度
溫升補償機能
預讀單節
最大預讀單節數 337

多樣應用工具及輔助功能
高速機能
選單畫面編輯
G 碼引導
Navi Mill 對話功能
巢狀式結構螢幕顯示
刀具長度量測
工件量測
控制信號強制開關
螢幕客製化
手動速度指令
幾何指令
乙太網路
USB及CF卡插槽

- MV line is equipped with advanced and high performance controller; Fanuc Oi-MF series; Faster processing and support functions, high quality smooth machining through more look ahead blocks, contouring performance enhancement to improve the operation efficiency.
- The Ethernet provided for direct and prompt network; USB & CF card slot is available for more program memory.
- MV 系列採用Fanuc高新效能控制器 Oi-MF 系列，並具備多樣應用工具及輔助功能，預讀單節數可達 200 提供高品質及高精度加工，高加工形狀精度等以提升工作效率。
- 乙太網路提供直接即時性的網路連結；並提供USB & CF 卡插槽。

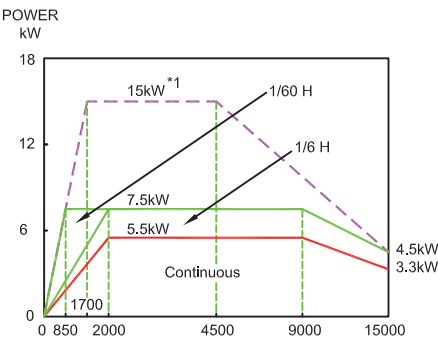
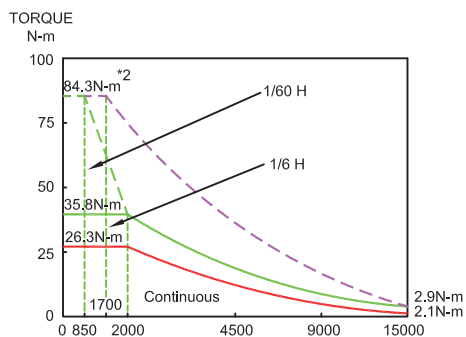
Fanuc Oi-MF
8.4" LCD (Option 10.4" color LCD)
High speed and high accuracy
Manual guide Oi (Option manual guide i)
Look-ahead blocks
Up to 200 blocks
Faster Processing And More Support Functions
AI contour control II
Linear acc./dec. before cutting feed interpolation
Automatic corner deceleration
Feedrate control with acc circular interpolation
Bell-type acc./dec. before look ahead interpolation
Machining condition selecting function
Cutting accuracy and speed condition select
HRV3 control
Ethernet
USB Slot & PCMCIA card Slot
512k byte Part program storage
400 registerable programs
Rigid tapping
Retraction for rigid tapping
FSSB high speed rigid tapping
400 Tool offset pairs
Tool offset memory C
Distinction between geometry and wear,
or between cutter and tool length compensation
Tool length offset

Fanuc OiMF
8.4" LCD 彩色螢幕 (選配10.4" LCD)
高速高精
Manual guide Oi (選配 Manual guide i)
Manual guide Oi

高速及輔助功能
AI CC II 輪廓控制
最大預讀單節數 200
補間前直線加減速
自動轉角減速
圓弧補間加速度進給控制
預讀單節前鐘形加減速
加工條件選擇功能
高速高品質加工套件
HRV3 控制
乙太網路
USB 插槽及PCMCIA 插槽
512k byte 加工程式容量
可登錄程式數 400 個
剛性攻牙
剛性攻牙退牙機能
FSSB 高速攻牙
刀具補正數400
刀具偏移補償資料儲存 C
刀具幾何形狀與刀具磨耗差異，
或刀具直徑與刀具長度補正
刀具長度補償

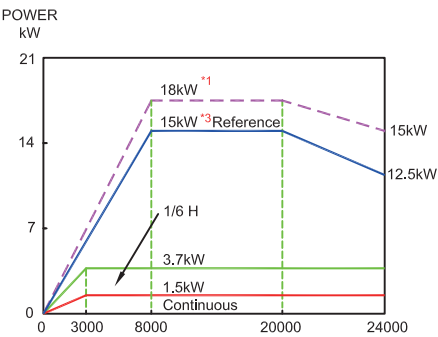
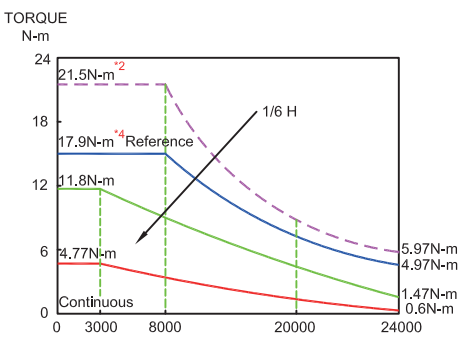


MITSUBISHI Spindle Motor Output P Series



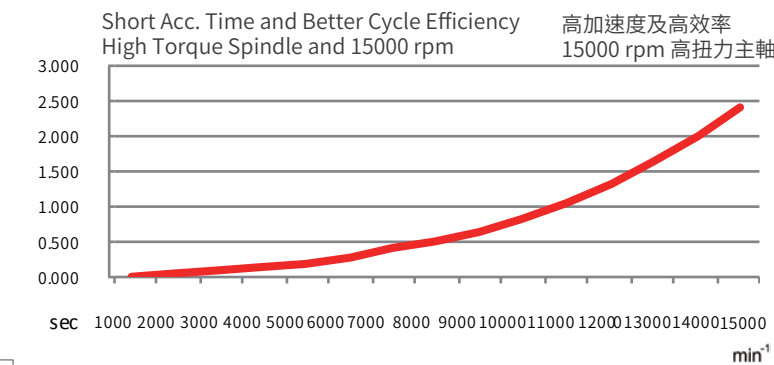
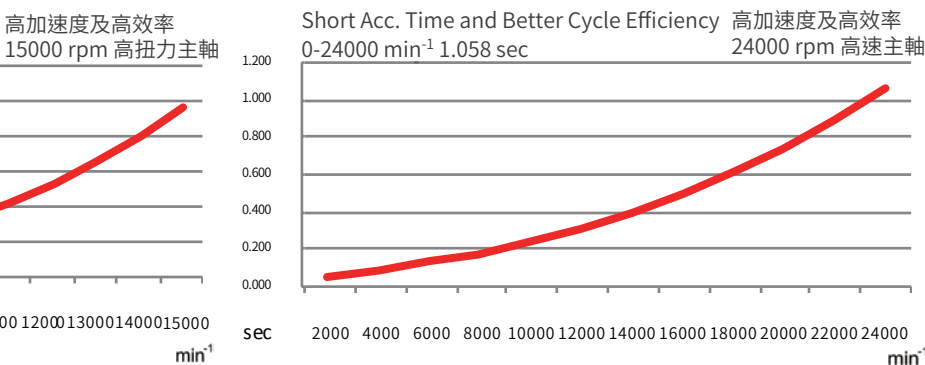
*1 Max. output under acc./dec.
加減速時最大功率

*2 Max. torque under acc./dec.
加減速時最大扭矩

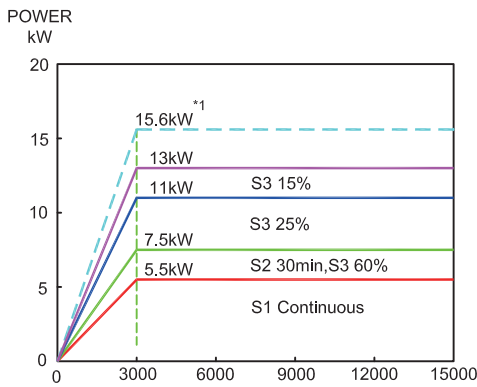
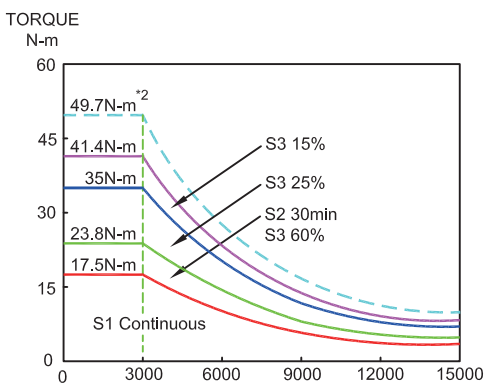
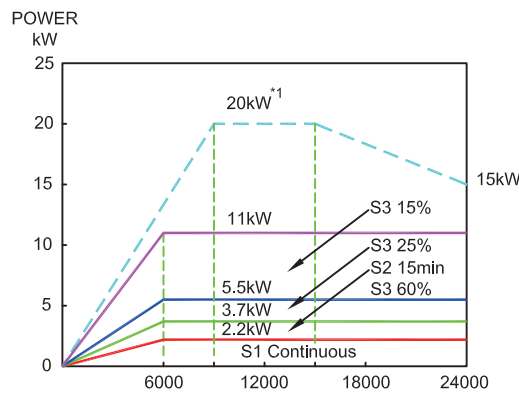
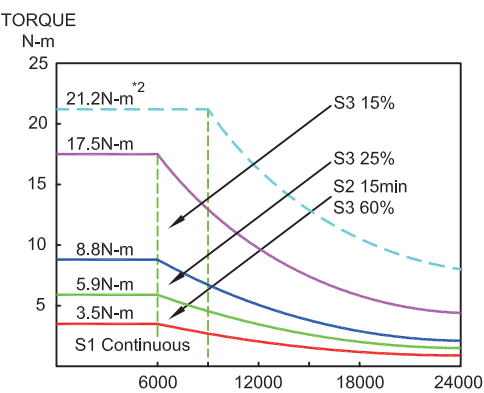


*3 Reference output under acc./dec.
重複加減速時最大功率

*4 Reference torque under acc./dec.
重複加減速時最大扭矩



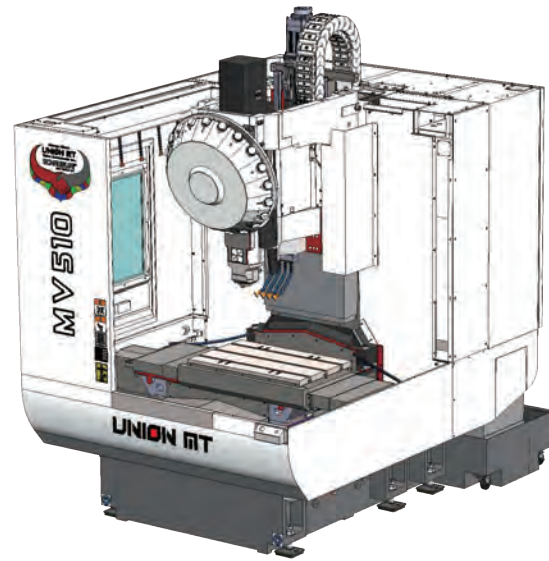
FANUC Spindle Motor Output P Series



*1 Max. output under acceleration 加速時最大功率

*2 Max. torque under acceleration 加速時最大扭矩

Efficient Chip Management 高效切屑處理



Top chip wash down (Option)
天井沖屑選配

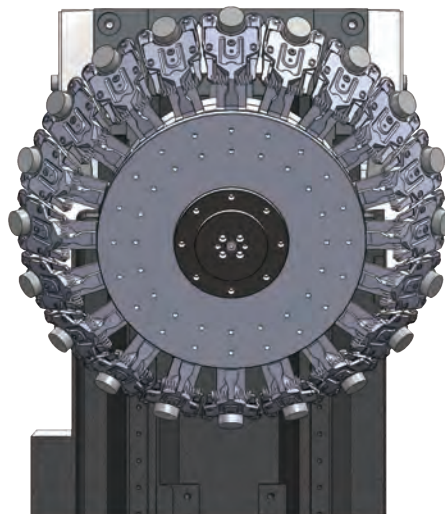
Fixture and working chip wash down and air blast
模具及工件沖屑及吹屑

- Pressured coolant wash down and above 200 liters high volume coolant tank provide efficient coolant flow and chip flow for reducing cutting heat.
- Rear type coolant tank for easy replenishing coolants and chips clean.
- Larger coolant tank and separate coolant tank are available as options for higher pressured coolant, high filtrated coolant, coolant cooler or chiller for precision machining.
- Friendly access chip pan for easy clean and chips removal.
- Both sides and front chip wash down, provide pressured coolant, pour chips from rear to front.
- Spindle ring-type coolant nozzles and cutter air blast are standard for efficient cooling, flowing away the heat of chips and improving tool life.

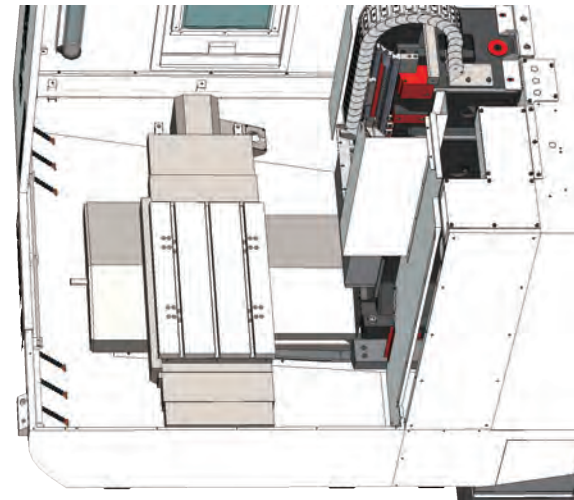
Fast ATC 快速儲刀倉

- Faster turret type ATC with 20 tools standard or swing arm type 20 tools option for more versatile applications.
- To ensure smooth and vibration free tool changing with unique planetary gear set; clamp, unclamp and tool selection activated simultaneously with spindle positioning reduce the tool change time.

- 高速幅射式儲刀倉，20 支刀標準附件，選配換刀臂式 20 刀儲刀倉以加大工作範圍因應不同工件加工需求。
- 使用行星齒輪式快速換刀機構，將夾刀、鬆刀、選刀幾乎與主軸定位同時作動，以降低刀具換刀時間。



Tool change time 1.6 sec
換刀時間 1.6 秒



Front and both sides chip wash down
前端及兩側沖屑

- 高壓沖屑及大容量 200 公升水箱，提供有效沖屑，降低加工熱源。
- 後置式水箱設計，易於移動添加切削水及清理切屑。
- 大容量水箱外，可選配附件之副水箱，專為高壓切削水設計，另有多種過濾裝置，切削水熱交換器或冷卻機，以確保高精度加工。
- 無排屑機時之切屑盤，易於清洗水垢及清理切屑。
- 機床兩端側沖及前沖提供高壓切削水，有效將切屑排除。
- 主軸切削水環噴及刀具吹氣有效降低所產生加工熱源，快速切屑移除及增加刀具壽命。

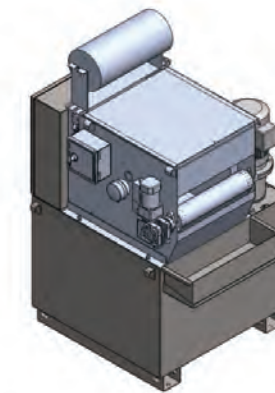
Feature Option 特色選配附件

Coolant Through Spindle 主軸中心給水

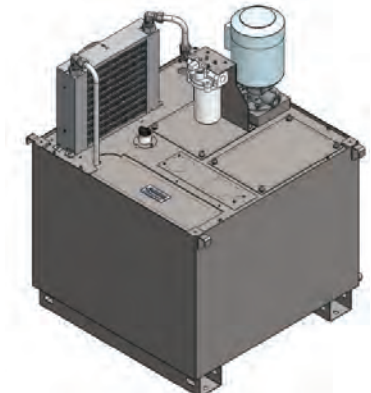


- Optional coolant through spindle system pressure range from 20 bar to 50 bar are available to suit various applications.
- Pressured and filtered coolant provide cooling the tool, flushing chips away from deep holes and reducing heat transfer.
- Separate through spindle coolant tank will provide efficient coolant for special deep hole applications. Option: paper filter, and coolant cooler are available.

- 主軸中心給水提供高壓切削水 20 bar 或 50 bar，適合多種不同加工條件。
- 高壓及過濾切削水降低刀具熱源，提供深孔沖屑及降低熱能轉換。
- 選配分離式切削水箱，有效提供特殊深孔加工應用。另可附加紙帶式過濾器，冷卻熱交換器等。



Optional Coolant Through Spindle up to 50 bar and
Optional Drum Type Paper Filter
主軸中心給水 50 bar 選配附件紙帶式過濾裝置



Optional Coolant Through Spindle up to 20 bar
and Optional Coolant Cooler
主軸中心給水選配附件加裝冷卻熱交換器

Linear Encoder 光學尺

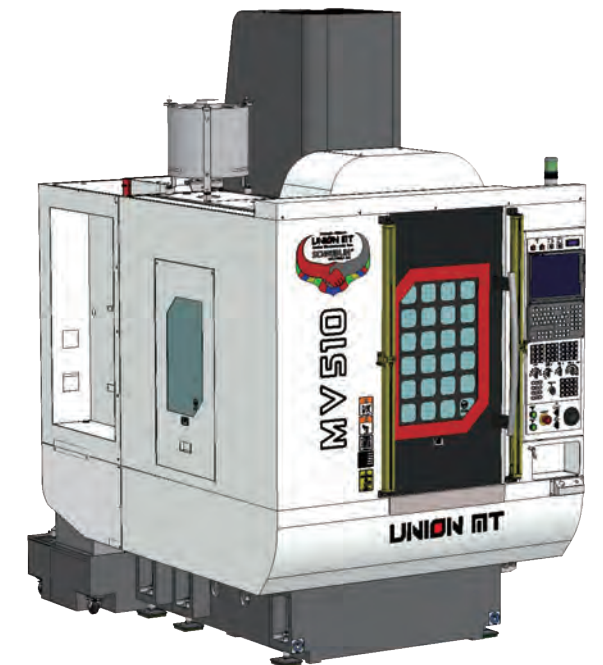
- Heidenhain linear scale with X/Y/Z axis or X/Y axis, accuracy 0.05 um.
- 採用海德漢 X/Y/Z 軸或 X/Y 軸，精度 0.05 um。

Mist Collector 油霧收集器

- Efficiently filter and eliminate oil mist and dry smoke from machine enclosure; flow rate 600 m³/h at 50 HZ, 750 m³/h at 60 HZ.
- The mist collector reduces the oil and mist splashed into the air and eliminates cutting coolant contamination to improve the workshop environment.
- 油霧收集器，提供有效過濾及消除機床產生的油霧與煙霧；流動率 600 m³/h (50 HZ)，750 m³/h (60 HZ)。
- 油霧收集器降低廠內的油霧噴濺、減少切削水汙染，以改善工廠作業環境。

Auto Door with Light Curtain 自動門與光柵

- Auto safety door or auto door with light curtain is suitable for fast cycle part production; the door close needed by pressing on two push buttons to ensure operator safety.
- Safety Light Curtains are opto-electronic presence sensing safety devices that detect the presence of personnel hand or whole body for safety in the light curtain's sensing field.
- 安全自動門或光柵自動門適用於快速循環單節、生產模式以提供效率，自動門關閉需同時壓按兩開關以確保操作人員之安全。
- 光電式光柵安全裝置，偵測操作人員之手或肢體，以確保操作人員之安全。



Mist collector and auto door with light curtain
油霧收集器及光柵自動門

Technical Specifications 機床規格

“P” Specifications

“M” Specifications

No	Group	ITEM	
1	Working Range 工作範圍	Travel X/ Y/ Z	三軸行程
2		Spindle nose to table surface	主軸鼻端至工作台面距離
3		Table size	工作台尺寸
4		Table load capacity	工作台最大荷重
5		T slot width/ qty/ pitch	T形槽 寬度/ 槽數/ 節距
6	Main Spindle 主軸規格	Spindle type	主軸型式
7		Max. spindle speed	主軸最大轉速
8		Max. spindle output	主軸最大功率
9		Max. spindle torque	主軸最大扭力
10	Feed Drive 三軸傳動	Feed force X/ Y/ Z	進給推力
11		Rapid travel X/ Y/ Z	快速移動速率
12		Acceleration X/ Y/ Z	加速度
13		Linear guide size	滾柱線性滑軌尺寸
14		Ball screw diameter	導螺桿直徑
15	Automatic Tool Changer 自動換刀裝置	Tool selection	刀具選擇
16		Magazine pots	儲刀倉刀具數
17		Max. tool adj. w/o tool	最大刀具直徑 有/無鄰刀
18		Max. tool length	最大刀具長度
19		Max. tool weight	最大刀具重量
20		CTC time	換刀時間
21	Accuracy Positioning/ Repeatability 定位精度/ 重覆精度	ISO 230-2	ISO 230-2
22	Coolant System 切削水系統	Coolant tank capacity	水箱容量
23		Nozzle coolant & flush pump	主軸環噴泵 / 沖屑泵
24		Through spindle coolant (option)	主軸中心給水 (選配)
25	Lubrication & Cooling 潤滑及冷卻	Spindle	主軸潤滑
26		Thermal cooling	溫昇控制
27	Machine Size 機床尺寸	Height	機器高度
28		Floor space W x D	佔地面積 寬度 x 深度
29		Weight	機器重量
30	Connections 動力及空壓需求	Main power	動力供給需求
31		Pneumatic consumption	空壓需求

500P		600P		700P	
500/ 400/ 330 mm; 600/ 400/ 330 mm;				700/ 400/ 330 mm	
150~ 480 mm					
650 x 410 mm; 750 x 410 mm;				850x410 mm	
250 kg		280 kg		300 kg	
14 mm/ 3/ 125 mm					
BBT30/ HSK A40 Coupling 直結式				BBT30/ HSK E40	
15,000 rpm				24,000 rpm	
Mitsubishi 15 kW * ¹ Fanuc 15.6 kW * ²				Mitsubishi 18 kW * ¹ Fanuc 20 kW * ²	
Mitsubishi 84.3 Nm * ³ Fanuc 49.7 Nm * ⁴				Mitsubishi 21.5 Nm* ³ Fanuc 21.2 Nm* ⁴	
Mitsubishi Fanuc	4,712/ 4,712/ 4,712 N 3,141/ 4,712/ 4,712 N				
60/ 60/ 60 m/min					
1.5/ 1.5/ 1.5 G					
30/ 30/ 30 mm					
32 mm					
Random and shortest selection				雙向就近選刀	
20 (Turret), 20 (Swing Arm)* ⁵					
80/ 150 mm; 75/ 150 mm					
250 mm					
3 kg					
1.6 sec (3.5 sec)					
0.006/ 0.004 mm					
200 L					
70 L/min 4 bar					
8 bar , 20 bar , 50 bar					
Grease 油脂潤滑					
(Option) 選配				Spindle chiller 主軸油冷卻	
2,500 mm					
1,560 x 2,891 mm		2,220 x 2,891 mm			
3,100 kg		3,300 kg		3,400 kg	
55A/ 220 V/ 3 Phase/ 20 KVA					
6 kg/ cm ²					

300M		500M	700M
300/ 400/ 330 mm; 500/ 400/ 330 mm; 700/ 400/ 330 mm			
150~ 480 mm			
650 x 410 mm; 750 x 410 mm; 850x410 mm			
200 kg		250 kg	300 kg
14 mm/ 3/ 125 mm			
BBT30/ HSK A40 Coupling 直結式		BBT30/ HSK E40	HSK E40 Built-in spindle 內藏式馬達主軸
15,000 rpm		24,000 rpm	40,000 rpm
Mitsubishi 15 kW *1		Mitsubishi 18 kW *1	
Fanuc 15.6 kW *2		Fanuc 20 kW *2	18 kW S6 40%
Mitsubishi 84.2 Nm *3		Mitsubishi 21.5 Nm*3	
Fanuc 49.7 Nm *4		Fanuc 21.2 Nm*4	7.1 Nm S6 40%
Mitsubishi 4,712/ 4,712/ 4,712 N			
Fanuc 3,141/ 4,712/ 4,712 N			
60/ 60/ 60 m/min			
1.5/ 1.5/ 1.5 G			
30/ 30/ 30 mm			
32 mm			
Random and shortest selection 雙向就近選刀			
20 (Turret), 20 (Swing Arm) *5			21 (Servo Turret); 20 (Swing Arm)
80/ 150 mm; 75/ 150 mm			80/ 150 mm
250 mm			250 mm
3 kg			3 kg
1.6 sec (3.5 sec)			1.8 sec (3.5 sec)
0.005/ 0.004 mm			
200 L			
35 L/min 8 bar / 70 L/min 4 bar			
8 bar , 20 bar , 50 bar			
Oil Air 油氣潤滑			
Spindle chiller 主軸油冷卻			
2,500 mm			
1,300 x 2,891 mm		1,560 x 2,891 mm	2,220 x 2,891 mm
3,000 kg		3,100 kg	3,400 kg
55A/ 220 V/ 3 Phase/ 20 KVA			
6 kg/ cm ²			

Two - faced contact tools are needed for getting better cutting capability.
Actual values may differ from the specification in the catalog caused by optional and peripheral accessories.

使用兩面拘束刀具能提升切削能力。
實際數據會因機台選配項目而有所差異。

*1234 Maximum output during acceleration.
*5 Z axis travel 450 mm.

加速時最大輸出。
Z軸行程 450 mm。