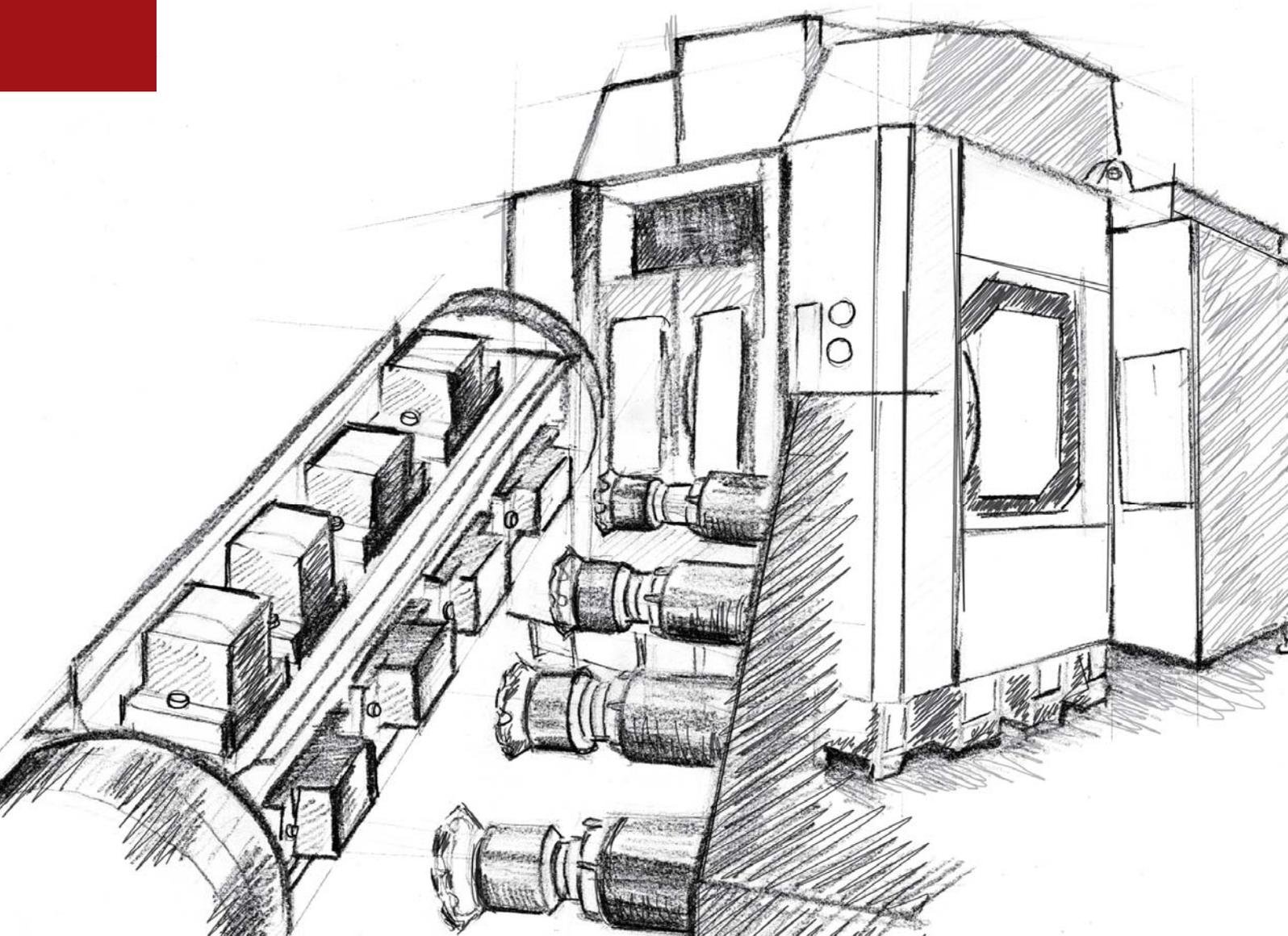


UNION MT
Your Choice Of Partner



Multi Spindle Horizontal Machining Center

多主軸臥式綜合加工機
HM 3/4 X Series 系列



www.unionmt.com



VS.

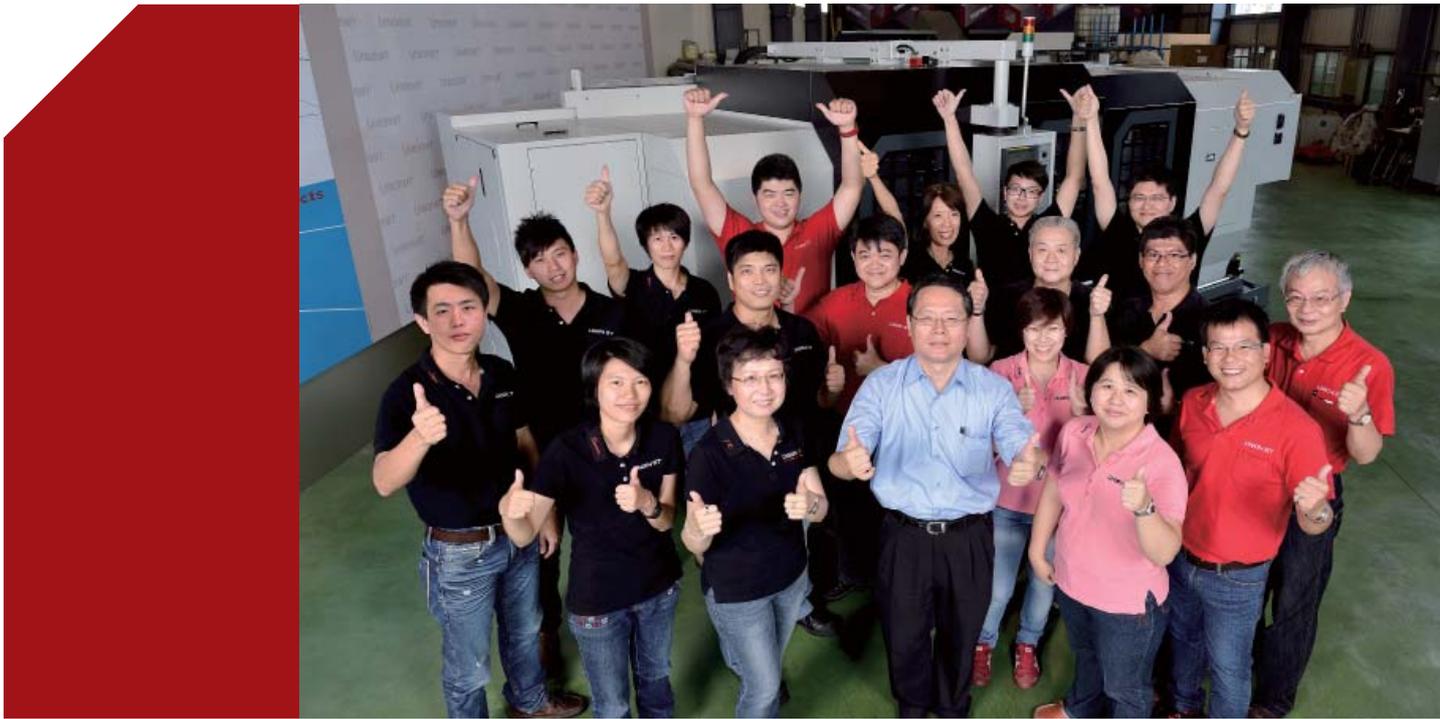


在農業生活仰賴農耕帶來經濟效益，
而台灣特有水牛即象徵辛勤、腳踏實地、貢獻與付出，
與瑞士的乳牛為人們帶來的貢獻，與台灣水牛的精神不謀而合。
進入工業時代的瑞士更多了精密精準的生活態度。
國合與 Schaublin 的聯盟合作，結合雙方優異的特質，除了專業技術的互信，
更在人與人之間的相處，多了溫度和溫暖。

Agricultural life depends farming to bring economic benefits.
The unique Taiwan water buffalos have the symbols of hard working,
steps by steps, and contribution.
What Switzerland cows bring to human beings is just coincident
with the spirit of the unique Taiwan water buffalos.
In Switzerland, there are more precisions for life attitude in the industrial age.
Alliance cooperation between UnionMT and Schaublin,
combining the excellent characteristics of both sides,
means not only the reliance of professional technologies,
but more warm for getting along with people.

Small but Outstanding

精實團隊 您的最佳選擇



我們不僅提供優質、高效率的解決方案；
更以熱情和負責的態度提供全方位的服務，
我們專注於優質機台組裝，更關注客戶
您的生產力、效率和滿足您的需求。

We provide quality and efficiency solutions,
moreover, service with passion and
accountability.
More than building machine tools, we care
your investment on productivity, efficiency and
requirements.

High Efficiency 2/4 Spindles Horizontal Machining Center

2/4

高效率 2 主軸或 4 主軸多主軸臥式加工中心機。

- HM 3 and HM4 Series feature high production horizontal machining center incorporating with two-spindle or four-spindle and incorporate loading / unloading capability in process of operation for higher operating efficiency.
- HM3 及 HM4 系列臥式綜合加工機搭配 2 主軸或 4 主軸以及機台在運轉時可同時上 / 下料提高操作效率。

High Productivity 高產能

- Multi spindles and four-side trunnion table operation provide higher productivity.
- Increase effective cutting time and reduce non-cutting time for more efficiency.
- Complete machining in one set-ups for volume production of complex and high precision workpieces with high speed machining.
- 多主軸搭配四面翻轉工作臺大幅提升產能。
- 增加有效切削時間，並減少非切削時間提高效率。
- 針對複雜和高精度的工件，一次性設定即能在高速加工下完成多量生產。

Robust Machine Structure 強韌的機身結構

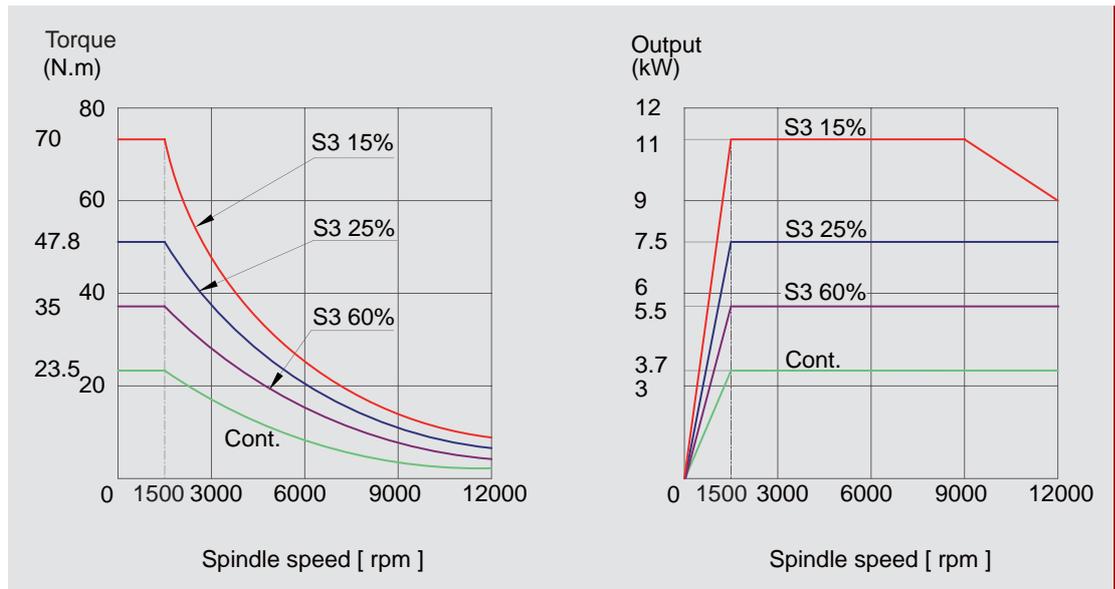
- Machine structure with Spheroid and Meehanite cast iron assure the best stability and rigidity.
- Unique Box-in-Box construction provides excellent robust and balance structure. NSK high precision roller linear guide provide high machining capability and reliability.
- Large, heavily ribbed column presents rigid structure for X, Y and Z axes and assures the machine withstanding any force generated by cutting tools and prevents frame flexing.
- Double Y axis Center of gravity remains always within guide ways for dynamic stiffness.
- 機台鑄件結構採用球狀石墨鑄鐵與高級米漢納鑄鐵，確保機身精度品質長期穩定。高精度 NSK 滾柱線軌提高機台性能與可靠度。
- Box-in-Box 箱形框架、高剛性、熱傳對稱結構設計，實現高速加工、高精度度及可靠度。
- X, Y 和 Z 軸採用加大、高密度肋骨結構，提高剛性與穩固，確保機台承受各軸向的切削力，並防止結構應力變形。
- 雙 Y 軸導桿確保重心始終保持在導軌內與動態剛性。

DDS-Direct Drive Spindle 直結傳動式主軸

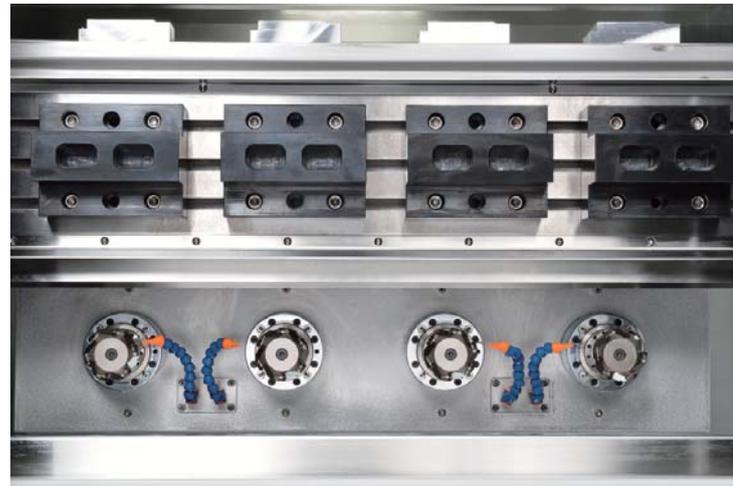
- Spindle is directly coupled to spindle motor without noise, backlash and vibrations issues.
- High torque and transmission efficiency for heavy duty machining and precision rigid tapping.
- 馬達與主軸直結傳動，無皮帶或齒輪傳動之噪音、背隙、振動之問題。
- 提供重切削，精密剛性攻牙，高扭力與高傳動效率。



High Performance Spindle Motor 高性能主軸馬達



12,000 rpm Direct-driven spindle motor power output and torque
12,000 rpm 直結式馬達馬力 / 扭力輸出



Reliability and Precision 可靠性與準確性

- Centrally-positioned Z-axis ball screw, dual servo feed systems and pneumatic-hydraulic counter balance system on Y axis for better rigidity and longevity.
- Centralized Hybrid Lubrication System to reduce maintenance, running costs and Maintain accuracy and performance of machine and moving parts.
- Z 軸精密導螺桿置中，Y 軸雙伺服進給系統及氣液壓平衡系統，提供穩定精密定位，以得較佳剛性及壽命。
- 集中混合式潤滑系統減少保養運轉成本，以及維持機台與傳動之效能與精度。

Long Life Pursuit 耐久性

- Spindle ceramic ball bearings, spindle oil cooling system, spindle air purge, independent thermal control of spindle and etc are all to pursuit machining stability and spindle life for 7 days 24 hours operation.
- 主軸之陶珠軸承、油冷系統、氣幕裝置、獨立式溫度控制系統等設計確保七天二十四小時運作下之機台穩定度與長主軸壽命。

High Performance 高性能



- Rapid traverse rate <X, Y and Z axes> 三軸快速位移：
48 m/min (1,890 ipm)
- Cutting feed rate <X, Y and Z axes> 切削進給：
20 m/min (788 ipm)
- Max. acceleration 三軸加速度：
X-axis 1 G (9.8 m/s²)
Y-axis 1 G (9.8 m/s²)
Z-axis 1 G (9.8 m/s²)
- Max. rigid tapping 剛性攻牙：8000 rpm
- Max. workpiece weight 最大工件重量：250 kg
- Tool change time 換刀時間：2.8 sec

· One machining center with multi-spindle configuration who completes machining in one set-up for volume production workpieces with high speed machining. This is 3~4 times production capacity than the traditional machining center, depends on the technic of workpieces, which increases your productivity at least 10%, and lower production and maintenance cost.

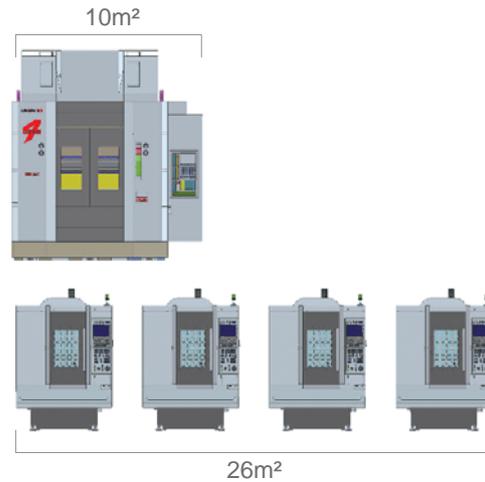
· 單機多主軸之配置可同時加工多個相同零件，相較傳統單主軸機床，依加工零件之工藝其產能提升為 3~4 倍，不僅提升加工效能、降低生產成本、減少相關耗材亦降低維護成本。

Space Saving 精簡空間

- Large work envelope over compact foot print offer better space saving, reducing the required floor space by 60% compared with other machines.

		Other Machine		
		Space	Units	HM34X
Machine Q'ty	1		4	1
Width	2115		9960	3100
Depth	2570		2570	3320
Arial	5m ²		26m ²	10m ²

- 精簡空間，比同型式機床空間減少 60%。



Resource Saving & Power Saving 節約資源與電源

- Four-in-one machine reduces lots of required power for power saving 20%.
- Inverter servo hydraulic system actuate according to the variable load for power saving.

- 四合一多軸臥式綜合加工機大幅降低電力耗用 20%。
- 變頻器伺服液壓系統視工作負載量變頻調整泵浦以節省電力。

		Other Machine		
		Machine	Units	HM34X
Machine Q'ty	1		4	1
Spindle motor	14.2kW		56.8kW	44kW
Servo motors	6.2kW		24.8kW	21kW
Other	3kW		12kW	8.2kW
Sum	23.4kW		93.6kW	75kW



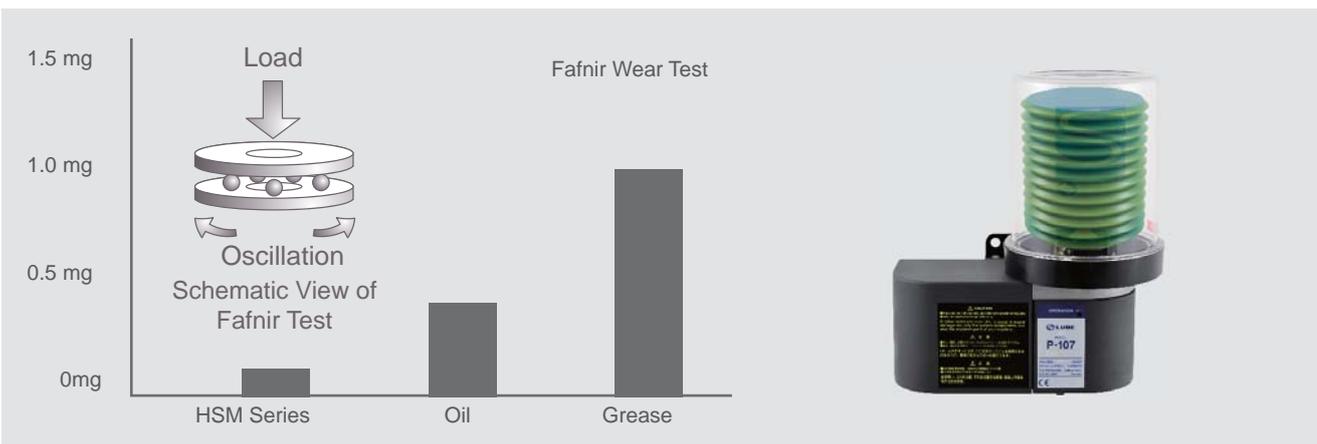
Economy Saving 節約能耗

Centralized Hybrid Lubrication System

- Integrating excellent oil transport and grease oil film maintenance property.
- Reduce maintenance and running costs.

集中混合潤滑系統

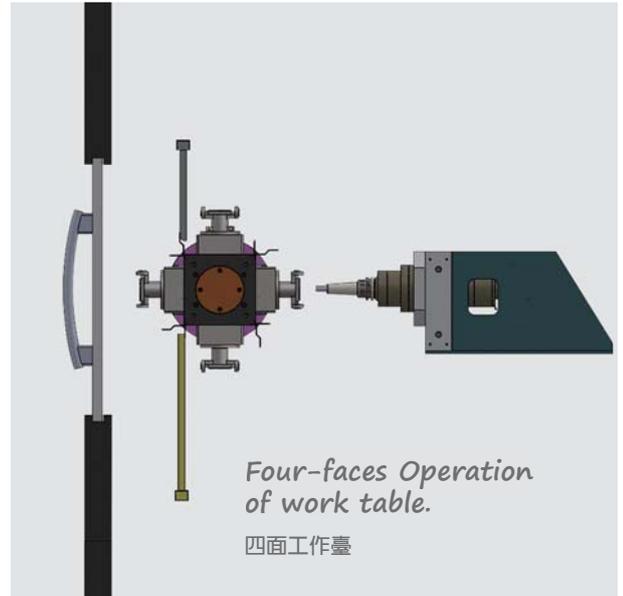
- 有效整合油路和潤滑油膜保護效力。
- 減摩抗磨，降低摩擦阻力以節約能源，減少磨損以延長機械壽命，提高經濟效益。



Efficiency 更效率的上下料 Loading/Unloading

- Separate machining zone from loading/unloading zone; to be available loading / unloading capability in process of operation for higher operating efficiency.
- Four-faces workpiece trunnion operation provide hydraulic clamping which can be positioned in the desired position according to the indexer or rotary table options.
- Safety auto door and locking mechanism in the 90 degree position for workpiece load/ unload in parallel with the machining process.
- Various clamping configurations; clamping of multiple workpiece on each trunnion; up to four set-ups clamping mechanism; up to eight hydraulic lines or air lines for trunnion.

• 橫樑式四面工作台配置除有易排屑之特性外，同時具有 APC 之功能。四面工作台前有隔離門和外防護門，兩者有安全互鎖功能，當隔離門開啓時工作台可做任意角度加工；當外防護門開啓時可於工作台之第四面進行工作之裝卸，另三面可同時繼續加工，部分工件透過工序之安排有可能完全消除因裝卸工件而停機之時間，大幅提高產能。





Controller 控制器

Fanuc 31i for HM34X/44X

Fanuc OiMF for HM32X/42X

High-speed, high accuracy machining is realized by using not only a CNC that controls the machine with nanometer resolution but also servos and drive systems that accurately position the machine.

- Machining Performance
- Minimizing Downtime
- Ease to Use

通過奈米單位的 CNC 運算、奈米級的檢測和伺服控制實現高速、高精度、高質量加工。

- 高加工性能
- 高連轉率
- 操作便利

Standard 標準配備 Accessories

- Pick up ATC (Tool numbers depends on machine model)
- Spindle air blast
- Spindle circulating coolant nozzles
- A/C for power cabinet
- Chain type chip conveyor
- Coolant flush system
- Working light, machine status light
- MPG hand wheel
- Auto power off

- 無刀臂式自動換刀 (刀具數量視機型而定)
- 模具吹屑
- 主軸環狀出水
- 電氣箱冷凍機
- 鏈條式輸送機
- 沖屑裝置
- 工作燈
- 三色工作指示燈
- 手輪
- 自動斷電

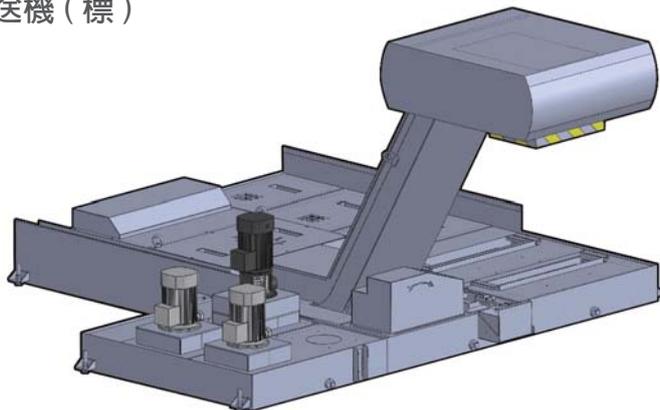
Machine 選配附件 Attachments

- 24,000 rpm direct-driven spindle
- Spindle chiller
- 20 bar CTS / 50 bar CTS
- Heidenhain optical scale
- Renishaw tool probe OTS
- Renishaw part probe OMP40-2
- Renishaw tool breakage detection system TRS2

- 直結式主軸
- 主軸油冷
- 中心給水
- 光學尺
- 工件量測
- 刀具量測
- 斷刀檢測

Large Capacity of Chip Conveyor

大排屑量鏈板式輸送機 (標)



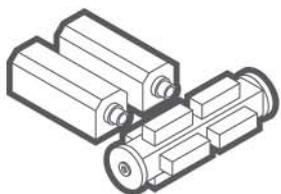
HM Table/Spindle Machine Dimension 機台規格

“HM3X” Specifications

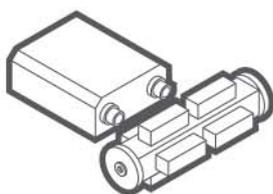
No	Group	ITEM	HM 32X SA	HM 32X	HM 34X
1	工作區 Working Range	X 軸 X-axis	460 mm	460 mm	235 mm
2		Y 軸(換刀位置) Y-axis (tool exchange)	500 mm (750 mm)	500 mm (750 mm)	500 mm (750 mm)
3		Z 軸 Z-axis	375 mm (Z1, Z2)	375 mm	375 mm
4		主軸間距 Spindle distance	450 mm	450 mm	225 mm
5	工作台 Worktable	翻轉工作台 Trunnion table	180x180 x 1000	180x180 x 1000 mm	180x180 x 1000
6		最大負荷 Load capacity	Max. 250 kg	Max. 250 kg	Max. 250 kg
7	主軸 Spindle	主軸孔錐度 Spindle taper	HSK A40 / BBT30	HSK A40 / BBT30	HSK A40 / BBT30
8		主軸 Max spindle speed	12,000 rpm	12,000 rpm	12,000 rpm
9		主軸軸承直徑 Spindle bearings	Ø 50 mm	Ø 50 mm	Ø 50 mm
10		馬力 (S3 15%) Power (S3 15%)	11 kW/ 1500 rpm	11 kW/ 1500 rpm	11 kW/ 1500 rpm
11		扭力 (S3 15%) Torque (S3 15%)	70 Nm	70 Nm	70 Nm
12	快速移動 Feed Drive	快速位移 X/ Y/ Z Rapid traverse X/ Y/ Z	48/ 48/ 48 m/min	48/ 48/ 48 m/min	48/ 48/ 48 m/min
13		加速度 X/ Y/ Z Axis acceleration X/ Y/ Z	9.8 / 9.8 / 9.8 m/s ²	9.8 / 9.8 / 9.8 m/s ²	9.8 / 9.8 / 9.8 m/s ²
14		最大軸向推力 X/ Y/ Z Max. axial thrust X/ Y/ Z	15,000/29,000/10,900N	15,000/29,000/10,900N	15,000/29,000/10,900N
15	精度 Accuracy	定位精度 Positioning accuracy	0.01 mm	0.01 mm	0.01 mm
16		重複精度 Repeatability accuracy	0.005 mm	0.005 mm	0.005 mm
17	儲刀倉 Tool Magazine	換刀系統 Tool change system	Pick-Up	Pick-Up	Pick-Up
18		刀倉容量 Capacity	2 x 36 (2x48 / 2x60)	2 x 36 (2x48 / 2x60)	4 x 18 (4x24 / 4x30)
19		最大刀具直徑 Max. tool diameter	Ø 70 mm / 125 mm	Ø 70 mm / 125 mm	Ø 70 mm / 125 mm
20		最大刀具長度 Max. tool length	275 mm	275 mm	275 mm
21		最大刀具重量 Max. tool weight	3 kg	3 kg	3 kg
22		換刀時間 (C-C) Tool change time	2.8 s	2.8 s	2.8 s
23	尺寸與重量 Machine Size	機台淨重 Total weight	11,300 kg	11,200 kg	11,500 kg
24		機台外型尺寸 Machine size	3.1 m x 3.3 m x 3.4 m	3.1 m x 3.3 m x 3.4 m	3.1 m x 3.3 m x 3.4 m
25	控制器 Controller	發那科 Fanuc	Oi MF	Oi MF	31i

HM Table/Spindle

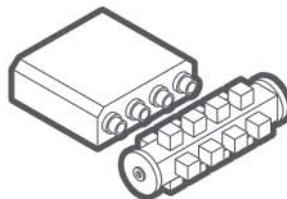
工作臺/主軸型式



HM 32X/42X SA



HM 32X/42X



HM 34X/44X

Machine Dimension

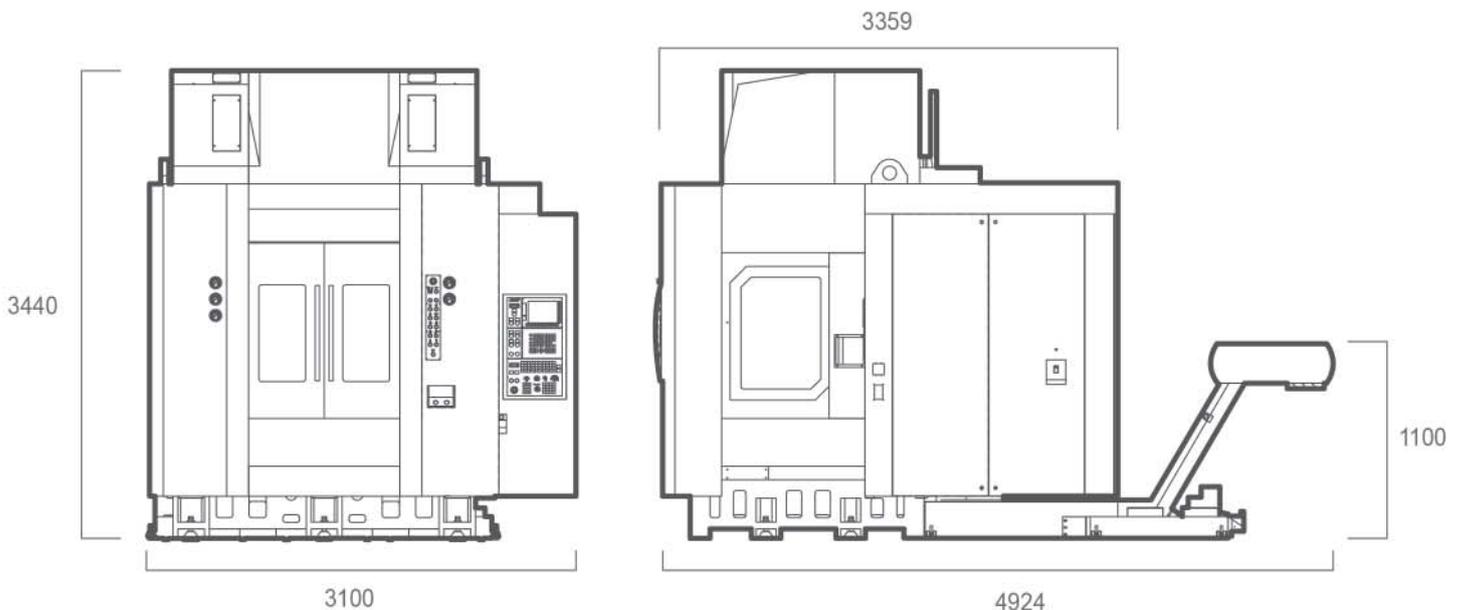
機台外型尺寸圖 (mm)

Two-face 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。

“HM4X” Specifications

No	Group	ITEM	HM 42X SA	HM 42X	HM 44X
1	工作區 Working Range	X 軸 X-axis	460 mm	460 mm	235 mm
2		Y 軸 (換刀位置) Y-axis (tool exchange)	500 mm (750 mm)	500 mm (750 mm)	500 mm (750 mm)
3		Z 軸 Z-axis	375 mm (Z1, Z2)	375 mm	375 mm
4		主軸間距 Spindle distance	450 mm	450 mm	225 mm
5	工作台 Worktable	翻轉工作台 Trunnion table	180x180 x 1000 mm	180x180 x 1000 mm	180x180 x 1000
6		最大負荷 Load capacity	Max. 250 kg	Max. 250 kg	Max. 250 kg
7	主軸 Spindle	主軸孔錐度 Spindle taper	HSK A63 / BBT40	HSK A63 / BBT40	HSK A40 / BBT40
8		主軸 Max spindle speed	12,000 rpm	12,000 rpm	12,000 rpm
9		主軸軸承直徑 Spindle bearings	Ø 60 mm	Ø 60 mm	Ø 60 mm
10		馬力 (S3 15%) Power (S3 15%)	11 kW/ 1500 rpm	11 kW/ 1500 rpm	11 kW/ 1500 rpm
11		扭力 (S3 15%) Torque (S3 15%)	70 Nm	70 Nm	70 Nm
12	快速移動 Feed Drive	快速位移 X/ Y/ Z Rapid traverse X/ Y/ Z	48/ 48/ 48 m/min	48/ 48/ 48 m/min	48/ 48/ 48 m/min
13		加速度 X/ Y/ Z Axis acceleration X/ Y/ Z	9.8 / 9.8 / 9.8 m/s ²	9.8 / 9.8 / 9.8 m/s ²	9.8 / 9.8 / 9.8 m/s ²
14		最大軸向推力 X/ Y/ Z Max. axial thrust X/ Y/ Z	15,000/29,000/10,900N	15,000/29,000/10,900N	15,000/29,000/10,900N
15	精度 Accuracy	定位精度 Positioning accuracy	0.01 mm	0.01 mm	0.01 mm
16		重複精度 Repeatability accuracy	0.005 mm	0.005 mm	0.005 mm
17	儲刀倉 Tool Magazine	換刀系統 Tool change system	Pick-Up	Pick-Up	Pick-Up
18		刀倉容量 Capacity	2 x 32 (2x44 / 2x60)	2 x 32 (2x44 / 2x60)	4 x 16 (4x22 / 4x30)
19		最大刀具直徑 Max. tool diameter	Ø 80 mm / 125 mm	Ø 80 mm / 125 mm	Ø 80 mm / 125 mm
20		最大刀具長度 Max. tool length	275 mm	275 mm	275 mm
21		最大刀具重量 Max. tool weight	6 kg	6 kg	6 kg
22		換刀時間 (C-C) Tool change time	3.5 s	3.5 s	3.5 s
23	尺寸與重量 Machine Size	機台淨重 Total weight	12,700 kg	12,500 kg	13,000 kg
24		機台外型尺寸 Machine size	3.1 m x 3.3 m x 3.4 m	3.1 m x 3.3 m x 3.4 m	3.1 m x 3.3 m x 3.4 m
25	控制器 Controller	發那科 Fanuc	Oi MF	Oi MF	31i



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

- The information in this brochure is valid as of August 2015.
- The photos shown in the catalog may differ from actual machine. Union MT reserves the rights to modify or to stop adopting the specification of this catalogue.
- 本目錄自 2015 年 8 月起生效。
- 目錄上的圖片可能與實際有所差異；國合科技保留機台規格外觀、配備變更或停用之權利。