

Eumadon

Always Step Ahead



DVM-2021 ~ 6035

龍門立式綜合加工機—3軸~5軸聯動

**DOUBLE COLUMN MACHINE CENTER
3 AXIS ~ 5 AXIS SIMULTANEOUS**

專業 CNC 機械製造廠

A PROFESSIONAL CNC MACHINES MANUFACTURER

- 匠心獨見的設計不僅 適合模具業，更適合航太建築紡織工業及一般零件加工業，高效率、高精度及高馬力的機械特性融合而成 適合加工型工件。



- 超大能力：
工作台尺寸2米×1.7米到6米×3.1米，負載8噸到30噸。
- 高剛性主軸頭：
標準 380mm×380mm 或選購 420mm×420mm 強力方型滑枕主軸頭提供比一般競爭者更強而有力的切削能力。
- 選配自動換刀及各式銑頭：
刀庫由24把到180把刀；可更換不同功用的銑頭，如側銑頭、萬能頭、特殊角度頭、延伸頭。

- **THE LATEST INNOVATIVE DESIGN NOT ONLY FOR MOULD & DIE APPLICATIONS BUT ALSO FOR AEROSPACE, CONSTRUCTION, TEXTILE MACHINERY INDUSTRIES AND GENERAL MACHINING; WITH HIGH EFFICIENCY, HIGH ACCURACY AND HIGH POWER CHARACTERISTICS COMBINED WITH A LARGE WORK ENVELOPE.**



- **LARGE CAPABILITY: TABLE SIZE FROM 2M X 1.7M UP TO 6M X 3.1M, TABLE LOAD FROM 8 TONS UP TO 30 TONS.**
- **HIGH RIGIDITY SPINDLE HEAD: STANDARD 380MM X 380MM OR OPTIONAL SECTION POWERFUL SQUARE RAM SPINDLE HEAD PROVIDES SUPERIOR CUTTING POWER.**
- **OPTIONAL ATC & MILLING HEADS : AUTOMATIC TOOL CHANGER 24 UP TO 180 TOOLS; MILLING HEAD CAN BE CHANGED WITH VARIOUS MILLING HEADS.**

OUTSTANDING DESIGN MACHINE FRAME

X AXIS



- ▶ MACHINE BASE IS WITH 2 SETS HEAVY DUTY ROLLER GUIDE AND 2 SETS LINEAR GUIDE TO ENSURE REALLY HEAVY AND SPEEDY CUTTING.

底座由 2 支德國製超重負荷型滾柱滑軌及 2 支線性滑軌組成之複合導軌，以確保重切削及高速切削，極低的摩擦系數並有高度驅動的靈敏性，動態精度極佳。

Y AXIS



- ▶ ALL THE DVM SERIES FAMILIES Y AXIS IS WITH 3 SLIDEWAYS, TWO ON TOP AND ONE IN FRONT SIDE, MADE OF HEAVY DUTY ROLLER GUIDE, NOT ONLY PROVIDES ACCURACY BUT THE RIGIDITY TO SUPPORT SLIDING SADDLE EVEN AT VERY HIGH SPEED MOVEMENT.

全系列Y軸為 3 支超重負荷滾柱滑軌，2 支朝上，1 支朝前，不僅提供精度及剛性以支撐高速運動中的鞍座。

Z AXIS



- ▶ SPECIAL CASTING MADE 380MM X 380MM SECTION RAM SPINDLE HEAD ABSOLUTELY PROVIDES SUPERIOR STURDY CUTTING CAPABILITY THAN COMPETITORS.

特殊鑄銑做成的380mm×380mm 方型滑枕主軸頭絕對地提供較一般競爭者更強而有力的切削能力。



- ▶ OPTIONAL PATENTED 420mm X 420mm SECTION RAM WITH 4 PIECES ROLLER GUIDE WAYS IS AVAILABLE FOR MACHINE WITH 1100mm OR 1300mm Z AXIS TRAVEL. TAIWAN PATENT M328340

另有專利之420mm×420mm 超大型滑枕搭配四支滾柱型滑軌，提供更高剛性及高速切削用，或是搭配自動抓取各式銑頭，Z軸行程1100mm或1300mm。台灣專利 M328340



Structure of the
of cylindrical roller
超重負

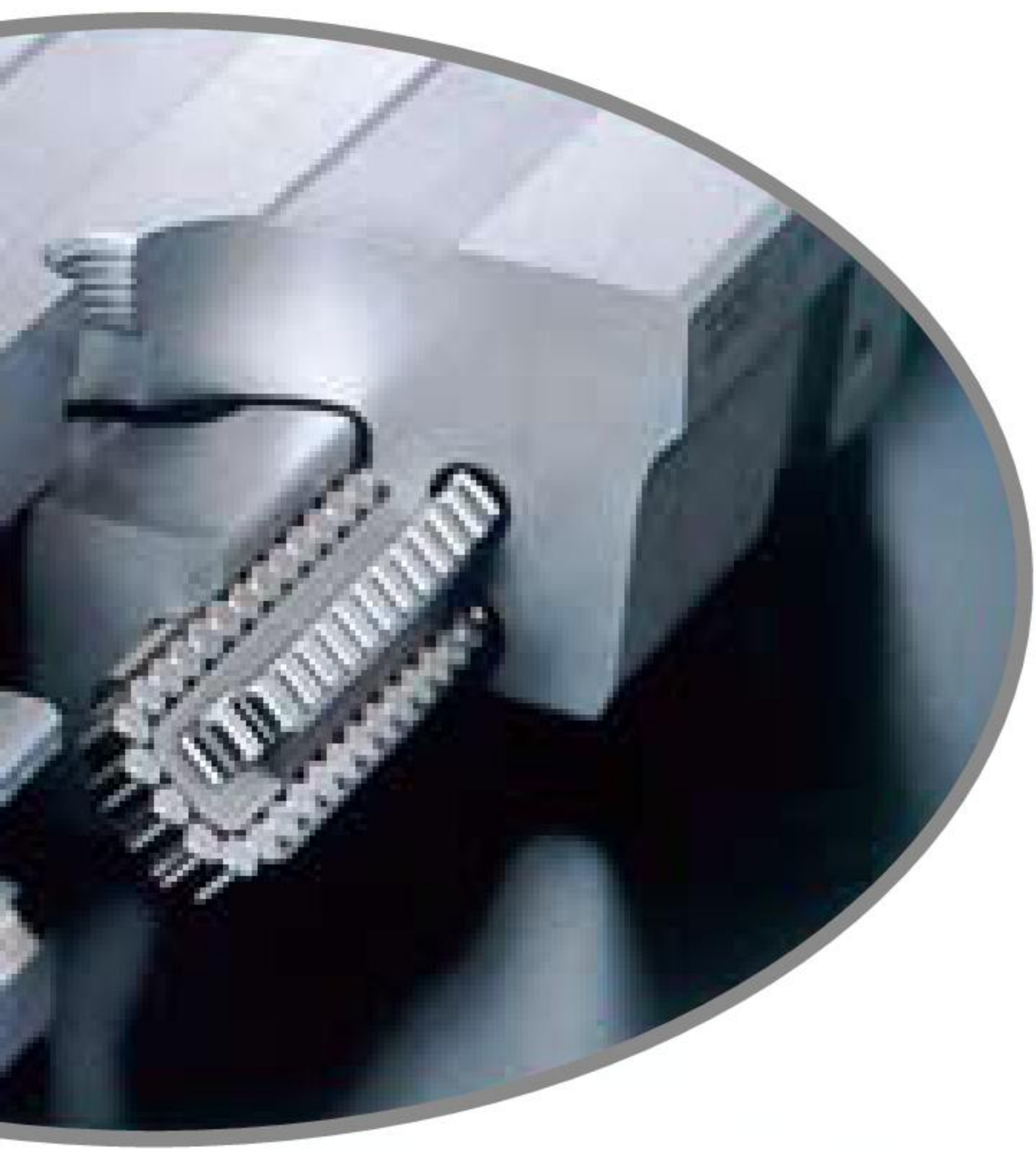
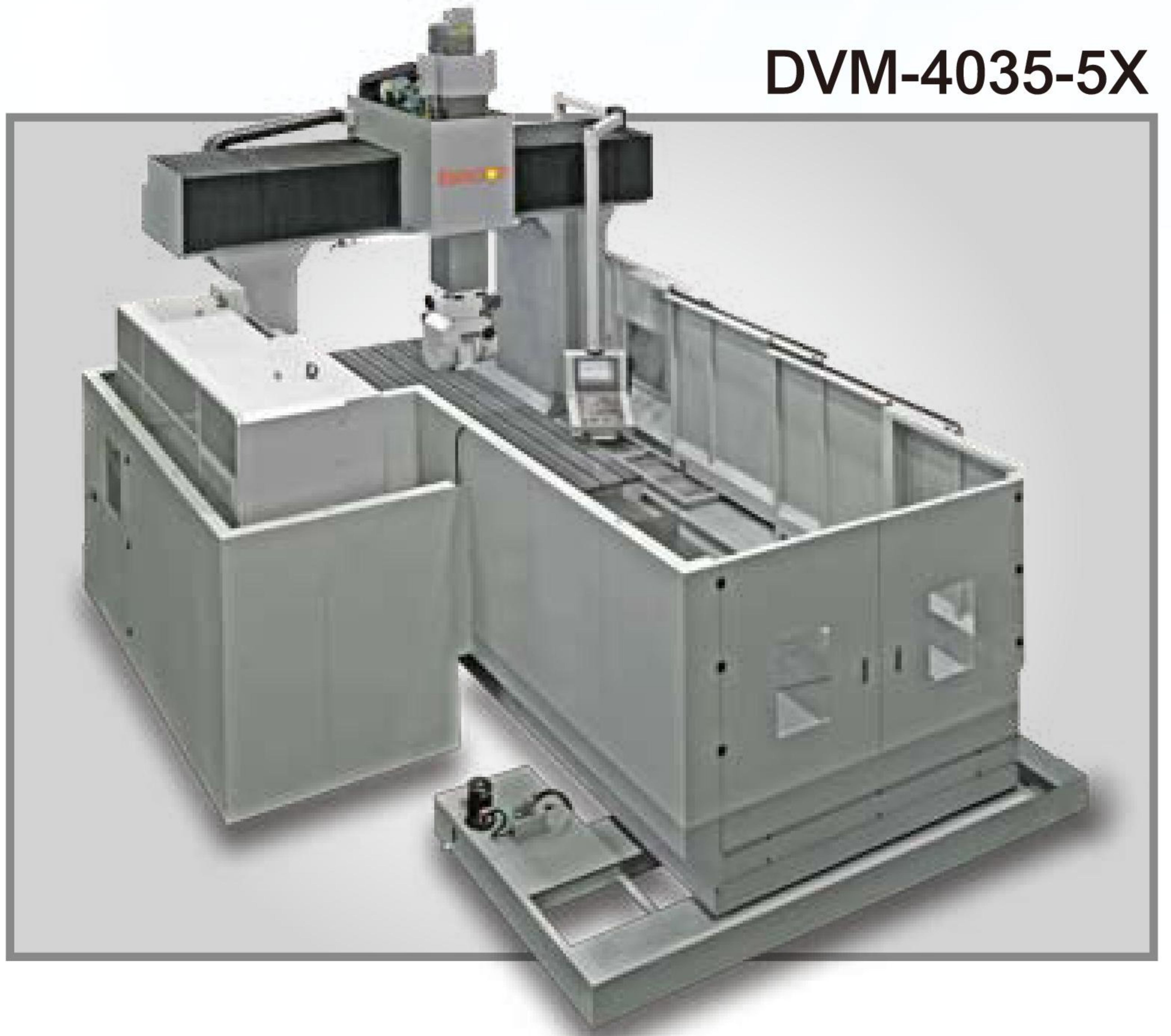
WITH MAXIMUM RIGIDITY & DYNAMICS

超越傑出的精心設計

DVM-4035-5X

- ▶ SPINDLE HEAD IS MADE OF SPECIAL CASTING, BY A 380MM X 380MM SECTION SQUARE RAM, SURROUNDED BY 8 SIDES SADDLE WHICH HAS BEEN ATTACHED "RULON" ANTI-FRICTION MATERIAL AND PRECISION HAND SCRAPED TO GET THE BEST CONTACT SURFACE.

主軸頭部是由特殊鑄鐵做成，380mm×380mm方型滑枕，8面由鞍座緊包著，內部並貼“RULON”特殊耐磨材料並經精密人工刮花，以得最佳接觸面。



*The re-circulating part
bearings arranged in four rows*
負荷型滾柱滑軌



- ▶ THE SUPERIOR DESIGNED BEAM & COLUMNS WHICH PROVIDES HIGHEST RIGIDITY DURING HEAVY CUTTING AND IS THE BASIS OF EXCELLENT MACHINING RESULTS.

卓越的立柱及橫樑設計，提供在重切削及高速切削時最佳機械剛性，也是優良加工效果的基本要素。

HIGH QUALITY HUMAN NATURED WORKING ENVIRONMENT 高品質且人性化 的工作環境

DVM-3021



- ▶ THE FRONT DOORS IS ALSO DESIGNED FOR EASY WORKPIECE LOADING & UNLOADING AND EASY PERFORMANCE OF DAILY MAINTENANCE AND CLEANING.
- ▶ 前門可開放方便工件進出及日常清潔及維修。

DVM-4035



- ▶ COMPACT BUT LARGE ENVELOPE INTERIOR SPACE PROVIDES EASE OF OPERATOR'S HANDLING BUCKY WORKPIECE, MAXIMUM LOADING UP TO 30 TONS (DVM-5035) STILL WITHIN BEST DYNAMIC ACCURACY, DUE TO VERY WELL DESIGN ON MACHINE BASE AND 4 SLIDE WAYS STRUCTURE.
- ▶ 簡潔且大型的內部空間方便操作者裝卸大型工件，寬大的承載面最重可達30噸時，仍可維持最佳動態水平精度，得力於最佳底座與四滑道跨距設計。

UNIQUE INNOVATIVE DESIGN TO SUIT TODAY'S HIGH SPEED CUTTING DEMAND

獨特傑出的設計配合現今高速加工的需求

標準 STANDARD:

- ▶ A STURDY & COMPACT SPINDLE SYSTEM BY USING DIRECT COUPLING SPINDLE, NOT LIKE COMPETITOR'S IN-DIRECT SYSTEM TO HAVE BACKLASH, NOISE AND THERMAL DEFORMATION. STANDARD LONG NOSE SPINDLE DESIGN TO ALLOW COMPLETELY ACCESS TO THE WORK PIECE EVEN IS A HOLLOW SHAPED. STANDARD SPINDLE OIL COOLER 6000RPM & BT#50 TAPER.
- ▶ 簡潔有力的主軸系統是用直傳式主軸，沒有一般同業間所採用的間接傳動的誤差背隙，噪音及溫升熱變位，標準長鼻端主軸設計，即使是內凹型工件也允許主軸盡可能接近工件。主軸油冷機為標準配置。主軸標準轉速為6000轉、BT#50。



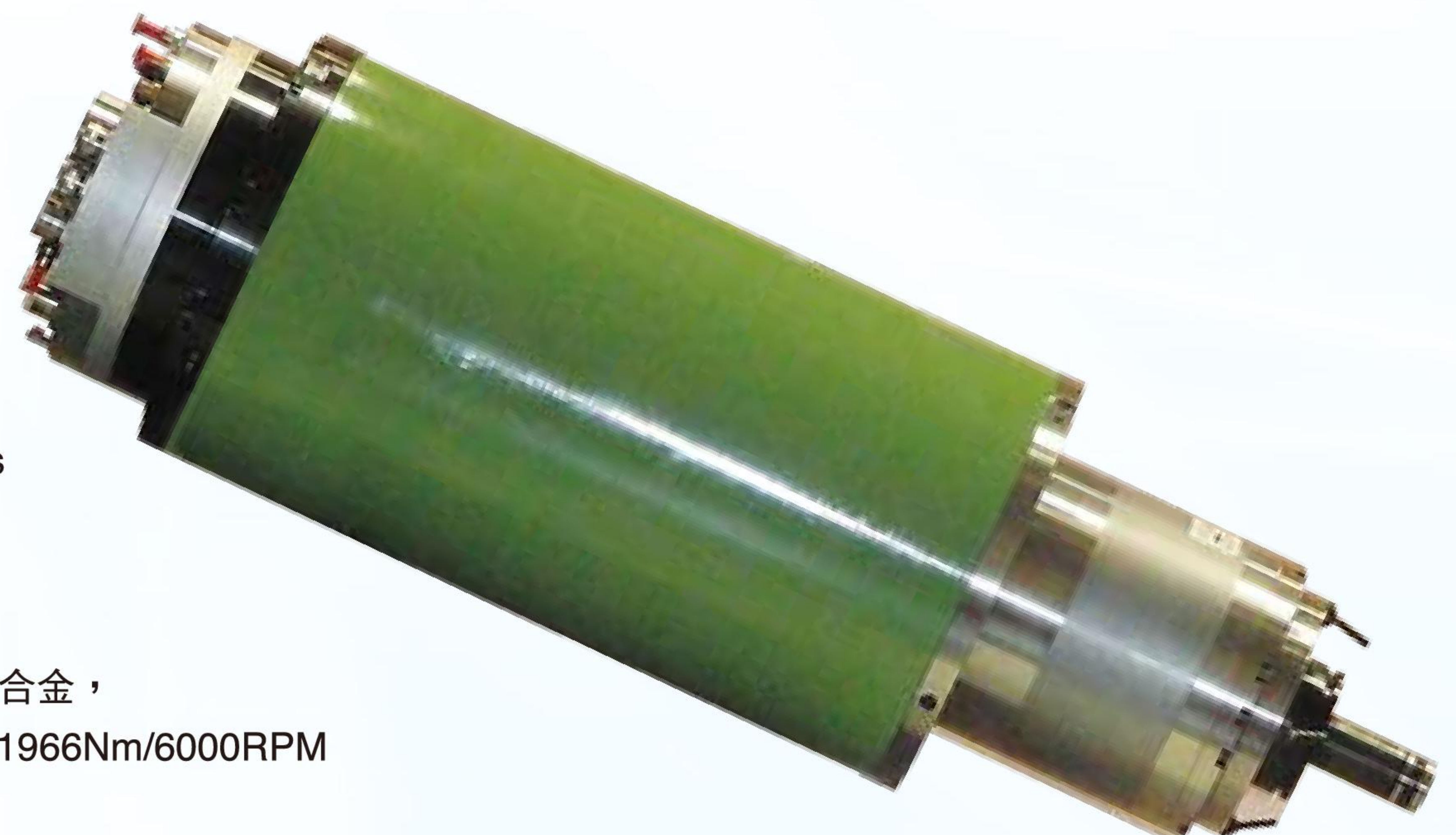
選購 OPTIONAL:

- ▶ AN OPTIONAL 10000RPM, BT#50 BUILT IN MOTOR SPINDLE BY USING CERAMIC BEARINGS FOR HIGH SPEED CUTTING APPLICATIONS MAXIMUM TORQUE & POWER IS 420Nm & 30KW. (ONLY FOR MACHINE WITH FANUC CONTROL) ALSO HAS 12000RPM, BT#50 OR HSK-A100, 293Nm SPINDLE FOR MACHINE WITH EUROPEAN MADE CONTROLS. (HSK-A100/15000RPM ALSO)
- ▶ 另有選配的10000轉、BT#50內藏主軸，採用陶瓷軸承，供高速切削應用。最高扭力可達420Nm、30KW（僅限FANUC控制器使用），另有搭配歐製控制器使用之主軸，最高轉速可達12000RPM，BT#50或HSK-A100，34KW、293Nm，或是HSK-A100/15000轉。



選購 OPTIONAL:

- ▶ Another optional spindle is being designed & proved only for those tough materials such as Titanium and Inconel alloy etc., spindle power is 63KW/73KW, torque is 1243Nm/1966Nm with HSK-A100 taper and 6000RPM.
- ▶ 另有專為航太工業或極難切削材質，如鈦或鎳鉻合金，所設計的專用主軸 HSK-A100/63&73KW/1243&1966Nm/6000RPM (S1/S6)

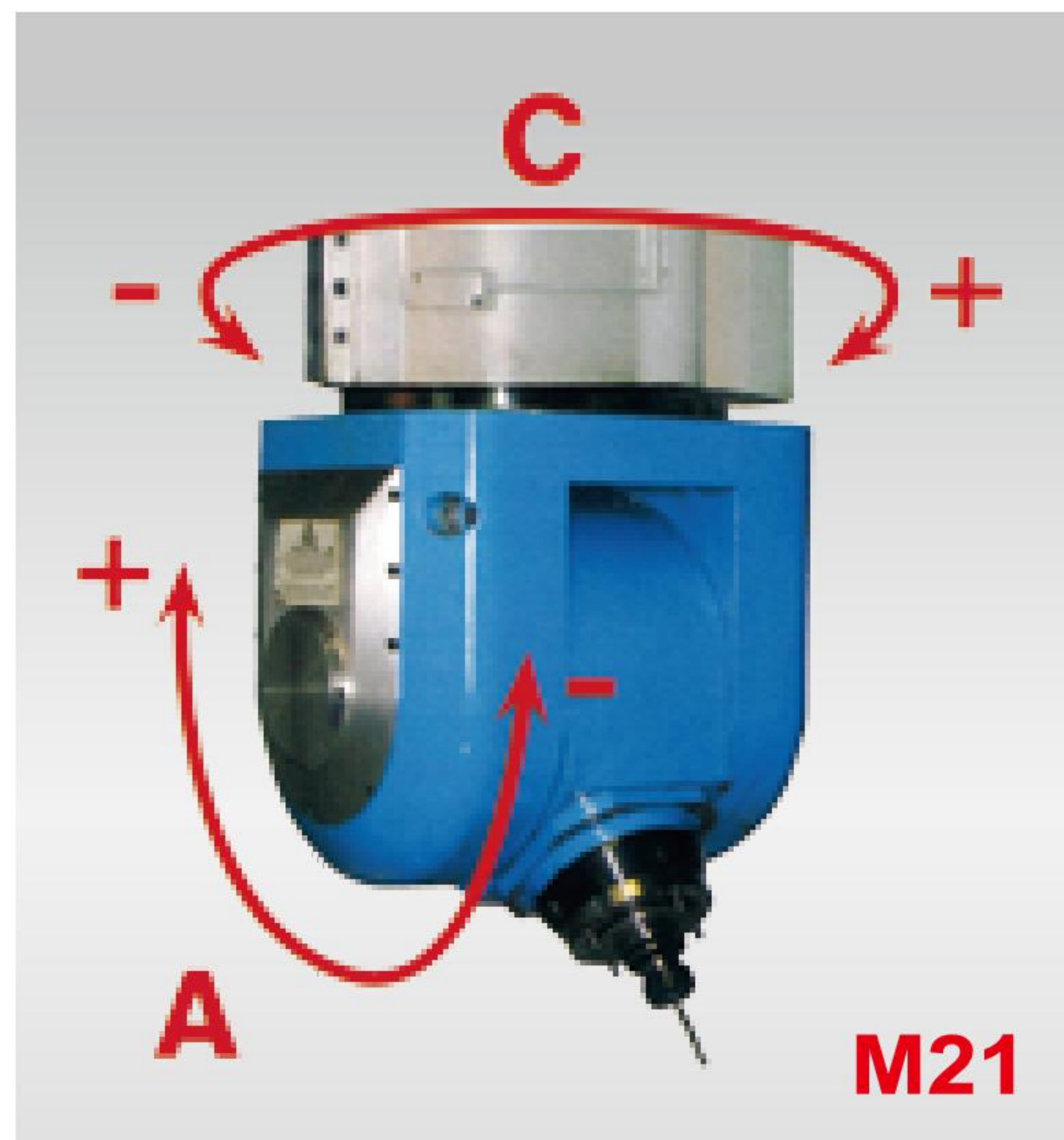


● **MILLING HEADS (OPT.):** 鑲入式銑頭 (選配)

Multi-faces多面體加工:



5 axis simultaneous五軸連動加工:



Model 型號	VH-5F	VH-1 / VH-2.5	ORT-2.5	HT	M21	M21U
RPM 轉速	3500	3500	3500	4000	12000	
TAPER 主軸錐度	BT / CAT / SK#50				HSK-A100	
KW-S1/S6功率	22/26 with Fanuc & 17/29 with Siemens or Heidenhain control				34 / 42	
Nm-S1/S6扭力	560/672 with Fanuc & 648/1108 with Siemens or Heidenhain control				160 / 200	
C axis 旋轉軸	5°x72	1° x360 / 2.5°x144	2.5° x 144	0.001° x 360,000		
A axis 傾斜軸	5 x 72	1° x360 / 2.5°x144	2.5° x 144	0.001° x 360,000		

Other optional head attachment: 其他選配銑頭配件:

A. Manual type手動型 (manually connect to main spindle手動鎖上原主軸)

- A1. 90° right angle head (90° 銑頭)
- A2. extension head (延伸銑頭)
- A3. 90° extension head (90° 延伸銑頭)
- A4. universal head (萬能銑頭)

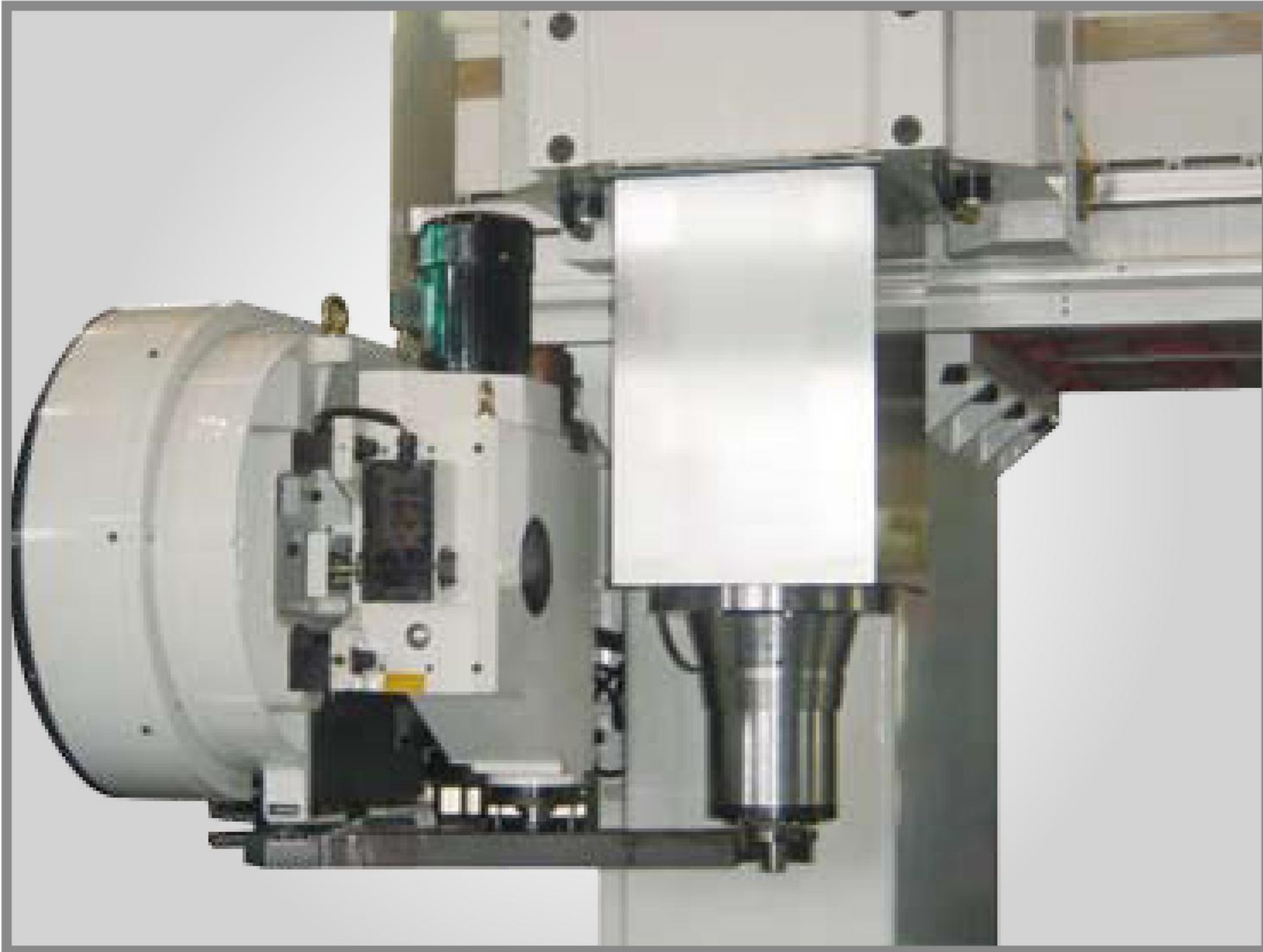
B. Semi-automatic type半自動型 (manually connect to main spindle with automatic index device 手動鎖上原主軸但自動轉向)

- B1. 90° right angle head (90° 銑頭)
- B2. orthogonal 2 axis milling head (正交頭)

C. Fully automatic全自動型 (automatically connect to main spindle & index = AHC automatic heads changer 原主軸自動抓取，鎖上及轉向)

- C1. AHC 90° right angle head (AHC型90° 銑頭)
- C2. AHC extension head (AHC型延伸銑頭)

● **AUTOMATIC TOOL CHANGER (OPT.):**
刀庫（選配）



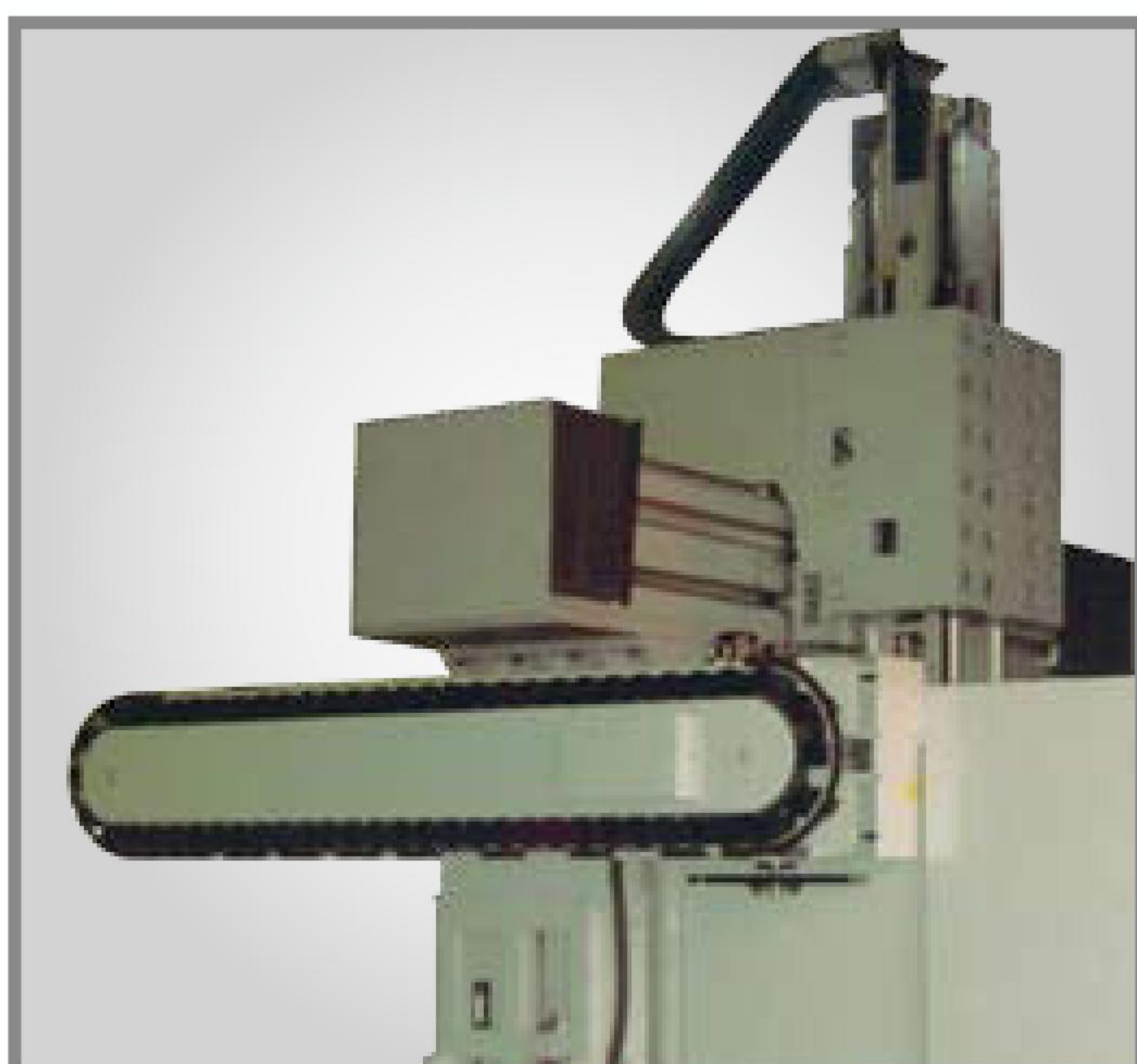
- ▶ MECHANICAL STAND ALONE TOOL MAGAZINE, DRIVEN BY ELECTRIC MOTOR OR SERVO MOTOR FOR LONG TERM STABILITY. TOOLS NUMBER AVAILABLE ARE 24 / 40 / 60 / 120 / 180.
- ▶ 機械式獨立刀庫由電動馬達或伺服馬達驅動，以達最佳穩定性，刀具有 24 / 40 / 60 / 120 / 180 把刀選擇。



24 ATC



40 ATC



60 ATC



180 ATC

● 機械規格 SPECIFICATIONS

MODEL	機 型	UNIT	DVM-2021	DVM-3021	DVM-3025	DVM-4021
TRAVEL:		行程 :				
X AXIS	X軸行程	mm	2150	3200		
Y AXIS	Y軸行程	mm	2200		2600	2200
Z AXIS	Z軸行程	mm				
DISTANCES:		距離 :				
BETWEEN TWO COLUMNS	兩門柱間距離	mm	2130		2530	2130
SPINDLE TO TABLE TOP	主軸鼻端至工作台面距離	mm	1.STANDARD 2.OPTIONAL			
TABLE TOP TO FLOOR	工作台至地面距離	mm				
TABLE:		項目 :				
OVERALL SIZE	工作台尺寸	mm	2000×1700	3000×1700	3000×2100	4000×1700
T SLOTS	T型槽寬	mm				
MAXIMUM LOADING	最大荷重	kgs	8000	11000	14000	13000
X AXIS SLIDEWAY	X軸滑道形式及數量					
SPINDLE & RAM		主軸 & 滑枕				
TRANSMISSION	傳動方式	TYPE				
TAPER	錐度、刀柄					
SPEED	轉速	RPM				
RAM SECTION	滑枕尺寸	mm				
	滑枕承受面	TYPE	BOX WAY 8			
MOTOR FANUC / MITSUBISHI	主軸馬力(日系)	KW				
HEIDENHAIN / SIEMENS	主軸馬力(歐系)	KW				
FEEDRATE: X & Y / Z		進給率 : X&Y/Z				
CUTTING FEEDRATE	切削進給	mm/min				
RAPID FEEDRATE	快速進給	mm/min	15 / 15 / 10 (15)			10 / 15
MINIMUM SETTING	最小輸入單位	mm				
AUTOMATIC TOOL CHANGER OPTION		刀庫一選配 :				
NO. OF ATC	刀庫容量	PCS支				
MAX. TOOL(DIA/LENGTH)	最大刀具(直徑/長度)	mm				
MAX. TOOL WEIGHT	最大刀具重	kgs				
TOOL TO TOOL	換刀時間 — 刀對刀	sec				
COOLANT & LUBRICATION:		冷卻與潤滑油箱容量:				
COOLANT TANK VOLUME	冷卻液箱容量	liter				
HYDRAULIC TANK VOLUME	油壓箱容量	liter				
LUBRICATION TANK VOLUME	潤滑油箱容量	liter				
	切削液箱容量	liter	800	880	800	
ACCURACY:		精度 :				
POSITIONING	定位精度(ISO 230-2標準)	mm	0.02			
REPEATABILITY	重覆定位精度(ISO 230-2標準)	mm	0.015			
ROUNDNESS	循圓	mm				
MISCELLANEOUS:		其他 :				
POWER REQUIRED	電力需求	KVA				
PNEUMATIC REQUIRED	氣壓單元壓力需求	Kg/cm ²				
MACHINE NET WEIGHT	機械淨重	kgs	24000	28000	30000	35000

() OPTION 括號內為選配

STANDARD FEATURES & ACCESSORIES

1. GLAZED WINDOW TYPE SPLASH GUARD
2. PROGRAMMABLE COOLANT SYSTEM
3. AUTOMATIC LUBRICATION SYSTEM
4. SPINDLE AIR BLAST SYSTEM
5. WORKING LAMP
6. ALARM LAMP FOR ABNORMAL SITUATION
7. M.P.G.
8. INDICATION LAMP FOR DWELL & END OF JOB
9. LEVELLING BOLTS & PADS
10. BT#50 LONG NOSE SPINDLE
11. RS-232 TERMINAL INTERFACE PORT
12. MACHINE & CONTROL MANUALS
13. TOOLBOX WITH SPANNERS & WRENCHES
14. SCREW TYPE & CHAIN TYPE CHIP CONVEYORS
15. FANUC Oi-MD CONTROL

DVM-4025	DVM-4030	DVM-4035	DVM-5021	DVM-5025	DVM-5030	DVM-5035	DVM-6030	DVM-6035
4200			5200			6200		
2600	3100	3600	2200	2600	3100	3600	3100	3600
700 (900, 1100, 1300)								
2530	3030	3530	2130	2530	3030	3530	3030	3530
LONG NOSE 標準長鼻端主軸130-830 (130-1030, 130-1230, 130-1430)								
SHORT NOSE 選配短鼻端主軸240-940 (240-1140, 240-1340, 240-1540)								
915								
4000×2100	4000×2600	4000×3100	5000×1700	5000×2100	5000×2600	5000×3100	6000×2600	6000×3100
22								
16000	20000	24000	15000	18000	21000	25000	23000	28000
2 ROLLER BEARING + 2 LINEAR BEARING								
2組滾柱軸承+2組線性軸承								
DIRECT COUPLING經由聯軸器與主軸馬達直接傳動								
BT-50 (DIN,69817) (CAT-50)								
40-6000								
380×380 (420×420)								
SURFACE CONTACTED 8面拘束方軌 (4 ROLLER GUIDE WAYS 4滾柱線軌)								
22 / 26								
25 (S6-40%)								
1-8000								
/ 10 (15)	10 (12) / 10 (12) / 10 (12)							
0.001								
(24, 40, 60, 120, 180)								
Ø110或 Ø200鄰空刀 / 350L								
15								
8								
26								
120								
6								
880	980	1080	800	880	980	1080	980	1080
0.025								
0.02								
0.02mm / Ø300mm								
60								
5								
38000	42000	44000	44000	49000	53000	56000	70000	75000

標準附件：

- 防濺護罩
- 可程式冷卻系統
- 自動潤滑裝置
- 主軸吹氣裝置
- 工作照明燈
- 機械異常警示燈
- 手搖線控制盒
- 暫停與工作完成指示燈
- 水平調整螺栓與基礎墊塊
- BT#50長鼻端主軸
- RS-232C介面
- 精度檢驗表，機械操作手冊及電氣圖乙套
- 調整工具乙套
- 螺旋除屑器和鏈式輸送器及積屑桶