TURRET

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The new Revolution

CONTENTS

Exclusive product features

獨家刀塔產品特色

全系列伺服刀塔皆內建三片齒與撞機跳脫T型塊

- 採用特殊設計高剛性三片齒, 能提升鎖緊精度與切削剛性。
- 無論刀塔正反轉都能表現超高精度的定位、 夾持力及穩定性。
- T型溝槽內建撞機跳脫T型塊, 可緩衝撞車時產生的撞擊力, 有效保護刀塔本體。
- 撞車發生時, 不須特殊工具或專業技術人員, 使用者即可自行更換或調整T型塊, 迅速重現刀塔精度。
- 大幅提升維修效率, 更能降低售服成本及停機時間。

Exclusive product features

- Whole series turrets are equipped with 3-part couplings and collision escape T-slot device.
- GPM adopts specially designed 3-part high rigid couplings to achieve high clamping precision and cutting rigidity.
- Collision escape T-slot device helps absorb impact force from crash to protect internal structure of turret.
- When a crash occurs, users could easily replace or adjust T-slot by themselves without requiring special tools or professional technicians to quickly restore the accuracy of the turret.

售服雲端化 **Cloud Service**

服務不受限, 隨時可從雲端搜尋故障排除SOP。
Unlimited service : Trouble shooting SOP may be downloaded from the cloud anytime any where.

高壓出水方案
High pressure coolant

出水壓力 Coolant pressure	440	436	434	435
25 bar	標準 Standard			
70 bar	選配 Optional			
100 bar	Size 20/25/32	Size 20/25/32	Size 20/25	-

技術參數
Technical data

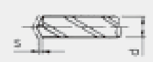
下表技術參數適用 440, 434, 435, 436 全系列GPM 自有品牌伺服刀塔
Applicable to 440, 434, 435, 436 series

項目 Item	單位 unit	尺寸與規格 Size & Specifications				
機型規格 (0../2../3..) Turret housing size		12	16	20	25	32
刀塔中心高 NH NH of turret housing	mm	63	80	100	125	160
鎖緊時容許切向力 Admissible tangential load (turret locked)	kNm	0.8	1.8	3.6	7.2	7.2
容許轉動慣量 Admissible mass moment of inertia of tools	kgm2	1.2	2.5	5	12	40
容許加工過程的不平衡度 Admissible out of balance (load moment) due to tooling	Nm	16	32	63	125	200
轉位馬達齒輪比 Gear ratio of indexing motor	i	45	54	72	90	216
分度時間 30° Rotate tool disc	sec	0.10-0.11	0.13-0.15	0.16-0.19	0.21-0.25	0.27-0.31
定位精度 Positioning accuracy	arcsec	±4"				
重覆定位精度 Repeating accuracy	arcsec	±1.6"				
最大負載重量 (刀盤+刀座) Max load (tool disc + tool holder)	kg	40	80	160	250	400
切削液壓力 Coolant pressure 標準 Standard 中等壓力 Medium pressure 高壓 High pressure	bar	5 – 25 (過濾精度 filter grade ≤ 100 μm) 25 – 70 (過濾精度 filter grade ≤ 50 μm) 70-150 (過濾精度 filter grade ≤ 25 μm)				
工作壓力 Operating hydraulic pressure	bar	50±5				
刀塔鬆開/鎖緊所需油量 Fluid absorption volume turret unlock/lock	cm3	15	30	45	65	114

可配置之轉位馬達
Recommended indexing motor

馬達型號 (防水等級IP67以上) Item	J 慣量	最高轉速	30°分度時間(不含加減速) swiveling time- without acceleration and braking				
motor type (IP67 or better)	kgm2	max rpm	12	16	20	25	32
Delta A2-CA0807(EK700) 標配 standard	0.0003	4000	0.06	0.07	0.09	0.11	0.27
Siemens 1FK7042	0.0003	4500	0.05	0.06	0.08	0.1	0.24
Siemens 1FK7043 HD	0.0001	6000	0.04	0.05	0.06	0.08	0.18
Fanuc α2/5000 - β2/5000 - β4/4000	0.0003	4000	0.05	0.06	0.08	0.1	0.24

切削能力表 **Cutting performance** (non-binding reference values)

Series			Size					
Disk-type tool turret			10	12	16	20	25	32
Drilling HSS spiral drill		d x s mmxmm /U	8 x 0.12	12 x 0.14	14 x 0.16	16 x 0.20	20 x 0.25	32 x 0.20
Drilling HM short hole drill		d x s mmxmm /U	12 x 0.05	15 x 0.08	16 x 0.10	20 x 0.12	24 x 0.16	32 x 0.16
Thread-drilling		d x P mmxmm /U	M 8 x 1	M 8 x 1.25 M 16 x 1	M10 x 1.5 M 24 x 1	M 14 x 2 M 20 x 1.5	M 18 x 2.5 M 36 x 1.5	M 20 x 2.5 M 42 x 2
Keyway axexs cutting Finger milling		a x e x s mmxmm /U	1 x 5 x 45	12x8x45	16x12x40	20x12x40	22x25x40	30x20x40
Keyway cutting Disc cutting		a x e x s mmxmm /U	-	-	D = 50 8x8x45	D = 63 10x10x40	D = 80 18x18x40	D = 100 20x20x40

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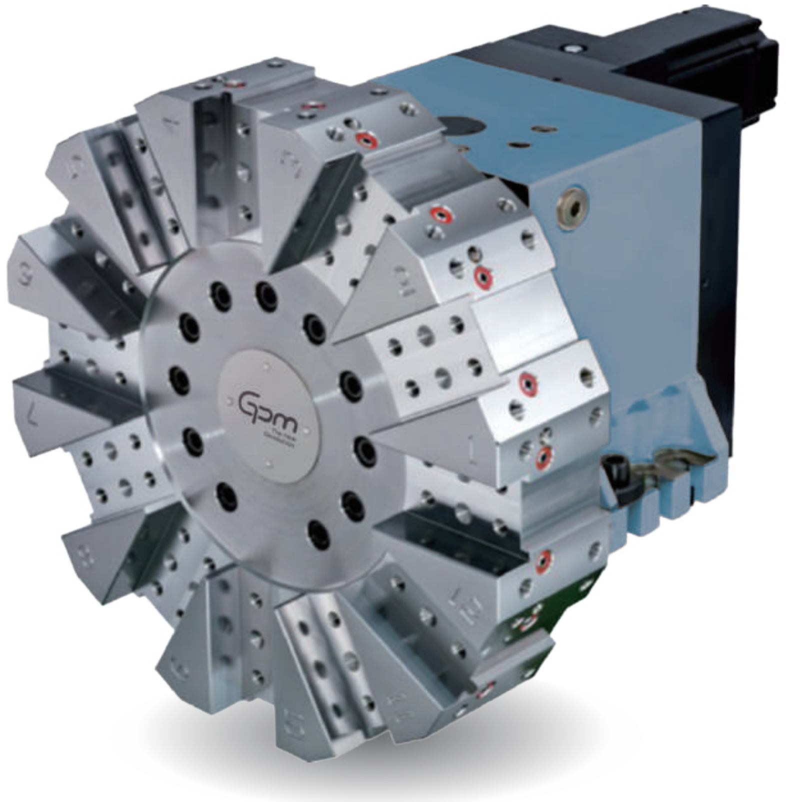
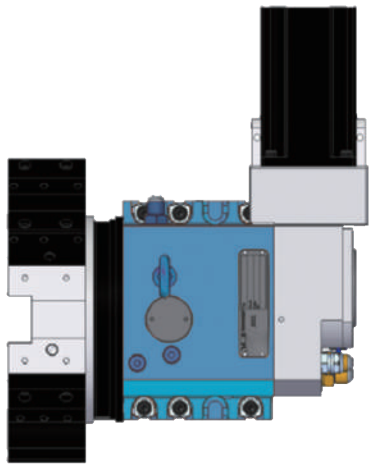
440 伺服非動力刀塔
Servo Type Static Turret



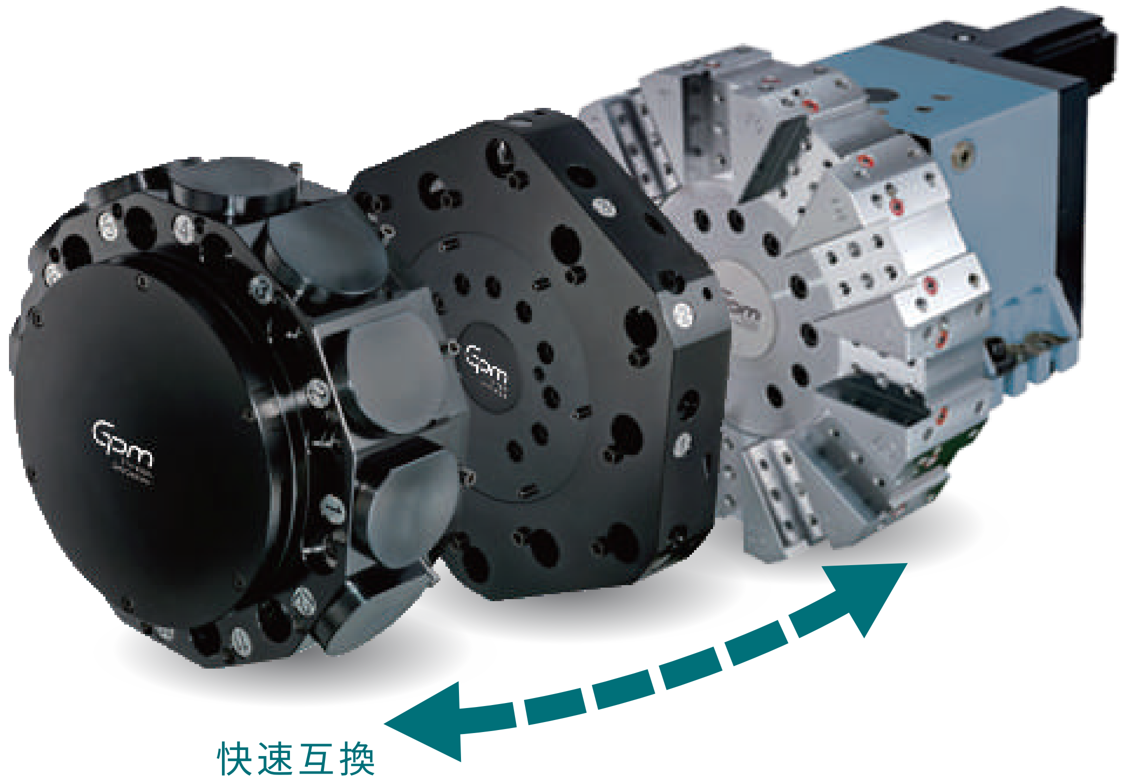


特色 :

- 刀盤具互換性, 使用者可依不同需求選擇不同的刀盤, 當需求改變時只需更換刀盤不需要更換刀塔本體, 可有效降低庫存, 使用上更具彈性。
- 因應小型機床內部空間,刀塔轉位馬達轉90度設計, 有效節省近40%長度。

Features:

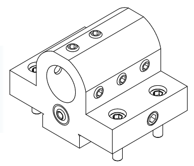
- 440 series turrets may be mounted with slot type, VDI or BMT interface tool disc; Highly interchangable and effectively reduce inventory pressure.
- Designed for small machines with limited space; nearly 40% of turret overall length is reduced when indexing motor turns 90 degree.



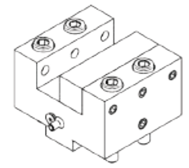
快速互換
Quick interchangeable

刀座
Tool Holder

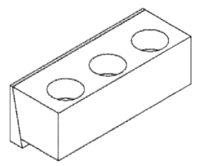
H搪孔刀座組
Boring tool holder



F端面刀座組
Facing tool holder



上&下壓板組
Clamping element



套筒
Sleeve

標準配置
Standard Configuration

機 種 Type	規 格 Specifications
440.212	440.212/SW220/8T/W3
440.216	440.216/SW270/8T/W3
	440.216/SW316/12T/W3
	440.216/SW330/8T/W3
440.220	440.220/SW380/8T/W3
	440.220/SW410/12T/W3
440.225	440.225/SW420/12T/W3
440.232	440.232/SW520/12T/W3

刀塔選型
Turret Product info

刀座型錄
Tool Holder

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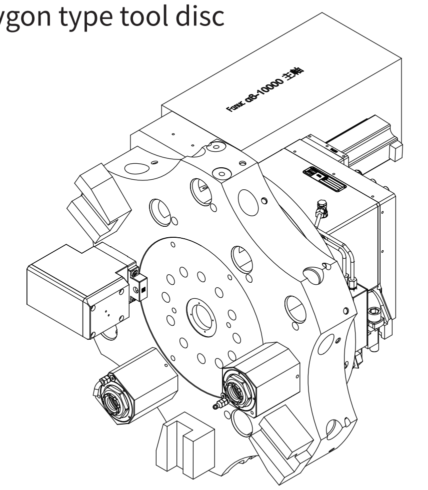
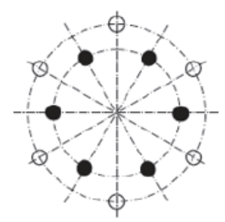
436 VDI軸向動力刀塔
VDI Axial Mount Driven Turret

GPM刀塔自有品牌
GPM brand Turret

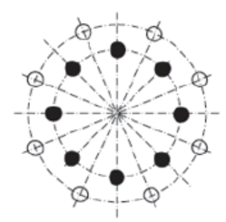
多邊形刀盤
Polygon type tool disc



● 內圈安裝動力刀座 ○ 外圈安裝固定刀座
● Position with tool drive ○ Position w/o tool drive



12刀 - 雙PCD
12Pos. - 2 graduated circles



16刀 - 雙PCD
16Pos. - 2 graduated circles

特色：

- 436/VDI軸向動力刀塔與動力刀座採DIN5480系統；通過動力刀系統的耦合齒與動力刀座的定位環以達到雙重定位。
- DIN5480傳動：可減少花鍵齒的磨耗、降低噪音、增加速度與延長零件壽命。
- 亦可視加工需求搭載多邊形刀盤 (軸、徑向皆可安裝刀座)或雙PCD刀盤。

Features:

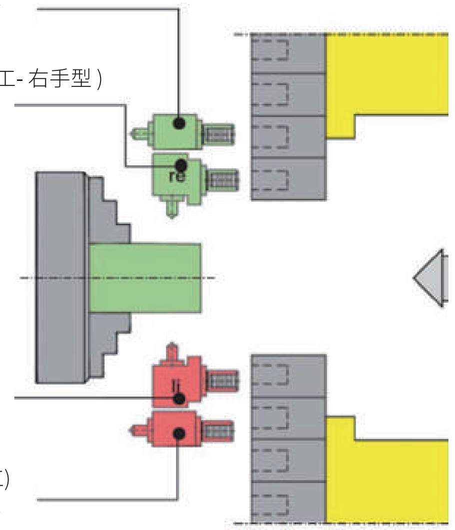
- 436/VDI axial mount driven turret and driven tool holder adopt DIN5480 system; dual positioning is achieved through coupling of tool drive system and the indexing ring of driven tool holder.
- DIN5480 transmission: may reduce teeth damage, reduce noise, increase speed and extend parts life.
- Depending on processing demands, polygonal tool disc or dual PCD tool disc may be used on 436/VDI turret.

刀塔選型
Turret Product info

436動力刀塔齒輪箱性能參數
Technical data of gear box

項目 Item	尺寸與規格 Size & Specifications				
機型規格 Type	12	16	20	25	32
刀具介面 Interface (VDI)	25/30	30/40	30/40	50	60
齒輪箱特性 Gearbox performance data					
容許驅動功率 Admissible drive ratio P_{adm} (Kw)	6	8	10	12.5	16
容許驅動扭矩 Admissible torque M_{adm} (Nm)	20	32	63	100	160
容許轉速 Admissible rpm n_{adm} (rpm)	6000	5000	4000	4000	3200
傳動比 Gear ratio (i=n1/n2)	1.0	1.0	1.0	1.0	1.0/1.5
建議配置的動力馬達(IP67) Recommended tool drive motor (IP67)					
Siemens伺服馬達 Servo motor Type 1FK7..	..063	..084	..086	..103/ ..105	..108 1PH8107
Fanuc伺服馬達 α Servo motor	8/4000 is	12/4000 is	22/4000 is	40/4000 is	on request
Fanuc主軸馬達 α Spindle motor	1.5	2	3	6	8

軸向VDI刀盤-加工方式
Tooling for axial mount

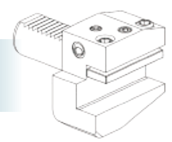


標準配置
Standard Configuration

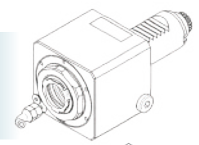
機 種 Type	規 格 Specifications
436.212	436.212/8T/PCD200/VDI25/W3
	436.212/12T/PCD270/VDI30/W3
436.216	436.216/12T/PCD270/VDI30/W3
	436.216/12T/PCD300/VDI30/W3
	436.216/12T/PCD340/ VDI40/W3
436.220	436.220/12T/PCD340/VDI30/W3
	436.220/12T/PCD340/VDI40/W3
	436.220/12T/PCD370/VDI40/W3
436.225	436.225/12T/PCD420/VDI40/W3
	436.225/12T/PCD420/VDI50/W3
436.232	436.232/8T&12T/PCD447/VDI60/W3
	436.232/8T&12T/PCD460/VDI60/W3

刀座
Tool Holder

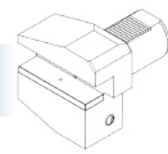
B2系列
Type



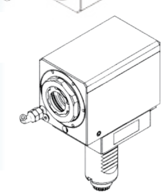
0度動力刀座
Driven tool holder-0 Degree



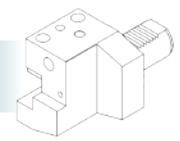
B3系列
Type



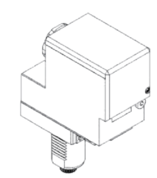
90度動力刀座
Driven tool holder-90 Degree



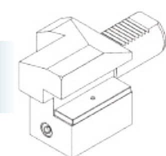
C2系列
Type



90度後縮動力刀座
Offset driven tool holder-90 Degree

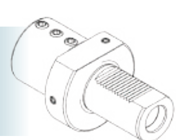


C3系列
Type



ER筒夾
Collet chuck

搪孔刀座
Boring tool holder
E2系列 type



套筒
Sleeve

刀座型錄
Tool Holder

435 VDI徑向動力刀塔
435/VDI Radial Mount Driven Turret

特色 :

- 435/VDI　徑向動力刀塔與動力刀座採DIN5480系統;通過動力刀系統的耦合齒與動力刀座的定位環以達到雙重定位。
- DIN5480傳動:　可減少花鍵齒的磨耗、降低噪音、增加速度與延長零件壽命。

Features:

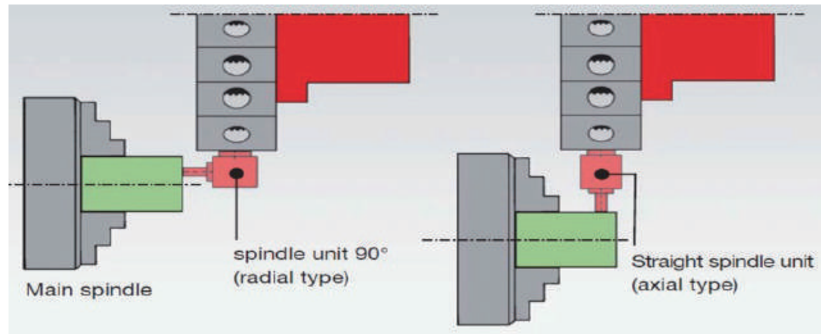
- 435/VDI radial mount driven turret and driven tool holder adopt DIN5480 system; dual positioning is achieved through coupling of tool drive system and the indexing ring of driven tool holder.
- DIN5480 transmission: may reduce teeth damage, reduce noise, increase speed and extend parts life.

刀塔選型
Turret Product info

標準配置
Standard Configuration

機 種 Type	規 格 Specifications
435.216	435.216/12T/SW270/VDI30/W3
	435.216/12T/SW340/VDI30/W3
435.220	435.220/12T/SW320/VDI40/W3
	435.220/12T/SW380/VDI40/W3

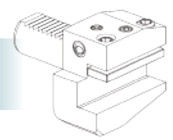
徑向VDI刀盤-加工方式
Tooling for radial mount

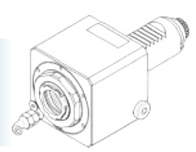


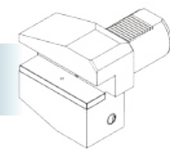
435動力刀塔齒輪箱性能參數
Technical data of gear box

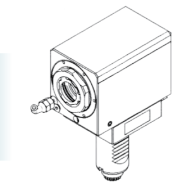
項目 Item	尺寸與規格 Size & Specifications	
機型規格 Type	16	20
刀具介面 Interface	VDI30	VDI40
齒輪箱特性 Gearbox performance data		
容許驅動功率 Admissible drive ratio P_{adm} (Kw)	8	20
容許驅動扭矩 Admissible torque M_{adm} (Nm)	32	63
容許轉速 Admissible rpm n_{adm} (rpm)	5000	4000
傳動比 Gear ratio (i=n1/n2)	1.0	1.0
建議配置的動力馬達(IP67) Recommended tool drive motor (IP67)		
Siemens伺服馬達 servo motor Type 1FK7..	..084	..086
Fanuc伺服馬達 α servo motor	12/4000 is	22/4000 is
Fanuc主軸馬達 α Spindle motor	2	3

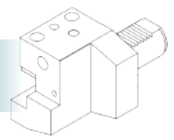
刀座
Tool Holder

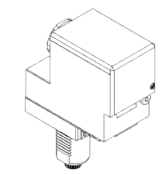
B2系列 Type


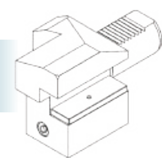
0度動力刀座 Driven tool holder-0 Degree


B3系列 Type


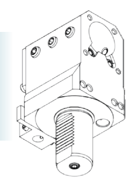
90度動力刀座 Driven tool holder-90 Degree


C2系列 Type


90度後縮動力刀座 Offset driven tool holder-90 Degree


C3系列 Type


ER筒夾 Collet chuck

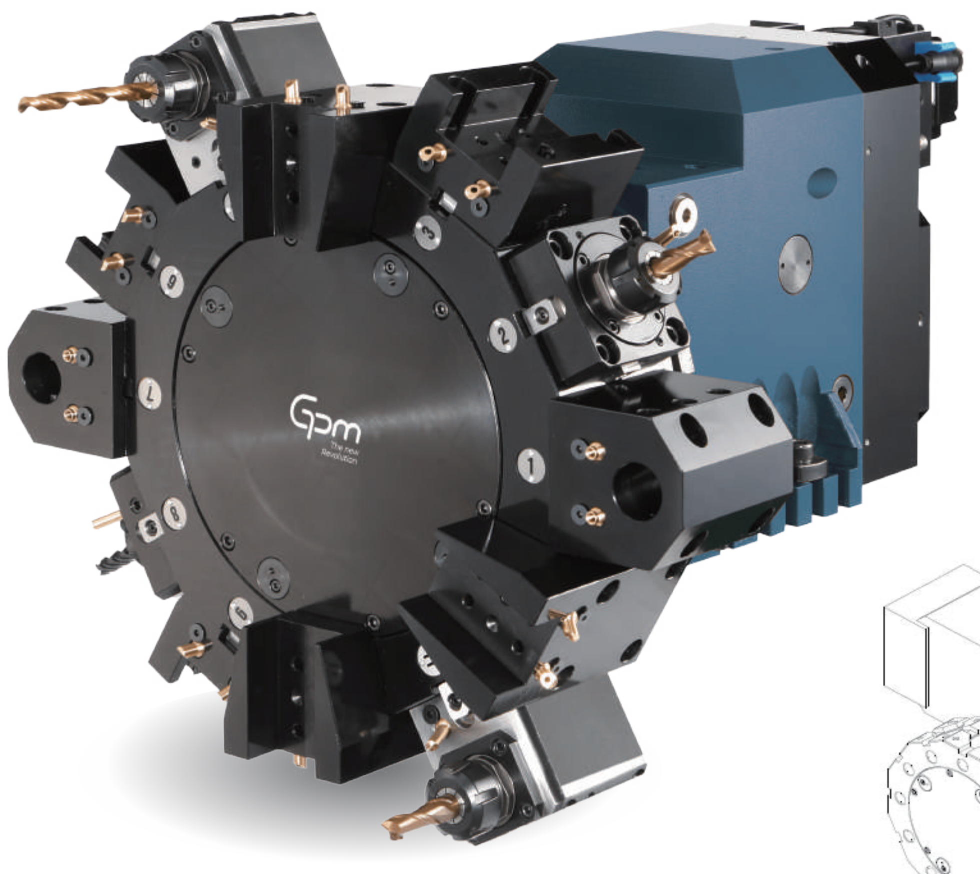

搪孔刀座 Boring tool holder E2系列 type


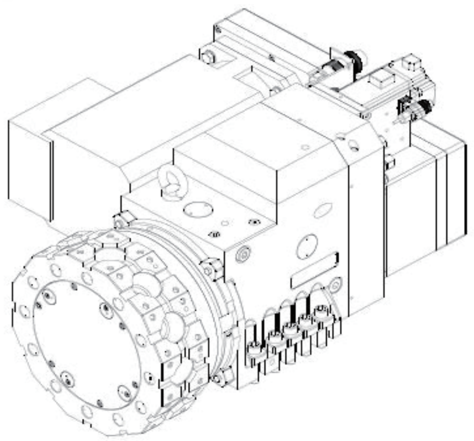
套筒 Sleeve


刀座型錄
Tool Holder

The new Revolution

434 BMT徑向動力刀塔
434/BMT Radial Mount Driven Turret





動力刀馬達 - U型連結
Tool drive motor – U-shape connection

特色 :

- 刀塔本體形狀多樣化 (如 LF, BF, HL, HB, MF 等), 滿足不同機床內部設計結構與空間。
- BMT :採用Doosan 介面, 適合重切削
- 動力刀馬達可U型安裝, 節省安裝空間

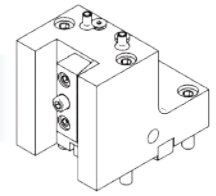
Features:

- Multiple housing shapes available, such as LF, BF HL, HB, MF ..etc to suit different machine design.
- BMT (Doosan) interface, suitable for heavy cutting.
- Tool drive motor may be mounted in U-shape, installation space is saved.

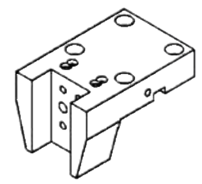
刀塔選型
Turret Product info

刀座
Tool Holder

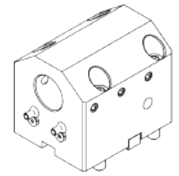
外徑刀座 C
Turning tool holder



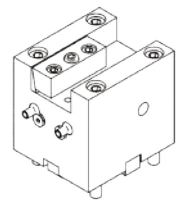
外徑刀座 C
Turning tool holder



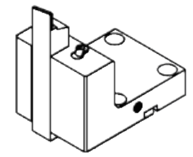
搪孔刀座 B
Boring tool holder



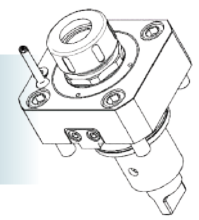
端面刀座F
Facing tool holder



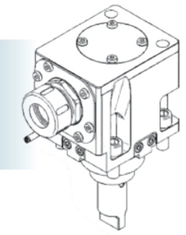
切斷刀座
Cutting holder



0度動力刀座
Driven tool holder-0 Degree



90度動力刀座
Driven tool holder-90 Degree



434動力刀塔齒輪頭性能參數
Technical data of gear head

項目 Item	尺寸與規格 Size & Specifications			
機型規格 Type	16	20	25	32
刀具介面 Interface (BMT)	45/55	45/55/65	75	85
齒輪頭特性 Gear head performance data				
容許驅動功率 Admissible drive ratin Padm (Kw)	8	10	12.5	16
容許驅動扭矩 Admissible torque Madm (Nm)	32	63	100	180
容許轉速 Admissible rpm nadm (rpm)	6000	6000	4000	4000
傳動比 Gear ratio	1.0	1.0	1.0	1.0
建議配置的動力馬達(IP67) Recommended tool drive motor (IP67)				
Siemens伺服馬達 servo motor Type 1FK7..	..084	..086	..105	..108
Fanuc伺服馬達 α servo motor	12/6000 is	22/4000 is	40/4000 is	50/3000
Fanuc主軸馬達 α Spindle motor	2	3	6/8	15 HVi

標準配置
Standard Configuration

機 種 Type	規 格 Specifications
434.016	434.016/NH80/BMT45/SW290/W3
	434.016/NH100/BMT55/SW330/W3
434.020	434.020/NH100/BMT45/SW290/W3
	434.020/NH125/BMT45/SW340/W3
	434.020/NH140/BMT45/SW340/W3
	434.020/NH125/BMT45/SW390/16T/W3
	434.020/NH100/BMT55/SW330/W3
	434.020/NH125/BMT55/SW330/W3
	434.020/NH140/BMT55/SW330/W3
	434.020/NH100/BMT65/SW380/W3
	434.020/NH100/BMT65/SW380/W3
	434.020/NH125/BMT65/SW380/W3
434.025	434.025/NH150/BMT75/SW430/W3
	434.025/NH180/BMT75/SW430/W3
434.032	434.032/NH200/BMT85/SW530/W3

刀座型錄
Tool Holder

434.4.. BMT 升級版動力刀塔
434.4xx BMT Premier Line Driven Turret

產品優勢 :

- 高速長時運轉
- 降低熱變形
- 提高刀座負載量

產品特色:

- 動力刀轉速6000rpm 以內, 可連續加工運轉
- 動力刀轉速8000rpm, 連續運轉30mins, 刀盤熱位移量<10μm, 溫度<65°C
- 刀座負載量提高100%
- 高壓出水: 70~150bar
  PT-100 高精密溫度感測器

註:上述轉速適用本體尺寸16及20

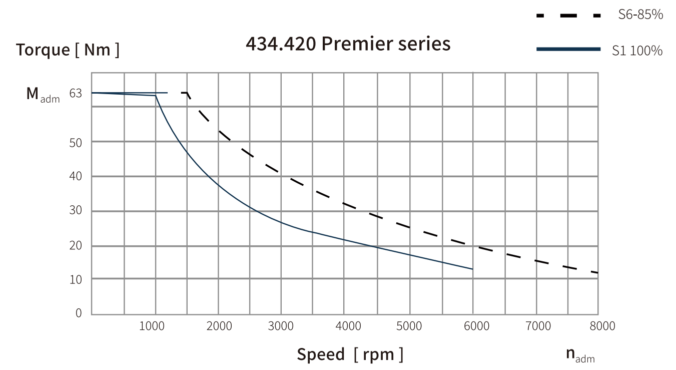
Advantages :

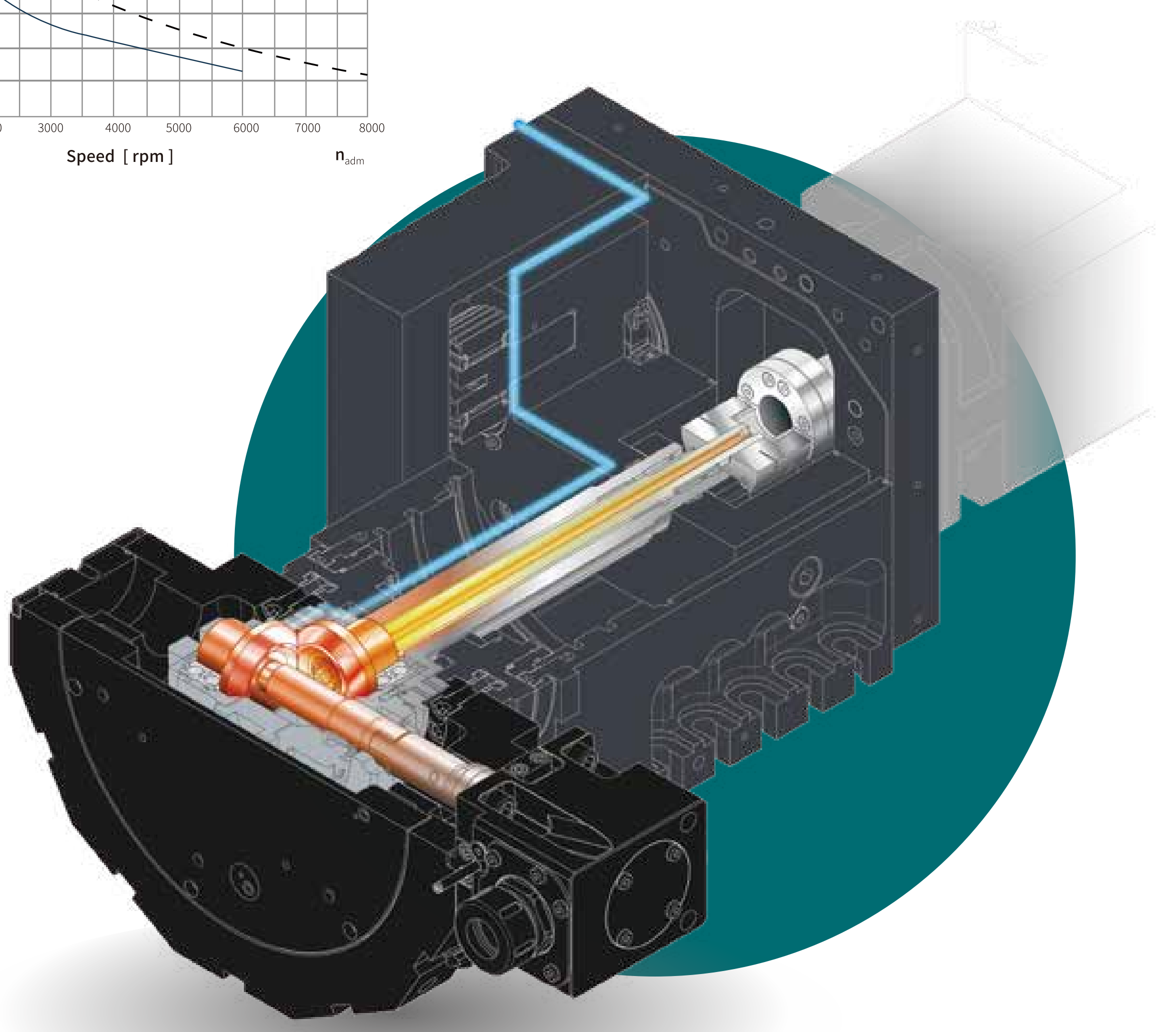
- High speed and long time operation
- Reducing thermal deformation
- Increasing tool holder loading capacity

Features :

- Tool drive speed < 6000rpm : continuous operation allowed
- Tool drive speed at 8000rpm : continuous operation for 30mins : thermal displacement of tool disc <10μm, temperature < 65°C
- Tool holder loading capacity : increase 100%
- High pressure coolant : 70~150bar
  PT-100 high precision temperature sensor

Note : The speed mentioned above is for turret size 16, 20.





2D 動畫

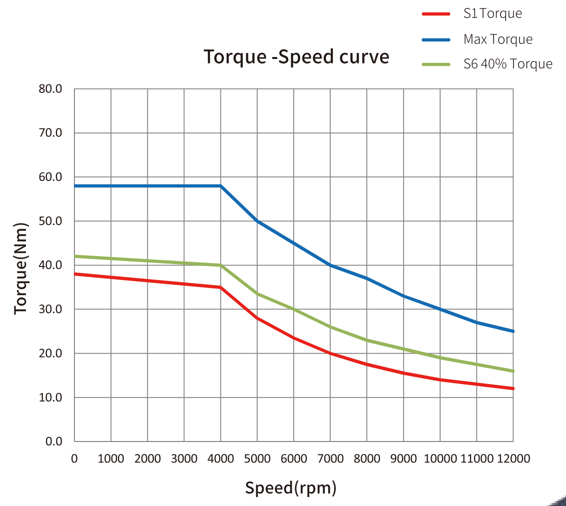
734 BMT 徑向內藏式動力刀塔
734 BMT Radial Mount DD turret

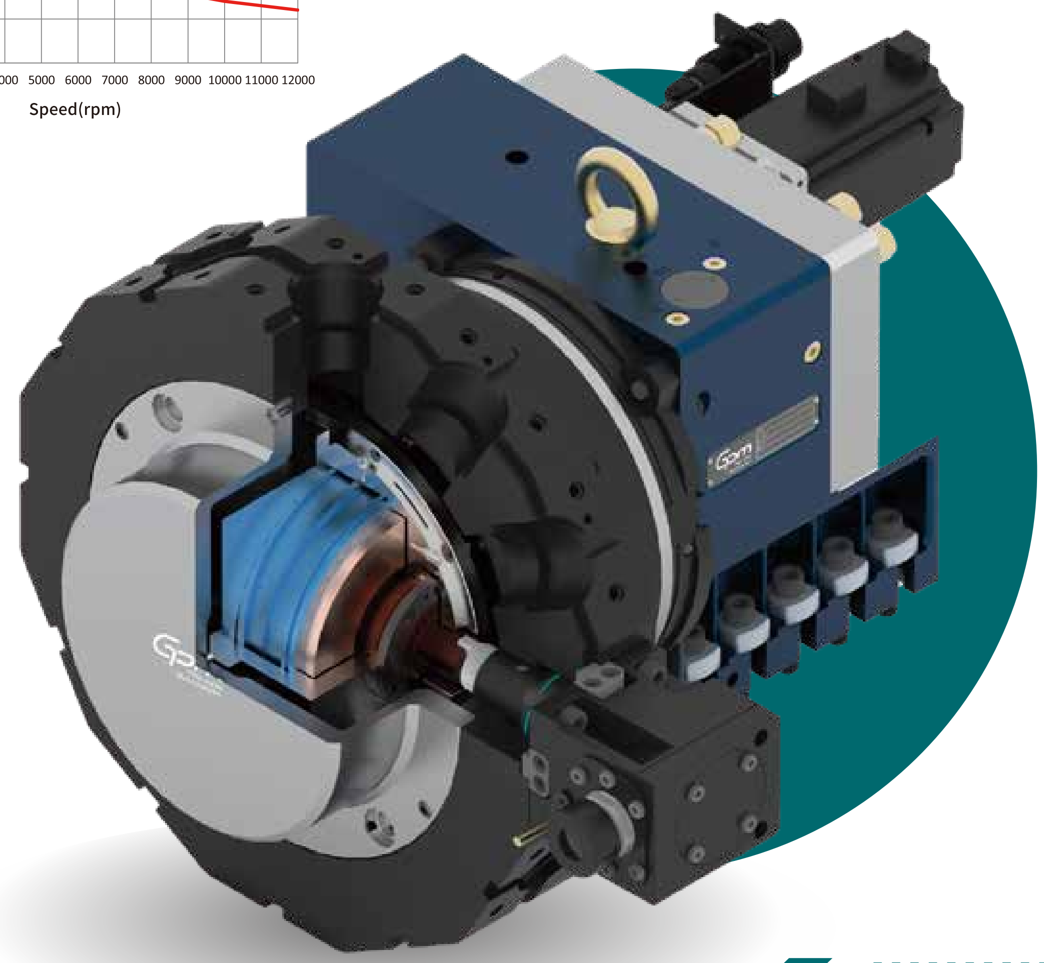
產品特色:

- 內藏式馬達設計, 節省安裝空間 25%
- 轉速高達 12,000 rpm(size 20)
- 扭力高達 35 Nm(size 20)
- 適用 VDI & BMT 介面
- 特殊本體設計, 可背向加工
- 特殊冷卻系統, 可連續加工
- 極靜作業

Features :

- Built-in motor design, saves 25% installation space
- Speed up to 12,000rpm (size 20)
- Torque up to 35Nm (size 20)
- Suitable for VDI & BMT interfaces
- Special housing design for back machining
- Special cooling design for continuous motion processing
- Quiet running





Y 軸動力刀塔
Driven turret with Y-axis

中置式：

- 滾柱線軌及一螺桿
- 干涉小，節省30%配置空間
- 應用面：可配置斜床身，擺脫傳統外掛式Y軸重量限制
- 適合中/輕切削
- Y軸行程±50mm

494/BMT45、55、65 徑向Y軸動力刀塔

Central mount type:

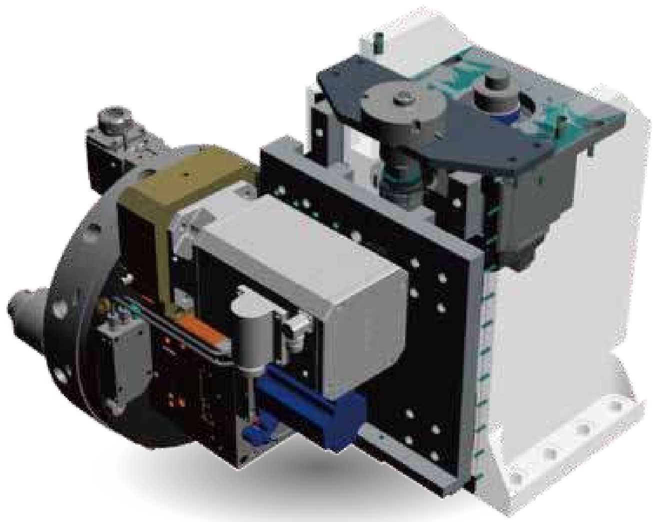
- Roller type linear guideway center mounted screw design.
- Interference is reduced by about 30%.
- Suitable for high-complex processing.
- Suitable for medium~light cutting.
- Y-axis travel ±50mm

494/BMT45、55、65 radial mount Driven Turret with Y-axis

外掛式：

- 適用於單主軸／雙主軸車床
- 2滾柱線軌及一螺桿
- Y軸行程±50~60mm
- Y軸電磁剎車另可外加馬達剎車，雙重保障

936/VDI軸向Y軸動力刀塔
935/VDI徑向Y軸動力刀塔
934/BMT徑向Y軸動力刀塔



External mount type :

- Suitable for single/two spindles machines.
- 2 Roller type linear guideway/1 ball screw design.
- Y axis travel: ±50~60mm.
- Y axis equipped with electromagnetic brake.
- Add additional motor brake is possible.

936/VDI axial mount Driven Turret with Y-axis
935/VDI radial mount Driven Turret with Y-axis
934/BMT radial mount Driven Turret with Y-axis

434.5.. BMT動力刀塔-ATC功能
434.5.. BMT driven turret with ATC function

刀座搭配 PSC 自動換刀系統

Tool holder equipped with PSC automatic clamping unit - Achieving auto tool change by hydraulic clamp & unclamp

刀塔內部5油路- 油壓放鬆、油壓夾緊、切削液、吹氣清潔、氣密檢知

5 channels for hydraulic clamp, unclamp, coolant, air blast and probe contact

旋轉接頭機構

Rotary distributor

- 可提供自動與手動換刀功能，滿足不同加工需求。
- Supports both automatic and manual tool changing to meet various machining needs.

The new Revolution

PSC 刀塔 Turret

特色 :

- PSC 的三角多邊形錐度面設計提供卓越的扭矩傳遞與夾持剛性，確保換刀後的重覆定位精度可達2μm，大幅提升加工穩定性與精度。
- 模組化設計讓 PSC 能夠快速更換刀具，減少停機時間，適合高混合、小批量生產，提高機台稼動率與整體生產效能。
- 適用於車削、銑削、鑽削等多種加工方式，並可搭配CNC車床、加工中心、複合加工機，讓生產更具靈活性與成本效益。

Features:

- Polygonal tapper surface of PSC system ensures superior rigidity, which translates to higher precision in machining operations. Repeating accuracy 2μm.
- Balanced, concentric, self-centering features and modular design enable quick and automated tool change and boosts productivity.
- Applicable to various machining purposes.

標準配置 Standard Configuration

機 種 Type	規 格 Specifications
440.220	440.216/PCD270/8T/C4
440.220	440.220/PCD370/12T/C5
440.225	440.225/PCD420/12T/C6
440.232	440.232/PCD460/12T/C8

PSC 刀座 Tool Holder

外徑刀座 Turning Tool holder

PSC	Shank	Specs
C4	16	B1 -C4x16
	20	B1 -C4x20
C5	20	B1 -C5x20
	25	B1 -C5x25
C6	25	B1 -C6x25
	32	B1 -C6x32
C8	32	B1 -C8x32

端面刀座 Facing Tool holder

PSC	Shank	Specs
C4	16	C1 -C4x16
	20	C1 -C4x20
C5	20	C1 -C5x20
	25	C1 -C5x25
C6	25	C1 -C6x25
	32	C1 -C6x32
C8	32	C1 -C8x32

側固式刀桿 Side Lock Holder

PSC	孔徑 φmm	Specs
C4	20	E1 -C4x20
	25	E1 -C4x25
C5	40	E1 -C5x40
C6	50	E1 -C6x50
C8	60	E1 -C8x60

筒夾式刀桿 ER Collet Chuck

PSC	ER
C4	ER25
C5	ER32
C6	ER40
C8	ER50

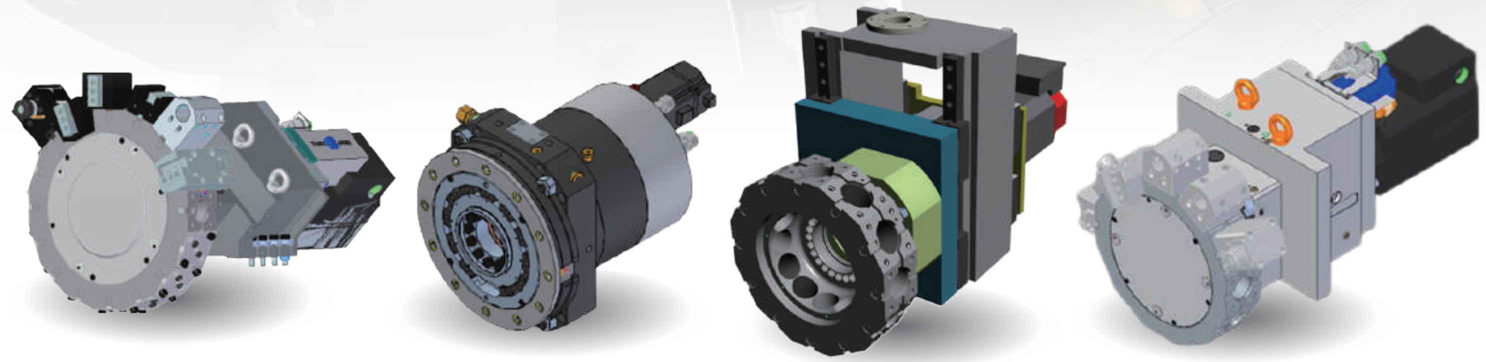
刀座型錄 Tool Holder

ODM / OEM 客製化設計能力

- 可配合機床設計, 提供客製化解決方案, 如 特殊刀塔本體、刀盤、刀座等。
- 因應自動化生產需求, 刀塔可另外搭載 如夾爪、中心架及其他特殊需求 等。

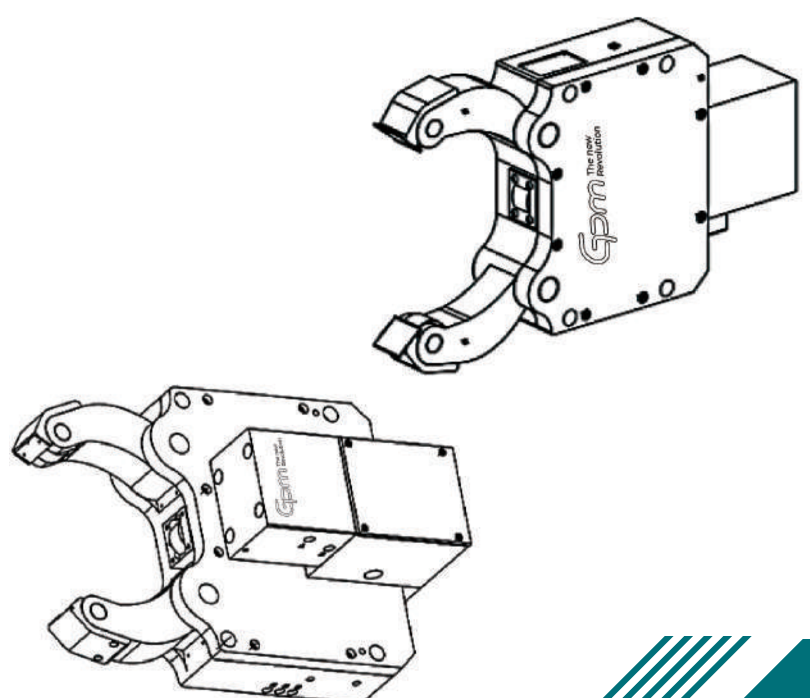
Customized ability

- Customized designs to suit different demands of machines, such as special turret housing, tool disc and tool holder..etc.
- Turret may be redesigned to integrate gripper, steady rest, ..etc for automated manufacturing.



油壓中心架
Hydraulic Steady Rest

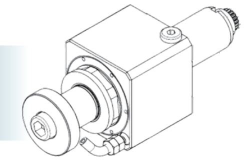
款式 Model	型號 Type	夾持範圍 Clamping diameter
標準油壓 Standard type	TSC-2	8-102mm
	TSC-3	12-152mm
	TSC-3.1	20-165mm
	TSC-4	30-245mm
	TSC-5	45-310mm
超緊湊 Super-compact type	TCX-6.1	250-685mm
精密油壓 Precision type	SCR-3	12-152mm
	SCR-4	30-245mm
	SCR-5	45-310mm
側置油缸 Lateral cylinder type	SCR-B3	12-152mm
	SCR-B4	30-245mm
	SCR-B5	45-310mm



其他特殊刀座
Other Special Tool Holder

軸向偏心動力刀座
Axial drilling and milling head offset

側銑動力刀座
Side milling cutter



萬向動力刀座
Universal live tool holder

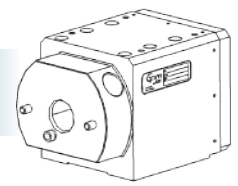
VDI測試棒
Testing mandrel

滾齒動力刀座
Gear hobbing unit

BMT測試棒
Testing mandrel

插槽動力刀座
Broaching unit

單點車銑座
Milling head



提供各型式歐美及日系介面刀座
Various Tool Holder Interfaces Available

DIN5480

DIN5482

DIN1809

SPUR MT TOEM (Baruffaldi)

Okuma

HASS

DOOSAN

MAZAK

MoriSeiki

Nakamura

刀座型錄
Tool Holder

The new Revolution

公司發展歷程
Company Profile

Ver 2

特品國際

上海德霄

霄特國際

集團沿革
Group Milestone

1988
特品國際成立
為Sauter台灣總代理
GP established,
as agent of Sauter in Taiwan.

2002
創立並在台灣生產自有主軸品牌SPINMARS (SPM)
Established & produced GP owned spindle brand in Taiwan.

2007
成立上海德霄
負責大陸刀塔&主軸的銷售與售後服務
GP Shanghai established,
in charge of sales & after-sales service
of turret & spindle in China.

2008
德國Sauter與台灣特品合資
成立霄特國際(Sauter Asia)
同年在台開始生產刀塔
Sauter Asia established -
a JVC between Sauter Germany and GP Taiwan.
Started to produce turrets in Taiwan

2022
霄特成為100%台灣獨資
04月購入德國 SAUTER 65%持股
Apr.2022 – Purchased 65% share
from Sauter Germany;
Became 100% owned
by Taiwanese shareholders.

2022
06月更名為 GPM CO., LTD
Jun.2022 – Changed company
name to GPM CO., LTD.
(formerly known as Sauter Asia Co.,LTD.)

集團致力於機床關鍵零組件 - 刀塔、刀座、主軸 等鑽研。以智能設計、專業技術、創新服務為基礎，以客戶需求為導向，客製化ODM，OEM服務，提升機床產業的全球競爭力與機床特殊性，成為全球機床業之關鍵零組件技術領導者及首選合作夥伴。

為落實ESG(環境保護、社會責任、公司治理)理念，廠區安裝節電設備，同時與協力廠商一同尋找並開發新原料。透過製程優化以降低或避免因製造過程對環境造成之任何負面影響。

Satisfying customer demands is our guideline. Intelligent design, professional technology and innovative services are our fundamentals. We are dedicated to providing world-class products and customized ODM, OEM solutions, to become the global leader in key components of machine tool industry, and to be the No. 1 preferred partner of machine tool builders around the world.

In order to implement the concept of ESG (environmental protection, social responsibility, corporate governance). The factory installs energy-saving equipment and works with third parties to find and develop new raw materials. Reduce or avoid any negative impact on the environment caused by the manufacturing process through process optimization.

特品 GP

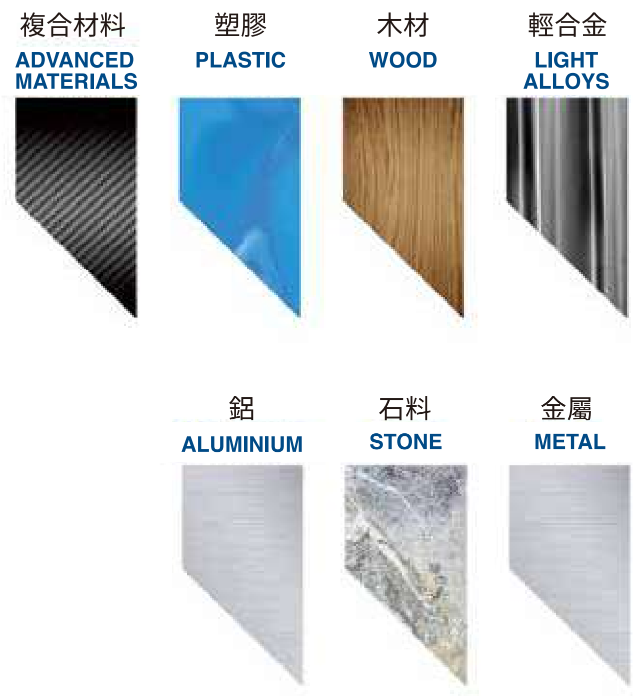
霄特 GPM

德霄 GP Int'l

Linktree /

TILT 系列

ORBITAL 系列



	TILT G		TILT G PLUS		TILT M		ORBITAL M	
技術規格 TECHINICAL SPECIFICATIONS	A軸 A AXIS	C軸 C AXIS	A軸 A AXIS	C軸 C AXIS	A軸 A AXIS	C軸 C AXIS	A軸 A AXIS	C軸 C AXIS
軸電機 Axis motor	Direct drive	Direct drive	Direct drive	Direct drive	Direct drive	Direct drive	Direct drive	Direct drive
額定扭矩 Rated torque	504 Nm	533 Nm	504 Nm	787 Nm	830 Nm	787 Nm	560 Nm	787 Nm
最大扭矩 Peak torque	1000 Nm	935 Nm	1000 Nm	1560 Nm	1472 Nm	1560 Nm	1030 Nm	1560 Nm
最大轉速 Max axes speed	30000°/ '		30000°/ '		30000°/ '		30000°/ '	
軸編碼器 Measuring system	增量式編碼器 Incremental encoder		增量式編碼器 Incremental encoder		增量式編碼器 Incremental encoder		增量式編碼器 Incremental encoder	
定位經度 Accuracy of graduation	±2,5 arcsec	±3,0 arcsec	±2,5 arcsec	±2 arcsec	±2 arcsec	±2 arcsec	±3,8 arcsec	±2 arcsec
煞車類型 Type of clamping	液壓 Hydraulic		液壓 Hydraulic		液壓 Hydraulic		氣壓 Pneumatic	液壓 Hydraulic
煞車扭矩 Clamping torque	3000 Nm	3000 Nm	3000 Nm	4000 Nm	4000 Nm	4000 Nm	3720 Nm	4000 Nm
最大軸旋轉 Max axis rotation	±120°	±360°	±120°	±360°	±110°	±360°	±185°	±360°
C軸安裝配合直徑 Head fitting diameter	Ø 310		Ø 335		Ø 335		Ø 335	
主軸直徑 Spindle fitting diameter	Ø 180		Ø 180		Ø 210 (Ø 180)		Ø 210 (Ø 180)	
重量 Weight	500 kg		650 kg		800 kg		650 kg	

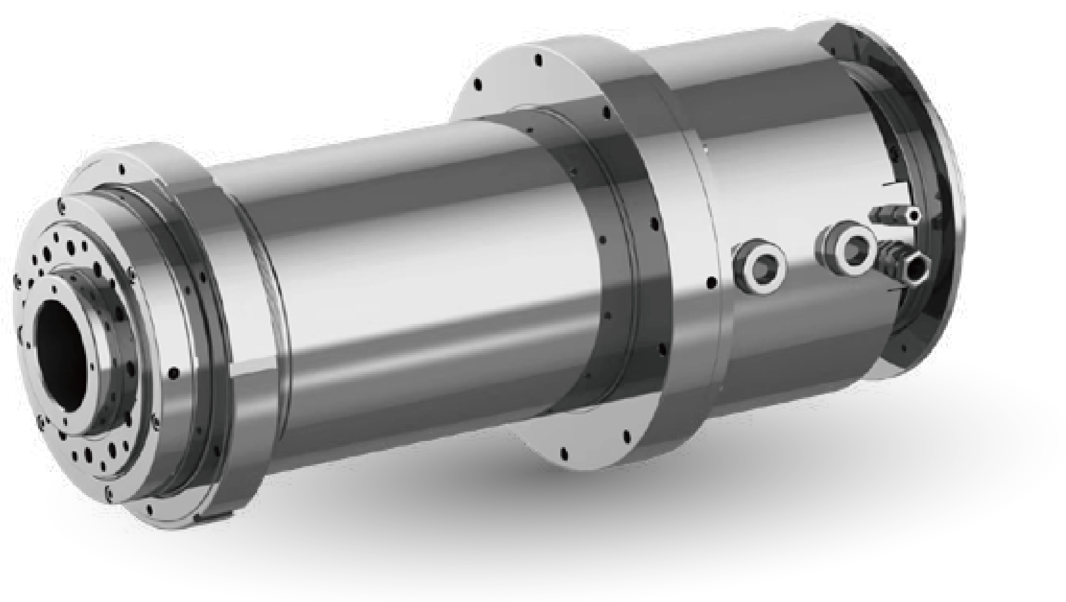
主軸 Spindle						
主軸型號 Product	MX-2 42/12 24	MX-2 42/6 24	MX-2 41/4.5 24	MX-2 38/3 12	MX-2 47/3 12	MX-2 60/3 12
主軸外徑 Ø Spindle outer diameter	180	180	180	210	210	210
油氣潤滑 Oil-air lubrication	28000	24000	24000	15000	15000	15000
出力(Kw) Power S1	42	42	41	38	47	60
出力(Kw) Power S6	48	48	47	43	54	69
扭力(Nm) Torque S1	34	67	87	120	150	191
扭力(Nm) Torque S6	39	76	100	137	172	220
主軸冷卻方式 Spindle cooling method	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water
刀把型式 Clamping type	HSK 63A	HSK 63A	HSK 63A	HSK 100A	HSK 100A	HSK 100A
軸承溫度感測器 Bearing temperature sensor	標配	標配	標配	標配	標配	標配
主軸重量KG Spindle weight	70	70	70	110	110	110

產品特色：

- 體積小、安裝便捷
- 低速大扭力
- 馬達後置售後無憂
- IP68級防水

Features：

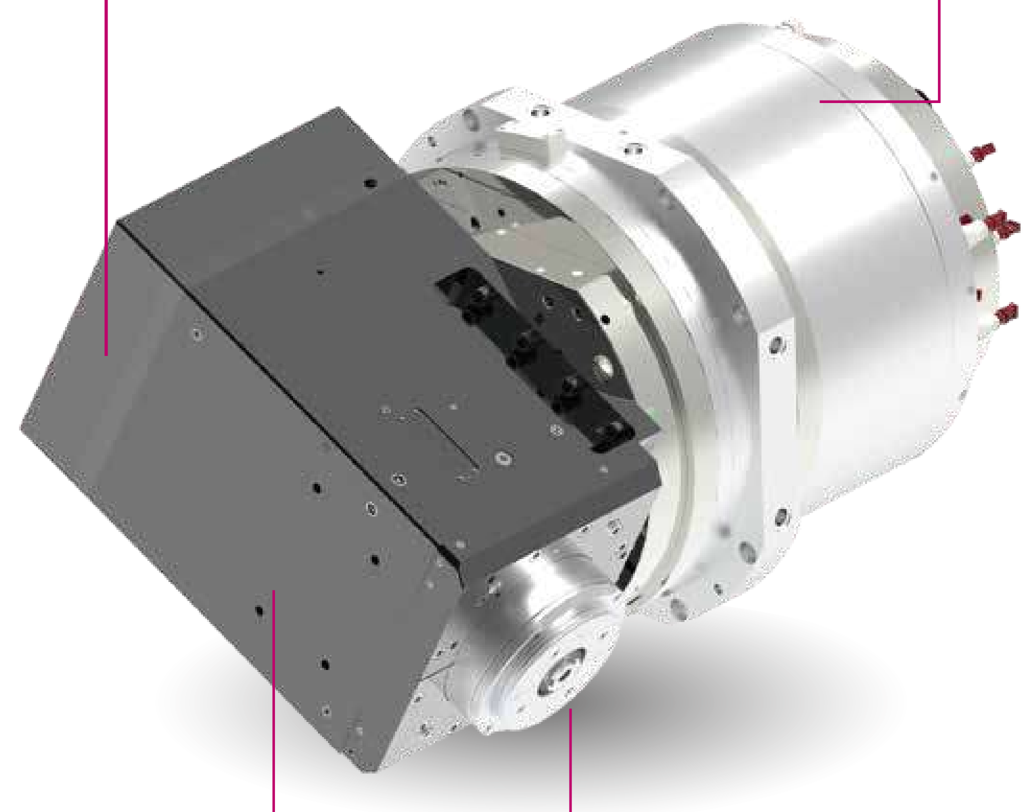
- Compact size, easy installation
- High torque at low speed
- Rear-mounted motor for hassle-free maintenance
- IP68 waterproof rating



產品型號 Product Model	A2-4-150		A2-5-170		A2-6-200	
額定電壓 Rated voltage	220V	380V	220V	380V	220V	380V
額定功率 Rated power	11.02kW	12.2kW	11.3kW	12.5kW	19kW	22kW
額定電流 Rated current	34.75A	21.99A	40A	28A	70A	43A
最高扭矩 Maximum torque	66Nm	67Nm	90Nm	100Nm	200Nm	226Nm
最高轉速 Maximum speed	6000rpm	6100rpm	5500rpm	5500rpm	4000rpm	4000rpm
馬達極數 Motor pole number	12	12	10	10	16	16
冷卻介質 Cooling medium	油冷 Oil		油冷 Oil		油冷 Oil	

轉台煞車
標配：72齒三片齒(5度一分割)
Brake on table
Std：72 teeth coupling(5degree/split)

搭載永磁馬達，體型小巧
Equipped with permanent-magnet motor, compact design
(HSK-T63 : 464mm)



最高轉速/ Max speed: 12,000 rpm
S1 torque: 88.3 Nm

多種刀具系統選擇
Multiple tool system available
(HSK T40/63/100,PSC C4/C6/C8)

研磨主軸
Grinding Spindle

SMG 58

SMG 120

SMG 215

產品型號 Product Model		SMG58	SMG120	SMG150	SMG215	SMG230
主軸外徑 Spindle outer diameter		Ø 58	Ø 120	Ø 150	Ø 215	Ø 230
最高轉速 rpm Max Speed	油脂潤滑 Grease lubrication	20000	30000	10000	10000	8000
	油氣潤滑 Oil-air lubrication	-	40000	-	-	10000
主軸電壓 Spindle Voltage		220	220	380	380	380
出力(Kw) Power S1		0.48	10	5.5	24	26
出力(Kw) Power S6		0.52	12	6.3	28	30
扭力(Nm) Torque S1		0.229	5.5	19.5	38.2	124
扭力(Nm) Torque S6		0.251	6.5	22.6	44.8	148
主軸冷卻方式 Spindle cooling method		氣冷 Air	水冷 Water	油冷 Oil	油冷 Oil	水冷 Water
刀把型式 Clamping type		Ø20	M22*P1.5	HSK E50	HSK E50	HSK A100
軸承溫度感測器 Bearing temperature sensor		-	Yes	Yes	Yes	Yes
主軸長度MM Spindle length		208	340	498	687	793
主軸重量KG Spindle weight		3	20	41	105	177

SPM

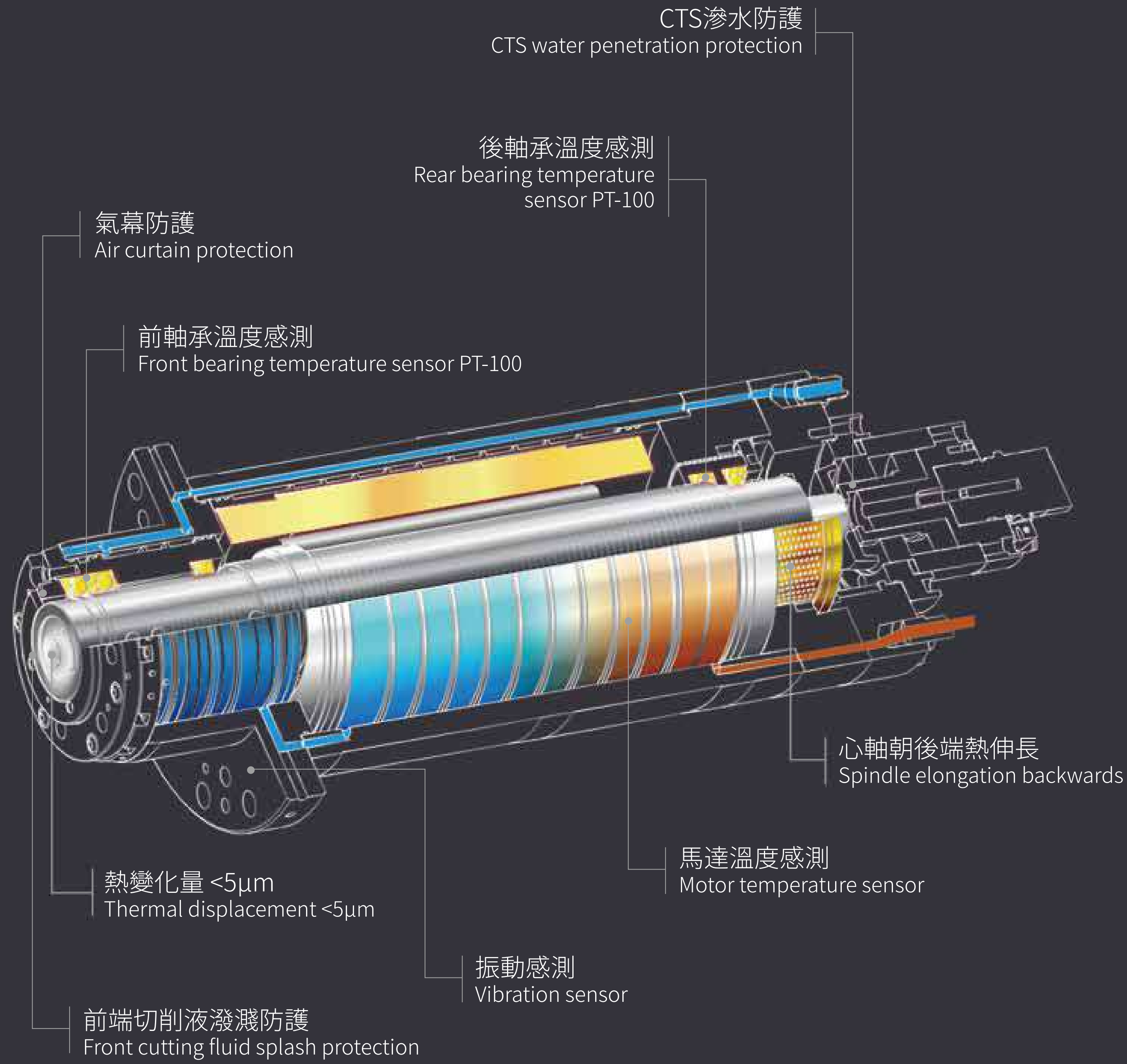
銑削主軸
Milling Spindle

SM 190

SM 230

產品型號 Product Model	SM 80	SM100	SM120	SM150	SM 170	SM 210	SM 230
主軸外徑 Spindle outer diameter	Ø 80	Ø 100	Ø 120	Ø 150	Ø 170	Ø 210	Ø 230
最高轉速 rpm Max Speed — 油脂潤滑 Grease lubrication	40000	30000	30000	20000	18000	16000	16000
最高轉速 rpm Max Speed — 油氣潤滑 Oil-air lubrication	-	-	40000	24000	24000	24000	24000
主軸電壓 Spindle Voltage	220	220	220/380	380	380	380	380
出力(Kw) Power S1	2.2	3	6.4/10	15	20	21	25
出力(Kw) Power S6	2.5	3.6	7.2/12	18	22.5	23.5	29
扭力(Nm) Torque S1	0.72	1.5	3.4/5.5	14.8	32.9	101	83.2
扭力(Nm) Torque S6	0.82	1.8	4.1/6.6	17.6	38.5	114	99.3
主軸冷卻方式 Spindle cooling method	油冷 Oil	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water	水冷 Water
刀把型式 Clamping type	ER16	ISO25/HSK E40	BT30/HSK E40	BT40/HSK A63	HSK A63	HSK A63	HSK A63
軸承溫度感測器 Bearing temperature sensor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
編碼器 Encoder	-	-	選配 Optional	Yes	Yes	Yes	Yes
旋轉接頭 Rotary joint	-	-	選配 Optional	選配 Optional	選配 Optional	選配 Optional	選配 Optional
主軸長度MM Spindle length	220	385	451	541	592	718	654
主軸重量KG Spindle weight	6	14	23	45	60	120	138

CONTENTS



2D 動畫

SPINDLE

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