

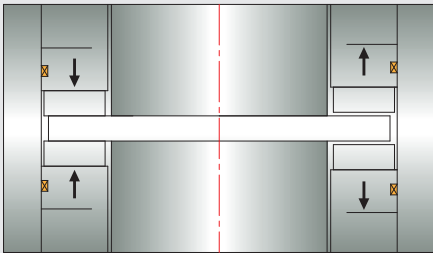
側固式主軸
Rotary Spindle



RM4-HMSC-T

側固式主軸：適高扭力、高剛性之自由曲面加工，適用於五軸加工中心機。

Used for free-surface machining, our rotary head spindle has high torque and high rigidity and is applicable to 5-axis machining centers.



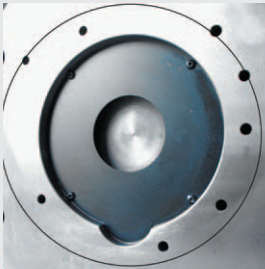
全周式刹車(專利設計)
構造精簡、驅動簡易，煞車扭力大、煞車時精度穩定性高
All Round Braking System(Paten)
Simple mechanism, high braking torque, excellent accuracy and stability.



三片式離合齒
離合齒精密嚙合，低背隙，公差控制精準，互換性高
3-Pieces Clutch Gear
Precise machining, no backlash, high, braking torque.



a. 環型噴水機構(SC)
巨幅降低加工件及刀具因切削產生的熱所導致的加工誤差。有效帶走切削鐵屑。
Surrounding Coolant Mechanism (SC)
This mechanism dramatically reduces any machining error caused by thermal deformation of the work piece and tool holder, and also can remove cutting chips quickly.



b. 旋轉中心出管出線
管線內藏化之一體設計使產品更加美觀、安全，有利於主軸迴旋角度之擺幅。
Outlet of Electrical/Cooling Lines at the Axis of Rotation
With the lines built-in as a one-body design, the spindle is more aesthetically pleasing, safe, and favorable for angular rotation by reducing any interference from the lines.



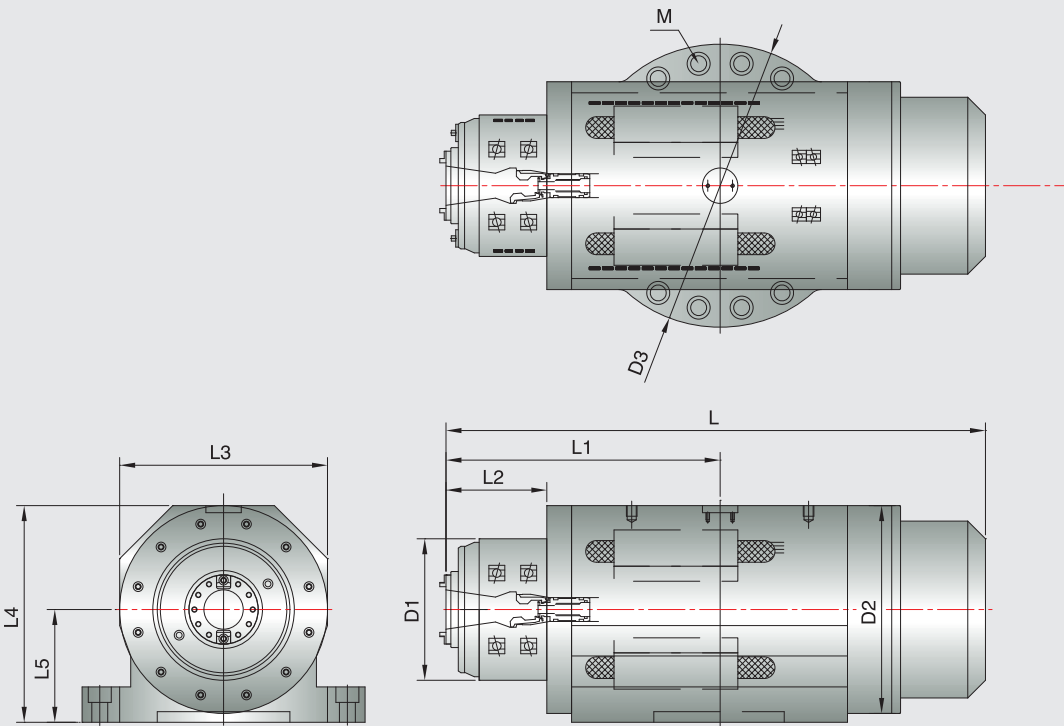
c. 主軸特製精密結合座
可與旋轉盤快速精準結合，滿足五軸加工中心機能一次快速完成加工的需求。
Special, Unique Base Integrated with Spindle
Capable of rapid and precise integration with a rotary table, our spindle can meet the machining requirements of 5-axis machining centers.

內藏式側固式主軸 Rotary Built-In Motor Spindle

型號 MODEL NO.	刀具 TOOL HOLDER		規格 (SPECIFICATION)								備註 Note
	標準 Standard	選配 Option	最高轉速 Max. Speed (rpm)	軸承數目 No. of Bearings	環形噴水 (SC)	中央出水 (CTS)	煞車 (Braking)	編碼器 Encoder (pulse/rev)	功率 Power (KW)	前軸承直徑 Diameter of Front Bearing (mm)	
RM25-GMS-T	ISO25		24000 30000	4	(OP)			512 (1024)	5.5KW	Ø30	
RH3-GMS-T	HSK32E										
RM3-LMSN-T	BBT30 BT30 ISO30		15000 18000 20000 24000	4	(OP)		(OP)	512 (1024)	10KW (OP 8.2KW)	Ø45	
RH4-LMSN-T	HSK40A BT40 DIN40 CAT40	HSK40T									
RM4-HMSC-T		#50	10000 12000 15000	4	(OP)	(OP)	(OP)	1024	18KW (OP 25KW)	Ø65	
RH6-HMSC-T	HSK63A	HSK63T CAPTO63									
RM4-JMSC-T	BT40 DIN40 CAT40	#50	10000 12000 15000	4	(OP)	(OP)	(OP)	1024	22KW	Ø65	
RH6-JMSC-T	HSK63A	HSK63T CAPTO63									

ST：標準Standard OP：可選配Option

側固式主軸外觀尺寸表 Table of Outer Dimensions of Rotary Built-In Motor Spindle



主軸型號 MODEL NO.	L	L1	L2	L3	L4	L5	D1	D2	D3	M	系列代碼 SERIES NO.
RM25-GMS-T RH3-GMS-T	432.6	185	88	140	160	90	104	134	220	6-M12	SS-100
RM3-LMSN-T RH4-LMSN-T	470	187	45	153	176.5	100	132	153	220	6-M12	SS-120
RM4-HMSC-T RH6-HMSC-T	600	260	60	235	265	147.5	195	235	320	8-M16	SS-210
RM4-JMSC-T RH6-JMSC-T	520	230	60	280	313	172.5	195	235	320	8-M16	SS-240

搖擺頭(主軸+轉盤)
Rotary Spindle Head



整合側固式主軸與轉盤，構成-完整的搖擺型主軸頭，表現精準的整合精度，以及精簡的設計外觀。

廣泛適用於五軸加工中心機以及車銑複合CNC車床。

轉盤可裝置高精度編碼器，俱精密定位及重複精度。

可依客戶需求搭配各主流控制器或伺服馬達。

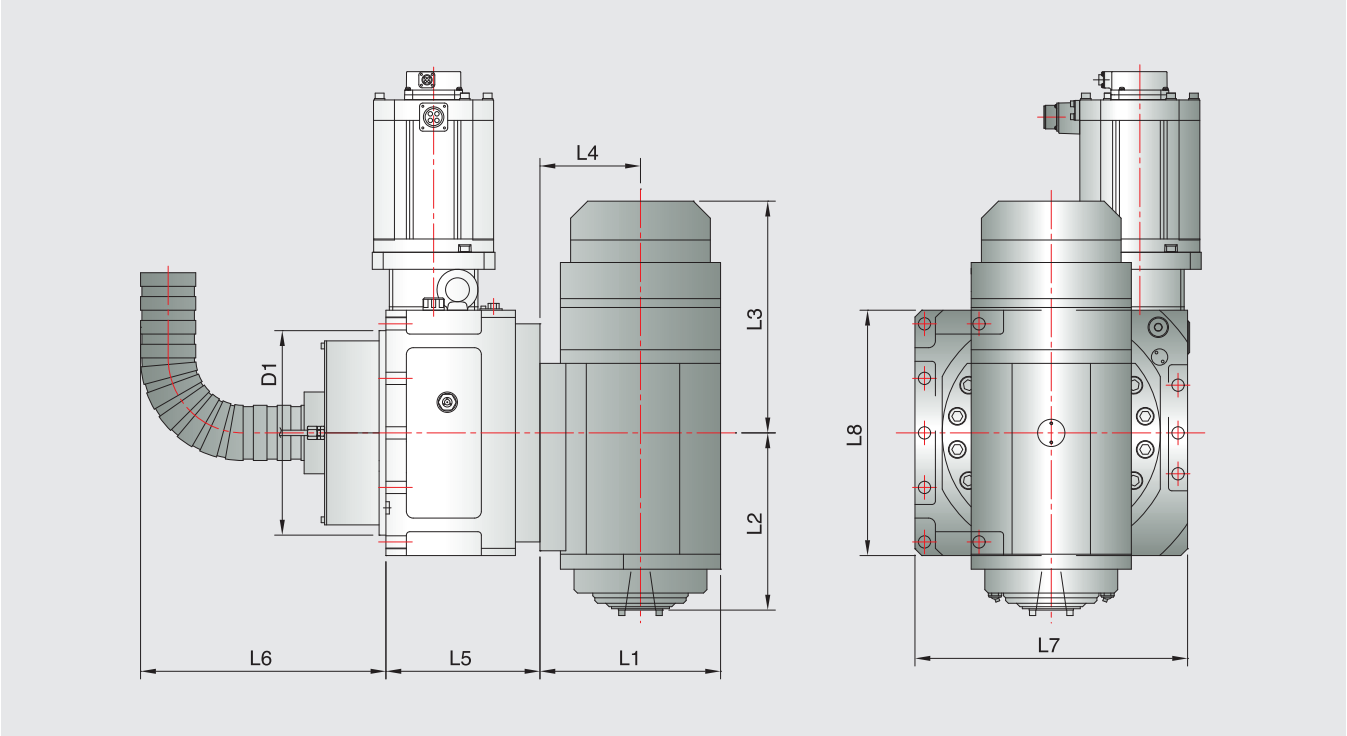
Combine Rotary Spindle with rotary table, has good precision and compact outward. Suitable for 5-axis machining centers and milling & turning integrated CNC Lathe. Equipped with high resolution encoder, achieve high position and repeatable accuracy. Compatible to many kinds major controllers.

轉盤規格表 Rotary Table Specification

轉盤型號 ROTARY NO.	JAA(-B)		JCA(-B)		JEA(-B)	
轉盤最高轉速 Rotary max. speed	40rpm		40rpm		30rpm	
搖擺角度範圍 Swing angle	±100°		±100°		±100°	
定位精度 Position accuracy	±8 arc-sec		±8 arc-sec		±8 arc-sec	
重覆精度 Repeatable accuracy	±3 arc-sec		±3 arc-sec		±3 arc-sec	
工作扭力 Working torque	220 N-m		220 N-m		520 N-m	
煞車扭力 Braking torque	500 N-m	(OP)	1000 N-m	(OP)	1500 N-m	(OP)
適用主軸規格 Tool holder	#25, HSK32E		#30, HSK40		#40, HSK63, Capto63	

ST：標準Standard OP：可選配Option

搖擺頭(主軸+轉盤)外觀尺寸表 Table of Outer Dimensions of Rotary Spindle Head



主軸型號 + 轉盤型號 MODEL NO. + ROTARY NO.	L1	L2	L3	L4	L5	L6(min.)	L7	L8	D1(h7)	備註 Note	系列代碼 SERIES NO.
RM25-GMS-T+JAA RH3-GMS-T+JAA	160	185	247.6	90	207	320	285	280	240	圖五 Diagram 5	J-SS-100
RM3-LMSN-T+JCA RH4-LMSN-T+JCA	176.5	187	283	100	207	320	330	280	240		J-SS-120
RM4-HMSC-T+JEA RH6-HMSC-T+JEA	265	260	340	147.5	226	360	400	360	300		J-SS-210

叉型A/C二軸頭 A/C-2-Axis-Fork Arm Head



適用於龍門型五軸加工中心機，
雙轉軸由伺服馬達驅動，可與各
主流控制器搭配。

Suitable for 5 axis gantry type
M/C. Compatible to different
brands of controller.

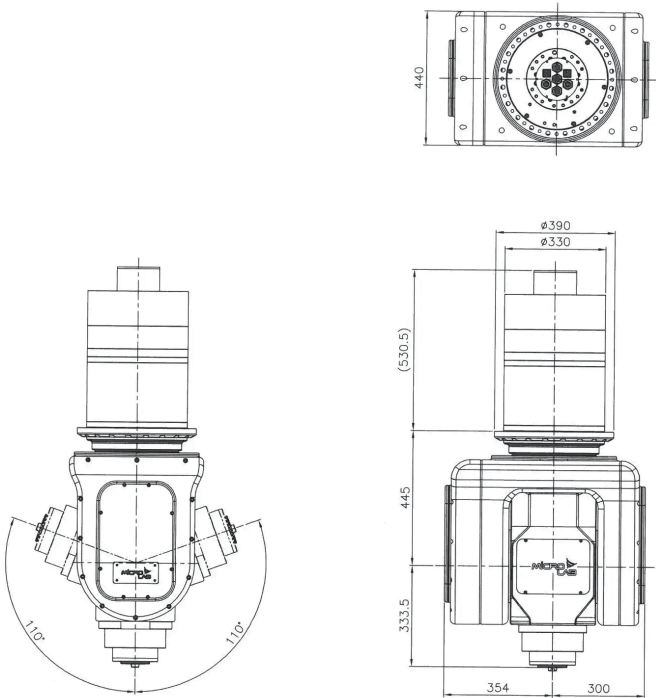


叉型A/C二軸頭 A/C-2-Axis-Fork Arm Head

型式 Model No.	C軸(旋轉) C-Axis(rotation)	A軸(搖擺) A-Axis(swing)
傳動方式 Transmission	DD 馬達 DD Motor	
工作扭矩 Working Torgue	650N-m	650N-m
旋轉速度 Rotation Speed	30rpm	30rpm
旋轉角度 Rotation Angle	±360°	±110°
夾緊力 Clamping Force	/	1000N-m
光學尺 Linear scale	絕對值檢出編碼器 Absolute Angle Encoder for different protocol	
定位精度 Positioning accuracy	± 8 arc-sec	± 8 arc-sec

註：主軸可選配#40或#50之刀具規格

A/C軸外觀尺寸表 Table of Outer Dimensions of A/C-2-Axis-Fork Arm Head



銑車複合直結主軸

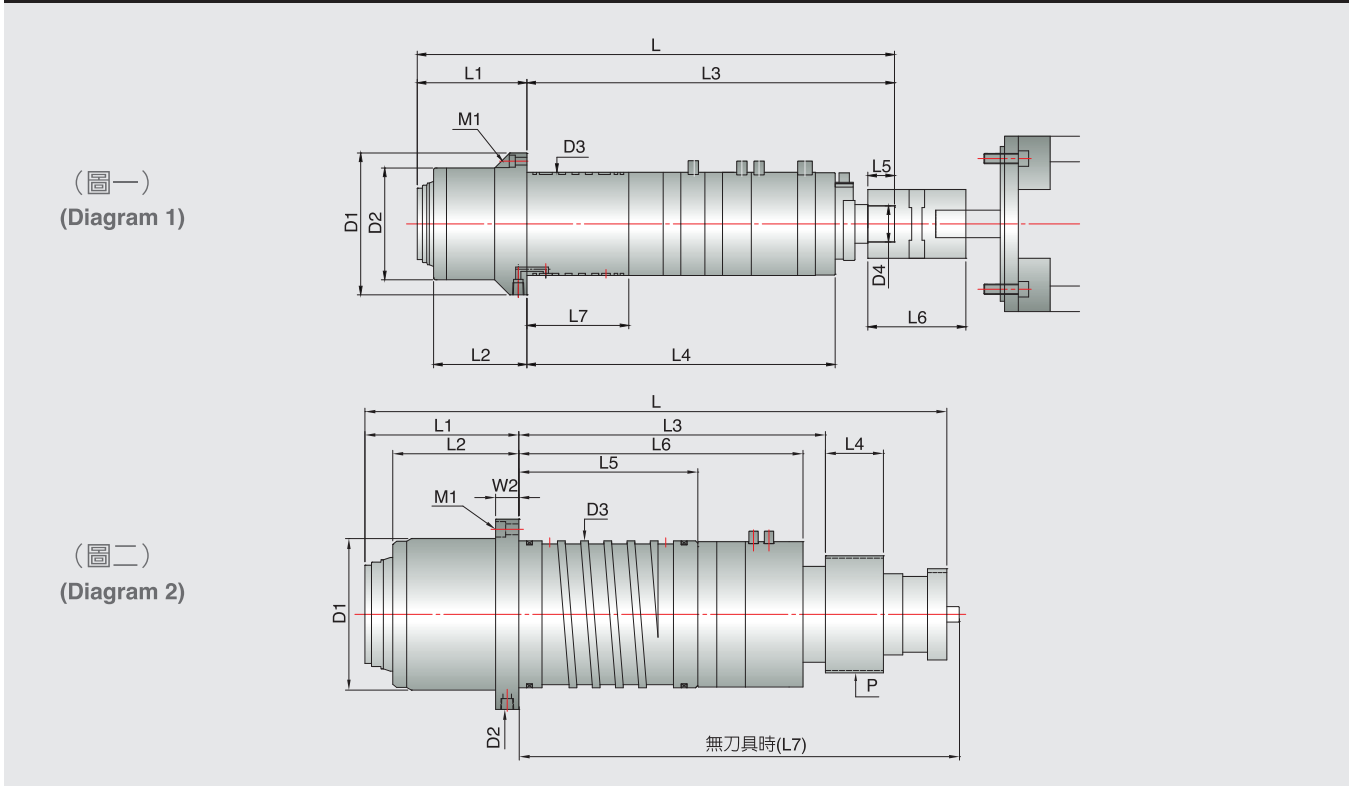
Milling & Turning Belt or Direct Drive Spindle



銑車複合主軸

H6-VNTS	HSK63T	CAPTO63	10000 12000 15000	4	(OP)	(ST)	(ST)	四瓣爪 grippers	Ø65	Ø120	500~850
H10-VMPQ	HSK100T	CAPTO80	4000 5000 6000	5	(OP)	(OP)	(ST)	四瓣爪 grippers	Ø100	Ø190	1000以上
ST : 標準Standard OP : 可選配Option											

銑車複合主軸外觀尺寸表



H6-VNTS	555.5	128	108.5	427.5	358.5	31	114	118.5		165	134	120	42	6-M8 PCDØ146	圖一	MT-120
H10-VMPQ	753.5	200	133	411.5	60	231.5	367.5	571.5	8YU60T	198	246	190		6-M12 PCDØ220	圖二	MT-190

內藏式 Built In Motor



M3-LMSN

#30內藏式高速主軸
最高轉速24,000~30,000rpm
#30 Built-in motor high speed spindle
Max. speed : 24,000~30,000rpm

高速加工、高精度、高效率，模具及高品質加工。

馬達內藏式主軸為高速加工之主流，在噪音及振動有極佳之特性，生產階段進行頻譜量測，以確保運轉特性及組裝品質，達到最高之迴轉精度，以模組化為思考，務求產品最佳之穩定性、壽命及維修成本。

High Speed, High Precision, High Efficiency, High Quality, and Die / Mold Machining

Designed for high speed machining, our built-in motor spindle produces little noise and vibration. At each production stage, the frequency and amplitude response are measured to guarantee operational stability and quality of assembly and to achieve the highest precision under dynamic conditions. Each manufactured spindle goes through computer analysis to ensure optimum stability, long operational life, and low maintenance costs.

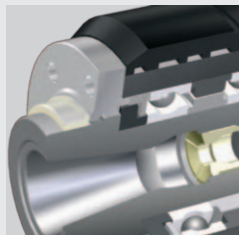


a. 甩水環專利設計

全系列標配甩水環專利設計，於高速切削時，減低切削液濺入迷宮區域。

Water-Repellant Ring (Patented)

For this spindle type, every spindle has a water-repellant ring to effectively repel any cutting fluids away from the spindle to prevent anything from splashing into the labyrinth area during high speed cutting.

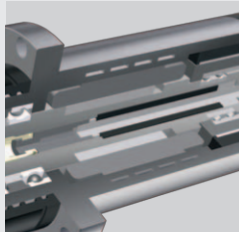


b. 多道次嚴密迷宮，標配迷宮吹氣

多道次嚴密迷宮，同時標配迷宮吹氣，高速運轉時切削油霧不會侵入軸承。

Labyrinth Design with Air Seal

During high speed operation, positive air pressure coming out from the labyrinth prevents any contamination from entering into the spindle.



c. 高效能之冷卻循環通道

冷卻循環通道經嚴密設計，可有效帶走線圈及軸承熱量，減低溫升熱變形精度誤差。

Highly Efficient Helical Cooling Channel

The compactly designed helical cooling channels effectively dissipate heat from the stator coil and bearings to reduce the effects of thermal deformation on precision.



d. 止轉四瓣爪導環

專利設計四瓣爪導環，主軸加速減速時，不會有異音及動平衡變化情形。

Anti-Rotating Gripper Guide Ring (Patented)

During acceleration and deceleration of the spindle, the patented gripper guide ring design eliminates any unusual noises and vibration of dynamic balance.



隔環等精密內部零件全檢

隔環等精密內部零件全檢，確保各支主軸品質一致。

Inspection of Precision of Every Spacer

Every spacer is inspected for precision to assure unanimous quality of every spindle.



PCB型不銹鋼製造

PCB型不銹鋼製造，可使用水冷機，適無塵室使用。

PCB Model Type Made With Stainless Steel

Suitable for clean room operation, the PCB model type is made with stainless steel to allow the use of a water cooling system.



H6-RMSC M4-RMSC

#40, HSK63內藏式高速主軸
最高轉速15,000~20,000rpm
#40, HSK63 Built-in motor high speed spindle
Max. speed : 15,000~20,000rpm



M4-HMSC

#40內藏式高扭力主軸
最高轉速15,000~18,000rpm
#40 Built-in motor high torque spindle
Max. speed : 15,000~18,000rpm



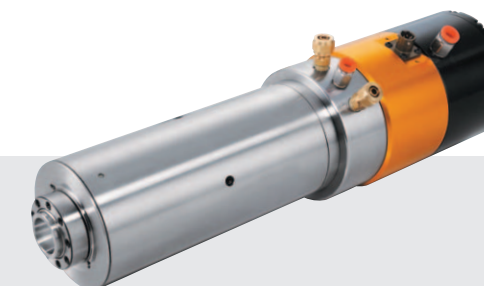
E16-QMS

ER16雕刻主軸
最高轉速24,000rpm~30,000rpm
ER16 engraving machine spindle
Max. speed : 24,000rpm~30,000rpm



PCBR

高速循邊切割及雕刻主軸
最高轉速60,000rpm
High speed routing and engraving spindle
Max. speed : 60,000rpm



M2-QMS

#20內藏式高速主軸
最高轉速24,000~40,000rpm
#20 Built-in motor high speed spindle
Max. speed : 24,000~40,000rpm



M25-GMS

#25雕刻機主軸
最高轉速24,000~30,000rpm
#25 Engraving machine spindle
Max. speed : 24,000~30,000rpm



重要關鍵零件硬度試驗

重要關鍵零件硬度試驗，減少熱處理不良造成零件損壞。

Hardness Test of Critical Parts

After heat treatment, the critical parts undergo a hardness test to ensure they have the correct hardness in order to reduce their risk of damage during operation.

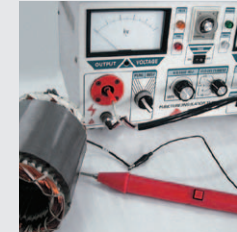


三平面動平衡

高速軸，以三平面進行動平衡校正，提升振動性能。

3-Plane Dynamic Balancing

To effectively decrease vibration, we conduct dynamic balancing calibration at 3 different planes.



高線圈絕緣等級檢測

線圈進行高絕緣檢測，確保電控穩定驅動特性及線圈壽命。

Test of Isolation Grade of Stator Coil

Testing the isolation grade of the stator coil ensures stable electronic drive control and long operational life.

內藏式雕銑及M/C主軸 Built-In Motor Engraving M/C Spindle

法蘭板型 Flange Type

型號 MODEL NO.	刀具 TOOL HOLDER	規格 (SPECIFICATION)							備註 Note
		最高轉速 Max. Speed (rpm)	軸承數目 No. of Bearings	環形噴水 (SC)	編碼器 Encoder (pulse/rev)	功率 Power (KW)	前軸承直徑 Diameter of Front Bearing (mm)	套筒外徑 Outer Diameter of Housing (mm)	
M25-GMS-FG	ISO25	24000 30000	4		(OP)	3.7KW	Ø30	Ø100	油壓換刀 hydraulic tool exchanging
M3-LMSN	BBT30 BT30 ISO30	24000 30000	4		(OP)	8.2KW (OP 10KW) (OP 14KW)	Ø40	Ø120	
H4-LMSN	HSK40E	24000 30000	4		(OP)	8.2KW (OP 10KW) (OP 14KW)	Ø40	Ø120	
H5-TMSN	HSK50E	20000 24000	4	(OP)	(OP)	15KW (OP 8.2KW) (OP 10KW)	Ø45	Ø140	
M4-AMSC	BT40 DIN40 CAT40	15000 18000 20000	4	(ST)	1024	14KW	Ø65	Ø170	
H6-AMSC	HSK63A								
M4-JMRC	BT40 DIN40 CAT40	12000 15000	5	(OP)	1024	11.5KW (OP 18KW)	Ø65	Ø150	
M4-RMSC	BT40 DIN40 CAT40	15000 18000 20000	4		1024	18KW (OP 15KW)	Ø65	Ø150	
H6-RMSC	HSK63A								
M4-HMSC	BT40 DIN40 CAT40	15000 18000 20000	4	(OP)	1024	18KW (OP 11.5KW) (OP 25KW)	Ø65	Ø210	
H6-HMSC	HSK63A								
M5-KMS	BT50 DIN50 CAT50	6000 8000	3	(OP)	(OP)	35KW (OP 16KW)	Ø100	Ø240	氣壓換刀 pneumatic tool exchanging cylinder
H10-KMS	HSK100A								
M2-FMSA	ISO20	24000 30000	4		(OP)	2KW	Ø30	Ø100	
M25-GMSA-FG	ISO25								
H3-GMSA-FG	HSK32E	24000	4		(OP)	3.7KW	Ø30	Ø100	
M3-LMSNA	BBT30 BT30 ISO30	20000	4		(OP)	8.2KW (OP 10KW) (OP 14KW)	Ø40	Ø120	
H4-LMSNA	HSK40E								

無法蘭板型 Clamped Type

型號 MODEL NO.	刀具 TOOL HOLDER	規格 (SPECIFICATION)					前軸承直徑 Diameter of Front Bearing (mm)	套筒外徑 Outer Diameter of Housing (mm)	備註 Note
		最高轉速 Max. Speed (rpm)	軸承數目 No. of Bearings	環形噴水 (SC)	編碼器 Encoder (pulse/rev)	功率 Power (KW)			
PCBR	62筒夾collet	60000	4			1.2KW	Ø17	Ø62	氣壓換刀 pneumatic tool exchanging cylinder
E16-QMS	ER16筒夾collet	24000 30000	4			1.5KW	Ø30	Ø80	
E20-QMS	ER20筒夾collet								
M2-QMS	ISO20	24000 30000 36000	4		(OP)	2KW	Ø30	Ø80	氣壓換刀 pneumatic tool exchanging cylinder
M25-GMS	ISO25	24000 30000	4		(OP)	3.7KW	Ø30	Ø100	油壓換刀 hydraulic tool exchanging
M25-GMSA									氣壓換刀 pneumatic tool exchanging cylinder

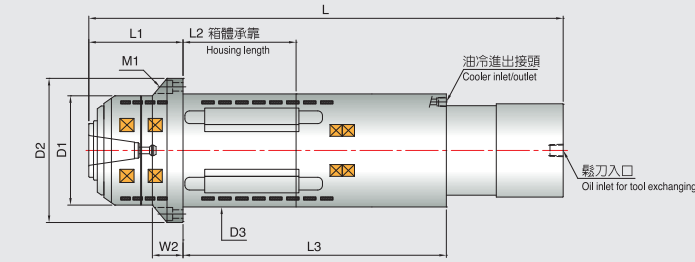
ST：標準Standard OP：可選配Option

註1：內藏式主軸皆為四瓣爪拉刀。
註2：客戶可指定特定廠牌轉子及定子。
註3：以上為標準功率，可聯繫選用其他功率規格。
註4：以上未標註氣壓換刀者為油壓式換刀，可搭配增壓缸進行換刀。

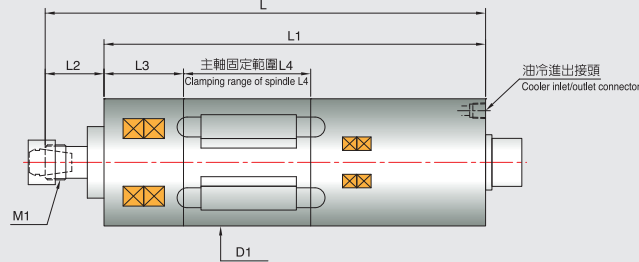
Note 1. Built-in spindles have pull stud type gripper unless specified.
Note 2. Customers can specify the particular brand of rotor and stator.
Note 3. Customers can provide power specifications, other than the ones stated above.
Note 4. Unspecified above, some of the flange/clamped type spindle models above can utilize a pneumatic tool exchanging cylinder instead of a hydro-pneumatic tool exchanging cylinder.

內藏式外觀尺寸表 Table of Outer Dimensions of Built-In Spindle

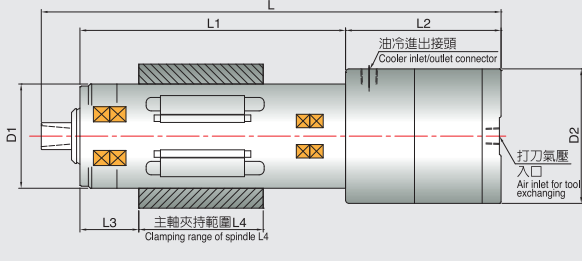
Built In Motor (圖一)
Built-In Motor (Diagram 1)



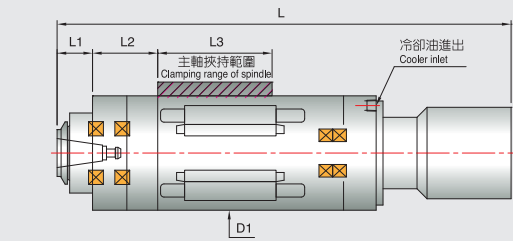
Built In Motor (圖二)
Built-In Motor (Diagram 2)



Built In Motor (圖三)
Built-In Motor (Diagram 3)



Built In Motor (圖四)
Built-In Motor (Diagram 3)



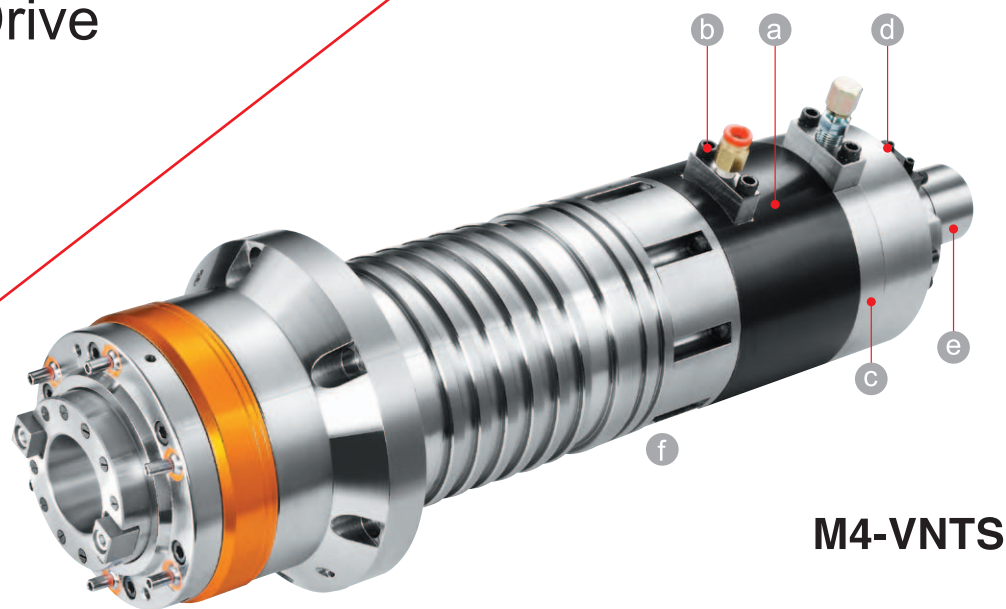
主軸型號 MODEL NO.	L	L1	L2	L3	W2	D1	D2	D3(h7)	M1	備註 Note	系列代碼 SERIES NO.
M2-FMSA	413	100	40	313	26	82	140	100	6-M8 PCDØ120	圖一 Diagram 1	HF-100
M25-GMS-FG	434.6	118	50	198.6	30	100	140	100	6-M8 PCDØ120		HF-100
M25-GMSA-FG	433	118	50	315	30	100	140	100	6-M8 PCDØ120		HF-100
M3-LMSN	504.5	101	50	279.5	32.5	116	153	120	6-M8 PCDØ135		HF-120
H4-LMSN									6-M8 PCDØ135		HF-120
M3-LMSNA									6-M8 PCDØ135		HF-120
H4-LMSNA	552.2	100	50	451.2	32.5	116	153	120	6-M8 PCDØ135		HF-120
H5-TMSN	503.5	100	50	279.5	28	130	190	140	8-M10 PCDØ165		HF-140
M4-RMSC	610.5	138	60	342	36	160	202	150	8-M10 PCDØ180		HF-150
H6-RMSC									8-M18 PCDØ190		HF-170
M4-AMSC									8-M18 PCDØ190		HF-170
H6-AMSC	610.5	150	50	330	40	160	212	170	8-M10 PCDØ230	圖二 Diagram 2	HF-210
M4-HMSC	650.5	142	70	378	28	160	255	210	8-M10 PCDØ230		HF-210
H6-HMSC									8-M12 PCDØ260		HF-240
M5-KMS									8-M12 PCDØ260	圖四 Diagram 4	HF-240
H10-KMS	874.5	160	70	476.3	35	206	294	240	8-M12 PCDØ260		HF-240

主軸型號 MODEL NO.	L	L1	L2	L3	L4	D1(h7)	M1	M2	備註 Note	系列代碼 SERIES NO
PCBR	273.5	159.5	92.5	38.5	74	62		80	 Diagram 3	HS-62
M2-QMS	369	182.7	168.4	50	100	80		115		
E16-QMS	277	240	37	50	80	80	M22xP1.5 M25xP1.5		 Diagram 2	HS-80
E20-QMS										
M25-GMS	397(註1)(note1)	31	57	100		100			 Diagram 4	HS-100
M25-GMSA	428.3(註1)(note1)									

註1：加裝編碼器加長37.5。
註2：其他型號尺寸規格請來電洽詢。

Note 1. Adding an encoder adds 37.5mm to the spindle length.
Note 2. For additional spindle model specifications, please contact us.

直結式
Direct - Drive

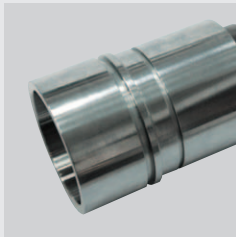


M4-VNTS

高速低噪音，適合各式驅動控制及加工運用。
精簡之高速化設計，低噪音、高穩定壽命，可選配中央出水(CTS)、環形噴水(SC)及搭配各種驅動馬達之選用。

High Speed and Low Noise, Suitable for Every Type of Drive Control and Machining Application

With a compact design of high speed, low noise, long and stable operational life, our direct-drive spindle can be fitted with coolant through spindle (CTS) and/or surrounding coolant (SC) and is adaptable to various drive motors.



a. 油壓缸高硬度電鍍拋光
油壓缸經高硬度電鍍拋光，確保打刀油缸之長使用壽命。
Electroplated, Polished Hydraulic Cylinder with High Hardness
The hydraulic cylinder has high hardness and is electroplated and polished to ensure its long operational life.



b. 油路塊接管
以油路塊接管路，方便高壓油管之連接。
Quick-Connect for Oil Line
The quick-connect makes it convenient to connect high pressure oil lines.



c. 打刀缸頂退刀量調整機構
專利設計打刀缸頂退刀量調整機構專利設計，模組化油缸，簡易調整維修。
Adjustable Ejecting Tool Mechanism of the Hydraulic Cylinder (Patented)
As an easily repairable part of the hydraulic cylinder module, the mechanism can be easily adjusted to change the amount of displacement the tool is ejected during tool exchanging.



d. 內建近接開關
內建換刀感測近接開關，減少機上換刀位置感測器之調整時間及失誤。
Built-In Proximity Sensors for Tool Exchanging
The proximity sensors detect when tool exchanging is occurring, reducing the need, adjustment time, and error of an additional external sensor on the machine.



e. 聯軸器傳動位置與心軸一體
主軸上之聯軸器傳動位置與心軸一體，確保長期組裝對心精度及高精度扭力傳動。
Coupling Drive Perfectly United with Spindle Shaft
Without the need of an additional shaft, the coupling drive is directly connected to the spindle shaft to guarantee long lasting precision after assembly and torque transmission with high precision.



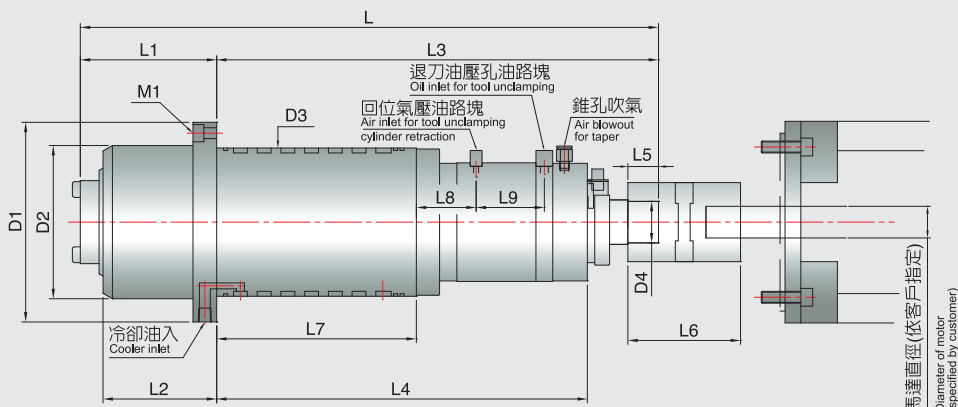
f. 低慣量打刀環
低慣量短力流線打刀環，振動特性佳，換刀穩定性優異。
Ring for Tool Unclamping with Low Inertia
Compactly designed, the ring for tool unclamping has low inertia and vibration, and tool exchanging is exceptionally stable.

直結式M/C主軸 Direct-Drive M/C Spindle

型號 MODEL NO.	刀具 TOOL HOLDER	規格 (SPECIFICATION)							建議適用 機型行程 Travel for Recommended Machine Type
		最高轉速 Max. Speed (rpm)	軸承數目 No. of Bearings	中央出水 (CTS)	環形噴水 (SC)	拉刀方式 Clamping Type	前軸承直徑 Diameter of Front Bearing (mm)	套筒外徑 Outer Diameter of Housing (mm)	
M3-FTS	BT30 ISO30	12000 15000 20000	4	(OP)	(OP)	四瓣爪 grippers	Ø45	Ø100	450~650
M4-VNTS M4-VATS	BBT40 BT40 DIN40 CAT40	12000 15000	4	(OP)	(ST)	四瓣爪 grippers	Ø60	Ø120	500~850
M4-HTS	BBT40 BT40 DIN40 CAT40	10000 12000 15000	4	(OP)	(ST)	四瓣爪 grippers	Ø65	Ø140	800~1300
M4-VATS	BBT40 BT40 DIN40 CAT40	12000 15000	4	(OP)	(ST)	四瓣爪 grippers	Ø70	Ø150	800~1300
H6-VATS	HSK63A								
M4-EATS	BBT40 BT40 DIN40 CAT40	12000 15000	4	(OP)	(ST)	四瓣爪 grippers	Ø70	Ø150	800~1300
M5-DTS	BT50 DIN50 CAT50	6000 8000 10000	4	(OP)	(ST)	四瓣爪 grippers	Ø80	Ø155	1000~1600
M5-VMTS	BBT50 BT50 DIN50 CAT50	6000 8000	4	(OP)	(ST)	四瓣爪 grippers	Ø100	Ø190	1000以上
H10-VMTS	HSK100A								
M5-NTS	BBT50 BT50 DIN50 CAT50	6000 8000	4	(OP)	(ST)	四瓣爪 grippers	Ø100	Ø190	1000以上
H10-NTS	HSK100A								

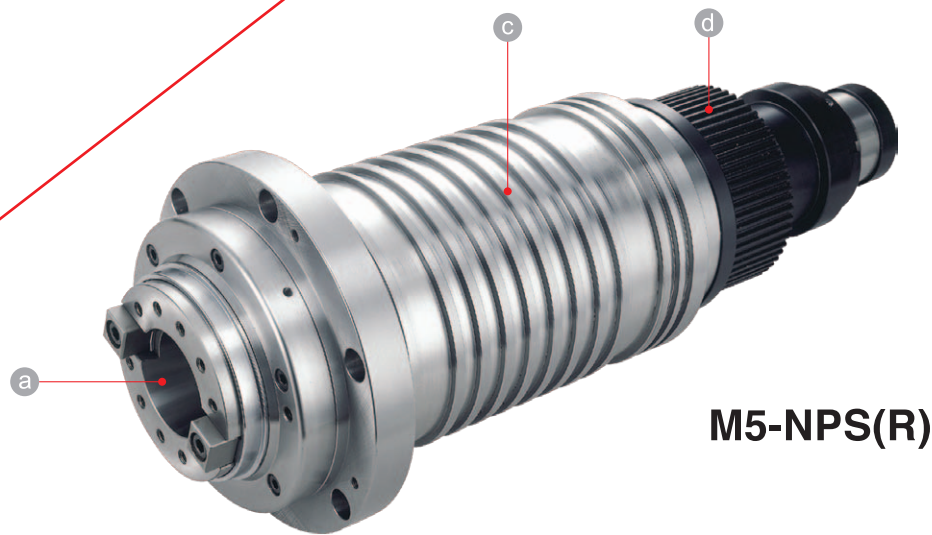
ST : 標準Standard OP : 可選配Option

直結式外觀尺寸表 Table of Outer Dimensions of Direct-Drive Spindle



主軸型號 MODEL NO.	L	L1	L2	L3	L4	L7	D1	D2	D3(h7)	D4	M1	L5	L6	L8	L9	系列代碼 SERIES NO.
M3-FTS	407	100	88	307	251.5	124	140	100	100	35	6-M8 PCDØ120	27	90	31	59.5	DD-100
M4-VNTS M4-LNTS	540	128	108.5	412	339	165	165	130	120	42	6-M8 PCDØ146	31	114	85.5	53.4	DD-120
M4-HTS M4-VATS	537.5	65	47.5	472.5	402	238	185	140	140	42	8-M10 PCDØ160	35	114	75.5	53.4	DD-140
H6-VATS M4-EATS	585	138	115	447	374	202	202	155	150	42	8-M10 PCDØ180	31	114	83.5	53.4	DD-150
M5-DTS	674	185	160	489	421	244	206	163	155	45	8-M10 PCDØ180	35	126	88.5	53.4	DD-155
M5-VMTS H10-VMTS	760	200	163	560	497	231.5	246	198	190	70	6-M12 PCDØ220	47	160	92	82.5	DD-190
M5-NTS H10-NTS	760	94	64	666	603	274	246	193	190	70	6-M12 PCDØ220	47	160	155.5	82.5	DD-190

皮帶式
Pulley Driven



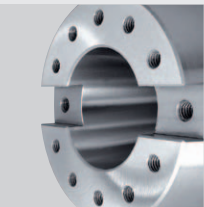
M5-NPS(R)

泛用式主軸，中低速切削加工，多元功能選項。

以高剛性、低溫升之設計為生產指標，多項選配多元運用，精準之皮帶輪齒形，減低傳動噪音，全系列冷卻循環溝預留，中速精密加工、低速重切削，長運轉壽命。

Generic Spindle, Medium/Low Speed Cutting, Multi-Function Options

With long operational life, our pulley driven spindle is specifically designed for high stiffness and low rise in temperature. Our multi-purposed spindle has precise pulley teeth that reduces drive noise and has multiple options to choose from. All our pulley driven models have reserved cooling channels to be used if desired. These spindles can be used for medium speed, precision machining or low speed, high torque cutting.



a. 高硬度心軸錐孔
多道次均厚高硬度錐孔處理，長期無磨變，錐孔換刀耐磨耗。
High Hardness Taper of the Spindle Shaft
With the addition of many hard, equally thick layers through a treatment process, the high hardness taper is able to maintain the precision of the spindle even after long term operation because the taper is resistant to wear and tear during tool exchanging.



b. 長壽命拉刀彈片設計
拉刀彈片經正確計算，確保拉刀彈片超長壽命。
Long Life Disc Springs for Tool Exchanging
We perform proper calculation of the disc springs to guarantee high tool exchange life expectancy.



c. 全系列冷卻循環溝預留
全系列冷卻循環溝預留，可隨時外加油冷卻。
Reserved Cooling Channels for Pulley Driven Spindles
Every pulley driven spindle already has cooling channels so oil cooling can be utilized if desired by the customer.



d. 各單一零件平衡
改善主軸動平衡特性，提升振動性能，減低機台共振效應。
Balance of Every Part
By balancing every part, the dynamic balance of the spindle is improved, its vibration is decreased, and resonance effects with the machine are reduced.



CTS，環噴，浮動拉刀多項選配
可選配CTS，環噴，浮動拉刀多項附加功能。

Additional functions:
CTS, SC, FTU
CTS, SC and FTU are all optional functions.



M4-APSN, M4-APRN, M4-VAPS

#40皮帶式主軸
最高轉速8,000~12,000rpm
#40 Pulley Spindle
Max. Speed : 8,000~12,000rpm



M4-VNPS, M4-VNPSG

#40皮帶式主軸
最高轉速8,000~12,000rpm
#40 Pulley Spindle
Max. Speed : 8,000~12,000rpm

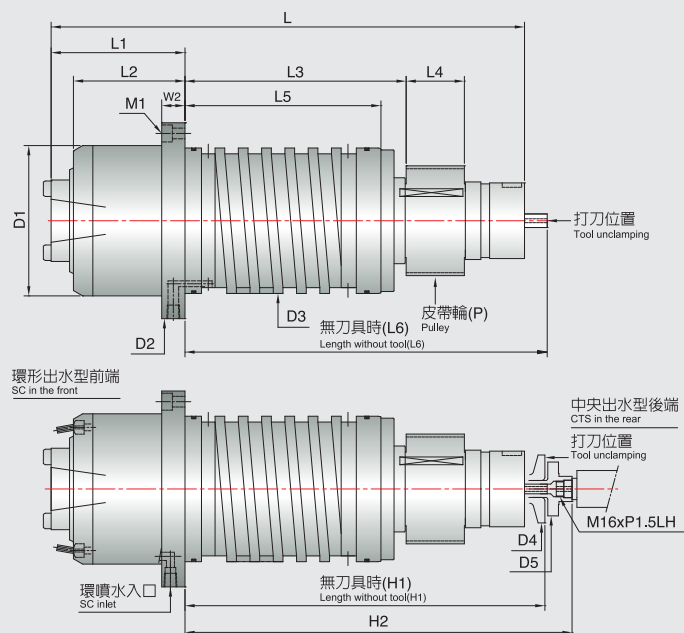
皮帶傳動式 M/C主軸 Pulley Driven M/C Spindle

型號 MODEL NO.	最高轉速 Max. Speed (rpm)	規格 (SPECIFICATION)							
		軸承數目 No. of Bearings	刀具 TOOL HOLDER	中央出水 (CTS)	環形噴水 (SC)	拉刀方式 clamping type	前軸承直徑 Diameter of Front Bearing (mm)	套筒外徑 Outer Diameter of Housing (mm)	建議適用機行程 Travel for Recommended Machine Type
M25-GPS	10000 12000 15000	2	ISO25			四瓣爪 grippers	Ø30	Ø70	450以下
M3-FPS	10000 12000 15000	4	BT30	(OP)	(OP)	鋼珠式 steel ball	Ø45	Ø100	650以下
M4-VNPSG 註	8000 10000 12000	4	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø60	Ø120	500~850
M4-VNPRG 註	8000	6	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø60	Ø120	500~850
M4-LNPSG 註	8000 10000 12000	4	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø60	Ø120	500~850
註:型號G省略則為鋼珠式拉刀，刀具僅可使用BT40。 Note 1. Leaving out the G in the model numbers above will change the clamping type to steel ball.									
M4-HPS	10000 12000	4	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø65	Ø140	800~1300
M4-VAPS	8000 10000	4	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø70	Ø150	800~1300
M4-APSN	8000 10000 12000	4	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø70	Ø150	800~1300
H6-APSN			HSK63A						
M4-APRN	6000 8000 10000	6	BBT40 BT40 DIN40 CAT40	(OP)	(OP)	四瓣爪 grippers	Ø70	Ø150	800~1300
H6-APRN			HSK63A						
M5-DPS	6000 8000 10000	4	BT50 DIN50 CAT50	(OP)	(OP)	四瓣爪 grippers	Ø80	Ø155	1000~1600
M5-DPR	6000	6							
M5-NPS	5000 6000 8000	4	BBT50 BT50 DIN50 CAT50	(OP)	(OP)	四瓣爪 grippers	Ø100	Ø190	1100以上
M5-VMPS									
M5-NPR	4500 5000 6000	6	BBT50 BT50 DIN50 CAT50	(OP)	(OP)	四瓣爪 grippers	Ø100	Ø190	1100以上
M5-VMPR									

CTS : coolant through spindle
SC : surrounding coolant

ST : 標準Standard OP : 可選配Option

皮帶傳動式外觀尺寸表 Table of Outer Dimensions of Pulley Driven Spindle

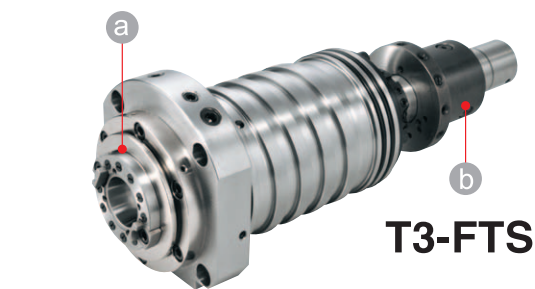


主軸型號 MODEL NO.	L	L1	L2	L3	L4	L5	L6	P	系列代碼 SERIES NO.
M25-GPS	184.5	75	67.5	70	21	51	119	10k/12krpm 5GT30T	PD-70
M3-FPS	323	100	88	145	50	124	235	15krpm PJ-V Belt	
M4-VNPS M4-VNPR M4-VNPSG M4-VNPRG	416.5	128	108.5	8krpm 175 10k/12krpm 190	8krpm 55 10k/12krpm 60	171.5	301.5	10k/12krpm 5GT40T	PD-100
M4-LNPS M4-LNPSG	416.5	128	108.5	175	55	171.5	301.5	15krpm PJ-V Belt	PD-120
M4-HPS	420	65	47.5	250	60	238	364.5	8krpm 5GT68T	PD-140
M4-VAPS	484	138	115	228	60	202	375.5	10k/12krpm 5GT54T	PD-150
M4-APSN M4-APRN H6-APSN H6-APRN	488	138	115	228	60	202	375.4	8krpm 5GT68T	PD-155
M5-DPS M5-DPR	586.5	185	160	286	58	244	424.5	10k/12krpm 5GT54T	PD-190
M5-NPS M5-NPR	632	94	64	320	60	274	556	8YU40T	PD-150
M5-VMPS M5-VMPR	632	200	170	290	60	231.5	450	8YU56T	
								8YU60T	PD-190

皮帶傳動式-中央出水(CTS)相關尺寸表 Table of Pulley Driven - Coolant Through Spindle (CTS) Dimensions

主軸型號 MODEL NO.	D1	D2	D3(h7)	M1	CTS				系列代碼 SERIES NO.
					H1	H2	D4	D5	
M25-GPS	70	93	70	6-M5 PCDØ82					PD-70
M3-FPS	100	140	100	6-M8 PCDØ120	274	302	70	56	PD-100
M4-VNPS M4-VNPR M4-VNPSG M4-VNPRG	130	165	120	6-M8 PCDØ146	333	359.5	70	56	PD-120
M4-LNPS M4-LNPSG	130	165	120	6-M8 PCDØ146	333	359.5	70	56	PD-120
M4-HPS	140	185	140	8-M10 PCDØ160	394.7	422.7	70	56	PD-140
M4-VAPS	155	202	150	8-M10 PCDØ180	373	399	70	56	PD-150
M4-APSN M4-APRN H6-APSN H6-APRN	155	202	150	8-M10 PCDØ180	373	399	70	56	PD-155
M5-DPS M5-DPR	163	206	155	8-M10 PCDØ180	440	465.5	70	56	PD-190
M5-NPS M5-NPR	193	246	190	6-M12 PCDØ220	571	597	70	56	PD-190
M5-VMPS M5-VMPR	198	246	190	6-M12 PCDØ220	465	491	70	56	

鑽攻中心機 Tapping Center



低慣量，高加減速，快速同步換刀。
鑽孔攻牙中心機專用主軸，配合連桿同步快速換刀，高換刀壽命，低慣量、高加減速，振動特性佳。

Low Inertia, High Acceleration and Deceleration, Rapid Synchronous Tool Exchange

Our tapping center spindles are compatible with synchronous tool exchanging and have long tool exchanging operational life, low inertia, high acceleration and deceleration, and low vibration.



a. 前端迷宮吹氣
全系列前端迷宮吹氣，適合高速加工鑽孔攻牙。

Front End Labyrinth Design with Air Seal
The tapping center spindle model has a front labyrinth with air seal, making it suitable for high speed tapping.



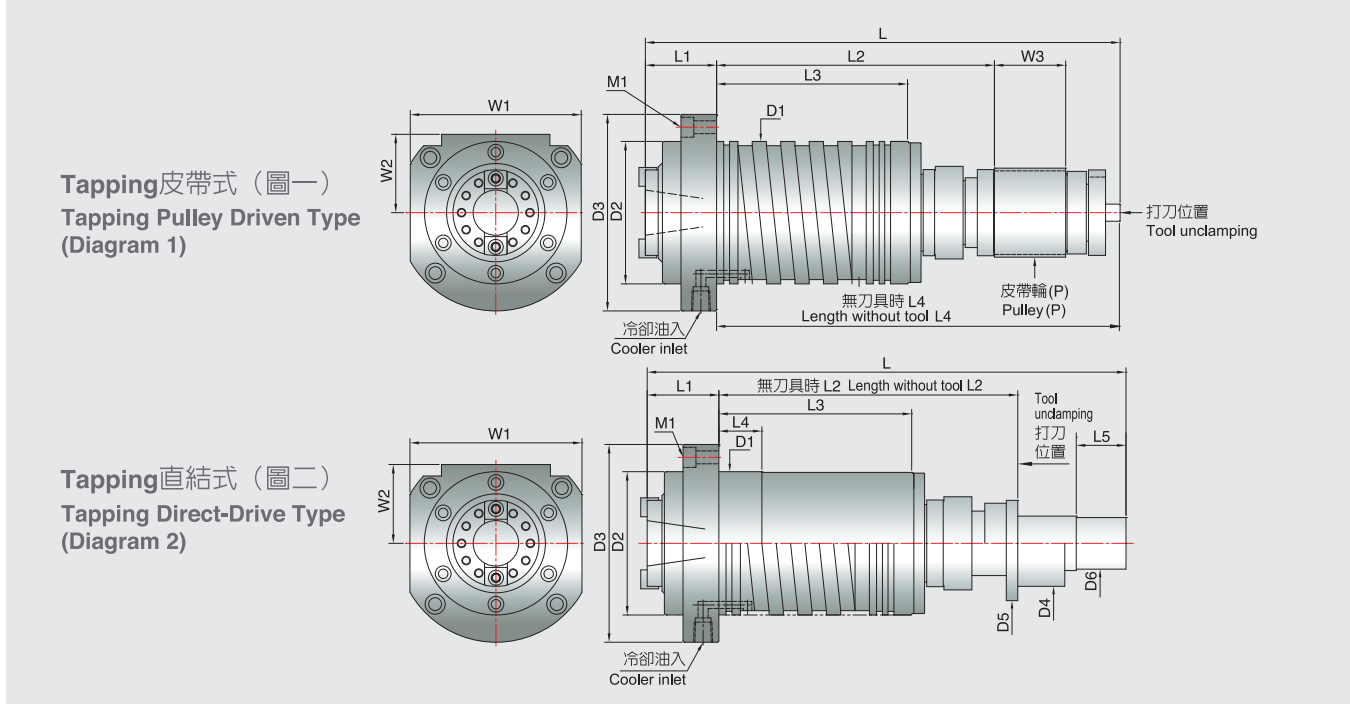
b. 耐磨打刀環
打刀環經熱處理，防止連桿快速換刀磨耗故障。

Tool Unclamping Ring with Long Life
The heat-treated tool unclamping ring prevents wear and tear failure from the high speed synchronous tool exchanging.

Tapping式主軸 Tapping Spindle

型號 MODEL NO.	刀具 TOOL HOLDER	規格 (SPECIFICATION)					建議適用 機型行程 Travel for Recommended Machine Type
		最高轉速 Max. Speed (rpm)	軸承數目 No. of Bearings	拉刀方式 Clamping Type	前軸承直徑 Diameter of Front Bearing (mm)	套筒外徑 Outer Diameter of Housing (mm)	
T3-FPS	BT30	10000	4	鋼珠式 steel ball	Ø45	Ø100	500以上
T3-BTS		12000				Ø95	
T3-FTS	BBT30 BT30 ISO30	15000		四瓣爪 grippers	Ø100		
T4-NPS	BT40 DIN40	8000 10000	4	四瓣爪 grippers	Ø60	Ø120	650以上
T4-QTS	CAT40	12000			Ø65	Ø126	

Tapping式外觀尺寸表 Table of Outer Dimensions of Pulley Driven Tapping Spindle



主軸型號 MODEL NO.	L	L1	L2	L3	L4	P	W1	W2	W3	D1	D2	D3	D4	D5	D6	M1	備註 Note	系列代碼 SERIES NO.
T3-FPS	335	50	195	134	285	5GT40T	120	55	50	100	100	138				4-M8 Ø120 (非等角距) (non-isometric distance)	圖一 Diagram1	TP-100
T4-NPS	373.5	56	182	156	317.5	5GT60T	154	75	50	120	120	154				6-M8 Ø135 (等角距) (non-isometric distance)		TP-120
T3-BTS	358	120	185.8	108	25		162	52		95(註1) (note1)	128	162	60	36	35	5-M8 Ø146 (非等角距) (non-isometric distance)	圖二 Diagram2	TD-95
T3-FTS	299	51	195	134			120	55		100	100	138	80	60	35	4-M8 Ø120 (非等角距) (non-isometric distance)		TD-100
T4-QTS	427	58.5	278	212						126	129	161	66	100	45	6-M8 Ø144 (等角距) (non-isometric distance)		TD-126

註1.無油冷循環溝。 Note 1. There is no cooling groove.