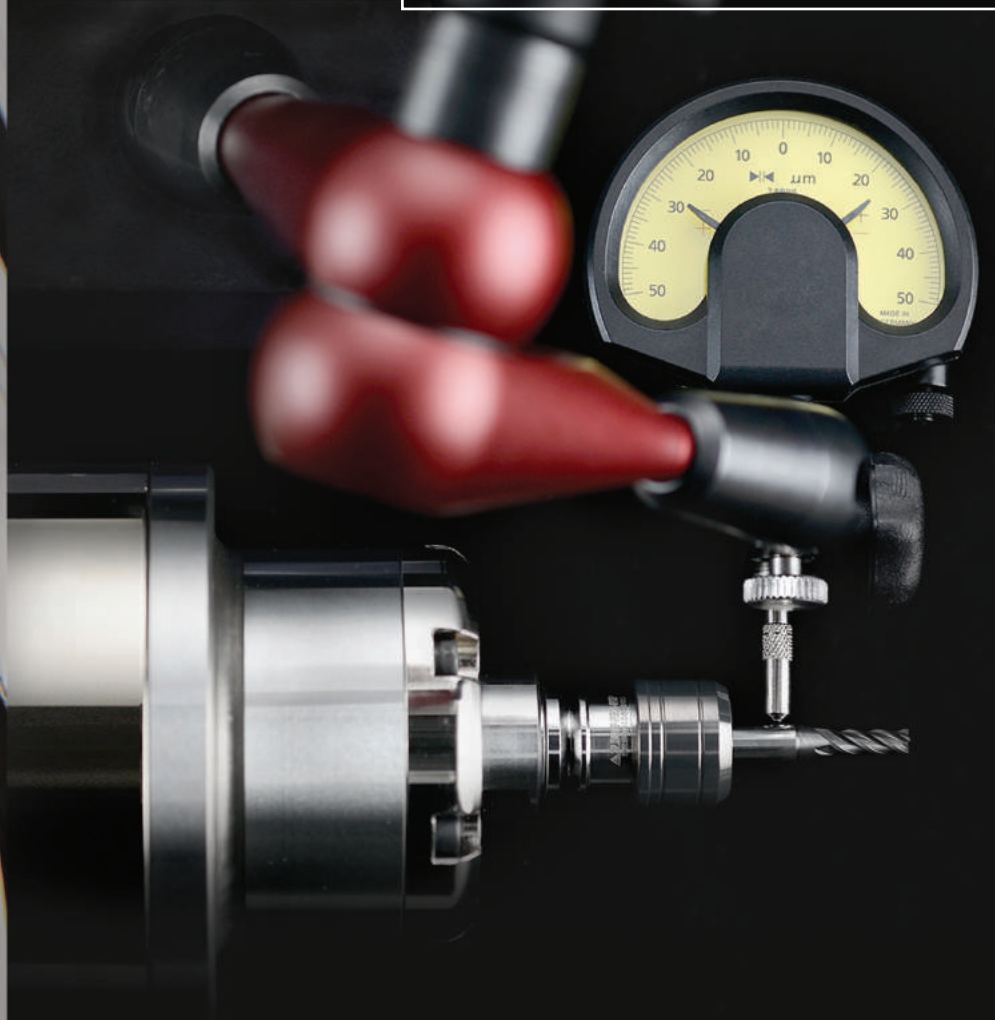




INSIST  
ONLY **QUALITY**



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HIGH SPEED SPINDLE

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售後服務





系列產品

Products Overview

ALL SERIES PRODUCTS

x6



HIGH FREQUENCY SPINDLE

馬達內藏式主軸



SPECIAL PURPOSE  
MACHINE PERIPHERALS

專用機加工工具系列



PARFAITE

[www.parfaite.com.tw](http://www.parfaite.com.tw)

HIGH FREQUENCY SPINDLE





CNC TOOL HOLDER

精密刀把



SPINDLE SPEEDER

電動增速器



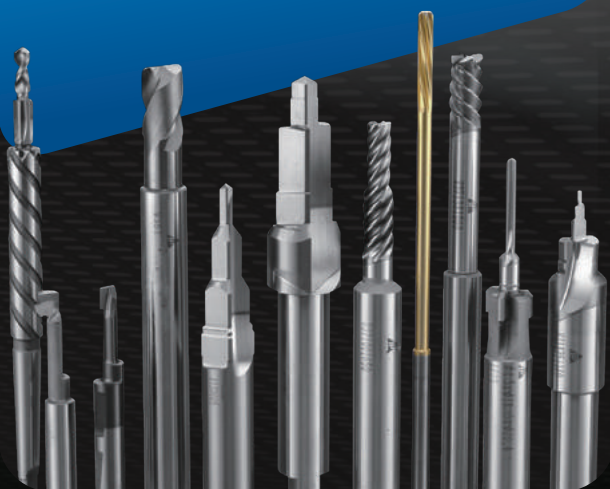
TURN KEY DESIGN SERVICE

一條龍專業設計服務



SPECIAL CARBIDE TOOL

特殊成形刀具





## 沿革

1982年成立的台湾普惠企业，以拥有超过三十年成熟稳健技术为基础，专司于马达内藏式高速主轴，精密刀柄，特殊刀具的设计、制作及销售，亦是全球唯一可以同时生产这三项高品质技术产品的公司。在航空、工具机、汽机车零件、机壳、模具等各类生产加工方面都以确保客户品质为最高指标，并获得业界各大厂的肯定。

普惠不仅在精密刀柄及特殊刀具领域取得卓越成就，更积极投入机械核心领域进行研发，持续打造竞争优势。其中可协助机台提升转速效率-电动增速器荣获台湾经济部企业创新研究奖。1995年量产了台湾第一支马达内藏式电动主轴，为公司建立了显著的市場差異性。

除提升下游产业转型，并延伸制造业的应用领域，整合到3C、医疗及绿能等新兴领域，带动产业创新的商机。普惠秉持著「挑战技术的极限」精神，不断的於技术上创新与改善，期待能为机械产业带向新的纪元。



一廠

FACTORY 1

# HISTORY

Parfaite Tool Co.,Ltd is founded in 1982 for the accumulation of almost 30 years of experience and craftsmanship in specializing the design, manufacture and sale of Motor built-in High Speed Spindle, High Precision Tool Holder and customized Tool. Parfaite is also the sole company of supplying the above mentioned high quality-technical products in the meantime.

For the various machining and manufacturing in the Industries such as Aerospace, Machining center, Automotive...etc, guaranteeing the quantity and making the clients fully rely on us is our supreme target.

We have been actively involved in the R & D of the mechanical core areas, in which, there is one product can help to enhance the speed efficiency of the machine- Spindle Speeder , this product once received the "Innovative Research Award" from Ministry of Economic Affairs,Taiwan. It was Taiwan's first motor built-in high frequency spindle in 1995. In addition to enhancing the downstream industries, manufacturing applications and can be extended again in the future into 3C, medical and other emerging areas of green energy, promote business opportunities in the domestic industrial innovation.

Parfaite keeps the spirit of challenging the technology limit to improve and innovate on the technology, also expect to lead the machinery industry to a new era.

二廠  
FACTORY 2





**HIGH REPEAT ACCURACY**  
高重複精度

**AIR SEAL**  
氣幕防護

**CERAMIC Bearings**  
陶珠軸承

**HIGH CLAMPING Force**  
高夾持力

# HIGH FREQUENCY SPINDLE

**COOLING** Waterway  
環狀冷卻水路

**STABILIZING** Axial Displacement Cage  
穩定軸向變化的保持器

**APPROXIMATE** Switch  
打刀感測

**MAGNETIC** Encoder  
磁性編碼器

**CLAMPING** Cylinder  
打刀缸



## DOUBLE-FACE Contact 二面承靠系統

將刀把錐面與法蘭面兩面緊貼心軸，可提升刀把與心軸接觸率達114%，較一般刀把更適於高轉速的狀態，有利於獲得更穩定的軸向平行度和強化動態轉速下的剛性變化。

(選配細節歡迎來電洽詢)



## HIGH REPEAT Accuracy 高重複精度

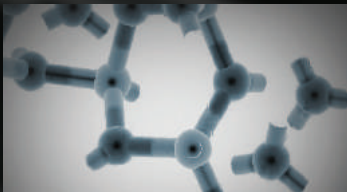
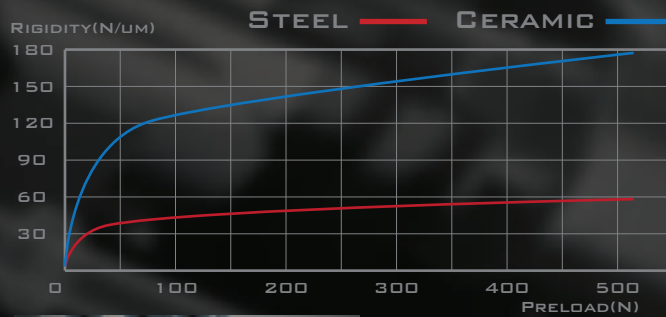
從旋轉件至刀具端的累積精度皆來自普慧的主軸與刀把，具有統一性的製造與檢測，相配件結合度高、品質穩定。

(高精度之選配細節歡迎來電洽詢)



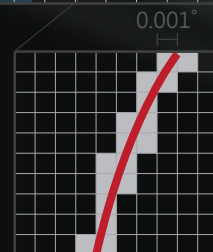
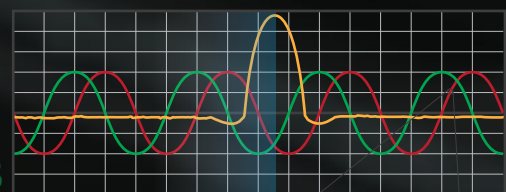
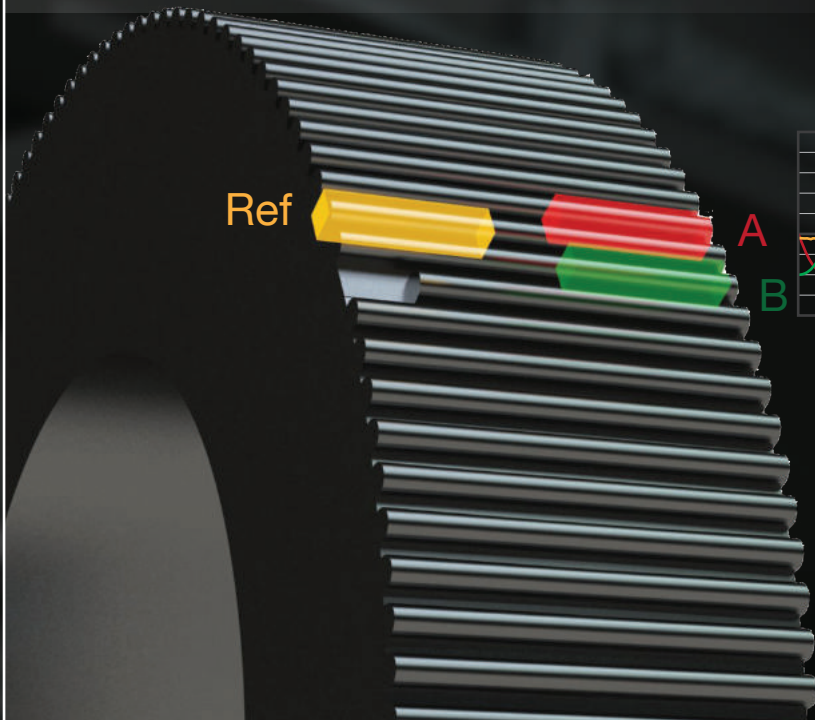
## CERAMIC Bearings 精密斜角陶珠軸承

採用歐系P4S超精密斜角滾珠軸承，陶瓷珠材質較一般鋼珠輕盈、高硬度，不穩定的慣量小、剛性高、壽命更長。不僅大幅提升極限轉速與切削剛性，主軸的切削範圍能更加靈活運用。



## MAGNETIC Encoder 磁性編碼器

高頻率的編碼器與高精度齒輪，使控制器能正確解讀精準的波形，可大幅提升主軸高轉速的穩定性，亦能讓低轉速漸進更加滑順，解析度可達到 $0.001^\circ$ 。





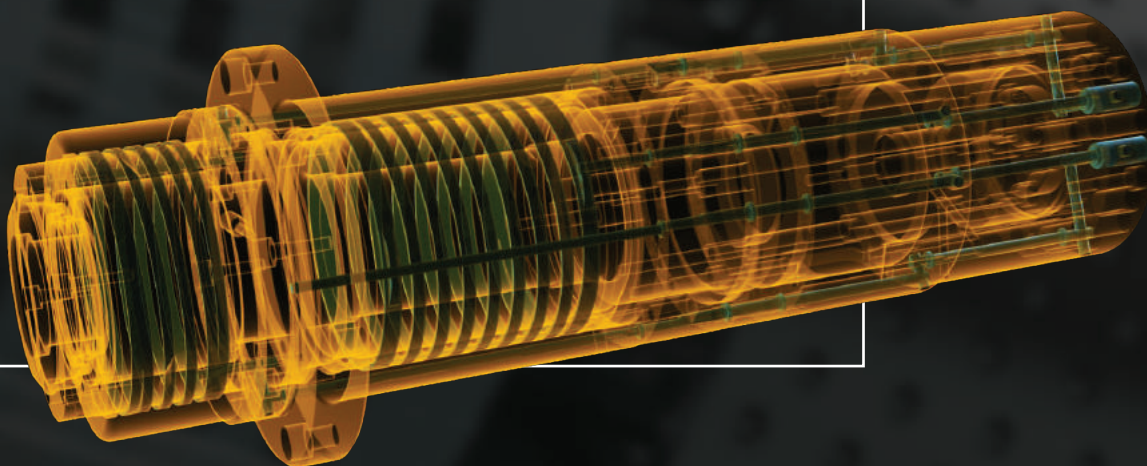
## AIR Seal 氣幕防護

壓縮空氣傳導至氣幕環中，將旋轉件的餘隙填滿並釋出空氣，讓內部軸承受到正壓保護，防止切削水與異物侵入。



## COOLING Waterway 環狀冷卻水路

冷卻水經過主軸環狀水路，均勻冷卻軸承與馬達熱源，除了令主軸維持恆溫之外，並可降低刀具端偏擺跳動，提升使用壽命與精度。



## TEMPERATURE Sensors 溫度感測器

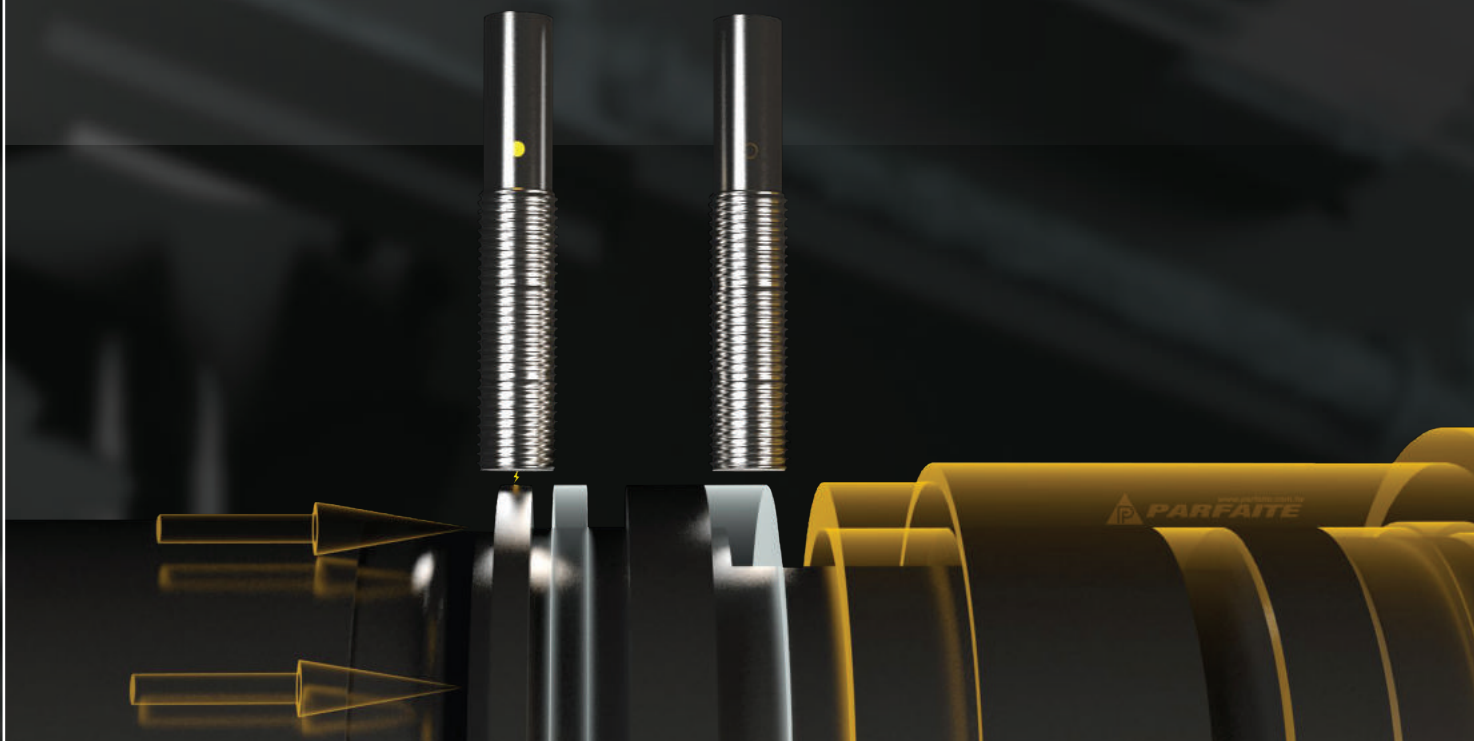
軸承的溫度監控其實非常重要，前後軸承加上基本的馬達溫度感測器，不僅與主軸軸承的使用壽命有直接關係，溫度數據會直接反映出切削負載的承受量，而異常溫度能讓設備提早下達停止指令以防燒毀。

(選配細節有固定型號,歡迎來電洽詢)



## APPROXIMATE Switch 拉退刀感測器

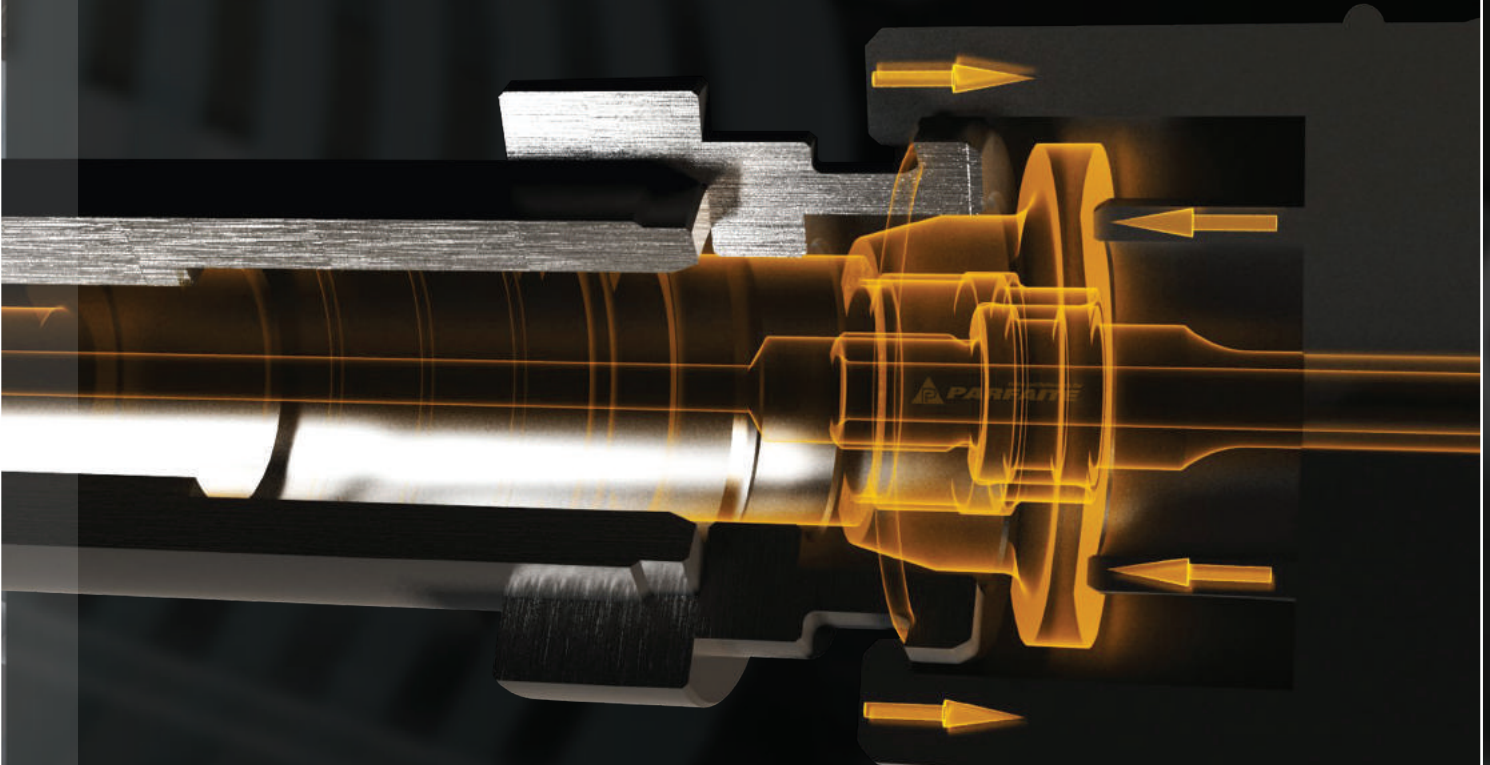
使用近距離非接觸式近接開關，加上在感測點面積與精細組裝下，讓退刀的感測位置能更精準定位，使退刀與拉刀的動作更加精確。

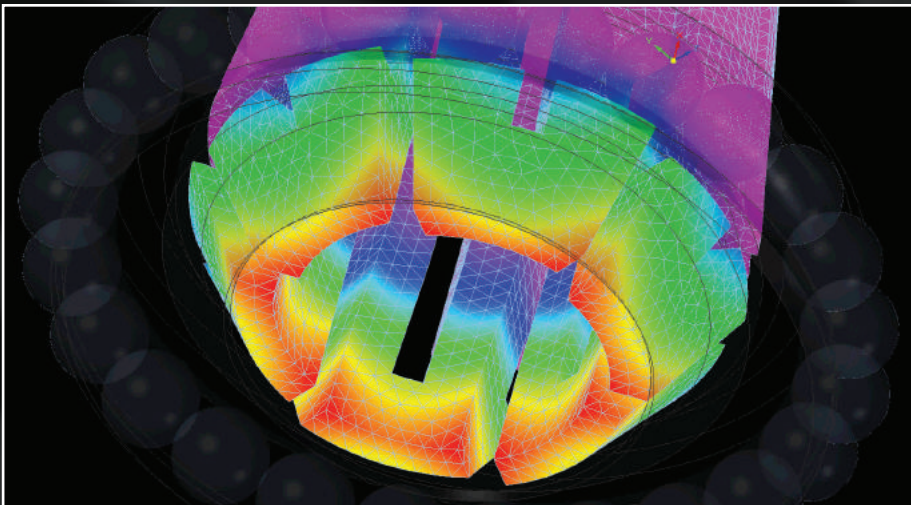
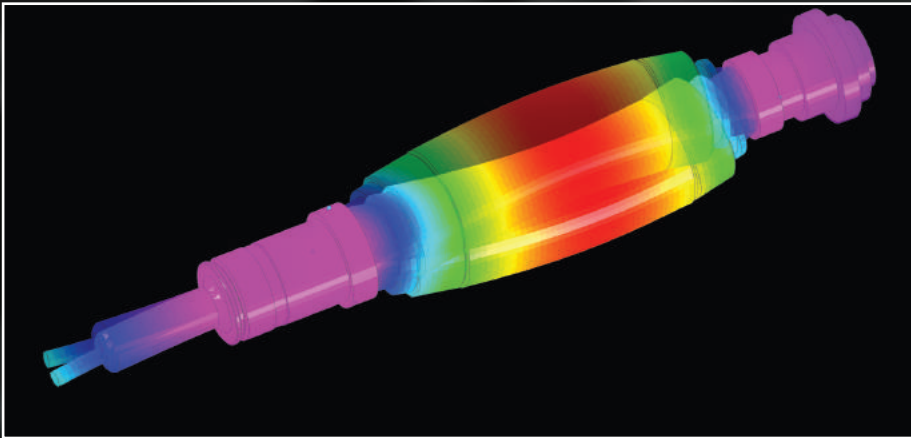
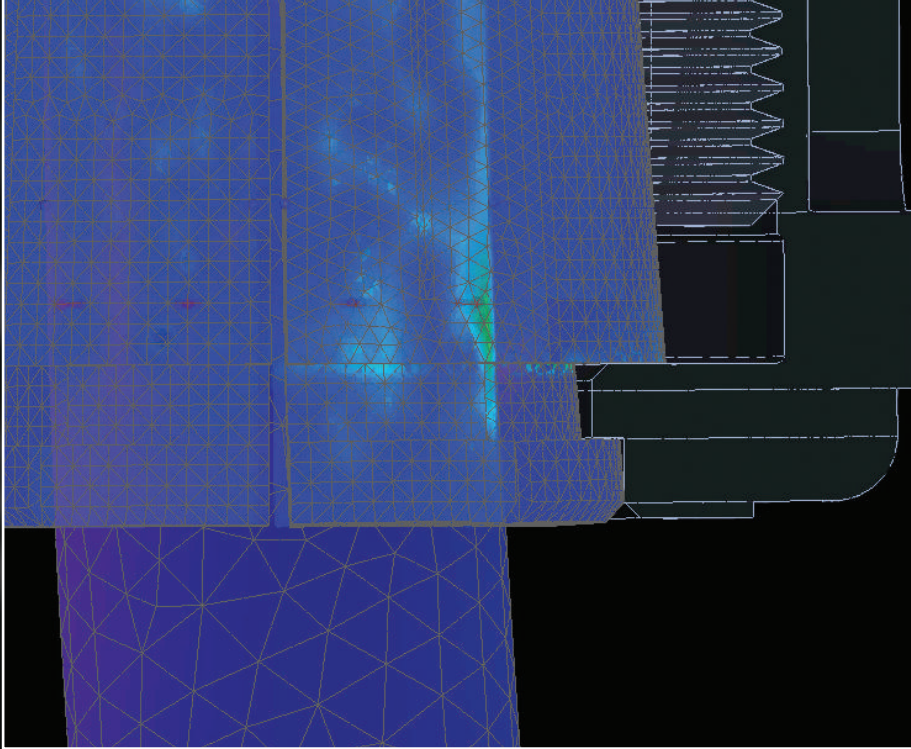




## Clamping System 換刀系統

如果使用常態高轉速之主軸，需選配使用反扣式換刀系統，如此能減輕低預壓下的軸承負擔，也能增加打刀次數與軸承使用壽命。  
(此選配系統可包含中心出水功能)  
(選配細節有固定型號，歡迎來電洽詢)





# OUR ENGINEERING



## 主軸產品總覽表 Spindle Overview

外徑 O.D.	主軸型號 Series No.	功率 Power	扭力 Torque	最低轉速 Min rpm.	最高轉速 Max rpm.
<b>MIA ATC自動換刀式銑削主軸 Milling Spindle with Automatic Tool Change</b>					
	MIA1275-24	7.5 KW	6.0 Nm	6,000 rpm	- 24,000 rpm
	Ø120 MIA1285-30	8.5 KW	3.9 Nm	10,000 rpm	- 30,000 rpm
	MIA1291-30	9.1 KW	6.5 Nm	7,500 rpm	- 30,000 rpm
	Ø140 MIA1413-20	13.8 KW	14 Nm	5,000 rpm	- 20,000 rpm
	Ø150 MIA1513-20	13.8 KW	14 Nm	5,000 rpm	- 20,000 rpm
	Ø170 MIA1725-20	25 KW	27.4 Nm	7,500 rpm	- 20,000 rpm
	Ø180 MIA1833-20	33.7 KW	36.5 Nm	5,000 rpm	- 20,000 rpm
	Ø210 MIA2115-18	15 KW	36.9 Nm	1,500 rpm	- 18,000 rpm
<b>EIA ATC自動換刀式雕刻主軸 Engraving Spindle with Automatic Tool Change</b>					
	EIA0845-50	4.5 KW	1.1 Nm	20,000 rpm	- 50,000 rpm
	Ø80 EIA0820-30	2.0 KW	1.1 Nm	10,000 rpm	- 30,000 rpm
	EIA0827-40	2.7 KW	0.98 Nm	15,000 rpm	- 40,000 rpm
	EIA1037-30	3.7 KW	2.37 Nm	10,000 rpm	- 30,000 rpm
	Ø100 EIA1055-36	5.5 KW	2.2 Nm	12,000 rpm	- 36,000 rpm
	EIA1275-24	7.5 KW	6.0 Nm	6,000 rpm	- 24,000 rpm
	Ø120 EIA1285-30	8.5 KW	3.9 Nm	10,000 rpm	- 30,000 rpm
	EIA1291-30	9.1 KW	6.5 Nm	7,500 rpm	- 30,000 rpm

	刀把・筒夾形式 Tool holder・Collet	立式 Vert	臥式 Horiz	頁次 Page	軸承潤滑方式 Bearing Lubrication
	HSK40E / BTT30 / BT30N	<input type="checkbox"/>	<input type="checkbox"/>	23	滑脂 Grease
	ISO30	<input type="checkbox"/>	<input type="checkbox"/>	24	
	HSK40E / BT30N	<input type="checkbox"/>	<input type="checkbox"/>	25	
	HSK50E / BTT30 / BT30	<input type="checkbox"/>	<input type="checkbox"/>	26	
	HSK50E / BTT30 / BT30	<input type="checkbox"/>	<input type="checkbox"/>	27	
	HSK63A / BTT40 / BT40	<input type="checkbox"/>	<input type="checkbox"/>	28	
	HSK63A / BTT40 / BT40	<input type="checkbox"/>	<input type="checkbox"/>	29	
	HSK63A / BTT40 / BT40		<input type="checkbox"/>	30	
	HSK25E / ISO10 / 15T	<input type="checkbox"/>	<input type="checkbox"/>	33	滑脂 Grease
	ISO20 / S20T	<input type="checkbox"/>	<input type="checkbox"/>	34	
	ISO20	<input type="checkbox"/>	<input type="checkbox"/>	35	
	HSK32E / ISO25	<input type="checkbox"/>	<input type="checkbox"/>	36	
	HSK32E / ISO25	<input type="checkbox"/>	<input type="checkbox"/>	37	
	BT30 / BTT30	<input type="checkbox"/>	<input type="checkbox"/>	38	
	ISO30	<input type="checkbox"/>	<input type="checkbox"/>	39	
	HSK40E / BT30N	<input type="checkbox"/>	<input type="checkbox"/>	40	



## 主軸產品總覽表 Spindle Overview

外徑 O.D.	主軸型號 Series No.	功率 Power	扭力 Torque	最低轉速 Min rpm.	最高轉速 Max rpm.
<b>EIM 手動換刀式雕刻主軸 Engraving Spindle with Manual Tool Change</b>					
	Ø61.9	EIM0609-70	0.9 KW	0.128 Nm	30,000 rpm - 70,000 rpm
	Ø70	EIM0711-50	1.1 KW	0.36 Nm	15,000 rpm - 50,000 rpm
	Ø80	EIM0820-30	2.0 KW	1.1 Nm	10,000 rpm - 30,000 rpm
		EIM0827-40	2.7 KW	0.98 Nm	15,000 rpm - 40,000 rpm
	Ø100	EIM1037-30	3.7 KW	2.3 Nm	10,000 rpm - 30,000 rpm
	Ø120	EIM1275-24	7.5 KW	6.0 Nm	6,000 rpm - 24,000 rpm
<b>E Type 精密電動主軸(風冷) Precision Electro Spindle (Air Cooling)</b>					
	Ø40	E0410-24	1.0 KW	0.39 Nm	12,000 rpm - 24,000 rpm
		E0410-42	1.0 KW	0.33 Nm	15,000 rpm - 42,000 rpm
	Ø50	E0510-24	1.0 KW	0.39 Nm	12,000 rpm - 24,000 rpm
		E0513-24	1.3 KW	0.52 Nm	12,000 rpm - 24,000 rpm
		E0533-30	3.3 KW	1.1 Nm	15,000 rpm - 30,000 rpm
	Ø60	E0623-30	2.3 KW	1.51 Nm	7,500 rpm - 30,000 rpm
	Ø70	E0723-24	2.3 KW	1.51 Nm	7,500 rpm - 24,000 rpm
		E0736W-18	3.6 KW	3.77 Nm	4,000 rpm - 15,000 rpm
<b>G 高頻內孔磨削主軸 High Frequency Internal Grinding Spindle</b>					
	Ø120	G1205-60	5.8 KW	0.92 Nm	30,000 rpm - 60,000 rpm
	Ø100	G1004-75	4.0 KW	0.52 Nm	37,500 rpm - 75,000 rpm
<b>S Type 電動增速器 Spindle Speeders</b>					
	Ø100	S1010-24	1.0 KW	0.39 Nm	12,000 rpm - 24,000 rpm
	Ø110	S1130-30	3.0 KW	1.13 Nm	15,000 rpm - 30,000 rpm
	Ø30	MS01	0.37 KW	0.08 Nm	1,000 rpm - 60,000 rpm
	Ø63	MZ01-BT30	0.37 KW	0.08 Nm	1,000 rpm - 60,000 rpm
		MZ01-BT40	0.37 KW	0.08 Nm	1,000 rpm - 60,000 rpm
		MZ01-BT50	0.37 KW	0.08 Nm	1,000 rpm - 60,000 rpm
		MZ01-ST32	0.37 KW	0.08 Nm	1,000 rpm - 60,000 rpm

	刀把・筒夾形式 Tool holder・Collet	立式 Vert	臥式 Horiz	頁次 Page	軸承潤滑方式 Bearing Lubrication
	ER11MS	<input type="checkbox"/>		43	滑脂 Grease
	ER11MS	<input type="checkbox"/>		44	
	ER16	<input type="checkbox"/>	<input type="checkbox"/>	45	
	ER16	<input type="checkbox"/>	<input type="checkbox"/>	46	
	ER20	<input type="checkbox"/>	<input type="checkbox"/>	47	
	ER32	<input type="checkbox"/>	<input type="checkbox"/>	48	
	ER16	<input type="checkbox"/>	<input type="checkbox"/>	51	滑脂 Grease
	ER16	<input type="checkbox"/>	<input type="checkbox"/>	52	
	ER20	<input type="checkbox"/>	<input type="checkbox"/>	53	
	ER20	<input type="checkbox"/>	<input type="checkbox"/>	54	
	ER25	<input type="checkbox"/>	<input type="checkbox"/>	55	
	ER25	<input type="checkbox"/>	<input type="checkbox"/>	56	
	ER32	<input type="checkbox"/>	<input type="checkbox"/>	57	
	ER32	<input type="checkbox"/>	<input type="checkbox"/>	58	
	Ø10.5		<input type="checkbox"/>	59	油氣 Oil-Air
	Ø9		<input type="checkbox"/>	60	油氣 Oil-Air
	ER20	<input type="checkbox"/>		63	滑脂 Grease
	ER25	<input type="checkbox"/>	<input type="checkbox"/>	63	
	ER11	<input type="checkbox"/>	<input type="checkbox"/>	64	
	ER11	<input type="checkbox"/>	<input type="checkbox"/>	64	
	ER11	<input type="checkbox"/>	<input type="checkbox"/>	64	
	ER11	<input type="checkbox"/>	<input type="checkbox"/>	64	





 普慧 PARFAITE



# MIA SERIES

**MILLING SPINDLE**

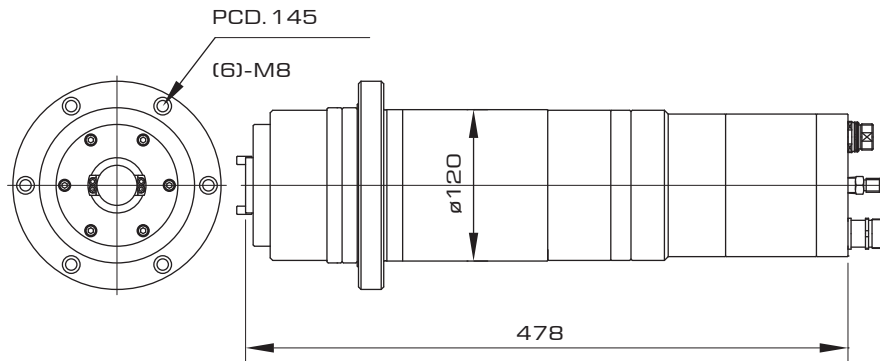
With Automatic Tool Change

TE ←



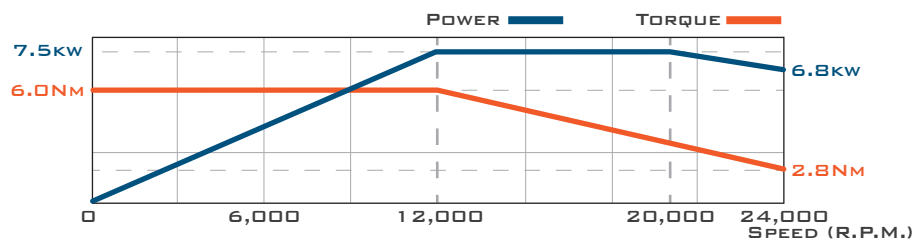
## MILLING SPINDLE

With Automatic Tool Change



MIA1275-24

## TORQUE AND POWER CURVE

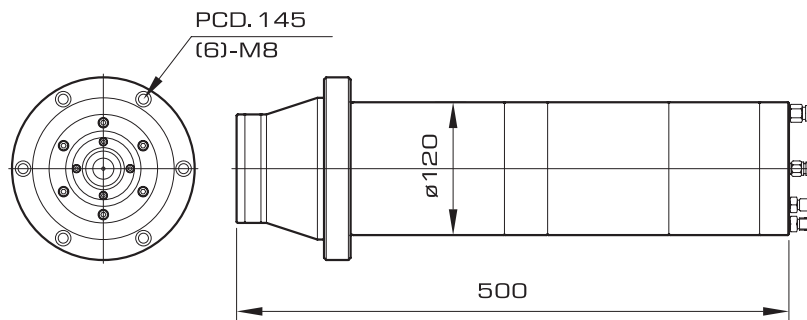


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	6,000~24,000 rpm
頻率 Frequency / Hz	800 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	7.5 Kw
扭力 Torque / Nm	6.0 Nm
刀把 / 筒夾 Tool Holder / Collet	BT30 / BTT30 / BT30N / HSK40E
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	$\varnothing 120$ mm
主軸全長 L / mm	478 mm
重量 Weight / Kg	29 Kg

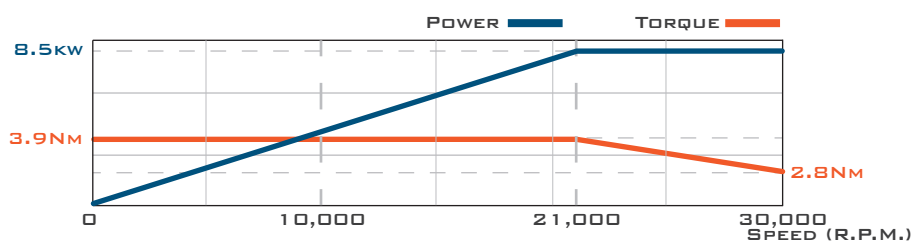
## MILLING SPINDLE

With Automatic Tool Change



MIA1285-30

## TORQUE AND POWER CURVE



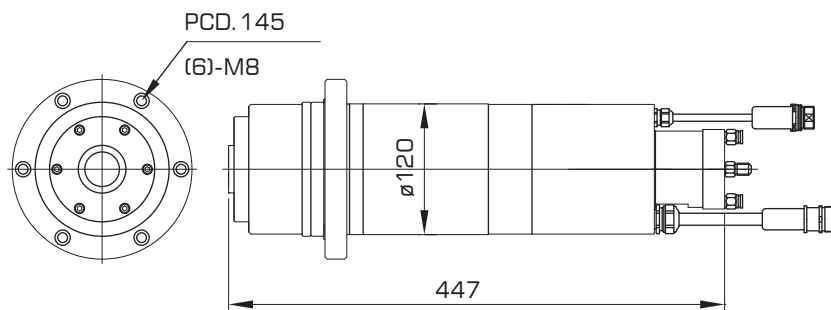
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	8.5 Kw
扭力 Torque / Nm	3.9 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO30
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø120 mm
主軸全長 L / mm	500 mm
重量 Weight / Kg	29 Kg



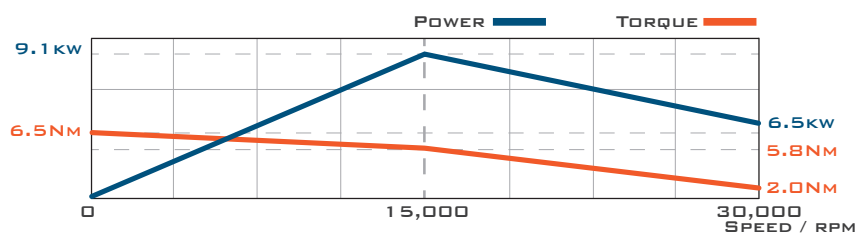
## MILLING SPINDLE

With Automatic Tool Change



MIA1291-30

## TORQUE AND POWER CURVE

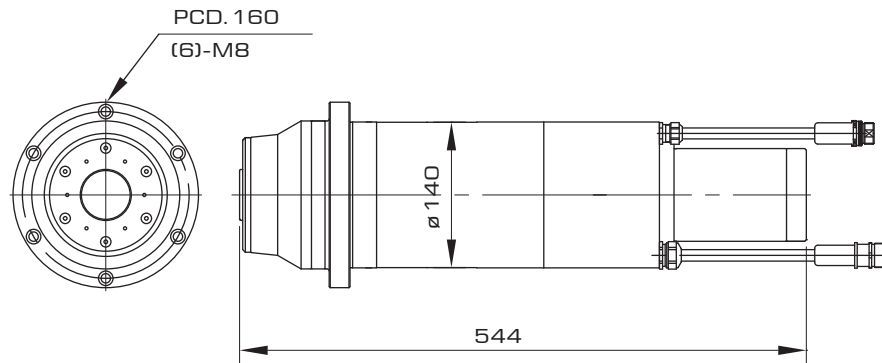


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	7,500~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	9.1 Kw
扭力 Torque / Nm	6.5 Nm
刀把 / 筒夾 Tool Holder / Collet	HSK40E / BT30N
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	120 mm
主軸全長 L / mm	447 mm
重量 Weight / Kg	29 Kg

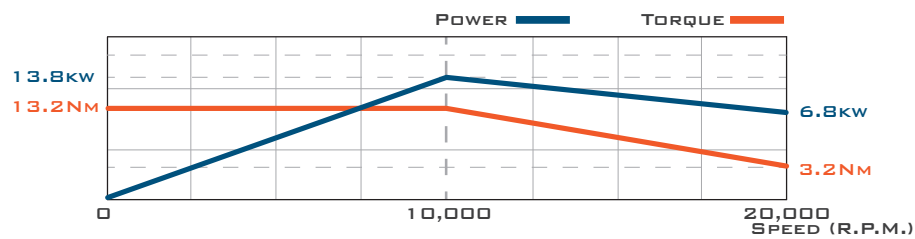
## MILLING SPINDLE

With Automatic Tool Change



MIA1413-20

## TORQUE AND POWER CURVE



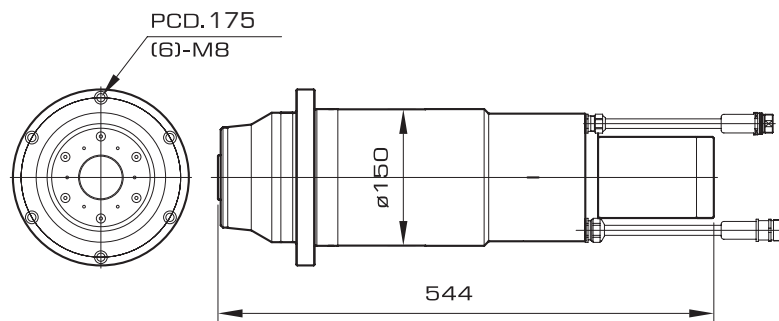
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	5,000~20,000 rpm
頻率 Frequency / Hz	667 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	13.8 Kw
扭力 Torque / Nm	13.2 Nm
刀把 / 筒夾 Tool Holder / Collet	•BT30 / BTT30 •HSK50E
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	140 mm
主軸全長 L / mm	544 mm
重量 Weight / Kg	39 Kg



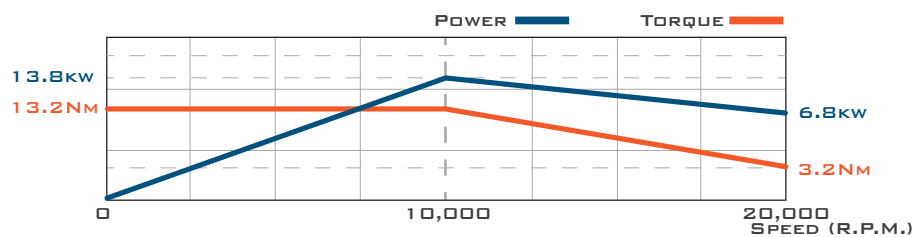
## MILLING SPINDLE

With Automatic Tool Change



MIA1513-20

## TORQUE AND POWER CURVE

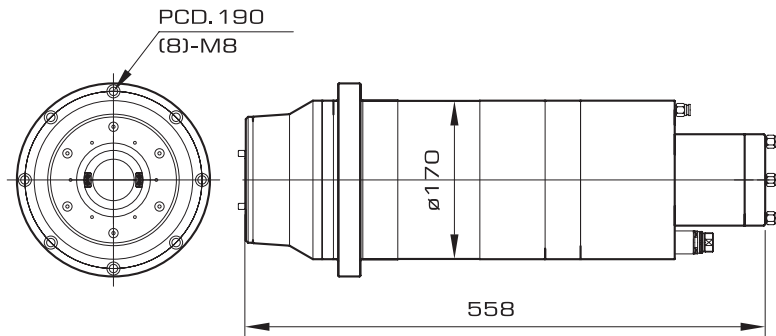


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	5,000~20,000 rpm
頻率 Frequency / Hz	667 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	13.8 Kw
扭力 Torque / Nm	13.2 Nm
刀把 / 筒夾 Tool Holder / Collet	•BT30 / BTT30 •HSK50E
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	150 mm
主軸全長 L / mm	544 mm
重量 Weight / Kg	45 Kg

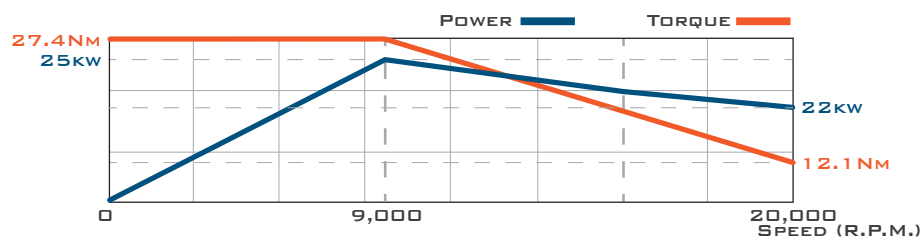
## MILLING SPINDLE

With Automatic Tool Change



MIA1725-20

## TORQUE AND POWER CURVE



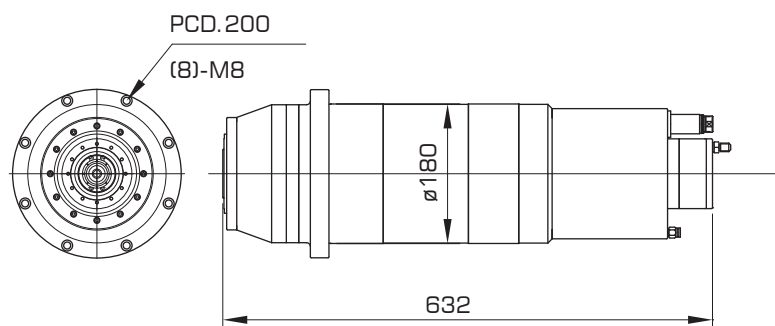
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	7,500~20,000 rpm
頻率 Frequency / Hz	667 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	25 Kw
扭力 Torque / Nm	27.4 Nm
刀把 / 筒夾 Tool Holder / Collet	•BT40 / BTT40 •HSK63A
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø170 mm
主軸全長 L / mm	558 mm
重量 Weight / Kg	52 Kg



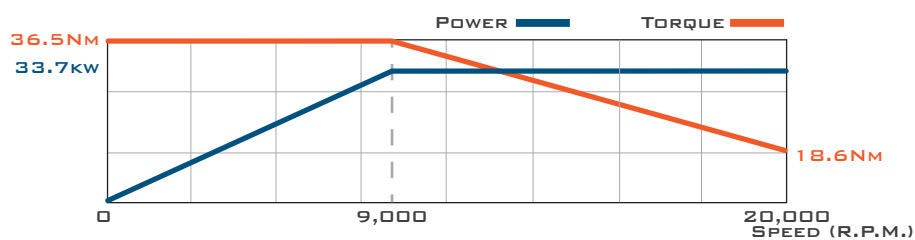
## MILLING SPINDLE

With Automatic Tool Change



MIA1833-20

## TORQUE AND POWER CURVE

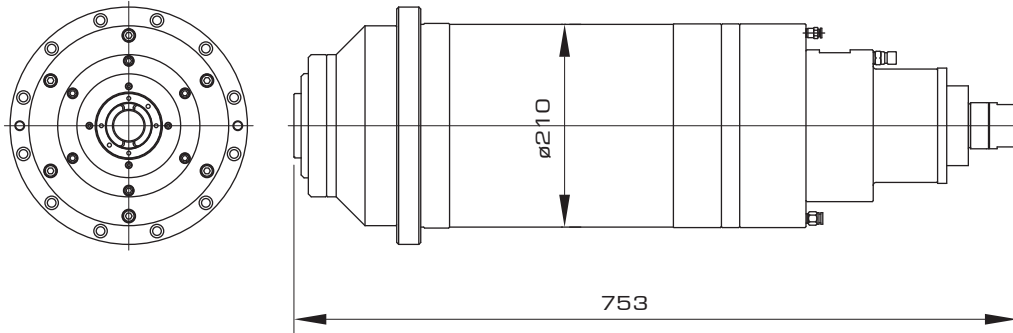


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	5,000~20,000 rpm
頻率 Frequency / Hz	667 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	33.7 Kw
扭力 Torque / Nm	36.5 Nm
刀把 / 筒夾 Tool Holder / Collet	HSK63A
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	180 mm
主軸全長 L / mm	632 mm
重量 Weight / Kg	90 Kg

## MILLING SPINDLE

With Automatic Tool Change

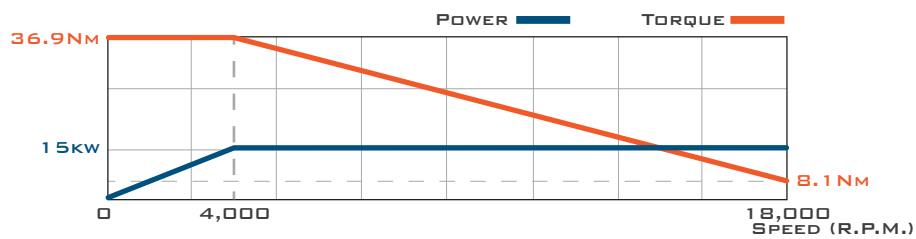


MIA2115-18

MIA2115-18  
Milling Spindle with  
Automatic Tool Change

MIA

## TORQUE AND POWER CURVE



## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	臥式 Horiz
轉速 Speed / rpm	1,500~18,000 rpm
頻率 Frequency / Hz	600 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	15 Kw
扭力 Torque / Nm	36.9 Nm
刀把 / 筒夾 Tool Holder / Collet	•BT40 / BTT40 •HSK63A
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	210 mm
主軸全長 L / mm	753 mm
重量 Weight / Kg	96 Kg

PARFAITE

EIA 1275H-20  
HSK-E40 7.5KW 20000 RPM  
380 VAC 18A 667 HZ  
S/N:13110101-18

PARFAITE  
EIA 090-150  
ISO-10 2.0KW 8000 RPM  
380 VAC 6A 120 HZ  
S/N : 1-02-000

PARFAITE

EIA 1037-30  
ISO-25 3.7 KW 30000 RPM  
380 VAC 9A 1000 HZ  
S/N : 13081402-15

PARFAITE

PARFAITE  
EIA 16-060  
S/N: 101

PARFAITE  
EIA 16-022  
S/N: 101







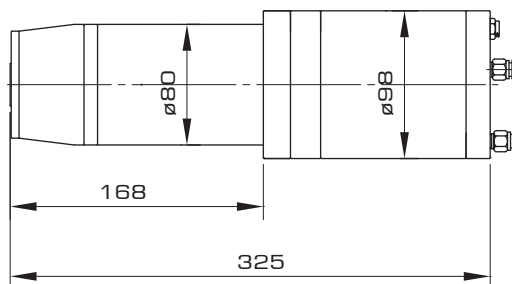
**EIA SERIES**

**ENGRAVING SPINDLE**

With Automatic Tool Change

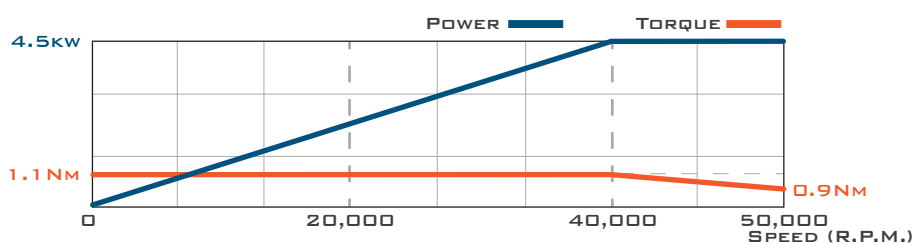
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA0845-50

## TORQUE AND POWER CURVE

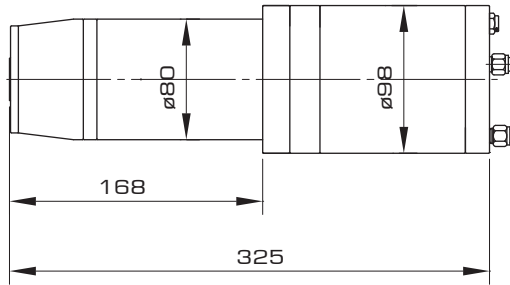


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	20,000~50,000 rpm
頻率 Frequency / Hz	1,667 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	4.5 Kw
扭力 Torque / Nm	1.1 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO10 / 15T / HSK25E
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø80 mm
主軸全長 L / mm	325 mm
重量 Weight / Kg	10 Kg

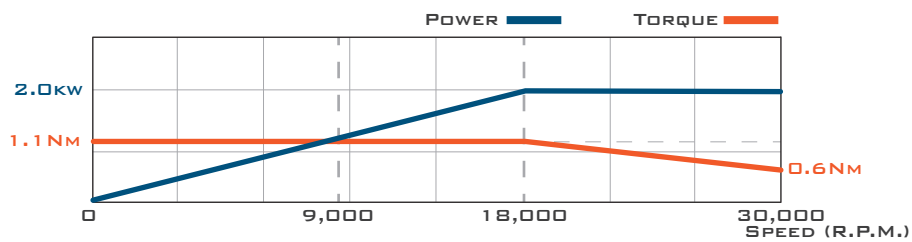
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA0845-50

## TORQUE AND POWER CURVE



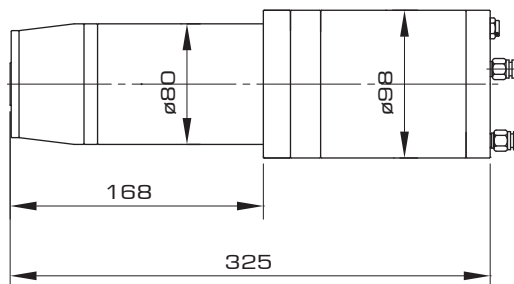
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	臥式 Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	2.0 Kw
扭力 Torque / Nm	1.1 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO20 / S20T
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø80 mm
主軸全長 L / mm	325 mm
重量 Weight / Kg	10 Kg



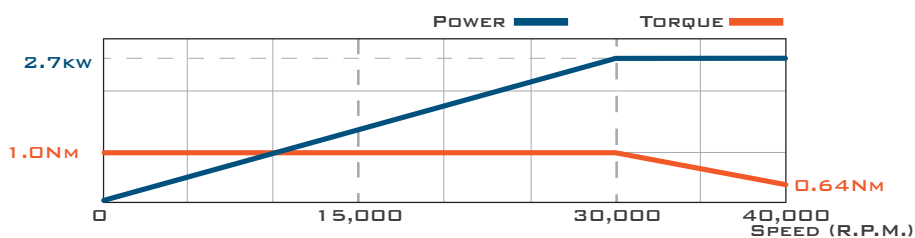
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA0827-40

## TORQUE AND POWER CURVE

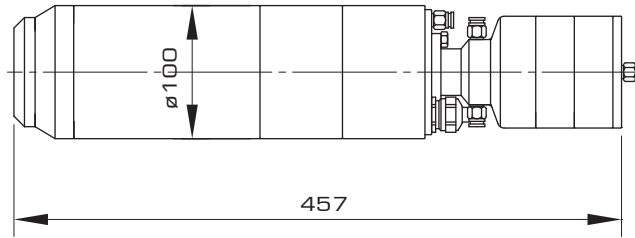


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	15,000~40,000 rpm
頻率 Frequency / Hz	1,333 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	2.7 Kw
扭力 Torque / Nm	1.0 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO20
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø80 mm
主軸全長 L / mm	325 mm
重量 Weight / Kg	10 Kg

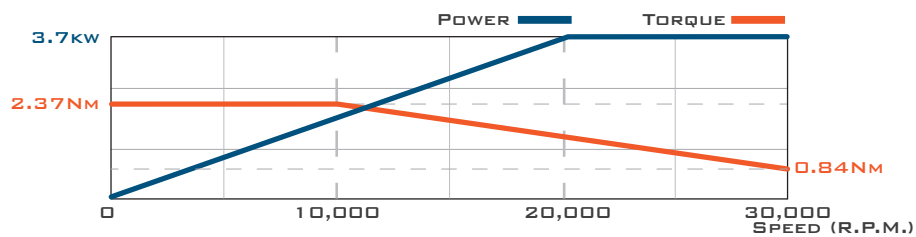
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA1037-30

## TORQUE AND POWER CURVE

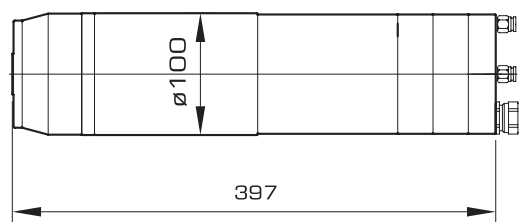


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	3.7 Kw
扭力 Torque / Nm	2.37 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO25 / HSK32E
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø100 mm
主軸全長 L / mm	457 mm
重量 Weight / Kg	19 Kg

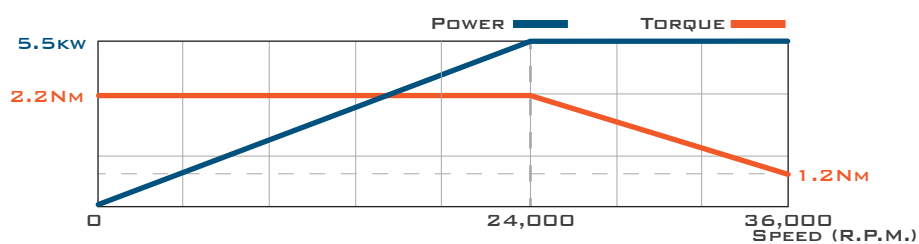
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA1055-36

## TORQUE AND POWER CURVE



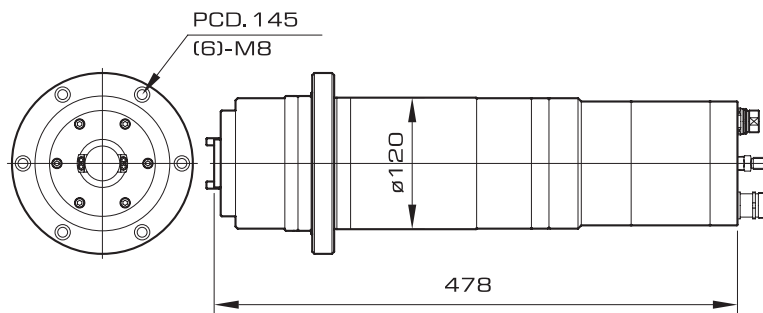
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	12,000~36,000 rpm
頻率 Frequency / Hz	1,200 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	5.5 Kw
扭力 Torque / Nm	2.2 Nm
刀把 / 筒夾 Tool Holder / Collet	HSK32E / ISO25
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	∅100 mm
主軸全長 L / mm	397 mm
重量 Weight / Kg	13 Kg



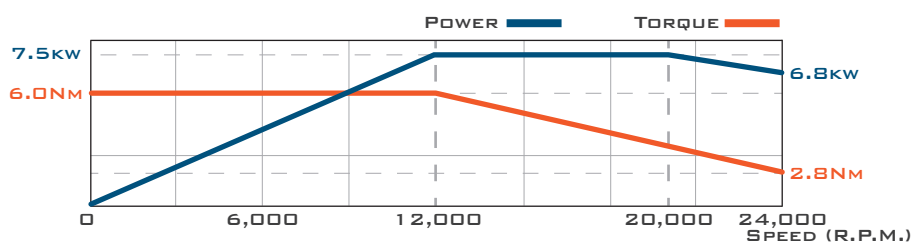
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA1275-24

## TORQUE AND POWER CURVE

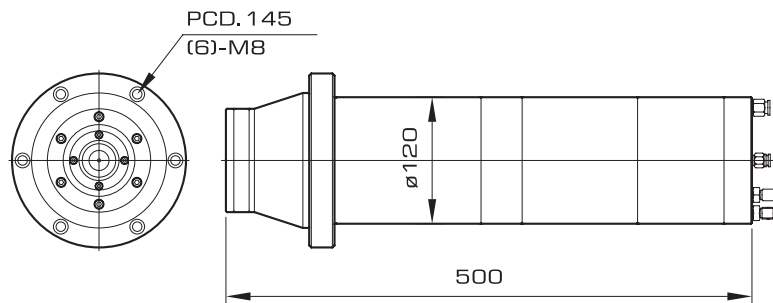


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	6,000~24,000 rpm
頻率 Frequency / Hz	800 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	7.5 Kw
扭力 Torque / Nm	6.0 Nm
刀把 / 筒夾 Tool Holder / Collet	BT30 / BTT30
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	120 mm
主軸全長 L / mm	478 mm
重量 Weight / Kg	29 Kg

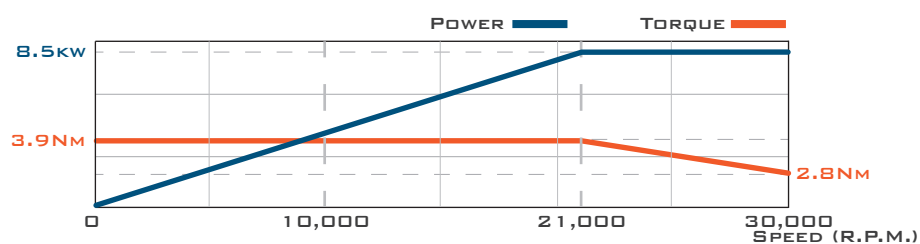
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA1285-30

## TORQUE AND POWER CURVE

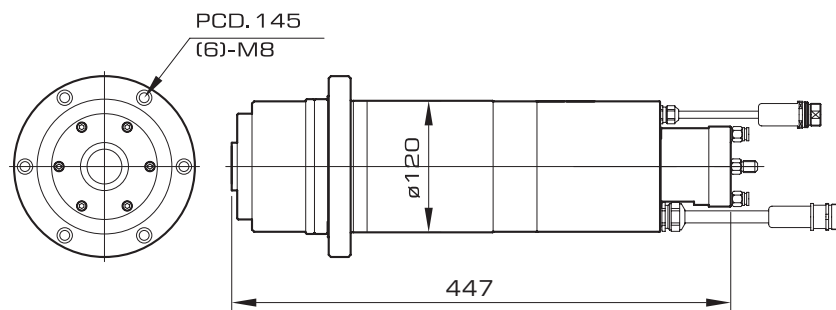


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	8.5 Kw
扭力 Torque / Nm	3.9 Nm
刀把 / 筒夾 Tool Holder / Collet	ISO30
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	φ120 mm
主軸全長 L / mm	500 mm
重量 Weight / Kg	29 Kg

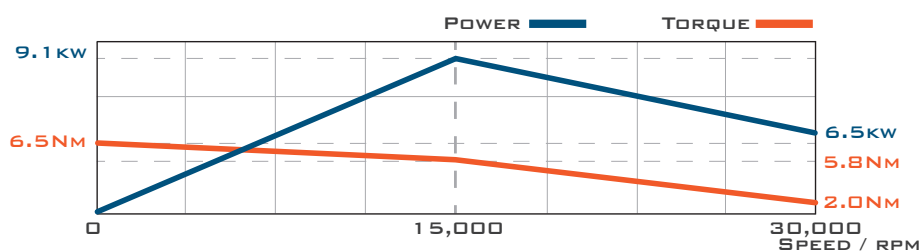
## ENGRAVING SPINDLE

With Automatic Tool Change



EIA1291-30

## TORQUE AND POWER CURVE



## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	7,500~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	9.1 Kw
扭力 Torque / Nm	6.5 Nm
刀把 / 筒夾 Tool Holder / Collet	HSK40E / BT30N
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø120 mm
主軸全長 L / mm	447 mm
重量 Weight / Kg	29 Kg





P

SER20





# EIM

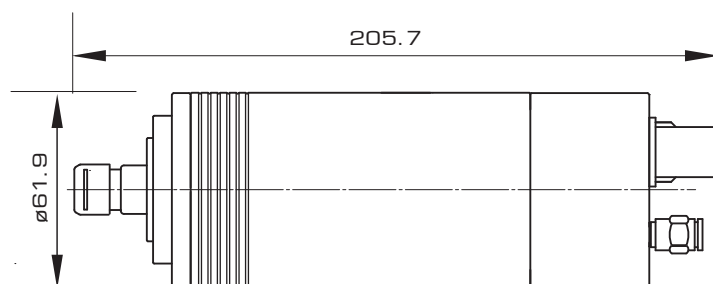
## **EIM SERIES**

**ENGRAVING SPINDLE**

With Manual Tool Change

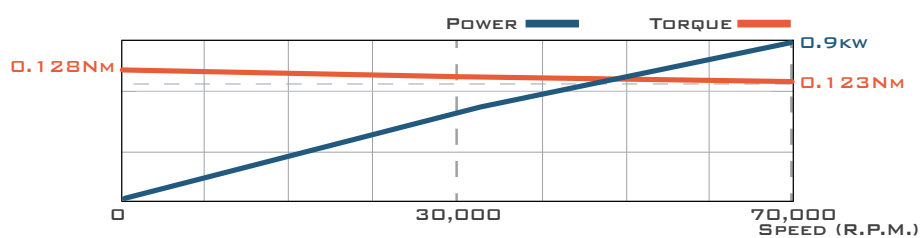
## ENGRAVING SPINDLE

With Manual Tool Change



EIM0607-70

## TORQUE AND POWER CURVE



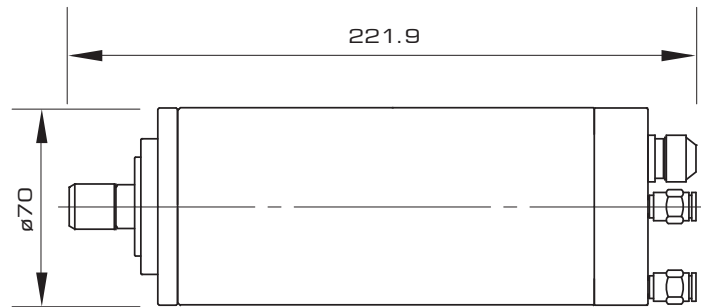
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / Vert
轉速 Speed / rpm	30,000~70,000 rpm
頻率 Frequency / Hz	1,167 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 V
功率 Power / KW	0.9 Kw
扭力 Torque / Nm	0.128 Nm
刀把 / 筒夾 Tool Holder / Collet	ER11MS
刀具夾持柄 Tool dia / mm	ø0.6-ø7.0
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø61.9 mm
主軸全長 L / mm	205.7 mm
重量 Weight / Kg	2.6 Kg



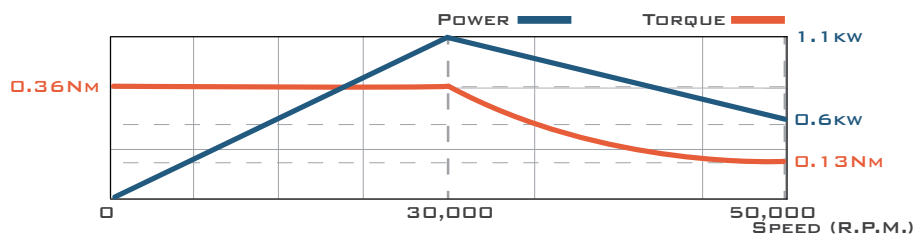
## ENGRAVING SPINDLE

With Manual Tool Change



EIM0711-50

## TORQUE AND POWER CURVE

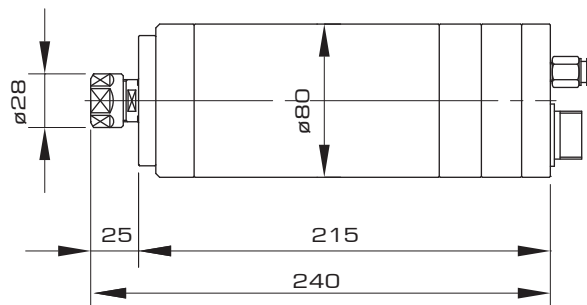


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / Vert
轉速 Speed / rpm	15,000~50,000 rpm
頻率 Frequency / Hz	1,666 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	1.1Kw
扭力 Torque / Nm	0.36 Nm
刀把 / 筒夾 Tool Holder / Collet	ER11MS
刀具夾持柄 Tool dia / mm	ø0.6-ø7.0
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø70 mm
主軸全長 L / mm	221.9 mm
重量 Weight / Kg	4.5 Kg

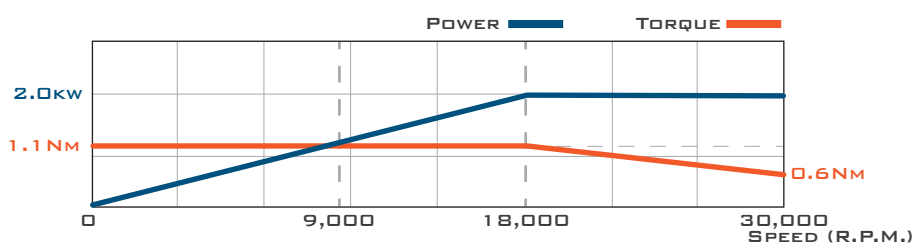
## ENGRAVING SPINDLE

With Manual Tool Change



EIM0820-30

## TORQUE AND POWER CURVE

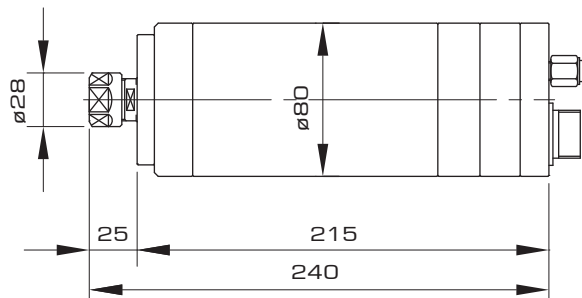


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	2.0 Kw
扭力 Torque / Nm	1.1 Nm
刀把 / 筒夾 Tool Holder / Collet	ER16
刀具夾持柄 Tool dia / mm	ø1-ø10
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø80 mm
主軸全長 L / mm	240 mm
重量 Weight / Kg	9 Kg

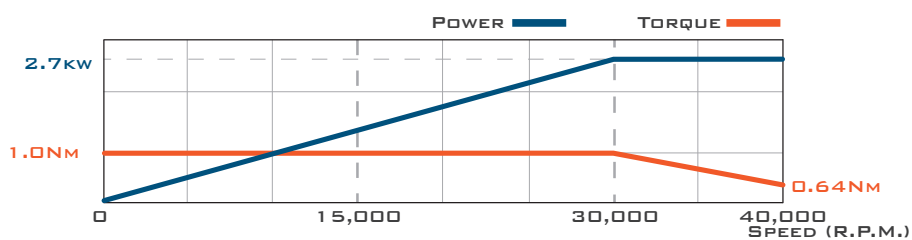
## ENGRAVING SPINDLE

With Manual Tool Change



EIM0827-40

## TORQUE AND POWER CURVE



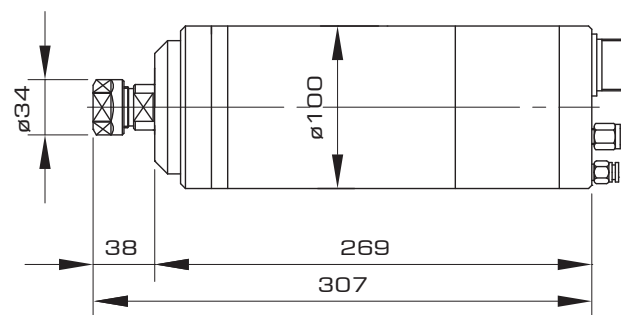
## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	15,000~40,000 rpm
頻率 Frequency / Hz	1,333 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	2.7 Kw
扭力 Torque / Nm	1.0 Nm
刀把 / 筒夾 Tool Holder / Collet	ER16
刀具夾持柄 Tool dia / mm	ø1-ø10
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	ø80 mm
主軸全長 L / mm	240 mm
重量 Weight / Kg	9 Kg



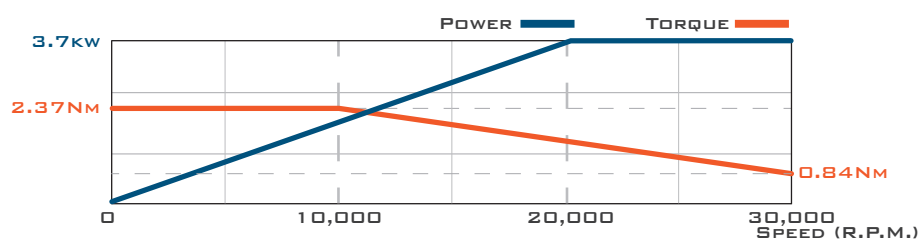
## ENGRAVING SPINDLE

With Manual Tool Change



EIM1037-30

## TORQUE AND POWER CURVE

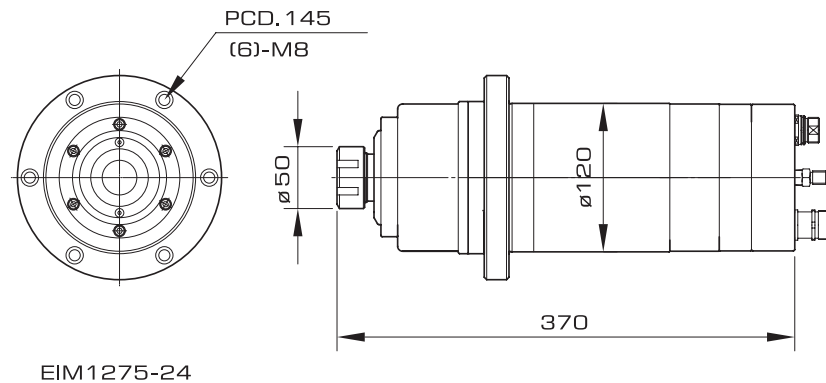


## SPECIFICATIONS

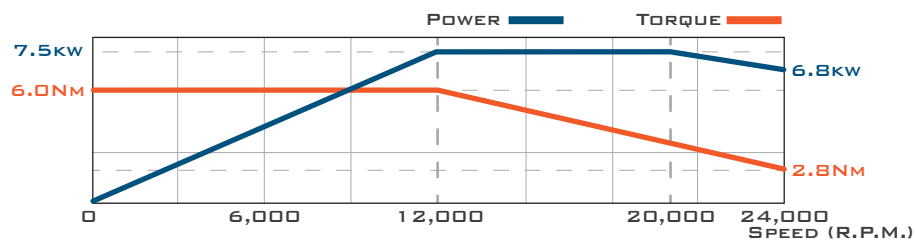
項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	10,000~30,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	3.7 Kw
扭力 Torque / Nm	2.3 Nm
刀把 / 筒夾 Tool Holder / Collet	ER20
刀具夾持柄 Tool dia / mm	Ø1-Ø13
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	Ø100 mm
主軸全長 L / mm	307 mm
重量 Weight / Kg	13.5 Kg

## ENGRAVING SPINDLE

With Manual Tool Change



## TORQUE AND POWER CURVE



## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	6,000~24,000 rpm
頻率 Frequency / Hz	800 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	380 V
功率 Power / KW	7.5 Kw
扭力 Torque / Nm	6.0 Nm
刀把 / 筒夾 Tool Holder / Collet	ER32
刀具夾持柄 Tool dia / mm	Ø1-Ø20
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	Ø120 mm
主軸全長 L / mm	370 mm
重量 Weight / Kg	25 Kg

PARFAITE

 PARFAITE

E0736V-15

380V 12A 4.1KW/S6

10A 3.6KW/S1

IP 54 50HZ 954 ~ 15000RPM

S/N:06112001-A





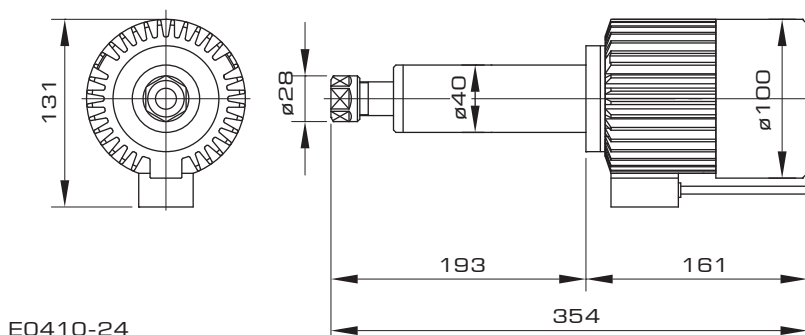


# ET TYPE SERIES

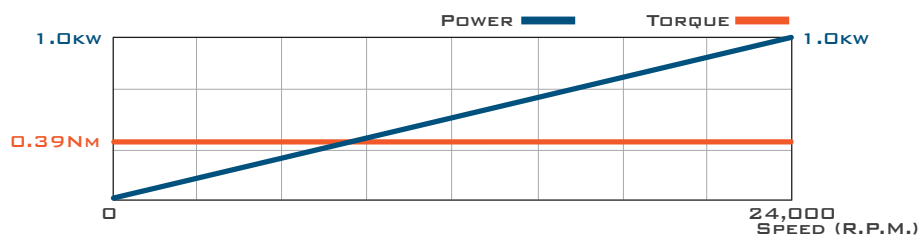
PRECISION ELECTRO SPINDLE

## PRECISION ELECTRO SPINDLE

(Air Cooling)



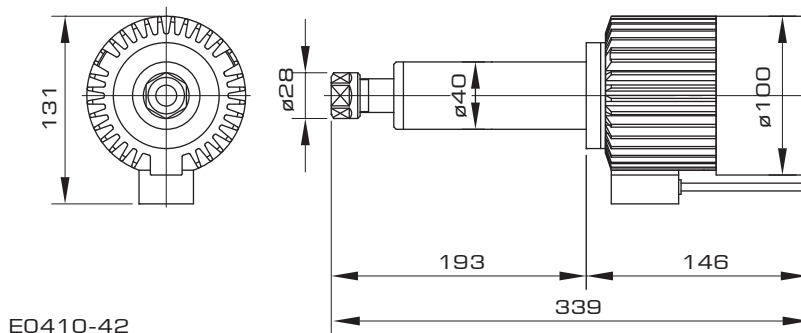
### TORQUE AND POWER CURVE



### SPECIFICATIONS

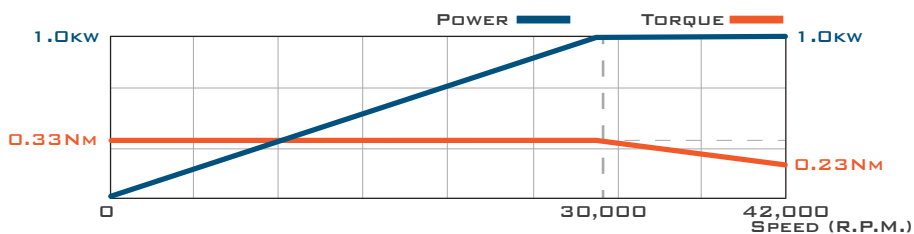
項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	12,000~24,000 rpm
頻率 Frequency / Hz	400 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 V
功率 Power / KW	1.0 Kw
扭力 Torque / Nm	0.39 Nm
刀把 / 筒夾 Tool Holder / Collet	ER16
刀具夾持柄 Tool dia / mm	Ø1-Ø10
冷卻方式 Cooling Type	風冷 (獨立風扇式) Air (Individual Fan Cooling)
主體外徑 D / mm	Ø40 mm
主軸全長 L / mm	354 mm
重量 Weight / Kg	5 Kg

### PRECISION ELECTRO SPINDLE (Air Cooling)



EO410-42

#### TORQUE AND POWER CURVE



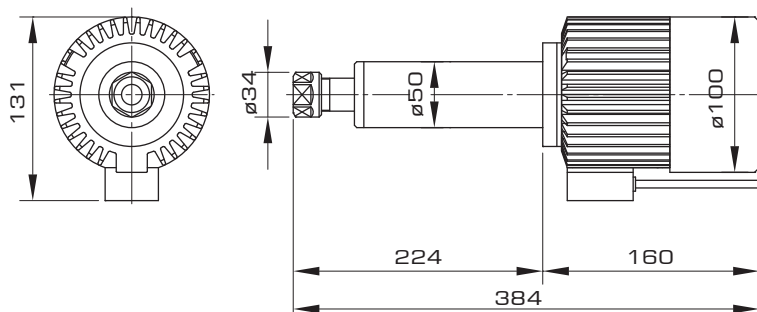
#### SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	15,000~42,000 rpm
頻率 Frequency / Hz	700 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 V
功率 Power / KW	1.0 Kw
扭力 Torque / Nm	0.33 Nm
刀把 / 筒夾 Tool Holder / Collet	ER16
刀具夾持柄 Tool dia / mm	ø1-ø10
冷卻方式 Cooling Type	風冷 (獨立風扇式) Air (Individual Fan Cooling)
主體外徑 D / mm	ø40 mm
主軸全長 L / mm	339 mm
重量 Weight / Kg	4.5 Kg



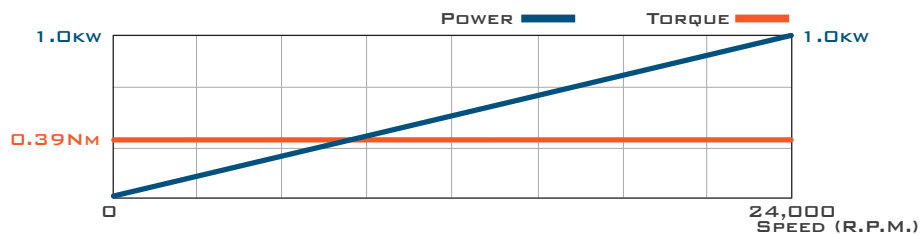
## PRECISION ELECTRO SPINDLE

(Air Cooling)



E0510-24

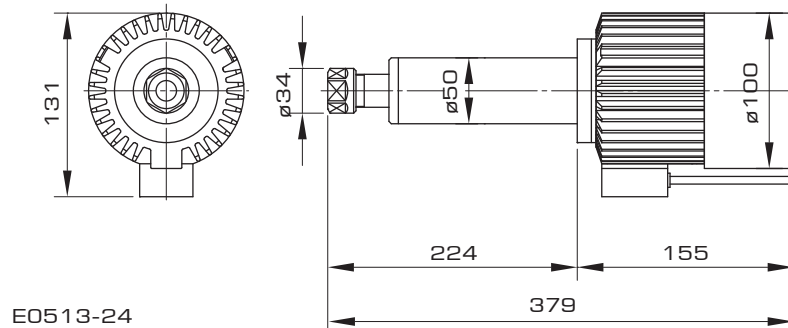
### TORQUE AND POWER CURVE



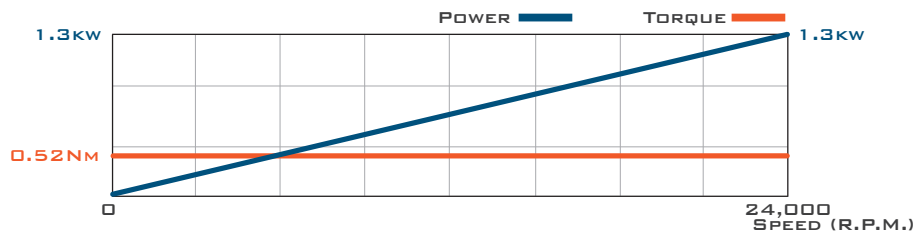
### SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	12,000~24,000 rpm
頻率 Frequency / Hz	400 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	1.0 Kw
扭力 Torque / Nm	0.39 Nm
刀把 / 筒夾 Tool Holder / Collet	ER20
刀具夾持柄 Tool dia / mm	Ø1-Ø13
冷卻方式 Cooling Type	風冷 (獨立風扇式) Air (Individual Fan Cooling)
主體外徑 D / mm	Ø50 mm
主軸全長 L / mm	384 mm
重量 Weight / Kg	6 Kg

## PRECISION ELECTRO SPINDLE (Air Cooling)



### TORQUE AND POWER CURVE

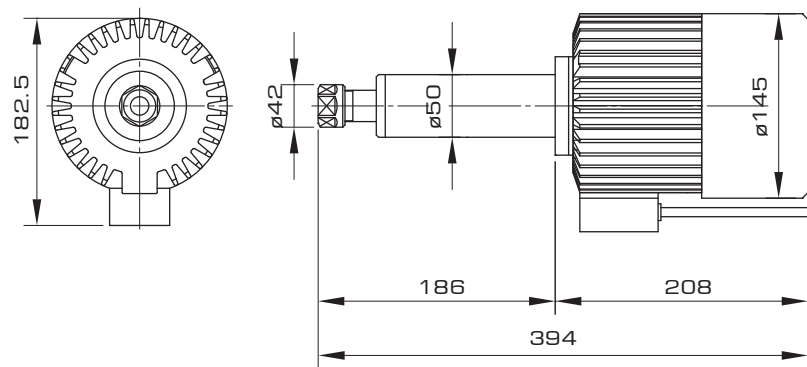


### SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	12,000~24,000 rpm
頻率 Frequency / Hz	400 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 V
功率 Power / KW	1.3 Kw
扭力 Torque / Nm	0.52 Nm
刀把 / 筒夾 Tool Holder / Collet	ER20
刀具夾持柄 Tool dia / mm	Ø1-Ø13
冷卻方式 Cooling Type	風冷 (直結葉片式) Air (Direct Coupled Blade Air Cooling)
主體外徑 D / mm	Ø50 mm
主軸全長 L / mm	379 mm
重量 Weight / Kg	6 Kg

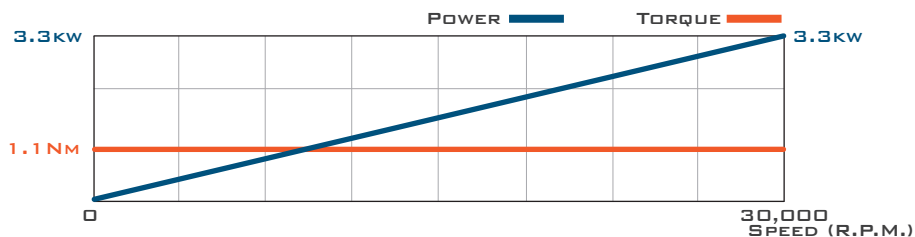
## PRECISION ELECTRO SPINDLE

(Air Cooling)



E0533-30

### TORQUE AND POWER CURVE

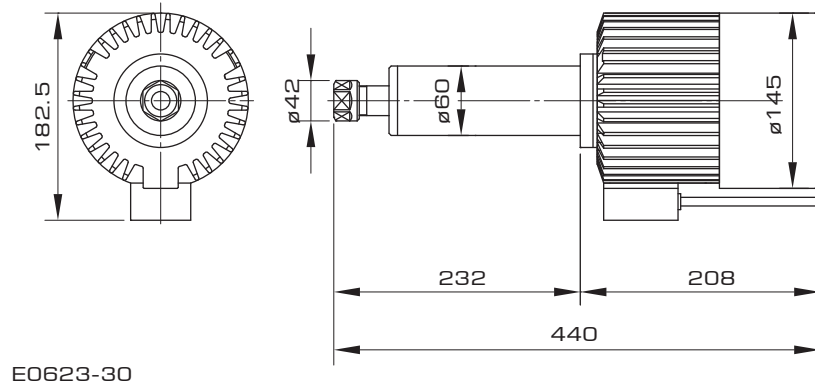


### SPECIFICATIONS

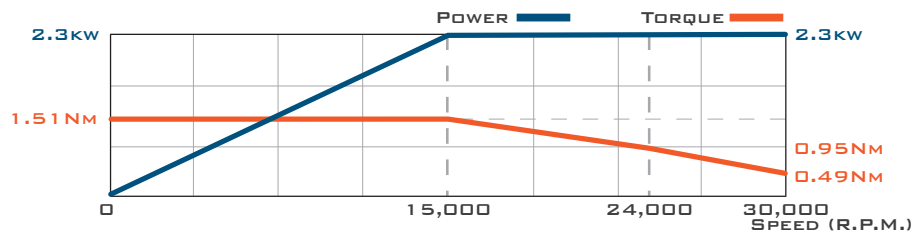
項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	15,000~30,000 rpm
頻率 Frequency / Hz	500 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 V
功率 Power / KW	3.3 Kw
扭力 Torque / Nm	1.1 Nm
刀把 / 筒夾 Tool Holder / Collet	ER25
刀具夾持柄 Tool dia / mm	ø1-ø16
冷卻方式 Cooling Type	風冷 (獨立風扇式) Air (Individual Fan Cooling)
主體外徑 D / mm	ø50 mm
主軸全長 L / mm	394 mm
重量 Weight / Kg	10 Kg



### PRECISION ELECTRO SPINDLE (Air Cooling)



#### TORQUE AND POWER CURVE

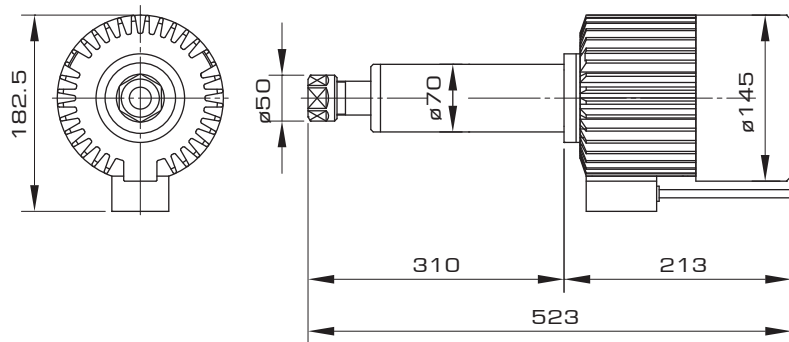


#### SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	7,500~30,000 rpm
頻率 Frequency / Hz	500 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	2.3 Kw
扭力 Torque / Nm	1.51 Nm
刀把 / 筒夾 Tool Holder / Collet	ER25
刀具夾持柄 Tool dia / mm	Ø1-Ø16
冷卻方式 Cooling Type	風冷 (直結葉片式) Air (Direct Coupled Blade Air Cooling)
主體外徑 D / mm	Ø60 mm
主軸全長 L / mm	440 mm
重量 Weight / Kg	13.5 Kg

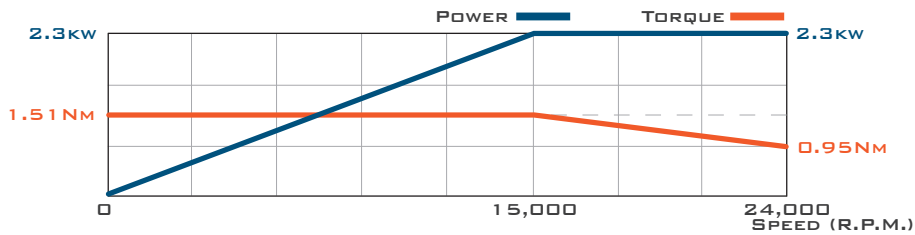
## PRECISION ELECTRO SPINDLE

(Air Cooling)



E0723-24

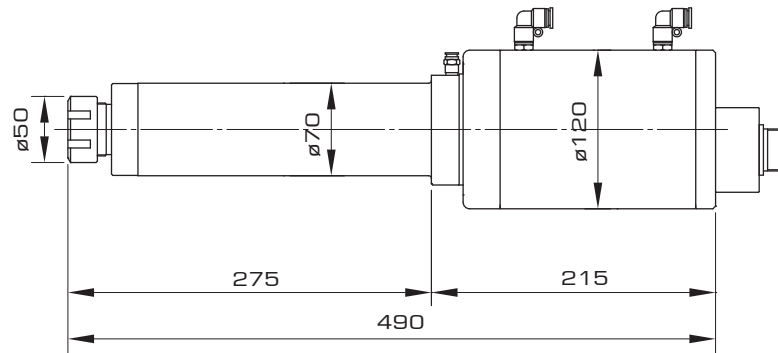
### TORQUE AND POWER CURVE



### SPECIFICATIONS

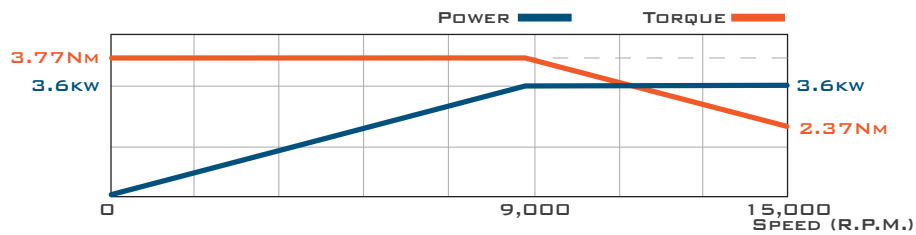
項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	7,500~24,000 rpm
頻率 Frequency / Hz	400 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	2.3 Kw
扭力 Torque / Nm	1.51 Nm
刀把 / 筒夾 Tool Holder / Collet	ER32
刀具夾持柄 Tool dia / mm	Ø1-Ø20
冷卻方式 Cooling Type	風冷 (直結葉片式) Air (Direct Coupled Blade Air Cooling)
主體外徑 D / mm	Ø70 mm
主軸全長 L / mm	523 mm
重量 Weight / Kg	16 Kg

### PRECISION ELECTRO SPINDLE (Water Cooling)



E0736W-18

#### TORQUE AND POWER CURVE



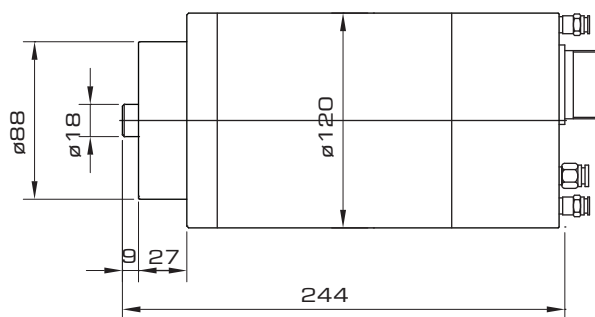
#### SPECIFICATIONS

項目	內容
安裝方式 Installation Position	立式 / 臥式 Vert / Horiz
轉速 Speed / rpm	4,000~15,000 rpm
頻率 Frequency / Hz	600 Hz
軸承 Ball Type	鋼珠 Steel Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease
電壓 Voltage / V	220 / 380 V
功率 Power / KW	3.6 Kw
扭力 Torque / Nm	3.77 Nm
刀把 / 筒夾 Tool Holder / Collet	ER32
刀具夾持柄 Tool dia / mm	Ø1-Ø20
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	Ø70 mm
主軸全長 L / mm	490 mm
重量 Weight / Kg	17 Kg



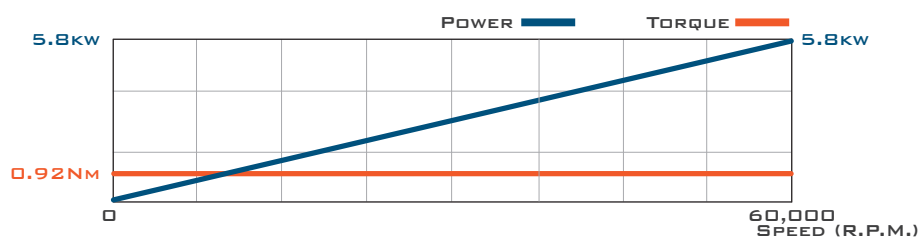
## INTERNAL GRINDING SPINDLE

High Frequency



G1205-60

## TORQUE AND POWER CURVE

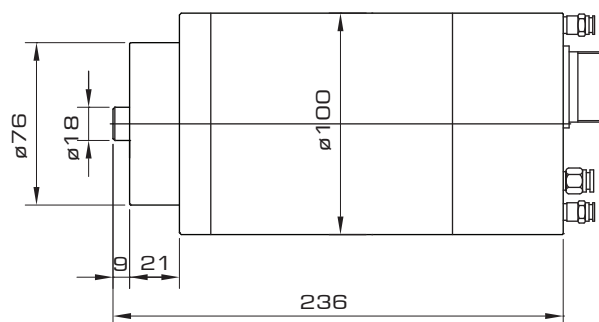


## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	臥式 Horiz
轉速 Speed / rpm	30,000~60,000 rpm
頻率 Frequency / Hz	1,000 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	油氣 Oil-Air
電壓 Voltage / V	220 V
功率 Power / KW	5.8 Kw
扭力 Torque / Nm	0.92 Nm
刀把 / 筒夾 Tool Holder / Collet	Ø10.5
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	Ø120 mm
主軸全長 L / mm	244 mm
重量 Weight / Kg	14 Kg

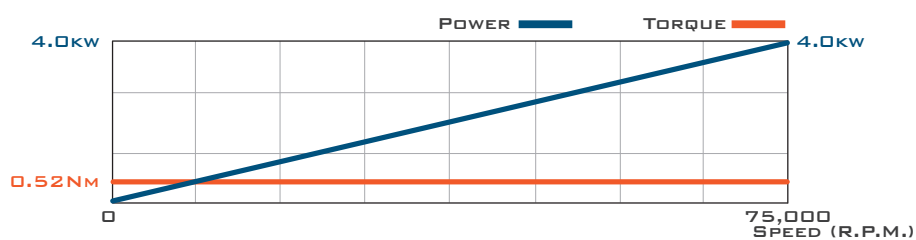
## INTERNAL GRINDING SPINDLE

High Frequency



G1004-75

## TORQUE AND POWER CURVE



## SPECIFICATIONS

項目	內容
安裝方式 Installation Position	臥式 Horiz
轉速 Speed / rpm	37,500~75,000 rpm
頻率 Frequency / Hz	1,250 Hz
軸承 Ball Type	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	油氣 Oil-Air
電壓 Voltage / V	220 V
功率 Power / KW	4.0 Kw
扭力 Torque / Nm	0.52 Nm
刀把 / 筒夾 Tool Holder / Collet	Ø9
冷卻方式 Cooling Type	水冷 Water
主體外徑 D / mm	Ø100 mm
主軸全長 L / mm	236 mm
重量 Weight / Kg	10 Kg



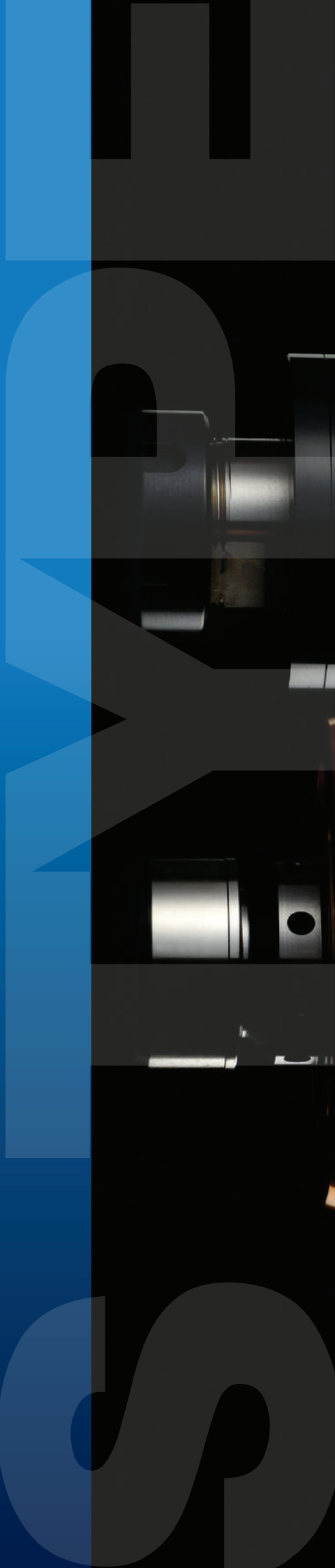
PARFAITTE

S 1130-30

3.0 KW 30,000 RPM

20 VAC 11.4 A 1000 HZ

S/N : 12041201-15



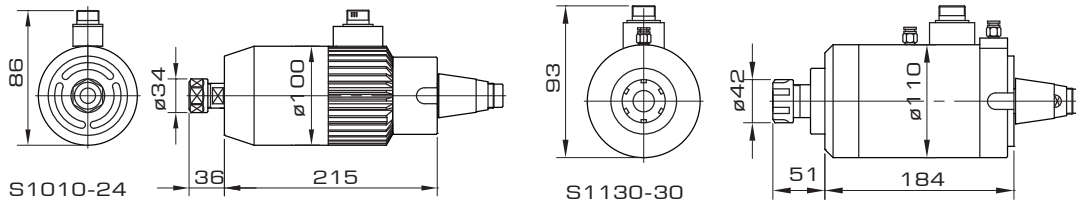




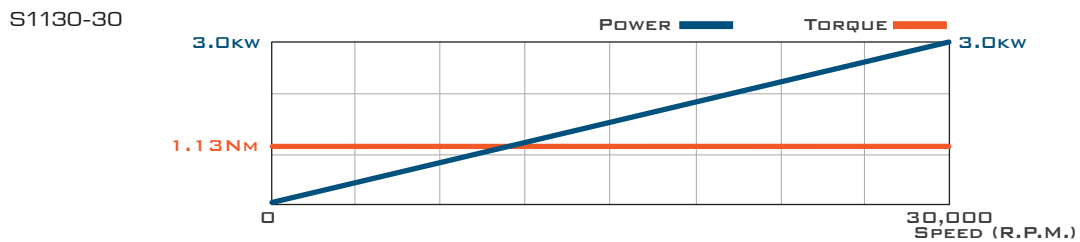
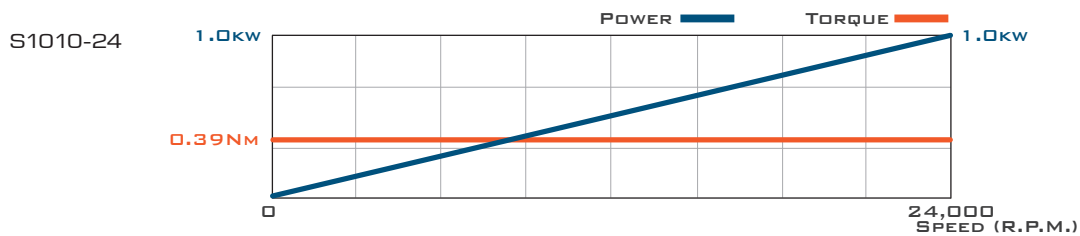
# S SERIES

SPINDLE SPEEDERS

SPINDLE SPEEDERS

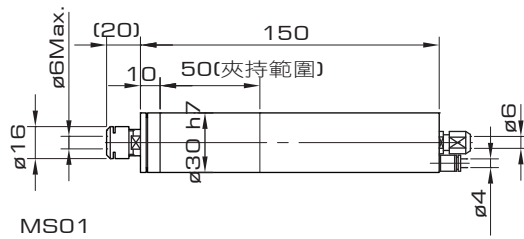


## TORQUE AND POWER CURVE

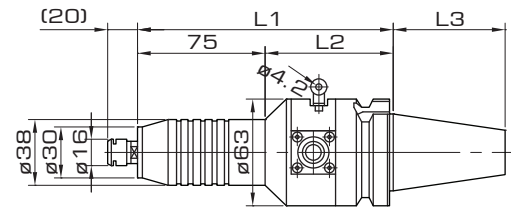


## SPECIFICATIONS

項目	S1010-24	S1130-30
安裝方式 Installation Position	立式 Vert	臥式 / 立式 Horiz / Vert
轉速 Speed / rpm	12,000~24,000 rpm	15,000~30,000 rpm
頻率 Frequency / Hz	400 Hz	1,000 Hz
軸承 Ball Type	鋼珠 Steel Ball	陶瓷珠 Ceramic Ball
軸承潤滑方式 Bearing Lubrication	滑脂 Grease	滑脂 Grease
電壓 Voltage / V	220 V	220 V
功率 Power / KW	1.0 Kw	3.0 Kw
扭力 Torque / Nm	0.39 Nm	1.13 Nm
刀把 / 筒夾 Tool Holder / Collet	ER20	ER25
刀具夾持柄 Tool dia / mm	φ1-φ13	φ1-φ16
冷卻方式 Cooling Type	風冷 Fan	水冷 Water
主體外徑 D / mm	φ100 mm	φ110 mm
主軸全長 L / mm	251 mm	235 mm
重量 Weight / Kg	• 7 Kg (BT40) • 10 Kg (BT50)	• 12 Kg (BT40) • 15 Kg (BT50)

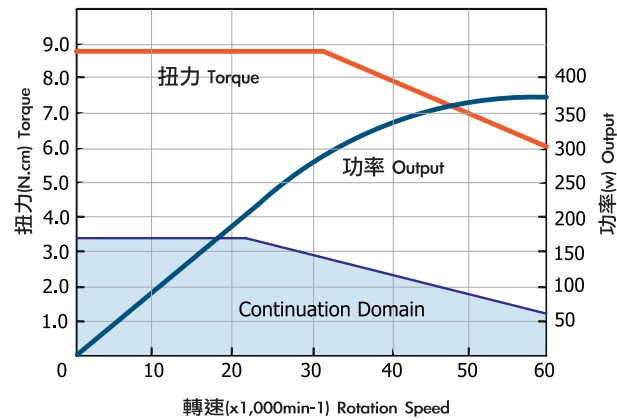


MS01



MZ01

### TORQUE AND POWER CURVE



### SPECIFICATIONS

		直柄式主軸 Straight Spindle	錐柄主軸Taperd Shank Spindle (其他柄部規格請洽詢本公司)				
訂購編號 Order No.		MS01	MZ01-BT30	MZ01-BT40	MZ01-BT50	MZ01-ST32	MZ01-HSK63A
訊號連接線 Connection		MKD-40	MKD-40				
外觀尺寸 Size	L1	150	165	150	160	172	184
	L2	-	90	75	85	97	109
	L3	-	48.4	65.4	101.8	80	32
重量Weight		600g	2.1kg	2.2kg	4.8kg	2.8Kg	2.7Kg
馬達種類 Motor Type		無刷式馬達Brushless Motor					
筒夾規格/夾持範圍 Collet/Clamping Range		ER11/ø0.6~ø7.0					
最大出力 Power		370W					
轉速 rpm		1,000~60,000 rpm					
扭力 Torque		8.82N.cm(900g.cm)					
主軸精度 Precision		1μm以下(主軸錐柄位置) under 1μm at taper shank					
軸承種類 Bearing		陶瓷珠Ceramic Ball					
潤滑方式 Bearing Lubrication		滑脂Grease					
主軸靜剛性		5.8μm/5kgf時					
動態主軸熱變形量		徑向變形2.3μm，軸向變形10.2μm					
冷卻方式 Cooling Type		強制空冷					
推薦空壓壓力 Recommended Air Pressure		0.25~0.5MPa(Max.0.9MPa)					
空氣流量		約30cc/min(於空氣壓力0.25MPa)					

電動增速器全套購買  
之標準附件

- ▶ 主軸x1組
- ▶ 變頻器x1組
- ▶ 訊號連接線(4m)x1
- ▶ 空壓三點組合x1組





# TOOL HOLDERS

## TOOL HOLDERS

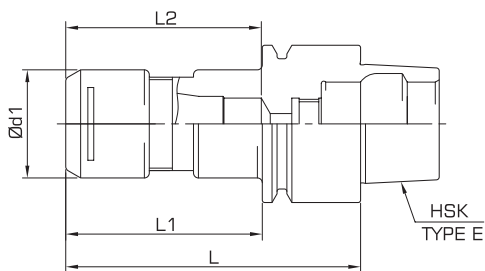
COLLET CHUCK



# HSK-E THER小徑刀把

## THER SLIM COLLET CHUCK

TOOL HOLDERS  
HSK-E  
THER SLIM  
Collet Chuck



### RUN-OUT PRECISION



### BALANCED GRADE




### APPLICATION



鑽孔 DRILLING 銓孔 REAMING 銑削 ENDMILLING 攻牙 TAPPING 小徑加工 MINI DIAMETER

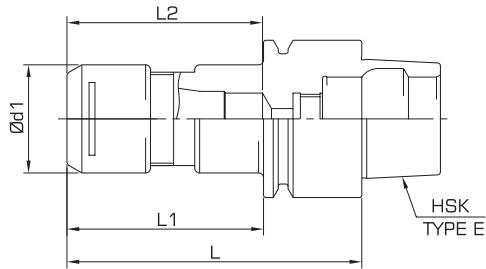
### SPECIFICATIONS

訂購編號 ORDER NO		夾持範圍 RANGE Ød	Ød1	L	L1	刀具 夾持 深度 L2	螺帽 Nut	筒夾 Collet	扳手 Wrench
HSK25E	THER16-043	0.6~10.0	22	43	33	max32		 page. P. 79	
HSK32E	THER16-060	0.6~10.0	22	76	40	max40	CAP-THER16	ER16-HP	PHS-THER16-RO22

• With 3µ HP Grade Collet    • 需配合3µ HP筒夾

# HSK-E ER高速小徑刀把

## ER HIGH SPEED SLIM COLLET CHUCK



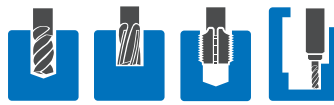
HSK-E  
ER High Speed Slim  
Collet Chuck

TOOL  
HOLDERS

### BALANCED GRADE



### APPLICATION



鑽孔 銑削 攻牙 小徑加工  
DRILLING ENDMILLING TAPPING MINI DIAMETER

### SPECIFICATIONS

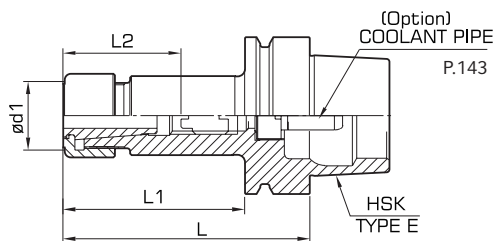
訂購編號 ORDER NO		夾持範圍 RANGE $\varnothing d$	$\varnothing d1$	L	L1	刀具 夾持 深度 L2	螺帽 Nut	筒夾 Collet	扳手 Wrench
								 page. P. 79	
HSK25E	ER16-043MS	0.6~10.0	22	43	33	max32	CAP-ER16MS	ER16	PHS-ER16MS
HSK32E	ER16-060MS	0.6~10.0	22	60	40	max40	CAP-ER16MS	ER16	PHS-ER16MS



# HSK-E 筒夾式高速刀把

## PFK HIGH SPEED COLLET CHUCK

**HSK-E**  
 PFK High Speed Collet Chuck  
 TOOL HOLDERS



- INCLUDING BALANCING
- 附動平衡

### RUN-OUT PRECISION



### BALANCED GRADE



### APPLICATION

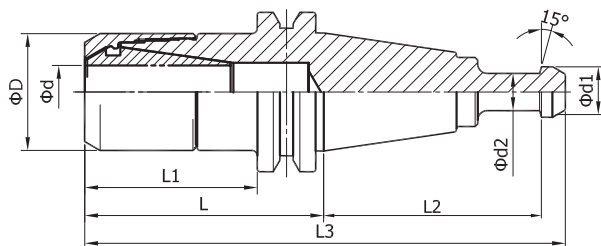


### SPECIFICATIONS

訂購編號 ORDER NO	夾持範圍 RANGE ød	ød1	L	L1	刀具 夾持 深度 L3	螺帽 Nut	調整螺絲 Screw	筒夾 Collet	扳手 Wrench	
								 page. P.80		
HSK40E	PFK10-080	1.75~10.0	27.5	80	-	max58.5	CAP-PFK10S	-	SK10P	PHS-R275
	PFK16-080	2.75~16.0	40	80	-	max49.5	CAP-PFK16S	-	SK16P	PHS-HER25-RO40
HSK50E	PFK10-100	1.75~10.0	27.5	100	-	30~40	CAP-PFK10S	PFK-M12	SK10P	PHS-R275
	PFK16-100	2.75~16.0	40	100	-	40~48	CAP-PFK16S	PFK-M12	SK16P	PHS-HER25-RO40

- With 3µ P Grade Collet
- 需配合3µ P 筒夾

## 15T / S20T 筒夾式高速刀把

HIGH SPEED COLLET  
CHUCK

- INCLUDING BALANCING
- 附動平衡

## RUN-OUT PRECISION



## BALANCED GRADE



## APPLICATION



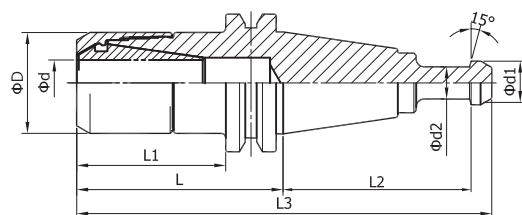
## SPECIFICATIONS

訂購編號 ORDER NO.		夾持 範圍 Range $\phi d$	$\phi$ D	$\phi$ d1	$\phi$ d2	L	L1	L2	L3	螺帽 NUT	筒夾 Collet	扳手 Wrench
15TPN	HER11-045M	1.0~7.0	16	7	5	45	32.5	38.5	87			
										CAP-HER11M	ER11-HP	PHS-HER11M-DRO16 + HS-TW-712-DW
S20TPN	HER16-045M	1.0~10.0	22	9.5	7	45	32.5	41	90.5			
										CAP-HER16M	ER16-HP	PHS-HER16M-DRO24 + PHS-TW-712-3DW

- With 3μ HP Grade Collet
- 需配合3μ HP筒夾

# ISO 10P 筒夾式高速小徑刀把

## HIGH SPEED SLIM COLLET CHUCK

High Speed Slim Type  
Collet Chuck  
ISO 10PTOOL  
HOLDERS

## RUN-OUT PRECISION



## BALANCED GRADE






## APPLICATION

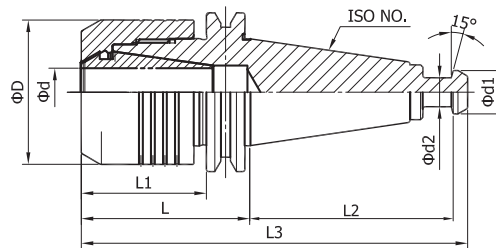


鑽孔 銓孔 銑削 攻牙  
DRILLING REAMING ENDMILLING TAPPING

## SPECIFICATIONS

訂購編號 ORDER NO.		夾持 範圍 Range $\phi d$	$\phi D$	$\phi d1$	$\phi d2$	L	L1	L2	L3	螺帽 NUT	筒夾 Collet	扳手 Wrench
ISO10P	HER11-030M	1.0~7.0	16	6.3	4.2	30	24.5	29.5	62			
										CAP-HER11M	ER11-HP	PHS-HER11M-DRO16 + PHS-TW-712-2DW

- With 3μ HP Grade Collet
- 需配合3μ HP筒夾



## RUN-OUT PRECISION



## BALANCED GRADE






## APPLICATION



鑽孔 銜孔 銑削 攻牙  
DRILLING REAMING ENDMILLING TAPPING

## SPECIFICATIONS

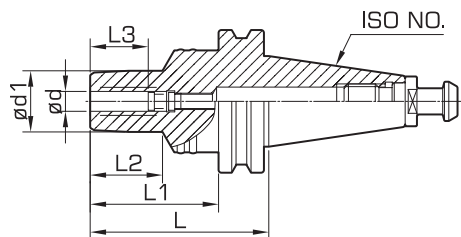
訂購編號 ORDER NO.		夾持 範圍 Range ød	ø D	ø d1	ø d2	L	L1	L2	L3	螺帽 NUT	筒夾 Collet	扳手 Wrench
ISO20P	HER16-035	1.0~10.0	30	9	6	35	26	42.3	80.3			
ISO25P	HER16-035	1.0~10.0	30	10	7	35	26.2	51.3	90.7	CAP-HER16	ER16-HP	PHS-R300

- With 3µ HP Grade Collet
- 需配合3µ HP筒夾
- 筒夾夾持為一對一整數值



# ISO ISO油壓刀把 HYDRAULIC CHUCK

ISO Hydraulic Chuck  
TOOL HOLDERS



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

### RUN-OUT PRECISION





### BALANCED GRADE



### APPLICATION



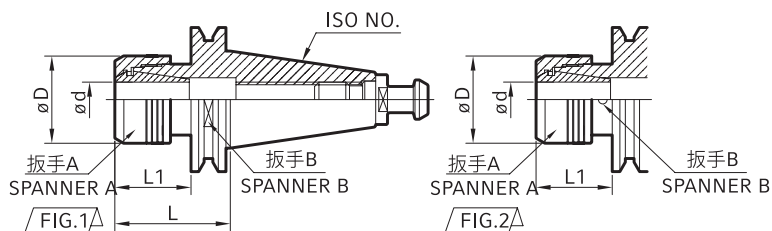
### SPECIFICATIONS

訂購編號 ORDER NO.	$\phi d$	$\phi d_1$	L	L1	L2	刀具夾持 深度 Tool Clamping depth L3	拉桿 Pull Stud	調整螺絲 Screw
								
ISO30	HY06-060	6	26	60	24.5	31~36	PI30T-1	HY06-M5
	HY08-060	8	28		25.5			HY08-M6
	HY10-075	10	30	75	35.5	35~40		HY08-M6
	HY12-075	12	32		40	39~45		

- Direct Clamping / Dia Tolerance of Tooling Must Be h6
- 直接夾持精度 / 刀具柄徑公差h6

# ISO HER筒夾刀把

## HER COLLET CHUCK



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

ISO  
HER Collet Chuck  
TOOL HOLDERS

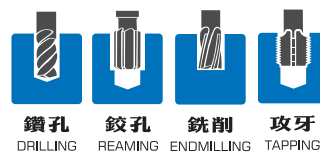
**RUN-OUT PRECISION**



**BALANCED GRADE**



**APPLICATION**



**SPECIFICATIONS**

訂購編號 ORDER NO	FIG	夾持 範圍 RANGE ød	øD	L	L1	拉桿 Pull Stud	螺帽 Nut	筒夾 Collet	扳手A Wrench	扳手B Wrench	
ISO20	HER16-035	1	1.0~10.0	30	35	26	PI20T-1	CAP-HER16	ER16-HP	PHS-R300	PHS-ISO20
ISO25	HER16-035	1	1.0~10.0	30		26.2	PI25T-1	CAP-HER16	ER16-HP	PHS-R300	PHS-ISO25
ISO30	HER16-060	1	1.0~10.0	30	60	40.9	PI30T-1	CAP-HER16	ER16-HP	PHS-R300	PHS-HER16
	HER20-060	1	1.0~13.0	32				CAP-HER20	ER20-HP	PHS-R320	PHS-HER20
	HER25-060	1	1.0~16.0	40				CAP-HER25	ER25-HP	PHS-HER25	PHS-HER25

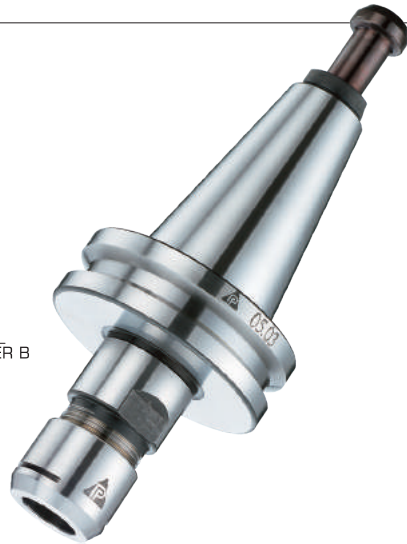
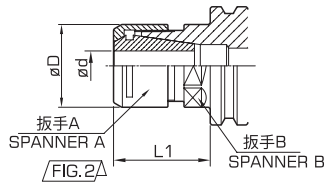
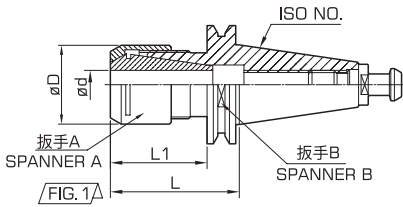
- With 3µ HP Grade Collet
- 需配合3µ HP筒夾
- 筒夾夾持為一對一整數值

# ISO ER高速小徑刀把

## ER HIGH SPEED SLIM CHUCK

ISO  
ER High Speed Slim  
Chuck

TOOL  
HOLDERS



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

### BALANCED GRADE



### APPLICATION



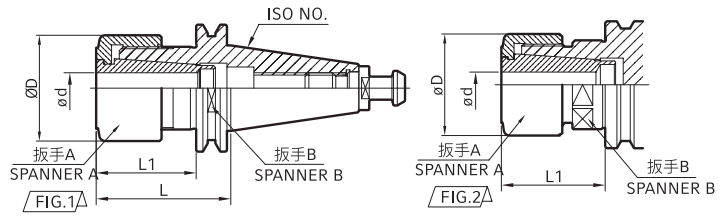
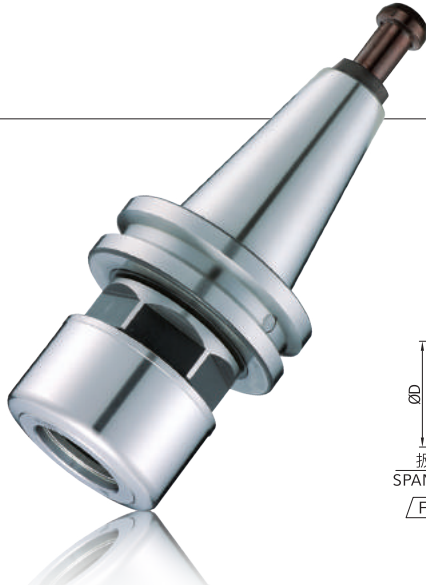
### SPECIFICATIONS

訂購編號 ORDER NO	FIG	夾持 範圍 RANGE ød	øD	L	L1	拉桿 Pull Stud	螺帽 Nut	筒夾 Collet	扳手A Wrench	扳手B Wrench
ISO20	ER16-035MS	1	0.6~10.0	22	26	PI20T-1	CAP-ER16MS	ER16	PHS-ER16MS	PHS-ISO20
ISO25	ER16-035MS	1	0.6~10.0	22	35	PI25T-1	CAP-ER16MS	ER16	PHS-ER16MS	PHS-ISO20
	ER20-035MS	1	0.6~13.0	28	26.2		CAP-ER20MS	ER20	PHS-ER20MS	PHS-ISO25
ISO30	ER16-060MS	2	0.6~10.0	22	60	PI30T-1	CAP-ER16MS	ER16	PHS-ER16MS	開口扳手19 SPANNER 19
	ER25-060MS	2	0.6~16.0	35			CAP-ER25MS	ER25	PHS-ER25MS	PHS-ISO30

- Direct Clamping / Dia Tolerance of Tooling Must Be h6
- 直接夾持精度 / 刀具柄徑公差h6

# ISO PFK高速刀把

## PFK HIGH SPEED COLLET CHUCK



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

ISO  
PFK High Speed  
Collet Chuck  
TOOL  
HOLDERS

**RUN-OUT PRECISION**



**BALANCED GRADE**



**APPLICATION**



**SPECIFICATIONS**

訂購編號 ORDER NO	FIG	夾持 範圍 RANGE $\phi d$	$\phi D$	L	L1	拉桿 Pull Stud	螺帽 Nut	筒夾 Collet	扳手A Wrench	扳手B Wrench	
ISO20	PFK10-035S	1	1.75~10.0	27.5	35	26	PI20T-1	CAP-PFK10S	SK10P	PHS-PR275	PHS-ISO20
ISO25	PFK10-035S					26.2					PI25T-1
ISO30	PFK10-060S	1	1.75~10.0	27.5	60	40.9	PI30T-1	CAP-PFK16S	SK16P	PHS-HER25-RO40	開口扳手25.4 SPANNER 25.4
	PFK16-060S										2

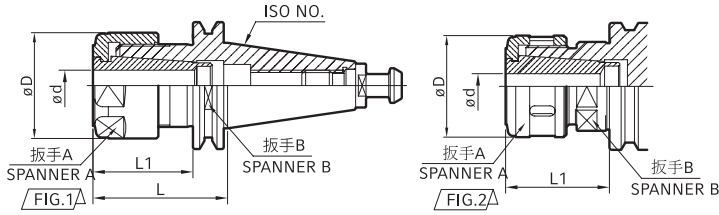
- With 3μ P Grade Collet
- 需配合3μ P 筒夾



# ISO PFK筒夾刀把

## PFK COLLET CHUCK

ISO  
PFK Collet Chuck  
TOOL HOLDERS



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

### RUN-OUT PRECISION



### BALANCED GRADE



### APPLICATION



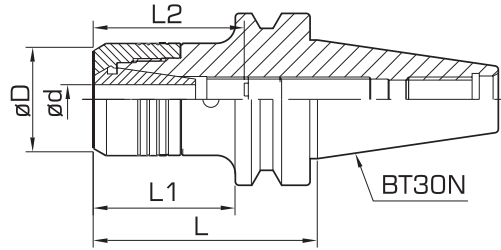
### SPECIFICATIONS

訂購編號 ORDER NO	FIG	夾持 範圍 RANGE ød	øD	L	L1	拉桿 Pull Stud	螺帽 Nut	筒夾 Collet	扳手A Wrench	扳手B Wrench
ISO20	PFK10-035	1	1.75~10.0	27.5	35	PI20T-1	CAP-PFK10	SK10P	PHS-PFK10	PHS-ISO20
ISO25	PFK10-035					PI25T-1				PHS-ISO25
ISO30	PFK10-060	1	1.75~10.0	27.5	60	PI30T-1	CAP-PFK16	SK16P	PHS-PFK16	開口扳手25.4 SPANNER 25.4
	PFK16-060	2	2.75~16.0	40						PHS-ISO30

- With 3µ P Grade Collet
- 需配合3µ P 筒夾

# BTN HER筒夾刀把

## HER COLLET CHUCK



- INCLUDING PULL STUD AND BALANCING
- 附拉桿、動平衡

BTN  
HER Collet Chuck  
TOOL  
HOLDERS

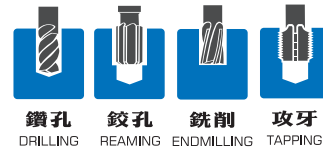
### RUN-OUT PRECISION







### BALANCED GRADE



### APPLICATION

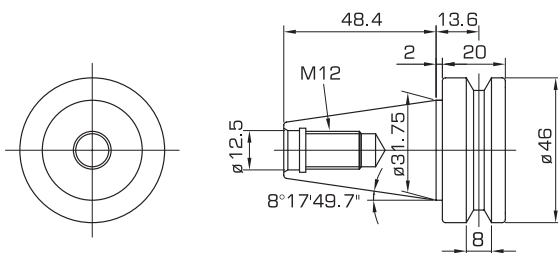


### SPECIFICATIONS

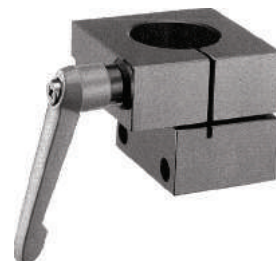
訂購編號 ORDER NO	夾持範圍 RANGE $\varnothing d$	$\varnothing D$	L	L1	刀具夾持深度 Clamp Clamping Depth L2	螺帽 Nut	調整螺絲 Screw	筒夾 Collet	扳手 Wrench
									
BT30N-HER16-060	1.0~10.0	30	60	38	29~58	CAP-HER16	ER-M11	ER16-HP	PHS-HER16-RO30
BT30N-HER20-060	1.0~13.0	32	60	38	32~65	CAP-HER20	ER-M14	ER20-HP	PHS-HER20-RO32
BT30N-HER25-060	1.0~16.0	40	60	38	35~58	CAP-HER25	ER-M18	ER25-HP	PHS-HER25-RO40

- With 3μ HP Grade Collet
- 需配合3μ HP筒夾
- 筒夾夾持為一對一整數值

### DIMENSION 錐柄尺寸



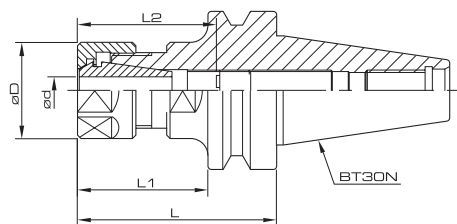
### LOCKING DEVICE 鎖刀座



# BTN ER筒夾刀把

## ER COLLET CHUCK

BTN  
ER Collet Chuck  
TOOL HOLDERS



### BALANCED GRADE



### APPLICATION



鑽孔  
DRILLING



銑削  
ENDMILLING



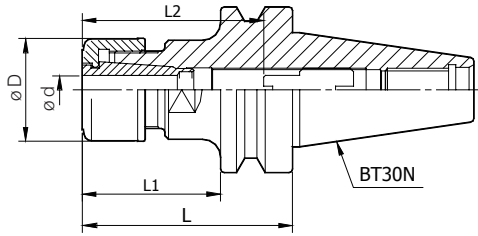
攻牙  
TAPPING

### SPECIFICATIONS

訂購編號 ORDER NO	夾持範圍 RANGE $\phi d$	$\phi D$	L	L1	刀具夾持深度 Clamp Clamping Depth L2	螺帽 Nut	調整螺絲 Screw	筒夾 Collet	扳手 Wrench
BT30N-ER16-060	0.6~10.0	28	60	38	29~58	CAP-ER16	ER-M11	ER16	PHS-ER16
BT30N-ER20-060	0.6~13.0	34	60	38	32~63	CAP-ER20	ER-M14	ER20	PHS-ER20
BT30N-ER25-075	0.6~16.0	42	75	53	35~73	CAP-ER25	ER-M18	ER25	PHS-ER25

# BTN PFK高速刀把

## PFK HIGH SPEED COLLET CHUCK



BTN  
PFK High Speed  
Collet Chuck  
TOOL  
HOLDERS

**RUN-OUT PRECISION**



**BALANCED GRADE**



**APPLICATION**



鑽孔  
DRILLING



銑削  
ENDMILLING



銚孔  
REAMING



攻牙  
TAPPING

**SPECIFICATIONS**

訂購編號 ORDER NO	夾持範圍 RANGE $\phi d$	$\phi D$	L	L1	刀具夾持深度 Tool Clamping Depth L2	螺帽 Nut	調整螺絲 Screw	筒夾 Collet	扳手 Wrench
BT30N-PFK10-060S	1.75~10.0	27.5	60	38	30~50				PHS-PR275
BT30N-PFK16-060S	2.75~16.0	40	60	38	40~54				PHS-HER25-RO40

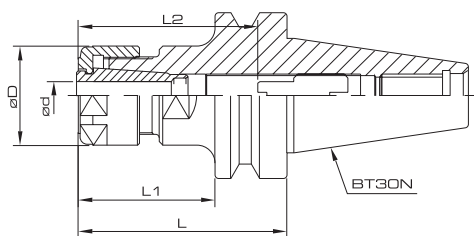
• With 3μ P Grade Collet      • 需配合3μ P筒夾



# BTN PFK筒夾刀把

## PFK COLLET CHUCK

BTN  
PFK Collet Chuck  
TOOL HOLDERS



### RUN-OUT PRECISION







### BALANCED GRADE



### APPLICATION



### SPECIFICATIONS

訂購編號 ORDER NO	夾持範圍 RANGE ød	øD	L	L1	刀具夾持深度 Tool Clamping Depth L2	螺帽 Nut	調整螺絲 Screw	筒夾 Collet	扳手 Wrench
									
BT30N-PFK10-060	1.75~10.0	27.5	60	38	30~50	CAP-PFK10	PFK-M12	SK10P	PHS-PFK10
BT30N-PFK16-060	2.75~16.0	40	60	38	40~54	CAP-PFK16	PFK-M12	SK16P	PHS-PFK16

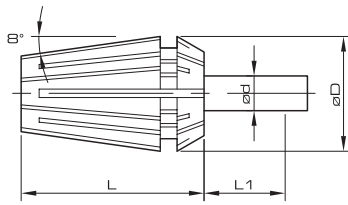
- With 3µ P Grade Collet
- 需配合3µ P筒夾

# COLLET ER筒夾

## ER COLLET CHUCK

### ER 筒夾同心度

Concentricity of ER collets According to DIN 6499



Ød mm	L1	DIN 6499		ER	ER-A	ER-AA	ER-HP
		Class 2	Class 1				
		一般級	精密級				
1.0~1.5	6	0.015	0.010		0.01	0.006	0.003
1.6~2.9	10						
3.0~5.9	16						
6.0~9.9	25						
10.0~17.9	40	0.020	0.015				
18.0~25.9	50						
26.0~34.0	60	0.025	0.020	-		0.015	-

規格 MODEL	D	L	一般級 Normal / A級 A Class				AA 級 AA Class		HP 級 HP Class	
			夾持範圍 Clamping Range	筒夾規格 Model	間距 尺寸 Steps	允許夾持量 (一般級) collapse (Normal class)	內徑範圍 Range	間距尺寸 Steps	內徑範圍 Range	間距尺寸 Steps
ER11	11.5	18	0.6~7.0	1.0~7.0	0.5	-0.4	1.0~7.0	0.5	1.0~7.0	0.5
ER16	17	27.5	0.6~4.0	1.0~4.0	0.5	-0.4	1.0~10.0	0.5	1.0~10.0	0.5
			4.1~10.0	5.0~10.0	1.0	-0.9				
ER20	21	31.5	0.6~5.0	1.0~5.0	0.5	-0.4	1.0~13.0	0.5	2.0~13.0	0.5
			5.1~13.0	6.0~13.0	1.0	-0.9				
ER25	26	34	0.6~7.0	1.0~7.0	0.5	-0.4	1.0~16.0	0.5	2.0~16.0	0.5
			7.1~16.0	8.0~16.0	1.0	-0.9				
ER32	33	40	1.6~7.0	2.0~7.0	0.5	-0.4	2.0~3.0	0.5	2.0~3.0	0.5
			7.1~20.0	8.0~20.0	1.0	-0.9	3.0~20.0	1.0	3.0~20.0	1.0
ER40	41	46	2.6~8.0	3.0~8.0	0.5	-0.4	3.0~26.0	0.5	3.0~26.0	0.5
			8.1~26.0	9.0~26.0	1.0	-0.9	-	-	-	-

訂購編號 Order NO.	精度等級 Precision Class	內徑夾持範圍 Clamping Range
ER16-3	一般級 Normal	3.0~2.6 (允許夾持量 collapse -0.4)
ER16-8		8.0~7.1 (允許夾持量 collapse -0.9)
ER16-8A	ER16-8 A 級	8.0
ER40-30AA	ER40-30 AA 級	30.0
ER25-12HP	ER25-12 HP 級	12.0

COLLET  
ER Collet Chuck  
TOOL HOLDERS

# COLLET ER筒夾

## ER COLLET CHUCK



訂購例 Odering Example:  
 PFK10-6  
 PFK10-6AA  
 SK10-6P  
 AA:精密級(Precision)  
 P超精密級(Ultra Precision)

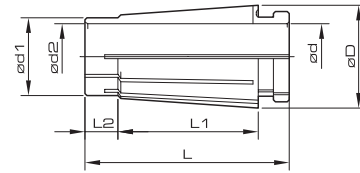
COLLET  
ER Collet Chuck

TOOL  
HOLDERS

型號 MODEL	規格 TYPE	夾持範圍 RANGE
PFK6/ PFK6-AA/ SK6-P	PFK6-2.0	2.0~1.75
	PFK6-2.25	2.25~2.0
	PFK6-2.5	2.5~2.25
	PFK6-2.75	2.75~2.5
	PFK6-3.0	3.0~2.75
	PFK6-3.5	3.5~3.1
	PFK6-4.0	4.0~3.6
	PFK6-4.5	4.5~4.1
	PFK6-5.0	5.0~4.6
	PFK6-5.5	5.5~5.1
PFK6-6.0	6.0~5.6	
PFK10/ PFK10- AA/ SK10-P	PFK10-2.0	2.0~1.75
	PFK10-2.25	2.25~2.0
	PFK10-2.5	2.5~2.25
	PFK10-2.75	2.75~2.5
	PFK10-3.0	3.0~2.75
	PFK10-3.5	3.5~3.1
	PFK10-4.0	4.0~3.6
	PFK10-4.5	4.5~4.1
	PFK10-5.0	5.0~4.6
	PFK10-5.5	5.5~5.1
	PFK10-6.0	6.0~5.6
	PFK10-6.5	6.5~6.1
	PFK10-7.0	7.0~6.6
	PFK10-7.5	7.5~7.1
	PFK10-8.0	8.0~7.6
	PFK10-8.5	8.5~8.1
	PFK10-9.0	9.0~8.6
	PFK10-9.5	9.5~9.1
PFK10-10.0	10.0~9.6	

型號 MODEL	規格 TYPE	夾持範圍 RANGE
PFK16/ PFK16- AA/ SK16-P	PFK16-3.0	3.0~2.75
	PFK16-3.5	3.5~3.1
	PFK16-4.0	4.0~3.6
	PFK16-4.5	4.5~4.1
	PFK16-5.0	5.0~4.6
	PFK16-5.5	5.5~5.1
	PFK16-6.0	6.0~5.6
	PFK16-6.5	6.5~6.1
	PFK16-7.0	7.0~6.6
	PFK16-7.5	7.5~7.1
	PFK16-8.0	8.0~7.6
	PFK16-8.5	8.5~8.1
	PFK16-9.0	9.0~8.6
	PFK16-9.5	9.5~9.1
	PFK16-10.0	10.0~9.6
	PFK16-10.5	10.5~10.1
PFK16-11.0	11.0~10.6	
PFK16-11.5	11.5~11.1	
PFK16-12.0	12.0~11.6	
PFK16-12.5	12.5~12.1	
PFK16-13.0	13.0~12.6	
PFK16-13.5	13.5~13.1	
PFK16-14.0	14.0~13.6	
PFK16-14.5	14.5~14.1	
PFK16-15.0	15.0~14.6	
PFK16-15.5	15.5~15.1	
PFK16-16.0	16.0~15.6	

型號 MODEL	規格 TYPE	夾持範圍 RANGE
PFK25/ PFK25-AA/ SK25-P	PFK25-6.0	6.0~5.5
	PFK25-8.0	8.0~7.5
	PFK25-10.0	10.0~9.5
	PFK25-12.0	12.0~11.5
	PFK25-16.0	16.0~15.5
	PFK25-20.0	20.0~19.5
	PFK25-25.0	25.0~24.5

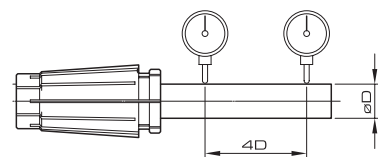


PFK/SK 筒夾尺寸表  
PFK/SK COLLET DIMENSIONS

MODEL	D	d1	d2	L	L1	L2
PFK6 SK6	10.5	7.5	5.8	25	17	4
PFK10 SK10	15.6	11.8	10	30	21.3	5
PFK16 SK16	24.6	18.8	16	45	32	8
PFK25 SK25	35.6	28.8	25.4	57	43	8.5

訂購例 Odering Example:

偏擺精度 Run out accuracy	P精密級 Precision
	3μ







# Our Service

## 1. 維修不只是維修

整修主軸重新量測精度及磨損  
這能評估出零件磨耗與壽命狀態  
並獲得最少的整修時間與成本  
讓客戶得到最大的效益

## 2. 不輕易放過任何細節

不容許任何缺失在主軸設計裡的一致態度  
在各部位的零件檢查下除了正常使用磨耗之外  
非人為操作損傷會逐一更加地謹慎檢驗  
即使客戶在使用下依舊完全正常  
我們還是會不斷持續改進  
不讓異常有機會發生

## 3. 回復原有的高精度

我們會透過評估將磨耗與變形的零件  
回復至原有的表面粗度和幾何精度  
讓主軸重新組裝與校正跑合之後  
就如同新品的集成精度一樣



## 4. 好 · 還要再更好

修整過後的零件除了透過複檢之外  
還會再次討論設計與統計回饋  
使之更符合客戶的使用需求  
及應對未來市場需求下  
做出更優良的產品

## 5. 如同醫師的診斷

所有訊號最終由加工機設備做輸出與接收  
因此每一項動態量測和訊號都予以苛求  
透過主軸內的感測器和振動分析  
在跑合時依階段性完成檢測校正  
及長時間監控和極速測試  
以確保主軸跑合的穩定性

## 6. 品質除了交付更是交流

每一次的普慧產品交付  
不僅僅是單純的維修與出貨  
我們更期待每一次的交流互動  
能共同成長發展更多元的解決方案  
以完成客戶與動態市場下的需求