



High Efficient

台中精密機械科技園區 營運總部

SPEED TIGER NEW HEAD OFFICE

in Taichung Refined Mechanics Industrial Park



綠建築設計理念
台中市南屯區精科二路 10 號



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Company's Profile 公司簡介

Company's Profile 公司簡介

Speed Tiger was founded in 1998. It is not only the largest cutting tools manufacturer, but also the first one that combined coating technology. We have up to 160 sales locations in 42 major industrial countries from Europe, America, Japan, etc.

Speed Tiger's main target is to create the core values of our products. Due to the advanced production technology, professional coating technology, strict quality control system, and well-rounded and rapid service, Speed Tiger is appointed as metal processing consultant supplier by many global well-known processing plants.

震虎精密科技股份有限公司創立於 1998 年，不僅為台灣最具規模的銑刀廠，也是台灣第一家結合鍍層的銑刀廠。全球有 160 個銷售據點，遍及歐美日等 42 國。

震虎以創造產品價值為核心目標，以先進的生產技術 & 專業的塗層技術 & 嚴苛的品管制度 & 全方位的迅速服務，成為世界加工大廠所青睞的金屬加工顧問供應商。

VISION 企業願景

Be the BEST Asian manufacturer in cutting tools market, and assist enterprises in using high efficient cutting tools to produce high quality and innovative products.

成為刀具市場中最卓越的華人廠商，協助企業使用現代高效刀具走向高品質、創新產品

VALUES 價值觀

Eco Friendly 安全環保

Quality Assurance 堅持品質

Innovation + R&D 創新研發

Pursuing Excellence 力求卓越

Customer Orientation 客戶滿意

QUALITY POLICY 品質政策

Quality Priority、Customer Satisfaction、Continual Improvement
品質第一、顧客滿意、持續改進



★ Advanced Production Technology

SPEED TIGER introduced the latest technology and facilities, and have more than 100 sets of grinding machine from Germany, Switzerland, Japan and Taiwan. We have been increasing our productivity to do mass production and produce customized tools in a short time, and match up with the updating requests.

先進的生產技術

不斷引進德國、瑞士、日本、台灣等最新自動化的機種與技術，設備達 100 餘台，俱備短時間量產與客製化生產能力，迅速因應現今市場日新月異的需求變化。



★ Professional Coating Technology

Speed Tiger introduced coating technology and equipments from Switzerland in 2004, and became the first manufacturer combining cutting tools with coating techniques. We are also good at developing many kinds of coating based on customers' processed requests and eventually become an eco friendly cutting tools company.

專業的塗層技術

先進刀具塗層技術與設備，為台灣首家將精密刀具與科技塗層技術整合的企業，擅長依據客戶需求去研發各種專用塗層，達到綠能加工生產的要求。



★ Strict Quality Control System

Ahead of others, Speed Tiger developed auto-inspect machines with our collaboration factory. From raw materials to finished products, we insist on high standard of inspection system, to make sure every product share equivalent and stable quality.

嚴苛的品管制度

領先業界與獨家廠商合作研發刀具自動全檢機，由進料到出貨，要求各項品檢量測制度最高標準，確保每個產品的品質一致，使客戶製程與加工件品質穩定。



★ Highest Precision Indication $\pm 2 \mu m$

Speed Tiger cutting tool's tolerance indication entered the nanometer level precision; the world highest precision size $\pm 2 \mu m$ in faith value enables the user to grasp the cutting tool's news thoroughly, understood how to request the cutting tool quality.

奈米級公差標示 $\pm 2 \mu m$

ST 切削刀具的公差標示已進入奈米級精度，世界最高的精度尺寸 $\pm 2 \mu m$ 內的信賴數值讓使用者對切削刀具的訊息掌握得更徹底、更懂得如何要求刀具品質。





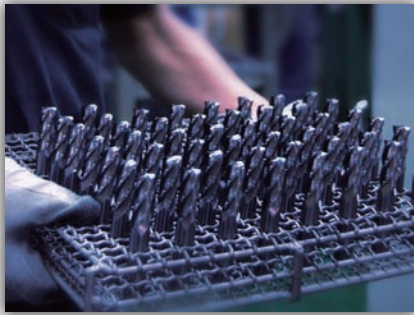
★ Taiwan No.1- Identity Number

Speed Tiger built the End Mills Traceability System in order to ensure the accountability of each process participants, from incoming raw material to finished products, of any production procedure. Once there is any doubt about our cutting tools, we will track its “identity number”, and then clarify the problem and recall the products promptly, to lower the damage and loss caused by the issue.



台灣首創 - 刀具生產履歷

震虎建立刀具生產履歷追溯系統，可賦予從進料到出貨等生產流程中所有參與者明確責任，一旦刀具發生任何疑慮，能根據每支刀具上的『生產履歷條碼』，快速釐清責任並及時從市場中移除問題刀具，降低該等事件對其他使用者的危害及損失。



★ Well-rounded and Rapid Service

Speed Tiger Test Center is dedicated to innovative R&D and cutting test, in order to quickly solve our customers' various processing problems, and help them reduce processing time and costs. That's why we can become the best milling adviser.

全方位的迅速服務

刀具應用中心致力於創新研發、切削測試，解決客戶各種加工難題，能迅速協助降低客戶加工時間與成本，成為客戶最佳銑削顧問。

★ Customized Services

Speed Tiger offers not only the high efficient cutting tools, but also advice and guidance about the idea through to implementation of the customized machining process. In collaboration with customers, we work continuously to develop innovative solutions to the most varied of problems in the most varied of processing requests. We are the people to contact if you need special tools for special machining tasks.

客製化服務

震虎不僅銷售合適的高效刀具，也提供關於訂製刀具的諮詢與建議。我們與客戶密切合作，為各行各業的不同加工需求持續開發新的解決方案。如果您正在為特殊的加工而在找特殊的刀具，我們將會是您適合的合作夥伴。





400 PLUS

SERIES



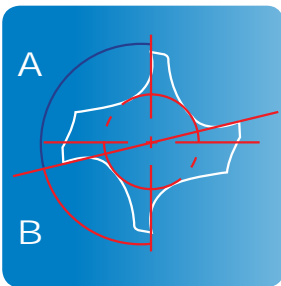
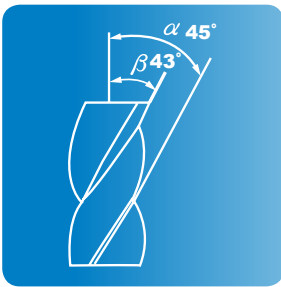
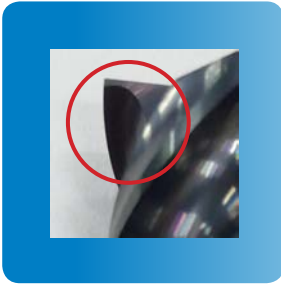
Unequal Flute Spacing & Helix 不等分割 & 不等螺旋

- Excellent vibration absorption provides stability.
- 降低刀具加工時產生的震動頻率
- Less chatter and high efficiency finishing.
- 減少工件側壁的切削震紋
- Reduce metal burr when machining.
- 減少刀具加工產生的端口毛刺



400PLUS UNEQUAL FLUTESPACING & HELIX

6



Strong edge to prevent chipping at corners.
厚實端角設計防止刀具崩裂。

**Unequal Flute Spacing , $A \neq B$
Irregular Helix Flutes, $\alpha \neq \beta$**
Ensures stable machining of difficult-to-cut materials, and achieve high efficient performance.

刀刃分割角採用 $A \neq B$ 刀刃螺旋角採用 $\alpha \neq \beta$ 於刀刃採用不等分割角搭配其不等螺旋的設計，能有效的降低刀具加工時所產生的共振；因此400PLUS能執行高效能切削及難切削材應用。

Tool diameter tolerance 0~-0.02mm.
刃徑容許公差0~-0.02mm

Special flute geometry to improve chip disposal.
特殊圓形溝槽設計，可提升排屑效果，減少應力產生，提高刀具強度。

Superior wear and chipping resistance due to optimally matched coating and carbide material
奈米超硬底材，驚異高抗損性、優異耐磨耗性。

Equal V.S Unequal - Performance of Slotting SUS316 一般刀具 VS 400PLUS-SUS316 開溝實測

General geometry end mill
一般刀具

Metal Burr: A lot
毛刺：很多
Surface: Not smooth
表面：不平滑

PVE1004 (ø10mm)

Metal Burr: Less
毛刺：極少
Surface: Excellent
表面：光滑

Unequal Design
不等設計

+

Special Flute Geometry
特殊刃部設計

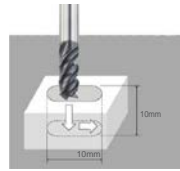
- ✓ **Prevent Burr** 減少毛刺
- ✓ **Excellent Surface** 光滑表面
- ✓ **Improve Chip Disposal** 不易積屑
- ✓ **Longer Tool Life** 延長壽命

400PLUS系列 不等分割 / 不等螺旋

SPEED TIGER

Unequal V.S Unequal - Surface and Tool Life Comparison
他牌抗震刀具 V.S 震虎抗震刀具 - 表面及壽命比較

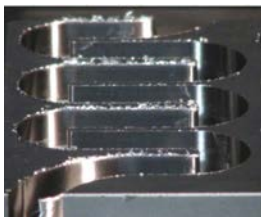
End mill 刀具	PVE1004 (ø10mm)
Workpiece Material 工件	SUS316
Milling Type 加工方式	Slotting 溝銑
Rotation Speed (S) 轉速	2644rpm
Milling Speed (Vc) 切削速度	83m/min
Feed Rate (min-1) (F) 進給速度	646 mm/min
Depth of cut 切深	ap=10mm ae: 10mm
Feed of teeth (Fz) 每刃進給量	0.062
Machine 使用機台	Vertical Machining Center 立式綜合加工機



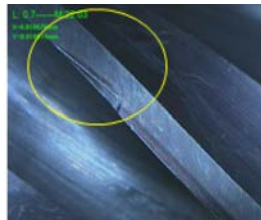
Smooth cutting at shouldering and corner part.
不等設計抑制高頻顫震，使表面光滑。



Competitor A 他牌 A

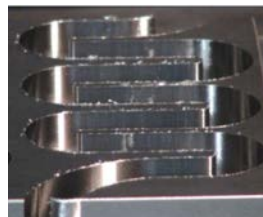


Metal Burr: Heavy 毛刺: 較厚
Surface: Fine 切壁: 尚可

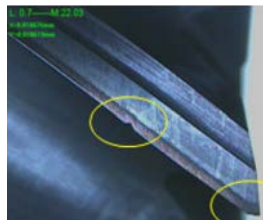


The cutting edge broke.
刃部破損

Competitor B 他牌 B

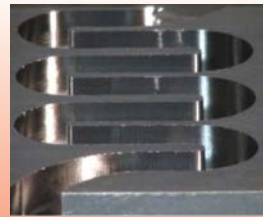


Metal Burr: Some 毛刺: 較少
Surface: Chattering 切壁: 震紋明顯

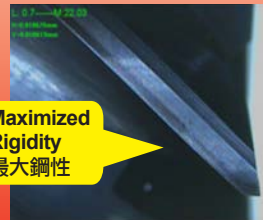


The cutting edge got chipping.
刃部缺角

PVE1004 (ø10mm)



Metal Burr: Less 毛刺: 極少
Surface: Excellent 切壁: 光亮



Maximized Rigidity
最大鋼性




The cutting edge is fine!
刃部良好

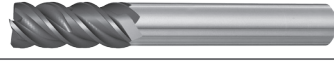



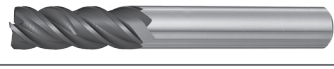

Catalogue 型錄



Cutting video 切削影片



GENERAL APPLICATION 泛用 400PLUS							
End Shape 刃端形狀	Flute 刃數	Type 刀型	Mode 型號	Photo 圖樣	Coating 塗層	Size Range 尺寸範圍	
Square 平刀	4	Square series 不等立銑刀	PVE		AITBN	Φ3-Φ25	
		Square series -Short Flute 1 倍刃長不等立銑刀	PVES			Φ6-Φ20	
		Square series -Medium Flute 1.5 倍刃長不等立銑刀	PVEM			Φ6-Φ20	
		Square series -Long Flute 3 倍刃長不等立銑刀	PVEL			Φ6-Φ20	
Corner Radius 圓鼻刀	4	Corner Radius series 不等圓鼻立銑刀	PVR			Φ3-Φ25	
Ball Nose 球刀	4	Ball Nose series 不等球型立銑刀	PVB			Φ6-Φ16	
		Ball Nose series 長刃有效不等球型立銑刀	PVBSX			Φ6-Φ16	

HIGH PERFORMANCE FOR EXOTIC MATERIALS 難切削材高效 400PLUS							
End Shape 刃端形狀	Flute 刃數	Mode 型號	Photo 圖樣	Coating 塗層	Workpiece 切削材	Application 應用範圍	Size Range 尺寸範圍
Square 平刀	4	PVE1T PLVE1T		nACRo	Titanium 鈦合金		Φ4-Φ20
		PNVE1T PLNVE1T		nACRo	Titanium 鈦合金		Φ4-Φ16
Corner Radius 圓鼻刀	4	PVR1T		nACRo	Titanium 鈦合金		Φ4-Φ20

Application 適用材質:

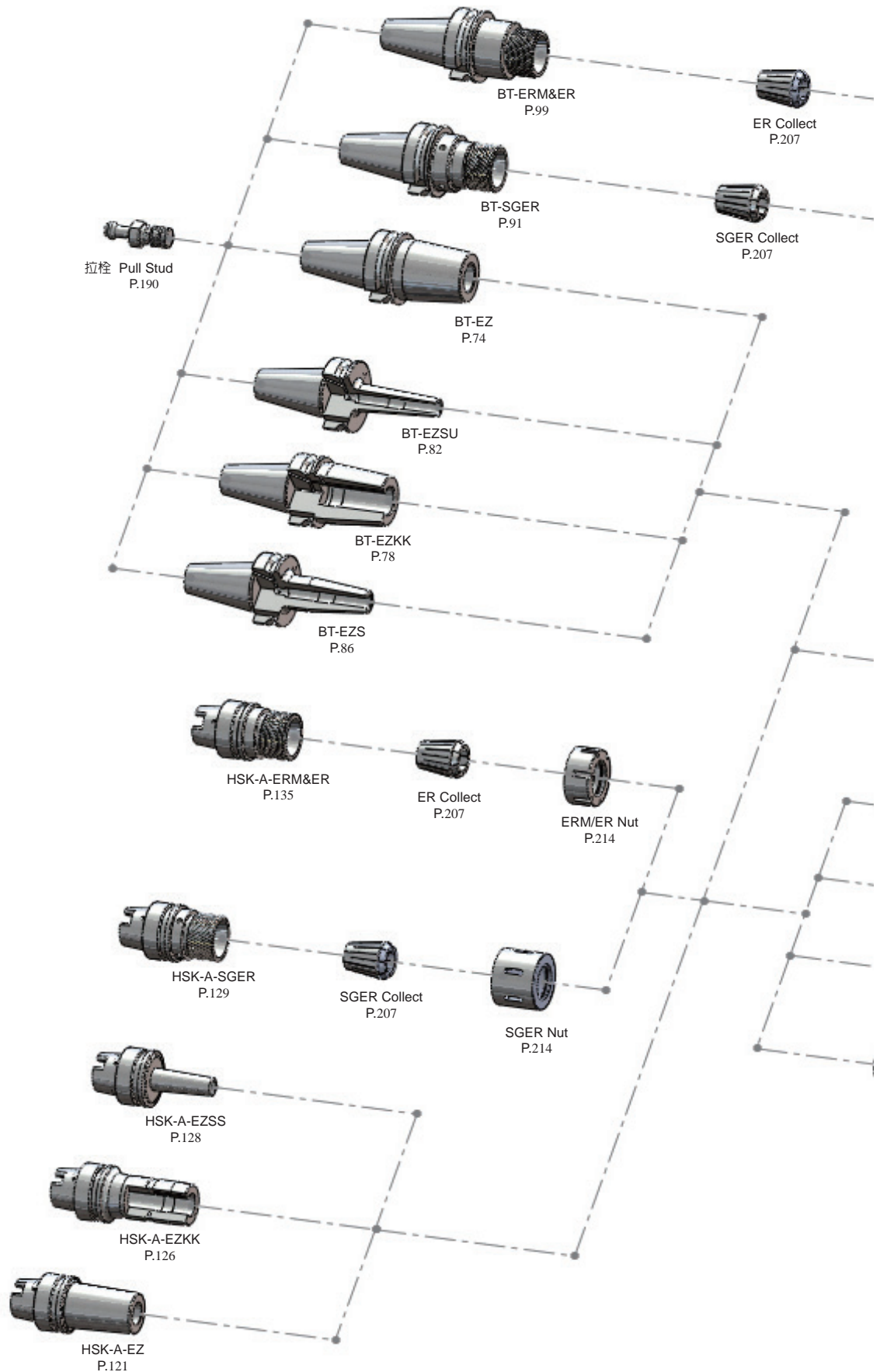
◎ Recommend 最適合 ○ Suitable 最適合

<30HRC	30-40HRC	40-50HRC	50-65HRC	Carbon steel, Alloy steel	Stainless steel	Titanium alloy	Nickel/Inconel alloy	Aluminum alloy	Copper alloy
	◎	◎	○	○	◎			○	○



System Map 切削刀具系統圖

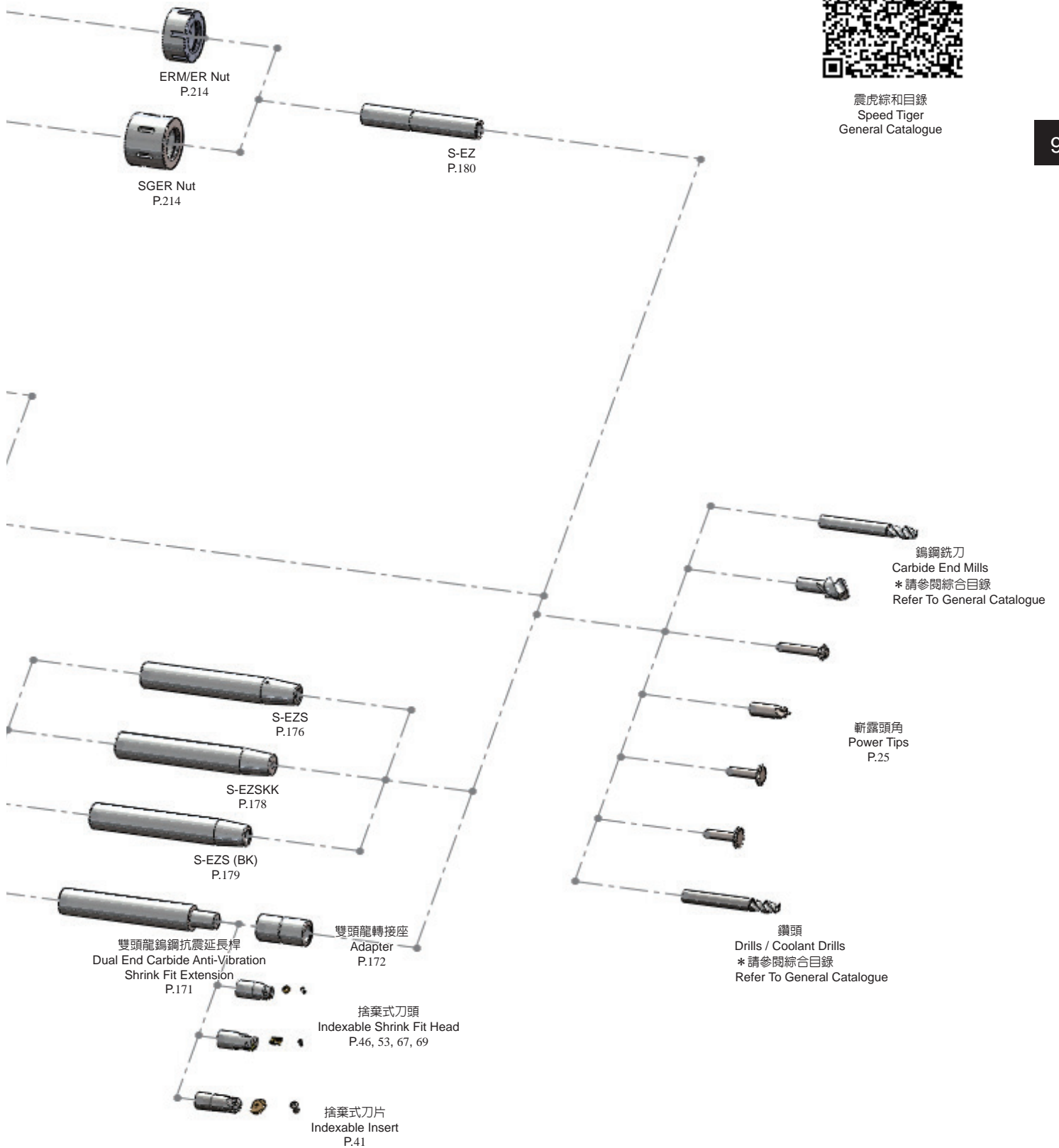
8



HSK-E(P.138), HSK-F(P.148), SK(P.104), PSC(P.158) 也適用。
HSK-E(P.138), HSK-F(P.148), SK(P.104), PSC(P.158) are available.



震虎綜和目錄
Speed Tiger
General Catalogue











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產品索引

鎢鋼刀具 CARBIDE END MILLS

P.23

球型刀頭 BALL NOSE TIP		圓鼻刀頭 CORNER RADIUS TIP	
2 刃 - 2FLUTES	4 刃 - 4FLUTES	2 刃 - 2FLUTES	4 刃 - 4FLUTES
SBS P.26	SBS P.26	RTAS P.27	RTAS P.27
			

平刀頭 SQUARE TIP			鋁用平刀頭 FOR ALUMINUM	
2 刃 - 2FLUTES	4 刃 - 4FLUTES	3 刃 - 3FLUTES	2 刃 - 2FLUTES	3 刃 - 3FLUTES
SES P.28	SES P.28	SES P.29	AES P.30	AES P.30
				


功能性銑刀頭 FUNCTIONAL TYPE			NEW	
重切削平刀頭 Heavy-duty	超高速 / 超高硬度球刀頭 Super High Speed/ Hardness Ball Nose	超高速 / 超高硬度圓鼻刀頭 Super High Speed/ Hardness Corner Radius	鳩尾刀 Dovetail Cutter	定位倒角刀 Position Chamfer Cutter
FHPC P.31	KTGS P.32	KCRS P.33	TAMS P.34	PDSTS P.35
				


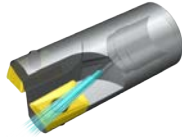
NEW				
外 R 刀 Corner Rounding Cutter	雙面倒角刀 Double Chamfer Cutter	鍵槽刀 Keyseat Cutter	T 型 R 刀 Keyseat Cutter - Full Radius	220° 球刀 220° Ball Nose Tip
RCS P.36	TMAS P.37	TMTS P.38	TMRS P.39	TRSS P.40
				

RD 捨棄式圓鼻銑刀片 INDEXABLE RADIUS INSERT		RD 配件 RD ACCESSORIES		
RDEW / RDEX	RDHX (鋁用) For Aluminum	RD 捨棄式燒結刀頭 RD Shrink Fit Head	RD 捨棄式整體刀柄 Radius End Mill Holder	RD 捨棄式整體刀柄 Radius End Mill Holder
P.45	P.45	P.46	P.47	P.48
 <p>TB Coating</p>		 <p>專利捨棄式刀頭 Patent Indexable Shrink Fit Head TW No. 4052464 Date of Reg. 2013/07/16</p>		

WR 捨棄式球刀片 INDEXABLE BALL-NOSE INSERT		WR 配件 WR ACCESSORIES	
WRHS		WR 捨棄式燒結刀頭 WR Shrink Fit Head	WR 捨棄式整體刀柄 Ball-Nose End Mill Holder
P.52		P.53	P.54
 <p>H級 精度 ±0.013 研磨級</p>			

HN 雙面六角銑刀片 INDEXABLE HN INSERT		HN 配件 HN ACCESSORIES	
HNGX		HN06 捨棄式整體刀柄 HN06 Holder	HN09 捨棄式整體刀柄 HN09 Holder
P.59		P.60	P.61
			

CN 雙面銑刀片 INDEXABLE CN INSERT		CN 配件 CN ACCESSORIES	
CNGX		CNGX07 捨棄式燒結刀頭 CNGX07 Shrink Fit Head	CNGX07 捨棄式整體刀柄 CNGX07 Holder
P.66		P.67	P.67
			

AP 捨棄式銑刀片 INDEXABLE AP INSERT		AP 配件 AP ACCESSORIES
APKT / APMT	APEX (鋁用) For Aluminum	AP 捨棄式燒結刀頭 AP Shrink Fit Head
P.68	P.68	P.69
 <p>TB Coating</p>		 <p>專利捨棄式刀頭 Patent Indexable Shrink Fit Head TW No. 4052464 Date of Reg. 2013/07/16</p>



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產品索引

刀桿 CHUCK

BT				P.72
熱膨脹燒結刀桿 Shrink Fit Chucks	鼻端噴水熱膨脹燒結刀桿 Shrink Fit Chucks with Coolant through Nose	極細型熱膨脹燒結刀桿 Slim Ultra Shrink Fit Chucks	細型熱膨脹燒結刀桿 Slim Shrink Fit Chucks	
BT-EZ P.73	BT-EZKK P.78	BT-EZSU P.82	BT-EZS P.86	
				
超細型熱膨脹燒結刀桿 SlimSuper Shrink Fit Chucks	無傳動鍵槽熱膨脹燒結刀桿 Shrink Fit Chucks w/o Drive Key Slots	SGER 強力型 ER 筒夾刀桿 SGER Power ER Collet Chucks	ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿 ERM Nut Collet Chucks & ER Collet Chucks	
BT-EZSS P.89	BTG-EZ P.90	BT-SGER P.91	BT-ERM&ER P.99	
				

SK

SK						P.104
熱膨脹燒結刀桿 Shrink Fit Chucks	鼻端噴水熱膨脹燒結刀桿 Shrink Fit Chucks with Coolant through Nose	細型熱膨脹燒結刀桿 Slim Shrink Fit Chucks	超細型熱膨脹燒結刀桿 SlimSuper Shrink Fit Chucks	SGER 強力型 ER 筒夾 刀桿 + 高速平衡奈米 鋼珠螺帽 SGER power ER collet chucks+balanced nano ball bearing nut	ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿 ERM nut collet chucks & ER collet chucks	
SK-EZ P.105	SK-EZKK P.108	SK-EZS P.111	SK-EZSS P.112	SK-SGER P.113	SK-ERM & SK-ER P.117	
						

HSK A TYPE

HSK A TYPE					P.120
熱膨脹燒結刀桿 Shrink Fit Chucks	鼻端噴水熱膨脹燒結刀桿 Shrink Fit Chucks with Coolant through Nose	超細型熱膨脹燒結刀桿 SlimSuper Shrink Fit Chucks	SGER 強力型 ER 筒夾 刀桿 SGER Power ER Collet Chucks	ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿 ERM Nut Collet Chucks & ER Collet Chucks	
HSK-A-EZ P.121	HSK-A-EZKK P.126	HSK-A-EZSS P.128	HSK-A-SGER P.129	HSK-A-ERM&ER P.135	
					

HSK E TYPE

HSK E TYPE				P.138
熱膨脹燒結刀桿 Shrink Fit Chucks	超細型熱膨脹燒結刀桿 Slim Super Shrink Fit Chucks	SGER 強力型 ER 筒夾刀桿 SGER Power ER Collet Chucks	ERM 型螺帽筒夾刀 桿 & ER 筒夾刀桿 ERM Nut Collet Chucks & ER Collet Chucks	
HSK-E-EZ P.139	HSK-E-EZSS P.141	HSK-E-SGER P.143	HSK-E-ERM&ER P.145	
				

HSK F TYPE P.148			
熱膨脹燒結刀桿 Shrink Fit Chucks	超細型熱膨脹燒結刀桿 SlimSuper Shrink Fit Chucks	SGER 強力型 ER 筒夾刀桿 SGER Power ER Collet Chucks	ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿 ERM Nut Collet Chucks & ER Collet Chucks
HSK-F-EZ P.149	HSK-F-EZSS P.152	HSK-F-SGER P.153	HSK-F-ERM&ER P.155
			

PSC P.158		
熱膨脹燒結刀桿 Shrink Fit chucks	SGER 強力型 ER 筒夾刀桿 + 高速平衡 奈米螺帽 SGER power ER collet chucks+balanced nano nut	ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿 ERM nut collet chucks & ER collet chucks
PSC-EZ P.159	PSC-SGER P.162	PSC-ERM & PSC-ER P.166
		

延長桿 EXTENSION BAR P.170

雙頭龍鎢鋼抗震延長桿 & 雙頭龍轉接座 Dual End Carbide Anti-Vibration Shrink Fit Extension & Adapter			燒結加熱治具 Fixture of Heating	
P.170			P.173	
				
細型熱膨脹燒結延長 桿 Slim Shrink Fit Extensions	細型鼻端噴水熱膨脹 燒結延長桿 Slim Shrink Fit Extensions with Coolant through Nose	細型熱膨脹燒結延長 桿 (附止動螺絲) Shrink Fit Extensions (with back up screw)	燒結直柄短桿 Straight Shrink Fit Extension (Short Type)	筒夾延長桿 Collet Chuck Extensions
S-EZS P.176	S-EZSKK P.178	S-EZS (BK) P.179	S-EZ P.180	S-ERM&ER P.181
				

配件 ACCESSORIES P.189

拉栓 Pullstub	筒夾 Collet	螺帽 Nut	扳手 Wrench
P.190	P.207	P.214	P.218
止動螺絲 Backup Screw	長度調整器 Length Setting Adaptor	刀具柄部固定器 Cutter Shank Holder	不鏽鋼熱膨脹燒結刀桿導熱套 Heating Sleeve For Stainless Shrink Chuck
P.219	P.220	P.220	P.220



ST-3500

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產品特點

1. 採用3.5KW功率進行中週波調變，產生交流磁場，進行感應加熱。可使用內建參數表或自訂秒數進行加熱。
2. 僅刀桿局部加熱，不需刀桿整隻加熱，可達到節能省時。
3. 利用水冷卻方式，搭配切削用冷卻劑，進而清除大部分積碳，更有效抑制刀桿生鏽。
4. 本設備搭配使用震虎燒結刀桿與斬露頭角系列產品，更可展現出燒結系統最大效益。
5. 本機採用一體式設計，燒結冷卻同一機上作業，操作方便且有效減少作業時間。

Features

1. Generate an alternating electromagnetic field by using 3.5KW high-frequency thermal coil. Refer to the heating time sheet, it's easy to load and unload tools just need to set the diameter and heating seconds.
2. Save your time and conserve energy by heating only part of shrink chuck's surface, no need to heat the whole one.
3. By water-cooling with cutting liquid, it can clean most of carbon deposits and prevent the chuck become rusty.
4. Use with Speed Tiger Shrink Fit Chucks and Power Tips Series, will show the maximum performance and economic benefits of shrink system.
5. Combine 2 functions in 1 machine: Operate heating and cooling process at one machine, i.e. no need to remove the base. Save your time efficiently and use friendly.

3.5KW Induction Machine and Water Cooling Station

3.5KW 電磁感應加熱水冷機組

SPEED TIGER

Specifications

機台規格

Power功率	3.5KW
Voltage電壓	1ø220V 15A
Tools適用刀具	Solid Carbide 鈷鋼
Tool diameter適用刀具直徑	3~20mm
Maximum length of shrink fit chuck最大熱縮刀柄長度	300mm
Dimensions機器尺寸	(W)600x(L)430x(H)755 mm
Weight機器重量	50Kg

Notice

BT 50: Use Raise Pad 60mm + Raise Pad 50mm*2
 BT 40: Use Raise Pad 50mm*2 + BT40 Round Tray
 BT 30: Use Raise Pad 50mm + BT30 Round Tray
 HSK Series: Use Raise Pad 50mm + HSK Round Tray
 *Select the raise pad according to the chuck you use.

補充說明

BT50 使用墊高塊 60mm + 墊高塊 50mm*2
 BT40 使用墊高塊 50mm*2 + BT40 刀桿隔環
 BT30 使用墊高塊 50 + BT30 刀桿隔環
 HSK 系列使用墊高塊 50 + HSK 刀桿隔環
 * 以上可針對不同刀長刀桿搭配使用。

Equipment Options相關配件

ezShrink 熱膨脹燒結刀桿用電磁感應機加熱機刀桿基座 / ezShrink induction unit toolholder base

STOCK	CODE		W(KG)
◎	EZ BASE NO30	(FIT BT30 & BT30G)	1.00
◎	EZ BASE NO40	(FIT BT40, SK40 & CAT40)	1.00
◎	EZ BASE NO50	(FIT BT50, SK50 & CAT50)	0.80
◎	EZ BASE H025	(FIT HSK025)	1.00
◎	EZ BASE H032	(FIT HSK032, PSC032 & TS032)	1.00
◎	EZ BASE H040	(FIT HSK040, PSC040 & TS040)	1.00
◎	EZ BASE H050	(FIT HSK050, PSC050 & TS050)	1.00
◎	EZ BASE H063	(FIT HSK063, PSC063 & TS063)	1.00
◎	EZ BASE H080	(FIT HSK080, PSC080 & TS080)	0.90
◎	EZ BASE H100	(FIT HSK100, PSC100 & TS100)	0.80
◎	EZ BASE H050	(FIT BT50)	0.90
◎	EZ BASE H060	(FIT BT50)	0.80

STOCK ◎=標準在庫品 // STOCK ○=regular stock



ezShrink 熱膨脹燒結刀桿用電磁感應機加熱機刀桿延長桿基座 / ezShrink induction unit toolholder extension base

STOCK	CODE		W(KG)
◎	EZ BASE S10		0.30
◎	EZ BASE S12		0.30
◎	EZ BASE S16		0.35
◎	EZ BASE S20		0.35
◎	EZ BASE S25		0.30
◎	EZ BASE S32		0.30
◎	EZ BASE SU03 3/8"		0.30
◎	EZ BASE SU04 1/2"		0.30
◎	EZ BASE SU05 5/8"		0.35
◎	EZ BASE SU06 3/4"		0.35
◎	EZ BASE SU10 1"		0.30
◎	EZ BASE SU12 1 1/4"		0.35

STOCK ◎=標準在庫品 // STOCK ○=regular stock

需要與EZ BASE NO40一起使用 / require EZ BASE NO40





3.5KW Induction Machine and Water Cooling Station

3.5KW 電磁感應加熱水冷機組

ezShrink 熱膨脹燒結刀桿用耐熱手套 / ezShrink heat resist gloves

STOCK	CODE	W(KG)
◎	EZ HEAT RESIST GLOVES	0.08

STOCK ◎=標準在庫品 // STOCK ◎=regular stock



ezShrink 熱膨脹燒結刀桿用刀具放置盤 / ezShrink tray

STOCK	CODE	W(KG)
◎	EZ TRAY	0.60

STOCK ◎=標準在庫品 // STOCK ◎=regular stock

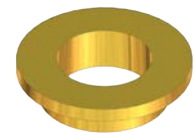


ezShrink 熱膨脹燒結刀桿用刀具圓形放置盤 / ezShrink round tray

STOCK	CODE	W(KG)	
◎	EZ ROUND TRAY	0.60	
	BT40 Round Tray	BT40刀桿隔環	0.60
	BT30 Round Tray	BT30刀桿隔環	0.60
	HSK30 Round Tray	HSK30刀桿隔環	0.60
	HSK40 Round Tray	HSK40刀桿隔環	0.60
	HSK50 Round Tray	HSK50刀桿隔環	0.60

STOCK ◎=標準在庫品 // STOCK ◎=regular stock

Suitable for EZ BASE Sxx



ezShrink 熱膨脹燒結刀桿用水冷機水冷上蓋 / ezShrink shower house

STOCK	CODE	W(KG)
◎	EZ3W SHOWER HOUSE	1.40
◎	EZ3W SHOWER HOUSE EXTENSION	0.40

STOCK ◎=標準在庫品 // STOCK ◎=regular stock



冷卻劑 / coolant liquid

STOCK	CODE	W(KG)
◎	EZ3W COOLANT LIQUID 600ML 冷卻液600毫升	0.60

STOCK ◎=標準在庫品 // STOCK ◎=regular stock

EZ3W COOLANT LIQUID 600ML剛好供EZ3W水槽使用 / EZ3W COOLANT LIQUID 600ML is for the whole tank of EZ3W

EZ3W冷卻液使用水溶性切削研磨液 // Use coolant liquid same as grinding machine in EZ3W

建議使用Castrol Syntrol 9930水溶性切削研磨液 // Recommend coolant liquid Castrol Syntro 9930

每6-12月更換水槽冷卻液 // Replace coolant liquid for all tank at every 6-12 months



Comparison Table For Chucks 刀桿比較表

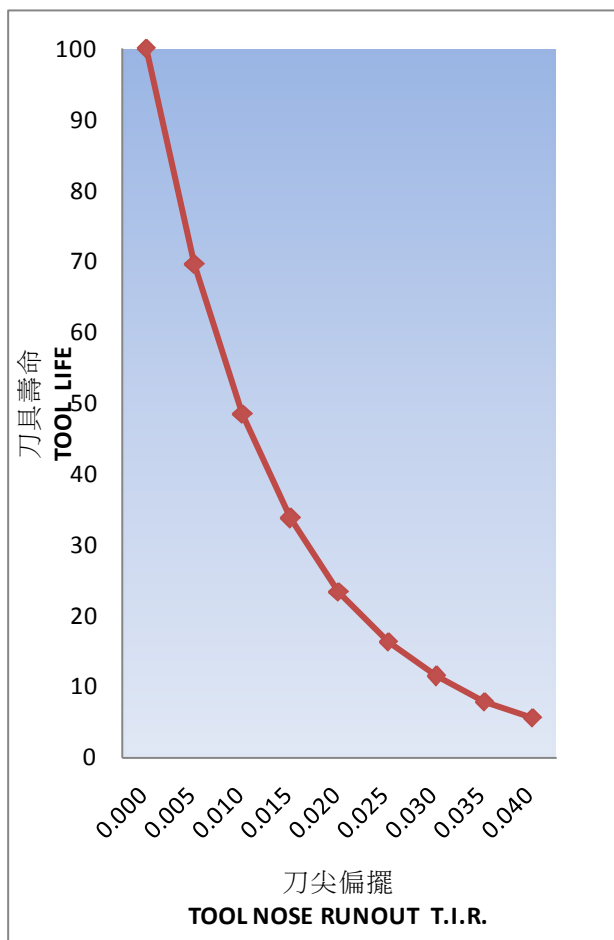
SPEED TIGER



	Shrink Fit Chucks 燒結刀桿	ER Collet Chucks 筒夾式 ER 刀桿	SGER Power ER Collet Chucks 筒夾式 SGER 刀桿
Run-Out 精度	$\leq 2 \mu$ ★★★★★	A 級筒夾 A Grade Collet : $\leq 10 \mu$ AA 級筒夾 AA Grade Collet : $\leq 5 \mu$ ★★	A 級筒夾 A Grade Collet : $\leq 6 \mu$ AA 級筒夾 AA Grade Collet : $\leq 3 \mu$ ★★★★★
Clamping Force 夾持力	★★★★★	★	★★★★
HSC 高速加工性	★★★★★	★★★★	★★★★★
Cost 成本	Middle 中等	Low 低	Fair 合理

為什麼我們要投資更精度更高的刀桿？
 為了降低生產成本
 精度更高的刀桿如何降低生產成本？
 可以提升刀具的壽命
 提升的程度有多少？
 假設刀尖的偏擺是 0，刀具壽命是 100
 0.003mm 刀尖偏擺的刀具，壽命是 80.4
 0.005mm 刀尖偏擺的刀具，壽命是 69.6
 0.010mm 刀尖偏擺的刀具，壽命是 48.4
 0.020mm 刀尖偏擺的刀具，壽命是 23.4
 0.003mm 刀尖偏擺的刀具比 0.020mm
 刀尖偏擺的刀具，刀具壽命差將近 4 倍
 想想看這樣的差別可以降低多少刀具的成本 !!!
 Why we invest on precision tool holders?
 To reduce the production cost.
 How precision tool holders reduce the production
 cost?
 It will extend the tool life evidently.

How much is the difference?
 Let's set 0mm runout at tool nose with tool life 100.
 0.003mm runout at tool nose, tool life is 80.4
 0.005mm runout at tool nose, tool life is 64.7
 0.010mm runout at tool nose, tool life is 48.4
 0.020mm runout at tool nose, tool life is 23.4
 Tool life for 0.003mm runout is 4 TIMES longer than
 0.020mm runout.
 See how much you can reduce the cost in cutting
 tools!!!





SGER Power ER Collet Chucks SGER

刀桿介紹

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BT40/50 均有端面進水功能
BT40/50 inflow end face function included.

全系列預留動平衡調整螺絲孔
Reserve the screw hole of dynamic balance adjustment.

刀桿材質硬化至 HRC56-60°
Chuck materials is HRC 56-60.
表面粗糙度 <RA0.2 以下
Surface Roughness under RA0.2
錐度面貼合度達 90% 以上
The fit of taper surface is over 90%.

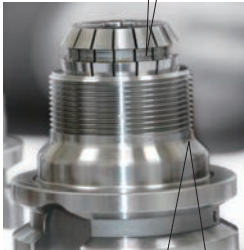


夾持 3D 長度
The length of clamping 3D
AA 級筒夾：精度 0.003 保證
AA Grade Collet: Accuracy 0.003 assurance
A 級筒夾：精度 0.006 保證
A Grade Collet: Accuracy 0.006 assurance

高速平衡 奈米處理鋼珠螺帽
High speed balance, Nut with nanotech treatment
提供更好的壽命及更大的夾持力
Offer much better tools life and clamping force.

比 ER 更大的接觸面積及更少的突出長度
提供更高的徑向切削抵抗力
More contact area and less prominent length than ER, to provide higher radial direction cutting resistance force.

傳統 ER 結構
Old Type ER Structure



SGER 結構
SGER Structure



螺帽牙公差 5H
刀桿牙公差 4g
提供更綿密的配合公差
Tolerance of nut pitch is 5H.
Tolerance of chuck pitch is 4g.
To provide more exact match-up tolerance.

比 ER 更大的柄徑提供更高的剛性
The bigger shank diameter than ER can offer higher rigidity.

比傳統 ER 系統
高於 100% 以上
The results are 100% way above conventional ER.

夾持力測試比較

Comparison Sheet of Clamping Force

	筒夾規格 Collet Type	ER 刀桿夾持力 ER Chuck Clamping Force	SGER 刀桿夾持力 SGER Chuck Clamping Force
ER16 筒夾 鎖緊扭力 54Nm ER16 Collet Torque 54Nm	8mm	24Nm	51Nm
	10mm	33Nm	63Nm
ER20 筒夾 鎖緊扭力 81Nm ER20 Collet Torque 81Nm	10mm	56Nm	100Nm
	12mm	66Nm	153Nm
ER32 筒夾 鎖緊扭力 135Nm ER32 Collet Torque 135Nm	16mm	116Nm	269Nm
	20mm	147Nm	355Nm

◎以上為實際測試比較數據
The test result is showed above.

SGER Collet Chucks

SGER 刀桿

SPEED TIGER

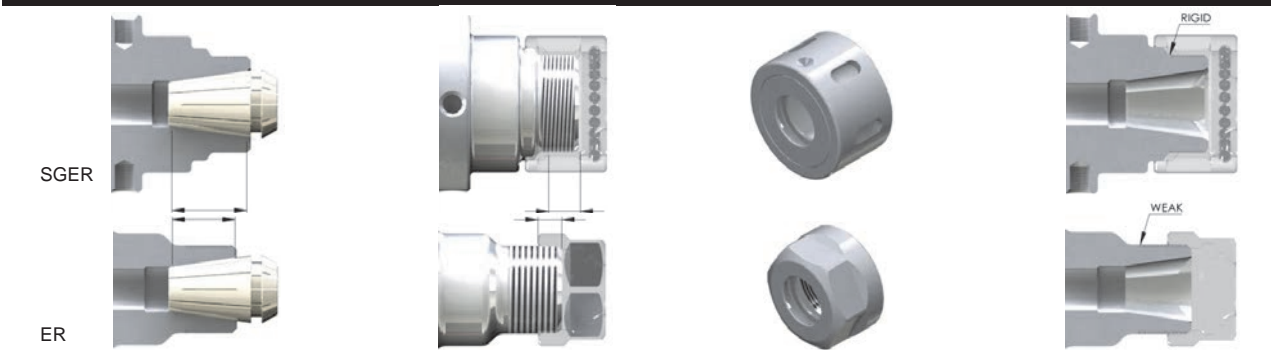
supERgrip SGER強力型ER筒夾刀桿簡介:

supERgrip SGER強力型ER筒夾刀桿是ER刀桿的加強版
 是新一代的ER筒夾刀桿
 supERgrip SGER變更了機構設計
 增加了30%以上的刀桿內錐孔與筒夾接合面積
 加大了牙部外徑與接合牙數
 增加了50%以上的牙部接合面積
 使用表面奈米處理鋼珠軸承設計的螺帽
 增加了50%以上的夾持力
 這樣創新的組合讓夾持力提升100%以上
 在外型上我們也做了設計變更
 讓剛性也提升50%以上
 最棒的是
 你目前使用中DIN6499B/ISO15488B的ER筒夾
 可以直接使用於supERgrip SGER強力型ER筒夾刀桿上
 只要升級你的筒夾刀桿就能升級加工效能
 supERgrip SGER的設計還讓ER筒夾保有0.25mm的夾持範圍
 另外還增加了可平衡螺絲孔
 讓您在刀具組合後可以再做動平衡校正
 這個創新的系列稱為SGER系列

Introduction of supERgrip SGER power ER collet chucks:

supERgrip SGER is the power version of ER collet chucks
 It is a new generation ER collet chucks
 supERgrip SGER redesign the structure of clamping part
 The contact area for ER collet taper is increased by 30% more
 Enlarge the O.D. of the thread part and increase the pitched of thread contact
 It will increase the contact area of thread part by 50% more
 We adopt the nano surface treatment ball bearing nut
 It will reinforce the clamping torque by 50% more
 The combination of innovation reinforce the clamping torque for 100% more
 We also redesign the outline
 It reinforce the rigidity by 50%
 The great thing is
 Your DIN6499B/ISO15488B ER collets using currently
 will be able to use on supERgrip SGER power ER collet chuck
 It will upgrade the performance by just upgrade the collet chuck
 ER collets on supERgrip SGER power ER collet chuck will have 0.25 mm collapse
 We also add the design of balanceable thread holes
 You may do the balance after the tool is assembled
 This innovation collet chucks are called SGER series

增加錐度接合面積 MORE CONTACT AREA	增加牙部接合面積 MORE THREAD CONTACT	使用奈米鋼珠螺帽 NANO BALL BEARING NUT	剛性提升的外觀設計 MORE RIGIDITY WITH NEW OUTLINE
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SGER筒夾刀桿技術資料:

材質: SCM420/20CrMo4/20CrMo/4120
 抗拉強度: 930+ N/mm2 (Mpa)
 熱處理硬度: 滲碳深度0.6mm HRC58~60
 刀桿牙部: 防碳處理防止脆裂
 刀桿內孔偏擺精度: 0.002mm

Technical information of SGER collet chucks:

Material: SCM420/20CrMo4/20CrMo/4120
 Tensile strength: 930+ N/mm2 (Mpa)
 Hardness: Carburizing depth 0.6mm with HRC58~60
 Thread part: Carburizing free on the thread part to prevent crack happening
 Run out of T.I.R: 0.002mm

為什麼材料使用SCM420/20CrMo4/20CrMo/4120?

這材料抗拉強度有930+ N/mm2 (Mpa)
 SCM415/15CrMo5/15CrMo/4118只有830+ N/mm2 (Mpa)
 SNCM220/21NiCrMo3/20CrNiMo/8620只有830+ N/mm2 (Mpa)

Why use steel SCM420/20CrMo4/20CrMo/4120?

The tensile strength is 930+ N/mm2 (Mpa)
 SCM415/15CrMo5/15CrMo/4118 is only 830+ N/mm2 (Mpa)
 SNCM220/21NiCrMo3/20CrNiMo/8620 is only 830+ N/mm2 (Mpa)

8°圓錐角度公差 // 8° TAPER ANGLE TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
AT1 (mm)	+0.0005/+0.0008
AT2 (mm)	+0.0008/+0.0013
AT3 (mm)	+0.0013/+0.0020
8°圓錐角度直線度公差 // 8° TAPER ANGLE STRAIGHTNESS TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
	0.001
8°圓錐圓度公差 // 8° TAPER ANGLE STRAIGHTNESS TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
	0.001

AT2 taper angle tolerance is a "MUST"

傳統ER結構 Old Type ER Structure	SGER結構 SGER Structure
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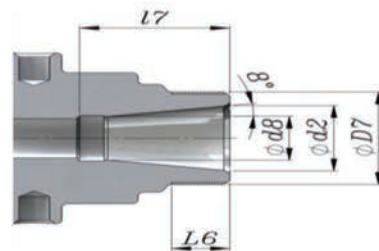


AT2的錐度角度公差是必須的



SGER Collet Chucks SGER刀桿

SGER	SGER16	SGER20	SGER25	SGER32	SGER40
COLLET	ER16	ER20	ER25	ER32	ER40
Ød2 -0.14/-0.20	17	21	26	33	41
ØD7 ISO4g	M24*P1.0	M28*P1.5	M34*P1.0	M42*P1.0	M52*P1.0
Ød8 +0.5/-0	11.0	14.0	18.0	24.0	31.0
L6 min.	9.0	10.0	11.0	12.0	13.0
l7 min.	24.5	28.0	29.5	35.0	40.0
Nut	N16SGX nano	N20SGX nano	N25SGX nano	N32SGX nano	N40SGX nano
Nut	N16SGSX nano	N20SGSX nano	N25SGSX nano	N32SGSX nano	N40SGSX nano



牙部ØD7 ISO4g是震虎的生產標準
比DIN6499/ISO15488的ISO6g更精準

Thread part ØD7 ISO4g is the production standard of SPEED TIGER
It is much more precise than DIN6499/ISO15488 requirement ISO6g

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SGER & ER筒夾刀桿夾持力表		Clamping torque for SGER & ER collet chuck						
鎖緊扭力 TIGHTENING TORQUE	SGER & ER螺帽 SGER & ER NUT	ER筒夾內徑 // ER COLLET BORE						
		Ø6	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25
ER16 TORQUE 55Nm	SGER N16SGX nano	40Nm	61Nm	93Nm				
	SGER N16SGSX nano	-	-	-				
	ER N16SX nano	22Nm	31Nm	44Nm				
	ER N16SX	19Nm	24Nm	33Nm				
ER20 TORQUE 80Nm	SGER N20SGX nano		73Nm	100Nm	153Nm			
	SGER N20SGSX nano		-	-	-			
	ER N20SX nano		47Nm	65Nm	75Nm			
	ER N20SX		39Nm	55Nm	66Nm			
ER25 TORQUE 100Nm	SGER N25SGX nano			103Nm	160Nm	231Nm		
	SGER N25SGSX nano			-	-	-		
	ER N25SX nano			68Nm	83Nm	123Nm		
	ER N25SX			57Nm	69Nm	109Nm		
ER32 TORQUE 135Nm	SGER N32SGX nano				171Nm	242Nm	330Nm	
	SGER N32SGSX nano				-	-	-	
	ER N32SX nano				91Nm	127Nm	162Nm	
	ER N32SX				80Nm	116Nm	147Nm	
ER40 TORQUE 170Nm	SGER N40SGX nano					276Nm	410Nm	535Nm
	SGER N40SGSX nano					-	-	-
	ER N40SX nano					156Nm	210Nm	271Nm
	ER N40SX					139Nm	187Nm	249Nm

夾持力比較表		Clamping torque comparison						
刀桿種類 TYPE OF TOOLHOLDER	內徑 // BORE							
		Ø6	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25
ezShrink shrink fit chuck form SPEED TIGER		20Nm	50Nm	70Nm	150Nm	300Nm	450Nm	680Nm
Hydraulic chuck from "S"		16Nm	23Nm	45Nm	90Nm	185Nm	330Nm	400Nm
Hydraulic chuck from "I"		15Nm	25Nm	50Nm	110Nm	180Nm	250Nm	310Nm

SGER螺帽鎖緊力表			SGER nut clamping torque chart		
SGER螺帽 SGER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE	SGER螺帽 SGER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE
N16SGX	ER16(1.0~4.5)	30Nm	N25SGX	ER25(1.0~6.5)	55Nm
	ER16(5.0~10.0)	55Nm		ER25(7.0~16.0)	100Nm
N20SGX	ER20(1.0~6.5)	45Nm	N32SGX	ER32(2.0~6.5)	70Nm
	ER20(7.0~13.0)	80Nm		ER32(7.0~20.0)	135Nm
			N40SGX	ER40(3.0~7.5)	100Nm
				ER40(8.0~26.0)	170Nm

NxxSGX nano與NxxSGSX nano使用相同扭力值

NxxSGX nano & NxxSGSX nano are with the same clamping torque

ER Collet Chucks ER刀桿

SPEED TIGER

ER筒夾刀桿簡介: Introduction of ER collet chucks:

ER筒夾刀桿是德國規範DIN6499也是ISO規範ISO15488
稱為ER系列
ER系列廣泛用於刀具夾持與工件夾持系統中
ER筒夾刀桿是由刀桿本體加上螺帽與ER筒夾組合而成的刀桿
刀桿的夾持端有一個8度的內錐度孔用以接合ER筒夾
刀桿的夾持端有一段外牙用以接合ER螺帽
更換不同孔徑的ER筒夾便能夾持不同柄徑的刀具

ER collet chuck is a Germany norm DIN6499 and an ISO norm ISO15488
It is called ER series
ER series is applied widely in tool holding system and work piece holding system
ER collet chuck is composed of chuck body, clamping nut and ER collet
There is an 8° taper bore at the holding part of the chuck to contact the ER collet
There is an O.D. thread at the holding part of the chuck to contact the ER nut
We can hold the tool with different dia. of shank by changing the ER collet

ER筒夾刀桿技術資料: Technical information of ER collet chucks:

材質: SCM420/20CrMo4/20CrMo/4120
抗拉強度: 930+ N/mm2 (Mpa)
熱處理硬度: 滲碳深度0.6mm HRC58~62
刀桿牙部: 防碳處理防止脆裂
刀桿內孔偏擺精度: 0.003mm

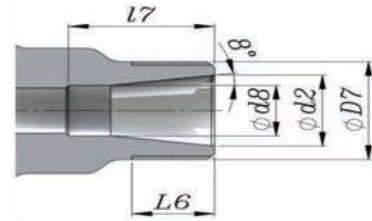
Material: SCM420/20CrMo4/20CrMo/4120
Tensile strength: 930+ N/mm2 (Mpa)
Hardness: Carburizing depth 0.6mm with HRC58~60
Thread part: Carburizing free on the thread part to prevent crack happening
Run out of T.I.R: 0.003mm

為什麼材料使用SCM420/20CrMo4/20CrMo/4120? Why use steel SCM420/20CrMo4/20CrMo/4120?

這材料抗拉強度有930+ N/mm2 (Mpa)
SCM415/15CrMo5/15CrMo/4118只有830+ N/mm2 (Mpa)
SNCM220/21NiCrMo3/20CrNiMo/8620只有830+ N/mm2 (Mpa)

The tensile strength is 930+ N/mm2 (Mpa)
SCM415/15CrMo5/15CrMo/4118 is only 830+ N/mm2 (Mpa)
SNCM220/21NiCrMo3/20CrNiMo/8620 is only 830+ N/mm2 (Mpa)

ER COLLET	ER11M ER11	ER16M ER16	ER20M ER20	ER25M ER25
Ød2 +0/-0.05	11	16	20	25
ØD7 ISO4g	M13*P0.75	M19*P1.0	M24*P1.0	M30*P1.0
Ød8 +1/-0	7.5	10.5	13.5	18.0
L6 min.	7.5	12.5	12.5	12.5
L7 min.	17.0	22.0	26.5	29.0
Nut	N11MX nano	N16MX nano	N20MX nano	N25MX nano
Nut	N11MX	N16MX	N20MX	N25MX



ER COLLET	ER11 ER11	ER16 ER16	ER20 ER20	ER25 ER25	ER32 ER32	ER40 ER40
Ød2 +0/-0.05	11	16	20	25	32	40
ØD7 ISO4g	M14*P0.75	M22*P1.5	M25*P1.5	M32*P1.5	M40*P1.5	M50*P1.5
Ød8 +1/-0	7.5	10.5	13.5	18.0	23.5	30.5
L6 min.	7.5	11.5	12.5	13.0	15.2	16.5
L7 min.	17.0	22.0	26.5	17.0	22.0	26.5
Nut	N11SX nano	N16SX nano	N20SX nano	N25SX nano	N32SX nano	N40SX nano
Nut	N11SX	N16SX	N20SX	N25SX	N32SX	N40SX

牙部ØD7 ISO4g是震虎的生產標準
比DIN6499/ISO15488的ISO6g更精準

Thread part ØD7 ISO4g is the production standard of SPEED TIGER
It is much more precise than DIN6499/ISO15488 requirement ISO6g

8°圓錐角度公差 // 8° TAPER ANGLE TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
AT1 (mm)	+0.0005/+0.0008
AT2 (mm)	+0.0008/+0.0013
AT3 (mm)	+0.0013/+0.0020

8°圓錐角度直線度公差 // 8° TAPER ANGLE STRAIGHTNESS TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
	0.001

8°圓錐圓度公差 // 8° TAPER ANGLE STRAIGHTNESS TOLERANCE	
ER TAPER	ER11, ER16, ER20, ER25, ER32 & ER40
	0.001

AT2的錐度角度公差是必須的

AT2 taper angle tolerance is a "MUST"



ER Collet Chucks ER刀桿

ER筒夾刀桿夾持力表			Clamping torque for ER collet chuck						
鎖緊扭力 TIGHTENING TORQUE	ER螺帽 ER NUT	ER筒夾內徑 // ER COLLET BORE							
			Ø6	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25
ER16 TORQUE 55Nm	N16SX nano (UM/ER16 nano) N16SX (UM/ER16)	22Nm 31Nm 44Nm	19Nm	24Nm	33Nm				
ER20 TORQUE 80Nm	N20SX nano (UM/ER20 nano) N20SX (UM/ER20)	47Nm 65Nm 75Nm	39Nm	55Nm	66Nm				
ER25 TORQUE 100Nm	N25SX nano (UM/ER25 nano) N25SX (UM/ER25)	68Nm 83Nm 123Nm	57Nm	69Nm	109Nm				
ER32 TORQUE 135Nm	N32SX nano (UM/ER32 nano) N32SX (UM/ER32)	91Nm 127Nm 162Nm	80Nm	116Nm	147Nm				
ER40 TORQUE 170Nm	N40SX nano (UM/ER40 nano) N40SX (UM/ER40)	156Nm 210Nm 271Nm	139Nm	187Nm	249Nm				

夾持力比較表		Clamping torque comparison						
刀桿種類 TYPE OF TOOLHOLDER	內徑 // BORE							
		Ø6	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25
ezShrink shrink fit chuck form SPEED TIGER		20Nm	50Nm	70Nm	150Nm	300Nm	450Nm	680Nm
Hydraulic chuck from "S"		16Nm	23Nm	45Nm	90Nm	185Nm	330Nm	400Nm
Hydraulic chuck from "I"		15Nm	25Nm	50Nm	110Nm	180Nm	250Nm	310Nm

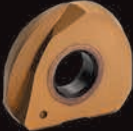
ER螺帽鎖緊力表			ER nut clamping torque chart			
ER螺帽 ER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE	ER螺帽 ER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE	
N11MX nano	ER11(1.0~2.5)	10Nm	N11SX nano	ER11(1.0~2.5)	12Nm	
	ER11(3.0~0.0)	12Nm		ER11(3.0~0.0)	25Nm	
N16MX nano	ER16(1.0~4.5)	15Nm	N16SX nano	ER16(1.0~4.5)	30Nm	
	ER16(5.0~10.0)	17Nm		ER16(5.0~10.0)	55Nm	
N20MX nano	ER20(1.0~6.5)	21Nm	N20SX nano	ER20(1.0~6.5)	45Nm	
	ER20(7.0~13.0)	23Nm		ER20(7.0~13.0)	80Nm	
N25MX nano	ER25(1.0~6.5)	24Nm	N25SX nano	ER25(1.0~6.5)	55Nm	
	ER25(7.0~16.0)	40Nm		ER25(7.0~16.0)	100Nm	
				N32SX nano	ER32(2.0~6.5)	70Nm
				ER32(7.0~20.0)	135Nm	
			N40SX nano	ER40(3.0~7.5)	100Nm	
		ER40(8.0~26.0)		170Nm		

NxxMX(SX) nano與NxxMX(SX)使用相同扭力值 NxxMX(SX) nano & NxxMX(SX) are with the same torque

測試結果發現 From our test results we find that
 ERM螺帽與ER螺帽增加表面奈米處理 ERM nut & ER nut with nano surface treatment
 在相同的鎖緊力之下有10%~30%夾持力提升 will increase the clamping torque by 10%~30% with the same tightening torque
 震虎ER系列都搭配NxxMX nano或NxxSX nano高速平衡奈米螺帽 SPEED TIGER ER series equip with NxxMX nano or NxxSX nano as standard
 讓震虎的ER系列刀桿有著優異的表現 It offers SPEED TIGER ER series a outstanding performance

什麼是表面奈米處理?	What is nano surface treatment?
這個製程最早使用在賽車引擎來提升引擎壽命	Nano surface treatment was adopted by car racing to increase the life of engine firstly
表面奈米處理"不是塗層"會磨損不會剝落	Nano surface treatment is "NOT coating", it will wear out but "NOT peel off"
是一種以低溫高壓方式	It is a treatment in low temperature and high pressure
高速射出電子撞擊工件的表面	shooting the surface of workpiece with electrons in a very high speed
不會使工件產生變形或改變精度	It will "NOT deform" the workpiece or change the accuracy
讓工件金屬表面的結晶變的細小	It makes the metal crystals on the surface of the workpiece smaller
提升工件的表面粗糙度	A smaller metal crystals will improve the surface roughness
撞擊產生的瞬間高溫	A brief high temperature comes from the electrons shooting
會讓工件表面產生熱處理的效果並提高表面硬度	will generate the effect of heat treatment to increase the surface hardness
更好的表面粗糙度讓接觸面積增加提高夾持力	Better surface roughness will offer more contact area to increase the clamping torque
更高的表面硬度讓工件使用壽命更長	Higher surface hardness will increase the life of workpiece
震虎使用表面奈米處理超過十年	SPEED TIGER has more than 10 years experience with nano surface treatment
表面奈米處理過的工件總是有讓人驚豔的表現	Workpiece with nano surface treatment always have outstanding performance

POWER TIPS





Icon Guide

Tool Materials



Tungsten Carbide
600 Nano
鎢鋼600奈米



Tungsten Carbide
600 PLUS
鎢鋼600奈米PLUS



Tungsten Carbide
400 Nano
鎢鋼400奈米



Tungsten Carbide
200 Nano
鎢鋼200奈米

Coating Level



nACo Coating
nACo 鍍層



nACRo Coating
nACRo 鍍層



TB Coating
TB 鍍層



RS Coating
RS 鍍層



TiSiN Coating
TiSiN 鍍層



TiCN Coating
TiCN 鍍層



AlTiN Coating
AlTiN 鍍層



SH Coating
SH 鍍層



nBS Coating
nBS 鍍層



SS Coating
SS 鍍層



SSA Coating
SSA 鍍層

Helix Angle



Helix Angle 0°
切削刃角度 0°



Helix Angle 25°
切削刃角度 25°



Helix Angle 30°
切削刃角度 30°



Helix Angle 35°
切削刃角度 35°



Helix Angle 40°
切削刃角度 40°



Helix Angle 45°
切削刃角度 45°



Helix Angle 50°
切削刃角度 50°



Helix Angle 55°
切削刃角度 55°



Helix Angle 50°
切削刃角度 50°



Helix Angle 10°
切削刃角度 10°



Helix Angle 35°
切削刃角度 35°



Helix Angle 40°
切削刃角度 40°



Helix Angle 45°
切削刃角度 45°



Helix Angle 50°
切削刃角度 50°



Helix Angle 55°
切削刃角度 55°



Helix Angle 35°
切削刃角度 35°



Helix Angle 0°
切削刃角度 0°



Helix Angle 50°
切削刃角度 50°



Helix Angle 30°
切削刃角度 30°



Helix Angle 35°
切削刃角度 35°



Helix Angle 40°
切削刃角度 40°



Helix Angle 45°
切削刃角度 45°



Helix Angle 50°
切削刃角度 50°



Helix Angle 55°
切削刃角度 55°

Tools Specification



Working Hardness 40°
可被切削材硬度 40°



Working Hardness 45°
可被切削材硬度 45°



Working Hardness 50°
可被切削材硬度 50°



Working Hardness 53°
可被切削材硬度 53°



Working Hardness 55°
可被切削材硬度 55°



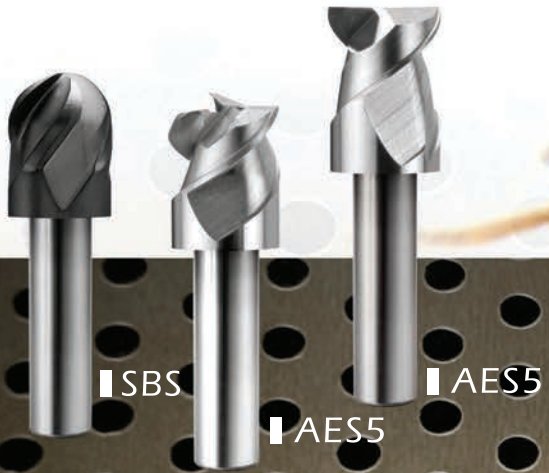
Working Hardness 60°
可被切削材硬度 60°



Working Hardness 65°
可被切削材硬度 65°

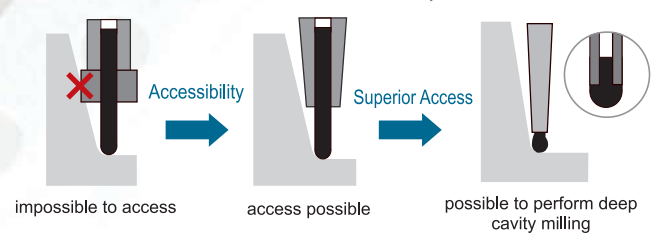
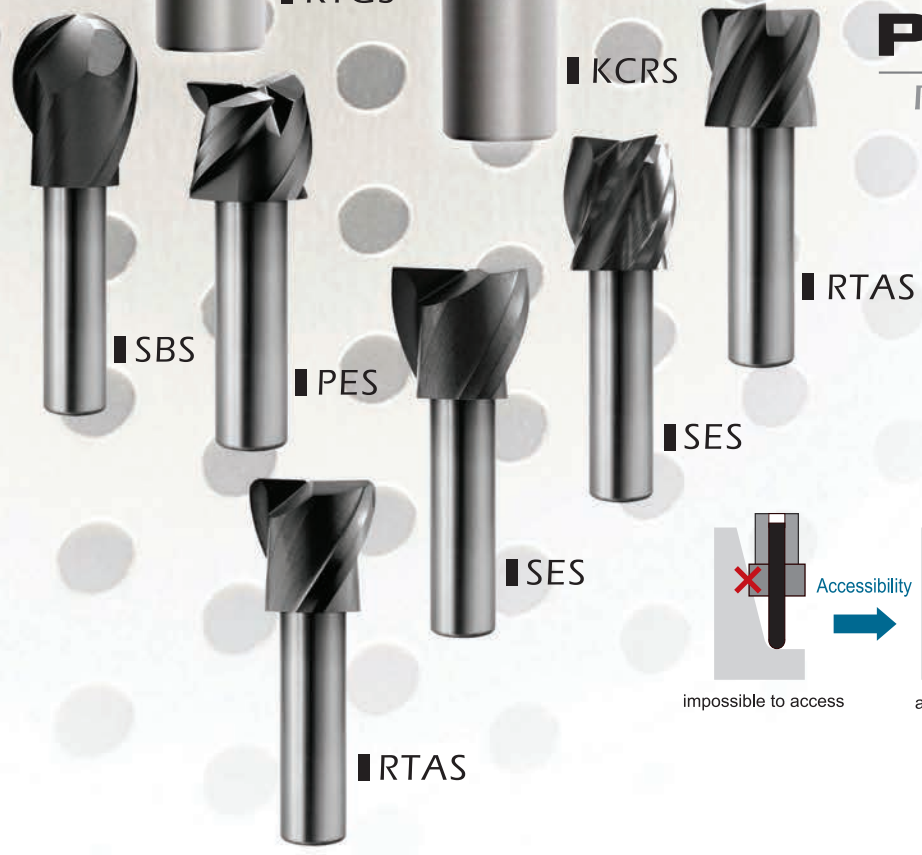


Conner Radius
圓鼻角度



Insert Price End Mill Function & Performance

Power Tips Products Series



POWER TIPS

■ SBS Ball Nose Tip - 2 & 4 flutes

600
Nano

HRC
50

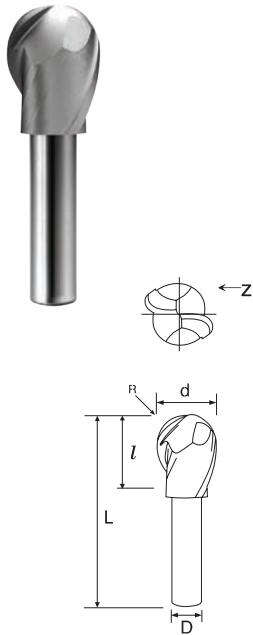
35°

nACRo

● 球形刀頭 2 刃 / 4 刃

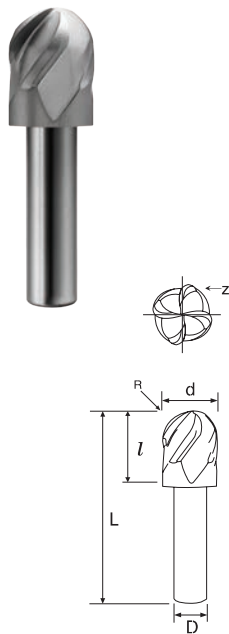
切削
條件表 **P221**
Cutting Condition

26



2 Flutes - 2 刃

MODE	Diameter	Radius	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刀徑	R 值	l 刃長	L 全長	D 柄徑	Z 刃數
SBS0802 nACRo	8	4	6	20	6	2
SBS1002 nACRo	10	5	8	24	6	2
SBS1102 nACRo	11	5.5	8	24	6	2
SBS1202 nACRo	12	6	9	26	6	2
SBS1302 nACRo	13	6.5	9	26	6	2
SBS1602 nACRo	16	8	12	32	10	2
SBS1702 nACRo	17	8.5	12	32	10	2
SBS2002 nACRo	20	10	15	35	12	2
SBS2102 nACRo	21	10.5	15	35	12	2



4 Flutes - 4 刃

MODE	Diameter	Radius	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刀徑	R 值	l 刃長	L 全長	D 柄徑	Z 刃數
SBS0804 nACRo	8	4	6	20	6	4
SBS1004 nACRo	10	5	8	24	6	4
SBS1204 nACRo	12	6	9	26	6	4
SBS1604 nACRo	16	8	12	32	10	4
SBS2004 nACRo	20	10	15	35	12	4

Application 適用材質：

◎ Recommend 最適

○ Suitable 適合X

Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼					Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC				
◎	◎	◎	○	○					

POWER TIPS

SPEED TIGER

RTAS Corner Radius Tip - 2 & 4 flutes

600 Nano

HRC 50

35°

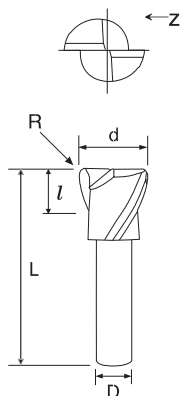
nACRo

R

● 圓鼻刀頭 2 刃 / 4 刃

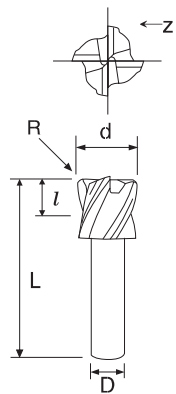
切削條件表 **P224**
Cutting Condition

2 Flutes - 2 刃



MODE	Diameter	Corner Radius	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刀徑	R 角	l 刃長	L 全長	D 柄徑	Z 刃數
RTAS080052 nACRo	8	0.5	6	20	6	2
RTAS080102 nACRo	8	1	6	20	6	2
RTAS080202 nACRo	8	2	6	20	6	2
RTAS100052 nACRo	10	0.5	8	24	6	2
RTAS100102 nACRo	10	1	8	24	6	2
RTAS100202 nACRo	10	2	8	24	6	2
RTAS110052 nACRo	11	0.5	8	24	6	2
RTAS110102 nACRo	11	1	8	24	6	2
RTAS120052 nACRo	12	0.5	9	26	6	2
RTAS120102 nACRo	12	1	9	26	6	2
RTAS120202 nACRo	12	2	9	26	6	2
RTAS130052 nACRo	13	0.5	9	26	6	2
RTAS130102 nACRo	13	1	9	26	6	2
RTAS160102 nACRo	16	1	12	32	10	2
RTAS160202 nACRo	16	2	12	32	10	2
RTAS160302 nACRo	16	3	12	32	10	2
RTAS170052 nACRo	17	0.5	12	32	10	2
RTAS170102 nACRo	17	1	12	32	10	2
RTAS200102 nACRo	20	1	15	35	12	2
RTAS200202 nACRo	20	2	15	35	12	2
RTAS200302 nACRo	20	3	15	35	12	2
RTAS210052 nACRo	21	0.5	15	35	12	2
RTAS210102 nACRo	21	1	15	35	12	2

4 Flutes - 4 刃



MODE	Diameter	Corner Radius	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刀徑	R 角	l 刃長	L 全長	D 柄徑	Z 刃數
RTAS080054 nACRo	8	0.5	6	20	6	4
RTAS080104 nACRo	8	1	6	20	6	4
RTAS080204 nACRo	8	2	6	20	6	4
RTAS100054 nACRo	10	0.5	8	24	6	4
RTAS100104 nACRo	10	1	8	24	6	4
RTAS100204 nACRo	10	2	8	24	6	4
RTAS120054 nACRo	12	0.5	9	26	6	4
RTAS120104 nACRo	12	1	9	26	6	4
RTAS120204 nACRo	12	2	9	26	6	4
RTAS160104 nACRo	16	1	12	32	10	4
RTAS160204 nACRo	16	2	12	32	10	4
RTAS160304 nACRo	16	3	12	32	10	4
RTAS200104 nACRo	20	1	15	35	12	4
RTAS200204 nACRo	20	2	15	35	12	4
RTAS200304 nACRo	20	3	15	35	12	4

Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	◎	○	○				

POWER TIPS

■ SES Square Tip - 2 & 4 flutes

600
Nano

HRC
45

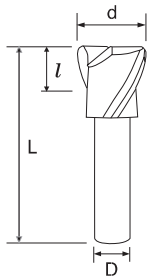
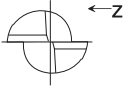
35°

nACRo

● 平刀頭 2 刃 / 4 刃

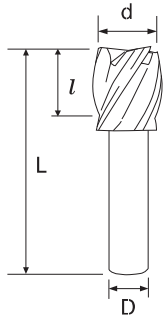
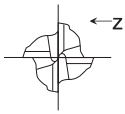
切削
條件表 **P226**
Cutting Condition

2 Flutes - 2 刃



MODE	Diameter	Flute Length	Shank Diameter	Full Length	Flutes
型號	d 刀徑	l 刃長	D 柄徑	L 全長	z 刃數
SES0802 nACRo	8	6	6	20	2
SES1002 nACRo	10	8	6	24	2
SES1202 nACRo	12	9	6	26	2
SES1602 nACRo	16	12	10	32	2
SES2002 nACRo	20	15	12	35	2

4 Flutes - 4 刃



MODE	Diameter	Flute Length	Shank Diameter	Full Length	Flutes
型號	d 刀徑	l 刃長	D 柄徑	L 全長	z 刃數
SES0804 nACRo	8	6	6	20	4
SES1004 nACRo	10	8	6	24	4
SES1204 nACRo	12	9	6	26	4
SES1604 nACRo	16	12	10	32	4
SES2004 nACRo	20	15	12	35	4

Application 適用材質：

◎ Recommend 最適合

○ Suitable 適合 X

Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	○	○				

POWER TIPS

SPEED TIGER

■ PES Square Tip - 3 flutes Helix Angle 45°

600
Nano

HRC
▶ 45

45°

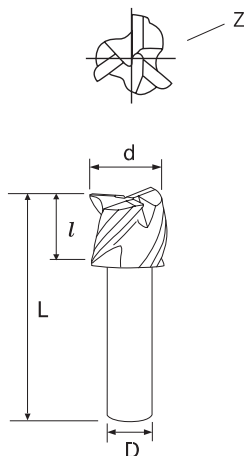
nACRo

● 平刀頭 3 刃 45°

切削
條件表 **P227**
Cutting Condition



MODE	Diameter	Flute Length	Shank Diameter	Full Length	Flutes
型號	d 刀徑	l 刃長	D 柄徑	L 全長	Z 刃數
PES0803 nACRo	8	6	6	20	3
PES1003 nACRo	10	8	6	24	3
PES1103 nACRo	11	8	6	24	3
PES1203 nACRo	12	9	6	26	3
PES1303 nACRo	13	9	6	26	3
PES1603 nACRo	16	12	10	32	3
PES1703 nACRo	17	12	10	32	3
PES2003 nACRo	20	15	12	35	3
PES2103 nACRo	21	15	12	35	3



Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼,合金鋼	Pre-harden steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金,銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	○					

POWER TIPS

■ AES5 Square Tip - For Aluminum Alloy - 2 & 3 flutes

600
Nano

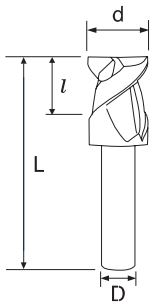
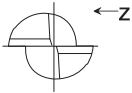
HRC
40

55°

● 鋁用刀頭 2 刃 / 3 刃

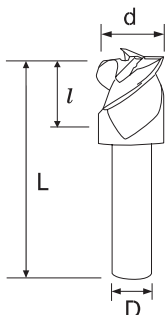
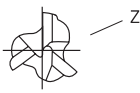
切削
條件表 **P228**
Cutting Condition

30



2 Flutes - 2 刃

MODE	Diameter	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刃徑	l 刃長	L 全長	D 柄徑	Z 刃數
AES50802	8	6	20	6	2
AES51002	10	8	24	6	2
AES51202	12	9	26	6	2
AES51602	16	12	32	10	2
AES52002	20	15	35	12	2



3 Flutes - 3 刃

MODE	Diameter	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刃徑	l 刃長	L 全長	D 柄徑	Z 刃數
AES50803	8	6	20	6	3
AES51003	10	8	24	6	3
AES51203	12	9	26	6	3
AES51603	16	12	32	10	3
AES52003	20	15	35	12	3

產品特點

鋁加工專用立銑刀
採用55°螺旋角之設計，使排屑順暢；高速加工時不易發生顫動，可提升加工精度。

Application 適用材質：

◎ Recommend 最適合

○ Suitable 適合 X

Not Recommend 不建議

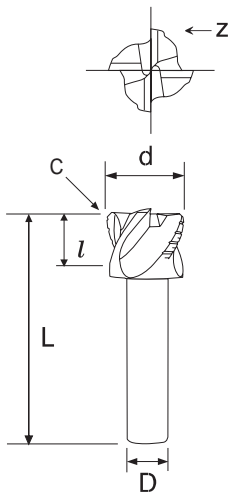
carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼					Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC				
X	X	X	X	X	X	X	◎	◎	

■ FHPCS Heavy-duty operation Tip - 4 flutes



● 重切削平刀頭 4 刃

切削
條件表 **P230**
Cutting Condition



MODE	Diameter	Flute Length	Shank Diameter	Full Length	Helix Angle	Flutes
型號	d 刀徑	l 刃長	D 柄徑	L 全長	螺旋角度	Z 刃數
FHPCS080 nACRo	8	6	6	20	45°	4
FHPCS100 nACRo	10	8	6	24	45°	4
FHPCS120 nACRo	12	9	6	26	45°	4
FHPCS160 nACRo	16	12	10	32	45°	4
FHPCS200 nACRo	20	15	12	35	45°	4

Details 產品特點

The FHPCS endmill features 4 flutes with a 45° helix, four serrated flutes and four continuous flutes.

The tool is fully effective and enables running at rough machining parameters, resulting in finish surface quality.

The unique tool design reduces vibration at high load applications.

The tool produces short and long chips simultaneously.

This chip mixture is evacuated more easily than each individual chip type an excellent solution in slotting and cavity milling applications.

One tool change and setup time can be eliminated.

A single tool replaces the roughing and finishing endmills, dramatically reducing cycle time and increasing productivity.

Extra tool position is gained on the machine.

Eliminates the need to keep a large amount of stock.

Superior nACRo nano metallic element coating.

4 flutes : 4 serrated plus 4 continuous flutes.

Excellent performance and tool life.

Suitable for all types of steel.

Excellent performance in machining titanium, Inconel, stainless steel and high temperature alloys.

FHPCS立銑刀，45° 螺旋角，4螺旋刃，4螺旋刃帶鋸齒，4光滑螺旋刃

高效刀具，粗加工的切削參數，精加工的表面質量

獨特設計減小了高負荷下刀具的振顫；有不等斷削槽設計

短小切屑及長切屑同時產生，長短混合的切屑比單一類型的切屑更易於排出，是槽銑加工及型腔銑削的出色解決方案

僅一把刀具，無調試時間

僅一把銑刀就完成了粗銑及精銑加工，出色地減少了加工週期及提高了生產率

刀庫中多了一個安裝其他刀具的刀位

當銑刀規格繁多時，會很明顯地為您減少庫存量

最頂尖的nACRo奈米金屬三元素薄膜

4個螺旋刃，4螺旋刃帶鋸齒，4光滑螺旋刃

表現卓越，刀具壽命長

適用於所有類型的鋼製品加工

加工鈦合金，鎳鉻鐵合金 (inconel)，不銹鋼及高溫合金時，表現不凡

Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼,合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金,銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	◎	○					

POWER TIPS

- KTGS Super high speed cutting with high hardness **Ball Nose Tip - 2 flutes**

200
Nano

HRC
60

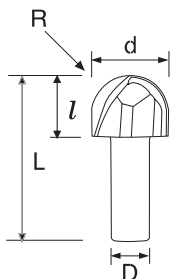
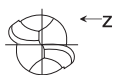
5°

nACo

- 超高速、超高硬度切削球形刀頭 2 刃

切削條件表 **P232**
Cutting Condition

32



MODE	Diameter	Radius	Flute Length	Full Length	Shank Diameter	Flutes
型號	d 刃徑	R 值	l 刃長	L 全長	D 柄徑	Z 刃數
KTGS0802 nACo	8	4	6	20	6	2
KTGS1002 nACo	10	5	8	24	6	2
KTGS1202 nACo	12	6	9	26	6	2
KTGS1602 nACo	16	8	12	32	10	2
KTGS2002 nACo	20	10	15	35	12	2

產品特點

採用先進奈米晶格nACo塗層，擁有高附着性和高硬度

長壽命 工具壽命大大提升

高精度 尺寸變化極少，精加工最適合

最新幾何刀刃形狀，擁有最高剛性保證，高精度R值

高能率 強力重切削粗加工可行

高精度 高精度超精密加工

KTGS nACo 系列強而有力的表現在形形色色的材質加工，從預熱鋼HRC45到高硬度鋼HRC65特別應用在預熱鋼切削KTGS nACo表現出無與倫比的超長壽命，非一般刀具能比（超過一般TiAlN3倍以上壽命）

R精度±0.01mm以下，尺寸磨耗小，高精密度精加工可行

Application 適用材質：

◎ Recommend 最適合

○ Suitable 適合X

Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼,合金鋼	Pre-harden steel 預硬鋼	High-hardened 高硬度鋼					Stainless steel 不銹鋼	Copper alloy 銅合金,銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC				
◎	◎	◎	◎	◎					

POWER TIPS

SPEED TIGER

■ KCRS Super high speed cutting with
super high hardness - 4 flute

200
Nano

HRC
55

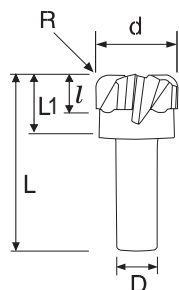
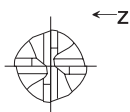
5°

nACo

R

- 超高速、超高硬度切削圓鼻刀頭 4 刃

切削
條件表 **P234**
Cutting Condition



MODE	Diameter	Corner Radius	Flute Length	Efficient Length	Full Length	Shank Diameter	Flutes
型號	d 刃徑	R 角	刀長	L1 有效長	L 全長	D 柄徑	Z 刃數
KCRS0805 nACo	8	0.5	3.5	6	20	6	4
KCRS0810 nACo	8	1	3.5	6	20	6	4
KCRS0820 nACo	8	2	3.5	6	20	6	4
KCRS1005 nACo	10	0.5	4	8	24	6	4
KCRS1010 nACo	10	1	4	8	24	6	4
KCRS1020 nACo	10	2	4	8	24	6	4
KCRS1210 nACo	12	1	5	9	26	6	4
KCRS1220 nACo	12	2	5	9	26	6	4
KCRS1230 nACo	12	3	5	9	26	6	4
KCRS1610 nACo	16	1	7	12	32	10	4
KCRS1620 nACo	16	2	7	12	32	10	4
KCRS1630 nACo	16	3	7	12	32	10	4

產品特點

採用先進奈米晶格nACo塗層，擁有高附著性和高硬度
 長壽命 工具壽命大大提升
 高精度 尺寸變化極少，精加工最適合
 最新幾何刀刃形狀，擁有最高剛性保證，高精度R值
 高能率 強力重切削粗加工可行
 高精度 高精度超精密加工

KCRS nACo 系列強而有力的表現在形形色色的材質加工，從預熱鋼HRC45到高硬度鋼HRC65特別應用在模具銑削KCRS nACo表現出無與倫比的超高速精度粗加工（超過一般圓鼻刀3倍以上效率）

R精度±0.01mm以下，尺寸磨耗小，高精密度精加工可行

Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼,合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金,銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	◎	◎	○				

POWER TIPS

■ Dovetail Cutter



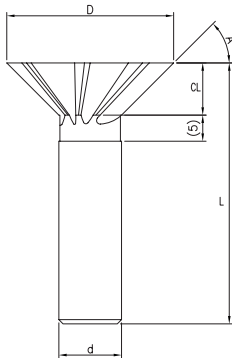
● 鳩尾刀

34



MODE	Diameter	Cutting Length	Length after Shrink	Angle	Shank Diameter	Full Length	Flutes
型號	D 外徑	CL 刃長	燒結後伸出長	A 角度	d 柄徑	L 全長	Z 刃數
TAMS160045	16	4	19	45 度	10	40	6
TAMS200045	20	5	19		10	40	6
TAMS250045	25	6.3	24		12	45	6
TAMS320045	32	8	29		12	50	8
TAMS160060	16	6.3	19	60 度	10	40	6
TAMS200060	20	8	19		10	40	6
TAMS250060	25	10	24		12	45	6
TAMS320060	32	12.5	29		12	50	8

特殊規格可依需求接單生產
Make to order for special requests is available.



Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-harden steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

Position Chamfer Cutter



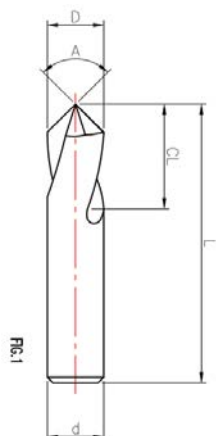
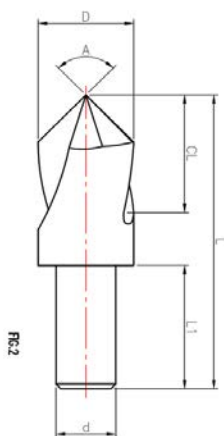
● 定位倒角刀



MODE	Diameter	Angle	Cutting Length	Shank Length	Shank Diameter	Full Length	Flutes	FIG
型號	D 刃徑	A 角度	CL 刃長	L1 柄長	d 柄徑	L 全長	Z 刃數	FIG
PDSTS040600	4	60°	8	-	4	40	2	1
PDSTS060600	6		12	-	6	40	2	1
PDSTS080600	8		15	-	8	40	2	1
PDSTS100600	10		15	-	10	40	2	1
PDSTS120600	12		15	-	12	40	2	1
PDSTS160600	16		20	20	10	50	2	2
PDSTS200600	20	20	20	10	50	2	2	
PDSTS040900	4	90°	8	-	4	40	2	1
PDSTS060900	6		12	-	6	40	2	1
PDSTS080900	8		15	-	8	40	2	1
PDSTS100900	10		15	-	10	40	2	1
PDSTS120900	12		15	-	12	40	2	1
PDSTS160900	16		20	20	10	50	2	2
PDSTS200900	20	20	20	10	50	2	2	
PDSTS040120	4	120°	8	-	4	40	2	1
PDSTS060120	6		12	-	6	40	2	1
PDSTS080120	8		15	-	8	40	2	1
PDSTS100120	10		15	-	10	40	2	1
PDSTS120120	12		15	-	12	40	2	1
PDSTS160120	16		20	20	10	50	2	2
PDSTS200120	20	20	20	10	50	2	2	

特殊規格可依需求接單生產

Make to order for special requests is available.



Application 適用材質：

◎ Recommend 最適合

○ Suitable 適合

X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

POWER TIPS

■ Corner Rounding Cutter



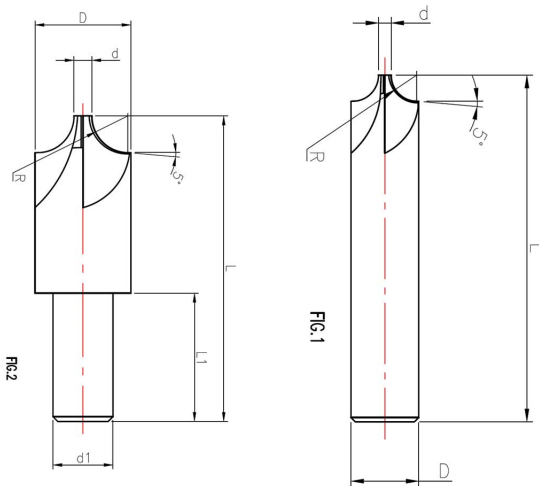
● 外 R 刀

36



MODE	Corner Radius	Diameter	Diameter	Diameter	Shank Length	Full Length	Flutes	FIG
型號	R 值	d 先端徑	D 外徑	d1 柄徑	L1 柄長	L 全長	Z 刃數	FIG
RCS015054	0.5	1.5	4	-	-	40	4	1
RCS015104	1	1.5	4	-	-	40	4	1
RCS015154	1.5	1.5	6	-	-	40	4	1
RCS015204	2	1.5	6	-	-	40	4	1
RCS015304	3	1.5	8	-	-	40	4	1
RCS020404	4	2	12	-	-	40	4	1
RCS030504	5	3	16	10	20	50	4	2
RCS030604	6	3	16	10	20	50	4	2

特殊規格可依需求接單生產
Make to order for special requests is available.



Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼,合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金,銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

Double Chamfer Cutter



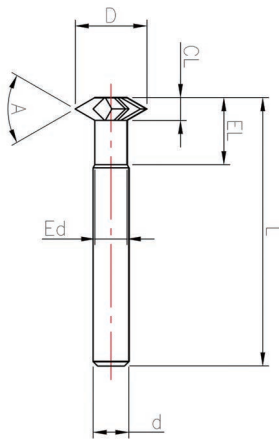
● 雙面倒角刀



MODE	Diameter	Angle	Cutting Length	Efficient Diameter	Efficient Length	Shank Diameter	Full Length	Flutes
型號	D 刃徑	A 角度	CL 刃長	頸徑 (Ed)	頸長 (EL)	d 柄徑	L 全長	Z 刃數
TMAS080060	8	60°	2.5	3.6	5	4	50	4
TMAS100060	10		3.2	3.6	6	4	50	6
TMAS120060	12		3.8	5.4	7	6	50	6
TMAS160060	16		5.1	7.2	9	6	50	6
TMAS200060	20		6.3	9	11	10	50	8
TMAS080090	8	90°	4	3.6	9	4	50	4
TMAS100090	10		6	3.6	11	4	50	6
TMAS120090	12		6	5.4	11	6	50	6
TMAS160090	16		8	7.2	13	8	50	6
TMAS200090	20		10	9	15	10	50	8

特殊規格可依需求接單生產

Make to order for special requests is available.



Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

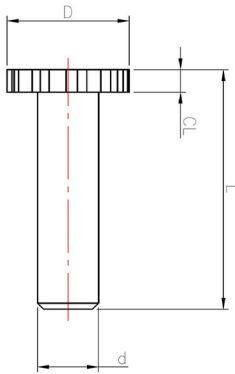
POWER TIPS

Keyseat Cutter



● 鍵槽刀

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MODE	Diameter	Cutting Length	Length after Shrink	Shank Diameter	Full Length	Flutes
型號	D 刃徑	CL 刃長	燒結後伸出長	d 柄徑	L 全長	Z 刃數
TMTS08010	8	1	13	4	30	6
TMTS08015		1.5	13		30	6
TMTS08020		2	13		30	6
TMTS10010	10	1	13	4	30	6
TMTS10015		1.5	13		30	6
TMTS10020		2	13		30	6
TMTS12010	12	1	13	6	30	6
TMTS12015		1.5	13		30	6
TMTS12020		2	13		30	6
TMTS16010	16	1	12	8	30	8
TMTS16015		1.5	12		30	8
TMTS16020		2	12		30	8
TMTS16025		2.5	12		30	8
TMTS16030	3	12	30	8	8	
TMTS20010	20	1	14	10	35	8
TMTS20015		1.5	14		35	8
TMTS20020		2	14		35	8
TMTS20025		2.5	14		35	8
TMTS20030		3	14		35	8
TMTS20050		5	19		40	8
TMTS20060		6	19		40	8
TMTS20070		7	24		45	8
TMTS20080	8	24	45	8		
TMTS25010	25	1	14	12	35	10
TMTS25020		2	14		35	10
TMTS25025		2.5	14		35	10
TMTS25030		3	14		35	10
TMTS25050		5	19		40	10
TMTS25060		6	19		40	10
TMTS25070		7	24		45	10
TMTS25080		8	24		45	10
TMTS30010	30	1	10	16	35	10
TMTS30020		2	10		35	10
TMTS30030		3	10		35	10
TMTS30040		4	10		35	10
TMTS30050		5	15		40	10
TMTS30060		6	15		40	10
TMTS30070		7	20		45	10
TMTS30080		8	20		45	10

特殊規格可依需求接單生產
Make to order for special requests is available.

Application 適用材質：

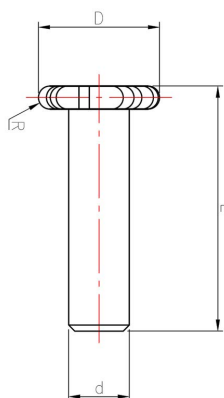
◎ Recommend 最適合 ○ Suitable 適合X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-harden steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

Keyseat Cutter - Full Radius



T 型 R 刀



MODE	Diameter	Corner Radius	Length after Shrink	Shank Diameter	Full Length	Flutes		
型號	D 刀徑	R 值	燒結後伸出長	d 柄徑	L 全長	Z 刃數		
TMRS080050	8	0.5	13	4	30	6		
TMRS080075		0.75	13		30	6		
TMRS080100		1	13		30	6		
TMRS100050	10	0.5	13	4	30	6		
TMRS100075		0.75	13		30	6		
TMRS100100		1	13		30	6		
TMRS120050	12	0.5	13	6	30	6		
TMRS120075		0.75	13		30	6		
TMRS120100		1	13		30	6		
TMRS160050	16	0.5	12	8	30	8		
TMRS160075		0.75	12		30	8		
TMRS160100		1	12		30	8		
TMRS160125		1.25	12		30	8		
TMRS160150		1.5	12		30	8		
TMRS200050	20	0.5	14	10	35	8		
TMRS200075		0.75	14		35	8		
TMRS200100		1	14		35	8		
TMRS200125		1.25	14		35	8		
TMRS200150		1.5	14		35	8		
TMRS200250		2.5	19		40	8		
TMRS200300		3	19		40	8		
TMRS200350		3.5	24		45	8		
TMRS200400		4	24		45	8		
TMRS250050		25	0.5		14	12	35	10
TMRS250100	1		14	35	10			
TMRS250125	1.25		14	35	10			
TMRS250150	1.5		14	35	10			
TMRS250250	2.5		19	40	10			
TMRS250300	3		19	40	10			
TMRS250350	3.5		24	45	10			
TMRS250400	4		24	45	10			
TMRS300050	30		0.5	10	16		35	10
TMRS300100			1	10			35	10
TMRS300150		1.5	10	35		10		
TMRS300200		2	10	35		10		
TMRS300250		2.5	15	40		10		
TMRS300300		3	15	40		10		
TMRS300350		3.5	20	45		10		
TMRS300400		4	20	45		10		

特殊規格可依需求接單生產
Make to order for special requests is available.

Application 適用材質：

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	-45HRC	-50HRC	-55HRC	-60HRC	-65HRC			
◎	◎	○	X	X	X	○	○	○

POWER TIPS

■ 220° Ball Nose Cutter



● 220° 球刀

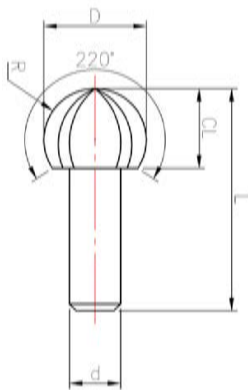
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MODE	Corner Radius	Diameter	Cutting Length	Effective Rake Angle	Shank Diameter	Full Length	Flutes
型號	R 值	D 刃徑	CL 刃長	有效切削角	d 柄徑	L 全長	Z 刃數
TRSS12006T	6	12	9.3	220°	6	26	6
TRSS16006T	8	16	13.3		6	32	6
TRSS20006T	10	20	16		10	35	6
TRSS25006T	12.5	25	20		12	40	6

特殊規格可依需求接單生產

Make to order for special requests is available.



Application 適用材質：

◎ Recommend 最適合

○ Suitable 適合X

Not Recommend 不建議

carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-harden steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	○	X	X	X	○	○	○

RD072
-D203
-S20
-150

RD

High Precision Indexable Radius End Mills

高效捨棄式圓刀片

Multi-Purpose by ONE Insert, Stable Machining of High Hardness Steel, Stainless Steel, and General Purpose.

多功能捨棄式刀片-實現了單一刀具可穩定加工於高硬度、不銹鋼、和一般鋼材的通用性。

- Class E, H high accuracy E、H 研磨級高精度
- New ultra-toughened carbide UF1025 新超強韌鎢鋼母材
- Nano composite, super high hardness SH coating 奈米級 SH 超硬塗層
- Easy cut strengthened-shape design 強化快削設計
- RDH Insert for Aluminum RDH 鋁用刀片
- TB (DLC) coating for non-ferrous material 非鐵材質專用 TB 類鑽塗層

Indexable Radius End Mills for Efficient Machining

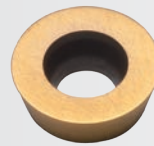
● 高效捨棄式圓刀片

■ Features 特色

Easy Cut Strengthened-Shape Design 強化快削設計

Improve feed rate, and processing efficiency
提高進給率與加工效能

Standard shape
標準型

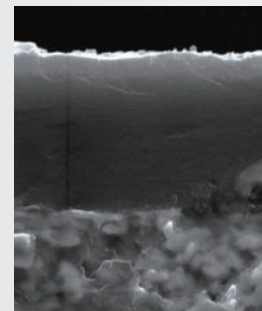


Easy cut strengthened shape
強化快削型



New ultra toughened micro-grain solid carbide UF1002 Super high hardness nano composite SH coating 新型超強韌的微晶硬質合金 UF1025，奈米級超高硬度 SH 塗層

- Achieve stable machining of high hardness steel, stainless steel, and general purpose by ONE tool.
- Super high hardness and superior adhesion; also be good at high feed machining of hard materials application.
- 實現了單一刀具可穩定加工於高硬度、不銹鋼、和一般鋼材的通用性。
- 超高塗層硬度、超強附著力，適用於高硬度材質與高進給加工。



Super high hardness nano composite SH coating

New ultra toughened micro-grain solid carbide UF1025

TB coating shows outstanding performance in machining non-ferrous material. Surpass 6 ~ 8 times efficacy in uncoated tool

TB 塗層展現了優異的表現於非鐵材質加工，超越未塗層刀具 6~8 倍的效能。

TB coating is super high hardness and accuracy coating. The material removal rate (MRR) and the productivity in non-ferrous material process are greatly improved, due to the super low friction coefficient and the low metal content.

超高硬度與精度的 TB 塗層；同時具備了超低摩擦係數，及抗沾黏低金屬親和性，大幅地提升了非鐵材質加工的移除效率與生產效率。



		TB Ta:C	PVD a:CH	PVD Me:CH	CVD	PaCVD
Deposition temp	沈積溫度	under 150°C	under 200° C	under 200° C	over 900° C	under 200° C
Range of substrates	基材限制	Broad	Broad	Broad	Limited	Broad
Oxidation temp	氧化溫度	500°C	350° C	300° C	700° C	300° C
Adhesion	附著力	Very good	Good	Very Good	Excellent	Good
Smoothness	平滑度	Good	Very good	Good	Good	Excellent
Hardness (GPA)	硬度	60-95	25	10-15	40-90	20-40
Coefficient of friction	摩擦係數	<0.1	<0.1	0.15	<0.4	<0.1
Hydrogenated	氫化	No	Yes or No	Yes	No	Yes
Metal content	金屬親和性	No	Yes	Yes	No	No

All DLC coatings are not equal : especially on Hardness and Oxidation
各種類鑽膜都有不同的特性，尤其是硬度和氧化溫度

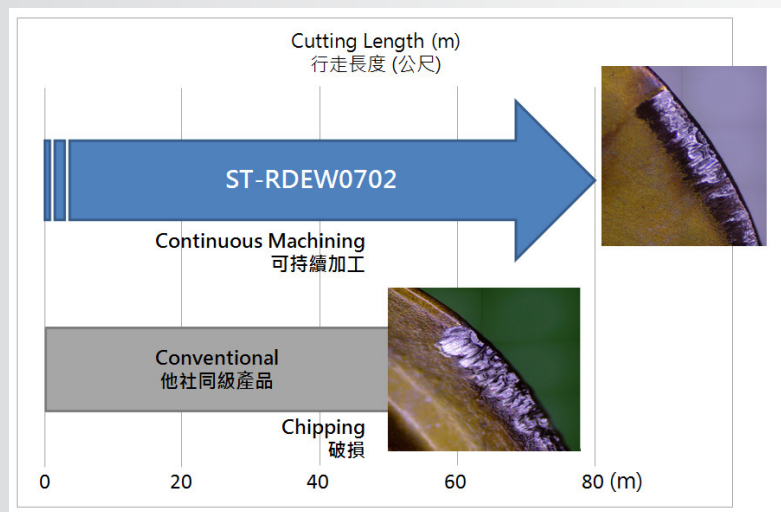
■ Cutting Performance

● 切削效能

■ Carbon Steel - Heavy Duty Milling 碳素鋼 - 重切削

Excellent wear resistance when machining heavy duty carbon steel, and also can prolong tool life by 60%!
優異的抗磨損效能於碳素鋼重切削，刀具壽命提升達 60%

Cutting Conditions 切削條件	
Work material 工件： S45C	fz 每刃進給： 0.3mm/rev
Holder 刀架： RD072 D203 S20-150	Feed 進給速度： 2500mm/min
Insert 刀片： RDEW0702	Ap : 1 mm Ae : 4 mm
Vc 切削速度： 176m/min	Speed 轉速： 2800rpm

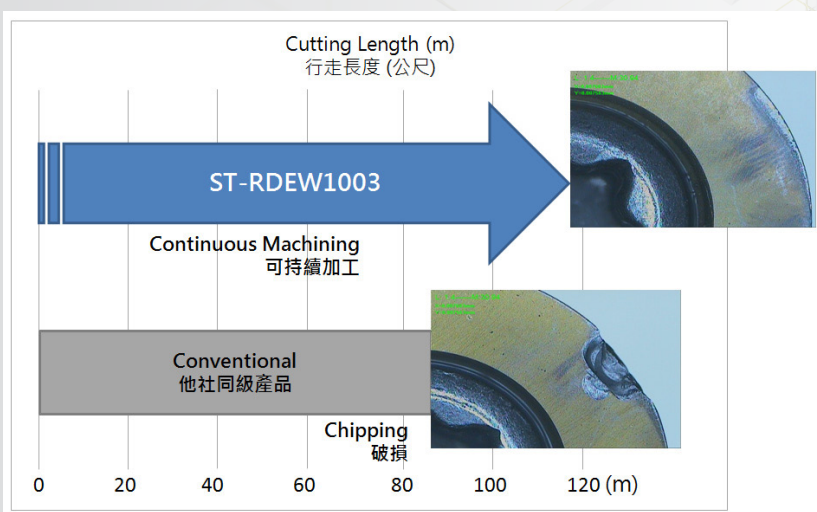


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■ Stainless Steel - Heavy Duty Milling 不鏽鋼 - 重切削

Excellent wear resistance when heavy duty Stainless steel machining, achieved 35% tool life beyond the competitor.
優異的抗磨損效能於不鏽鋼重切削，刀具壽命提升達 35%

Cutting Conditions 切削條件	
Work material 工件： SUS316	fz 每刃進給： 0.17mm/rev
Holder 刀架： RD103 D202 S20-150	Feed 進給速度： 1050mm/min
Insert 刀片： RDEW1003	Ap : 1 mm Ae : 4 mm
Vc 切削速度： 129 m/min	Speed 轉速： 2050rpm



■ Cutting Performance

● 切削效能

■ High Hardness Steel - Heavy Duty Milling 高硬度鋼 - 重切削

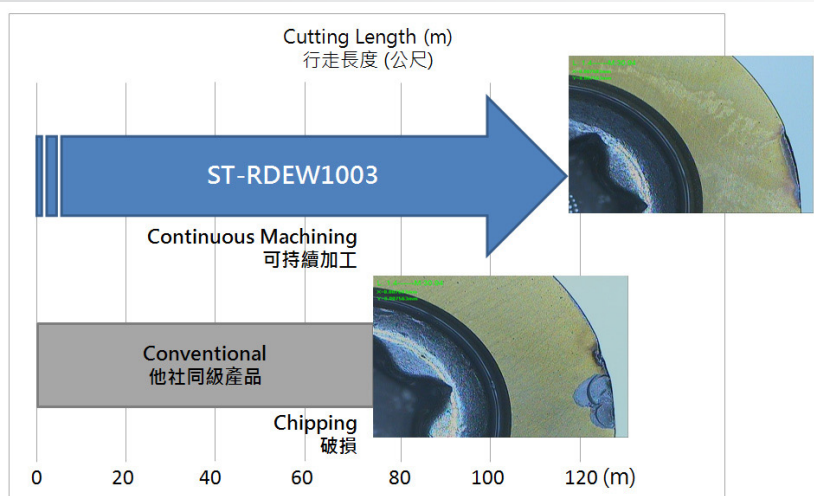
Excellent wear resistance when heavy duty High Hardness steel machining, achieved 53% tool life beyond the competitor.

優異的抗磨損效能於預硬鋼重切削，刀具壽命提升達 53%

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Cutting Conditions 切削條件

Work material 工件： Pre-Hardened SKD61 (HRC55)	fz 每刃進給： 0.1mm/rev
Holder 刀架： RD103 D202-S20-150	Feed 進給速度： 450mm/min
Insert 刀片： RDEW1003	Ap : 0.2 mm Ae : 3 mm
Vc 切削速度： 94.3m/min	Speed 轉速： 1500

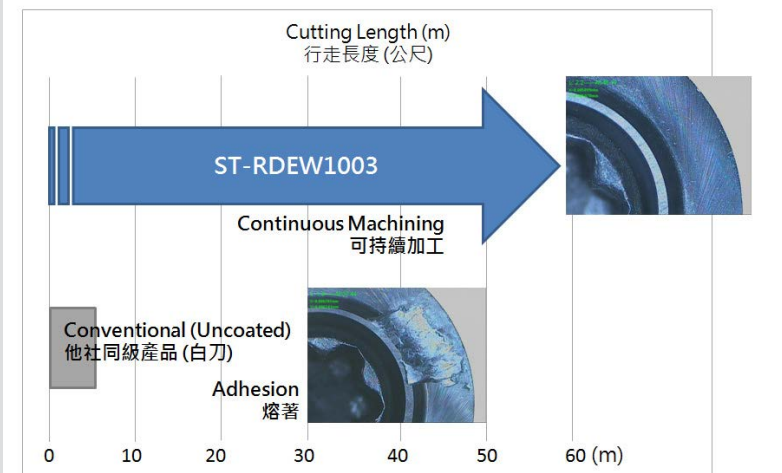


■ Aluminum Application - Heavy Duty Milling 鋁材 - 重切削

- Tools with TB coating are good at non-ferrous material process. Under dry-heavy duty machining, the tool life is prolonged to 1000%.
TB 類鑽塗層 (DLC) 於非鐵金屬加工中展現了優異的切削效能，在乾式重切削模式下，刀具壽命可提升達 1000%。
- Dry machining is available; it not only reduces the cost of coolant oil, but also makes the economical environmental manufacturing come true.
可乾式切削，降低切削液使用成本，同時實現綠色加工可行性。

Cutting Conditions 切削條件

Work material 工件： AL6061	fz 每刃進給： 0.25mm/rev
Holder 刀架： RD072 D203 S20-150	Feed 進給速度： 3000mm/min
Insert 刀片： RDHX0702	Ap : 1.0 mm Ae : 12.0 mm
Vc 切削速度： 220m/min	Speed 轉速： 3342

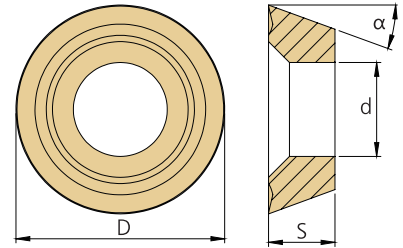


切削條件表 **P236**
Cutting Condition

Indexable Radius End Mill

捨棄式圓鼻銑刀

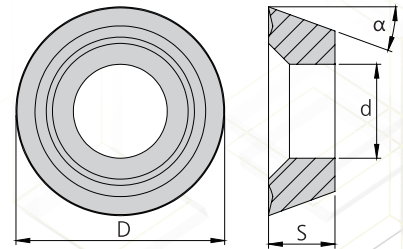
INSERTS 刀片



Shape 外觀	Order No. 品號	Item code 規格碼	Dimensions(mm) 規格				Coating 塗層	Available Tools 適用刀架		P	M	K
			D	S	d	α		Shank Type 直柄式 Page	Shrink Fit Type 燒結式 Page			
	JFRD2001-2	RDEW0501M0-3225	5	1.59	2.1	15°	SH	47、48	46	●	▲	●
	JFRD2002-2	RDEW0702M0-3225	7	2.38	2.75	15°	SH					
	JFRD2003-2	RDEW1003M0-3225	10	3.18	4.5	15°	SH					
	JFRD2004-2	RDEX0802M0-3225	8	2.38	3.4	15°	SH	47、48	46	●	●	●
	JFRD2005-2	RDEX10T3M0-3225	10	3.97	4.5	15°	SH					
	JFRD2006-2	RDEX1204M0-3225	12	4.76	4.5	15°	SH					
	JFRD2007-2	RDEX1604M0-3225	16	4.76	5.5	15°	SH					

●: Main Application 主要應用 ▲: Secondary Application 次要應用

INSERTS for Aluminum 鋁用刀片



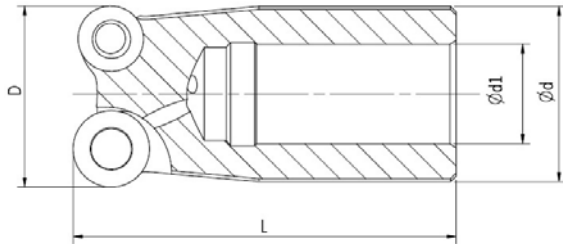
Shape 外觀	Order No. 品號	Item code 規格碼	Dimensions(mm) 規格				Coating 塗層	Available Tools 適用刀架		N
			D	S	d	α		Shank Type 直柄式 Page	Shrink Fit Type 燒結式 Page	
	JFRD2002-b	RDHX0702EF-0225	7	2.33	2.75	15°	No	47、48	46	●
	JFRD2003-b	RDHX1003EF-0225	10	3.12	4.5	15°	No			
	JFRD2004-b	RDHX0802EF-0225	8	2.32	3.4	15°	No			
	JFRD2005-b	RDHX10T3EF-0225	10	3.92	4.5	15°	No			
	JFRD2006-b	RDHX1204EF-0225	12	4.72	4.5	15°	No			
	JFRD2007-b	RDHX1604EF-0225	16	4.72	5.5	15°	No			
	JFRD2002-b1	RDHX0702EF-7225	7	2.33	2.75	15°	TB	47、48	46	●
	JFRD2003-b1	RDHX1003EF-7225	10	3.12	4.5	15°	TB			
	JFRD2004-b1	RDHX0802EF-7225	8	2.32	3.4	15°	TB			
	JFRD2005-b1	RDHX10T3EF-7225	10	3.92	4.5	15°	TB			
	JFRD2006-b1	RDHX1204EF-7225	12	4.72	4.5	15°	TB			
	JFRD2007-b1	RDHX1604EF-7225	16	4.72	5.5	15°	TB			

●: Main Application 主要應用 ▲: Secondary Application 次要應用

SRD

RD Indexable Shrink Fit Head

RD 捨棄式燒結刀頭



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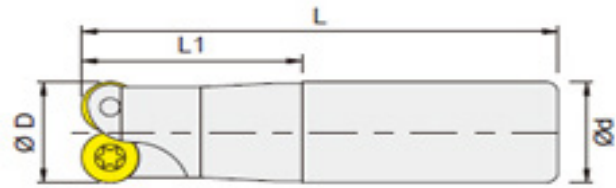
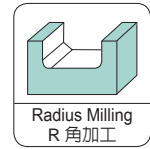
MODE	Dimensions (mm)				Teeth	Available Insert	Screw	Wrench
型號	D	d	L	d1	刃數	適用刀片	螺絲	板手
SRD05-D1602	16	16	35	10	2	RD..0501	MS2004A	T06
SRD05-D1603	16	16	35	10	3	RD..0501	MS2004A	T06
SRD05-D1702	17	16	35	10	2	RD..0501	MS2004A	T06
SRD05-D1703	17	16	35	10	3	RD..0501	MS2004A	T06
SRD07-D1602	16	16	35	10	2	RD..0702	MS2506A	T09
SRD07-D1603	16	16	35	10	3	RD..0702	MS2506A	T09
SRD07-D1702	17	16	35	10	2	RD..0702	MS2506A	T09
SRD07-D1703	17	16	35	10	3	RD..0702	MS2506A	T09
SRD08-D2502	25	25	45	12	2	RD..0802	MS3509A	T15
SRD08-D2503	25	25	45	12	3	RD..0802	MS3509A	T15
SRD08-D2602	26	25	45	12	2	RD..0802	MS3509A	T15
SRD08-D2603	26	25	45	12	3	RD..0802	MS3509A	T15
SRD10-D2503	25	25	45	12	3	RD..10T3	MS3509A	T15
SRD10-D2603	26	25	45	12	3	RD..10T3	MS3509A	T15
SRD10-D3203	32	32	55	16	3	RD..10T3	MS3509A	T15
SRD10-D3204	32	32	55	16	4	RD..10T3	MS3509A	T15
SRD10-D3303	33	32	55	16	3	RD..10T3	MS3509A	T15
SRD10-D3304	33	32	55	16	4	RD..10T3	MS3509A	T15
SRD12-D3202	32	32	55	16	2	RD..1204	MS3509A	T15
SRD12-D3203	32	32	55	16	3	RD..1204	MS3509A	T15
SRD12-D3502	35	32	55	16	2	RD..1204	MS3509A	T15
SRD12-D3503	35	32	55	16	3	RD..1204	MS3509A	T15

產品出貨附件為螺絲&板手 Product with Screw and Wrench

獲台灣專利 字號：新型第M 512454號
 Patent of Taiwan No.: M 512454
 獲中國專利 字號：201520721653.9
 Patent of China No.: 201520721653.9

Indexable Radius End Mill Holder

RD 捨棄式整體刀柄



Item code 品名	Dimensions(mm) 規格				Teeth 刀數	Available Insert 適用刀片	Page 頁碼
	D	d	L	L1			
RD051-D122-S12-100	12	12	100	22	2	RDEW0501	45
RD051-D132-S12-100	13	12	100	18	2		
RD051-D164-S16-150	16	16	150	30	4		
RD051-D164-S16-200			200				
RD051-D174-S16-150	17	16	150	20	4		
RD051-D174-S16-200			200				
RD072-D162-S16-150	16	16	150	35	2	RDEW0702	
RD072-D162-S16-200			200				
RD072-D172-S16-150	17	16	150	20	2		
RD072-D172-S16-200			200				
RD072-D203-S20-150	20	20	150	35	3		
RD072-D203-S20-200			200				
RD072-D213-S20-150	21	20	150	25	3		
RD072-D213-S20-200			200				
RD072-D254-S25-150	25	25	150	40	4		
RD072-D254-S25-200			200				
RD072-D254-S25-250			250				
RD072-D255-S25-150	25	25	150	40	5		
RD072-D255-S25-200			200				
RD072-D255-S25-250			250				
RD072-D264-S25-150	26	25	150	25	4		
RD072-D264-S25-200			200				
RD072-D264-S25-250			250				
RD072-D265-S25-150	26	25	150	25	5		
RD072-D265-S25-200			200				
RD072-D265-S25-250			250				

Item code 品名	Dimensions(mm) 規格				Teeth 刀數	Available Insert 適用刀片	Page 頁碼
	D	d	L	L1			
RD072-D355-S32-150	35	32	150	30	5	RDEW0702	45
RD072-D355-S32-200			200				
RD072-D356-S32-150	35	32	150	30	6		
RD072-D356-S32-200			200				
RD103-D202-S20-150	20	20	150	40	2		
RD103-D202-S20-200			200				
RD103-D212-S20-150	21	20	150	25	2		
RD103-D212-S20-200			200				
RD103-D253-S25-150	25	25	150	40	3		
RD103-D253-S25-200			200				
RD103-D253-S25-250			250				
RD103-D263-S25-150	26	25	150	25	3		
RD103-D263-S25-200			200				
RD103-D263-S25-250			250				
RD103-D303-S25-150	30	25	150	25	3	RDEW1003	
RD103-D303-S25-200			200				
RD103-D303-S25-250			250				
RD103-D323-S32-150	32	32	150	40	3		
RD103-D323-S32-200			200				
RD103-D323-S32-250			250				
RD103-D353-S32-150	35	32	150	40	3		
RD103-D353-S32-200			200				
RD103-D353-S32-250			250				
RD103-D354-S32-150	35	32	150	40	4		
RD103-D354-S32-200			200				
RD103-D354-S32-250			250				

產品出貨附件為螺絲 & 板手 Product with Screw and Wrench

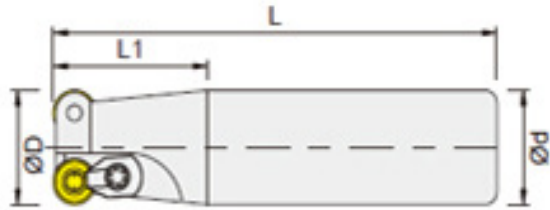
RD

Indexable Radius End Mill Holder

RD 捨棄式整體刀柄

EASY-CUT SHANK TYPE 直柄快削式

48



Item code 品名	Dimensions(mm) 規格				Teeth 刃數	Available Insert 適用刀片	Page 頁碼
	D	d	L	L1			
C 12-4R12-130	12	12	130	30	1	RDEX0802	45
C 16-4R16-150	16	16	150	35	1		
C 16-4R16-200			200				
C 16-4R172-150	17	16	150	25	2		
C 20-4R20-150	20	20	150	40	2		
C 20-4R20-200			200				
C 20-4R21-150	21	20	150	25	2		
C 20-4R21-200			200				
C 25-5R25-150	25	25	150	45	2		
C 25-5R25-200			200				
C 25-5R25-250			250				
C 25-5R26-150	26	25	150	30	2		
C 25-5R26-200			200				
C 25-5R26-250			250				
C 25-5R302-150	30	25	150	35	2		
C 25-5R302-200			200				
C 25-5R302-250			250				
C 25-5R303-150	30	25	150	35	3		
C 25-5R303-200			200				
C 25-5R303-250			250				
C 32-5R32-150	32	32	150	45	3		
C 32-5R32-200			200				
C 32-5R32-250			250				
C 32-5R32-300			300				
C 32-5R35-150	35	32	150	50	3		
C 32-5R35-200			200				
C 32-5R35-250			250				
C 32-5R35-300			300				
C 32-5R40-150	40	32	150	50	3		
C 32-5R40-200			200				
C 32-5R40-250			250				
C 32-5R40-300			300				

產品出貨附件為螺絲 & 板手 Product with Screw and Wrench



WRH

Indexable Ball-Nose End Mill for Efficient Machining
高效捨棄式球刀片

Multi-Purpose, Stable Machining of High Hardness Steel, Stainless Steel, and General Purpose by ONE Tool.

實現了單一刀具可穩定加工於高硬度、不銹鋼、和一般鋼材的通用性。

- Class H high accuracy H 級高精度
- New ultra-toughened carbide UF1025 新超強韌鎢鋼母材
- Nano composite, super high hardness SH coating 奈米級 SH 超硬塗層
- S-Shaped design lower cutting resistance S 球頭低切削阻力設計
- Wide range, Screw-in holder is available 規格齊全，鎖牙式刀架可選購

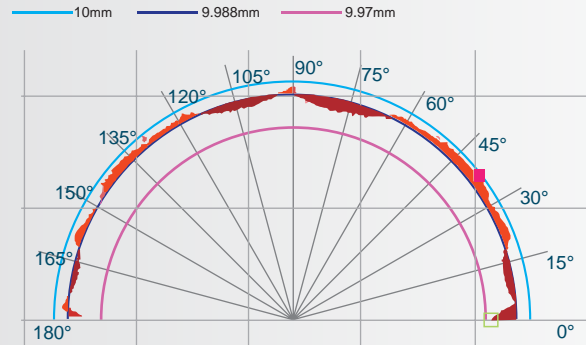
Indexable Ball-nose Insert

● 高效捨棄式球刀片

■ Features 特色

High accuracy indexable Insert 高精度捨棄式銑刀片

Tolerance grade H. Accurate radius tolerance
研磨公差 H 級



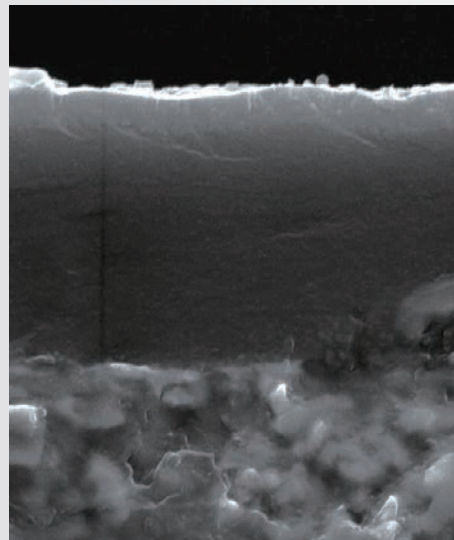
S-Shaped design for lowering cutting resistance S 球頭低切削阻力設計

Improve chip removal performance, reduce edge wear,
extend tool life and enhance the quality of processing.
提高排屑效能，減小刃口磨損，大幅提高刀具壽命及加工品質



New ultra toughened micro-grain solid carbide UF1002 Super high hardness nano composite SH coating 新型超強韌的微晶硬質合金 UF1025，奈米級超高硬度 SH 塗層

- Achieve stable machining of high hardness steel, stainless steel, and general purpose by ONE tool.
- Super high hardness and superior adhesion; also be good at high feed machining of hard materials application.
- 實現了單一刀具可穩定加工於高硬度、不銹鋼、和一般鋼材的通用性。
- 超高塗層硬度、超強附著力，適用於高硬度材質與高進給加工。



Super high
hardness
nano
composite
SH coating

New ultra
toughened
micro-grain
solid carbide
UF1025

Indexable Ball-nose Insert

● 高效捨棄式球刀片

■ Cutting Performance 切削效能

WRHS0162-Hardened steel milling 預硬鋼切削 SKD61-HRC55°

Excellent wear resistance when machining high hardness materials, and the tool life is prolonged by 20% than the conventional.

於高硬度材料加工，展現優異的耐磨性，壽命超出一般刀具達到 20%。



Conventional 他社同級產品

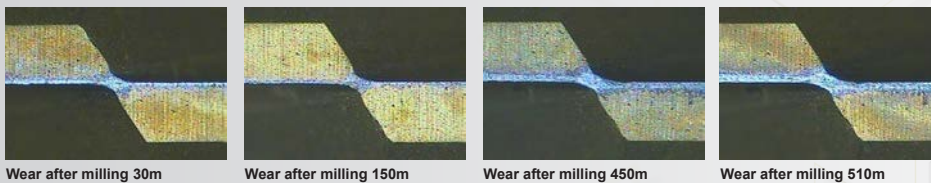
Chipping 破損

420m

 WRHS016

Continuous Machining Feasible 可持續加工

510m



Cutting Conditions 切削條件

Work Material 工件 : Pre-Hardened SKD61 (HRC55)	fz 每刃進給 : 0.2 mm/rev
Tool Holder 刀架 : WGR16-S16-150	Feed 進給速度 : 1200mm/min
Insert 刀片 : WRHS016	Ap : 0.15 mm
Vc 切削速度 : 151mm/min	Ae : 0.5 mm

WRH

Indexable Ball-nose Insert

切削條件表 **P237**
Cutting Condition

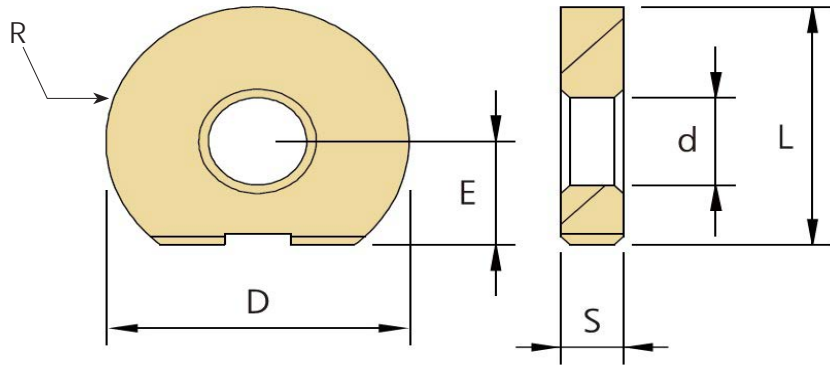
● 高效捨棄式球刀片

WRH INSERTS 刀片

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H級
精度±0.013
研磨級

H CLASS
TOLERANCE: ±0.013



Shape 外觀	Order No. 品號	Item code 規格碼	Dimensions(mm)規格						Holder 刀架	Coating 塗層	Shank Type 直柄式 Page	Shrink Fit Type 燒結式 Page	P	M	K
			D	R	S	d	L	E							
	JFWR2002-1	WRHS010-3225	10	5R	2.5	4	11.5	5	WGR10	SH	54	53	●	▲	●
	JFWR2003-1	WRHS012-3225	12	6R	2.5	5	12	6	WGR12						
	JFWR2004-1	WRHS016-3225	16	8R	3	5	14	6	WGR16						
	JFWR2005-1	WRHS020-3225	20	10R	3	5	16	6	WGR20	SH	54	53	●	▲	●
	JFWR2006-1	WRHS025-3225	25	12.5R	4	6	21.5	9	WGR25						

●: Main Application 主要應用 ▲: Secondary Application 次要應用

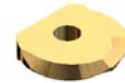
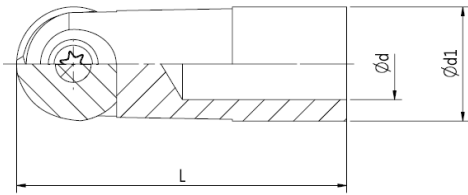
Application 適用材質:

◎ Recommend 最適合 ○ Suitable 適合 X Not Recommend 不建議

Carbon steel, Alloy steel 炭素鋼, 合金鋼	Pre-hardened steel 預硬鋼	High-hardened 高硬度鋼				Stainless steel 不銹鋼	Copper alloy 銅合金, 銅	Aluminum alloy 鋁合金
	~45HRC	~50HRC	~55HRC	~60HRC	~65HRC			
◎	◎	◎	◎	○	◎			

■ WR Indexable Shrink Fit Head

● WR 捨棄式燒結刀頭



MODE	Dimensions (mm)				Teeth	Available Insert	Screw	Wrench
型號	D	d1	L	d	刃數	適用刀片	螺絲	板手
SWR10-HD06	10	10	35	6	1	WR..010	MGR4010	T15
SWR12-HD06	12	10	40	6	1	WR..012	MGR5012	T20
SWR12-HD08	12	12	40	8	1			
SWR16-HD08	16	12	55	8	1	WR..016	MGR5016	T20
SWR16-HD14	16	16	55	10	1			
SWR20-HD18	20	16	60	10	1	WR..020	MGR5020	T20
SWR20-HD18	20	20	60	12	1			
SWR25-HD23	25	20	60	12	1	WR..025	MGR6025	T30

產品出貨附件為螺絲&板手 Product with Screw and Wrench

獲台灣專利 字號：新型第M 512454號
 Patent of Taiwan No.: M 512454
 獲中國專利 字號：201520721653.9
 Patent of China No.: 201520721653.9

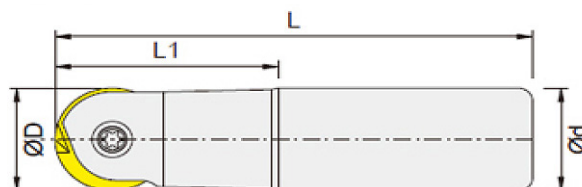
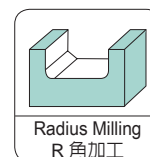
WGR

Indexable Ball-nose Insert Holder

WR 捨棄式整體刀柄

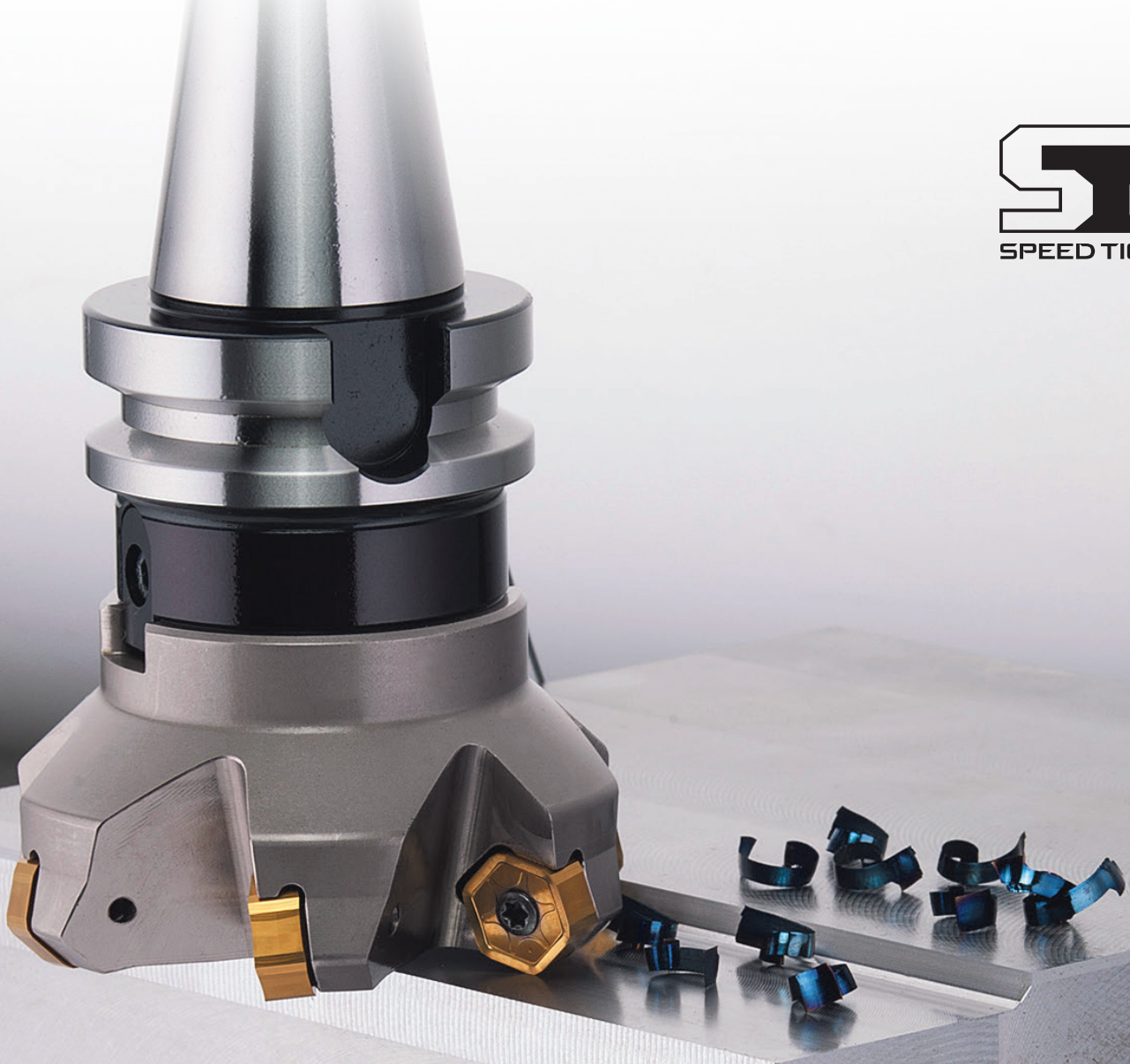
WGR SHANK TYPE 直柄式

54



Item code 品名	Dimensions(mm) 規格				Teeth 刀數	Insert 刀片	Page 頁碼
	D	d	L	L1			
WGR10-S10-100	10	10	100	25	1	WRH010	52
WGR10-S12-150		12	150	36			
WGR12-S12-150	12	12	150	32	1	WRH012	
WGR12-S16-200		16	200	58			
WGR16-S16-150	16	16	150	36	1	WRH016	
WGR16-S16-200			200				
WGR20-S20-150	20	20	150	45	1	WRH020	
WGR20-S20-200			200				
WGR20-S25-200		25	200	76			
WGR20-S25-250			250				
WGR25-S25-200	25	25	200	45	1	WRH025	
WGR25-S25-250			250				
WGR25-S32-200		32	200	98			
WGR25-S32-300			300				

產品出貨附件為螺絲 & 板手 Product with Screw and Wrench



HN

Indexable HN End Mill for Efficient Machining 高效捨棄式 HN 雙面六角銑刀片

Multi-Purpose, Stable Machining of Steel, Cast Iron, Stainless Steel, and General Purpose by ONE Tool.

實現了單一刀具可穩定加工於一般鋼材、鑄鐵、不銹鋼的通用性。

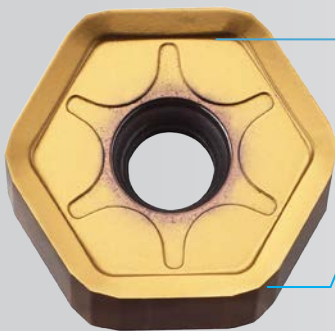
- The double-sided multi-edge design make it a cost-efficient solution – 12 times use.
大幅降低刀具成本 - 雙面對稱共十二角可換位切削
- Special cutting edge geometries with a high cutting performance to cast iron.
刃口特殊設計對於鑄鐵材料有良好的切削性
- Circular arc design of corner is to maximize cutting edge, and improve tool life effectively
轉角圓弧設計提升刃口強度，有效提升刀具壽命。
- Nano composite; the oxidation temperature of nACro coating is up to 1,100°C
奈米級 nACro 高耐氧化溫度塗層
- Nano composite, super high hardness SH coating 奈米級 SH 超硬塗層

■ HN Indexable Insert

● 雙面六角銑刀片

■ Feature 特色

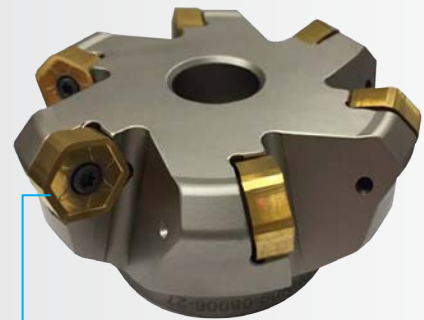
Design 外型設計



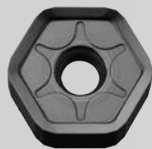
The double-sided multi-edge design make it a cost-efficient solution – 12 times use. It offers high productivity and a low cost per edge.
雙面對稱共十二角可換位切削，減少刀具成本。

Special cutting edge geometries with a high cutting performance to cast iron.
刃口特殊設計對於鑄鐵材料有良好的切削性。

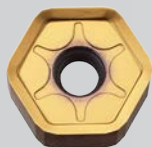
Circular arc design of corner is to maximize cutting edge, and improve tool life effectively.
轉角圓弧設計提升刃口強度，有效提升刀具壽命。



Coating 塗層介紹 – nACro and SH coating



The oxidation temperature of nACro coating is up to 1,100°C, which is suitable for milling cast iron, carbon steel, stainless steel, and alloy steel.
nACro 具有高達 1100°C 氧化溫度的特性，適用於切削鑄鐵、一般碳鋼、不鏽鋼以及合金鋼的鍍層。



SH coating is with low friction coefficient and super high hardness which is over HV4000; thus, with cutting tool, it can mill steel very easily.
SH 結構低摩擦係數，超高硬度，表面硬度達 Hv4000 以上，削鐵如泥。

Application - New ultra toughened micro-grain solid carbide 3225/4225 & 3220/4220 應用 – 型超強韌微晶硬質合金 3225/4225 及 3220/4220

Tool Material 材料型號	ISO Standard Code ISO 標準代號	Cutting Material 材料種類	Applications 應用範圍													P Steel	M Stainless 不銹鋼	K Cast Iron 鑄鐵	N Non-ferrous 非鐵金屬	S Heat resistant 耐熱合金	H Hard Alloy 硬質合金			
			1	5	10	15	20	25	30	35	40	45	50											
3225	P	Cemented Carbide 超硬質合金															●	▲					▲	
	M																	▲						
	K																		●					
4225	P	Super Hard Alloy 超硬質合金																●	▲					▲
	M																	▲						
	K																		●					
3220	P	Super Hard Alloy 超硬質合金																●	▲					▲
	M																	●						
	K																		●					
4220	P	Super Hard Alloy 超硬質合金																●	▲					▲
	M																	●						
	K																		●					

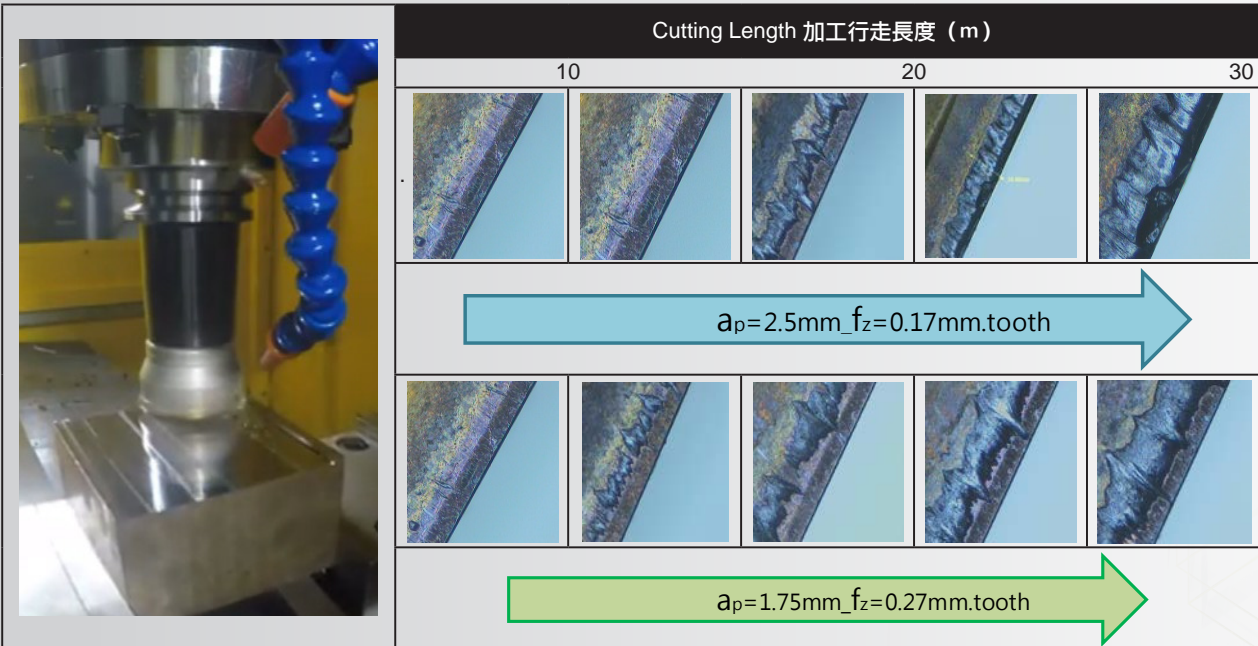
●: Main Application 主要應用 ▲: Secondary Application 次要應用

■ Cutting Performance

● 切削效能

■ Carbon Steel - S45C

HNGX0604 切削 S45C 中碳鋼



Cutting Conditions 條件與設備規格

Material 工件材料	S45C
Cutting Fluid 切削液	Air 噴氣
Spindle Horsepower 主軸馬力	7.5/11kW
Chucks 刀桿規格	BT40
Tool 刀具規格	PHN06-5006(Ø50mm x 145mm x 6T)
Insert 刀片規格	HNGX0604-R-3225
Vc 切線速度	250(m/min)
Ae 徑向切削步距	33mm

Formula 公式 $V_c = \pi DN/1000$ $F = f_z \cdot T \cdot N$

■ Surface Performance

● 表面粗糙度


■ HN face milling HN 面銑

Surface Roughness Tester 表面粗度測量儀 : MitutoyoSurftest_SJ-301

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Carbon Steel 中碳鋼 - S45C		
		
Holder 刀具 - PHN06-5006(Ø50mm x 145mm x 6T)		
Insert 刀片 - HNGX0604-R-3225		
Vc=200m/min		
N=1270rpm		
Fz=0.1mm/tooth Ra=1.22 μm	Fz=0.3mm/tooth Ra=1.66 μm	Fz=0.5mm/tooth Ra=1.82 μm

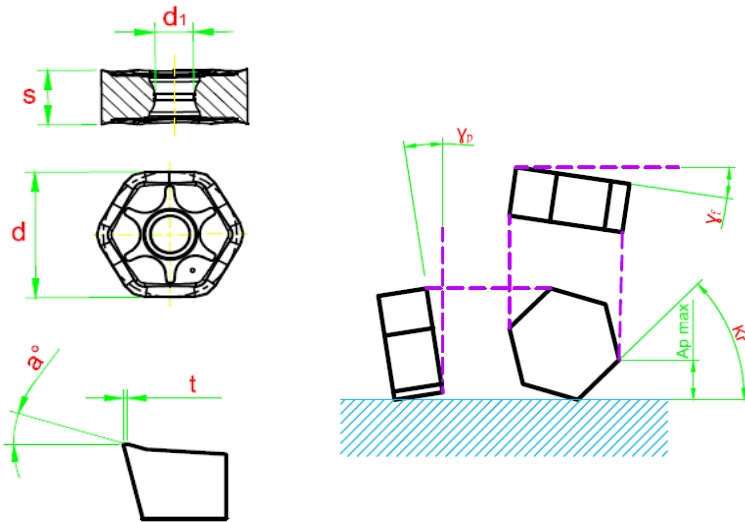
Stainless Steel 不鏽鋼 - SUS304		
		
Holder 刀具 - PHN06-5006(Ø50mm x 145mm x 6T)		
Insert 刀片 - HNGX0604-R-3225		
Vc=120m/min		
N=764rpm		
Fz=0.1mm/tooth Ra=1.19 μm	Fz=0.3mm/tooth Ra=1.51 μm	Fz=0.5mm/tooth Ra=1.85 μm



Nodular Cast Iron/Ductile Iron 球墨鑄鐵		
		
Holder 刀具 - PHN06-5006(Ø50mm x 145mm x 6T)		
Insert 刀片 - HNGX0604-R-3225		
Vc=200m/min		
N=1270rpm		
Fz=0.1mm/tooth Ra=1.38 μm	Fz=0.3mm/tooth Ra=1.90 μm	Fz=0.5mm/tooth Ra=2.85 μm

切削條件表 **P238**
Cutting Condition

HN Indexable Insert

HN 雙面六角銑刀

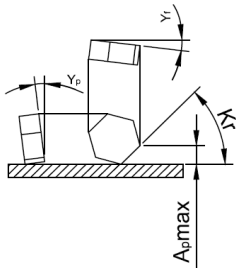


Shape 外觀	Item Code 規格碼	Dimensions (mm) 規格					Coating 塗層		Milling 銑削	P	M	K
		d	d1	s	a	t	nACro	SH				
	HNGX0604-R-3225	10.5	3.64	5.26	15	0.08		✓	Roughing 粗銑	●	▲	●
									Medium 中	●	▲	●
									Finishing 精銑	●	▲	●
	HNGX0604-R-4225	10.5	3.64	5.26	15	0.08	✓		Roughing 粗銑	●	●	▲
									Medium 中	●	●	▲
									Finishing 精銑	●	●	▲
	HNGX0906-R-3225	16.5	4.74	6.4	15	0.08		✓	Roughing 粗銑	●	▲	●
									Medium 中	●	▲	●
									Finishing 精銑	●	▲	●
	HNGX0906-R-4225	16.5	4.74	6.4	15	0.08	✓		Roughing 粗銑	●	●	▲
									Medium 中	●	●	▲
									Finishing 精銑	●	●	▲

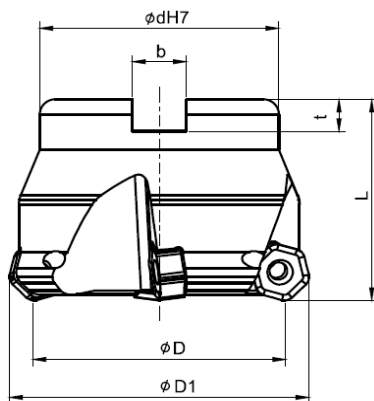
●: Main Application 主要應用 ▲: Secondary Application 次要應用

HN06 Holder

● HN06 捨棄式整體刀柄



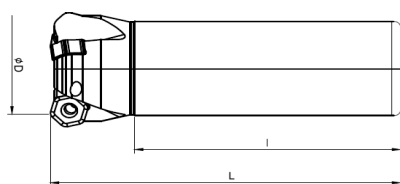
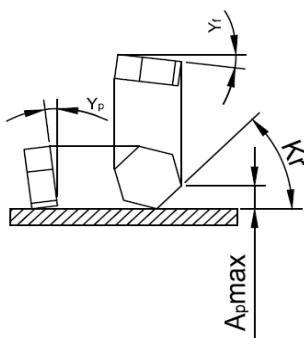
Apmax	3mm
γp	7°
γf	7°
Kr	45°



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Shell Type Milling Cutter 殼型面銑刀

Item Code 規格碼	Dimensions (mm) 規格							Available Tools 適用工具		
	D	dh7	L	D1	b	t	齒數T*	Insert 刀片	Screw 星形螺絲	Screwdriver 旗形板手
PHN06-4005-C16	40	16	40	47.3	8.4	5.6	5	HNGX0604-R	M3x9.0x5.0xT15 (D07160100114)	T15
PHN06-5004-C22	50	22	40	57.3	10.4	6.3	4			
PHN06-5006-C22	50	22	40	57.3	10.4	6.3	6			
PHN06-6306-C22	63	22	40	70.3	10.4	6.3	6			
PHN06-6308-C22	63	22	40	70.3	10.4	6.3	8			
PHN06-8007-C27	80	27	50	86.8	12.4	7.0	7			
PHN06-8010-C27	80	27	50	86.8	12.4	7.0	10			



Apmax	3mm
γp	7°
γf	7°
Kr	45°

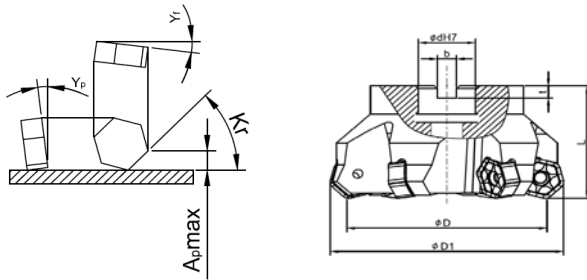


Holder 刀桿式六角銑刀

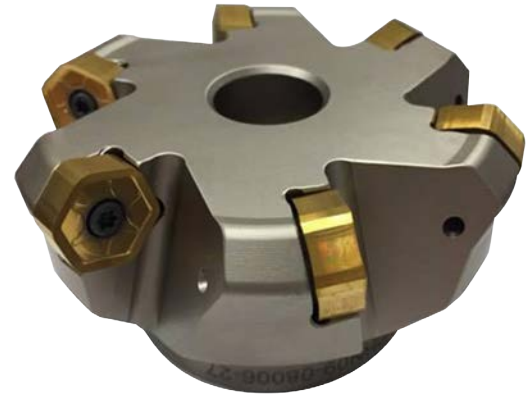
Item Code 規格碼	Dimensions (mm) 規格				Available Tools 適用工具		
	D	L	l	齒數T*	Insert 刀片	Screw 星形螺絲	Screwdriver 旗形板手
HHN06-2502-S25-150	25	150	100	2	HNGX0604-R	M3x9.0x5.0xT15 (D07160100114)	T15
HHN06-2503-S25-150	25	150	100	3			
HHN06-3203-S32-150	32	150	100	3			
HHN06-3204-S32-150	32	150	100	4			

■ HN09 Holder

● HN09 捨棄式整體刀柄



A_{pmax}	5mm
γ_p	7°
γ_f	7°
Kr	45°



Shell Type Milling Cutter 殼型面銑刀

Item Code 規格碼	Dimensions (mm) 規格						Available Tools 適用工具		
	dh7	D	L	b	t	齒數T*	Insert 刀片	Screw 星形螺絲	Screwdriver 旗形板手
PHN09-5004-C22	22	50.0	40	10.4	6.3	4	HNGX 0906-R	M4.3x12.2x6xT20 (D07160100118)	T20
PHN09-6306-C22	22	63.0	40	10.4	6.3	6			
PHN09-8006-C27	27	80.0	50	12.4	7.0	6			
PHN09-8008-C27	27	80.0	50	12.4	7.0	8			
PHN09-10008-C32	32	100.0	50	14.4	8.0	8			
PHN09-10010-C32	32	100.0	50	14.4	8.0	10			



CN

Indexable CN End Mill for Efficient Machining

高效捨棄式 CN 雙面銑刀片

Multi-Purpose, Stable Machining of Steel, Cast Iron, Stainless Steel, and General Purpose by ONE Tool.

實現了單一刀具可穩定加工於一般鋼材、鑄鐵、不銹鋼的通用性。

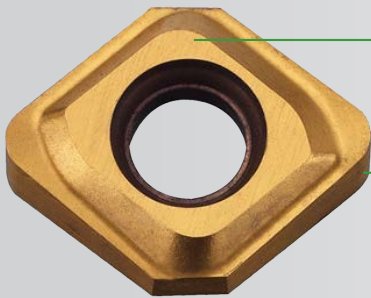
- High accuracy insert which is suitable for middle finishing and finishing.
高精度刀片適用於中、精銑
- 4 times use - The double-sided 2-edge design make it a cost-efficient solution.
大幅降低刀具成本 - 雙面對稱共四角可替換
- Nano composite; the oxidation temperature of nACro coating is up to 1,100°C
奈米級 nACro 高耐氧化溫度塗層
- Nano composite, super high hardness SH coating 奈米級 SH 超硬塗層

■ CN Indexable Insert

● CN 雙面銑刀片

■ Feature 特色

Design 外型設計



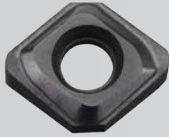
High accuracy insert which is suitable for middle finishing and finishing.
高精度刀片適用於中、精銑。

4 times use - The double-sided 2-edge design make it a cost-efficient solution.
雙面對稱四角可替換，減少刀具成本。

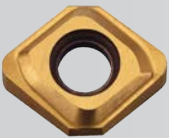


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Coating 塗層介紹 - nACro and SH coating



The oxidation temperature of nACro coating is up to 1,100°C, which is suitable for milling cast iron, carbon steel, stainless steel, and alloy steel.
nACro 具有高達 1100°C 氧化溫度的特性，適用於切削鑄鐵、一般碳鋼、不鏽鋼以及合金鋼的鍍層。



SH coating is with low friction coefficient and super high hardness which is over HV4000; thus, with cutting tool, it can mill steel very easily.
SH 結構低摩擦係數，超高硬度，表面硬度達 Hv4000 以上，削鐵如泥。

Application - New ultra toughened micro-grain solid carbide 3225/4225 & 3220/4220 應用 - 型超強韌微晶硬質合金 3225/4225 及 3220/4220

Tool Material 材料型號	ISO Standard Code ISO 標準代號	Cutting Material 材料種類	Applications 應用範圍													P 鋼	M 不鏽鋼	K 鑄鐵	N 非鐵金屬	S 耐熱合金	H 硬質合金				
			1	5	10	15	20	25	30	35	40	45	50												
3225	P	Super Hard Alloy 超硬質合金																●	▲						
	M																		▲						
	K																				●				
4225	P	Super Hard Alloy 超硬質合金																	●	▲					
	M																		▲						
	K																				●				
3220	P	Super Hard Alloy 超硬質合金																	●	▲					
	M																		●						
	K																				●				
4220	P	Super Hard Alloy 超硬質合金																	●	▲					
	M																		●						
	K																				●				

●: Main Application 主要應用 ▲: Secondary Application 次要應用

■ Surface Performance

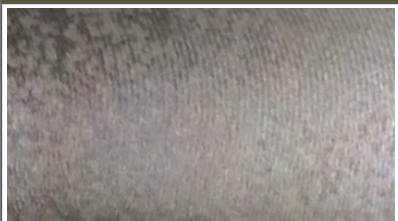


● 表面粗糙度

■ CN face milling CN 平銑

Surface Roughness Tester 表面粗度測量儀 : MitutoyoSurftest_SJ-301

Carbon Steel 中碳鋼 -S45C		
		
Holder 刀具: HCN07-D1602-S16-150		
Insert 刀片: CNGX07-3225		
Vc=180m/min		
N=3580rpm		
Fz=0.05mm/tooth	Fz=0.2mm/tooth	Fz=0.3mm/tooth
Ra=0.45 μm	Ra=1.01 μm	Ra=2.06 μm

Stainless Steel 不鏽鋼 - SUS304		
		
Holder 刀具: HCN07-D1602-S16-150		
Insert 刀片: CNGX07-3225		
Vc=100m/min		
N=1990rpm		
Fz=0.05mm/tooth	Fz=0.2mm/tooth	Fz=0.3mm/tooth
Ra=0.38 μm	Ra=0.52 μm	Ra=1.38 μm

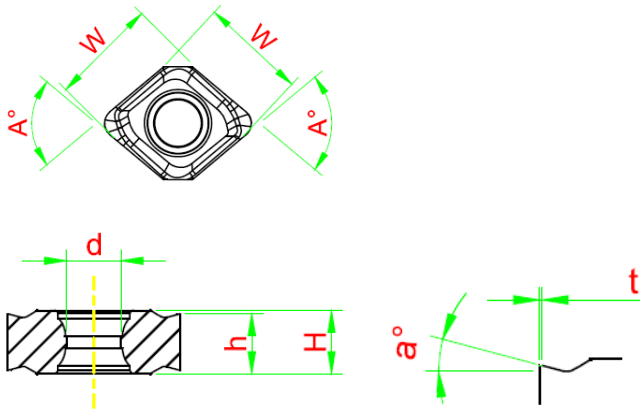
Nodular Cast Iron/Ductile Iron 球墨鑄鐵		
		
Holder 刀具: HCN07-D1602-S16-150		
Insert 刀片: CNGX07-3225		
Vc=200m/min		
N=3980rpm		
Fz=0.05mm/tooth	Fz=0.2mm/tooth	Fz=0.3mm/tooth
Ra=0.81 μm	Ra=1.09 μm	Ra=1.30 μm

■ CN Indexable Insert

切削
條件表 **P239**
Cutting Condition

● CN 雙面菱形銑刀

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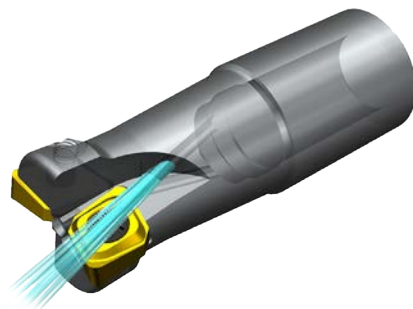
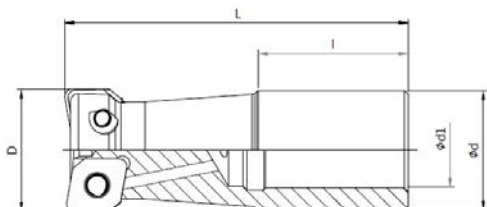


Shape 外觀	Item Code 規格碼	Dimensions (mm) 規格						Coating 塗層		Milling 銑削	P	M	K	
		W	d	h	H	A	a	t	nACro					SH
	CNGX07-3225	7	3.1	3.41	3.6	80	15	0.02 ~0.03		✓	Roughing 粗銑	●	▲	●
											Medium 中	●	▲	●
											Finishing 精銑	●	▲	●
	CNGX07-4225	7	3.1	3.41	3.6	80	15	0.02 ~0.03	✓		Roughing 粗銑	●	●	●
											Medium 中	●	●	●
											Finishing 精銑	●	●	●
	CNGX07-3220	7	3.1	3.41	3.6	80	15	0.02 ~0.03		✓	Roughing 粗銑	●	▲	▲
											Medium 中	●	▲	●
											Finishing 精銑	●	▲	●
	CNGX07-4220	7	3.1	3.41	3.6	80	15	0.02 ~0.03	✓		Roughing 粗銑	●	●	▲
											Medium 中	●	●	▲
											Finishing 精銑	●	●	●

●: Main Application 主要應用 ▲: Secondary Application 次要應用

■ CNGX07 Indexable Shrink Fit Head & Holder

● CNGX07 捨棄式燒結刀頭 & 整體刀柄



CN Indexable Shrink Fit Head CN 捨棄式燒結刀頭

Item Code 規格碼	Dimensions (mm) 規格						Available Tools 適用工具		
	D	d	d1	L	l	齒數T*	Insert 刀片	Screw 星形螺絲	Screwdriver 旗形板手
SCN07-D1602	16	16	10	45	35.0	2	CN__07	M2.5x6.0x3.6xT8 (D07160100112)	T8
SCN07-D1603	16	16	10	45	35.0	3			
SCN07-D1702	17	16	10	45	35.0	2			
SCN07-D1703	17	16	10	45	35.0	3			
SCN07-D2003	20	20	12	45	40.0	3			
SCN07-D2004	20	20	12	45	40.0	4			
SCN07-D2103	21	20	12	45	40.0	3			
SCN07-D2104	21	20	12	45	40.0	4			



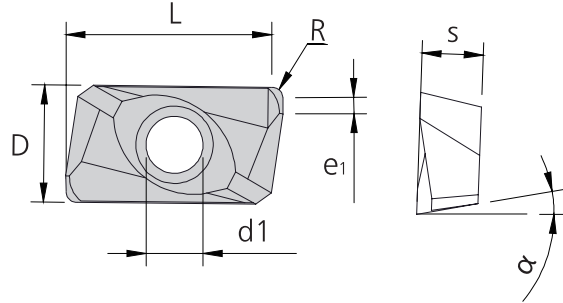
Holder 整體刀柄

Item Code 規格碼	Dimensions (mm) 規格					Available Tools 適用工具		
	D	d	L	l	齒數T*	Insert 刀片	Screw 星形螺絲	Screwdriver 旗形板手
HCN07-D1602-S16-150	16	16	150	35	2	CN__07	M2.5x6.0x3.6xT8 (D07160100112)	T8
HCN07-D1702-S16-150	17	16	150	35	2			
HCN07-D2003-S20-150	20	20	150	40	3			
HCN07-D2103-S20-150	21	20	150	40	3			

Indexable Radius End Mill

捨棄式圓鼻銼刀

INSERTS 刀片

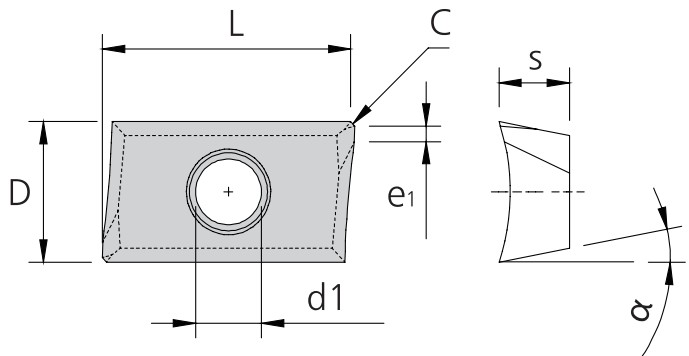


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Shape 外觀	Order No. 品號	Item code 規格碼	Dimensions(mm) 規格							Coating 塗層	Available Tools 適用刀架 Shrink Fit Type 燒結式 Page	P	M	K
			D	L	R	e1	d1	S	α					
	JFAP3001	APKT1003PDER	6.7	10	0.5	1	2.8	3.5	11°	AlTiN	69	●	●	●
	JFAP3002	APKT1604PDER	9.5	15.5	0.8	1.4	4.4	5.2	11°	AlTiN				
	JFAP2001	APMT1135PDER	6.16	10.83	0.8	1.92	2.8	3.5	11°	AlTiN				
	JFAP2002	APMT1604PDER	9.26	16.26	0.8	2	4.6	4.76	11°	AlTiN				

●: Main Application 主要應用 ▲: Secondary Application 次要應用

INSERTS for Aluminum 鋁用刀片



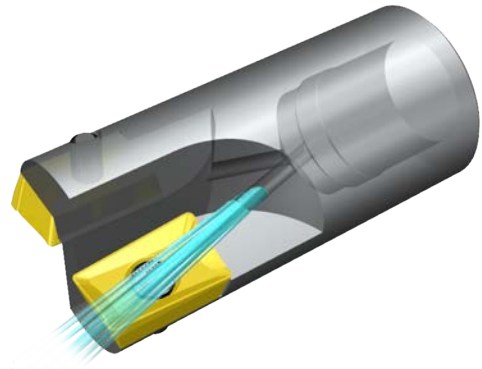
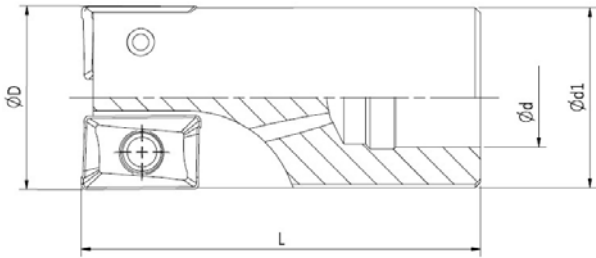
鋁用刀 Insert for aluminum

Shape 外觀	Order No. 品號	Item code 規格碼	Dimensions(mm) 規格							Coating 塗層	Available Tools 適用刀架 Shrink Fit Type 燒結式 Page	N
			D	L	R	e1	d1	S	α			
	JFAP1001	APEX1604PDFR	9.5	16.5	0.2	1.2	4.4	4.76	11°	NO	69	●
	JFAP1001-al	APEX1604PDFR	9.5	16.5	0.2	1.2	4.4	4.76	11°	TB (DLC)		

●: Main Application 主要應用 ▲: Secondary Application 次要應用

■ AP Indexable Shrink Fit Head

● AP 捨棄式燒結刀頭



MODE	Dimensions (mm)				Teeth	Available Insert	Screw	Wrench
型號	D	d1	L	d	刃數	適用刀片	螺絲	板手
SAP10-D1602	16	16	45	10	2	APKT1003	MS2506A	T09
SAP10-D1702	17	16	45	10	2			
SAP10-D2002	20	20	45	12	2			
SAP10-D2003	20	20	45	12	3			
SAP10-D2102	21	20	45	12	2			
SAP10-D2103	21	20	45	12	3			
SAP10-D2503	25	25	50	16	3			
SAP10-D2504	25	25	50	16	4			
SAP10-D2603	26	25	50	16	3			
SAP10-D2604	26	25	50	16	4			
SAP10-D2503	25	25	50	16	3	APKT1604	MS4011A	T15
SAP10-D2603	26	25	50	16	3			
SAP10-D3203	32	32	50	20	3			
SAP10-D3303	33	32	50	20	3			

產品出貨附件為螺絲&板手 Product with Screw and Wrench

獲台灣專利 字號：新型第M 512454號
 Patent of Taiwan No.: M 512454
 獲中國專利 字號：201520721653.9
 Patent of China No.: 201520721653.9

BT



BT

BT是日本規範7/24圓錐的代號,

始於1969年的MAS403規範,稱為MAS403-BT.

是最早的ATC(Automatic Tool Changer)7/24圓錐規範

1998年日本公佈JIS B 6339:1998規範代替了MAS403規範

2007年ISO7388-2:2007是7/24 BT外圓錐新規範

BT**刀桿命名為ISO**J

BT**AD刀桿內帶中心貫穿冷卻孔命名為ISO**JD

BT**B刀桿法蘭端面帶冷卻孔命名為ISO**JF

BT**AD/B刀桿將兩種內冷卻方式整合命名為ISO**JD/F

BT is the norm of 7/24 taper from Japan,

It started from the norm MAS403 in 1969, called MAS403-BT.

It was the first norm of 7/24 taper with ATC (Automatic Tool Changer)

In 1998, Japan published norm JIS B 6339:1998 to replace MAS403-BT

In 2007, ISO published ISO7388-2:2007 as new norm for 7/24 BT taper toolholder

BT** was named as ISO**J

BT**AD with coolant through center was named as ISO**JD

BT**B with coolant through flange was named as ISO**JF

BT**AD/B with two type coolant through was named as ISO**JD/F

CLAMPING FORCE	BT30	BT40	BT50
	6KN	12KN	25KN

TAPER	BT30AD	BT40AD	BT50AD
	ISO30JD	ISO40JD	ISO50JD
ØD1	31.75	44.45	69.85
Ød2 H8	12.5	17	25
d7 6H	M12*P1.75	M16*P2.0	M24*P3.0
ØD5 h8	46	63	100
v +/-0.1	13.6	16.6	23.2
y +/-0.4	2	2	3
f	20	25	35
l1 +/-0.2	48.4	65.4	101.8
l2	24	30	45
l4+0.5/0.0	7	9	13
l6	16.3 -0.3/+0.0	22.6 -0.3/+0.0	35.4 -0.4/+0.0
b +0.2/0.0	16.1	16.1	25.7

TAPER	BT30AD/B	BT40AD/B	BT50AD/B
	ISO30JD/F	ISO40JD/F	ISO50JD/F
e1	20	27	42
Ød9	2	4	6

TAPER	BT30GAD
ØD1	31.75
Ød2 H8	12.50
d7 6H	M12*P1.75
ØD5 h8	46.00
v +/-0.1	13.60
y +/-0.4	2
f	20
l1 +/-0.2	48.40
l2	24
l4+0.5/0.0	7.0
l6	16.3 -0.3/+0.0

圓錐角度公差 // TAPER ANGLE TOLERANCE

TAPER	#30 TAPER	#40 TAPER	#50 TAPER
AT1 (mm)	+0.0008/+0.0013	+0.0010/+0.0016	+0.0013/+0.0020
AT2 (mm)	+0.0013/+0.0020	+0.0016/+0.0025	+0.0020/+0.0032
AT3 (mm)	+0.0020/+0.0032	+0.0025/+0.0040	+0.0032/+0.0050

圓錐角度直線度公差 // TAPER ANGLE STRAIGHTNESS TOLERANCE

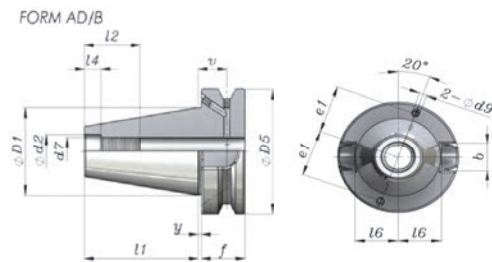
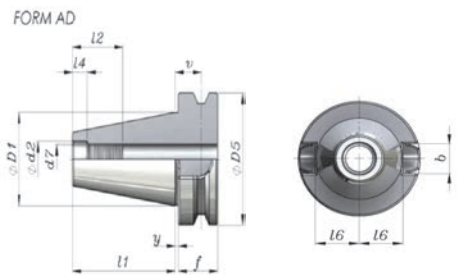
TAPER	#30 TAPER	#40 TAPER	#50 TAPER
	0.002	0.002	0.003

圓錐圓度公差 // TAPER ROUNDNESS TOLERANCE

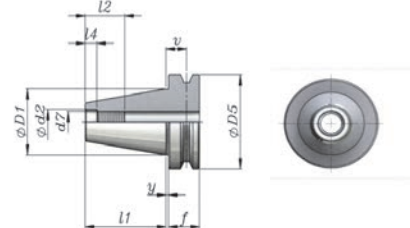
TAPER	#30 TAPER	#40 TAPER	#50 TAPER
	0.001	0.001	0.002

7/24圓錐刀桿要達到0.002mm的鼻端偏擺

AT2的錐度角度公差是必須的



BT30G FORM AD:
BT30 FORM AD W/O DRIVE KEY SLOTS

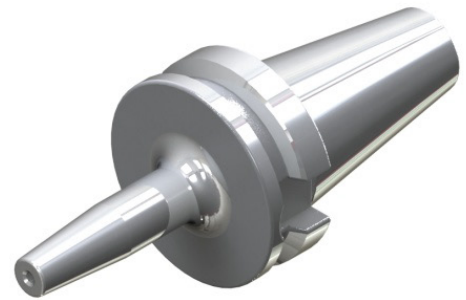
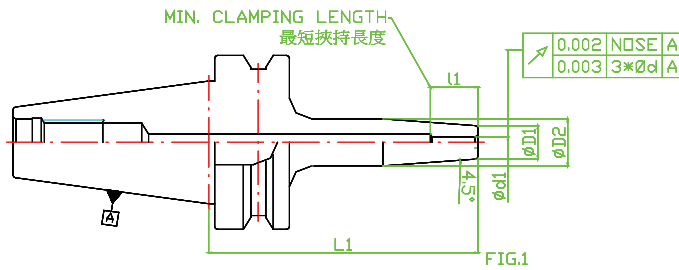


To achieve 0.002mm runout of T.I.R 7/24 taper

AT2 taper angle tolerance is a "MUST"

Shrink fit chucks

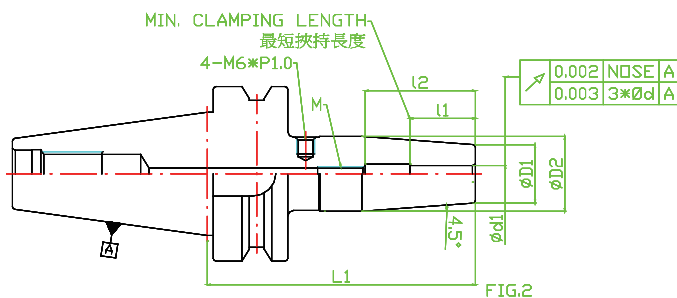
熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30AD-EZ03-080	1	80	-	12	17	-	3	11	-	-	0.60
◎	BT30AD-EZ04-080	1	80	-	12	17	-	4	14	-	-	0.60
◎	BT30AD-EZ05-080	1	80	-	12	17	-	5	17	-	-	0.60

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品
STOCK ◯=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30AD-EZ06-080	2	80	-	21	27	-	6	23	37	M5*P0.8	0.70
◎	BT30AD-EZ08-080	2	80	-	21	27	-	8	27	37	M6*P1.0	0.70
◎	BT30AD-EZ10-080	2	80	-	24	32	-	10	32	42	M8*P1.0	0.80
◎	BT30AD-EZ12-080	2	80	-	24	32	-	12	37	48	M10*P1.0	0.80
◎	BT30AD-EZ14-080	2	80	-	27	34	-	14	37	48	M10*P1.0	0.80
◎	BT30AD-EZ16-080	2	80	-	27	34	-	16	40	51	M12*P1.0	0.80
◎	BT30AD-EZ18-090	2	90	-	33	42	-	18	40	51	M12*P1.0	1.00
◎	BT30AD-EZ20-090	2	90	-	33	42	-	20	42	53	M16*P1.0	1.00

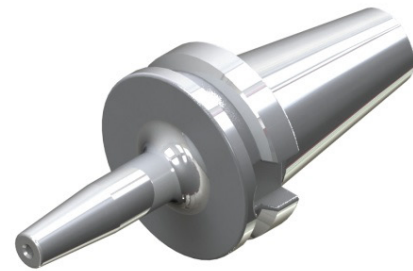
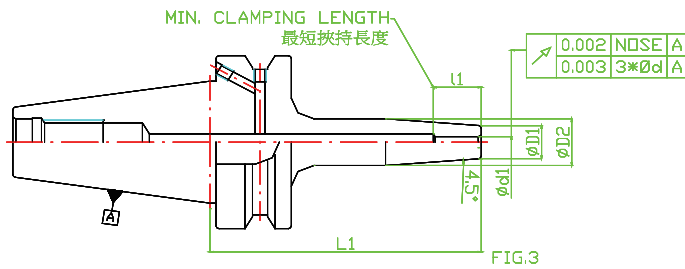
產品FIG.2出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.2 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產品 //
STOCK BLANK=on request

BT-EZ

Shrink fit chucks

熱膨脹燒結刀桿

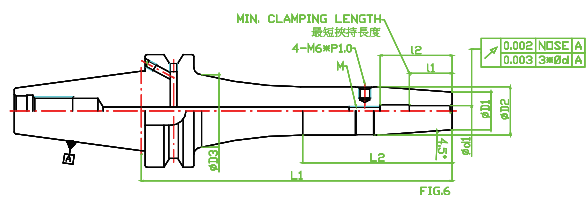
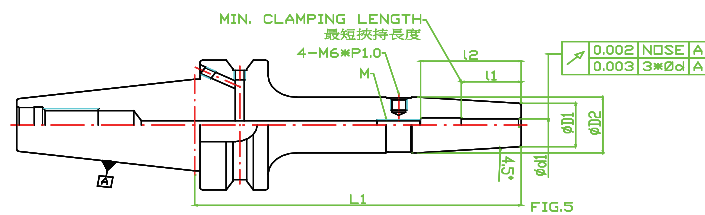
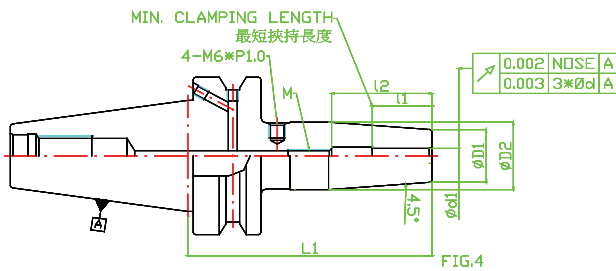
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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT40AD/B-EZ03-090	3	90	-	12	17	-	3	15	-	-	1.10
◎	BT40AD/B-EZ04-090	3	90	-	12	17	-	4	17	-	-	1.10
◎	BT40AD/B-EZ05-090	3	90	-	12	17	-	5	17	-	-	1.10

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



■ Shrink fit chucks

● 熱膨脹燒結刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT40AD/B-EZ06-090	4	90	-	21	27	-	6	23	37	M5*P0.8	1.20
○	BT40AD/B-EZ06-120	5	120	-	21	27	-	6	23	37	M5*P0.8	1.50
◎	BT40AD/B-EZ08-090	4	90	-	21	27	-	8	27	37	M6*P1.0	1.20
○	BT40AD/B-EZ08-120	5	120	-	21	27	-	8	27	37	M6*P1.0	1.50
◎	BT40AD/B-EZ10-090	4	90	-	24	32	-	10	32	42	M8*P1.0	1.30
○	BT40AD/B-EZ10-120	5	120	-	24	32	-	10	32	42	M8*P1.0	1.60
◎	BT40AD/B-EZ12-090	4	90	-	24	32	-	12	37	48	M10*P1.0	1.30
○	BT40AD/B-EZ12-120	5	120	-	24	32	-	12	37	48	M10*P1.0	1.60
◎	BT40AD/B-EZ14-090	4	90	-	27	34	-	14	37	48	M10*P1.0	1.30
○	BT40AD/B-EZ14-120	5	120	-	27	34	-	14	37	48	M10*P1.0	1.60
◎	BT40AD/B-EZ16-090	4	90	-	27	34	-	16	40	51	M12*P1.0	1.30
○	BT40AD/B-EZ16-120	5	120	-	27	34	-	16	40	51	M12*P1.0	1.60
◎	BT40AD/B-EZ18-090	4	90	-	33	42	-	18	40	51	M12*P1.0	1.40
○	BT40AD/B-EZ18-120	5	120	-	33	42	-	18	40	51	M12*P1.0	1.80
◎	BT40AD/B-EZ20-090	4	90	-	33	42	-	20	40	51	M16*P1.0	1.40
○	BT40AD/B-EZ20-120	5	120	-	33	42	-	20	42	53	M16*P1.0	1.80
◎	BT40AD/B-EZ25-100	4	100	-	44	53	-	25	48	59	M16*P1.0	2.00
○	BT40AD/B-EZ25-120	5	120	-	44	53	-	25	48	59	M16*P1.0	2.30
◎	BT40AD/B-EZ32-100	4	100	-	44	53	-	32	52	63	M16*P1.0	2.00
○	BT40AD/B-EZ32-120	5	120	-	44	53	-	32	52	63	M16*P1.0	2.30

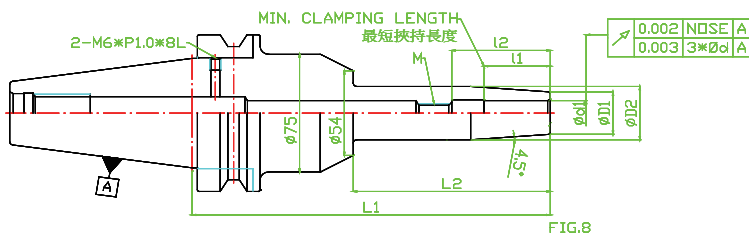
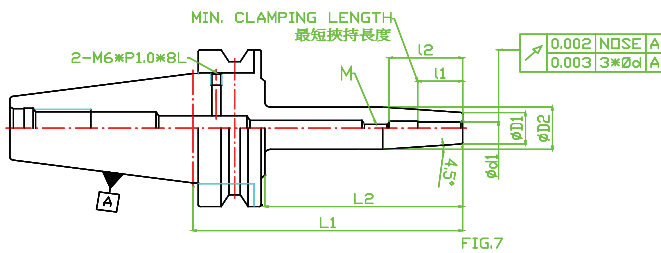
產品FIG.4,5 & 6出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.4, 5 & 6 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

BT-EZ

Shrink fit chucks

熱膨脹燒結刀桿

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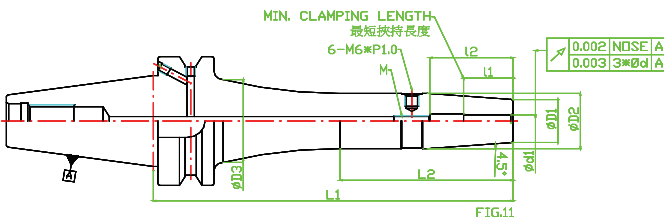
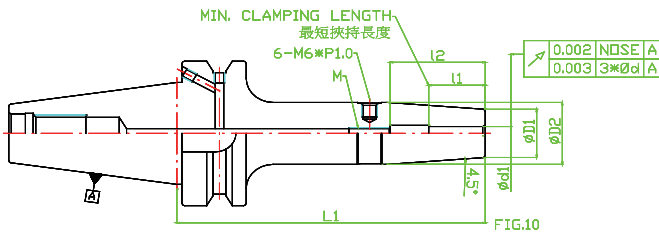
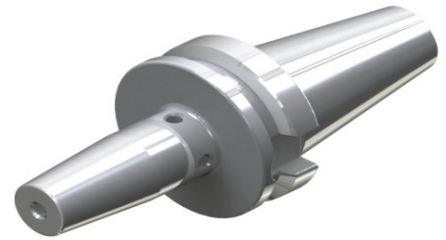
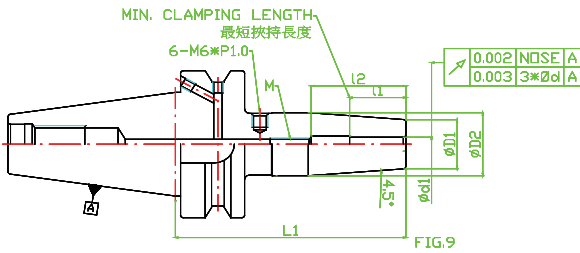
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT50AD-EZX06-105	7	105	65	21	27	-	6	23	37	M5*P0.8	3.80
○	BT50AD-EZX06-150	7	150	110	21	27	-	6	23	37	M5*P0.8	4.10
○	BT50AD-EZX06-200	8	200	110	21	27	-	6	23	37	M5*P0.8	5.60
○	BT50AD-EZX08-105	7	105	65	21	27	-	8	27	37	M6*P1.0	3.80
○	BT50AD-EZX08-150	7	150	110	21	27	-	8	27	37	M6*P1.0	4.10
○	BT50AD-EZX08-200	8	200	110	21	27	-	8	27	37	M6*P1.0	5.60
○	BT50AD-EZX10-105	7	105	65	24	32	-	10	32	42	M8*P1.25	3.90
○	BT50AD-EZX10-150	7	150	110	24	32	-	10	32	42	M8*P1.25	4.20
○	BT50AD-EZX10-200	8	200	110	24	32	-	10	32	42	M8*P1.25	5.70
○	BT50AD-EZX12-105	7	105	65	24	32	-	12	37	48	M10*P1.5	3.90
○	BT50AD-EZX12-150	7	150	110	24	32	-	12	37	48	M10*P1.5	4.20
○	BT50AD-EZX12-200	8	200	110	24	32	-	12	37	48	M10*P1.5	5.80
○	BT50AD-EZX14-105	7	105	65	27	37	-	14	37	48	M10*P1.5	3.90
○	BT50AD-EZX14-150	7	150	110	27	37	-	14	37	48	M10*P1.5	4.20
○	BT50AD-EZX14-200	8	200	110	27	37	-	14	37	48	M10*P1.5	5.80
○	BT50AD-EZX16-105	7	105	65	27	34	-	16	40	51	M12*P1.75	3.90
○	BT50AD-EZX16-150	7	150	110	27	34	-	16	40	51	M12*P1.75	4.20
○	BT50AD-EZX16-200	8	200	110	27	34	-	16	40	51	M12*P1.75	5.80
○	BT50AD-EZX18-105	7	105	65	33	42	-	18	40	51	M12*P1.75	4.00
○	BT50AD-EZX18-150	7	150	110	33	42	-	18	40	51	M12*P1.75	4.30
○	BT50AD-EZX18-200	8	200	110	33	42	-	18	40	51	M12*P1.75	5.90
○	BT50AD-EZX20-105	7	105	65	33	42	-	20	42	53	M16*P2.0	4.00
○	BT50AD-EZX20-150	7	150	110	33	42	-	20	42	53	M16*P2.0	4.30
○	BT50AD-EZX20-200	8	200	110	33	42	-	20	42	53	M16*P2.0	5.90

產品FIG.7 & 8出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.7 & 8 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

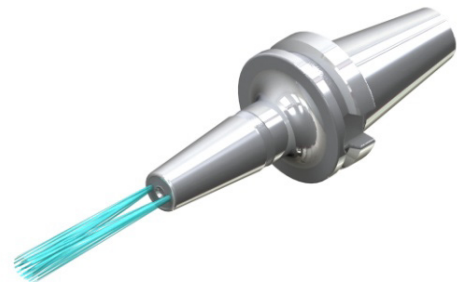
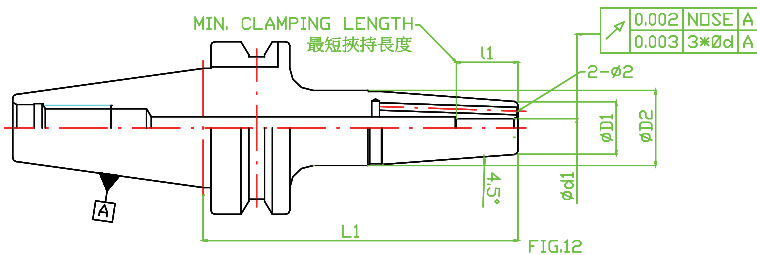
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	BT50AD/B-EZ25-100	9	100	-	44	53	-	25	48	59	M16*P1.0	4.40
	BT50AD/B-EZ25-130	10	130	-	44	53	-	25	48	59	M16*P1.0	4.80
	BT50AD/B-EZ25-160	11	160	75	44	53	59	25	48	59	M16*P1.0	5.50
	BT50AD/B-EZ25-200	11	200	110	44	53	60	25	48	59	M16*P1.0	6.00
	BT50AD/B-EZ32-100	9	100	-	44	53	-	32	52	63	M16*P1.0	4.40
	BT50AD/B-EZ32-130	10	130	-	44	53	-	32	52	63	M16*P1.0	4.80
	BT50AD/B-EZ32-160	11	160	75	44	53	59	32	52	63	M16*P1.0	5.00
	BT50AD/B-EZ32-200	11	200	110	44	53	60	32	52	63	M16*P1.0	6.00

產品 FIG. 9, 10 & 11 出貨附件為長度調整螺絲 BK-EZ-Mxx*1pc // PRODUCTS IN FIG. 9, 10 & 11 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=按單生產 // STOCK
 BLANK=on request

BT-EZKK

Shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿

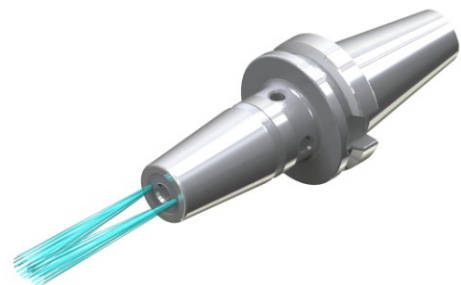
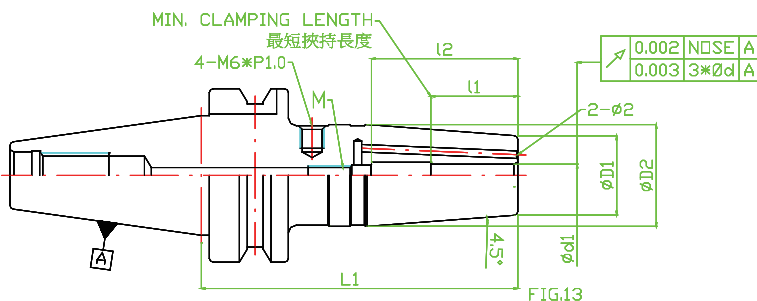


動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30AD-EZ03-080KK	12	80	-	14	20	-	3	11	-	-	0.60
○	BT30AD-EZ03-120KK	12	120	-	14	20	-	3	11	-	-	0.90
◎	BT30AD-EZ04-080KK	12	80	-	14	20	-	4	14	-	-	0.60
○	BT30AD-EZ04-120KK	12	120	-	14	20	-	4	14	-	-	0.90
◎	BT30AD-EZ05-080KK	12	80	-	14	20	-	5	17	-	-	0.60
○	BT30AD-EZ05-120KK	12	120	-	14	20	-	5	17	-	-	0.90

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30AD-EZ06-080KK	13	80	-	21	27	-	6	23	37	M5*P0.8	0.70
○	BT30AD-EZ06-120KK	13	120	-	21	27	-	6	23	37	M5*P0.8	1.00
◎	BT30AD-EZ08-080KK	13	80	-	21	27	-	8	27	37	M6*P1.0	0.70
○	BT30AD-EZ08-120KK	13	120	-	21	27	-	8	27	37	M6*P1.0	1.00
◎	BT30AD-EZ10-080KK	13	80	-	24	32	-	10	32	42	M8*P1.0	0.80
○	BT30AD-EZ10-120KK	13	120	-	24	32	-	10	32	42	M8*P1.0	1.10
◎	BT30AD-EZ12-080KK	13	80	-	24	32	-	12	37	48	M10*P1.0	0.80
○	BT30AD-EZ12-120KK	13	120	-	24	32	-	12	37	48	M10*P1.0	1.10
◎	BT30AD-EZ14-080KK	13	80	-	27	34	-	14	37	48	M10*P1.0	0.80
○	BT30AD-EZ14-120KK	13	120	-	27	34	-	14	37	48	M10*P1.0	1.10
◎	BT30AD-EZ16-080KK	13	80	-	27	34	-	16	40	51	M12*P1.0	0.80
○	BT30AD-EZ16-120KK	13	120	-	27	34	-	16	40	51	M12*P1.0	1.10
◎	BT30AD-EZ18-090KK	13	80	-	33	42	-	18	40	51	M12*P1.0	0.90
○	BT30AD-EZ18-120KK	13	120	-	33	42	-	18	40	51	M12*P1.0	1.20
◎	BT30AD-EZ20-090KK	13	80	-	33	42	-	20	42	53	M16*P1.0	0.90
○	BT30AD-EZ20-120KK	13	120	-	33	42	-	20	42	53	M16*P1.0	1.20

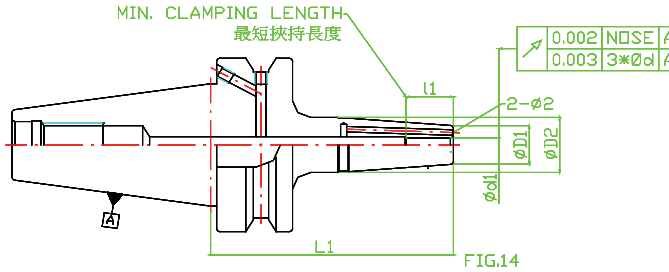
產品FIG.13出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.13 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.13出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.13 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

Shrink fit chucks with coolant through nose

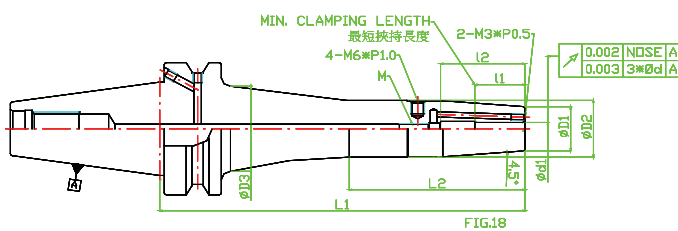
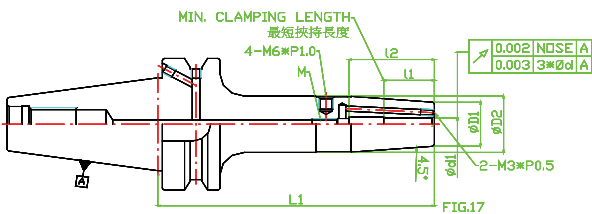
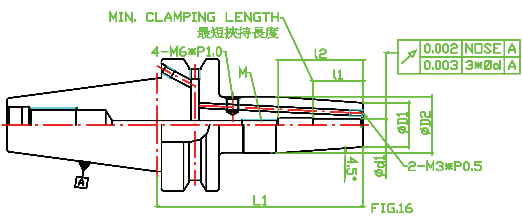
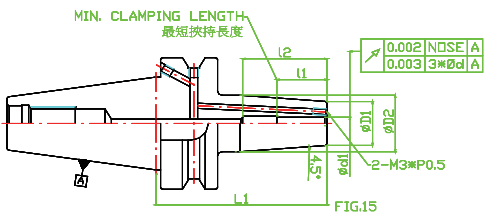
鼻端噴水熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT40AD/B-EZ03-090KK	14	90	-	14	20	-	3	11	-	-	1.10
○	BT40AD/B-EZ03-120KK	14	120	-	14	20	-	3	11	-	-	1.40
◎	BT40AD/B-EZ04-090KK	14	90	-	14	20	-	4	14	-	-	1.10
○	BT40AD/B-EZ04-120KK	14	120	-	14	20	-	4	14	-	-	1.40
◎	BT40AD/B-EZ05-090KK	14	90	-	14	20	-	5	17	-	-	1.10
○	BT40AD/B-EZ05-120KK	14	120	-	14	20	-	5	17	-	-	1.40

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◎=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



BT-EZKK

Shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	BT40AD/B-EZ06-075KK	15	75	-	21	27	-	6	23	-	-	1.10
◎	BT40AD/B-EZ06-090KK	16	90	-	21	27	-	6	23	37	M5*P0.8	1.20
○	BT40AD/B-EZ06-120KK	17	120	-	21	27	-	6	23	37	M5*P0.8	1.50
○	BT40AD/B-EZ06-160KK	18	160	77	21	27	41	6	23	37	M5*P0.8	1.80
○	BT40AD/B-EZ06-200KK	18	200	117	21	27	41	6	23	37	M5*P0.8	2.20
	BT40AD/B-EZ08-075KK	15	75	-	21	27	-	8	27	-	-	1.10
◎	BT40AD/B-EZ08-090KK	16	90	-	21	27	-	8	27	37	M6*P1.0	1.20
○	BT40AD/B-EZ08-120KK	17	120	-	21	27	-	8	27	37	M6*P1.0	1.50
○	BT40AD/B-EZ08-160KK	18	160	78	21	27	41	8	27	37	M6*P1.0	1.80
○	BT40AD/B-EZ08-200KK	18	200	118	21	27	41	8	27	37	M6*P1.0	2.20
	BT40AD/B-EZ10-075KK	15	75	-	24	32	-	10	32	-	-	1.20
◎	BT40AD/B-EZ10-090KK	16	90	-	24	32	-	10	32	42	M8*P1.0	1.30
○	BT40AD/B-EZ10-120KK	17	120	-	24	32	-	10	32	42	M8*P1.0	1.60
○	BT40AD/B-EZ10-160KK	18	160	78	24	32	40	10	32	42	M8*P1.0	1.90
○	BT40AD/B-EZ10-200KK	18	200	118	24	32	40	10	32	42	M8*P1.0	2.30
	BT40AD/B-EZ12-075KK	15	75	-	24	32	-	12	37	-	-	1.20
◎	BT40AD/B-EZ12-090KK	16	90	-	24	32	-	12	37	48	M10*P1.0	1.30
○	BT40AD/B-EZ12-120KK	17	120	-	24	32	-	12	37	48	M10*P1.0	1.60
○	BT40AD/B-EZ12-160KK	18	160	78	24	32	40	12	37	48	M10*P1.0	1.90
○	BT40AD/B-EZ12-200KK	18	200	118	24	32	40	12	37	48	M10*P1.0	2.30
	BT40AD/B-EZ14-075KK	15	75	-	27	34	-	14	37	-	-	1.20
◎	BT40AD/B-EZ14-090KK	16	90	-	27	34	-	14	37	48	M10*P1.0	1.30
○	BT40AD/B-EZ14-120KK	17	120	-	27	34	-	14	37	48	M10*P1.0	1.60
○	BT40AD/B-EZ14-160KK	18	160	78	27	34	42	14	37	48	M10*P1.0	1.90
	BT40AD/B-EZ14-200KK	18	200	118	27	34	42	14	37	48	M10*P1.0	2.30
	BT40AD/B-EZ16-075KK	15	75	-	27	34	-	16	40	-	-	1.20
◎	BT40AD/B-EZ16-090KK	16	90	-	27	34	-	16	40	51	M12*P1.0	1.30
○	BT40AD/B-EZ16-120KK	17	120	-	27	34	-	16	40	51	M12*P1.0	1.60
○	BT40AD/B-EZ16-160KK	18	160	78	27	34	42	16	40	51	M12*P1.0	1.90
	BT40AD/B-EZ16-200KK	18	200	118	27	34	42	16	40	51	M12*P1.0	2.30
	BT40AD/B-EZ18-075KK	15	75	-	33	42	-	18	40	-	-	1.30
◎	BT40AD/B-EZ18-090KK	16	90	-	33	42	-	18	40	51	M12*P1.0	1.40
○	BT40AD/B-EZ18-120KK	17	120	-	33	42	-	18	40	51	M12*P1.0	1.70
	BT40AD/B-EZ18-160KK	17	160	-	33	42	-	18	40	51	M12*P1.0	2.00
	BT40AD/B-EZ18-200KK	17	200	-	33	42	-	18	40	51	M12*P1.0	2.40
	BT40AD/B-EZ20-075KK	15	75	-	33	42	-	20	40	-	-	1.30
◎	BT40AD/B-EZ20-090KK	16	90	-	33	42	-	20	42	53	M16*P1.0	1.40
○	BT40AD/B-EZ20-120KK	17	120	-	33	42	-	20	42	53	M16*P1.0	1.70
	BT40AD/B-EZ20-160KK	17	160	-	33	42	-	20	42	53	M16*P1.0	2.00
	BT40AD/B-EZ20-200KK	17	200	-	33	42	-	20	42	53	M16*P1.0	2.40
	BT40AD/B-EZ25-075KK	15	75	-	44	53	-	25	48	-	-	1.60
◎	BT40AD/B-EZ25-100KK	16	100	-	44	53	-	25	48	59	M16*P1.0	2.00
○	BT40AD/B-EZ25-120KK	17	120	-	44	53	-	25	48	59	M16*P1.0	2.30
	BT40AD/B-EZ25-160KK	17	160	-	44	53	-	25	48	59	M16*P1.0	2.60
	BT40AD/B-EZ25-200KK	17	200	-	44	53	-	25	48	59	M16*P1.0	3.00
	BT40AD/B-EZ32-075KK	15	75	-	44	53	-	32	52	-	-	1.60
◎	BT40AD/B-EZ32-100KK	16	100	-	44	53	-	32	52	63	M16*P1.0	2.00
○	BT40AD/B-EZ32-120KK	17	120	-	44	53	-	32	52	63	M16*P1.0	2.30
	BT40AD/B-EZ32-160KK	17	160	-	44	53	-	32	52	63	M16*P1.0	2.60
	BT40AD/B-EZ32-200KK	17	200	-	44	53	-	32	52	63	M16*P1.0	3.00

產品FIG.16, 17 & 18出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.16, 17 & 18 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.16, 17 & 18出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.16, 17 & 18 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

Shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿

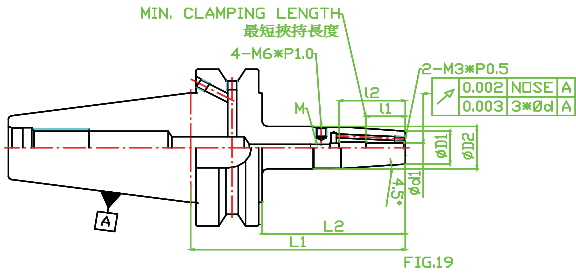


FIG.19

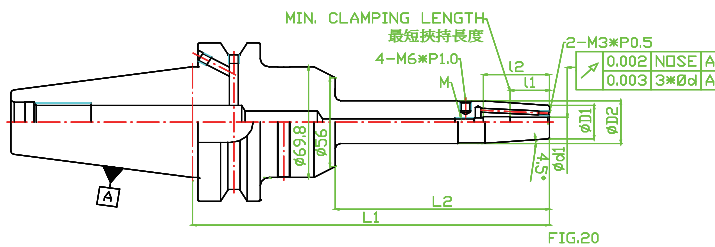
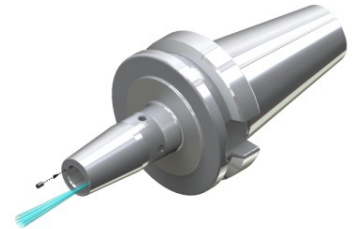


FIG.20



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT50AD/B-EZX06-100KK	19	100	60	21	27	-	6	23	-	-	3.80
○	BT50AD/B-EZX06-120KK	19	120	80	21	27	-	6	23	37	M5*P0.8	3.90
○	BT50AD/B-EZX06-160KK	19	160	140	21	27	-	6	23	37	M5*P0.8	4.20
	BT50AD/B-EZX06-200KK	20	200	120	21	27	-	6	23	37	M5*P0.8	5.80
○	BT50AD/B-EZX08-100KK	19	100	60	21	27	-	8	27	-	-	3.80
○	BT50AD/B-EZX08-120KK	19	120	80	21	27	-	8	27	37	M6*P1.0	3.90
○	BT50AD/B-EZX08-160KK	19	160	140	21	27	-	8	27	37	M6*P1.0	4.20
	BT50AD/B-EZX08-200KK	20	200	120	21	27	-	8	27	37	M6*P1.0	5.80
○	BT50AD/B-EZX10-100KK	19	100	60	24	32	-	10	32	-	-	3.90
○	BT50AD/B-EZX10-120KK	19	120	80	24	32	-	10	32	42	M8*P1.0	4.00
○	BT50AD/B-EZX10-160KK	19	160	140	24	32	-	10	32	42	M8*P1.0	4.30
	BT50AD/B-EZX10-200KK	20	200	120	24	32	-	10	32	42	M8*P1.0	5.90
○	BT50AD/B-EZX12-100KK	19	100	60	24	32	-	12	37	-	-	3.90
○	BT50AD/B-EZX12-120KK	19	120	80	24	32	-	12	37	48	M10*P1.0	4.00
○	BT50AD/B-EZX12-160KK	19	160	140	24	32	-	12	37	48	M10*P1.0	4.30
	BT50AD/B-EZX12-200KK	20	200	120	24	32	-	12	37	48	M10*P1.0	5.90
○	BT50AD/B-EZX14-100KK	19	100	60	27	34	-	14	37	-	-	3.90
○	BT50AD/B-EZX14-120KK	19	120	80	27	34	-	14	37	48	M10*P1.0	4.00
○	BT50AD/B-EZX14-160KK	19	160	140	27	34	-	14	37	48	M10*P1.0	4.30
	BT50AD/B-EZX14-200KK	20	200	120	27	34	-	14	37	48	M10*P1.0	5.90
○	BT50AD/B-EZX16-100KK	19	100	60	27	34	-	16	40	-	-	3.90
○	BT50AD/B-EZX16-120KK	19	120	80	27	34	-	16	40	51	M12*P1.0	4.00
○	BT50AD/B-EZX16-160KK	19	160	140	27	34	-	16	40	51	M12*P1.0	4.30
	BT50AD/B-EZX16-200KK	20	200	120	27	34	-	16	40	51	M12*P1.0	5.90
	BT50AD/B-EZX18-100KK	19	100	60	33	42	-	18	40	-	-	4.00
	BT50AD/B-EZX18-120KK	19	120	80	33	42	-	18	40	51	M12*P1.0	4.10
	BT50AD/B-EZX18-160KK	19	160	140	33	42	-	18	40	51	M12*P1.0	4.40
	BT50AD/B-EZX18-200KK	20	200	120	33	42	-	18	40	51	M12*P1.0	6.00
○	BT50AD/B-EZX20-100KK	19	100	60	33	42	-	20	42	-	-	4.00
○	BT50AD/B-EZX20-120KK	19	120	80	33	42	-	20	42	53	M16*P1.0	4.10
○	BT50AD/B-EZX20-160KK	19	160	140	33	42	-	20	42	53	M16*P1.0	4.40
	BT50AD/B-EZX20-200KK	20	200	120	33	42	-	20	42	53	M16*P1.0	6.00

產品FIG.19 & 20出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.19 & 20 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.19 & 20出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.19 & 20 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

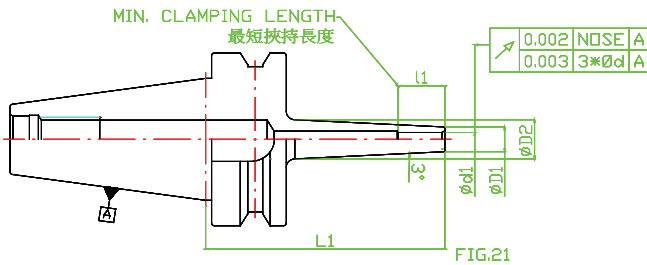
STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

BT-EZSU

■ SlimUltra shrink fit chucks

● 極細型熱膨脹燒結刀桿

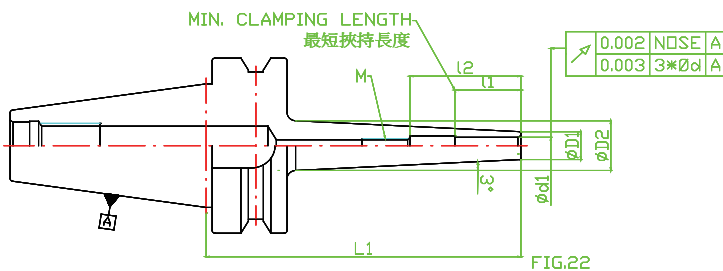
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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT30AD-EZ03SU-080	21	80	-	7	13	-	3	11	-	-	0.60
○	BT30AD-EZ03SU-120	21	120	-	7	17	-	3	11	-	-	0.90
○	BT30AD-EZ04SU-080	21	80	-	8	14	-	4	14	-	-	0.60
○	BT30AD-EZ04SU-120	21	120	-	8	18	-	4	14	-	-	0.90
○	BT30AD-EZ05SU-080	21	80	-	9	15	-	5	17	-	-	0.60
○	BT30AD-EZ05SU-120	21	120	-	9	19	-	5	17	-	-	0.90

STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



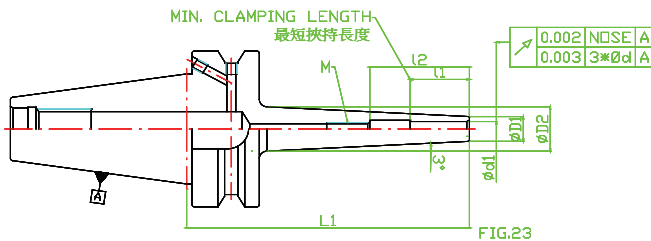
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT30AD-EZ06SU-080	22	80	-	10	16	-	6	23	37	M5*P0.8	0.70
○	BT30AD-EZ06SU-120	22	120	-	10	20	-	6	23	37	M5*P0.8	1.00
○	BT30AD-EZ08SU-080	22	80	-	12	16	-	8	27	37	M6*P1.0	0.70
○	BT30AD-EZ08SU-120	22	120	-	12	20	-	8	27	37	M6*P1.0	1.00
○	BT30AD-EZ10SU-080	22	80	-	14	16	-	10	32	42	M8*P1.0	0.80
○	BT30AD-EZ10SU-120	22	120	-	14	20	-	10	32	42	M8*P1.0	1.10
○	BT30AD-EZ12SU-080	22	80	-	16	16	-	12	37	48	M10*P1.0	0.80
○	BT30AD-EZ12SU-120	22	120	-	16	20	-	12	37	48	M10*P1.0	1.10

產品FIG.22出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.22 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

■ SlimUltra shrink fit chucks

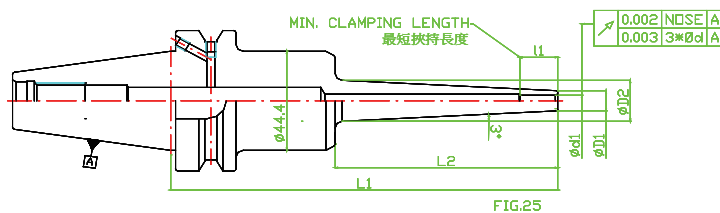
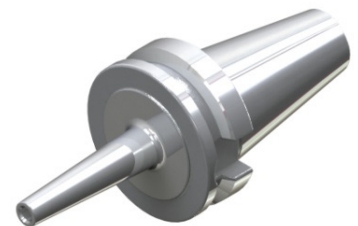
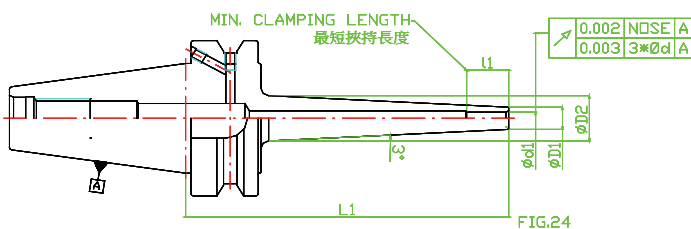
● 極細型熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT40AD/B-EZ06SU-105	23	105	-	10	18	-	6	23	37	M5*P0.8	1.30
○	BT40AD/B-EZ08SU-105	23	105	-	12	20	-	8	37	37	M6*P1.0	1.30
○	BT40AD/B-EZ10SU-105	23	105	-	14	22	-	10	32	42	M8*P1.0	1.40
○	BT40AD/B-EZ12SU-105	23	105	-	16	24	-	12	37	48	M10*P1.0	1.40

產品FIG.23出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.23 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT40AD/B-EZX03SU-120	24	120	92	7	17	-	3	11	-	-	1.40
○	BT40AD/B-EZX03SU-160	24	160	132	7	21	-	3	11	-	-	1.70
○	BT40AD/B-EZX03SU-200	25	200	132	7	21	-	3	11	-	-	2.10
◎	BT40AD/B-EZX04SU-120	24	120	92	8	18	-	4	14	-	-	1.40
○	BT40AD/B-EZX04SU-160	24	160	132	8	22	-	4	14	-	-	1.70
○	BT40AD/B-EZX04SU-200	25	200	132	8	22	-	4	14	-	-	2.10
◎	BT40AD/B-EZX05SU-120	24	120	92	9	19	-	5	17	-	-	1.40
○	BT40AD/B-EZX05SU-160	24	160	132	9	23	-	5	17	-	-	1.70
○	BT40AD/B-EZX05SU-200	25	200	132	9	23	-	5	17	-	-	2.10

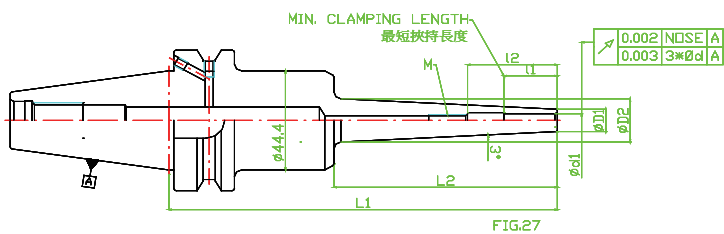
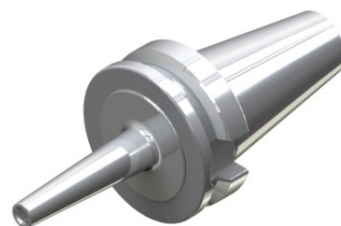
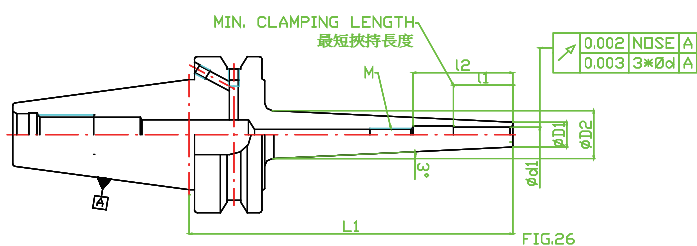
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

BT-EZSU

■ SlimUltra shrink fit chucks

● 極細型熱膨脹燒結刀桿

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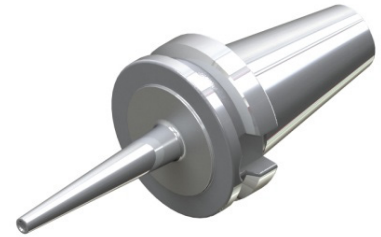
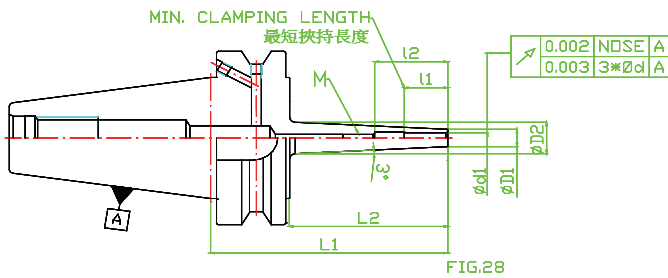
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT40AD/B-EZX06SU-120	26	120	92	10	20	-	6	23	37	M5*P0.8	1.50
○	BT40AD/B-EZX06SU-160	26	160	132	10	24	-	6	23	37	M5*P0.8	1.80
○	BT40AD/B-EZX06SU-200	27	200	132	10	24	-	6	23	37	M5*P0.8	2.20
◎	BT40AD/B-EZX08SU-120	26	120	92	12	22	-	8	27	37	M6*P1.0	1.50
○	BT40AD/B-EZX08SU-160	26	160	132	12	26	-	8	27	37	M6*P1.0	1.80
○	BT40AD/B-EZX08SU-200	27	200	132	12	26	-	8	27	37	M6*P1.0	2.20
◎	BT40AD/B-EZX10SU-120	26	120	92	14	24	-	10	32	42	M8*P1.0	1.60
○	BT40AD/B-EZX10SU-160	26	160	132	14	28	-	10	32	42	M8*P1.0	1.90
○	BT40AD/B-EZX10SU-200	27	200	132	14	28	-	10	32	42	M8*P1.0	2.30
◎	BT40AD/B-EZX12SU-120	26	120	92	16	26	-	12	37	48	M10*P1.0	1.60
○	BT40AD/B-EZX12SU-160	26	160	132	16	30	-	12	37	48	M10*P1.0	1.90
○	BT40AD/B-EZX12SU-200	27	200	132	16	30	-	12	37	48	M10*P1.0	2.30

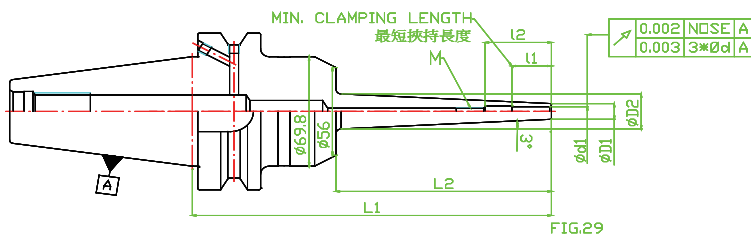
產品FIG.26 & 27出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.26 & 27 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

■ SlimUltra shrink fit chucks

● 極細型熱膨脹燒結刀桿



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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT50AD/B-EZX06SU-120	28	120	80	10	18	-	6	23	37	M5*P0.8	3.90
○	BT50AD/B-EZX06SU-160	28	160	120	10	22	-	6	23	37	M5*P0.8	4.20
○	BT50AD/B-EZX06SU-200	29	200	120	10	22	-	6	23	37	M5*P0.8	5.80
○	BT50AD/B-EZX08SU-120	28	120	80	12	20	-	8	27	37	M6*P1.0	3.90
○	BT50AD/B-EZX08SU-160	28	160	120	12	24	-	8	27	37	M6*P1.0	4.20
○	BT50AD/B-EZX08SU-200	29	200	120	12	24	-	8	27	37	M6*P1.0	5.80
○	BT50AD/B-EZX10SU-120	28	120	80	14	22	-	10	32	42	M8*P1.0	4.00
○	BT50AD/B-EZX10SU-160	28	160	120	14	26	-	10	32	42	M8*P1.0	4.30
○	BT50AD/B-EZX10SU-200	29	200	120	14	26	-	10	32	42	M8*P1.0	5.90
○	BT50AD/B-EZX12SU-120	28	120	80	16	24	-	12	37	48	M10*P1.0	4.00
○	BT50AD/B-EZX12SU-160	28	160	120	16	28	-	12	37	48	M10*P1.0	4.30
○	BT50AD/B-EZX12SU-200	29	200	120	16	28	-	12	37	48	M10*P1.0	5.90

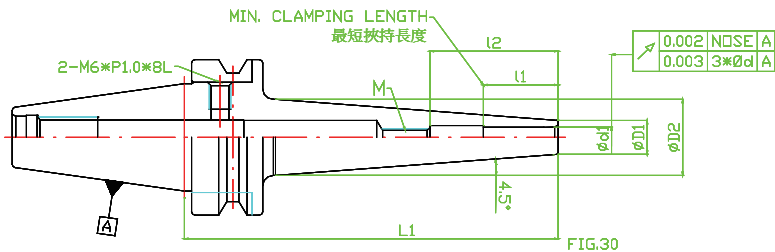
產品FIG.28 & 29出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.28 & 29 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

BT-EZS

■ Slim shrink fit chucks

● 細型熱膨脹燒結刀桿

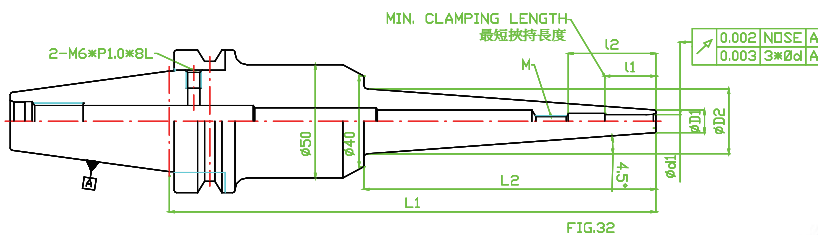
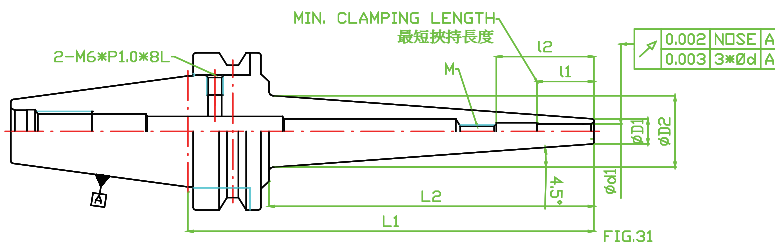
86



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT30AD-EZ06S-105	30	105	-	10	23	-	6	23	37	M5*P0.8	0.80
○	BT30AD-EZ08S-105	30	105	-	12	25	-	8	27	37	M6*P1.0	0.80
○	BT30AD-EZ10S-105	30	105	-	14	27	-	10	32	42	M8*P1.25	0.90
○	BT30AD-EZ12S-105	30	105	-	16	29	-	12	37	48	M10*P1.5	0.90

產品FIG.30出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.30 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request



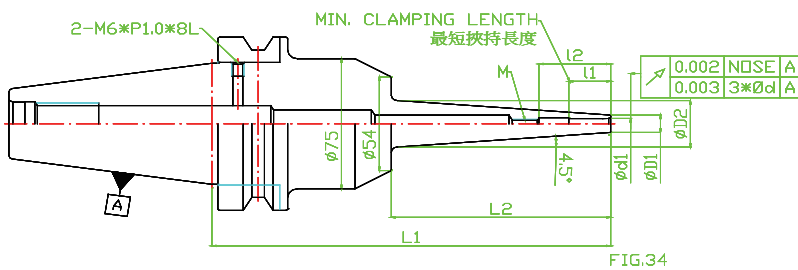
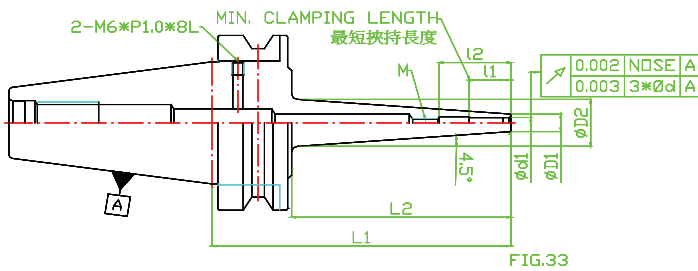
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT40AD-EZX06S-150	31	150	120	10	29	-	6	23	37	M5*P0.8	1.70
○	BT40AD-EZX06S-200	32	200	120	10	29	-	6	23	37	M5*P0.8	2.20
○	BT40AD-EZX08S-150	31	150	120	12	31	-	8	27	37	M6*P1.0	1.70
○	BT40AD-EZX08S-200	32	200	120	12	31	-	8	27	37	M6*P1.0	2.20
○	BT40AD-EZX10S-150	31	150	120	14	33	-	10	32	42	M8*P1.25	1.80
○	BT40AD-EZX10S-200	32	200	120	14	33	-	10	32	42	M8*P1.25	2.30
○	BT40AD-EZX12S-150	31	150	120	16	35	-	12	37	48	M10*P1.5	1.80
○	BT40AD-EZX12S-200	32	200	120	16	35	-	12	37	48	M10*P1.5	2.30

產品FIG.31 & 32出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.31 & 32 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

■ Slim shrink fit chucks

● 細型熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	BT50AD-EZX06S-150	33	150	110	10	27	-	6	23	37	M5*P0.8	4.10
○	BT50AD-EZX06S-200	34	200	110	10	27	-	6	23	37	M5*P0.8	5.60
○	BT50AD-EZX08S-150	33	150	110	12	29	-	8	27	37	M6*P1.0	4.10
○	BT50AD-EZX08S-200	34	200	110	12	29	-	8	27	37	M6*P1.0	5.60
○	BT50AD-EZX10S-150	33	150	110	14	31	-	10	32	42	M8*P1.25	4.20
○	BT50AD-EZX10S-200	34	200	110	14	31	-	10	32	42	M8*P1.25	5.70
○	BT50AD-EZX12S-150	33	150	110	16	33	-	12	37	48	M10*P1.5	4.20
○	BT50AD-EZX12S-200	34	200	110	16	33	-	12	37	48	M10*P1.5	5.70

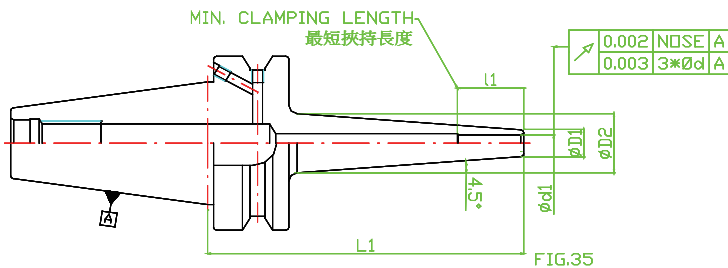
產品FIG.33 & 34出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.33 & 34 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

BT-EZS

■ Slim shrink fit chucks

● 細型熱膨脹燒結刀桿

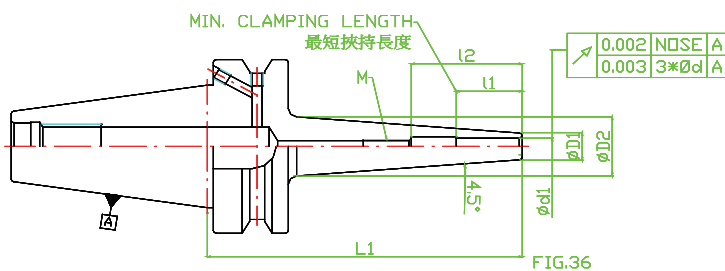
88



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	BT40AD/B-EZ03S-120	35	120	-	9	24	-	3	11	-	-	1.40
	BT40AD/B-EZ04S-120	35	120	-	9	24	-	4	14	-	-	1.40
	BT40AD/B-EZ05S-120	35	120	-	9	24	-	5	17	-	-	1.40

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



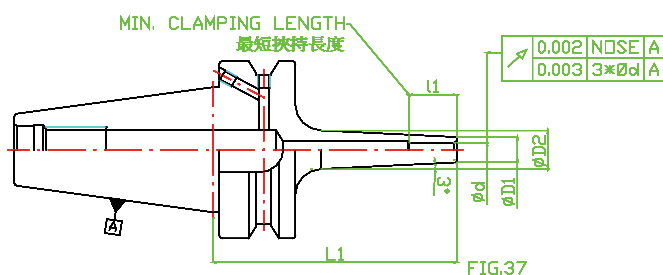
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	BT40AD/B-EZ06S-120	36	120	-	15	29	-	6	23	37	M5*P0.8	1.50
	BT40AD/B-EZ08S-120	36	120	-	15	29	-	8	27	37	M6*P1.0	1.50
	BT40AD/B-EZ10S-120	36	120	-	18	31	-	10	32	42	M8*P1.0	1.60
	BT40AD/B-EZ12S-120	36	120	-	18	31	-	12	37	48	M10*P1.0	1.60

產品FIG.36出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.36 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

■ SlimSuper shrink fit chucks

● 超細型熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

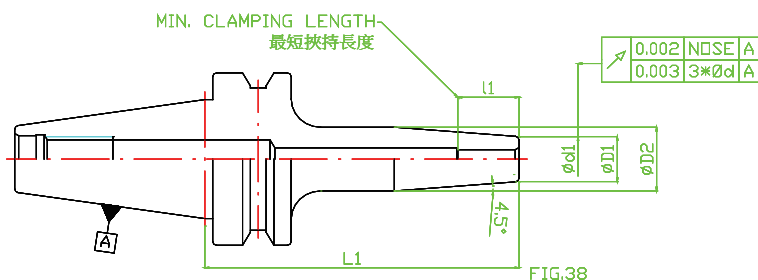
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	BT40AD/B-EZ03SS-090	37	90	-	9	16	-	3	11	-	-	1.20
	BT40AD/B-EZ03SS-120	37	120	-	9	19	-	3	11	-	-	1.50
	BT40AD/B-EZ04SS-090	37	90	-	10	17	-	4	14	-	-	1.20
	BT40AD/B-EZ04SS-120	37	120	-	10	20	-	4	14	-	-	1.50
	BT40AD/B-EZ05SS-090	37	90	-	11	18	-	5	17	-	-	1.20
	BT40AD/B-EZ05SS-120	37	120	-	11	21	-	5	17	-	-	1.50
	BT40AD/B-EZ06SS-090	37	90	-	12	19	-	6	23	-	-	1.20
	BT40AD/B-EZ06SS-120	37	120	-	12	22	-	6	23	-	-	1.50
	BT40AD/B-EZ08SS-090	37	90	-	14	21	-	8	27	-	-	1.20
	BT40AD/B-EZ08SS-120	37	120	-	14	24	-	8	27	-	-	1.50
	BT40AD/B-EZ10SS-090	37	90	-	16	23	-	10	32	-	-	1.30
	BT40AD/B-EZ10SS-120	37	120	-	16	26	-	10	32	-	-	1.60
	BT40AD/B-EZ12SS-090	37	90	-	18	25	-	12	37	-	-	1.30
	BT40AD/B-EZ12SS-120	37	120	-	18	28	-	12	37	-	-	1.60

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

BT-BTG-EZ

■ Shrink fit chucks without drive key slots

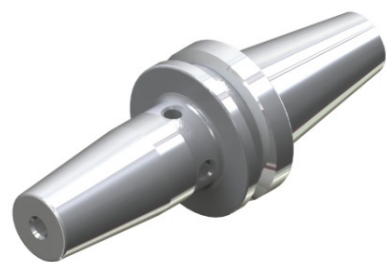
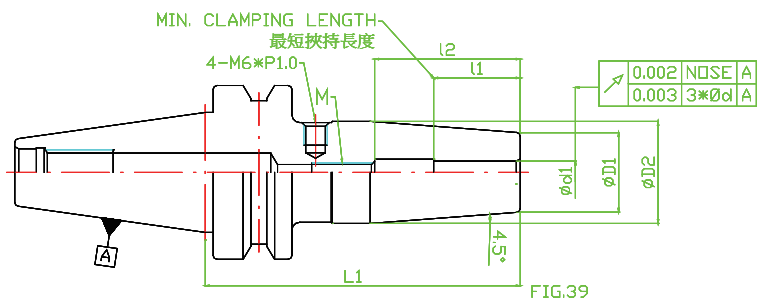
● 無傳動鍵槽熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30GAD-EZ03-080	38	80	-	12	17	-	3	11	-	-	0.60
◎	BT30GAD-EZ04-080	38	80	-	12	17	-	4	14	-	-	0.60
◎	BT30GAD-EZ05-080	38	80	-	12	17	-	5	17	-	-	0.60

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



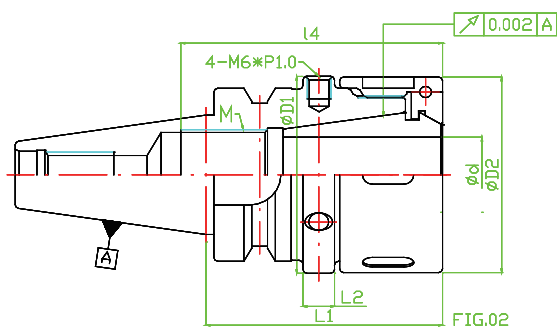
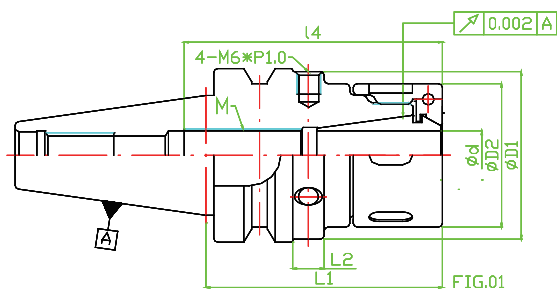
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
◎	BT30GAD-EZ06-080	39	80	-	21	27	-	6	23	37	M5*P0.8	0.70
◎	BT30GAD-EZ08-080	39	80	-	21	27	-	8	27	37	M6*P1.0	0.70
◎	BT30GAD-EZ10-080	39	80	-	24	32	-	10	32	42	M8*P1.0	0.80
◎	BT30GAD-EZ12-080	39	80	-	24	32	-	12	37	48	M10*P1.0	0.80
◎	BT30GAD-EZ14-080	39	80	-	27	34	-	14	37	48	M10*P1.0	0.80
◎	BT30GAD-EZ16-080	39	80	-	27	34	-	16	40	51	M12*P1.0	0.80
	BT30GAD-EZ18-090	39	90	-	33	42	-	18	40	51	M12*P1.0	1.00
	BT30GAD-EZ20-090	39	90	-	33	42	-	20	42	53	M16*P1.0	1.00

產品 FIG.39 出貨附件為長度調整螺絲 BK-EZ-Mxx*1pc // PRODUCTS IN FIG.39 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT30AD-SGER16-060	1	60	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGXnano	W-FK04	0.60
◎	BT30AD-SGER16-100	1	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGXnano	W-FK04	0.80
◎	BT30AD-SGER20-060	1	60	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGXnano	W-FK05	0.70
◎	BT30AD-SGER20-100	1	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGXnano	W-FK05	0.90
◎	BT30AD-SGER25-060	1	60	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGXnano	W-FK06	0.90
◎	BT30AD-SGER25-100	1	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGXnano	W-FK06	1.30
◎	BT30AD-SGER32-060	2	60	8	-	47	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGXnano	W-FK08	1.00
◎	BT30AD-SGER32-100	2	100	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGXnano	W-FK08	1.40

產品FIG.1, 2 出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.1, 2 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

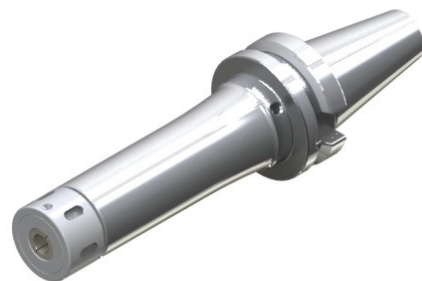
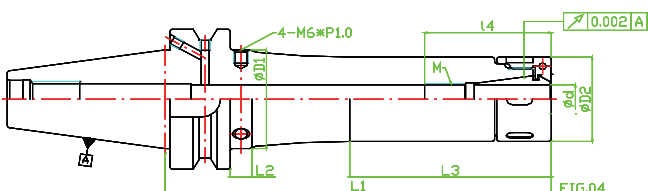
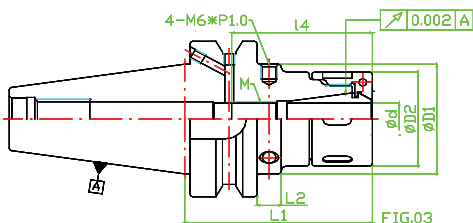
ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-SGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

92



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT40AD/B-SGER16-070	3	70	9	-	39	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.20
◎	BT40AD/B-SGER16-100	3	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.40
◎	BT40AD/B-SGER16-120	3	120	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.50
○	BT40AD/B-SGER16-160	4	160	9	86	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.90
	BT40AD/B-SGER16-200	4	200	9	126	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.30
◎	BT40AD/B-SGER20-070	3	70	9	-	38	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.30
◎	BT40AD/B-SGER20-100	3	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.50
◎	BT40AD/B-SGER20-120	3	120	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.60
○	BT40AD/B-SGER20-160	4	160	9	86	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.00
	BT40AD/B-SGER20-200	4	200	9	126	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.40
◎	BT40AD/B-SGER25-070	3	70	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.50
◎	BT40AD/B-SGER25-100	3	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.80
◎	BT40AD/B-SGER25-120	3	120	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.00
○	BT40AD/B-SGER25-160	3	160	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.40
	BT40AD/B-SGER25-200	3	200	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.80
◎	BT40AD/B-SGER32-070	3	70	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.60
◎	BT40AD/B-SGER32-100	3	100	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.90
◎	BT40AD/B-SGER32-120	3	120	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.10
○	BT40AD/B-SGER32-160	3	160	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.40
	BT40AD/B-SGER32-200	3	200	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.90
◎	BT40AD/B-SGER40-070	3	70	9	-	62	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.00
◎	BT40AD/B-SGER40-100	3	100	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.30
◎	BT40AD/B-SGER40-120	3	120	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.60
○	BT40AD/B-SGER40-160	3	160	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.20
	BT40AD/B-SGER40-200	3	200	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.80

產品FIG.3.4出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.3.4 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	I4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
◎	BT50AD/B-SGER16-080	3	80	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	4.10
◎	BT50AD/B-SGER16-100	3	100	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	4.20
◎	BT50AD/B-SGER16-120	3	120	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	4.30
○	BT50AD/B-SGER16-160	4	160	9	70	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	4.70
	BT50AD/B-SGER16-200	4	200	9	110	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	5.10
◎	BT50AD/B-SGER20-080	3	80	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	4.20
◎	BT50AD/B-SGER20-100	3	100	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	4.30
◎	BT50AD/B-SGER20-120	3	120	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	4.40
○	BT50AD/B-SGER20-160	4	160	9	70	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	4.80
	BT50AD/B-SGER20-200	4	200	9	110	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	5.20
◎	BT50AD/B-SGER25-080	3	80	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	4.40
◎	BT50AD/B-SGER25-100	3	100	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	4.60
◎	BT50AD/B-SGER25-120	3	120	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	4.80
○	BT50AD/B-SGER25-160	4	160	9	70	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	5.20
	BT50AD/B-SGER25-200	4	200	9	110	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	5.60
◎	BT50AD/B-SGER32-080	3	80	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	4.50
◎	BT50AD/B-SGER32-100	3	100	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	4.70
◎	BT50AD/B-SGER32-120	3	120	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	4.90
○	BT50AD/B-SGER32-160	4	160	9	70	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	5.30
	BT50AD/B-SGER32-200	4	200	9	110	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	5.70
◎	BT50AD/B-SGER40-080	3	80	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.90
◎	BT50AD/B-SGER40-100	3	100	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	5.10
◎	BT50AD/B-SGER40-120	3	120	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	5.30
○	BT50AD/B-SGER40-160	3	160	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	5.70
	BT50AD/B-SGER40-200	3	200	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	6.10

產品FIG.3,4出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.3,4 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

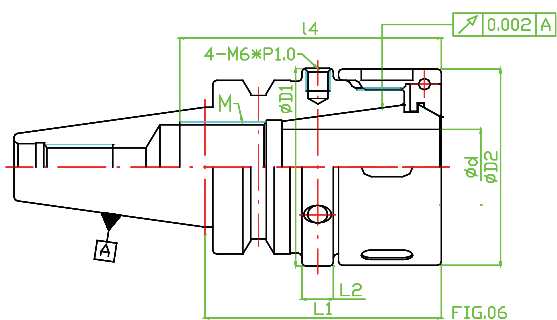
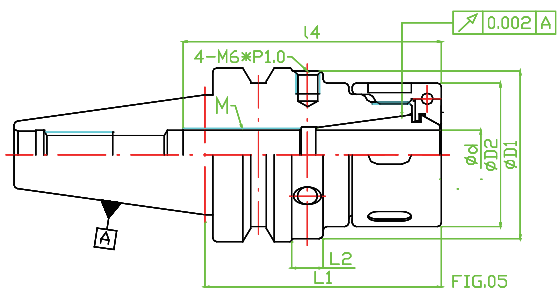
ER筒夾和板手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-SGER

■ SGER power ER collet chucks

● SGER 強力型 ER 筒夾刀桿

94



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
○	BT30GAD-SGER16-060	5	60	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.60
	BT30GAD-SGER16-100	5	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.80
○	BT30GAD-SGER20-060	5	60	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	0.70
	BT30GAD-SGER20-100	5	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	0.90
○	BT30GAD-SGER25-060	5	60	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	0.90
	BT30GAD-SGER25-100	5	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.30
○	BT30GAD-SGER32-060	6	60	8	-	47	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.00
	BT30GAD-SGER32-100	6	100	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.40

產品FIG.5 & 6出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.5 & 6 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

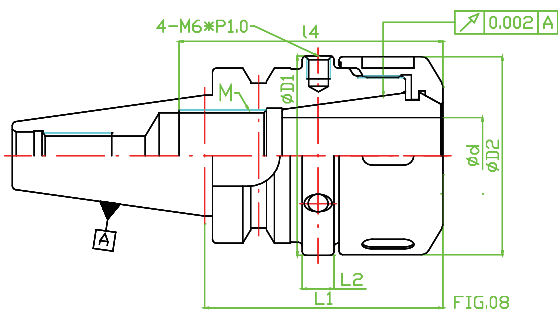
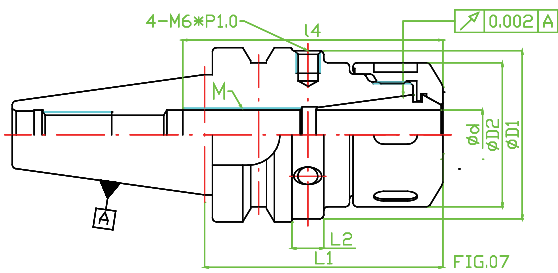
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT30AD-SGER16SX-060	7	60	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.60
◎	BT30AD-SGER16SX-100	7	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.80
◎	BT30AD-SGER20SX-060	7	60	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.70
◎	BT30AD-SGER20SX-100	7	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.90
◎	BT30AD-SGER25SX-060	7	60	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	0.90
◎	BT30AD-SGER25SX-100	7	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.30
◎	BT30AD-SGER32SX-060	8	60	8	-	47	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.00
◎	BT30AD-SGER32SX-100	8	100	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.40

產品FIG.7 & 8出貨附件為高速平衡奈米螺帽

NxxSGSX nano*1pc // PRODUCTS IN FIG.7 & 8 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK

BLANK=on request

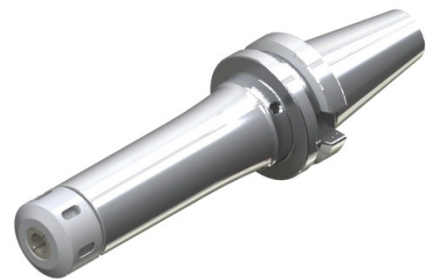
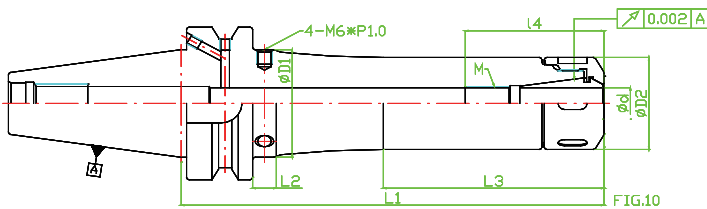
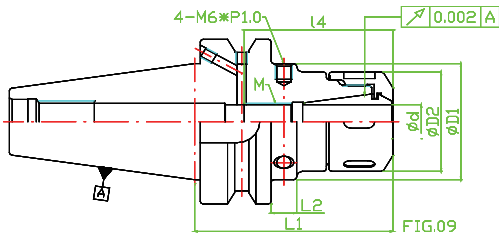
ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-SGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

96



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT40AD/B-SGER16SX-070	9	70	9	-	39	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.20
◎	BT40AD/B-SGER16SX-100	9	100	9	-	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.40
◎	BT40AD/B-SGER16SX-120	9	120	9	-	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.50
○	BT40AD/B-SGER16SX-160	10	160	9	86	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.90
	BT40AD/B-SGER16SX-200	10	200	9	126	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.30
◎	BT40AD/B-SGER20SX-070	9	70	9	-	38	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.30
◎	BT40AD/B-SGER20SX-100	9	100	9	-	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.50
◎	BT40AD/B-SGER20SX-120	9	120	9	-	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.60
○	BT40AD/B-SGER20SX-160	10	160	9	86	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.00
	BT40AD/B-SGER20SX-200	10	200	9	126	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.40
◎	BT40AD/B-SGER25SX-070	9	70	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.50
◎	BT40AD/B-SGER25SX-100	9	100	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.80
◎	BT40AD/B-SGER25SX-120	9	120	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.00
○	BT40AD/B-SGER25SX-160	9	160	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.40
	BT40AD/B-SGER25SX-200	9	200	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.80
◎	BT40AD/B-SGER32SX-070	9	70	9	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.60
◎	BT40AD/B-SGER32SX-100	9	100	9	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.90
◎	BT40AD/B-SGER32SX-120	9	120	9	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.10
○	BT40AD/B-SGER32SX-160	9	160	9	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.40
	BT40AD/B-SGER32SX-200	9	200	9	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.90
◎	BT40AD/B-SGER40SX-070	9	70	9	-	62	62.4	62	3.0-26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.00
◎	BT40AD/B-SGER40SX-100	9	100	9	-	67	62.4	62	3.0-26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.30
◎	BT40AD/B-SGER40SX-120	9	120	9	-	67	62.4	62	3.0-26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.60
○	BT40AD/B-SGER40SX-160	9	160	9	-	67	62.4	62	3.0-26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.20
	BT40AD/B-SGER40SX-200	9	200	9	-	67	62.4	62	3.0-26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.80

產品FIG.9 & 10出貨附件為高速平衡奈米螺帽

NxxSGSX nano*1pc // PRODUCTS IN FIG.9 & 10 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

■ SGER power ER collet chucks

● SGER 強力型 ER 筒夾刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	I4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT50AD/B-SGER16SX-080	9	80	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	4.10
◎	BT50AD/B-SGER16SX-100	9	100	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	4.20
◎	BT50AD/B-SGER16SX-120	9	120	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	4.30
○	BT50AD/B-SGER16SX-160	10	160	9	70	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	4.70
	BT50AD/B-SGER16SX-200	10	200	9	110	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	5.10
◎	BT50AD/B-SGER20SX-080	9	80	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	4.20
◎	BT50AD/B-SGER20SX-100	9	100	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	4.30
◎	BT50AD/B-SGER20SX-120	9	120	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	4.40
○	BT50AD/B-SGER20SX-160	10	160	9	70	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	4.80
	BT50AD/B-SGER20SX-200	10	200	9	110	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	5.20
◎	BT50AD/B-SGER25SX-080	9	80	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	4.40
◎	BT50AD/B-SGER25SX-100	9	100	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	4.60
◎	BT50AD/B-SGER25SX-120	9	120	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	4.80
○	BT50AD/B-SGER25SX-160	10	160	9	70	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	5.20
	BT50AD/B-SGER25SX-200	10	200	9	110	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	5.60
◎	BT50AD/B-SGER32SX-080	9	80	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	4.50
◎	BT50AD/B-SGER32SX-100	9	100	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	4.70
◎	BT50AD/B-SGER32SX-120	9	120	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	4.90
○	BT50AD/B-SGER32SX-160	10	160	9	70	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	5.30
	BT50AD/B-SGER32SX-200	10	200	9	110	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	5.70
◎	BT50AD/B-SGER40SX-080	9	80	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.90
◎	BT50AD/B-SGER40SX-100	9	100	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	5.10
◎	BT50AD/B-SGER40SX-120	9	120	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	5.30
○	BT50AD/B-SGER40SX-160	9	160	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	5.70
	BT50AD/B-SGER40SX-200	9	200	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	6.10

產品FIG.9 & 10出貨附件為高速平衡奈米螺帽

NxxSGSX nano*1pc // PRODUCTS IN FIG.9 & 10 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

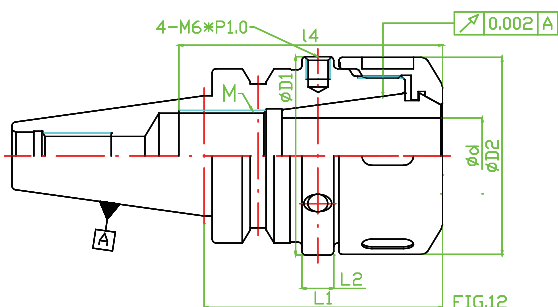
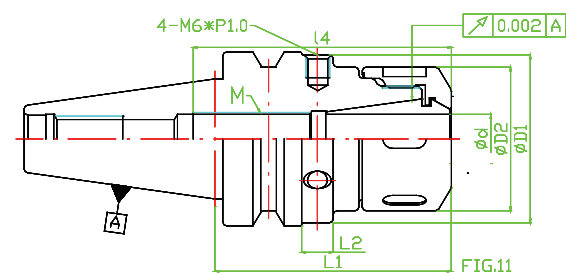
ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-SGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

98



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
○	BT30GAD-SGER16SX-060	11	60	9	-	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.60
	BT30GAD-SGER16SX-100	11	100	9	-	46	44.4	34	0.5-10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.80
○	BT30GAD-SGER20SX-060	11	60	9	-	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.70
	BT30GAD-SGER20SX-100	11	100	9	-	51	44.4	38	0.5-13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.90
○	BT30GAD-SGER25SX-060	11	60	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	0.90
	BT30GAD-SGER25SX-100	11	100	9	-	53	44.4	44	0.5-16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.30
○	BT30GAD-SGER32SX-060	12	60	8	-	47	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.00
	BT30GAD-SGER32SX-100	12	100	8	-	57	52.4	52	2.0-20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.40

產品FIG.11 & 12出貨附件為高速平衡奈米螺帽

NxxSGSX nano*1pc // PRODUCTS IN FIG.11 & 12 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc

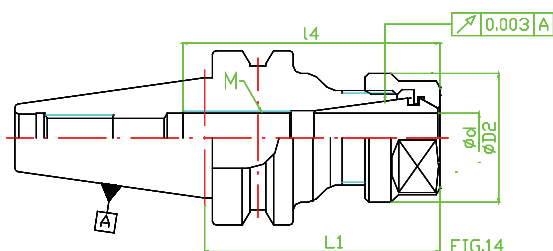
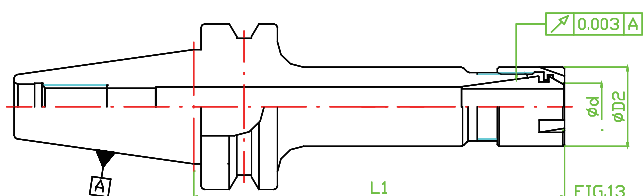
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	I4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	BT30AD-ER11M-060	13	60	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.40
○	BT30AD-ER11M-100	13	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.60
	BT30AD-ER16M-060	13	60	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.50
○	BT30AD-ER16M-100	13	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.70
	BT30AD-ER20M-060	13	60	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	0.60
	BT30AD-ER20M-100	13	100	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	0.80
	BT30AD-ER25M-060	13	60	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	0.80
	BT30AD-ER25M-100	13	100	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.20
◎	BT30AD-ER11-060	14	60	-	-	32	-	19	0.5~7.0	M8*P1.0	ER11	N11SX nano	W-ER11	0.50
◎	BT30AD-ER11-100	14	100	-	-	32	-	19	0.5~7.0	M8*P1.0	ER11	N11SX nano	W-ER11	0.70
◎	BT30AD-ER16-060	14	60	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.60
◎	BT30AD-ER16-100	14	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.80
◎	BT30AD-ER20-060	14	60	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	0.70
◎	BT30AD-ER20-100	14	100	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	0.90
◎	BT30AD-ER25-060	14	60	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	0.90
◎	BT30AD-ER25-100	14	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.30
◎	BT30AD-ER32-060	14	60	-	-	47	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.00
◎	BT30AD-ER32-100	14	100	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.40

產品 FIG.13 出貨附件為高速平衡奈米螺帽 NxxMX nano*1pc // PRODUCTS IN FIG.13 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品 FIG.14 出貨附件為高速平衡奈米螺帽 NxxSX nano*1pc // PRODUCTS IN FIG.14 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK

BLANK=on request

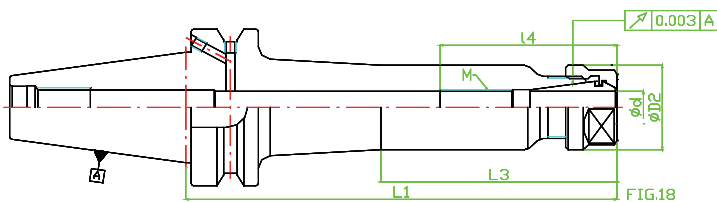
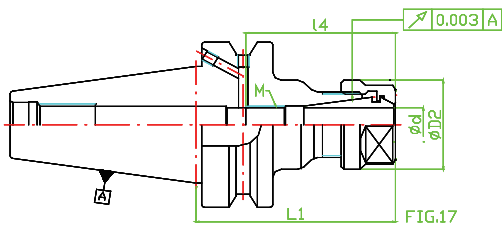
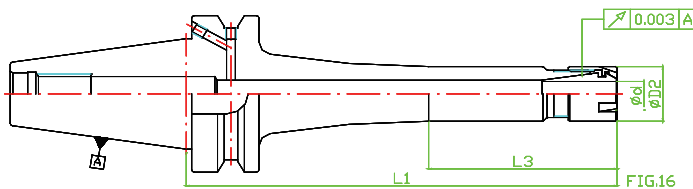
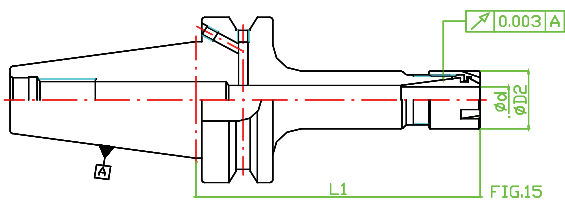
ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-ERM&ER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

100



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	I4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT40AD/B-ER11M-100	15	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.20
○	BT40AD/B-ER11M-160	15	160	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.70
◎	BT40AD/B-ER16M-100	15	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.30
○	BT40AD/B-ER16M-160	16	160	-	70	-	36	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.80
	BT40AD/B-ER20M-100	15	100	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.40
	BT40AD/B-ER20M-160	16	160	-	70	-	42	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.90
	BT40AD/B-ER25M-100	15	100	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.70
	BT40AD/B-ER25M-160	16	160	-	70	-	45	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	2.30

產品FIG.15 & 16出貨附件為高速平衡奈米螺帽

NxxMX nano*1pc // PRODUCTS IN FIG.15 & 16 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.17 & 18出貨附件為高速平衡奈米螺帽

NxxSX nano*1pc // PRODUCTS IN FIG.17 & 18 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
◎	BT40AD/B-ER16-070	17	70	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.20
◎	BT40AD/B-ER16-100	17	100	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.40
○	BT40AD/B-ER16-120	17	120	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.50
○	BT40AD/B-ER16-160	18	160	-	86	46	36	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.90
	BT40AD/B-ER16-200	18	200	-	126	46	36	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	2.30
◎	BT40AD/B-ER20-070	17	70	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.30
◎	BT40AD/B-ER20-100	17	100	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.50
○	BT40AD/B-ER20-120	17	120	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.60
○	BT40AD/B-ER20-160	18	160	-	86	51	42	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	2.00
	BT40AD/B-ER20-200	18	200	-	126	51	42	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	2.40
◎	BT40AD/B-ER25-070	17	70	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.50
◎	BT40AD/B-ER25-100	17	100	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.80
○	BT40AD/B-ER25-120	17	120	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.00
○	BT40AD/B-ER25-160	17	160	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.40
	BT40AD/B-ER25-200	17	200	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.80
◎	BT40AD/B-ER32-070	17	70	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.60
◎	BT40AD/B-ER32-100	17	100	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.90
○	BT40AD/B-ER32-120	17	120	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.10
○	BT40AD/B-ER32-160	17	160	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.40
	BT40AD/B-ER32-200	17	200	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.90
◎	BT40AD/B-ER40-070	17	70	-	-	62	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.00
◎	BT40AD/B-ER40-100	17	100	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.30
○	BT40AD/B-ER40-120	17	120	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.60
○	BT40AD/B-ER40-160	17	160	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.20
	BT40AD/B-ER40-200	17	200	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.80
STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	BT50AD/B-ER16-070	17	70	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	4.10
	BT50AD/B-ER16-100	17	100	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	4.20
	BT50AD/B-ER16-120	17	120	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	4.30
	BT50AD/B-ER16-160	18	160	-	70	46	40	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	4.70
	BT50AD/B-ER16-200	18	200	-	110	46	40	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	5.10
	BT50AD/B-ER20-070	17	70	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	4.20
	BT50AD/B-ER20-100	17	100	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	4.30
	BT50AD/B-ER20-120	17	120	-	-	51	-	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	4.40
	BT50AD/B-ER20-160	18	160	-	70	51	46	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	4.80
	BT50AD/B-ER20-200	18	200	-	110	51	46	34	0.5-13.0	M14*P1.0	ER20	N20SX nano	W-ER20	5.20
	BT50AD/B-ER25-070	17	70	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	4.40
	BT50AD/B-ER25-100	17	100	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	4.60
	BT50AD/B-ER25-120	17	120	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	4.80
	BT50AD/B-ER25-160	18	160	-	70	53	50	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	5.20
	BT50AD/B-ER25-200	18	200	-	110	53	50	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	5.60
	BT50AD/B-ER32-070	17	70	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	4.50
	BT50AD/B-ER32-100	17	100	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	4.70
	BT50AD/B-ER32-120	17	120	-	-	57	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	4.90
	BT50AD/B-ER32-160	18	160	-	70	57	54	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	5.30
	BT50AD/B-ER32-200	18	200	-	110	57	54	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	5.70
	BT50AD/B-ER40-080	17	80	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.90
	BT50AD/B-ER40-100	17	100	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	5.10
	BT50AD/B-ER40-120	17	120	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	5.30
	BT50AD/B-ER40-160	17	160	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	5.70
	BT50AD/B-ER40-200	17	200	-	-	67	-	63	3.0-26.0	M28*P1.5	ER40	N40SX nano	W-FK09	6.10

產品FIG.15 & 16出貨附件為高速平衡奈米螺帽

NxxMX nano*1pc // PRODUCTS IN FIG.15 & 16 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.17 & 18出貨附件為高速平衡奈米螺帽

NxxSX nano*1pc // PRODUCTS IN FIG.17 & 18 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

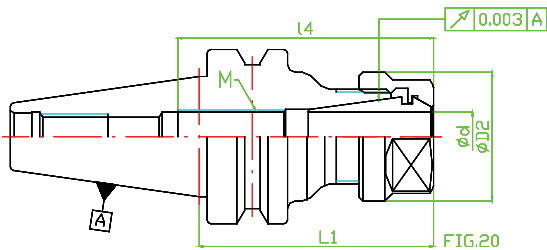
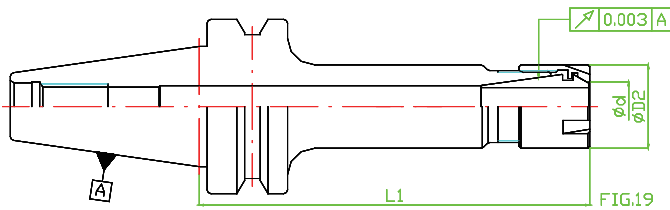
ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

BT-ERM&ER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
	BT30GAD-ER11M-060	19	60	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.40
○	BT30GAD-ER11M-100	19	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.60
	BT30GAD-ER16M-060	19	60	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.50
○	BT30GAD-ER16M-100	19	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.70
	BT30GAD-ER20M-060	19	60	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	0.60
	BT30GAD-ER20M-100	19	100	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	0.80
	BT30GAD-ER25M-060	19	60	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	0.80
	BT30GAD-ER25M-100	19	100	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.20
○	BT30GAD-ER11-060	20	60	-	-	32	-	19	0.5~7.0	M8*P1.0	ER11	N11SX nano	W-ER11	0.50
	BT30GAD-ER11-100	20	100	-	-	32	-	19	0.5~7.0	M8*P1.0	ER11	N11SX nano	W-ER11	0.70
○	BT30GAD-ER16-060	20	60	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.60
	BT30GAD-ER16-100	20	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.80
○	BT30GAD-ER20-060	20	60	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	0.70
	BT30GAD-ER20-100	20	100	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	0.90
○	BT30GAD-ER25-060	20	60	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	0.90
	BT30GAD-ER25-100	20	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.30
○	BT30GAD-ER32-060	20	60	-	-	47	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.00
	BT30GAD-ER32-100	20	100	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.40

產品FIG.19出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.19 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.20出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.20 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ○=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

ER筒夾和板手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

SK



SK是德國規範DIN69871 7/24圓錐的代號
 JT是中國選用ISO7388-1:1983當成國家規範
 2007年ISO7388-1:2007是7/24 SK(JT)外圓錐新規範
 SK**(JT**)刀桿命名為ISO**A
 SK**AD(JT**AD)刀桿內帶中心貫穿冷卻孔命名為ISO**AD
 SK**B(JT**B)刀桿法蘭端面帶冷卻孔命名為ISO**AF
 SK**AD/B(JT**AD/B)刀桿將兩種內冷卻方式整合命名為ISO**AD/F

SK刀桿上有一IC晶片孔是我們的生產標準品

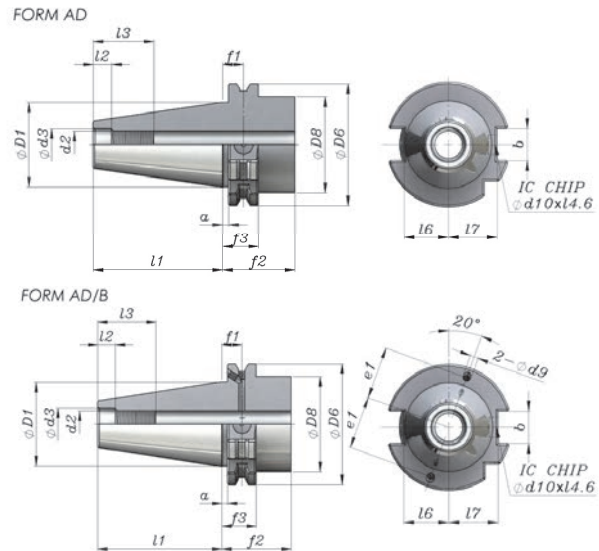
SK is the norm DIN69871 of 7/24 taper from Germany
 JT is the norm ISO7388-1:1983 of 7/24 taper adopted by China
 In 2007, ISO published ISO7388-1:2007 as new norm for 7/24 SK(JT) taper toolholder
 SK**(JT**) was named as ISO**A
 SK**AD(JT**AD) with coolant through center was named as ISO**AD
 SK**B/JT**B with coolant through flange was named as ISO**AF
 SK**AD/B(JT**AD/B) with two type coolant through was named as ISO**AD/F

SK(JT) toolholder with IC chip hole is a standard product from us

CLAMPING FORC	SK30	SK40	SK50
	6KN	12KN	25KN

TAPER	SK30AD	SK40AD	SK50AD
	JT30AD	JT40AD	JT50AD
	ISO30AD	ISO40AD	ISO50AD
ØD1	31.75	44.45	69.85
d2	M12*P1.75	M16*P2.0	M24*P3.0
Ød3 H7	13	17	25
ØD6 0.0/-0.1	50.00	63.55	97.50
ØD8 max.	45	50	80
a +/-0.1	3.2	3.2	3.2
f1 +/-0.1	11.1	11.1	11.1
f2 min.	35	35	35
f3 0.0/-0.1	19.1	19.1	19.1
l1 +/-0.3	47.80	68.40	101.75
l2 +0.5/0.0	5.5	8.2	11.5
l3	24	32	47
l6 0.0/-0.4	16.4	22.8	35.5
l7 0.0/-0.4	19.0	25.0	37.7
b H12	16.1	16.1	25.7

TAPER	SK30AD/B	SK40AD/B	SK50AD/B
	JT30AD/B	JT40AD/B	JT50AD/B
	ISO30AD/F	ISO40AD/F	ISO50AD/F
e1 +/-0.1	21	27	42
Ød9	4.0	4.0	6.0



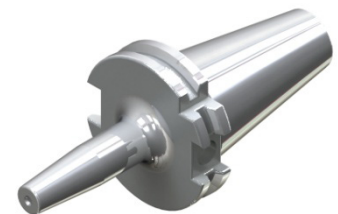
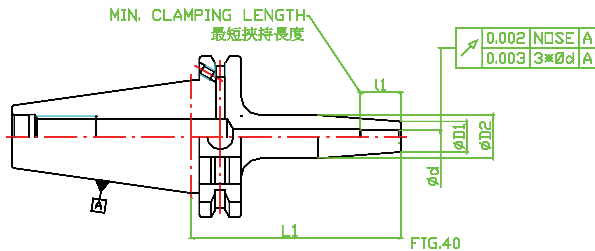
圓錐角度公差 // TAPER ANGLE TOLERANCE			
TAPER	#30 TAPER	#40 TAPER	#50 TAPER
AT1 (mm)	+0.0008/+0.0013	+0.0010/+0.0016	+0.0013/+0.0020
AT2 (mm)	+0.0013/+0.0020	+0.0016/+0.0025	+0.0020/+0.0032
AT3 (mm)	+0.0020/+0.0032	+0.0025/+0.0040	+0.0032/+0.0050
圓錐角度直線度公差 // TAPER ANGLE STRAIGHTNESS TOLERANCE			
TAPER	#30 TAPER	#40 TAPER	#50 TAPER
	0.002	0.002	0.003
圓錐圓度公差 // TAPER ROUNDNESS TOLERANCE			
TAPER	#30 TAPER	#40 TAPER	#50 TAPER
	0.001	0.001	0.002

7/24圓錐刀桿要達到0.002mm的鼻端偏擺
 AT2的錐度角度公差是必須的

To achieve 0.002mm runout of T.I.R 7/24 taper
 AT2 taper angle tolerance is a "MUST"

shrink fit chucks

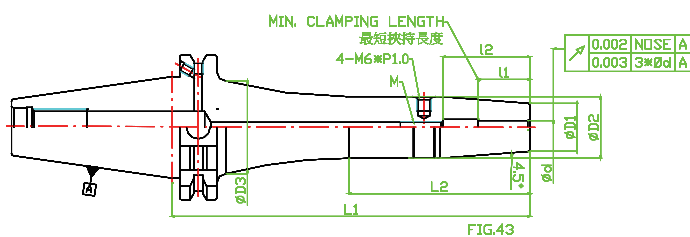
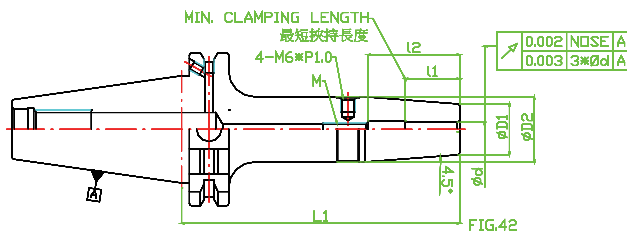
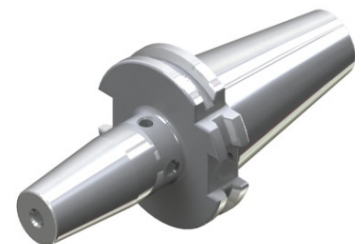
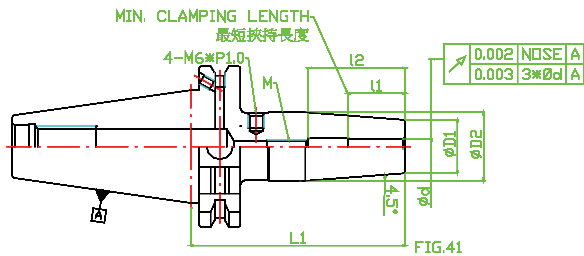
熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	SK40AD/B-EZ03-080	40	80	-	12	17	-	3	11	-	-	0.90
○	SK40AD/B-EZ04-080	40	80	-	12	17	-	4	14	-	-	0.90
○	SK40AD/B-EZ05-080	40	80	-	12	17	-	5	17	-	-	0.90

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



SK-EZ

shrink fit chucks

熱膨脹燒結刀桿

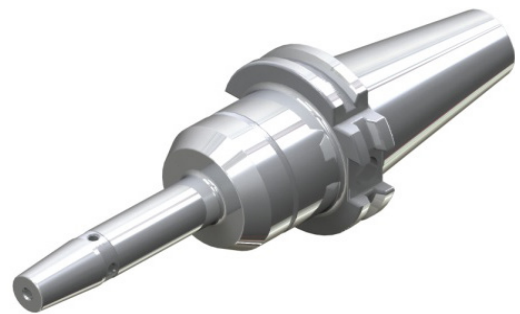
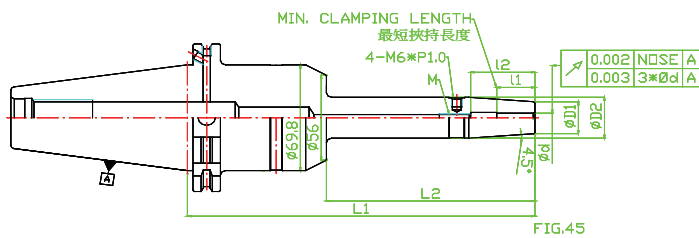
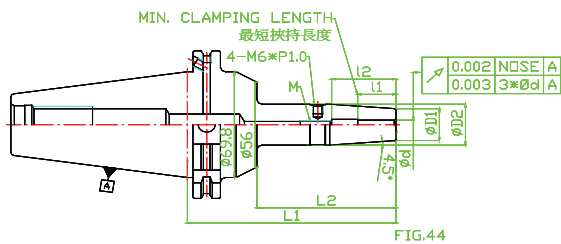
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
○	SK40AD/B-EZ06-080	41	80	-	21	27	-	6	23	37	M5*P0.8	1.00
	SK40AD/B-EZ06-120	42	120	-	21	27	-	6	23	37	M5*P0.8	1.30
○	SK40AD/B-EZ08-080	41	80	-	21	27	-	8	27	37	M6*P1.0	1.00
	SK40AD/B-EZ08-120	42	120	-	21	27	-	8	27	37	M6*P1.0	1.30
○	SK40AD/B-EZ10-080	41	80	-	24	32	-	10	32	42	M8*P1.0	1.10
	SK40AD/B-EZ10-120	42	120	-	24	32	-	10	32	42	M8*P1.0	1.40
○	SK40AD/B-EZ12-080	41	80	-	24	32	-	12	37	48	M10*P1.0	1.10
	SK40AD/B-EZ12-120	42	120	-	24	32	-	12	37	48	M10*P1.0	1.40
○	SK40AD/B-EZ14-080	41	80	-	27	34	-	14	37	48	M10*P1.0	1.10
	SK40AD/B-EZ14-120	42	120	-	27	34	-	14	37	48	M10*P1.0	1.40
○	SK40AD/B-EZ16-080	41	80	-	27	34	-	16	40	51	M12*P1.0	1.10
	SK40AD/B-EZ16-120	42	120	-	27	34	-	16	40	51	M12*P1.0	1.40
	SK40AD/B-EZ18-080	41	80	-	33	42	-	18	40	51	M12*P1.0	1.20
	SK40AD/B-EZ18-120	42	120	-	33	42	-	18	40	51	M12*P1.0	1.50
	SK40AD/B-EZ20-080	41	80	-	33	42	-	20	40	51	M16*P1.0	1.20
	SK40AD/B-EZ20-120	42	120	-	33	42	-	20	42	53	M16*P1.0	1.50
	SK40AD/B-EZ25-100	41	80	-	44	53	-	25	48	59	M16*P1.0	1.80
	SK40AD/B-EZ25-120	42	120	-	44	53	-	25	48	59	M16*P1.0	2.10
	SK40AD/B-EZ32-100	41	80	-	44	53	-	32	52	63	M16*P1.0	1.80
	SK40AD/B-EZ32-120	42	120	-	44	53	-	32	52	63	M16*P1.0	2.10

產品FIG.41, 42 出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.41, 42 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK
 BLANK=on request

shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

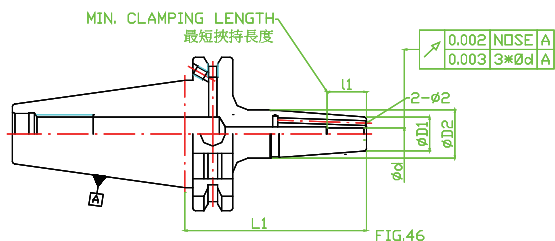
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK50AD/B-EZX06-100	44	100	60	21	27	-	6	23	-	-	2.80
	SK50AD/B-EZX06-120	44	120	80	21	27	-	6	23	37	M5*P0.8	2.90
	SK50AD/B-EZX08-100	44	100	60	21	27	-	8	27	-	-	2.80
	SK50AD/B-EZX08-120	44	120	80	21	27	-	8	27	37	M6*P1.0	2.90
	SK50AD/B-EZX10-100	44	100	60	24	32	-	10	32	-	-	2.90
	SK50AD/B-EZX10-120	44	120	80	24	32	-	10	32	42	M8*P1.0	3.00
	SK50AD/B-EZX12-100	44	100	60	24	32	-	12	37	-	-	2.90
	SK50AD/B-EZX12-120	44	120	80	24	32	-	12	37	48	M10*P1.0	3.00
	SK50AD/B-EZX14-100	44	100	60	27	34	-	14	37	-	-	2.90
	SK50AD/B-EZX14-120	44	120	80	27	34	-	14	37	48	M10*P1.0	3.00
	SK50AD/B-EZX16-100	44	100	60	27	34	-	16	40	-	-	2.90
	SK50AD/B-EZX16-120	44	120	80	27	34	-	16	40	51	M12*P1.0	3.00
	SK50AD/B-EZX18-100	44	100	60	33	42	-	18	40	-	-	3.00
	SK50AD/B-EZX18-120	44	120	80	33	42	-	18	40	51	M12*P1.0	3.10
	SK50AD/B-EZX20-100	44	100	60	33	42	-	20	42	-	-	3.00
	SK50AD/B-EZX20-120	44	120	80	33	42	-	20	42	53	M16*P1.0	3.10

產品FIG.44 出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.44 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

SK-EZKK

shrink fit chucks with coolant through nose

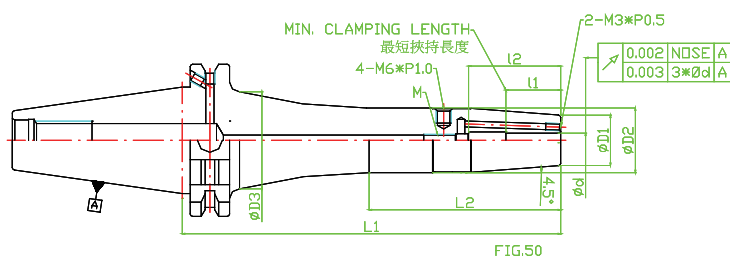
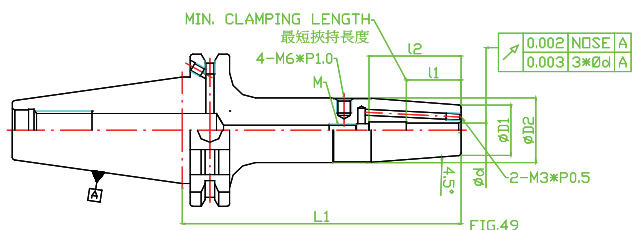
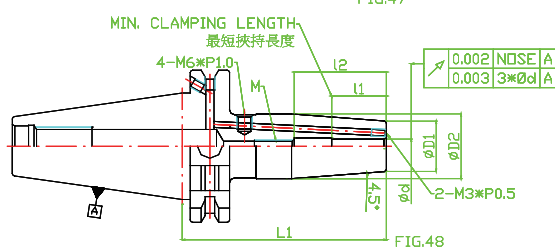
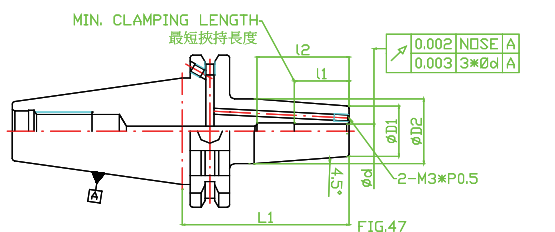
鼻端噴水熱膨脹燒結刀桿



動平衡 G2.5/25,000RPM 可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK40AD/B-EZ03-080KK	46	80	-	14	20	-	3	11	-	-	0.90
	SK40AD/B-EZ03-120KK	46	120	-	14	20	-	3	11	-	-	1.20
	SK40AD/B-EZ04-080KK	46	80	-	14	20	-	4	14	-	-	0.90
	SK40AD/B-EZ04-120KK	46	120	-	14	20	-	4	14	-	-	1.20
	SK40AD/B-EZ05-080KK	46	80	-	14	20	-	5	17	-	-	0.90
	SK40AD/B-EZ05-120KK	46	120	-	14	20	-	5	17	-	-	1.20

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK40AD/B-EZ06-065KK	47	65	-	21	27	-	6	23	-	-	0.90
	SK40AD/B-EZ06-080KK	48	90	-	21	27	-	6	23	37	M5*P0.8	1.00
	SK40AD/B-EZ06-120KK	49	120	-	21	27	-	6	23	37	M5*P0.8	1.30
	SK40AD/B-EZ06-160KK	50	160	78	21	27	41	6	23	37	M5*P0.8	1.60
	SK40AD/B-EZ06-200KK	50	200	118	21	27	41	6	23	37	M5*P0.8	2.00
	SK40AD/B-EZ08-065KK	47	65	-	21	27	-	8	27	-	-	0.90
	SK40AD/B-EZ08-080KK	48	90	-	21	27	-	8	27	37	M6*P1.0	1.00
	SK40AD/B-EZ08-120KK	49	120	-	21	27	-	8	27	37	M6*P1.0	1.30
	SK40AD/B-EZ08-160KK	50	160	78	21	27	41	8	27	37	M6*P1.0	1.60
	SK40AD/B-EZ08-200KK	50	200	118	21	27	41	8	27	37	M6*P1.0	2.00
	SK40AD/B-EZ10-065KK	47	65	-	24	32	-	10	32	-	-	1.00
	SK40AD/B-EZ10-080KK	48	90	-	24	32	-	10	32	42	M8*P1.0	1.10
	SK40AD/B-EZ10-120KK	49	120	-	24	32	-	10	32	42	M8*P1.0	1.40
	SK40AD/B-EZ10-160KK	50	160	78	24	32	40	10	32	42	M8*P1.0	1.70
	SK40AD/B-EZ10-200KK	50	200	118	24	32	40	10	32	42	M8*P1.0	2.10
	SK40AD/B-EZ12-065KK	47	65	-	24	32	-	12	37	-	-	1.00
	SK40AD/B-EZ12-080KK	48	90	-	24	32	-	12	37	48	M10*P1.0	1.10
	SK40AD/B-EZ12-120KK	49	120	-	24	32	-	12	37	48	M10*P1.0	1.40
	SK40AD/B-EZ12-160KK	50	160	78	24	32	40	12	37	48	M10*P1.0	1.70
	SK40AD/B-EZ12-200KK	50	200	118	24	32	40	12	37	48	M10*P1.0	2.10
	SK40AD/B-EZ14-065KK	47	65	-	27	34	-	14	37	-	-	1.00
	SK40AD/B-EZ14-080KK	48	90	-	27	34	-	14	37	48	M10*P1.0	1.10
	SK40AD/B-EZ14-120KK	49	120	-	27	34	-	14	37	48	M10*P1.0	1.40
	SK40AD/B-EZ14-160KK	50	160	78	27	34	42	14	37	48	M10*P1.0	1.70
	SK40AD/B-EZ14-200KK	50	200	118	27	34	42	14	37	48	M10*P1.0	2.10
	SK40AD/B-EZ16-065KK	47	65	-	27	34	-	16	40	-	-	1.00
	SK40AD/B-EZ16-080KK	48	90	-	27	34	-	16	40	51	M12*P1.0	1.10
	SK40AD/B-EZ16-120KK	49	120	-	27	34	-	16	40	51	M12*P1.0	1.40
	SK40AD/B-EZ16-160KK	50	160	78	27	34	42	16	40	51	M12*P1.0	1.70
	SK40AD/B-EZ16-200KK	50	200	118	27	34	42	16	40	51	M12*P1.0	2.10
	SK40AD/B-EZ18-065KK	47	65	-	33	42	-	18	40	-	-	1.10
	SK40AD/B-EZ18-080KK	48	90	-	33	42	-	18	40	51	M12*P1.0	1.20
	SK40AD/B-EZ18-120KK	49	120	-	33	42	-	18	40	51	M12*P1.0	1.60
	SK40AD/B-EZ18-160KK	49	160	-	33	42	-	18	40	51	M12*P1.0	1.80
	SK40AD/B-EZ18-200KK	49	200	-	33	42	-	18	40	51	M12*P1.0	2.20
	SK40AD/B-EZ20-065KK	47	65	-	33	42	-	20	40	-	-	1.10
	SK40AD/B-EZ20-080KK	48	90	-	33	42	-	20	42	53	M16*P1.0	1.20
	SK40AD/B-EZ20-120KK	49	120	-	33	42	-	20	42	53	M16*P1.0	1.60
	SK40AD/B-EZ20-160KK	49	160	-	33	42	-	20	42	53	M16*P1.0	1.80
	SK40AD/B-EZ20-200KK	49	200	-	33	42	-	20	42	53	M16*P1.0	2.20
	SK40AD/B-EZ25-065KK	47	65	-	44	53	-	25	48	-	-	1.40
	SK40AD/B-EZ25-100KK	48	100	-	44	53	-	25	48	59	M16*P1.0	1.80
	SK40AD/B-EZ25-120KK	49	120	-	44	53	-	25	48	59	M16*P1.0	2.10
	SK40AD/B-EZ25-160KK	49	160	-	44	53	-	25	48	59	M16*P1.0	2.40
	SK40AD/B-EZ25-200KK	49	200	-	44	53	-	25	48	59	M16*P1.0	2.80
	SK40AD/B-EZ32-065KK	47	65	-	44	53	-	32	52	-	-	1.40
	SK40AD/B-EZ32-100KK	48	100	-	44	53	-	32	52	63	M16*P1.0	1.80
	SK40AD/B-EZ32-120KK	49	120	-	44	53	-	32	52	63	M16*P1.0	2.10
	SK40AD/B-EZ32-160KK	49	160	-	44	53	-	32	52	63	M16*P1.0	2.40
	SK40AD/B-EZ32-200KK	49	200	-	44	53	-	32	52	63	M16*P1.0	2.80

產品FIG.48, 49 & 50出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.48, 49 & 50 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.48, 49 & 50出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.48, 49 & 50 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

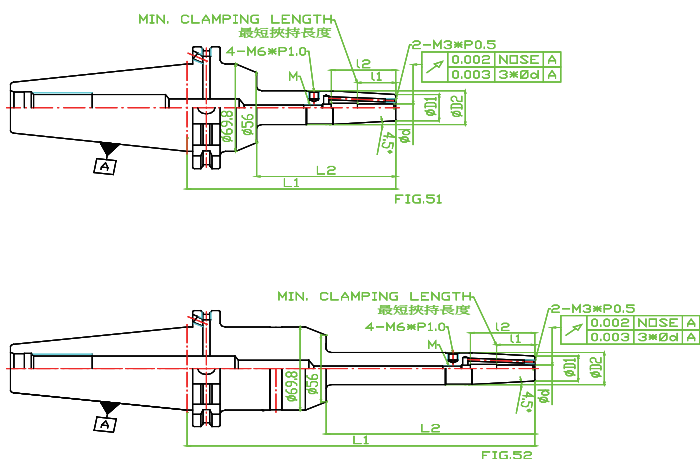
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

SK-EZKK

shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK50AD/B-EZX06-100KK	51	100	60	21	27	-	6	23	-	-	2.80
	SK50AD/B-EZX06-120KK	51	120	80	21	27	-	6	23	37	M5*P0.8	2.90
	SK50AD/B-EZX06-160KK	51	160	140	21	27	-	6	23	37	M5*P0.8	3.20
	SK50AD/B-EZX06-200KK	52	200	120	21	27	-	6	23	37	M5*P0.8	4.80
	SK50AD/B-EZX08-100KK	51	100	60	21	27	-	8	27	-	-	2.80
	SK50AD/B-EZX08-120KK	51	120	80	21	27	-	8	27	37	M6*P1.0	2.90
	SK50AD/B-EZX08-160KK	51	160	140	21	27	-	8	27	37	M6*P1.0	3.20
	SK50AD/B-EZX08-200KK	52	200	120	21	27	-	8	27	37	M6*P1.0	4.80
	SK50AD/B-EZX10-100KK	51	100	60	24	32	-	10	32	-	-	2.90
	SK50AD/B-EZX10-120KK	51	120	80	24	32	-	10	32	42	M8*P1.0	3.00
	SK50AD/B-EZX10-160KK	51	160	140	24	32	-	10	32	42	M8*P1.0	3.30
	SK50AD/B-EZX10-200KK	52	200	120	24	32	-	10	32	42	M8*P1.0	4.90
	SK50AD/B-EZX12-100KK	51	100	60	24	32	-	12	37	-	-	2.90
	SK50AD/B-EZX12-120KK	51	120	80	24	32	-	12	37	48	M10*P1.0	3.00
	SK50AD/B-EZX12-160KK	51	160	140	24	32	-	12	37	48	M10*P1.0	3.30
	SK50AD/B-EZX12-200KK	52	200	120	24	32	-	12	37	48	M10*P1.0	4.90
	SK50AD/B-EZX14-100KK	51	100	60	27	34	-	14	37	-	-	2.90
	SK50AD/B-EZX14-120KK	51	120	80	27	34	-	14	37	48	M10*P1.0	3.00
	SK50AD/B-EZX14-160KK	51	160	140	27	34	-	14	37	48	M10*P1.0	3.30
	SK50AD/B-EZX14-200KK	52	200	120	27	34	-	14	37	48	M10*P1.0	4.90
	SK50AD/B-EZX16-100KK	51	100	60	27	34	-	16	40	-	-	2.90
	SK50AD/B-EZX16-120KK	51	120	80	27	34	-	16	40	51	M12*P1.0	3.00
	SK50AD/B-EZX16-160KK	51	160	140	27	34	-	16	40	51	M12*P1.0	3.30
	SK50AD/B-EZX16-200KK	52	200	120	27	34	-	16	40	51	M12*P1.0	4.90
	SK50AD/B-EZX18-100KK	51	100	60	33	42	-	18	40	-	-	3.00
	SK50AD/B-EZX18-120KK	51	120	80	33	42	-	18	40	51	M12*P1.0	3.10
	SK50AD/B-EZX18-160KK	51	160	140	33	42	-	18	40	51	M12*P1.0	3.40
	SK50AD/B-EZX18-200KK	52	200	120	33	42	-	18	40	51	M12*P1.0	5.00
	SK50AD/B-EZX20-100KK	51	100	60	33	42	-	20	42	-	-	3.00
	SK50AD/B-EZX20-120KK	51	120	80	33	42	-	20	42	53	M16*P1.0	3.10
	SK50AD/B-EZX20-160KK	51	160	140	33	42	-	20	42	53	M16*P1.0	3.40
	SK50AD/B-EZX20-200KK	52	200	120	33	42	-	20	42	53	M16*P1.0	5.00

產品 FIG.51 & 52 出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.51 & 52 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

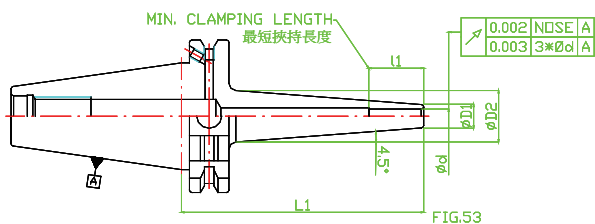
產品 FIG.51 & 52 出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.51 & 52 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

STOCK ⊙=標準在庫品 // STOCK ⊙=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK

BLANK=on request

■ Slim shrink fit chucks

● Slim 細型熱膨脹燒結刀桿

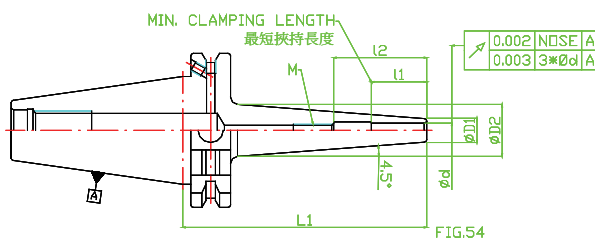


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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK40AD/B-EZ03S-120	53	120	-	9	25	-	3	15	-	-	1.20
	SK40AD/B-EZ04S-120	53	120	-	9	25	-	4	17	-	-	1.20
	SK40AD/B-EZ05S-120	53	120	-	9	25	-	5	17	-	-	1.20

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產產品 // STOCK BLANK=on request



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

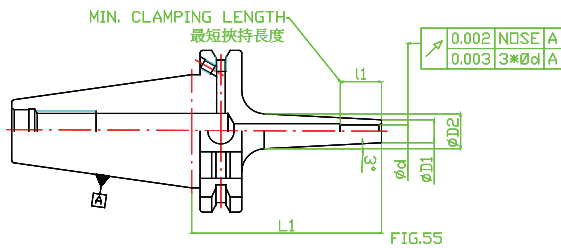
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK40AD/B-EZ06S-120	54	120	-	15	30	-	6	23	37	M5*P0.8	1.40
	SK40AD/B-EZ08S-120	54	120	-	15	30	-	8	27	37	M6*P1.0	1.40
	SK40AD/B-EZ10S-120	54	120	-	18	32	-	10	32	42	M8*P1.0	1.50
	SK40AD/B-EZ12S-120	54	120	-	18	32	-	12	37	48	M10*P1.0	1.50

產品FIG.54出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.54 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產產品 // STOCK BLANK=on request

SK-EZSS

■ SlimSuper shrink fit chucks

● Slim Super 超細型熱膨脹燒結刀桿



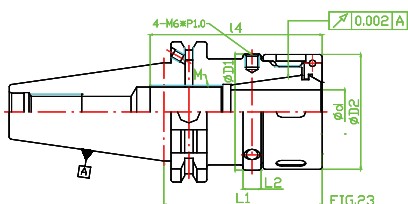
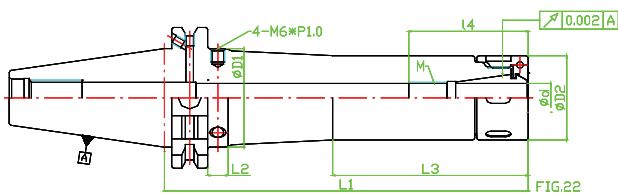
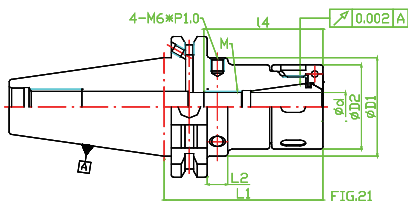
動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	SK40AD/B-EZ03SS-080	55	80	-	9	16	-	3	11	-	-	0.90
	SK40AD/B-EZ03SS-120	55	120	-	9	20	-	3	11	-	-	1.20
	SK40AD/B-EZ04SS-080	55	80	-	10	17	-	4	14	-	-	0.90
	SK40AD/B-EZ04SS-120	55	120	-	10	21	-	4	14	-	-	1.20
	SK40AD/B-EZ05SS-080	55	80	-	11	18	-	5	17	-	-	0.90
	SK40AD/B-EZ05SS-120	55	120	-	11	22	-	5	17	-	-	1.20
	SK40AD/B-EZ06SS-080	55	80	-	12	19	-	6	23	-	-	1.00
	SK40AD/B-EZ06SS-120	55	120	-	12	23	-	6	23	-	-	1.30
	SK40AD/B-EZ08SS-080	55	80	-	14	21	-	8	27	-	-	1.00
	SK40AD/B-EZ08SS-120	55	120	-	14	25	-	8	27	-	-	1.30
	SK40AD/B-EZ10SS-080	55	80	-	16	23	-	10	32	-	-	1.10
	SK40AD/B-EZ10SS-120	55	120	-	16	27	-	10	32	-	-	1.40
	SK40AD/B-EZ12SS-080	55	80	-	18	25	-	12	37	-	-	1.10
	SK40AD/B-EZ12SS-120	55	120	-	18	29	-	12	37	-	-	1.40

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request

■ SGER power ER collet chucks+balanced nano ball bearing nut NxxSGX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米鋼珠螺帽 NxxSGX



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
○	SK40AD/B-SGER16-070	21	70	9	-	39	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.00
○	SK40AD/B-SGER16-100	21	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.20
○	SK40AD/B-SGER16-120	21	120	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.30
○	SK40AD/B-SGER16-160	22	160	9	86	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.70
○	SK40AD/B-SGER16-200	22	200	9	126	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.10
○	SK40AD/B-SGER20-070	21	70	9	-	38	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.10
○	SK40AD/B-SGER20-100	21	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.30
○	SK40AD/B-SGER20-120	21	120	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.40
○	SK40AD/B-SGER20-160	22	160	9	86	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.80
○	SK40AD/B-SGER20-200	22	200	9	126	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.20
○	SK40AD/B-SGER25-070	21	70	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.30
○	SK40AD/B-SGER25-100	21	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.60
○	SK40AD/B-SGER25-120	21	120	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.80
○	SK40AD/B-SGER25-160	21	160	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.20
○	SK40AD/B-SGER25-200	21	200	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.60
○	SK40AD/B-SGER32-070	23	70	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.40
○	SK40AD/B-SGER32-100	23	100	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.70
○	SK40AD/B-SGER32-120	23	120	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.90
○	SK40AD/B-SGER32-160	23	160	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.20
○	SK40AD/B-SGER32-200	23	200	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.70
○	SK40AD/B-SGER40-080	23	80	8	-	62	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	1.80
○	SK40AD/B-SGER40-100	23	100	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.10
○	SK40AD/B-SGER40-120	23	120	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.40
○	SK40AD/B-SGER40-160	23	160	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.00
○	SK40AD/B-SGER40-200	23	200	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.40

產品FIG.21, 22 & 23出貨附件為高速平衡奈米鋼珠螺帽NxxSGX nano*1pc // PRODUCTS IN FIG.21, 22 & 23 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SK-SGER

■ SGER power ER collet chucks+balanced nano ball bearing nut NxxSGX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米鋼珠螺帽 NxxSGX

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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
	SK50AD/B-SGER16-080	21	80	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.10
	SK50AD/B-SGER16-100	21	100	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.20
	SK50AD/B-SGER16-120	21	120	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.30
	SK50AD/B-SGER16-160	22	160	9	70	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.70
	SK50AD/B-SGER16-200	22	200	9	110	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	4.10
	SK50AD/B-SGER20-080	21	80	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.20
	SK50AD/B-SGER20-100	21	100	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.30
	SK50AD/B-SGER20-120	21	120	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.40
	SK50AD/B-SGER20-160	22	160	9	70	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.80
	SK50AD/B-SGER20-200	22	200	9	110	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	4.20
	SK50AD/B-SGER25-080	21	80	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.40
	SK50AD/B-SGER25-100	21	100	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.60
	SK50AD/B-SGER25-120	21	120	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.80
	SK50AD/B-SGER25-160	22	160	9	70	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	4.20
	SK50AD/B-SGER25-200	22	200	9	110	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	4.60
	SK50AD/B-SGER32-080	21	80	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.50
	SK50AD/B-SGER32-100	21	100	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.70
	SK50AD/B-SGER32-120	21	120	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.90
	SK50AD/B-SGER32-160	22	160	9	70	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	4.30
	SK50AD/B-SGER32-200	22	200	9	110	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	4.70
	SK50AD/B-SGER40-080	21	80	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.90
	SK50AD/B-SGER40-100	21	100	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.10
	SK50AD/B-SGER40-120	21	120	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.30
	SK50AD/B-SGER40-160	21	160	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.70
	SK50AD/B-SGER40-200	21	200	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	5.10

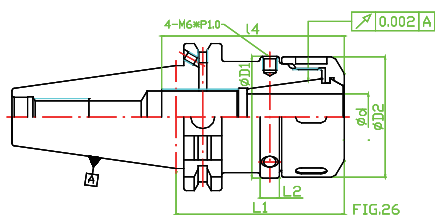
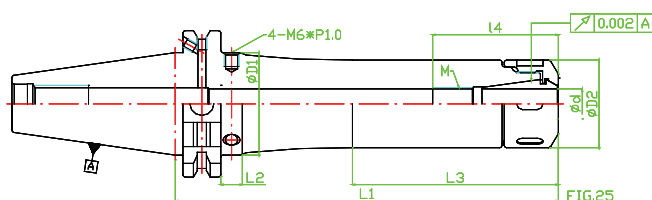
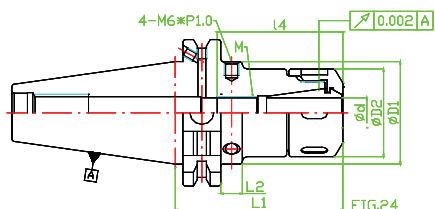
產品FIG. 21, 22 & 23出貨附件為高速平衡奈米鋼珠螺帽NxxSGX nano*1pc // PRODUCTS IN FIG.21, 22 & 23 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SGER power ER collet chucks+balanced nano nut NxxSGSX

SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
○	SK40AD/B-SGER16SX-070	24	70	9	-	39	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.00
○	SK40AD/B-SGER16SX-100	24	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.20
○	SK40AD/B-SGER16SX-120	24	120	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.30
○	SK40AD/B-SGER16SX-160	25	160	9	86	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.70
○	SK40AD/B-SGER16SX-200	25	200	9	126	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.10
○	SK40AD/B-SGER20SX-070	24	70	9	-	38	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.10
○	SK40AD/B-SGER20SX-100	24	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.30
○	SK40AD/B-SGER20SX-120	24	120	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.40
○	SK40AD/B-SGER20SX-160	25	160	9	86	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.80
○	SK40AD/B-SGER20SX-200	25	200	9	126	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.20
○	SK40AD/B-SGER25SX-070	24	70	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.30
○	SK40AD/B-SGER25SX-100	24	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.60
○	SK40AD/B-SGER25SX-120	24	120	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.80
○	SK40AD/B-SGER25SX-160	25	160	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.20
○	SK40AD/B-SGER25SX-200	25	200	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.60
○	SK40AD/B-SGER32SX-070	26	70	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.40
○	SK40AD/B-SGER32SX-100	26	100	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.70
○	SK40AD/B-SGER32SX-120	26	120	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.90
○	SK40AD/B-SGER32SX-160	26	160	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.20
○	SK40AD/B-SGER32SX-200	26	200	8	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.70
○	SK40AD/B-SGER40SX-080	26	80	8	-	62	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	1.80
○	SK40AD/B-SGER40SX-100	26	100	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.10
○	SK40AD/B-SGER40SX-120	26	120	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.40
○	SK40AD/B-SGER40SX-160	26	160	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.00
○	SK40AD/B-SGER40SX-200	26	200	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.40

產品FIG.24, 25 & 26出貨附件為高速平衡奈米螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.24, 25 & 26 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc
 STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request
 ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SK-SGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX

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動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	I4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	SK50AD/B-SGER16SX-080	24	80	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.10
	SK50AD/B-SGER16SX-100	24	100	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.20
	SK50AD/B-SGER16SX-120	24	120	9	-	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.30
	SK50AD/B-SGER16SX-160	25	160	9	70	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.70
	SK50AD/B-SGER16SX-200	25	200	9	110	46	69.8	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	4.10
	SK50AD/B-SGER20SX-080	24	80	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.20
	SK50AD/B-SGER20SX-100	24	100	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.30
	SK50AD/B-SGER20SX-120	24	120	9	-	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.40
	SK50AD/B-SGER20SX-160	25	160	9	70	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.80
	SK50AD/B-SGER20SX-200	25	200	9	110	51	69.8	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	4.20
	SK50AD/B-SGER25SX-080	24	80	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.40
	SK50AD/B-SGER25SX-100	24	100	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.60
	SK50AD/B-SGER25SX-120	24	120	9	-	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.80
	SK50AD/B-SGER25SX-160	25	160	9	70	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	4.20
	SK50AD/B-SGER25SX-200	25	200	9	110	53	69.8	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	4.60
	SK50AD/B-SGER32SX-080	24	80	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.50
	SK50AD/B-SGER32SX-100	24	100	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.70
	SK50AD/B-SGER32SX-120	24	120	9	-	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.90
	SK50AD/B-SGER32SX-160	25	160	9	70	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	4.30
	SK50AD/B-SGER32SX-200	25	200	9	110	57	69.8	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	4.70
	SK50AD/B-SGER40SX-080	24	80	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.90
	SK50AD/B-SGER40SX-100	24	100	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.10
	SK50AD/B-SGER40SX-120	24	120	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.30
	SK50AD/B-SGER40SX-160	24	160	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.70
	SK50AD/B-SGER40SX-200	24	200	9	-	67	69.8	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	5.10

產品FIG.24, 25出貨附件為高速平衡奈米螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.24, 25 EQUIP WITH BALANCED NANO NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request

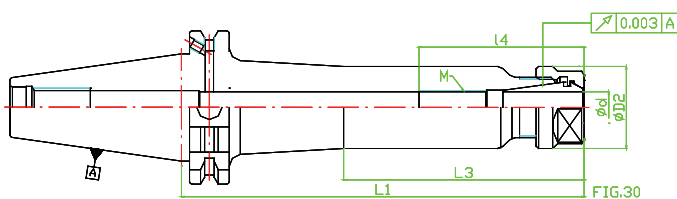
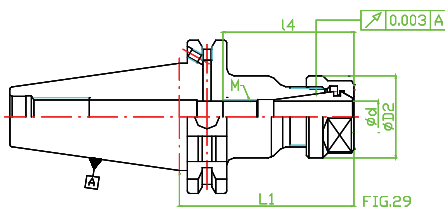
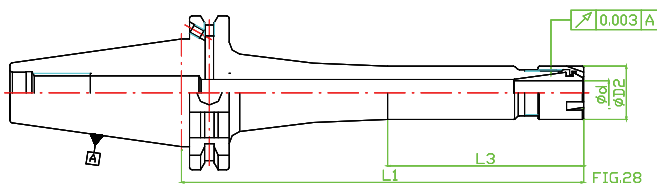
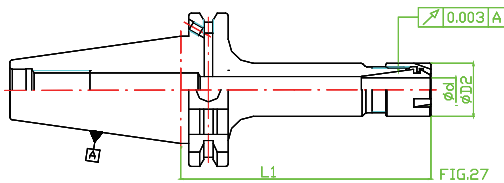
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SK-ERM & SK-ER

SPEED TIGER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
○	SK40AD/B-ER11M-100	27	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.00
○	SK40AD/B-ER11M-160	27	160	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.50
○	SK40AD/B-ER16M-100	27	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.10
○	SK40AD/B-ER16M-160	28	160	-	70	-	36	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.60
○	SK40AD/B-ER20M-100	27	100	-	-	-	-	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.20
○	SK40AD/B-ER20M-160	28	160	-	70	-	42	28	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.70
○	SK40AD/B-ER25M-100	27	100	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.50
○	SK40AD/B-ER25M-160	28	160	-	70	-	45	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	2.10

產品FIG.27 & 28出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.27 & 28 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.29 & 30出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.29 & 30 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SK-ERM & SK-ER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

動平衡G2.5/25,000RPM可以另外施作 // BALANCE TO G2.5/25,000RPM IS AVAILABLE ON REQUEST

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
○	SK40AD/B-ER16-070	29	70	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.00
○	SK40AD/B-ER16-100	29	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.20
	SK40AD/B-ER16-120	29	120	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.30
○	SK40AD/B-ER16-160	30	160	-	86	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.70
	SK40AD/B-ER16-200	30	200	-	126	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	2.10
○	SK40AD/B-ER20-070	29	70	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.10
○	SK40AD/B-ER20-100	29	100	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.30
	SK40AD/B-ER20-120	29	120	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.40
○	SK40AD/B-ER20-160	30	160	-	86	51	42	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	1.80
	SK40AD/B-ER20-200	30	200	-	126	51	42	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	2.20
○	SK40AD/B-ER25-070	29	70	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.30
○	SK40AD/B-ER25-100	29	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.60
	SK40AD/B-ER25-120	29	120	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.80
○	SK40AD/B-ER25-160	29	160	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.20
	SK40AD/B-ER25-200	29	200	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.60
○	SK40AD/B-ER32-070	29	70	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.40
○	SK40AD/B-ER32-100	29	100	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.70
	SK40AD/B-ER32-120	29	120	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.90
○	SK40AD/B-ER32-160	29	160	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.20
	SK40AD/B-ER32-200	29	200	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.70
○	SK40AD/B-ER40-070	29	70	-	-	62	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	1.80
○	SK40AD/B-ER40-100	29	100	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.10
	SK40AD/B-ER40-120	29	120	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.40
○	SK40AD/B-ER40-160	29	160	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.00
	SK40AD/B-ER40-200	29	200	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.40
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
	SK50AD/B-ER16-070	29	70	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.10
	SK50AD/B-ER16-100	29	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.20
	SK50AD/B-ER16-120	29	120	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.30
	SK50AD/B-ER16-160	30	160	-	70	46	40	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.70
	SK50AD/B-ER16-200	30	200	-	110	46	40	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	4.10
	SK50AD/B-ER20-070	29	70	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	3.20
	SK50AD/B-ER20-100	29	100	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	3.30
	SK50AD/B-ER20-120	29	120	-	-	51	-	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	3.40
	SK50AD/B-ER20-160	30	160	-	70	51	46	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	3.80
	SK50AD/B-ER20-200	30	200	-	110	51	46	34	0.5~13.0	M14*P1.0	ER20	N20SX nano	W-ER20	4.20
	SK50AD/B-ER25-070	29	70	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	3.40
	SK50AD/B-ER25-100	29	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	3.60
	SK50AD/B-ER25-120	29	120	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	3.80
	SK50AD/B-ER25-160	30	160	-	70	53	50	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	4.20
	SK50AD/B-ER25-200	30	200	-	110	53	50	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	4.60
	SK50AD/B-ER32-070	29	70	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	3.50
	SK50AD/B-ER32-100	29	100	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	3.70
	SK50AD/B-ER32-120	29	120	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	3.90
	SK50AD/B-ER32-160	30	160	-	70	57	54	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	4.30
	SK50AD/B-ER32-200	30	200	-	110	57	54	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	4.70
	SK50AD/B-ER40-070	29	80	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.90
	SK50AD/B-ER40-100	29	100	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.10
	SK50AD/B-ER40-120	29	120	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.30
	SK50AD/B-ER40-160	29	160	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.70
	SK50AD/B-ER40-200	29	200	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	5.10

產品FIG.27 & 28出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.27 & 28 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc
 產品FIG.29 & 30出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.29 & 30 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc
 STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
 ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-A



HSK-A

HSK是中空短圓錐刀桿

始於1991年德國阿亨大學開發

1993年成為德國規範DIN69893-1-6:1993

共有A, B, C, D, E & F六種錐度形式

2001年成為ISO規範ISO12164-1:2001

並將原本1/10的錐度改為1/9.98

確保錐度與端面兩面接觸時

中空短圓錐的大端能確實接觸

HSK is hollow shank short taper toolholder

It was developed by Achen University in Germany in 1991

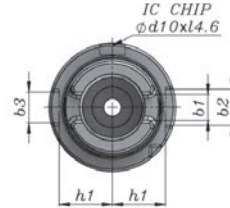
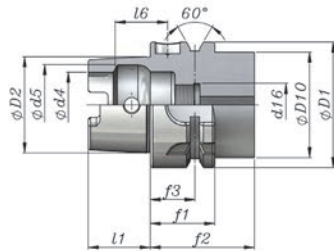
In 1993, Germany published it as norm DIN69893-1-6:1993

There are six different type of HSK: A, B, C, D, E & F

In 2001, ISO published it as norm ISO12164-1:2001

ISO revised the taper angle from 1:10 to 1:9.98

It was to make sure the taper D2 will contact the spindle when HSK toolholder has dual contact on taper and face



CLAMPING FORC	HSK-A032	HSK-A040	HSK-A050	HSK-A063	HSK-A080	HSK-A100
	5KN	6.8KN	11KN	18KN	28KN	45KN
TAPER	HSK-A032	HSK-A040	HSK-A050	HSK-A063	HSK-A080	HSK-A100
∅D1 h10	32	40	50	63	80	100
∅D2	24 +0.007/+0.005	30 +0.007/+0.005	38 +0.009/+0.006	48 +0.011/+0.007	60 +0.013/+0.008	75 +0.015/+0.009
∅d4 H10	17	21	26	34	42	53
∅d5 H11	21.0	25.5	32.0	40.0	50.0	63.0
∅d10 max.	26	34	42	53	67	85
d16	M10*P1.0	M12*P1.0	M16*P1.0	M18*P1.0	M20*P1.5	M24*P1.5
f1 +0.0/-0.1	20	20	26	26	26	29
f2 min.	35	35	42	42	42	45
f3 +/-0.1	16	16	18	18	18	20
l1 +0.0/-0.2	16	20	25	32	40	50
l6 JS10	8.92	11.42	14.13	18.13	22.85	28.56
h1 +0.0/-0.2	13.0	17.0	21.0	26.5	34.0	44.0
b1 +0.04/-0.04	7.05	8.05	10.54	12.54	16.04	20.02
b2 H10	7	9	12	16	18	20
b3 H10	9	11	14	18	20	22

ezShrink EZ // HSK-T

日本於2001年公佈HSK-ICTM

規範車銑複合機使用的刀桿

ISO在2008年將其納入規範ISO12164-4:2008

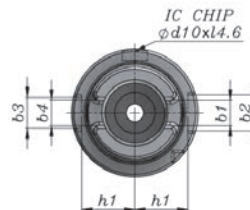
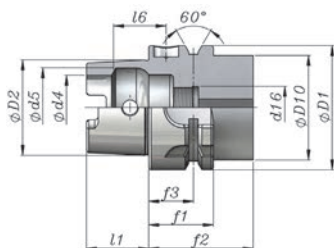
稱為HSK-T刀桿

In 2001, Japanese published HSK-ICTM

It was a new norm of HSK toolholders for CNC mill/turn machines

In 2008, ISO published it as norm ISO12164-4:2008

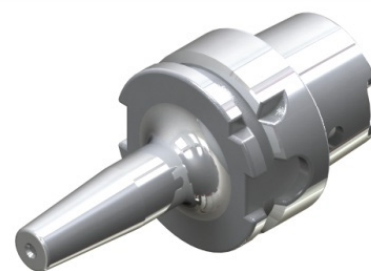
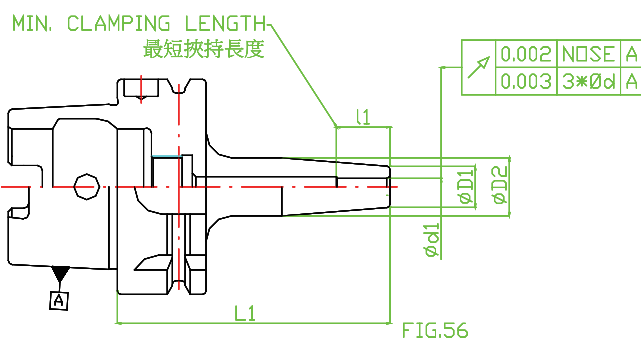
It is called HSK-T toolholders



CLAMPING FORC	HSK-T032	HSK-T040	HSK-T050	HSK-T063	HSK-T080	HSK-T100
	6.5KN~7.5KN	8.84KN~10.2KN	14.3KN~16.5KN	23.4KN~28KN	36.4KN~42KN	58.5KN~67.5KN
TAPER	HSK-T032	HSK-T040	HSK-T050	HSK-T063	HSK-T080	HSK-T100
∅d10 max.	31	39	49	62	79	99
f2 min.	23	23	30	30	30	34
b1 +0.04/-0.04	7.05	8.05	10.54	12.54	16.04	20.02
b4	6.932 +0.030/-0.0	7.932 +0.030/-0.0	10.425 +0.035/-0.0	12.425 +0.035/-0.0	15.930 +0.035/-0.0	19.910 +0.035/-0.0

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

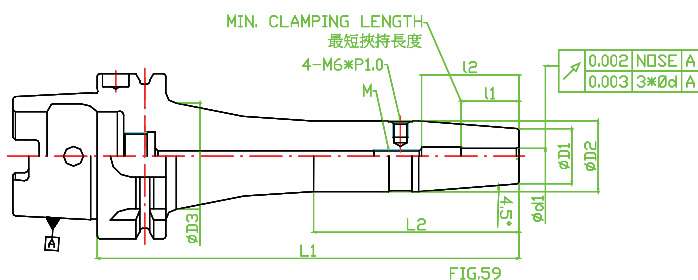
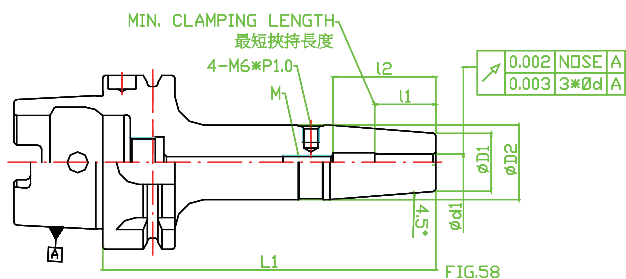
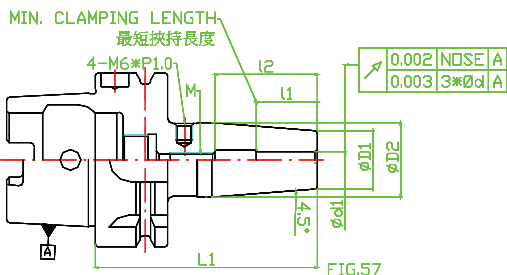
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A032-EZ03-065	56	65	-	15	20	-	3	11	-	-	0.20
	HSK-A032-EZ04-065	56	65	-	15	20	-	4	14	-	-	0.20
	HSK-A032-EZ05-065	56	65	-	15	20	-	5	17	-	-	0.20
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A040-EZ03-065	56	65	-	12	17	-	3	11	-	-	0.30
	HSK-A040-EZ04-065	56	65	-	12	17	-	4	14	-	-	0.30
	HSK-A040-EZ05-065	56	65	-	12	17	-	5	17	-	-	0.30
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A050-EZ03-060	56	60	-	12	17	-	3	11	-	-	0.50
	HSK-A050-EZ04-060	56	60	-	12	17	-	4	14	-	-	0.50
	HSK-A050-EZ05-080	56	80	-	12	17	-	5	17	-	-	0.50
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A063-EZ03-080	56	80	-	12	17	-	3	11	-	-	0.70
	HSK-A063-EZ03-120	56	120	-	12	17	-	3	11	-	-	1.00
	HSK-A063-EZ03-130	56	130	-	12	17	-	3	11	-	-	1.10
	HSK-A063-EZ03-160	56	160	-	12	17	-	3	11	-	-	1.30
	HSK-A063-EZ04-080	56	80	-	12	17	-	4	14	-	-	0.70
	HSK-A063-EZ04-120	56	120	-	12	17	-	4	14	-	-	1.00
	HSK-A063-EZ04-130	56	130	-	12	17	-	4	14	-	-	1.10
	HSK-A063-EZ04-160	56	160	-	12	17	-	4	14	-	-	1.30
	HSK-A063-EZ05-080	56	80	-	12	17	-	5	17	-	-	0.70
	HSK-A063-EZ05-120	56	120	-	12	17	-	5	17	-	-	1.00
	HSK-A063-EZ05-130	56	120	-	12	17	-	5	17	-	-	1.10
	HSK-A063-EZ05-160	56	160	-	12	17	-	5	17	-	-	1.30

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

HSK-A-EZ

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A032-EZ06-075	57	75	-	21	26	-	6	23	37	M5*P0.8	0.40
	HSK-A032-EZ08-075	57	75	-	21	26	-	8	27	37	M6*P1.0	0.40
	HSK-A032-EZ10-075	57	75	-	24	30	-	10	32	42	M8*P1.0	0.40
	HSK-A032-EZ12-080	57	80	-	24	31	-	12	37	48	M10*P1.0	0.40
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A040-EZ06-080	57	80	-	21	27	-	6	23	37	M5*P0.8	0.50
	HSK-A040-EZ08-080	57	80	-	21	27	-	8	27	37	M6*P1.0	0.50
	HSK-A040-EZ10-080	57	80	-	24	32	-	10	32	42	M8*P1.0	0.50
	HSK-A040-EZ12-090	57	90	-	24	32	-	12	37	48	M10*P1.0	0.60
	HSK-A040-EZ14-090	57	90	-	27	34	-	14	37	48	M10*P1.0	0.60
	HSK-A040-EZ16-090	57	90	-	27	34	-	16	40	51	M12*P1.0	0.60
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A050-EZ06-080	57	80	-	21	27	-	6	23	37	M5*P0.8	0.70
	HSK-A050-EZ08-080	57	80	-	21	27	-	8	27	37	M6*P1.0	0.70
	HSK-A050-EZ10-085	57	85	-	24	32	-	10	32	42	M8*P1.0	0.80
	HSK-A050-EZ12-090	57	90	-	24	32	-	12	37	48	M10*P1.0	0.80
	HSK-A050-EZ14-090	57	90	-	27	34	-	14	37	48	M10*P1.0	0.80
	HSK-A050-EZ16-095	57	95	-	27	34	-	16	40	51	M12*P1.0	0.80
	HSK-A050-EZ18-095	57	95	-	33	42	-	18	40	51	M12*P1.0	0.90
	HSK-A050-EZ20-100	57	100	-	33	42	-	20	42	53	M16*P1.0	0.90

產品 FIG. 57, 58 & 59 出貨附件為長度調整螺絲 BK-EZ-Mxx*1pc // PRODUCTS IN FIG. 57, 58 & 59 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 //
 STOCK BLANK=on request

Shrink fit chucks

熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A063-EZ06-080	57	80	-	21	27	-	6	23	37	M5*P0.8	0.80
	HSK-A063-EZ06-120	58	120	-	21	27	-	6	23	37	M5*P0.8	1.10
	HSK-A063-EZ06-130	58	130	-	21	27	-	6	23	37	M5*P0.8	1.20
	HSK-A063-EZ06-160	59	160	78	21	27	41	6	23	37	M5*P0.8	1.40
	HSK-A063-EZ06-200	59	200	118	21	27	41	6	23	37	M5*P0.8	1.80
	HSK-A063-EZ08-080	57	80	-	21	27	-	8	27	37	M6*P1.0	0.80
	HSK-A063-EZ08-120	58	120	-	21	27	-	8	27	37	M6*P1.0	1.10
	HSK-A063-EZ08-130	58	130	-	21	27	-	8	27	37	M6*P1.0	1.20
	HSK-A063-EZ08-160	59	160	78	21	27	41	8	27	37	M6*P1.0	1.40
	HSK-A063-EZ08-200	59	200	118	21	27	41	8	27	37	M6*P1.0	1.80
	HSK-A063-EZ10-085	57	85	-	24	32	-	10	32	42	M8*P1.0	0.90
	HSK-A063-EZ10-120	58	120	-	24	32	-	10	32	42	M8*P1.0	1.20
	HSK-A063-EZ10-130	58	130	-	24	32	-	10	32	42	M8*P1.0	1.30
	HSK-A063-EZ10-160	59	160	78	24	32	40	10	32	42	M8*P1.0	1.50
	HSK-A063-EZ10-200	59	200	118	24	32	40	10	32	42	M8*P1.0	1.90
	HSK-A063-EZ12-090	57	90	-	24	32	-	12	37	48	M10*P1.0	0.90
	HSK-A063-EZ12-120	58	120	-	24	32	-	12	37	48	M10*P1.0	1.20
	HSK-A063-EZ12-130	58	130	-	24	32	-	12	37	48	M10*P1.0	1.30
	HSK-A063-EZ12-160	59	160	78	24	32	40	12	37	48	M10*P1.0	1.50
	HSK-A063-EZ12-200	59	200	118	24	32	40	12	37	48	M10*P1.0	1.90
	HSK-A063-EZ14-090	57	90	-	27	34	-	14	37	48	M10*P1.0	0.90
	HSK-A063-EZ14-120	58	120	-	27	34	-	14	37	48	M10*P1.0	1.20
	HSK-A063-EZ14-130	58	130	-	27	34	-	14	37	48	M10*P1.0	1.30
	HSK-A063-EZ14-160	59	160	78	27	34	42	14	37	48	M10*P1.0	1.50
	HSK-A063-EZ14-200	59	200	118	27	34	42	14	37	48	M10*P1.0	1.90
	HSK-A063-EZ16-095	57	95	-	27	34	-	16	40	51	M12*P1.0	0.90
	HSK-A063-EZ16-120	58	120	-	27	34	-	16	40	51	M12*P1.0	1.20
	HSK-A063-EZ16-130	58	130	-	27	34	-	16	40	51	M12*P1.0	1.30
	HSK-A063-EZ16-160	59	160	78	27	34	42	16	40	51	M12*P1.0	1.50
	HSK-A063-EZ16-200	59	200	118	27	34	42	16	40	51	M12*P1.0	1.90
	HSK-A063-EZ18-095	57	95	-	33	42	-	18	40	51	M12*P1.0	1.00
	HSK-A063-EZ18-120	58	120	-	33	42	-	18	40	51	M12*P1.0	1.30
	HSK-A063-EZ18-130	58	130	-	33	42	-	18	40	51	M12*P1.0	1.40
	HSK-A063-EZ18-160	58	160	-	33	42	-	18	40	51	M12*P1.0	1.60
	HSK-A063-EZ18-200	58	200	-	33	42	-	18	40	51	M12*P1.0	2.00
	HSK-A063-EZ20-100	57	100	-	33	42	-	20	42	53	M16*P1.0	1.00
	HSK-A063-EZ20-120	58	120	-	33	42	-	20	42	53	M16*P1.0	1.30
	HSK-A063-EZ20-130	58	130	-	33	42	-	20	42	53	M16*P1.0	1.40
	HSK-A063-EZ20-160	58	160	-	33	42	-	20	42	53	M16*P1.0	1.60
	HSK-A063-EZ20-200	58	200	-	33	42	-	20	42	53	M16*P1.0	2.00
	HSK-A063-EZ25-115	57	115	-	44	53	-	25	48	59	M16*P1.0	1.90
	HSK-A063-EZ25-130	58	130	-	44	53	-	25	48	59	M16*P1.0	2.00
	HSK-A063-EZ25-160	58	160	-	44	53	-	25	48	59	M16*P1.0	2.20
	HSK-A063-EZ25-200	58	200	-	44	53	-	25	48	59	M16*P1.0	2.60
	HSK-A063-EZ32-120	57	120	-	44	53	-	32	52	63	M16*P1.0	1.90
	HSK-A063-EZ32-160	57	160	-	44	53	-	32	52	63	M16*P1.0	2.10

產品FIG.57, 58 & 59出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.57, 58 & 59 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK
 BLANK=on request

HSK-A-EZ

■ Shrink fit chucks

● 熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A080-EZ06-085	57	85	-	21	27	-	6	23	37	M5*P0.8	1.40
	HSK-A080-EZ06-160	59	160	78	21	27	41	6	23	37	M5*P0.8	2.00
	HSK-A080-EZ08-085	57	85	-	21	27	-	8	27	37	M6*P1.0	1.40
	HSK-A080-EZ08-160	59	160	78	21	27	41	8	27	37	M6*P1.0	2.00
	HSK-A080-EZ10-090	57	90	-	24	32	-	10	32	42	M8*P1.0	1.50
	HSK-A080-EZ10-160	59	160	78	24	32	40	10	32	42	M8*P1.0	2.10
	HSK-A080-EZ12-095	57	95	-	24	32	-	12	37	48	M10*P1.0	1.50
	HSK-A080-EZ12-160	59	160	78	24	32	40	12	37	48	M10*P1.0	2.10
	HSK-A080-EZ14-095	57	95	-	27	34	-	14	37	48	M10*P1.0	1.50
	HSK-A080-EZ16-100	59	100	-	27	34	-	16	40	51	M12*P1.0	1.50
	HSK-A080-EZ16-160	57	160	78	27	34	42	16	40	51	M12*P1.0	2.10
	HSK-A080-EZ18-100	58	100	-	33	42	-	18	40	51	M12*P1.0	1.60
	HSK-A080-EZ20-105	57	105	-	33	42	-	20	42	53	M16*P1.0	1.60
	HSK-A080-EZ20-160	58	160	-	33	42	-	20	42	53	M16*P1.0	2.00
	HSK-A080-EZ25-115	57	115	-	44	53	-	25	48	59	M16*P1.0	2.50
	HSK-A080-EZ25-160	58	160	-	44	53	-	25	48	59	M16*P1.0	2.80
	HSK-A080-EZ32-120	57	120	-	44	53	-	32	52	63	M16*P1.0	2.50

產品FIG.57, 58 & 59出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.57, 58 & 59 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 //
 STOCK BLANK=on request

Shrink fit chucks

熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

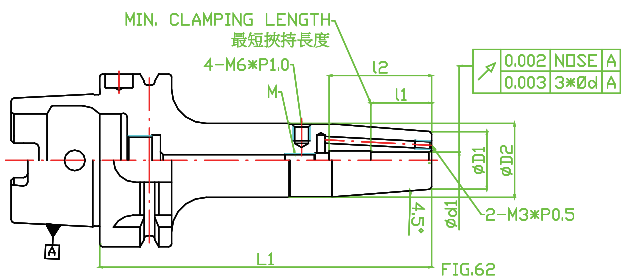
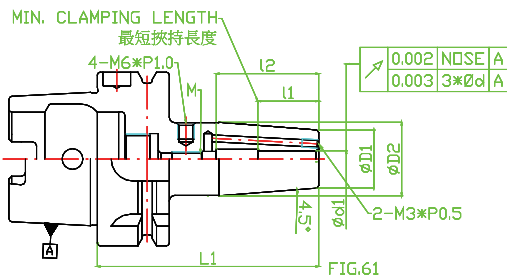
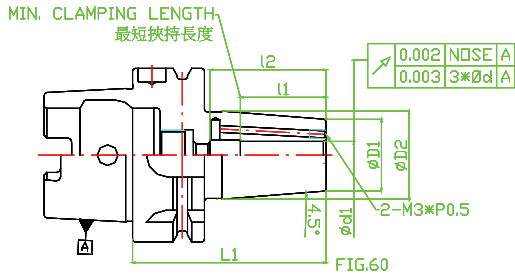
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A100-EZ06-085	57	85	-	21	27	-	6	23	37	M5*P0.8	2.20
	HSK-A100-EZ06-120	58	120	-	21	27	-	6	23	37	M5*P0.8	2.50
	HSK-A100-EZ06-130	58	130	-	21	27	-	6	23	37	M5*P0.8	2.60
	HSK-A100-EZ06-160	59	160	70	21	27	41	6	23	37	M5*P0.8	2.80
	HSK-A100-EZ06-200	59	200	110	21	27	41	6	23	37	M5*P0.8	3.20
	HSK-A100-EZ08-085	57	85	-	21	27	-	8	27	37	M6*P1.0	2.20
	HSK-A100-EZ08-120	58	120	-	21	27	-	8	27	37	M6*P1.0	2.50
	HSK-A100-EZ08-130	58	130	-	21	27	-	8	27	37	M6*P1.0	2.60
	HSK-A100-EZ08-160	59	160	70	21	27	41	8	27	37	M6*P1.0	2.80
	HSK-A100-EZ08-200	59	200	110	21	27	41	8	27	37	M6*P1.0	3.20
	HSK-A100-EZ10-090	57	90	-	24	32	-	10	32	42	M8*P1.0	2.30
	HSK-A100-EZ10-120	58	120	-	24	32	-	10	32	42	M8*P1.0	2.60
	HSK-A100-EZ10-130	58	130	-	24	32	-	10	32	42	M8*P1.0	2.70
	HSK-A100-EZ10-160	59	160	70	24	32	40	10	32	42	M8*P1.0	2.90
	HSK-A100-EZ10-200	59	200	110	24	32	40	10	32	42	M8*P1.0	3.30
	HSK-A100-EZ12-095	57	95	-	24	32	-	12	37	48	M10*P1.0	2.30
	HSK-A100-EZ12-120	58	120	-	24	32	-	12	37	48	M10*P1.0	2.60
	HSK-A100-EZ12-130	58	130	-	24	32	-	12	37	48	M10*P1.0	2.70
	HSK-A100-EZ12-160	59	160	70	24	32	40	12	37	48	M10*P1.0	2.90
	HSK-A100-EZ12-200	59	200	110	24	32	40	12	37	48	M10*P1.0	3.30
	HSK-A100-EZ14-095	57	95	-	27	34	-	14	37	48	M10*P1.0	2.30
	HSK-A100-EZ14-120	58	120	-	27	34	-	14	37	48	M10*P1.0	2.60
	HSK-A100-EZ14-130	58	130	-	27	34	-	14	37	48	M10*P1.0	2.70
	HSK-A100-EZ14-160	59	160	70	27	34	42	14	37	48	M10*P1.0	2.90
	HSK-A100-EZ14-200	59	200	110	27	34	42	14	37	48	M10*P1.0	3.30
	HSK-A100-EZ16-100	57	100	-	27	34	-	16	40	51	M12*P1.0	2.30
	HSK-A100-EZ16-120	58	120	-	27	34	-	16	40	51	M12*P1.0	2.60
	HSK-A100-EZ16-130	58	130	-	27	34	-	16	40	51	M12*P1.0	2.70
	HSK-A100-EZ16-160	59	160	70	27	34	42	16	40	51	M12*P1.0	2.90
	HSK-A100-EZ16-200	59	200	110	27	34	42	16	40	51	M12*P1.0	3.30
	HSK-A100-EZ18-100	57	100	-	33	42	-	18	40	51	M12*P1.0	2.40
	HSK-A100-EZ18-120	58	120	-	33	42	-	18	40	51	M12*P1.0	2.70
	HSK-A100-EZ18-130	58	130	-	33	42	-	18	40	51	M12*P1.0	2.80
	HSK-A100-EZ18-160	58	160	75	33	42	48	18	40	51	M12*P1.0	3.00
	HSK-A100-EZ18-200	58	200	115	33	42	48	18	40	51	M12*P1.0	3.40
	HSK-A100-EZ20-105	57	105	-	33	42	-	20	42	53	M16*P1.0	2.40
	HSK-A100-EZ20-120	58	120	-	33	42	-	20	42	53	M16*P1.0	2.70
	HSK-A100-EZ20-130	58	130	-	33	42	-	20	42	53	M16*P1.0	2.80
	HSK-A100-EZ20-160	58	160	75	33	42	48	20	42	53	M16*P1.0	3.00
	HSK-A100-EZ20-200	58	200	115	33	42	48	20	42	53	M16*P1.0	3.40
	HSK-A100-EZ25-115	57	115	-	44	53	-	25	48	59	M16*P1.0	3.20
	HSK-A100-EZ25-130	58	130	-	44	53	-	25	48	59	M16*P1.0	3.40
	HSK-A100-EZ25-160	58	160	70	44	53	60	25	48	59	M16*P1.0	3.60
	HSK-A100-EZ25-200	58	200	110	44	53	60	25	48	59	M16*P1.0	4.00
	HSK-A100-EZ32-120	57	120	-	44	53	-	32	52	63	M16*P1.0	3.20
	HSK-A100-EZ32-160	58	160	70	44	53	60	32	52	63	M16*P1.0	3.20
	HSK-A100-EZ32-200	58	200	110	44	53	60	32	52	63	M16*P1.0	4.00

產品FIG. 57, 58 & 59出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG. 57, 58 & 59 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 //
 STOCK BLANK=on request

HSK-A-EZKK

Shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A063-EZ03-080KK	60	80	-	14	20	-	3	11	-	-	0.70
	HSK-A063-EZ03-130KK	60	130	-	14	20	-	3	11	-	-	1.00
	HSK-A063-EZ04-080KK	60	80	-	14	20	-	4	14	-	-	0.70
	HSK-A063-EZ04-130KK	60	130	-	14	20	-	4	14	-	-	1.00
	HSK-A063-EZ05-080KK	60	80	-	14	20	-	5	17	-	-	0.70
	HSK-A063-EZ05-130KK	60	130	-	14	20	-	5	17	-	-	1.00

產品FIG.61 & 62出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.61 & 62 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.61 & 62出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.61 & 62 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

STOCK ⊙=標準在庫品 // STOCK ⊙=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

Shrink fit chucks with coolant through nose

鼻端噴水熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A063-EZ06-080KK	61	80	-	21	27	-	6	23	37	M5*P0.8	0.80
	HSK-A063-EZ06-120KK	62	120	-	21	27	-	6	23	37	M5*P0.8	1.10
	HSK-A063-EZ06-130KK	62	130	-	21	27	-	6	23	37	M5*P0.8	1.20
	HSK-A063-EZ08-080KK	61	80	-	21	27	-	8	27	37	M6*P1.0	0.80
	HSK-A063-EZ08-120KK	62	120	-	21	27	-	8	27	37	M6*P1.0	1.10
	HSK-A063-EZ08-130KK	62	130	-	21	27	-	8	27	37	M6*P1.0	1.20
	HSK-A063-EZ10-070KK	60	70	-	24	32	-	10	32	-	-	0.80
	HSK-A063-EZ10-085KK	61	85	-	24	32	-	10	32	42	M8*P1.0	0.90
	HSK-A063-EZ10-120KK	62	120	-	24	32	-	10	32	42	M8*P1.0	1.20
	HSK-A063-EZ10-130KK	62	130	-	24	32	-	10	32	42	M8*P1.0	1.30
	HSK-A063-EZ12-070KK	60	70	-	24	32	-	12	37	-	-	0.80
	HSK-A063-EZ12-090KK	61	90	-	24	32	-	12	37	48	M10*P1.0	0.90
	HSK-A063-EZ12-120KK	62	120	-	24	32	-	12	37	48	M10*P1.0	1.20
	HSK-A063-EZ12-130KK	62	130	-	24	32	-	12	37	48	M10*P1.0	1.30
	HSK-A063-EZ14-090KK	61	90	-	27	34	-	14	37	48	M10*P1.0	0.90
	HSK-A063-EZ14-120KK	62	120	-	27	34	-	14	37	48	M10*P1.0	1.20
	HSK-A063-EZ14-130KK	62	130	-	27	34	-	14	37	48	M10*P1.0	1.30
	HSK-A063-EZ16-075KK	60	75	-	27	34	-	16	40	-	-	0.80
	HSK-A063-EZ16-095KK	61	95	-	27	34	-	16	40	51	M12*P1.0	0.90
	HSK-A063-EZ16-120KK	62	120	-	27	34	-	16	40	51	M12*P1.0	1.20
	HSK-A063-EZ16-130KK	62	130	-	27	34	-	16	40	51	M12*P1.0	1.30
	HSK-A063-EZ18-095KK	61	95	-	33	42	-	18	40	51	M12*P1.0	1.00
	HSK-A063-EZ18-120KK	62	120	-	33	42	-	18	40	51	M12*P1.0	1.30
	HSK-A063-EZ18-130KK	62	130	-	33	42	-	18	40	51	M12*P1.0	1.40
	HSK-A063-EZ20-075KK	60	75	-	33	42	-	20	42	-	-	0.90
	HSK-A063-EZ20-100KK	61	100	-	33	42	-	20	42	53	M16*P1.0	1.00
	HSK-A063-EZ20-120KK	62	120	-	33	42	-	20	42	53	M16*P1.0	1.30
	HSK-A063-EZ20-130KK	62	130	-	33	42	-	20	42	53	M16*P1.0	1.40
	HSK-A063-EZ25-085KK	60	85	-	44	53	-	25	48	-	-	1.50
	HSK-A063-EZ25-115KK	61	115	-	44	53	-	25	48	59	M16*P1.0	1.90
	HSK-A063-EZ25-130KK	62	130	-	44	53	-	25	48	59	M16*P1.0	2.10
	HSK-A063-EZ32-130KK	62	130	-	44	53	-	25	48	59	M16*P1.0	2.00
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-A100-EZ06-085KK	61	85	-	21	27	-	6	23	37	M5*P0.8	2.20
	HSK-A100-EZ08-085KK	61	85	-	21	27	-	8	27	37	M6*P1.0	2.20
	HSK-A100-EZ10-090KK	61	90	-	24	32	-	10	32	42	M8*P1.0	2.30
	HSK-A100-EZ12-095KK	61	95	-	24	32	-	12	37	48	M10*P1.0	2.30
	HSK-A100-EZ14-095KK	61	95	-	27	34	-	14	37	48	M10*P1.0	2.30
	HSK-A100-EZ16-100KK	61	100	-	27	34	-	16	40	51	M12*P1.0	2.30
	HSK-A100-EZ18-100KK	61	100	-	33	42	-	18	40	51	M12*P1.0	2.40
	HSK-A100-EZ20-105KK	61	105	-	33	42	-	20	42	53	M16*P1.0	2.40
	HSK-A100-EZ25-115KK	61	115	-	44	53	-	25	48	59	M16*P1.0	3.00

產品FIG.61 & 62出貨附件為長度調整螺絲BK-EZKK-Mxx*1pc // PRODUCTS IN FIG.61 & 62 EQUIP WITH BACK UP SCREW BK-EZKK-Mxx*1PC

產品FIG.61 & 62出貨附件為止水螺絲M3*P0.5-4L*2pc // PRODUCTS IN FIG.61 & 62 EQUIP WITH SEAL SCREW M3*P0.5-4L*2PCS

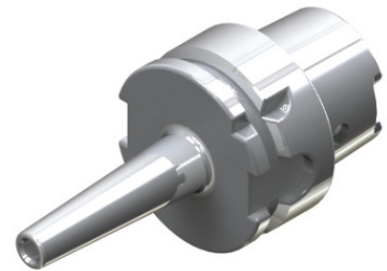
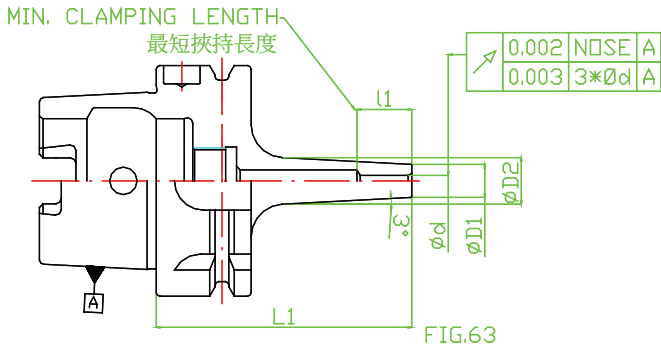
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

HSK-A-EZSS

■ SlimSuper shrink fit chucks

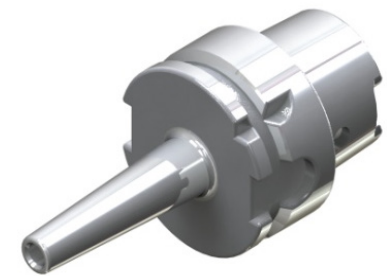
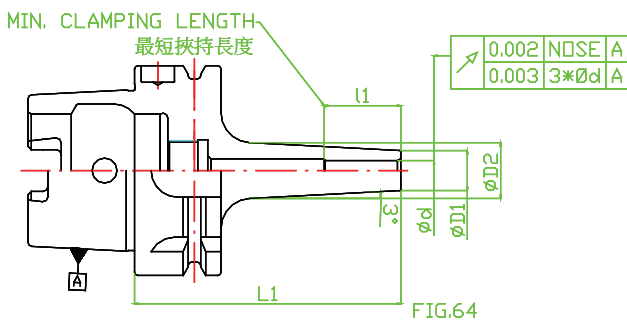
● 超細型熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A063-EZ03SS-080	63	80	-	9	16	-	3	11	-	-	0.60
	HSK-A063-EZ03SS-120	63	120	-	9	19	-	3	11	-	-	1.00
	HSK-A063-EZ04SS-080	63	80	-	10	17	-	4	14	-	-	0.60
	HSK-A063-EZ04SS-120	63	120	-	10	20	-	4	14	-	-	1.00
	HSK-A063-EZ05SS-080	63	80	-	11	18	-	5	17	-	-	0.60
	HSK-A063-EZ05SS-120	63	120	-	11	21	-	5	17	-	-	1.00

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	止動螺絲 (M) Screw	重量 (KG) Weight
	HSK-A063-EZ06SS-080	64	80	-	12	18	-	6	23	-	-	0.70
	HSK-A063-EZ06SS-120	64	120	-	12	22	-	6	23	-	-	1.10
	HSK-A063-EZ08SS-080	64	80	-	14	20	-	8	27	-	-	0.70
	HSK-A063-EZ08SS-120	64	120	-	14	24	-	8	27	-	-	1.10
	HSK-A063-EZ10SS-080	64	80	-	16	22	-	10	32	-	-	0.80
	HSK-A063-EZ10SS-120	64	120	-	16	26	-	10	32	-	-	1.20
	HSK-A063-EZ12SS-080	64	80	-	18	24	-	12	37	-	-	0.80
	HSK-A063-EZ12SS-120	64	120	-	18	28	-	12	37	-	-	1.20

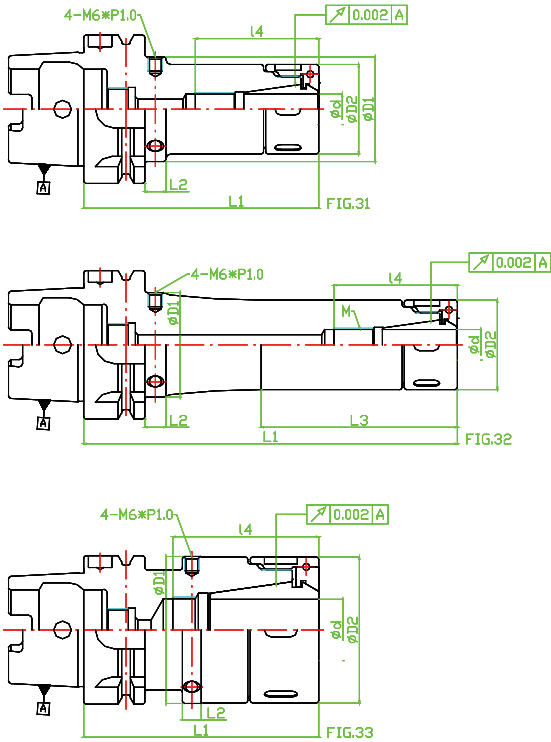
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

HSK-A-SGER

SPEED TIGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A032-SGER16-070	33	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.50
	HSK-A032-SGER20-070	33	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGX nano	W-FK05	0.60
	HSK-A032-SGER25-070	33	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.70
STOCK	CODE	FIG.	L1	L2	L3	l4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A040-SGER16-070	33	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.50
	HSK-A040-SGER16-100	33	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.70
	HSK-A040-SGER20-070	33	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGX nano	W-FK05	0.60
	HSK-A040-SGER20-100	33	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	0.80
	HSK-A040-SGER25-070	33	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.70
	HSK-A040-SGER25-100	33	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	0.90
	HSK-A040-SGER32-070	33	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	0.80
	HSK-A040-SGER32-100	33	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A050-SGER16-070	31	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.70
	HSK-A050-SGER16-100	31	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.90
	HSK-A050-SGER20-070	31	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGX nano	W-FK04	0.80
	HSK-A050-SGER20-100	31	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.00
	HSK-A050-SGER25-080	33	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.90
	HSK-A050-SGER25-100	33	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.10
	HSK-A050-SGER32-080	33	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	1.00
	HSK-A050-SGER32-100	33	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.20
	HSK-A050-SGER40-080	33	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.60
	HSK-A050-SGER40-100	33	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.90

產品FIG.31, 32 & 33出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.31, 32 & 33 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

HSK-A-SGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

130

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A063-SGER16-070	31	70	9	-	-	52.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.80
	HSK-A063-SGER16-100	31	100	9	-	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.00
	HSK-A063-SGER16-120	31	120	9	-	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.20
	HSK-A063-SGER16-160	32	160	9	86	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.60
	HSK-A063-SGER16-200	32	200	9	126	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.00
	HSK-A063-SGER20-070	31	70	9	-	-	52.4	34	0.5~10.0	-	ER20	N20SGX nano	W-FK04	0.90
	HSK-A063-SGER20-100	31	100	9	-	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.10
	HSK-A063-SGER20-120	31	120	9	-	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.30
	HSK-A063-SGER20-160	32	160	9	86	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.70
	HSK-A063-SGER20-200	32	200	9	126	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.10
	HSK-A063-SGER25-080	31	80	9	-	-	52.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	1.20
	HSK-A063-SGER25-100	31	100	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.40
	HSK-A063-SGER25-120	31	120	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.60
	HSK-A063-SGER25-160	31	160	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.00
	HSK-A063-SGER25-200	31	200	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.40
	HSK-A063-SGER32-080	31	80	9	-	-	52.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	1.30
	HSK-A063-SGER32-100	31	100	9	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.50
	HSK-A063-SGER32-120	31	120	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.70
	HSK-A063-SGER32-160	31	160	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.10
	HSK-A063-SGER32-200	31	200	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.50
	HSK-A063-SGER40-080	33	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.60
	HSK-A063-SGER40-100	33	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.90
	HSK-A063-SGER40-120	33	120	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.20
	HSK-A063-SGER40-160	33	160	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.80
	HSK-A063-SGER40-200	33	200	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.40

產品FIG.31, 32 & 33出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.31, 32 & 33 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

HSK-A-SGER

SPEED TIGER

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A080-SGER16-100	31	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.60
	HSK-A080-SGER16-160	32	160	9	86	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.20
	HSK-A080-SGER20-100	31	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.70
	HSK-A080-SGER20-160	32	160	9	86	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.30
	HSK-A080-SGER25-100	31	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.00
	HSK-A080-SGER25-160	31	160	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.60
	HSK-A080-SGER32-100	31	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.10
	HSK-A080-SGER32-160	31	160	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.70
	HSK-A080-SGER40-100	31	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	2.50
	HSK-A080-SGER40-160	31	160	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.40
STOCK	CODE	FIG.	L1	L2	L3	l4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A100-SGER16-100	31	100	9	-	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.40
	HSK-A100-SGER16-120	31	120	9	-	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.60
	HSK-A100-SGER16-160	32	160	9	70	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.00
	HSK-A100-SGER16-200	32	200	9	110	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	3.40
	HSK-A100-SGER20-100	31	100	9	-	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.50
	HSK-A100-SGER20-120	31	120	9	-	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.70
	HSK-A100-SGER20-160	32	160	9	70	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.10
	HSK-A100-SGER20-200	32	200	9	110	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	3.50
	HSK-A100-SGER25-100	31	100	9	-	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.80
	HSK-A100-SGER25-120	31	120	9	-	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.00
	HSK-A100-SGER25-160	32	160	9	70	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.40
	HSK-A100-SGER25-200	32	200	9	110	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	3.80
	HSK-A100-SGER32-100	31	100	9	-	52	84.0	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	2.90
	HSK-A100-SGER32-120	31	120	9	-	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.10
	HSK-A100-SGER32-160	32	160	9	70	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.50
	HSK-A100-SGER32-200	32	200	9	110	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	3.90
	HSK-A100-SGER40-100	31	100	9	-	-	84.0	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	3.30
	HSK-A100-SGER40-120	31	120	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	3.60
	HSK-A100-SGER40-160	31	160	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.20
	HSK-A100-SGER40-200	31	200	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	4.80

產品FIG.31, 32 & 33出貨附件為高速平衡奈米鋼珠螺帽

NxxSGX nano*1pc // PRODUCTS IN FIG.31, 32 & 33 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK

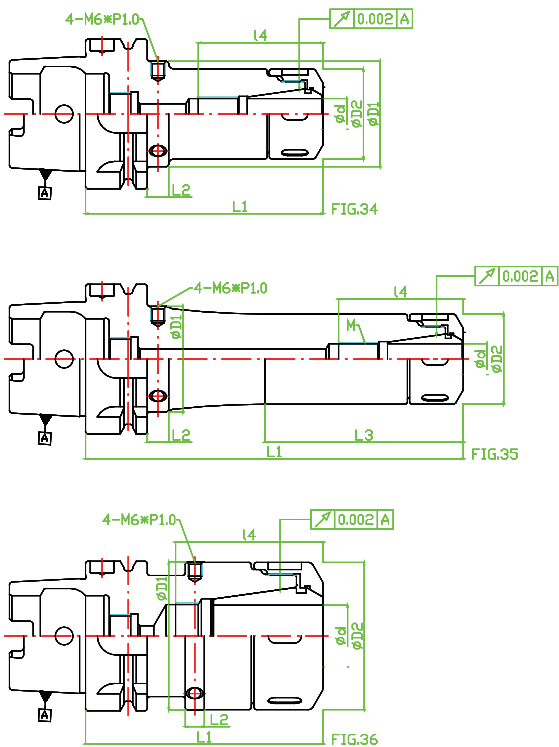
BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

HSK-A-SGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A032-SGER16SX-070	36	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.50
	HSK-A032-SGER20SX-070	36	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSXnano	W-FK05	0.60
	HSK-A032-SGER25SX-070	36	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	0.70
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A040-SGER16SX-070	36	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.50
	HSK-A040-SGER16SX-100	36	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	0.70
	HSK-A040-SGER20SX-070	36	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSXnano	W-FK05	0.60
	HSK-A040-SGER20SX-100	36	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	0.80
	HSK-A040-SGER25SX-070	36	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	0.70
	HSK-A040-SGER25SX-100	36	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	0.90
	HSK-A040-SGER32SX-070	36	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSXnano	W-FK08	0.80
	HSK-A040-SGER32SX-100	36	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A050-SGER16SX-070	34	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.70
	HSK-A050-SGER16SX-100	34	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	0.90
	HSK-A050-SGER20SX-070	34	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGSXnano	W-FK04	0.80
	HSK-A050-SGER20SX-100	34	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	1.00
	HSK-A050-SGER25SX-080	36	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	0.90
	HSK-A050-SGER25SX-100	36	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	1.10
	HSK-A050-SGER32SX-080	36	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSXnano	W-FK08	1.00
	HSK-A050-SGER32SX-100	36	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	1.20
	HSK-A050-SGER40SX-080	36	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.60
	HSK-A050-SGER40SX-100	36	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.90

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-A-SGER SPEED TIGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	I4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A063-SGER16SX-070	34	70	9	-	-	52.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.80
	HSK-A063-SGER16SX-100	34	100	9	-	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	1.00
	HSK-A063-SGER16SX-120	34	120	9	-	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	1.20
	HSK-A063-SGER16SX-160	35	160	9	86	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	1.60
	HSK-A063-SGER16SX-200	35	200	9	126	46	52.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSXnano	W-FK04	2.00
	HSK-A063-SGER20SX-070	34	70	9	-	-	52.4	34	0.5~10.0	-	ER20	N20SGSXnano	W-FK04	0.90
	HSK-A063-SGER20SX-100	34	100	9	-	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	1.10
	HSK-A063-SGER20SX-120	34	120	9	-	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	1.30
	HSK-A063-SGER20SX-160	35	160	9	86	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	1.70
	HSK-A063-SGER20SX-200	35	200	9	126	51	52.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSXnano	W-FK05	2.10
	HSK-A063-SGER25SX-080	34	80	9	-	-	52.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	1.20
	HSK-A063-SGER25SX-100	34	100	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	1.40
	HSK-A063-SGER25SX-120	34	120	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	1.60
	HSK-A063-SGER25SX-160	34	160	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	2.00
	HSK-A063-SGER25SX-200	34	200	9	-	53	52.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSXnano	W-FK06	2.40
	HSK-A063-SGER32SX-080	34	80	9	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSXnano	W-FK08	1.30
	HSK-A063-SGER32SX-100	34	100	9	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	1.50
	HSK-A063-SGER32SX-120	34	120	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	1.70
	HSK-A063-SGER32SX-160	34	160	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	2.10
	HSK-A063-SGER32SX-200	34	200	9	-	57	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSXnano	W-FK08	2.50
	HSK-A063-SGER40SX-080	36	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.60
	HSK-A063-SGER40SX-100	36	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.90
	HSK-A063-SGER40SX-120	36	120	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSXnano	W-FK09	2.20
	HSK-A063-SGER40SX-160	36	160	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSXnano	W-FK09	2.80
	HSK-A063-SGER40SX-200	36	200	8	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSXnano	W-FK09	3.40

產品FIG.34, 35 & 36出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.34, 35 & 36 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-A-SGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX

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動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	I4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A080-SGER16SX-100	34	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.60
	HSK-A080-SGER16SX-160	35	160	9	86	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.20
	HSK-A080-SGER20SX-100	34	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.70
	HSK-A080-SGER20SX-160	35	160	9	86	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.30
	HSK-A080-SGER25SX-100	34	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.00
	HSK-A080-SGER25SX-160	34	160	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.60
	HSK-A080-SGER32SX-100	34	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.10
	HSK-A080-SGER32SX-160	34	160	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.70
	HSK-A080-SGER40SX-100	34	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	2.50
	HSK-A080-SGER40SX-160	34	160	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.40
TOCK	CODE	FIG.	L1	L2	L3	I4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A100-SGER16SX-100	34	100	9	-	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.40
	HSK-A100-SGER16SX-120	34	120	9	-	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.60
	HSK-A100-SGER16SX-160	35	160	9	70	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.00
	HSK-A100-SGER16SX-200	35	200	9	110	46	84.0	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	3.40
	HSK-A100-SGER20SX-100	34	100	9	-	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.50
	HSK-A100-SGER20SX-120	34	120	9	-	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.70
	HSK-A100-SGER20SX-160	35	160	9	70	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.10
	HSK-A100-SGER20SX-200	35	200	9	110	51	84.0	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	3.50
	HSK-A100-SGER25SX-100	34	100	9	-	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.80
	HSK-A100-SGER25SX-120	34	120	9	-	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.00
	HSK-A100-SGER25SX-160	35	160	9	70	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.40
	HSK-A100-SGER25SX-200	35	200	9	110	53	84.0	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	3.80
	HSK-A100-SGER32SX-100	34	100	9	-	52	84.0	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	2.90
	HSK-A100-SGER32SX-120	34	120	9	-	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.10
	HSK-A100-SGER32SX-160	35	160	9	70	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.50
	HSK-A100-SGER32SX-200	35	200	9	110	57	84.0	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	3.90
	HSK-A100-SGER40SX-100	34	100	9	-	-	84.0	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	3.30
	HSK-A100-SGER40SX-120	34	120	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	3.60
	HSK-A100-SGER40SX-160	34	160	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.20
	HSK-A100-SGER40SX-200	34	200	9	-	67	84.0	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	4.80

產品FIG.34, 35 出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.34, 35 EQUIP WITH BALANCED NANO BALL BEARING

NUT NxxSGSX nano*1pc

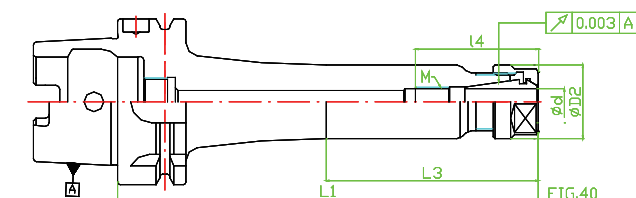
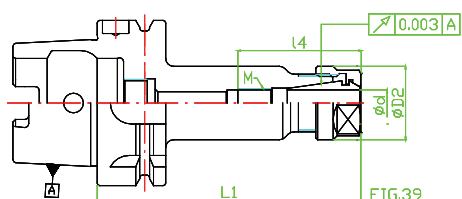
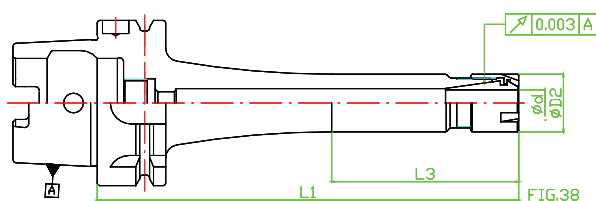
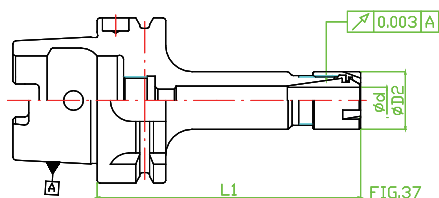
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A040-ER11-080	39	80	-	-	-	-	19	0.5~7.0	-	ER11	N11SX nano	W-ER11	0.50
	HSK-A040-ER16-060	39	60	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.50
	HSK-A040-ER16-080	39	80	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.60
	HSK-A040-ER25-070	39	70	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	0.70
	HSK-A040-ER25-080	39	80	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	0.80
	HSK-A040-ER32-070	39	70	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	0.80
	HSK-A040-ER32-100	39	100	-	-	-	-	42	2.0~20.0	-	ER32	N32SX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	扳手 WRENCH Page 218	重量 (KG) Weight
	HSK-A050-ER16-060	39	60	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.60
	HSK-A050-ER16-100	39	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.90
	HSK-A050-ER25-070	39	70	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	0.80
	HSK-A050-ER25-100	39	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.10
	HSK-A050-ER32-080	39	80	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	1.00
	HSK-A050-ER32-100	39	100	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.20

產品 FIG.37 & 38 出貨附件為高速平衡奈米螺帽 NxxMX nano*1pc // PRODUCTS IN FIG.37 & 38 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品 FIG.39 & 40 出貨附件為高速平衡奈米螺帽 NxxSX nano*1pc // PRODUCTS IN FIG.39 & 40 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-A-ERM&ER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

動平衡G2.5/25,000RPM或小于1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-A063-ER11M-100	37	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.80
	HSK-A063-ER11M-130	37	130	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.10
	HSK-A063-ER11M-160	37	160	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.40
	HSK-A063-ER16M-100	37	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.90
	HSK-A063-ER16M-130	37	130	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.20
	HSK-A063-ER16M-160	38	160	-	70	-	36	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.50
	HSK-A063-ER20M-100	37	100	-	-	-	-	22	0.5~13.0	-	ER20	N20MX nano	W-ER20M	0.90
	HSK-A063-ER20M-130	37	130	-	-	-	-	22	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.20
	HSK-A063-ER20M-160	38	160	-	70	-	36	22	0.5~13.0	-	ER20	N20MX nano	W-ER20M	1.50
	HSK-A063-ER25M-100	37	100	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.30
	HSK-A063-ER25M-130	37	130	-	-	-	-	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.60
	HSK-A063-ER25M-160	38	160	-	70	-	45	35	0.5~16.0	-	ER25	N25MX nano	W-ER25M	1.90
	HSK-A063-ER11-075	39	75	-	-	-	-	19	0.5~7.0	-	ER11	N11SX nano	W-ER11	0.70
	HSK-A063-ER16-075	39	75	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.80
	HSK-A063-ER16-100	39	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.00
	HSK-A063-ER16-160	40	160	-	86	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.60
	HSK-A063-ER16-200	40	200	-	126	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	2.10
	HSK-A063-ER25-075	39	75	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	1.20
	HSK-A063-ER25-100	39	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.40
	HSK-A063-ER25-160	39	160	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.00
	HSK-A063-ER25-200	39	200	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.50
	HSK-A063-ER32-075	39	75	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	1.30
	HSK-A063-ER32-100	39	100	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.50
	HSK-A063-ER32-160	39	160	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.10
	HSK-A063-ER32-200	39	200	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.60
	HSK-A063-ER40-085	39	85	-	-	-	-	63	3.0~26.0	-	ER40	N40SX nano	W-FK09	1.60
	HSK-A063-ER40-120	39	120	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.20
	HSK-A063-ER40-160	39	160	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	2.80
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	D2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-A080-ER16-100	39	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.60
	HSK-A080-ER16-160	40	160	-	86	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	2.20
	HSK-A080-ER25-100	39	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.00
	HSK-A080-ER25-160	39	160	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.60
	HSK-A080-ER32-100	39	100	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.10
	HSK-A080-ER32-160	39	160	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.70
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-A100-ER16-100	39	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	2.40
	HSK-A100-ER16-160	40	160	-	70	46	40	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.00
	HSK-A100-ER16-200	40	200	-	110	46	40	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	3.40
	HSK-A100-ER25-100	39	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.80
	HSK-A100-ER25-160	40	160	-	70	53	50	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	3.40
	HSK-A100-ER25-200	40	200	-	110	53	50	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	3.80
	HSK-A100-ER32-100	39	100	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.90
	HSK-A100-ER32-160	40	160	-	70	57	54	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	3.50
	HSK-A100-ER32-200	40	200	-	110	57	54	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	3.90
	HSK-A100-ER40-120	39	120	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	3.60
	HSK-A100-ER40-160	39	160	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.20
	HSK-A100-ER40-200	39	200	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	4.80

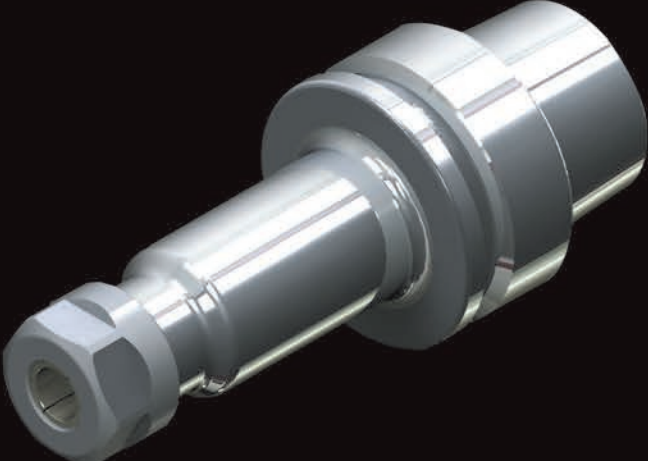
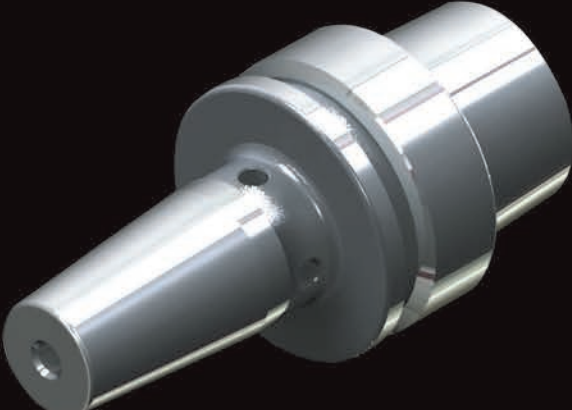
產品FIG.37 & 38出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.37 & 38 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.39 & 40出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.39 & 40 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-E



HSK-E

HSK是中空短圓錐刀桿

始於1991年德國阿亨大學開發

1993年成為德國規範DIN69893-1~6:1993

共有A, B, C, D, E & F六種錐度形式

2001年成為ISO規範ISO12164-1:2001

並將原本1/10的錐度改為1/9.98

確保錐度與端面兩面接觸時

中空短圓錐的大端能確實接觸

HSK is hollow shank short taper toolholders

It was developed by Achen University in Germany in 1991

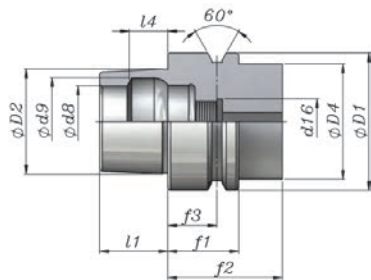
In 1993, Germany published it as norm DIN69893-1~6:1993

There are six different type of HSK: A, B, C, D, E & F

In 2001, ISO published it as norm ISO12164-1:2001

ISO revised the taper angle from 1:10 to 1:9.98

It was to make sure the taper D2 will contact the spindle when HSK toolholder has dual contact on taper and face

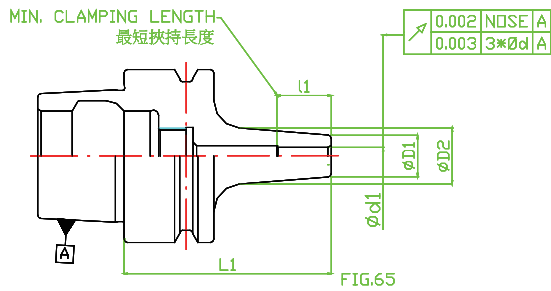


CLAMPING FORC	HSK-E025	HSK-E032	HSK-E040	HSK-E050	HSK-E063
	2.8KN	5KN	6.8KN	11KN	18KN

TAPER	HSK-E025	HSK-E032	HSK-E040	HSK-E050	HSK-E063
ØD1 h10	25	32	40	50	63
ØD2	19 +0.006/+0.004	24 +0.007/+0.005	30 +0.007/+0.005	38 +0.009/+0.006	48 +0.011/+0.007
ØD4 max.	20	26	34	42	53
Ød8 H10	14	17	21	26	34
Ød9 H11	16.4	21.0	25.5	32.0	40.0
d16	M10*P1.0	M10*P1.0	M12*P1.0	M16*P1.0	M18*P1.0
f1 0.0/-0.1	10	20	20	26	26
f2 min.	20	35	35	42	42
f3 +/-0.1	4.5	16.0	16.0	18.0	18.0
l1 0.0/-0.2	13	16	20	25	32
l4 JS10	7.21	8.92	11.42	14.13	18.13

■ Shrink fit chucks

● 熱膨脹燒結刀桿



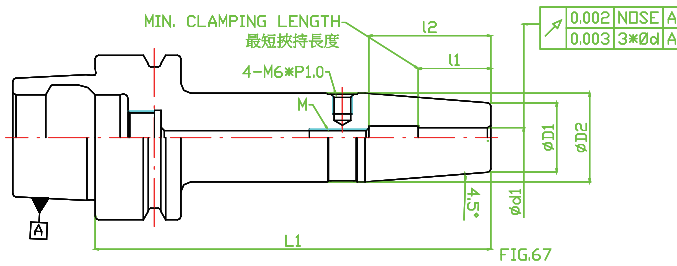
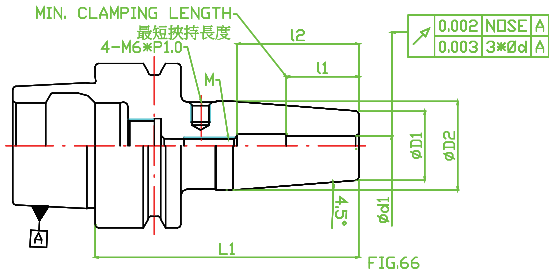
動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E032-EZ03-060	65	60	-	12	17	-	3	11	-	-	0.20
	HSK-E032-EZ04-060	65	60	-	12	17	-	4	14	-	-	0.20
	HSK-E032-EZ05-060	65	60	-	12	17	-	5	17	-	-	0.20
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E040-EZ03-060	65	60	-	12	17	-	3	11	-	-	0.20
	HSK-E040-EZ04-060	65	60	-	12	17	-	4	14	-	-	0.20
	HSK-E040-EZ05-060	65	60	-	12	17	-	5	17	-	-	0.20
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E050-EZ03-060	65	60	-	12	17	-	3	11	-	-	0.50
	HSK-E050-EZ04-060	65	60	-	12	17	-	4	14	-	-	0.50
	HSK-E050-EZ05-060	65	60	-	12	17	-	5	17	-	-	0.50

HSK-E-EZ

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E032-EZ06-070	66	70	-	21	26	-	6	23	36	M5*P0.8	0.40
	HSK-E032-EZ08-070	66	70	-	21	26	-	8	23	36	M6*P1.0	0.40
	HSK-E032-EZ10-070	66	70	-	24	29	-	10	32	42	M8*P1.0	0.50
	HSK-E032-EZ12-070	66	70	-	24	29	-	12	37	47	M10*P1.0	0.50
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E040-EZ06-080	66	80	-	21	27	-	6	23	37	M5*P0.8	0.50
	HSK-E040-EZ08-080	66	80	-	21	27	-	8	27	37	M6*P1.0	0.50
	HSK-E040-EZ10-080	66	80	-	24	32	-	10	32	42	M8*P1.0	0.60
	HSK-E040-EZ12-090	66	90	-	24	32	-	12	37	48	M10*P1.0	0.60
	HSK-E040-EZ14-090	66	90	-	27	34	-	14	37	48	M10*P1.0	0.60
	HSK-E040-EZ16-090	66	90	-	27	34	-	16	40	51	M12*P1.0	0.90
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-E050-EZ06-080	66	80	-	21	27	-	6	23	37	M5*P0.8	0.70
	HSK-E050-EZ08-080	66	80	-	21	27	-	8	27	37	M6*P1.0	0.70
	HSK-E050-EZ10-085	66	85	-	24	32	-	10	32	42	M8*P1.0	0.80
	HSK-E050-EZ12-090	66	90	-	24	32	-	12	37	48	M10*P1.0	0.80
	HSK-E050-EZ14-090	66	90	-	27	34	-	14	37	48	M10*P1.0	0.80
	HSK-E050-EZ16-095	67	95	-	27	34	-	16	40	51	M12*P1.0	1.10

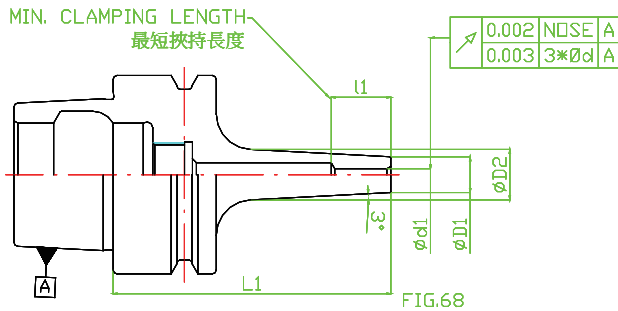
產品FIG.66 & 67出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.66 & 67 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ○=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK
 BLANK=on request

HSK-F-EZSS

SPEED TIGER

■ SlimSuper shrink fit chucks

● 超細型熱膨脹燒結刀桿



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動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

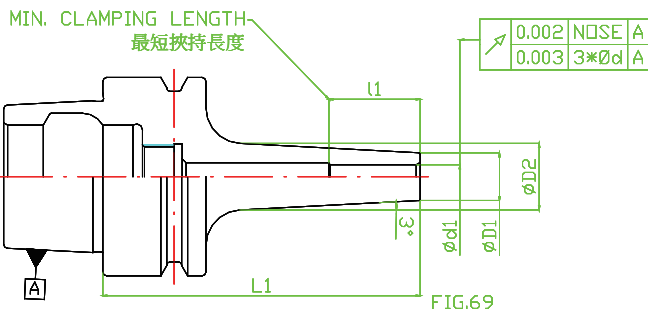
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E032-EZ03SS-040	68	40	-	9	13	-	3	11	-	-	0.15
	HSK-E032-EZ03SS-070	68	70	-	9	16	-	3	11	-	-	0.20
	HSK-E032-EZ04SS-040	68	40	-	10	14	-	4	14	-	-	0.15
	HSK-E032-EZ04SS-070	68	70	-	10	17	-	4	14	-	-	0.20
	HSK-E032-EZ05SS-040	68	40	-	11	15	-	5	17	-	-	0.15
	HSK-E032-EZ05SS-070	68	70	-	11	18	-	5	17	-	-	0.20
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E040-EZ03SS-060	68	60	-	9	14	-	3	11	-	-	0.30
	HSK-E040-EZ03SS-070	68	70	-	9	15	-	3	11	-	-	0.40
	HSK-E040-EZ03SS-080	68	80	-	9	16	-	3	11	-	-	0.50
	HSK-E040-EZ04SS-060	68	60	-	10	15	-	4	14	-	-	0.30
	HSK-E040-EZ04SS-070	68	70	-	10	16	-	4	14	-	-	0.40
	HSK-E040-EZ04SS-080	68	80	-	10	17	-	4	14	-	-	0.50
	HSK-E040-EZ05SS-060	68	60	-	11	16	-	5	17	-	-	0.30
	HSK-E040-EZ05SS-070	68	70	-	11	17	-	5	17	-	-	0.40
	HSK-E040-EZ05SS-080	68	80	-	11	18	-	5	17	-	-	0.50
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E050-EZ03SS-070	68	70	-	9	14	-	3	15	-	-	0.50
	HSK-E050-EZ03SS-080	68	80	-	9	15	-	3	15	-	-	0.60
	HSK-E050-EZ03SS-100	68	100	-	9	17	-	3	15	-	-	0.80
	HSK-E050-EZ04SS-070	68	70	-	10	15	-	4	17	-	-	0.50
	HSK-E050-EZ04SS-080	68	80	-	10	16	-	4	17	-	-	0.60
	HSK-E050-EZ04SS-100	68	100	-	10	18	-	4	17	-	-	0.80
	HSK-E050-EZ05SS-070	68	70	-	11	16	-	5	17	-	-	0.50
	HSK-E050-EZ05SS-080	68	80	-	11	17	-	5	17	-	-	0.60
	HSK-E050-EZ05SS-100	68	100	-	11	19	-	5	17	-	-	0.80

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

HSK-E-EZSS

■ SlimSuper shrink fit chucks

● 超細型熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E032-EZ06SS-050	69	50	-	12	17	-	6	23	-	-	0.20
	HSK-E032-EZ06SS-080	69	80	-	12	20	-	6	23	-	-	0.30
	HSK-E032-EZ08SS-050	69	50	-	14	19	-	8	27	-	-	0.20
	HSK-E032-EZ08SS-080	69	80	-	14	22	-	8	27	-	-	0.30
	HSK-E032-EZ10SS-050	69	50	-	16	21	-	10	32	-	-	0.20
	HSK-E032-EZ10SS-080	69	80	-	16	22	-	10	32	-	-	0.30
	HSK-E032-EZ10SS-050	69	50	-	18	23	-	12	37	-	-	0.20
	HSK-E032-EZ10SS-080	69	80	-	18	24	-	12	37	-	-	0.30
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E040-EZ06SS-060	69	60	-	12	17	-	6	23	-	-	0.40
	HSK-E040-EZ06SS-070	69	70	-	12	18	-	6	23	-	-	0.50
	HSK-E040-EZ06SS-080	69	80	-	12	19	-	6	23	-	-	0.60
	HSK-E040-EZ08SS-060	69	60	-	14	19	-	8	27	-	-	0.40
	HSK-E040-EZ08SS-070	69	70	-	14	20	-	8	27	-	-	0.50
	HSK-E040-EZ08SS-080	69	80	-	14	21	-	8	27	-	-	0.60
	HSK-E040-EZ10SS-060	69	60	-	16	21	-	10	32	-	-	0.40
	HSK-E040-EZ10SS-070	69	70	-	16	22	-	10	32	-	-	0.50
	HSK-E040-EZ10SS-080	69	80	-	16	23	-	10	32	-	-	0.60
	HSK-E040-EZ12SS-060	69	60	-	18	23	-	12	37	-	-	0.40
	HSK-E040-EZ12SS-070	69	70	-	18	24	-	12	37	-	-	0.50
	HSK-E040-EZ12SS-080	69	80	-	18	25	-	12	37	-	-	0.60
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	HSK-E050-EZ06SS-070	69	70	-	12	17	-	6	23	-	-	0.50
	HSK-E050-EZ06SS-080	69	80	-	12	18	-	6	23	-	-	0.60
	HSK-E050-EZ06SS-100	69	100	-	12	20	-	6	23	-	-	0.80
	HSK-E050-EZ08SS-070	69	70	-	14	19	-	8	27	-	-	0.50
	HSK-E050-EZ08SS-080	69	80	-	14	20	-	8	27	-	-	0.60
	HSK-E050-EZ08SS-100	69	100	-	14	22	-	8	27	-	-	0.80
	HSK-E050-EZ10SS-070	69	70	-	16	21	-	10	32	-	-	0.50
	HSK-E050-EZ10SS-080	69	80	-	16	22	-	10	32	-	-	0.60
	HSK-E050-EZ10SS-100	69	100	-	16	24	-	10	32	-	-	0.80
	HSK-E050-EZ12SS-070	69	70	-	18	23	-	12	37	-	-	0.50
	HSK-E050-EZ12SS-080	69	80	-	18	24	-	12	37	-	-	0.60
	HSK-E050-EZ12SS-100	69	100	-	18	26	-	12	37	-	-	0.80

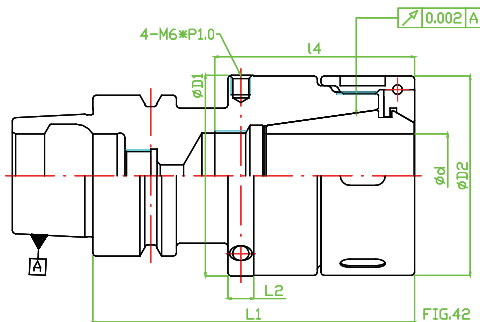
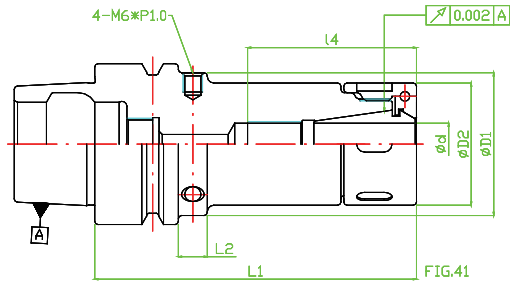
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

HSK-E-SGER

SPEED TIGER

SGER power ER collet chucks+balanced nano ball bearing nut NxxSGX

SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米鋼珠螺帽 NxxSGX



143

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E032-SGER16-070	42	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.50
	HSK-E032-SGER20-070	42	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGX nano	W-FK05	0.60
	HSK-E032-SGER25-070	42	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.70
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E040-SGER16-070	42	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.50
	HSK-E040-SGER16-100	42	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.70
	HSK-E040-SGER20-070	42	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGX nano	W-FK05	0.60
	HSK-E040-SGER20-100	42	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	0.80
	HSK-E040-SGER25-070	42	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.70
	HSK-E040-SGER25-100	42	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	0.90
	HSK-E040-SGER32-070	42	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	0.80
	HSK-E040-SGER32-100	42	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E050-SGER16-070	41	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.70
	HSK-E050-SGER16-100	41	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.90
	HSK-E050-SGER20-070	41	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGX nano	W-FK04	0.80
	HSK-E050-SGER20-100	41	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.00
	HSK-E050-SGER25-080	42	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	0.90
	HSK-E050-SGER25-100	42	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.10
	HSK-E050-SGER32-080	42	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	1.00
	HSK-E050-SGER32-100	42	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.20
	HSK-E050-SGER40-080	42	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.60
	HSK-E050-SGER40-100	42	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.90

產品FIG.41 & 42出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.41 & 42 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◌=few stock | STOCK無標示=單生產品 // STOCK BLANK=on request

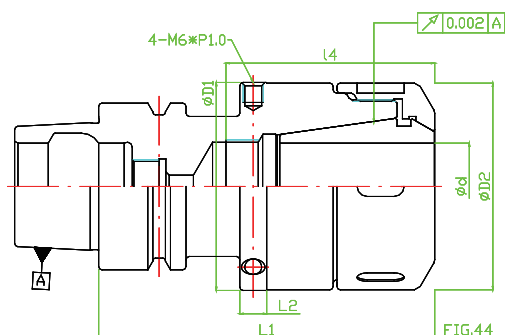
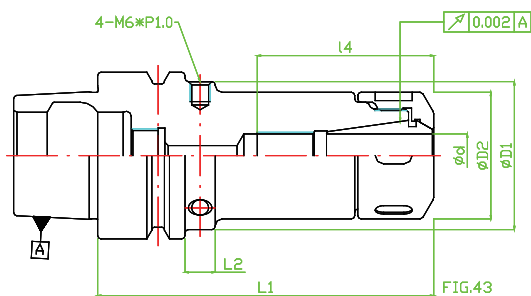
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-E-SGER

SGER power ER collet chucks+balanced nano nut NxxSGSX

SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX

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動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E032-SGER16SX-070	44	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.50
	HSK-E032-SGER20SX-070	44	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSX nano	W-FK05	0.60
	HSK-E032-SGER25SX-070	44	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	0.70
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E040-SGER16SX-070	44	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.50
	HSK-E040-SGER16SX-100	44	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.70
	HSK-E040-SGER20SX-070	44	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSX nano	W-FK05	0.60
	HSK-E040-SGER20SX-100	44	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.80
	HSK-E040-SGER25SX-070	44	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	0.70
	HSK-E040-SGER25SX-100	44	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	0.90
	HSK-E040-SGER32SX-070	44	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	0.80
	HSK-E040-SGER32SX-100	44	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E050-SGER16SX-070	43	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.70
	HSK-E050-SGER16SX-100	43	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.90
	HSK-E050-SGER20SX-070	43	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGSX nano	W-FK04	0.80
	HSK-E050-SGER20SX-100	43	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.00
	HSK-E050-SGER25SX-080	44	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	0.90
	HSK-E050-SGER25SX-100	44	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.10
	HSK-E050-SGER32SX-080	44	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	1.00
	HSK-E050-SGER32SX-100	44	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.20
	HSK-E050-SGER40SX-080	44	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.60
	HSK-E050-SGER40SX-100	44	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.90

產品FIG.43 & 44出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.43 & 44 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

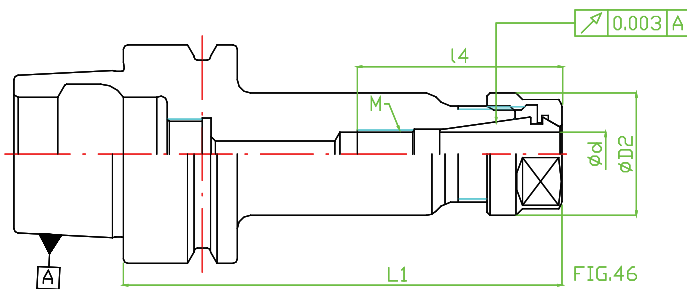
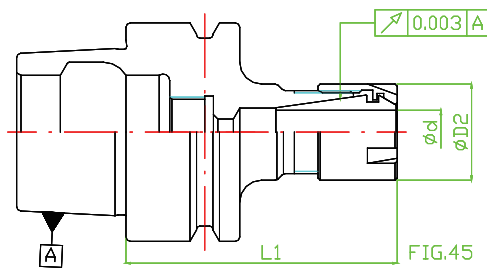
STOCK ○=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-E-ERM & ER SPEED TIGER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



145

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E040-ER20M-065	45	65	-	-	-	-	28	0.5-13.0	-	ER20	N20MX nano	W-ER20M	0.50
	HSK-E040-ER25M-080	45	80	-	-	-	-	35	0.5-16.0	-	ER25	N25MX nano	W-ER25M	0.70
	HSK-E040-ER11-060	46	60	-	-	-	-	19	0.5-7.0	-	ER11	N11SX nano	W-ER11	0.40
	HSK-E040-ER16-060	46	60	-	-	-	-	28	0.5-10.0	-	ER16	N16SX nano	W-ER16	0.50
	HSK-E040-ER16-080	46	80	-	-	-	-	28	0.5-10.0	-	ER16	N16SX nano	W-ER16	0.60
	HSK-E040-ER25-070	46	70	-	-	-	-	42	0.5-16.0	-	ER25	N25SX nano	W-FK06	0.70
	HSK-E040-ER25-080	46	80	-	-	-	-	42	0.5-16.0	-	ER25	N25SX nano	W-FK06	0.80
STOCK	CODE	FIG.	L1	L2	L3	L4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-E050-ER16-060	46	60	-	-	-	-	28	0.5-10.0	-	ER16	N16SX nano	W-ER16	0.60
	HSK-E050-ER16-100	46	100	-	-	46	-	28	0.5-10.0	M11*P1.0	ER16	N16SX nano	W-ER16	0.90
	HSK-E050-ER25-070	46	70	-	-	-	-	42	0.5-16.0	-	ER25	N25SX nano	W-FK06	0.80
	HSK-E050-ER25-100	46	100	-	-	53	-	42	0.5-16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.10
	HSK-E050-ER32-080	46	80	-	-	-	-	50	2.0-20.0	-	ER32	N32SX nano	W-FK08	1.00
	HSK-E050-ER32-100	46	100	-	-	52	-	50	2.0-20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.20

產品FIG.45出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.45 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.46出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.46 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產 // STOCK

BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-F



HSK-F

HSK是中空短圓錐刀桿

始於1991年德國阿亨大學開發

1993年成為德國規範DIN69893-1~6:1993

共有A, B, C, D, E & F六種錐度形式

2001年成為ISO規範ISO12164-1:2001

並將原本1/10的錐度改為1/9.98

確保錐度與端面兩面接觸時

中空短圓錐的大端能確實接觸

HSK is hollow shank short taper toolholders

It was developed by Achen University in Germany in 1991

In 1993, Germany published it as norm DIN69893-1~6:1993

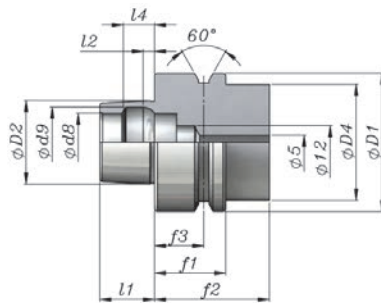
There are six different type of HSK: A, B, C, D, E & F

In 2001, ISO published it as norm ISO12164-1:2001

ISO revised the taper angle from 1:10 to 1:9.98

It was to make sure the taper D2 will contact the spindle

when HSK toolholder has dual contact on taper and face

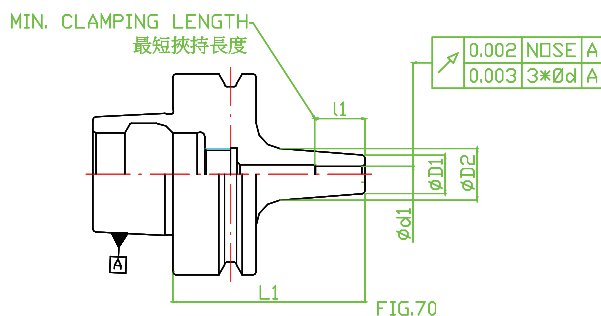


CLAMPING FORCE	HSK-F032	HSK-F040	HSK-F050	HSK-F063
	5KN	6.8KN	11KN	18KN

TAPER	HSK-F32	HSK-F40	HSK-F50	HSK-F63
ØD1 h10	32	40	50	63
ØD2	24 +0.007/+0.005	24 +0.007/+0.005	30 +0.007/+0.005	38 +0.009/+0.006
ØD4 max.	26	34	42	53
Ød8 H10	17	17	21	26
Ød9 H11	21.0	21.0	25.5	32.0
f1 0.0/-0.1	20.0	20.0	26.0	26.0
f2 min.	35	35	42	42
f3 +/-0.1	16	16	18	18
f3 +/-0.1	16.0	16.0	18.0	18.0
l1 0.0/-0.2	16	16	20	25
l2	3	4	5	6
l4 JS10	8.92	8.92	11.42	14.13

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

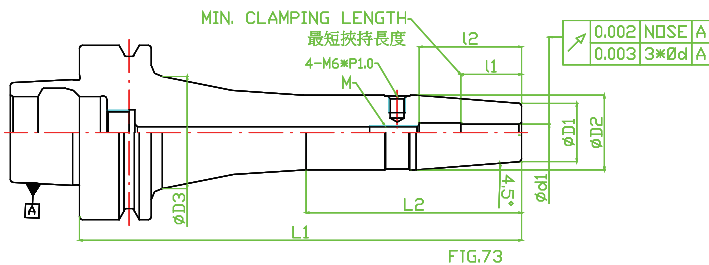
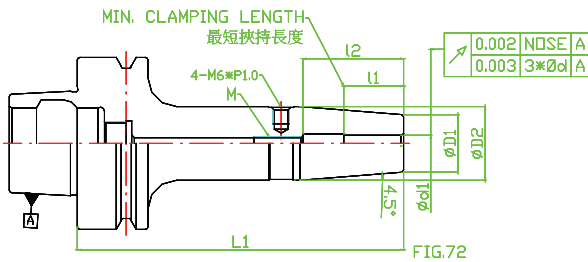
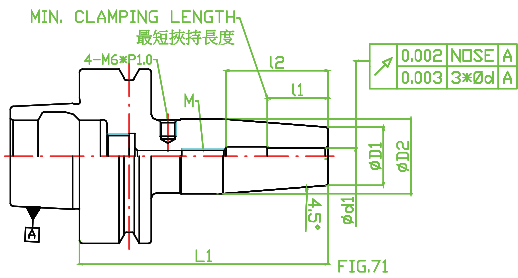
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-F040-EZ03-060	70	60	-	12	17	-	3	11	-	-	0.50
	HSK-F040-EZ04-060	70	60	-	12	17	-	4	14	-	-	0.50
	HSK-F040-EZ05-060	70	60	-	12	17	-	5	17	-	-	0.50
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-F063-EZ03-090	70	90	-	12	17	-	3	11	-	-	0.80
	HSK-F063-EZ03-120	70	120	-	12	17	-	3	11	-	-	1.10
	HSK-F063-EZ03-160	70	160	-	12	17	-	3	11	-	-	1.40
	HSK-F063-EZ04-090	70	90	-	12	17	-	4	14	-	-	0.80
	HSK-F063-EZ04-120	70	120	-	12	17	-	4	14	-	-	1.10
	HSK-F063-EZ04-160	70	160	-	12	17	-	4	14	-	-	1.40
	HSK-F063-EZ05-090	70	90	-	12	17	-	5	17	-	-	0.80
	HSK-F063-EZ05-120	70	120	-	12	17	-	5	17	-	-	1.10
	HSK-F063-EZ05-160	70	160	-	12	17	-	5	17	-	-	1.40

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request

HSK-F-EZ

Shrink fit chucks

熱膨脹燒結刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-F040-EZ06-065	71	65	-	21	27	-	6	23	32	M5*P0.8	0.50
	HSK-F040-EZ06-080	71	80	-	21	27	-	6	23	37	M5*P0.8	0.80
	HSK-F040-EZ08-065	71	65	-	21	27	-	8	27	32	M6*P1.0	0.50
	HSK-F040-EZ08-080	71	80	-	21	27	-	8	27	37	M6*P1.0	0.80
	HSK-F040-EZ10-065	71	65	-	24	31	-	10	32	37	M8*P1.0	0.60
	HSK-F040-EZ10-080	71	80	-	24	32	-	10	32	42	M8*P1.0	0.90
	HSK-F040-EZ12-065	71	65	-	24	31	-	12	37	37	M10*P1.0	0.60
	HSK-F040-EZ12-090	71	90	-	24	32	-	12	37	42	M10*P1.0	0.90
	HSK-F040-EZ16-090	71	90	-	27	34	-	16	40	51	M12*P1.0	0.90

產品FIG.71出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.71 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ○=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK
 BLANK=on request

■ Shrink fit chucks

● 熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

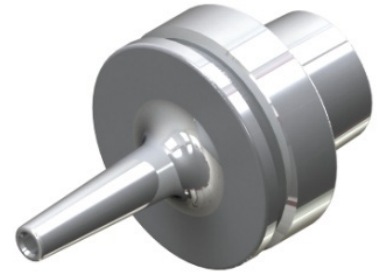
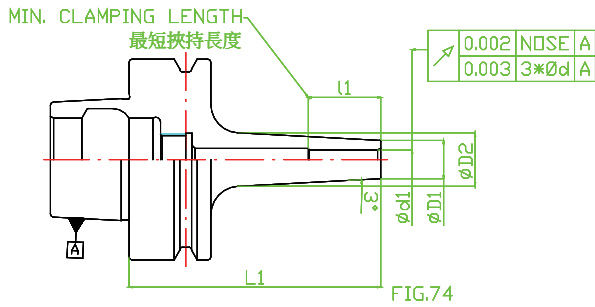
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-F063-EZ06-090	71	90	-	21	27	-	6	23	37	M5*P0.8	0.80
	HSK-F063-EZ06-120	72	120	-	21	27	-	6	23	37	M5*P0.8	1.10
	HSK-F063-EZ06-160	73	160	78	21	27	41	6	23	37	M5*P0.8	1.40
	HSK-F063-EZ08-090	71	90	-	21	27	-	8	27	37	M6*P1.0	0.80
	HSK-F063-EZ08-120	72	120	-	21	27	-	8	27	37	M6*P1.0	1.10
	HSK-F063-EZ08-160	73	160	78	21	27	41	8	27	37	M6*P1.0	1.40
	HSK-F063-EZ10-090	71	90	-	24	32	-	10	32	42	M8*P1.0	0.90
	HSK-F063-EZ10-120	72	120	-	24	32	-	10	32	42	M8*P1.0	1.20
	HSK-F063-EZ10-160	73	160	78	24	32	40	10	32	42	M8*P1.0	1.50
	HSK-F063-EZ12-090	71	90	-	24	32	-	12	37	48	M10*P1.0	0.90
	HSK-F063-EZ12-120	72	120	-	24	32	-	12	37	48	M10*P1.0	1.20
	HSK-F063-EZ12-160	73	160	78	24	32	40	12	37	48	M10*P1.0	1.50
	HSK-F063-EZ14-095	71	95	-	27	34	-	14	37	48	M10*P1.0	0.90
	HSK-F063-EZ14-120	72	120	-	27	34	-	14	37	48	M10*P1.0	1.20
	HSK-F063-EZ14-160	73	160	78	27	34	42	14	37	48	M10*P1.0	1.50
	HSK-F063-EZ16-095	71	95	-	27	34	-	16	40	51	M12*P1.0	0.90
	HSK-F063-EZ16-120	72	120	-	27	34	-	16	40	51	M12*P1.0	1.20
	HSK-F063-EZ16-160	73	160	78	27	34	42	16	40	51	M12*P1.0	1.50
	HSK-F063-EZ18-095	71	95	-	33	42	-	18	40	51	M12*P1.0	1.00
	HSK-F063-EZ18-120	72	120	-	33	42	-	18	40	51	M12*P1.0	1.30
	HSK-F063-EZ18-160	72	160	-	33	51	-	18	40	51	M12*P1.0	1.60
	HSK-F063-EZ20-100	71	100	-	33	42	-	20	42	53	M16*P1.0	1.00
	HSK-F063-EZ20-120	72	120	-	33	42	-	20	42	53	M16*P1.0	1.30
	HSK-F063-EZ20-160	72	160	-	33	51	-	20	42	53	M16*P1.0	1.60
	HSK-F063-EZ25-115	71	115	-	36	42	-	25	48	59	M16*P1.0	1.60

產品FIG.71-73出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.65 & 66 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK 無標示=接單生產產品 // STOCK
 BLANK=on request

HSK-F-EZSS

■ SlimSuper shrink fit chucks

● 超細型熱膨脹燒結刀桿



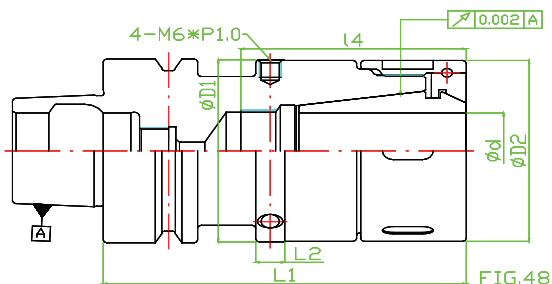
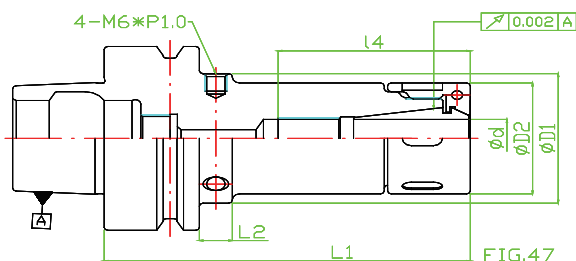
動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 219	重量 (KG) Weight
	HSK-F040-EZ06SS-080	74	80	-	12	18	-	6	23	-	-	0.40
	HSK-F040-EZ08SS-080	74	80	-	14	20	-	8	27	-	-	0.40
	HSK-F040-EZ10SS-080	74	80	-	16	22	-	10	32	-	-	0.50
	HSK-F040-EZ12SS-080	74	80	-	18	24	-	12	37	-	-	0.50

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

SGER power ER collet chucks

SGER 強力型 ER 筒夾刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-F040-SGER16-070	48	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGXnano	W-FK04	0.50
	HSK-F040-SGER16-100	48	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	ER16	N16SGXnano	W-FK04	0.70
	HSK-F040-SGER20-070	48	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGXnano	W-FK05	0.60
	HSK-F040-SGER20-100	48	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGXnano	W-FK05	0.80
	HSK-F040-SGER25-070	48	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGXnano	W-FK06	0.70
	HSK-F040-SGER25-100	48	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGXnano	W-FK06	0.90
	HSK-F040-SGER32-070	48	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGXnano	W-FK08	0.80
	HSK-F040-SGER32-100	48	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGXnano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-F063-SGER16-070	47	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGXnano	W-FK04	0.80
	HSK-F063-SGER16-100	47	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGXnano	W-FK04	1.00
	HSK-F063-SGER20-070	47	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGXnano	W-FK04	0.90
	HSK-F063-SGER20-100	47	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGXnano	W-FK05	1.10
	HSK-F063-SGER25-080	48	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGXnano	W-FK06	1.20
	HSK-F063-SGER25-100	48	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGXnano	W-FK06	1.40
	HSK-F063-SGER32-080	48	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGXnano	W-FK08	1.30
	HSK-F063-SGER32-100	48	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGXnano	W-FK08	1.50
	HSK-F063-SGER40-080	48	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGXnano	W-FK09	1.60
	HSK-F063-SGER40-100	48	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGXnano	W-FK09	1.90

產品FIG.47 & 48出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.47 & 48 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

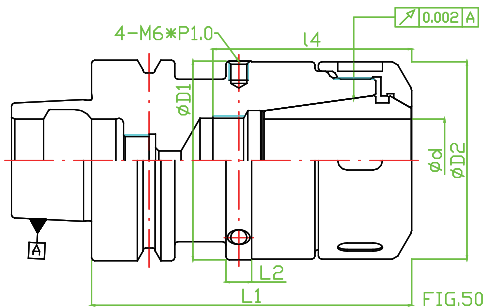
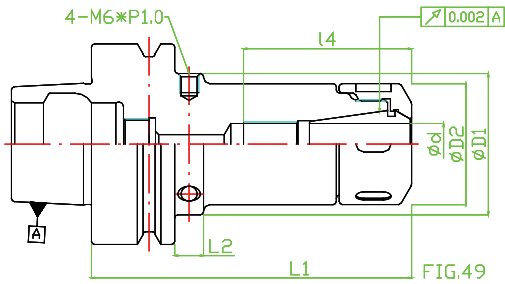
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-F-SGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX



動平衡G2.5/25,000RPM或小于1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-F040-SGER16SX-070	50	70	8	-	-	34.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.50
	HSK-F040-SGER16SX-100	50	100	8	-	46	34.4	34	0.5~10.0	M11*P1.0	N16SGSXnano	W-FK04	0.70	
	HSK-F040-SGER20SX-070	50	70	8	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSXnano	W-FK05	0.60
	HSK-F040-SGER20SX-100	50	100	8	-	51	38.4	38	0.5~13.0	M14*P1.0	N20SGSXnano	W-FK05	0.80	
	HSK-F040-SGER25SX-070	50	70	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	0.70
	HSK-F040-SGER25SX-100	50	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	N25SGSXnano	W-FK06	0.90	
	HSK-F040-SGER32SX-070	50	70	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSXnano	W-FK08	0.80
	HSK-F040-SGER32SX-100	50	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	N32SGSXnano	W-FK08	1.00	
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	HSK-F063-SGER16SX-070	49	70	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGSXnano	W-FK04	0.80
	HSK-F063-SGER16SX-100	49	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	N16SGSXnano	W-FK04	1.00	
	HSK-F063-SGER20SX-070	49	70	9	-	-	38.4	34	0.5~10.0	-	ER20	N20SGSXnano	W-FK04	0.90
	HSK-F063-SGER20SX-100	49	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	N20SGSXnano	W-FK05	1.10	
	HSK-F063-SGER25SX-080	50	80	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSXnano	W-FK06	1.20
	HSK-F063-SGER25SX-100	50	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	N25SGSXnano	W-FK06	1.40	
	HSK-F063-SGER32SX-080	50	80	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSXnano	W-FK08	1.30
	HSK-F063-SGER32SX-100	50	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	N32SGSXnano	W-FK08	1.50	
	HSK-F063-SGER40SX-080	50	80	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.60
	HSK-F063-SGER40SX-100	50	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSXnano	W-FK09	1.90

產品FIG.49 & 50出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.49 & 50 EQUIP WITH BALANCED NANO BALL

BEARING NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=單生產品 // STOCK

BLANK=on request

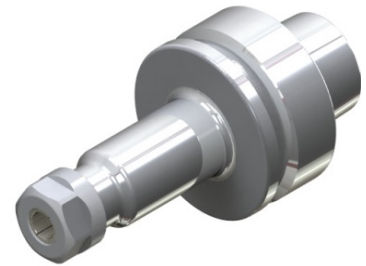
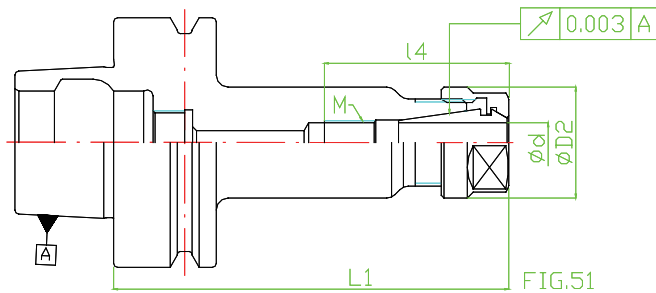
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

HSK-F-ERM & ER

SPEED TIGER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



155

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	L4	D1	D2	d	止動螺絲 (M) Screw Page 218	筒夾 COLLET Page 208	螺帽 NUT Page 216	板手 WRENCH Page 218	重量 (KG) Weight
	HSK-F063-ER16-100	51	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.00
	HSK-F063-ER25-100	51	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.40
	HSK-F063-ER32-090	51	90	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.40
	HSK-F063-ER40-070	51	70	-	-	-	-	63	3.0~26.0	-	ER40	N40SX nano	W-FK09	1.50

產品 FIG.51 出貨附件為高速平衡奈米螺帽 NxxSX nano*1pc // PRODUCTS IN FIG.51 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK
 BLANK=on request
 ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

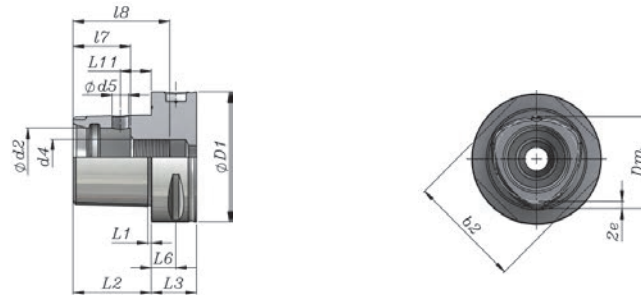
PSC



PSC

PSC是三角中空短圓錐刀桿
2008年成為ISO規範ISO26623-1:2008
稱為PSC刀桿

PSC is hollow polygon shank short taper toolholders
In 2008, ISO published it as norm ISO26623-1:2008
It is called PSC toolholders

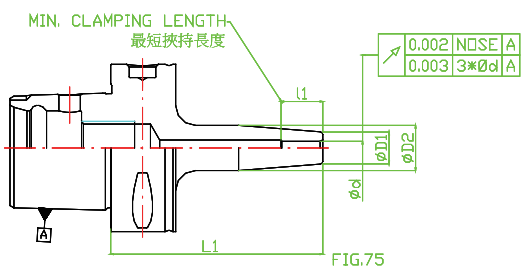


CLAMPING FORC	PSC032	PSC040	PSC050	PSC063	PSC080	PSC100
	-	-	32KN	41KN	50KN	70KN

TAPER	PSC032	PSC040	PSC050	PSC063	PSC080	PSC100
ØD1 +/-0.1	32	40	50	63	80	100
ØD2	15	18	21	28	32	43
d4	M12*P1.5	M14*P1.5	M16*P1.5	M20*P2.0	M20*P2.0	M24*P2.0
Ød5 +/-0.1	3.6	4.6	6.1	8.1	9.1	12.0
L1	2.5	2.5	3.0	3.0	3.0	3.0
L2 +/-0.1	19	24	30	38	48	60
L3 min.	15	20	20	22	30	36
L6 +/-0.15	6	8	10	12	12	16
L7 +/-0.15	13	15	20	27	28	40
L8 min.	25	30	37	47	48	70
L11 +/-0.1	8.0	11.5	14.0	15.5	25.0	26.5

shrink fit chucks

熱膨脹燒結刀桿

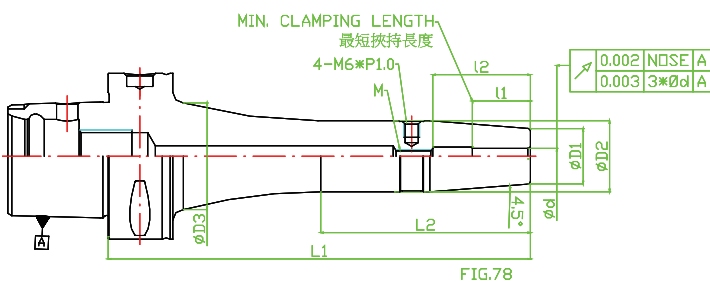
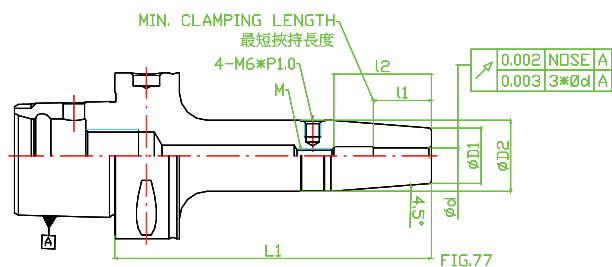
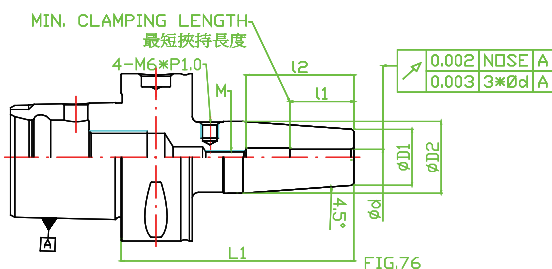


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動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	PSC063-EZ03-080	75	80	-	12	17	-	3	11	-	-	0.60
	PSC063-EZ04-080	75	80	-	12	17	-	4	14	-	-	0.65
	PSC063-EZ05-080	75	80	-	12	17	-	5	17	-	-	0.70

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



PSC-EZ

shrink fit chucks

熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	PSC040-EZ06-075	76	75	-	21	27	-	6	23	37	M5*P0.8	0.50
	PSC040-EZ08-075	76	75	-	21	27	-	8	27	37	M6*P1.0	0.50
	PSC040-EZ10-075	76	75	-	24	32	-	10	32	42	M8*P1.0	0.60
	PSC040-EZ12-075	76	75	-	24	32	-	12	37	48	M10*P1.0	0.60
	PSC040-EZ14-080	76	80	-	27	34	-	14	37	48	M10*P1.0	0.60
	PSC040-EZ16-080	76	80	-	27	34	-	16	40	51	M12*P1.0	0.60
	PSC040-EZ18-080	76	80	-	33	42	-	18	40	51	M12*P1.0	0.70
	PSC040-EZ20-085	76	85	-	33	42	-	20	42	53	M16*P1.0	0.70
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	PSC050-EZ06-075	76	75	-	21	27	-	6	23	37	M5*P0.8	0.70
	PSC050-EZ08-075	76	75	-	21	27	-	8	27	37	M6*P1.0	0.70
	PSC050-EZ10-075	76	75	-	24	32	-	10	32	42	M8*P1.0	0.80
	PSC050-EZ12-075	76	75	-	24	32	-	12	37	48	M10*P1.0	0.80
	PSC050-EZ14-080	76	80	-	27	34	-	14	37	48	M10*P1.0	0.80
	PSC050-EZ16-080	76	80	-	27	34	-	16	40	51	M12*P1.0	0.80
	PSC050-EZ18-080	76	80	-	33	42	-	18	40	51	M12*P1.0	0.90
	PSC050-EZ20-085	76	85	-	33	42	-	20	42	53	M16*P1.0	0.90
	PSC050-EZ25-090	76	90	-	44	53	-	25	48	59	M16*P1.0	1.50
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	PSC063-EZ06-080	76	80	-	21	27	-	6	23	37	M5*P0.8	0.80
	PSC063-EZ06-120	77	120	-	21	27	-	6	23	37	M5*P0.8	1.10
	PSC063-EZ06-160	78	160	78	21	27	41	6	23	37	M5*P0.8	1.40
	PSC063-EZ08-080	76	80	-	21	27	-	8	27	37	M6*P1.0	0.80
	PSC063-EZ08-120	77	120	-	21	27	-	8	27	37	M6*P1.0	1.10
	PSC063-EZ08-160	78	160	78	21	27	41	8	27	37	M6*P1.0	1.40
	PSC063-EZ10-080	76	80	-	24	32	-	10	32	42	M8*P1.0	0.90
	PSC063-EZ10-120	77	120	-	24	32	-	10	32	42	M8*P1.0	1.20
	PSC063-EZ10-160	78	160	78	24	32	40	10	32	42	M8*P1.0	1.50
	PSC063-EZ12-080	76	80	-	24	32	-	12	37	48	M10*P1.0	0.90
	PSC063-EZ12-120	77	120	-	24	32	-	12	37	48	M10*P1.0	1.20
	PSC063-EZ12-160	78	160	78	24	32	40	12	37	48	M10*P1.0	1.50
	PSC063-EZ14-085	76	85	-	27	34	-	14	37	48	M10*P1.0	0.90
	PSC063-EZ14-120	77	120	-	27	34	-	14	37	48	M10*P1.0	1.20
	PSC063-EZ14-160	78	160	78	27	34	42	14	37	48	M10*P1.0	1.50
	PSC063-EZ16-085	76	85	-	27	34	-	16	40	51	M12*P1.0	0.90
	PSC063-EZ16-120	77	120	-	27	34	-	16	40	51	M12*P1.0	1.20
	PSC063-EZ16-160	78	160	78	27	34	42	16	40	51	M12*P1.0	1.50
	PSC063-EZ18-085	76	85	-	33	42	-	18	40	51	M12*P1.0	1.00
	PSC063-EZ18-120	77	120	-	33	42	-	18	40	51	M12*P1.0	1.30
	PSC063-EZ18-160	77	160	-	33	42	-	18	40	51	M12*P1.0	1.60
	PSC063-EZ20-085	76	85	-	33	42	-	20	40	51	M16*P1.0	1.00
	PSC063-EZ20-120	77	120	-	33	42	-	20	42	53	M16*P1.0	1.30
	PSC063-EZ20-160	77	160	-	33	42	-	20	42	53	M16*P1.0	1.60
	PSC063-EZ25-090	76	90	-	44	53	-	25	48	59	M16*P1.0	1.60
	PSC063-EZ25-120	77	120	-	44	53	-	25	48	59	M16*P1.0	1.90
	PSC063-EZ25-160	77	160	-	44	53	-	25	48	59	M16*P1.0	2.20
	PSC063-EZ32-095	76	95	-	44	53	-	32	52	63	M16*P1.0	1.60
	PSC063-EZ32-120	77	120	-	44	53	-	32	52	63	M16*P1.0	1.90
	PSC063-EZ32-160	77	160	-	44	53	-	32	52	63	M16*P1.0	2.20

產品FIG.76, 77 & 78出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.76, 77 & 78 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ○=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產產品 // STOCK
 BLANK=on request

shrink fit chucks

熱膨脹燒結刀桿

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

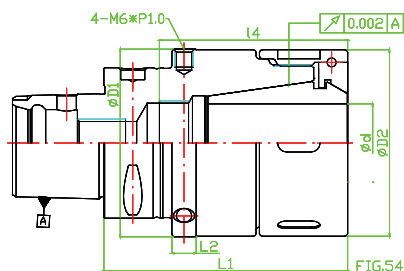
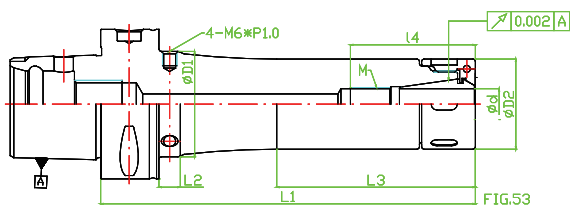
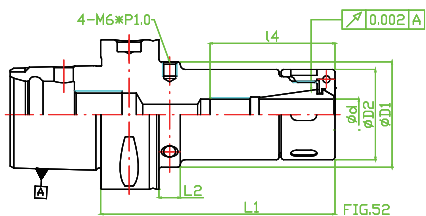
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min.	l2-max.	M	重量 (KG) Weight
	PSC080-EZ06-080	76	80	-	21	27	-	6	23	37	M5*P0.8	1.40
	PSC080-EZ08-080	76	80	-	21	27	-	8	27	37	M6*P1.0	1.40
	PSC080-EZ10-080	76	80	-	24	32	-	10	32	42	M8*P1.0	1.50
	PSC080-EZ12-080	76	80	-	24	32	-	12	37	48	M10*P1.0	1.50
	PSC080-EZ14-085	76	85	-	27	34	-	14	37	48	10*P1.0	1.50
	PSC080-EZ16-085	76	85	-	27	34	-	16	40	51	12*P1.0	1.50
	PSC080-EZ18-085	76	85	-	33	42	-	18	40	51	12*P1.0	1.60
	PSC080-EZ20-085	76	85	-	33	42	-	20	42	53	16*P1.0	1.60
	PSC080-EZ25-090	76	90	-	44	53	-	25	48	59	16*P1.0	2.20
	PSC080-EZ32-095	76	95	-	44	53	-	32	52	63	M16*P1.0	2.20

產品FIG.76, 77 & 78出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.76, 77 & 78 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產 // STOCK
 BLANK=on request

PSC-SGER

■ SGER power ER collet chucks+balanced nano ball bearing nut NxxSGX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米鋼珠螺帽 NxxSGX



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC040-SGER16-060	52	60	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.50
	PSC040-SGER16-100	52	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.70
	PSC040-SGER20-060	52	60	9	-	38.4	38	0.5~13.0	-	-	ER20	N20SGX nano	W-FK05	0.60
	PSC040-SGER20-100	52	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	0.80
	PSC040-SGER25-060	54	60	8	-	44.4	44	0.5~16.0	-	-	ER25	N25SGX nano	W-FK06	0.70
	PSC040-SGER25-100	54	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	0.90
	PSC040-SGER32-060	54	60	8	-	52.4	52	2.0~20.0	-	-	ER32	N32SGX nano	W-FK08	0.80
	PSC040-SGER32-100	54	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC050-SGER16-060	52	60	9	-	44.4	34	0.5~10.0	-	-	ER16	N16SGX nano	W-FK04	0.70
	PSC050-SGER16-100	52	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	0.90
	PSC050-SGER20-060	52	60	9	-	44.4	34	0.5~10.0	-	-	ER20	N20SGX nano	W-FK04	0.80
	PSC050-SGER20-100	52	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.00
	PSC050-SGER25-060	52	60	9	-	44.4	44	0.5~16.0	-	-	ER25	N25SGX nano	W-FK06	0.90
	PSC050-SGER25-100	52	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.10
	PSC050-SGER32-060	54	60	8	-	52.4	52	2.0~20.0	-	-	ER32	N32SGX nano	W-FK08	1.00
	PSC050-SGER32-100	54	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.20
	PSC050-SGER40-070	54	70	8	-	62.4	62	3.0~26.0	-	-	ER40	N40SGX nano	W-FK09	1.60
	PSC050-SGER40-100	54	100	8	-	62.4	62	3.0~26.0	-	-	ER40	N40SGX nano	W-FK09	1.90

產品FIG.52 & 54出貨附件為高速平衡奈米鋼珠螺帽NxxSGX nano*1pc // PRODUCTS IN FIG.52 & 54 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SGER power ER collet chucks+balanced nano ball bearing nut NxxSGX

SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米鋼珠螺帽 NxxSGX

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC063-SGER16-060	52	60	9	-	-	62.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	0.80
	PSC063-SGER16-100	52	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.00
	PSC063-SGER16-120	52	120	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.20
	PSC063-SGER16-160	53	160	9	86	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	1.60
	PSC063-SGER20-060	52	60	9	-	-	62.4	34	0.5~10.0	-	ER20	N20SGX nano	W-FK04	0.90
	PSC063-SGER20-100	52	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.10
	PSC063-SGER20-120	52	120	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.30
	PSC063-SGER20-160	53	160	9	86	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	1.70
	PSC063-SGER25-060	52	60	9	-	-	62.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	1.20
	PSC063-SGER25-100	52	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.40
	PSC063-SGER25-120	52	120	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	1.60
	PSC063-SGER25-160	52	160	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.00
	PSC063-SGER32-060	52	60	9	-	-	62.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	1.30
	PSC063-SGER32-100	52	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.50
	PSC063-SGER32-120	52	120	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	1.70
	PSC063-SGER32-160	52	160	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.10
	PSC063-SGER40-070	52	70	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.60
	PSC063-SGER40-100	52	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	1.90
	PSC063-SGER40-120	52	120	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.20
	PSC063-SGER40-160	52	160	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGX nano	W-FK09	2.80
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC080-SGER16-070	52	70	9	-	-	62.4	34	0.5~10.0	-	ER16	N16SGX nano	W-FK04	1.60
	PSC080-SGER16-100	52	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGX nano	W-FK04	2.20
	PSC080-SGER20-070	52	70	9	-	-	62.4	38	0.5~13.0	-	ER20	N20SGX nano	W-FK05	1.70
	PSC080-SGER20-100	52	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGX nano	W-FK05	2.30
	PSC080-SGER25-070	52	70	9	-	-	62.4	44	0.5~16.0	-	ER25	N25SGX nano	W-FK06	2.00
	PSC080-SGER25-100	52	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGX nano	W-FK06	2.60
	PSC080-SGER32-070	52	70	9	-	-	62.4	52	2.0~20.0	-	ER32	N32SGX nano	W-FK08	2.10
	PSC080-SGER32-100	52	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGX nano	W-FK08	2.70
	PSC080-SGER40-080	52	80	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	2.50
	PSC080-SGER40-100	52	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGX nano	W-FK09	3.40

產品FIG.52, 53 & 54出貨附件為高速平衡奈米鋼珠螺帽NxxSGX nano*1pc // PRODUCTS IN FIG.52, 53 & 54 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGX nano*1pc

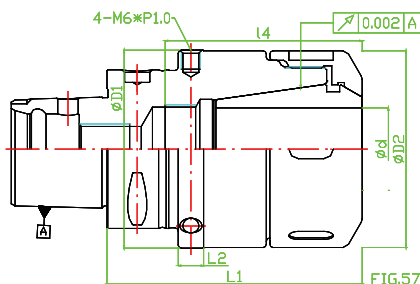
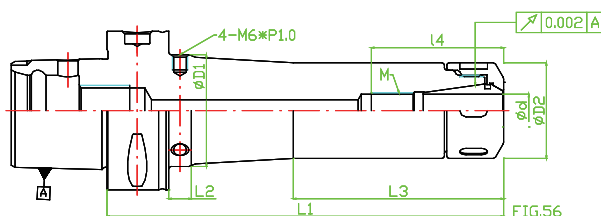
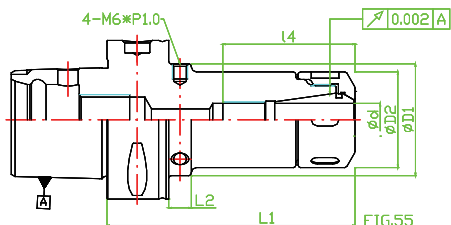
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

PSC-SGER

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC040-SGER16SX-060	55	60	9	-	-	38.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.50
	PSC040-SGER16SX-100	55	100	9	-	46	38.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.70
	PSC040-SGER20SX-060	55	60	9	-	-	38.4	38	0.5~13.0	-	ER20	N20SGSX nano	W-FK05	0.60
	PSC040-SGER20SX-100	55	100	9	-	51	38.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	0.80
	PSC040-SGER25SX-060	57	60	8	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	0.70
	PSC040-SGER25SX-100	57	100	8	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	0.90
	PSC040-SGER32SX-060	57	60	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	0.80
	PSC040-SGER32SX-100	57	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.00
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC050-SGER16SX-060	55	60	9	-	-	44.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.70
	PSC050-SGER16SX-100	55	100	9	-	46	44.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	0.90
	PSC050-SGER20SX-060	55	60	9	-	-	44.4	34	0.5~10.0	-	ER20	N20SGSX nano	W-FK04	0.80
	PSC050-SGER20SX-100	55	100	9	-	51	44.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.00
	PSC050-SGER25SX-060	55	60	9	-	-	44.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	0.90
	PSC050-SGER25SX-100	55	100	9	-	53	44.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.10
	PSC050-SGER32SX-060	57	60	8	-	-	52.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	1.00
	PSC050-SGER32SX-100	57	100	8	-	52	52.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.20
	PSC050-SGER40SX-070	57	70	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.60
	PSC050-SGER40SX-100	57	100	8	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.90

產品FIG.55 & 57出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.55 & 57 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

■ SGER power ER collet chucks+balanced nano nut NxxSGSX

● SGER 強力型 ER 筒夾刀桿 + 高速平衡奈米螺帽 NxxSGSX

動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC063-SGER16SX-060	55	60	9	-	-	62.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	0.80
	PSC063-SGER16SX-100	55	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.00
	PSC063-SGER16SX-120	55	120	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.20
	PSC063-SGER16SX-160	56	160	9	86	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	1.60
	PSC063-SGER20SX-060	55	60	9	-	-	62.4	34	0.5~10.0	-	ER20	N20SGSX nano	W-FK04	0.90
	PSC063-SGER20SX-100	55	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.10
	PSC063-SGER20SX-120	55	120	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.30
	PSC063-SGER20SX-160	56	160	9	86	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	1.70
	PSC063-SGER25SX-060	55	60	9	-	-	62.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	1.20
	PSC063-SGER25SX-100	55	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.40
	PSC063-SGER25SX-120	55	120	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	1.60
	PSC063-SGER25SX-160	55	160	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.00
	PSC063-SGER32SX-060	55	60	9	-	-	62.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	1.30
	PSC063-SGER32SX-100	55	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.50
	PSC063-SGER32SX-120	55	120	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	1.70
	PSC063-SGER32SX-160	55	160	9	-	57	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.10
	PSC063-SGER40SX-070	55	70	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.60
	PSC063-SGER40SX-100	55	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	1.90
	PSC063-SGER40SX-120	55	120	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.20
	PSC063-SGER40SX-160	55	160	9	-	67	62.4	62	3.0~26.0	M28*P1.5	ER40	N40SGSX nano	W-FK09	2.80
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC080-SGER16SX-070	55	70	9	-	-	62.4	34	0.5~10.0	-	ER16	N16SGSX nano	W-FK04	1.60
	PSC080-SGER16SX-100	55	100	9	-	46	62.4	34	0.5~10.0	M11*P1.0	ER16	N16SGSX nano	W-FK04	2.20
	PSC080-SGER20SX-070	55	70	9	-	-	62.4	38	0.5~13.0	-	ER20	N20SGSX nano	W-FK05	1.70
	PSC080-SGER20SX-100	55	100	9	-	51	62.4	38	0.5~13.0	M14*P1.0	ER20	N20SGSX nano	W-FK05	2.30
	PSC080-SGER25SX-070	55	70	9	-	-	62.4	44	0.5~16.0	-	ER25	N25SGSX nano	W-FK06	2.00
	PSC080-SGER25SX-100	55	100	9	-	53	62.4	44	0.5~16.0	M18*P1.5	ER25	N25SGSX nano	W-FK06	2.60
	PSC080-SGER32SX-070	55	70	9	-	-	62.4	52	2.0~20.0	-	ER32	N32SGSX nano	W-FK08	2.10
	PSC080-SGER32SX-100	55	100	9	-	52	62.4	52	2.0~20.0	M24*P1.5	ER32	N32SGSX nano	W-FK08	2.70
	PSC080-SGER40SX-080	55	80	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	2.50
	PSC080-SGER40SX-100	55	100	9	-	-	62.4	62	3.0~26.0	-	ER40	N40SGSX nano	W-FK09	3.40

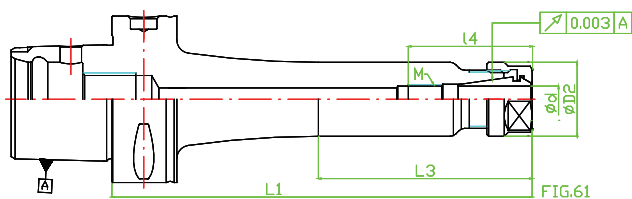
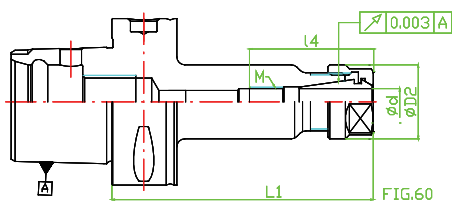
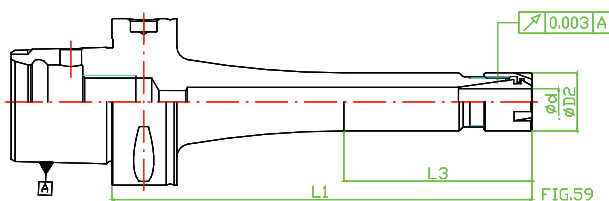
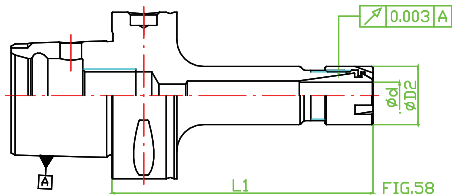
產品FIG.55, 56 & 57出貨附件為高速平衡奈米鋼珠螺帽NxxSGSX nano*1pc // PRODUCTS IN FIG.55, 56 & 57 EQUIP WITH BALANCED NANO BALL BEARING NUT NxxSGSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=少量在庫品 // STOCK ◯=few stock | STOCK無標示=接單生產 // STOCK BLANK=on request
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

PSC-ERM & PSC-ER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿



動平衡G2.5/25,000RPM或小於1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC040-ER16-070	60	70	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.50
	PSC040-ER25-055	60	55	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	0.60
	PSC040-ER32-055	60	55	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	0.70
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC050-ER16-055	60	55	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.60
	PSC050-ER25-055	60	55	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	0.70
	PSC050-ER32-060	60	60	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	0.80

產品FIG.58 & 59出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.58 & 59 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.60 & 61出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.60 & 61 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ◯=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

PSC-ERM & PSC-ER SPEED TIGER

ERM nut collet chucks & ER collet chucks

ERM 型螺帽筒夾刀桿 & ER 筒夾刀桿

動平衡G2.5/25,000RPM或小于1gmm // BALANCE TO G2.5/25,000RPM OR UNDER 1gmm

STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC063-ER11M-100	58	100	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	0.80
	PSC063-ER11M-160	58	160	-	-	-	-	16	0.5~7.0	-	ER11	N11MX nano	W-ER11M	1.40
	PSC063-ER16M-100	58	100	-	-	-	-	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	0.90
	PSC063-ER16M-160	59	160	-	70	-	36	22	0.5~10.0	-	ER16	N16MX nano	W-ER16M	1.50
	PSC063-ER16-060	60	60	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	0.70
	PSC063-ER16-100	60	100	-	-	46	-	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.00
	PSC063-ER16-160	61	160	-	86	46	36	28	0.5~10.0	M11*P1.0	ER16	N16SX nano	W-ER16	1.60
	PSC063-ER25-060	60	60	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	1.10
	PSC063-ER25-100	60	100	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.40
	PSC063-ER25-130	60	130	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	1.70
	PSC063-ER25-160	60	160	-	-	53	-	42	0.5~16.0	M18*P1.5	ER25	N25SX nano	W-FK06	2.00
	PSC063-ER32-060	60	60	-	-	-	-	50	2.0~20.0	-	ER32	N32SX nano	W-FK08	1.20
	PSC063-ER32-100	60	100	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.50
	PSC063-ER32-130	60	130	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.80
	PSC063-ER32-160	60	160	-	-	57	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	2.10
	PSC063-ER40-065	60	65	-	-	-	-	63	3.0~26.0	-	ER40	N40SX nano	W-FK09	1.40
	PSC063-ER40-100	60	100	-	-	67	-	63	3.0~26.0	M28*P1.5	ER40	N40SX nano	W-FK09	1.90
STOCK	CODE	FIG.	L1	L2	L3	l4	ØD1	ØD2	Ød	M	COLLET	NUT	WRENCH	W(KG)
	PSC080-ER16-065	60	65	-	-	-	-	28	0.5~10.0	-	ER16	N16SX nano	W-ER16	1.40
	PSC080-ER25-070	60	70	-	-	-	-	42	0.5~16.0	-	ER25	N25SX nano	W-FK06	1.80
	PSC080-ER32-070	60	70	-	-	52	-	50	2.0~20.0	M24*P1.5	ER32	N32SX nano	W-FK08	1.90
	PSC080-ER40-070	60	70	-	-	-	-	63	3.0~26.0	-	ER40	N40SX nano	W-FK09	2.10

產品FIG.58 & 59出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.58 & 59 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc
 產品FIG.60 & 61出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.60 & 61 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc
 STOCK ◎=標準在庫品 // STOCK ⊙=regular stock | STOCK ○=少量在庫品 // STOCK 無標示=接單生產 // STOCK BLANK=on request
 ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

EXTENSION

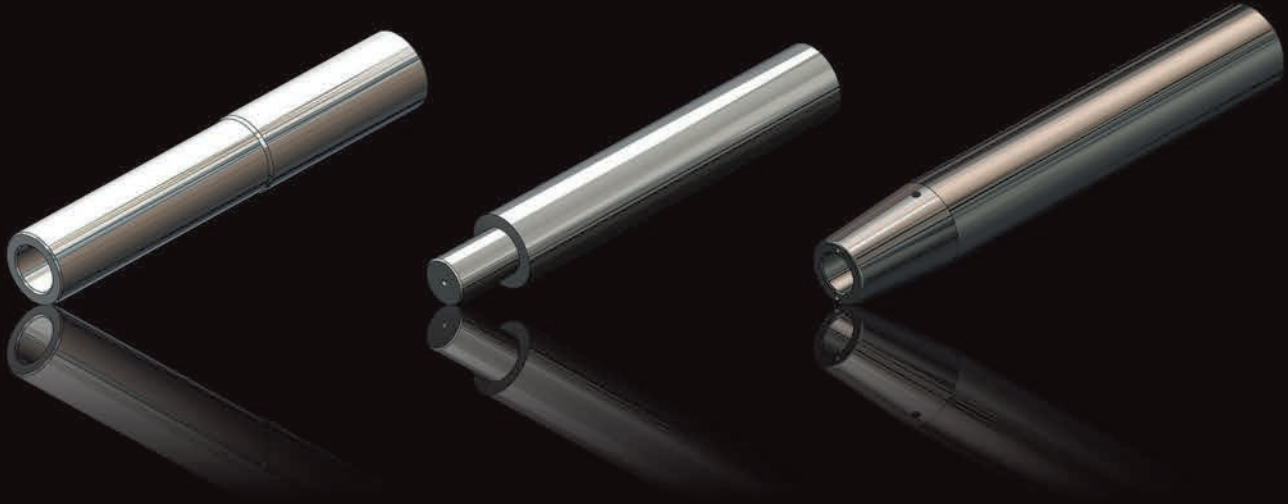


Illustration of Different Match

雙頭龍內冷燒結抗震刀桿組各種組合示意圖

任何形式刀桿
(油壓/側固/ER/DC/SK... 等)
Chucks

各系列燒結刀桿
Shrink Fit Chucks

燒結捨棄式刀頭
Shrink Fit Heads

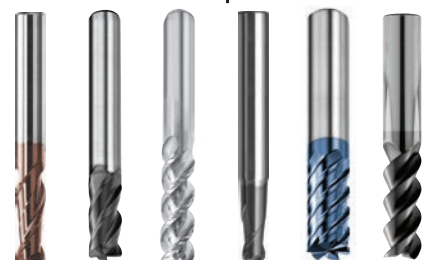
1. 運用雙頭龍設計搭配燒結方式降低偏擺，提高刀具壽命
 2. 低利時代，降低刀具成本
 3. 多樣選擇，靈活運用
1. Reduce the run-out and improve tool life by using dual End Anti-Vibration Shrink Fit Extension.
 2. Reduce the cost of cutting tools.
 3. Many choices and with more flexible applications.

1. 鎢鋼抗震材質
 2. 多種規格可供選擇
 3. 製作過程較容易
 4. 環保節能最佳選擇
 5. 以燒結方式結合、提供更高精度
 6. 可搭配中心出水
1. Carbide anti-vibration materials.
 2. Many specifications for your option.
 3. Manufacturing process becomes easier.
 4. Best choice for eco-friendly.
 5. Higher accuracy by sinter incorporated
 6. Work with coolant is available.

內冷中心孔
Internal coolant hole

雙頭龍轉接座
Adapter

1. 震虎、山謙聯名開發 (專利產品，仿冒必究)
 2. 雙頭龍燒結式轉接座 讓您更靈活運用與加工
1. Speed Tiger and YAMAKEN co-branded developed. (Patent Product, All Rights Reserved.)
 2. More flexible application by using the adapter of Dual End Anti-Vibration Shrink Fit Extension.



新露頭角全系列刀具
Power Tips

中心出水鑽頭
Drills/Coolant Drills

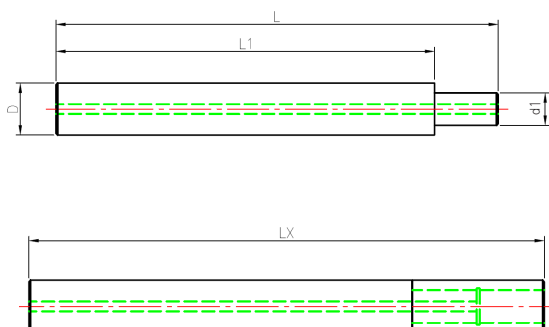
各式鎢鋼材質刀具
Carbide End Mills

NEW

SPEED TIGER

■ Dual End Carbide Anti-Vibration Shrink Fit Extension

● 雙頭龍錳鋼抗震延長桿



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MODE	Shank Diameter	d1 Front Diameter	Shank Length	Full Length	Length of Combination
型號	D 柄徑	d1 前端柄徑	L1 柄長	L 總長	LX 組合總長
S1006-L120	10	6	87	103	120
S1006-L160			127	143	160
S1006-L200			167	183	200
S1006-L300			267	283	300
S1208-L120	12	8	85	102	120
S1208-L160			125	142	160
S1208-L200			165	182	200
S1208-L300			265	282	300
S1610-L120	16	10	79	99	120
S1610-L160			119	139	160
S1610-L200			159	179	200
S1610-L300			259	279	300
S2012-L120	20	12	79	99	120
S2012-L160			119	139	160
S2012-L200			159	179	200
S2012-L300			259	279	300
S2516-L120	25	16	71	95	120
S2516-L160			111	135	160
S2516-L200			151	175	200
S2516-L300			251	275	300
S3220-L120	32	20	59	89	120
S3220-L160			99	129	160
S3220-L200			139	169	200
S3220-L300			239	269	300

NEW

Adapter

● 雙頭龍轉接座



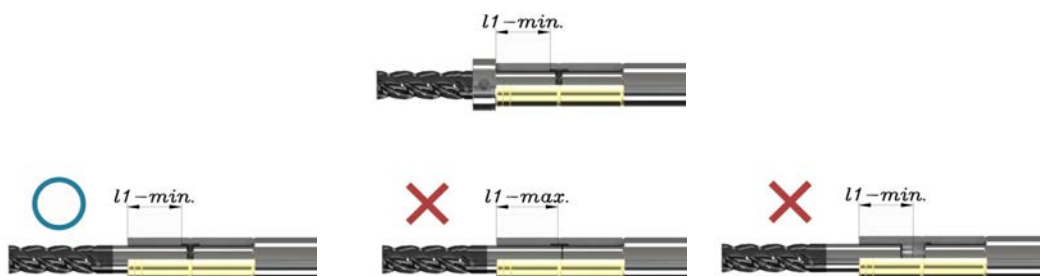
材質：SKD 鋼材
Material: SKD Steel

MODE	Diameter	d1 Diameter	d2 Diameter	L1 Shrink Length 刀具燒結長度		Full Length
型號	D 外徑	d1 刀桿端孔徑	d2 刀具端孔徑	Min. 最短燒結長度	Max. 最長燒結長度	L 總長
SD10-EZ06-EZ04-033	10	6	4	14	16	33
SD10-EZ06-EZ06-033			6	14		
SD12-EZ08-EZ04-035			4	14		
SD12-EZ08-EZ06-035	12	8	6	15	17	35
SD12-EZ08-EZ08-035			8	16		
SD16-EZ10-EZ06-041			6	15		
SD16-EZ10-EZ08-041	16	10	8	16	20	41
SD16-EZ10-EZ10-041			10	19		
SD20-EZ12-EZ08-041			8	16		
SD20-EZ12-EZ10-041	20	12	10	19	20	41
SD20-EZ12-EZ12-041			12	19		
SD25-EZ16-EZ10-049			10	19		
SD25-EZ16-EZ12-049	25	16	12	19	24	49
SD25-EZ16-EZ16-049			16	23		
SD32-EZ20-EZ12-061			12	19		
SD32-EZ20-EZ16-061	32	20	16	23	30	61
SD32-EZ20-EZ20-061			20	29		

獲台灣專利 字號：新型第 M 515426 號
Patent of Taiwan No.: M 515426
獲中國專利 字號：201520716712.3
Patent of China No.: 201520716712.3

屬於高溫作業，操作時需要全程穿戴耐熱手套。
小孔徑 4 在刀具交換時，每次都需要清潔刀桿內孔。
6 孔徑以上在刀具交換 10 次時，需要清潔刀桿內孔 1 次。
錯誤的刀具夾持長度將會 "永久" 損壞熱膨脹燒結刀桿內孔。
刀具端面與鎢鋼柄端面貼合將會影響精度。
可使用刀刀固定器，設定夾持長度。

Wear heat resist gloves during the operation of heating tool change
Clean the bore every time tool change for 3, 4 & 5 mm
Clean the bore once for every 10 times tool change tool for 6mm and above
Wrong clamping length will damage the shrink fit chucks "FOREVER"
Precision will be affected when tool contact with Carbide Fit Extension
Use ezShrink cutter shank holder set up clamping length



Fixture of Heating & Instructions

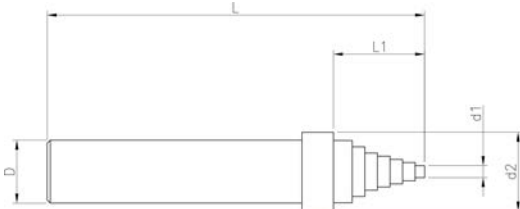
燒結加熱治具及操作說明

SPEED TIGER

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■ Fixture of Heating

● 燒結加熱治具



MODE 品名	d1	d2	L	L1	D
Fixture of Heating 燒結加熱治具 Order No. 品號 D07250110101	3.8	25	120	29	20

Unit: mm

■ Shrink fit program for Cutting Tool, Adapter, and Dual End Carbide Anti-Vibration Shrink Fit Extension.

● 結合抗震延長桿及刀具

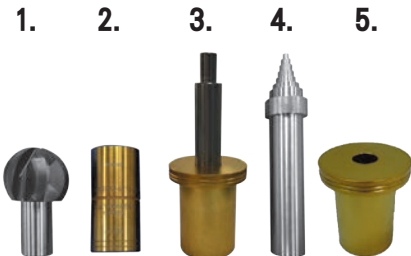
STEP1

Integrate Carbide Cutting Tool into Dual End Carbide Anti-Vibration Shrink Fit Extension by using Adapter. All you need are listed below:

1. Cutting Tools, e.g. Power Tips, Carbide End Mills/Drills.
2. Adapter
3. Dual End Carbide Anti-Vibration Shrink Fit Extension with corresponding Extension Base
4. Fixture of Heating
5. Extension Base (Mode EZ BASE S20) for Fixture of Heating

使用雙頭龍轉接座結合抗震延長桿及刀具，準備物品如下：

1. 刀具
2. 雙頭龍轉接座
3. 抗震延長桿 + 對應尺寸之延長桿基座
4. 燒結加熱治具
5. 燒結加熱治具基座 (型號：EZ BASE S20)



STEP2

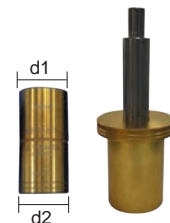
Make sure the size of d1 and d2 of Adapter.

d1: The size of Shrink Fit Extension.

d2: The shank dia. of Cutting Tool.

Also, put the Dual End Carbide Anti-Vibration Shrink Fit Extension onto the corresponding Extension Base.

確認雙頭龍轉接座兩端尺寸：d1 延長桿端孔徑，d2 刀具端孔徑。
將抗震延長桿放至基座準備。



STEP3

After cleaning, put Adapter onto the Fixture of Heating, and start to operate Induction Machine.

清潔完成後，取雙頭龍轉接座放至燒結加熱治具上，準備進行加熱。



STEP4

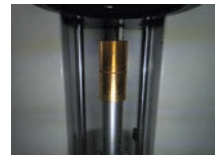
Set up the time for heating by the diameter.
 參考加熱秒數設定表，設定孔徑及加熱秒數。

**STEP5**

Start heating.
 將雙頭龍轉接座進行加熱。

**STEP6**

After heating, insert Adapter into the Dual End Carbide Anti-Vibration Shrink Fit Extension by pliers.
 加熱完成後，將雙頭龍轉接座夾至抗震延長桿上方並接合。

**STEP7**

1. And then insert the Cutting Tool into Adapter.
2. If the Cutting Tool cannot insert into Adapter, then the Adapter needs to be heated again.
1. 直接將刀具接合至雙頭龍轉接座。
2. 若刀具無法放入接合，雙頭龍轉接座則需再次加熱。

**STEP8**

Move the tool with base to Water Cooling Station and start to cool.
 After cooling, a set of shrink fit cutting tool is available to use.
 將接合完成刀具組放置水冷機進行降溫，即完成操作。



Shrink fit program for Shrink Fit Head and Dual End Carbide Anti-Vibration Shrink Fit Extension.

● 結合抗震延長桿及燒結刀頭

STEP1

Put Shrink Fit Head onto the Fixture of Heating, and start to operate Induction Machine.
 Also, put the Dual End Carbide Anti-Vibration Shrink Fit Extension onto the corresponding Extension Base.
 取燒結刀頭放至於燒結加熱治具上，準備進行加熱將抗震延長桿放至基座準備

**STEP2**

After heating, insert Shrink Fit Head into the Dual End Carbide Anti-Vibration Shrink Fit Extension by pliers.
 加熱完成後，將燒結刀頭夾至抗震延長桿上方並接合。

**STEP3**

Move the tool with base to Water Cooling Station and start to cool.
 After cooling, a set of Shrink Fit Head is available to screw its insert on it.
 將接合完成刀具組放置水冷機進行降溫。冷卻後，即可鎖上刀片。



Extension 延長桿

SPEED TIGER

直柄延長桿的使用頻率很高
但是要生產精準的直柄延長桿並不是很簡單
需要注意的有:

1. 直柄的尺寸公差

一般廠商生產的多數是h6公差
震虎生產的低於h5公差

2. 直柄的真圓度

一般廠商生產的是0.0020mm~0.0040mm
震虎生產的是0.0005~0.0015mm

3. 直柄的真直度

一般廠商生產的是0.0030mm~0.0060mm@300mm長
震虎生產的是0.0010mm~0.0030mm@300mm長

4. 直柄的表面粗糙度

一般廠商生產的是Ra0.8~Ra0.4
震虎生產的是Ra0.2

5. 孔徑的偏擺

一般廠商生產的是0.005mm~0.020mm
震虎生產的是0.003mm

Straight shank extensions are used frequently
However, it is never easy to produce an accurate one

There are some points to take care

1. Tolerance of shank

Most makers produce it in h6
SPEED TIGER produce it more precise than h5

2. Roundness of shank

Most makers produce it in 0.002mm~0.004mm
SPEED TIGER produce it in 0.0005mm~0.0015mm

3. Straightness of shank

Most makers produce it in 0.003mm~0.006mm@300mm
SPEED TIGER produce it in 0.0010mm~0.0030mm@300mm

4. Roughness of shank

Most makers produce it in Ra0.8~Ra0.4
SPEED TIGER produce it Ra0.2

5. Runout of the bore

Most makers produce it in 0.005mm~0.020mm
SPEED TIGER produce it 0.003mm

柄徑公差				柄徑公差			
Shank tolerance	h6	h5	SPEED TIGER h5	Shank tolerance	h6	h5	SPEED TIGER h5
3mm	0.000/-0.006	0.000/-0.004	-0.001/-0.004	1/8" 3.175mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005
4mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	3/16" 4.7625mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005
5mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	1/4" 6.35mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
6mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	5/16" 7.9375mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
8mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006	3/8" 9.525mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
10mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006	7/16" 11.125mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
12mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	1/2" 12.7mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
14mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	9/16" 14.2875mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
16mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	5/8" 15.875mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
18mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	11/16" 17.4625mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
20mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	3/4" 19.05mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
22mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	13/16" 20.6375mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
25mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	7/8" 22.225mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
32mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	15/16" 23.8125mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
40mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	1" 25.4mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
42mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	1 1/4" 31.75mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011

熱膨脹燒結刀桿種類:

Type of shrink fit chucks:

S-EZS / Slim



EZS=細型
EZS=slim type

S-EZSKK / Slim



EZSKK=鼻端出水細型
EZSKK=slim coolant through nose type

熱膨脹燒結刀桿種類:

Type of shrink fit chucks:

S-EZS / Slim

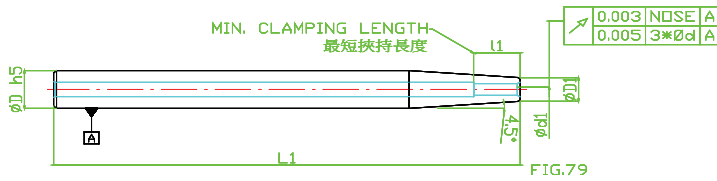


EZS=細型(附止動螺絲)
EZS=slim type(with back up screw)

S-EZS

■ Slim shrink fit extensions

● 細型熱膨脹燒結延長桿



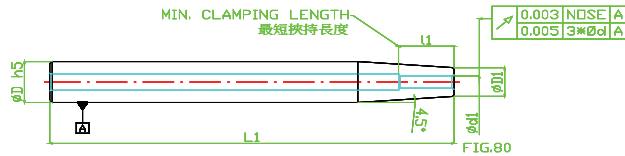
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STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S12-EZ03S-120	79	120	-	12	8	-	3	11	-	-	0.09
◎	S12-EZ03S-160	79	160	-	12	8	-	3	11	-	-	0.13
◎	S12-EZ04S-120	79	120	-	12	8	-	4	14	-	-	0.09
◎	S12-EZ04S-160	79	160	-	12	8	-	4	14	-	-	0.12
◎	S12-EZ05S-120	79	120	-	12	10	-	5	17	-	-	0.09
◎	S12-EZ05S-160	79	160	-	12	10	-	5	17	-	-	0.12
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S16-EZ03S-120	79	120	-	16	10	-	3	11	-	-	0.18
◎	S16-EZ03S-160	79	160	-	16	10	-	3	11	-	-	0.21
◎	S16-EZ04S-120	79	120	-	16	10	-	4	14	-	-	0.18
◎	S16-EZ04S-160	79	160	-	16	10	-	4	14	-	-	0.21
◎	S16-EZ05S-120	79	120	-	16	10	-	5	17	-	-	0.18
◎	S16-EZ05S-160	79	160	-	16	10	-	5	17	-	-	0.21
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S20-EZ03S-160	79	160	-	20	10	-	3	11	-	-	0.35
◎	S20-EZ04S-160	79	160	-	20	10	-	4	14	-	-	0.32
◎	S20-EZ05S-160	79	160	-	20	14	-	5	17	-	-	0.30

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

■ Slim shrink fit extensions

● 細型熱膨脹燒結延長桿



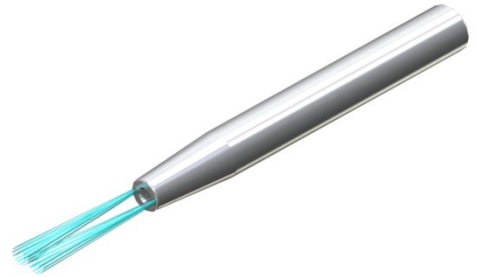
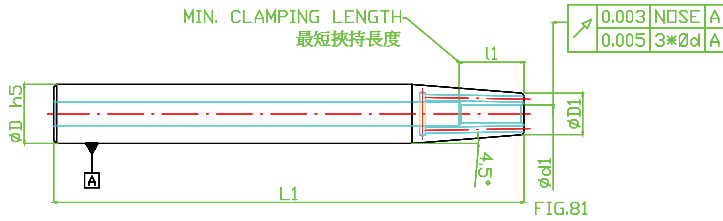
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S12-EZ06S-120	80	120	-	12	10	-	6	23	-	-	0.09
◎	S12-EZ06S-160	80	160	-	12	10	-	6	23	-	-	0.12
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S16-EZ06S-120	80	120	-	16	10	-	6	23	-	-	0.18
◎	S16-EZ06S-160	80	160	-	16	10	-	6	23	-	-	0.19
◎	S16-EZ08S-120	80	120	-	16	12	-	8	27	-	-	0.18
◎	S16-EZ08S-160	80	160	-	16	12	-	8	27	-	-	0.19
◎	S16-EZ10S-120	80	120	-	16	14	-	10	33	-	-	0.15
◎	S16-EZ10S-160	80	160	-	16	14	-	10	33	-	-	0.16
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S20-EZ06S-160	80	160	-	20	14	-	6	23	-	-	0.31
◎	S20-EZ06S-300	80	300	-	20	14	-	6	23	-	-	0.69
◎	S20-EZ08S-160	80	160	-	20	14	-	8	27	-	-	0.28
◎	S20-EZ08S-300	80	300	-	20	14	-	8	27	-	-	0.64
◎	S20-EZ10S-160	80	160	-	20	14	-	10	33	-	-	0.26
◎	S20-EZ10S-300	80	300	-	20	14	-	10	33	-	-	0.55
◎	S20-EZ12S-160	80	160	-	20	16	-	12	38	-	-	0.24
◎	S20-EZ12S-300	80	300	-	20	16	-	12	38	-	-	0.55
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S25-EZ06S-160	80	160	-	25	19	-	6	23	-	-	0.51
◎	S25-EZ06S-300	80	300	-	25	19	-	6	23	-	-	1.00
◎	S25-EZ08S-160	80	160	-	25	19	-	8	28	-	-	0.49
◎	S25-EZ08S-300	80	300	-	25	19	-	8	28	-	-	0.98
◎	S25-EZ10S-160	80	160	-	25	20	-	10	33	-	-	0.45
◎	S25-EZ10S-300	80	300	-	25	20	-	10	33	-	-	0.94
◎	S25-EZ12S-160	80	160	-	25	20	-	12	38	-	-	0.43
◎	S25-EZ12S-300	80	300	-	25	20	-	12	38	-	-	0.84
◎	S25-EZ14S-160	80	160	-	25	20	-	14	38	-	-	0.37
◎	S25-EZ14S-300	80	300	-	25	20	-	14	38	-	-	0.73
◎	S25-EZ16S-160	80	160	-	25	22	-	16	40	-	-	0.32
◎	S25-EZ16S-300	80	300	-	25	22	-	16	40	-	-	0.70
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	l1-min. 最短夾持長度 Min. Clamping Length	l2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S32-EZ10S-160	80	160	-	32	24	-	10	33	-	-	0.90
◎	S32-EZ10S-300	80	300	-	32	24	-	10	33	-	-	1.60
◎	S32-EZ12S-160	80	160	-	32	24	-	12	38	-	-	0.76
◎	S32-EZ12S-300	80	300	-	32	24	-	12	38	-	-	1.52
◎	S32-EZ14S-160	80	160	-	32	27	-	14	38	-	-	0.70
◎	S32-EZ14S-300	80	300	-	32	27	-	14	38	-	-	1.40
◎	S32-EZ16S-160	80	160	-	32	27	-	16	40	-	-	0.67
◎	S32-EZ16S-300	80	300	-	32	27	-	16	40	-	-	1.34
○	S32-EZ18S-160	80	160	-	32	27	-	18	40	-	-	0.61
○	S32-EZ18S-300	80	300	-	32	27	-	18	40	-	-	1.10
◎	S32-EZ20S-160	80	160	-	32	27	-	20	42	-	-	0.52
◎	S32-EZ20S-300	80	300	-	32	27	-	20	42	-	-	1.10

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request

S-EZSKK

■ Slim shrink fit extensions with coolant through nose

● 細型鼻端噴水熱膨脹燒結延長桿



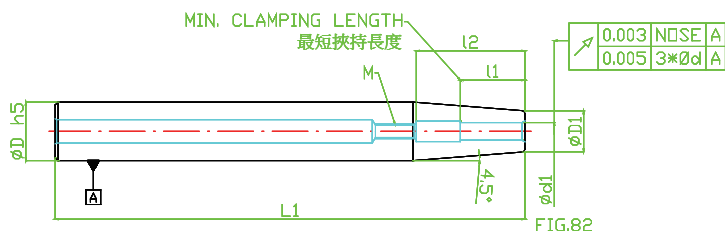
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STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S20-EZ06S-160KK	81	160	-	20	14	-	6	23	-	-	0.32
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S25-EZ06S-160KK	81	160	-	25	19	-	6	23	-	-	0.52
◎	S25-EZ08S-160KK	81	160	-	25	19	-	8	28	-	-	0.48
◎	S25-EZ10S-160KK	81	160	-	25	20	-	10	33	-	-	0.45
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S32-EZ10S-160KK	81	160	-	32	24	-	10	33	-	-	0.89
◎	S32-EZ12S-160KK	81	160	-	32	24	-	12	38	-	-	0.75
◎	S32-EZ14S-160KK	81	160	-	32	27	-	14	38	-	-	0.69
◎	S32-EZ16S-160KK	81	160	-	32	27	-	16	40	-	-	0.66

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

■ Shrink fit extensions(with back up screw)

● 細型熱膨脹燒結延長桿 (附止動螺絲)



STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S12-EZ06S-120BK	82	120	-	12	10	-	6	22	36	M5*P0.8	0.09
◎	S12-EZ06S-160BK	82	160	-	12	10	-	6	23	37	M5*P0.8	0.12
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S16-EZ06S-120BK	82	120	-	16	10	-	6	22	36	M5*P0.8	0.17
◎	S16-EZ06S-160BK	82	160	-	16	10	-	6	23	37	M5*P0.8	0.22
◎	S16-EZ08S-120BK	82	120	-	16	12	-	8	26	41	M6*P1.0	0.16
◎	S16-EZ08S-160BK	82	160	-	16	12	-	8	27	37	M6*P1.0	0.20
◎	S16-EZ10S-120BK	82	120	-	16	14	-	10	32	47	M8*P1.25	0.15
◎	S16-EZ10S-160BK	82	160	-	16	14	-	10	32	42	M8*P1.0	0.19
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S20-EZ06S-160BK	82	160	-	20	14	-	6	23	37	M5*P0.8	0.31
◎	S20-EZ08S-160BK	82	160	-	20	14	-	8	27	37	M6*P1.0	0.28
◎	S20-EZ10S-160BK	82	160	-	20	14	-	10	32	42	M8*P1.0	0.26
◎	S20-EZ12S-160BK	82	160	-	20	16	-	12	37	48	M10*P1.0	0.24
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S25-EZ06S-160BK	82	160	-	25	19	-	6	23	37	M5*P0.8	0.52
◎	S25-EZ08S-160BK	82	160	-	25	19	-	8	27	37	M6*P1.0	0.50
◎	S25-EZ10S-160BK	82	160	-	25	20	-	10	32	42	M8*P1.0	0.48
◎	S25-EZ12S-160BK	82	160	-	25	20	-	12	37	48	M10*P1.0	0.45
◎	S25-EZ14S-160BK	82	160	-	25	20	-	14	37	48	M10*P1.0	0.43
◎	S25-EZ16S-160BK	82	160	-	25	22	-	16	40	51	M12*P1.0	0.42
STOCK	CODE	FIG.	L1	L2	ØD1	ØD2	ØD3	Ød	I1-min. 最短夾持長度 Min. Clamping Length	I2-max. 最長夾持長度 Max. Clamping Length	止動螺絲 (M) Screw Page 218	重量 (KG) Weight
◎	S32-EZ10S-160BK	82	160	-	32	24	-	10	32	42	M8*P1.0	0.84
◎	S32-EZ12S-160BK	82	160	-	32	24	-	12	37	48	M10*P1.0	0.82
◎	S32-EZ14S-160BK	82	160	-	32	27	-	14	37	48	M10*P1.0	0.80
◎	S32-EZ16S-160BK	82	160	-	32	27	-	16	40	51	M12*P1.0	0.77
○	S32-EZ18S-160BK	82	160	-	32	27	-	18	40	51	M12*P1.0	0.75
◎	S32-EZ20S-160BK	82	160	-	32	27	-	20	42	53	M16*P1.0	0.73

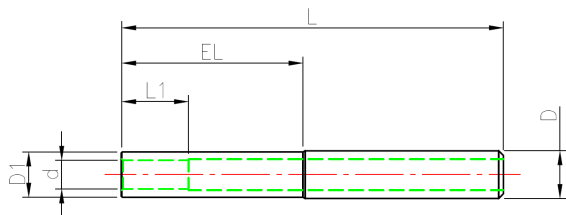
產品FIG.82出貨附件為長度調整螺絲BK-EZ-Mxx*1pc // PRODUCTS IN FIG.80 EQUIP WITH BACK UP SCREW BK-EZ-Mxx*1PC
 STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產 // STOCK
 BLANK=on request

S-EZ

■ Straight Shrink Fit Extension (Short Type)

● 燒結直柄短桿

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材質：SKD 鋼材
Material: SKD Steel

MODE	Shank Diameter	Diameter	Depth of Inside	Clamping Diameter	Min. Shrink Length	Full Length
型號	D 柄徑	D1 外徑	EL 外徑長度	d 夾持柄徑	L1 最短燒結長度	L 全長
D10 刀桿 (S10-EZ06ST-080)	10	9.5	38	6	16	80
D12 刀桿 (S12-EZ06ST-080)	12	11.5	33	6	16	80
D16 刀桿 (S16-EZ10ST-100)	16	15	50	10	20	100
D20 刀桿 (S20-EZ12ST-120)	20	19	68	12	20	120

Collet chuck extensions

直柄筒夾延長桿

SPEED TIGER

直柄筒夾延長桿的使用頻率很高
但是要生產精準的直柄延長桿並不是很簡單
需要注意的有：

1. 直柄的尺寸公差

一般廠商生產的多數是h6公差
震虎生產的低於h5公差

2. 直柄的真圓度

一般廠商生產的是0.0020mm~0.0040mm
震虎生產的是0.0005~0.0015mm

3. 直柄的真直度

一般廠商生產的是0.0030mm~0.0060mm@300mm長
震虎生產的是0.0010mm~0.0030mm@300mm長

4. 直柄的表面粗糙度

一般廠商生產的是Ra0.8~Ra0.4
震虎生產的是Ra0.2

5. 孔徑的偏擺

一般廠商生產的是0.005mm~0.020mm
震虎生產的是0.003mm

Straight shank collet chuck extensions are used frequently
However, it is never easy to produce an accurate one

There are some points to notice

1. Tolerance of shank

Most makers produce it in h6
SPEED TIGER produce it more precise than h5

2. Roundness of shank

Most makers produce it in 0.002mm~0.004mm
SPEED TIGER produce it in 0.0005mm~0.0015mm

3. Straightness of shank

Most makers produce it in 0.003mm~0.006mm@300mm
SPEED TIGER produce it in 0.0010mm~0.0030mm@300mm

4. Roughness of shank

Most makers produce it in Ra0.8~Ra0.4
SPEED TIGER produce it Ra0.2

5. Runout of the bore

Most makers produce it in 0.005mm~0.020mm
SPEED TIGER produce it 0.003mm

柄徑公差				柄徑公差			
Shank tolerance	h6	h5	SPEED TIGER h5	Shank tolerance	h6	h5	SPEED TIGER h5
3mm	0.000/-0.006	0.000/-0.004	-0.001/-0.004	1/8" 3.175mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005
4mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	3/16" 4.7625mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005
5mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	1/4" 6.35mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
6mm	0.000/-0.008	0.000/-0.005	-0.002/-0.005	5/16" 7.9375mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
8mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006	3/8" 9.525mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006
10mm	0.000/-0.009	0.000/-0.006	-0.003/-0.006	7/16" 11.125mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
12mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	1/2" 12.7mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
14mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	9/16" 14.2875mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
16mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	5/8" 15.875mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
18mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008	11/16" 17.4625mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
20mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	3/4" 19.05mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
22mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	13/16" 20.6375mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
25mm	0.000/-0.013	0.000/-0.009	-0.003/-0.009	7/8" 22.225mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
32mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	15/16" 23.8125mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
40mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	1" 25.4mm	0.000/-0.011	0.000/-0.008	-0.003/-0.008
42mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011	1 1/4" 31.75mm	0.000/-0.016	0.000/-0.011	-0.003/-0.011

直柄筒夾延長桿種類：

Type of straight shank collet chuck extensions:

S-ERM & S-ER



S=直柄
S=Straight shank

SL-ER



SL=側固直柄
SL=Straight shank with flat

SSL-ERM & SSL-ER



SSL=短鼻側固直柄
SSL=Short nose straight shank with flat

SSLD-ERM & SSLD-ER

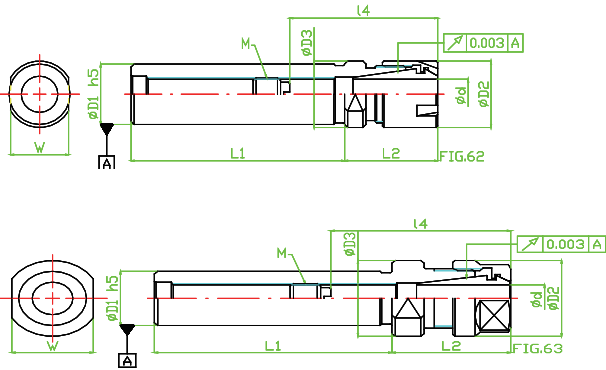


SSLD=雙頭短鼻側固直柄
SSLD=Double heads short nose straight shank with flat

S-ERM

Straight shank ERM nut collet chucks & straight shank ER collet chucks

直柄 ERM 型螺帽筒夾延長桿 & 直柄 ER 筒夾延長桿



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STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
◎	S16-ER11M-150	62	150	24	63	16	16	16	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.20
○	S16-ER11-150	63	150	24	63	16	16	19	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.20
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	S20-ER16M-070	62	70	31	84	20	22	22	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.25
○	S20-ER16M-150	62	150	31	60	20	22	22	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.50
	S20-ER20M-070	62	70	33	85	20	28	28	0.5~13.0	M14.P1.0	25	ER20	N20MXnano	W-ER20M	0.30
○	S20-ER20M-150	62	150	33	60	20	28	28	0.5~13.0	M14.P1.0	25	ER20	N20MXnano	W-ER20M	0.55
	S20-ER16-070	63	70	35	88	20	28	28	0.5~10.0	M11.P1.0	24	ER16	N16SXnano	W-ER16	0.30
	S20-ER20-070	63	70	36	88	20	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SXnano	W-ER20	0.35
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	S25-ER16M-070	62	70	24	77	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.35
○	S25-ER16M-150	62	150	24	58	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.70
	S25-ER20M-070	62	70	33	85	25	28	28	0.5~13.0	M14.P1.0	25	ER20	N20MXnano	W-ER20M	0.35
○	S25-ER20M-150	62	150	33	58	25	28	28	0.5~13.0	M14.P1.0	25	ER20	N20MXnano	W-ER20M	0.70
	S25-ER25M-070	62	70	35	85	25	35	35	0.5~16.0	M18.P1.5	32	ER25	N25MXnano	W-ER25M	0.40
	S25-ER25M-150	62	150	35	58	25	35	35	0.5~16.0	M18.P1.5	32	ER25	N25MXnano	W-ER25M	0.70
○	S25-ER16-070	63	70	35	88	25	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SXnano	W-ER16	0.35
○	S25-ER16-150	63	150	35	58	25	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SXnano	W-ER16	0.70
	S25-ER20-070	63	70	36	88	25	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SXnano	W-ER20	0.40
○	S25-ER25-070	63	70	40	91	25	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SXnano	W-FK06	0.45
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
○	S32-ER20-080	63	80	36	98	32	34	36	0.5~13.0	M14.P1.0	32	ER20	N20SXnano	W-ER20	0.65
○	S32-ER25-080	63	80	40	101	32	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SXnano	W-FK06	0.70
○	S32-ER32-080	63	80	48	107	32	50	50	2.0~20.0	M24.P1.5	46	ER32	N32SXnano	W-FK08	0.80
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	S3/4-ER16M-070	62	70	31	79	19.05	22	22	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.20
	S3/4-ER11-070	63	70	24	79	19.05	19	22	0.5~7.0	M8*P1.0	19	ER11	N11SXnano	W-ER11	0.20
	S3/4-ER16-070	63	70	35	88	19.05	28	28	0.5~10.0	M11.P1.0	24	ER16	N16SXnano	W-ER16	0.20
	S3/4-ER20-070	63	70	36	88	19.05	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SXnano	W-ER20	0.25
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	S1-ER16M-070	62	70	24	77	25.4	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.35
	S1-ER20M-070	62	70	33	85	25.4	28	28	0.5~13.0	M14.P1.0	24	ER20	N20MXnano	W-ER20M	0.35
	S1-ER16-070	63	70	35	88	25.4	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SXnano	W-ER16	0.35
	S1-ER20-070	63	70	36	88	25.4	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SXnano	W-ER20	0.40
	S1-ER25-070	63	70	40	91	25.4	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SXnano	W-FK06	0.45

產品FIG.62 & 63有M的出貨附件為長度調整螺絲BK-ERxx-Mxx*1pc // PRODUCTS IN FIG.62 & 63 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*1pc

產品FIG.62出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.62 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.63出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.63 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

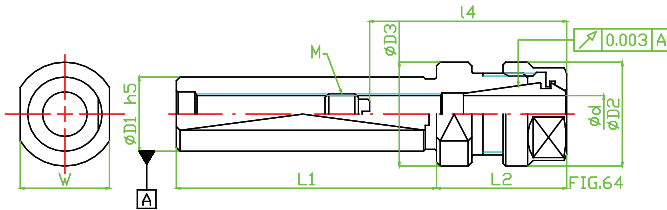
STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SL-ERM & ER SPEED TIGER

Straight shank with flat ERM nut collet chucks & straight shank with flat ER collet chucks

- 側固直柄 ERM 型螺帽筒夾延長桿 & 側固直柄 ER 筒夾延長桿



STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
○	○	○	○	○	○	○	○	○	○	M	W	COLLET	NUT	WRENCH	W(KG)
	SL16-ER11-070	64	70	24	79	16	19	22	0.5~7.0	M8*P1.0	19	ER11	N11SX nano	W-ER11	0.20
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
○	SL20-ER11-070	64	70	24	79	20	19	22	0.5~7.0	M8*P1.0	19	ER11	N11SX nano	W-ER11	0.20
○	SL20-ER11-105	64	105	24	79	20	19	22	0.5~7.0	M8*P1.0	19	ER11	N11SX nano	W-ER11	0.25
◎	SL20-ER16-070	64	70	35	88	20	28	28	0.5~10.0	M11.P1.0	24	ER16	N16SX nano	W-ER16	0.25
◎	SL20-ER20-070	64	70	36	88	20	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SX nano	W-ER20	0.30
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
○	SL22-ER11-105	64	105	24	79	22	19	27	0.5~7.0	M8*P1.0	24	ER11	N11SX nano	W-ER11	0.35
○	SL22-ER16-105	64	105	35	93	22	28	28	0.5~10.0	M11.P1.0	24	ER16	N16SX nano	W-ER16	0.40
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SL25-ER16-070	64	70	28	81	25	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SX nano	W-ER16	0.35
○	SL25-ER16-105	64	105	28	86	25	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SX nano	W-ER16	0.50
◎	SL25-ER20-070	64	70	34	88	25	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SX nano	W-ER20	0.40
◎	SL25-ER25-070	64	70	42	91	25	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SX nano	W-FK06	0.45
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SL32-ER20-080	64	80	36	116	32	34	36	0.5~13.0	M14.P1.0	32	ER20	N20SX nano	W-ER20	0.65
◎	SL32-ER25-080	64	80	40	120	32	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SX nano	W-FK06	0.70
◎	SL32-ER32-080	64	80	48	128	32	50	50	2.0~20.0	M24.P1.5	46	ER32	N32SX nano	W-FK08	0.80
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SL40-ER32-110	64	110	48	112	40	50	50	2.0~20.0	M24.P1.5	46	ER32	N32SX nano	W-FK08	1.20
◎	SL40-ER40-110	64	110	54	118	40	63	58	3.0~26.0	M28.P1.5	50	ER40	N40SX nano	W-FK09	1.40
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SL3/4-ER11-070	64	70	24	79	19.05	19	22	0.5~7.0	M8*P1.0	19	ER11	N11SX nano	W-ER11	0.20
	SL3/4-ER16-070	64	70	35	88	19.05	28	28	0.5~10.0	M11.P1.0	24	ER16	N16SX nano	W-ER16	0.20
	SL3/4-ER20-070	64	70	36	88	19.05	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SX nano	W-ER20	0.25
STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SL1-ER16-070	64	70	35	88	25.4	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SX nano	W-ER16	0.35
○	SL1-ER16-105	64	105	35	123	25.4	28	32	0.5~10.0	M11.P1.0	27	ER16	N16SX nano	W-ER16	0.50
	SL1-ER20-070	64	70	36	88	25.4	34	32	0.5~13.0	M14.P1.0	27	ER20	N20SX nano	W-ER20	0.40
	SL1-ER25-070	64	70	40	91	25.4	42	40	0.5~16.0	M18.P1.5	36	ER25	N25SX nano	W-FK06	0.45

產品FIG.64有M的出貨附件為長度調整螺絲

BK-ERxx-Mxx*1pc // PRODUCTS IN FIG.64 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*1pc

產品FIG.64出貨附件為高速平衡奈米螺帽

NxxSX nano*1pc // PRODUCTS IN FIG.64 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

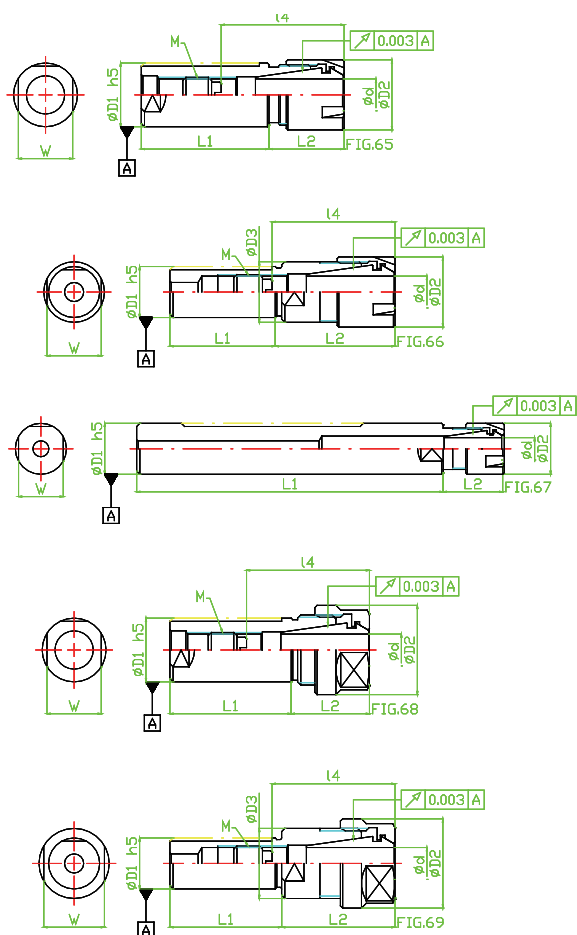
BLANK=on request

ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

SSL-ERM & ER

Short nose type straight shank with flat ERM nut collet chucks & Short nose type straight shank with flat ER collet chucks

- 短鼻型側固直柄 ERM 型螺帽 SSL-ERM & SSL-ER 筒夾延長桿 & 短鼻型側固直柄 ER 筒夾延長桿



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STOCK	CODE	FIG.	L1	L2	l4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
	SSL16-ER11M-035	65	35	17	37	16	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MX nano	W-ER11M	0.10
○	SSL16-ER11M-070	65	70	17	57	16	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MX nano	W-ER11M	0.15
◎	SSL16-ER11M-151	67	151	20	-	16	16	-	0.5~7.0	-	14	ER11	N11MX nano	W-ER11M	0.25
	SSL16-ER16M-035	66	35	35	43	16	22	19	0.5~10.0	M11.P1.0	17	ER16	N16MX nano	W-ER16M	0.10
◎	SSL16-ER16M-070	66	70	35	43	16	22	19	0.5~10.0	M11.P1.0	17	ER16	N16MX nano	W-ER16M	0.15
	SSL16-ER20M-035	66	35	40	48	16	28	24	0.5~13.0	M11.P1.0	22	ER20	N20MX nano	W-ER20M	0.15
	SSL16-ER11-035	68	35	16	36	16	19	-	0.5~7.0	M8*P1.0	14	ER11	N11SX nano	W-ER11	0.10
◎	SSL16-ER11-070	68	70	16	56	16	19	-	0.5~7.0	M8*P1.0	14	ER11	N11SX nano	W-ER11	0.15
	SSL16-ER16-035	69	35	35	43	16	28	22	0.5~10.0	M11.P1.0	19	ER16	N16SX nano	W-ER16	0.15
	SSL16-ER16-070	69	70	35	43	16	28	22	0.5~10.0	M11.P1.0	19	ER16	N16SX nano	W-ER16	0.20
○	SSL16-ER20-035T	69	35	40	48	16	34	25	0.5~13.0	M11.P1.0	22	ER20	N20SX nano	W-ER20	0.20

產品 FIG.65, 66, 67, 68 & 69 有 M 的出貨附件為長度調整螺絲 BK-ERxx-Mxx*1pc // PRODUCTS IN FIG.65, 66, 67, 68 & 69 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*1pc

產品 FIG.65, 66 & 67 出貨附件為高速平衡奈米螺帽 NxxMX nano*1pc // PRODUCTS IN FIG.65, 66 & 67 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品 FIG.68 & 69 出貨附件為高速平衡奈米螺帽 NxxSX nano*1pc // PRODUCTS IN FIG.68 & 69 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

ER 筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SSL-ERM & ER

SPEED TIGER

Short nose type straight shank with flat ERM nut collet chucks & Short nose type straight shank with flat ER collet chucks

● 短鼻型側固直柄 ERM 型螺帽筒夾延長桿 & 短鼻型側固直柄 ER 筒夾延長桿

STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
	SSL20-ER11M-040	65	40	17	37	20	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.15
	SSL20-ER11M-070	65	70	17	57	20	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.20
	SSL20-ER11M-105	65	105	17	67	20	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.25
	SSL20-ER16M-040	65	40	24	47	20	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.15
◎	SSL20-ER16M-070	65	70	24	72	20	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.20
	SSL20-ER16M-105	65	105	24	82	20	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.30
◎	SSL20-ER16M-137	67	137	27	-	20	22	-	0.5~10.0	-	17	ER16	N16MXnano	W-ER16M	0.35
	SSL20-ER20M-040	66	40	30	44	20	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.15
◎	SSL20-ER20M-070	66	70	30	44	20	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.20
	SSL20-ER20M-105	66	105	30	44	20	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.30
○	SSL20-ER11-040	68	40	16	41	20	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.15
○	SSL20-ER11-068(Y1751#0100)	68	68	18	-	20	19	-	0.5~7.0	-	17	ER11	N11SXnano	W-ER11	0.20
◎	SSL20-ER11-070	68	70	16	61	20	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.20
○	SSL20-ER11-105	68	105	16	76	20	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.30
○	SSL20-ER16-040	69	40	22	45	20	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.15
◎	SSL20-ER16-070	69	70	22	70	20	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.20
	SSL20-ER16-105	69	105	22	80	20	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.30
	SSL20-ER20-040	69	40	30	70	20	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.20
	SSL20-ER20-070	69	70	30	100	20	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.25
○	SSL20-ER20-105	69	105	30	135	20	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.35
○	SSL20-ER25-060	69	60	35	52	20	42	32	0.5~16.0	M14.P1.0	27	ER25	N25SXnano	W-FK06	0.35
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
◎	SSL22-ER16M-071(#301-25-010)	65	71	32	-	22	22	-	0.5~10.0	-	19	ER16	N16MXnano	W-ER16M	0.25
◎	SSL22-ER16M-098(#301-24-010)	65	98	32	-	22	22	-	0.5~10.0	-	19	ER16	N16MXnano	W-ER16M	0.30
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
○	SSL23-ER16M-075(#3200359)	65	75	24	82	23	22	-	0.5~10.0	-	19	ER16	N16MXnano	W-ER16M	0.25
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
	SSL25-ER16M-050	65	50	24	57	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.20
○	SSL25-ER16M-070	65	70	24	72	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.25
○	SSL25-ER16M-105	65	105	24	82	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.35
	SSL25-ER20M-050	65	50	26	58	25	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.20
◎	SSL25-ER20M-070	65	70	26	78	25	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.25
○	SSL25-ER20M-105	65	105	26	83	25	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.35
◎	SSL25-ER20M-137.5	67	138	29	-	25	28	-	0.5~13.0	-	22	ER20	N20MXnano	W-ER20M	0.45
	SSL25-ER11-050	68	50	16	66	25	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.20
○	SSL25-ER11-062T	68	62	18	-	25	19	-	0.5~7.0	-	22	ER11	N11SXnano	W-ER11	0.25
◎	SSL25-ER11-070	68	70	16	86	25	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.30
	SSL25-ER11-105	68	105	16	121	25	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.35
○	SSL25-ER16-050	68	50	23	73	25	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.20
○	SSL25-ER16-062T	68	62	23	-	25	28	-	0.5~10.0	-	22	ER16	N16SXnano	W-ER16	0.30
◎	SSL25-ER16-070	68	70	23	93	25	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.30
○	SSL25-ER16-105	68	105	23	128	25	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.40
○	SSL25-ER20-050	68	50	24	56	25	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.25
◎	SSL25-ER20-070	68	70	24	76	25	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.35
○	SSL25-ER20-105	68	105	24	81	25	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.40
◎	SSL25-ER25-050	69	50	35	52	25	42	32	0.5~16.0	M18.P1.5	27	ER25	N25SXnano	W-FK06	0.35
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
○	SSL32-ER20-060	68	60	24	68	32	34	-	0.5~13.0	M14.P1.0	27	ER20	N20SXnano	W-ER20	0.40
○	SSL32-ER25-060	68	60	27	68	32	42	-	0.5~16.0	M18.P1.5	27	ER25	N25SXnano	W-FK06	0.45
	SSL32-ER32-060	69	60	40	79	32	50	40	2.0~20.0	M24.P1.5	36	ER32	N32SXnano	W-FK08	0.50

產品FIG.65, 66, 67, 68 & 69有M的出貨附件為長度調整螺絲BK-ERxx-Mxx*1pc // PRODUCTS IN FIG.65, 66, 67, 68 & 69 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*1pc
 產品FIG.65, 66 & 67出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.65, 66 & 67 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc
 產品FIG.68 & 69出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.68 & 69 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc
 STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request
 ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SSL-ERM & ER

Short nose type straight shank with flat ERM nut collet chucks & Short nose type straight shank with flat ER collet chucks

- 短鼻型側固直柄 ERM 型螺帽筒夾延長桿 & 短鼻型側固直柄 ER 筒夾延長桿

STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
	SSL5/8-ER11M-035	65	35	17	37	15.875	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.10
	SSL5/8-ER11M-070	65	70	17	57	15.875	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.15
	SSL5/8-ER16M-035	66	35	35	43	15.875	22	19	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.10
	SSL5/8-ER16M-070	66	70	35	43	15.875	22	19	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.15
	SSL5/8-ER20M-035	66	35	40	48	15.875	28	24	0.5~13.0	M11.P1.0	22	ER20	N20MXnano	W-ER20M	0.15
	SSL5/8-ER11-035	68	35	16	36	15.875	19	-	0.5~7.0	M8*P1.0	14	ER11	N11SXnano	W-ER11	0.10
◎	SSL5/8-ER11-070	68	70	16	56	15.875	19	-	0.5~7.0	M8*P1.0	14	ER11	N11SXnano	W-ER11	0.15
○	SSL5/8-ER16-035T	69	35	27	-	15.875	28	22	0.5~10.0	-	19	ER16	N16SXnano	W-ER16	0.15
	SSL5/8-ER16-070	69	70	35	43	15.875	28	22	0.5~10.0	M11.P1.0	19	ER16	N16SXnano	W-ER16	0.15
○	SSL5/8-ER20-035T	69	35	44	47	15.875	34	25	0.5~13.0	M11.P1.0	22	ER20	N20SXnano	W-ER20	0.20
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SSL3/4-ER11M-040	65	40	17	37	19.05	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.10
	SSL3/4-ER11M-070	65	70	17	57	19.05	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.15
	SSL3/4-ER11M-105	65	105	17	67	19.05	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.20
◎	SSL3/4-ER16M-040	65	40	24	47	19.05	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.15
◎	SSL3/4-ER16M-070	65	70	24	72	19.05	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.20
◎	SSL3/4-ER16M-105	65	105	24	82	19.05	22	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.25
	SSL3/4-ER20M-040	66	40	30	44	19.05	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.15
○	SSL3/4-ER20M-070	66	70	30	44	19.05	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.20
	SSL3/4-ER20M-105	66	105	30	44	19.05	28	24	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.25
○	SSL3/4-ER11-040	68	40	16	41	19.05	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.15
◎	SSL3/4-ER11-070	68	70	16	61	19.05	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.20
○	SSL3/4-ER11-105	68	105	16	76	19.05	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.25
○	SSL3/4-ER16-040	69	40	22	45	19.05	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.15
◎	SSL3/4-ER16-040(#561-130)	69	40	25	-	19.05	28	-	0.5~10.0	-	17	ER16	N16SXnano	W-ER16	0.15
○	SSL3/4-ER16-070	69	70	22	70	19.05	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.20
○	SSL3/4-ER16-105	69	105	22	80	19.05	28	-	0.5~10.0	M11.P1.0	17	ER16	N16SXnano	W-ER16	0.25
	SSL3/4-ER20-040	69	40	30	44	19.05	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.20
	SSL3/4-ER20-070	69	70	30	44	19.05	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.25
	SSL3/4-ER20-105	69	105	30	44	19.05	34	25	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.30
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SSL1-ER16M-050	65	50	24	57	25.4	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.25
◎	SSL1-ER16M-070	65	70	24	72	25.4	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.30
◎	SSL1-ER16M-105	65	105	24	82	25.4	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.40
	SSL1-ER20M-050	65	50	26	58	25.4	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.25
	SSL1-ER20M-070	65	70	26	78	25.4	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.30
	SSL1-ER20M-105	65	105	26	83	25.4	28	-	0.5~13.0	M14.P1.0	22	ER20	N20MXnano	W-ER20M	0.45
	SSL1-ER11-050	68	50	16	51	25.4	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.25
	SSL1-ER11-070	68	70	16	71	25.4	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.30
○	SSL1-ER11-085T	68	85	18	-	25.4	19	-	0.5~7.0	-	22	ER11	N11SXnano	W-ER11	0.35
	SSL1-ER11-105	68	105	16	76	25.4	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.40
	SSL1-ER16-050	68	50	23	56	25.4	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.25
	SSL1-ER16-070	68	70	23	76	25.4	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.35
○	SSL1-ER16-074(#562-166)	68	74	26	-	25.4	28	-	0.5~10.0	-	22	ER16	N16SXnano	W-ER16	0.40
	SSL1-ER16-105	68	105	23	81	25.4	28	-	0.5~10.0	M11.P1.0	22	ER16	N16SXnano	W-ER16	0.45
	SSL1-ER20-050	68	50	24	56	25.4	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.30
	SSL1-ER20-070	68	70	24	76	25.4	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.40
	SSL1-ER20-105	68	105	24	81	25.4	34	-	0.5~13.0	M14.P1.0	22	ER20	N20SXnano	W-ER20	0.45
	SSL1-ER25-050	68	50	35	52	25.4	42	32	0.5~16.0	M18.P1.5	27	ER25	N25SXnano	W-FK06	0.30

產品FIG.65, 66, 67, 68 & 69有M的出貨附件為長度調整螺絲BK-ERxx-Mxx*1pc // PRODUCTS IN FIG.65, 66, 67, 68 & 69 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*1pc

產品FIG.65, 66 & 67出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.65, 66 & 67 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc

產品FIG.68 & 69出貨附件為高速平衡奈米螺帽NxxSX nano*1pc // PRODUCTS IN FIG.68 & 69 EQUIP WITH BALANCED NANO NUT NxxSX nano*1pc

STOCK ◎=標準在庫品 // STOCK ○=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

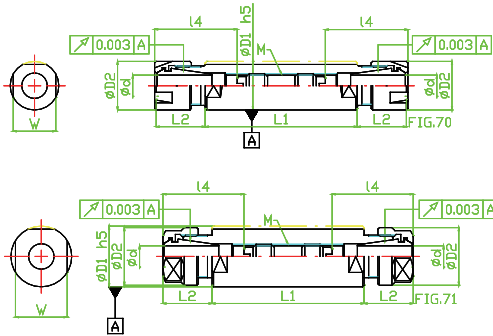
ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

SSLD-ERM & ER

SPEED TIGER

Double heads short nose type straight shank with flat ERM nut collet chucks & Double heads short nose type straight shank with flat ER collet chucks

- 雙頭短鼻型側固直柄 ERM 型螺帽筒夾延長桿 & 雙頭短鼻型側固直柄 ER 筒夾延長桿



STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
○	SSLD16-ER11M-030	70	30	17	-	16	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.10
	SSLD16-ER11M-050	70	50	17	-	16	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.15
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SSLD20-ER11M-030	70	30	17	-	20	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.10
	SSLD20-ER11M-050	70	50	17	-	20	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.15
○	SSLD20-ER16M-055	70	55	24	-	20	19	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.20
◎	SSLD20-ER11-033	71	33	16	-	20	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.15
◎	SSLD20-ER11-053	71	53	16	-	20	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.20
◎	SSLD20-ER11-082(Y1752#0100)	71	82	18	-	20	19	-	0.5~7.0	-	17	ER11	N11SXnano	W-ER11	0.20
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SSLD22-ER16M-067(#421-22-010)	70	67	24	-	22	22	-	0.5~10.0	-	19	ER16	N16MXnano	W-ER16M	0.25
◎	SSLD22-ER16M-080(#421-27-010)	70	80	24	-	22	22	-	0.5~10.0	-	19	ER16	N16MXnano	W-ER16M	0.30
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
○	SSLD23-ER16M-040(#3110511)	70	40	26	-	23	22	-	0.5~10.0	-	16	ER16	N16MXnano	W-ER16M	0.25
○	SSLD23-ER16M-060(#3110510)	70	60	26	-	23	22	-	0.5~10.0	-	16	ER16	N16MXnano	W-ER16M	0.30
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SSLD25-ER16M-062	70	62	24	-	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.30
	SSLD25-ER16M-080	70	80	24	-	25	22	-	0.5~10.0	M11.P1.0	22	ER16	N16MXnano	W-ER16M	0.35
○	SSLD25-ER11-050	71	50	16	-	25	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.30
◎	SSLD25-ER11-082T	71	82	16	-	25	19	-	0.5~7.0	M8*P1.0	22	ER11	N11SXnano	W-ER11	0.35
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SSLD32-ER20M-055	70	55	26	-	32	28	-	0.5~13.0	M14.P1.0	27	ER20	N20MXnano	W-ER20M	0.40
○	SSLD32-ER20M-085	70	85	26	-	32	28	-	0.5~13.0	M14.P1.0	27	ER20	N20MXnano	W-ER20M	0.55
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SSLD5/8-ER11M-030	70	30	17	-	15.875	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.10
	SSLD5/8-ER11M-050	70	50	17	-	15.875	16	-	0.5~7.0	M8*P1.0	14	ER11	N11MXnano	W-ER11M	0.15
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
	SSLD3/4-ER11M-030	70	30	17	-	19.05	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.10
	SSLD3/4-ER11M-050	70	50	17	-	19.05	16	-	0.5~7.0	M8*P1.0	17	ER11	N11MXnano	W-ER11M	0.15
◎	SSLD3/4-ER16M-055	70	55	24	-	19.05	19	-	0.5~10.0	M11.P1.0	17	ER16	N16MXnano	W-ER16M	0.20
◎	SSLD3/4-ER11-033	71	33	16	-	19.05	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.10
◎	SSLD3/4-ER11-053	71	53	16	-	19.05	19	-	0.5~7.0	M8*P1.0	17	ER11	N11SXnano	W-ER11	0.15
STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	M	W	COLLET	NUT	WRENCH	W(KG)
◎	SSLD1-ER16M-045	70	45	24	-	25.4	22	-	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.25
◎	SSLD1-ER16M-062	70	62	24	-	25.4	22	-	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.30
◎	SSLD1-ER16M-080	70	80	24	-	25.4	22	-	0.5~10.0	M11.P1.0	19	ER16	N16MXnano	W-ER16M	0.35

產品FIG.70 & 71有M的長度調整螺絲BK-ERxx-Mxx*2pc是另購品 // PRODUCTS IN FIG.70 & 71 WITH M EQUIP WITH BACK UP SCREW BK-ERxx-Mxx*2pc TO BE ORDERED SEPARATELY

產品FIG.70出貨附件為高速平衡奈米螺帽NxxMX nano*2pc // PRODUCTS IN FIG.70 EQUIP WITH BALANCED NANO NUT NxxMX nano*2pc

產品FIG.71出貨附件為高速平衡奈米螺帽NxxSX nano*2pc // PRODUCTS IN FIG.71 EQUIP WITH BALANCED NANO NUT NxxSX nano*2pc

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK

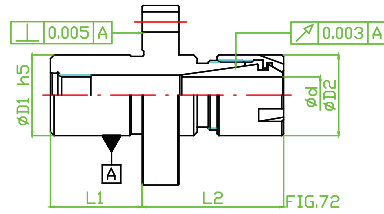
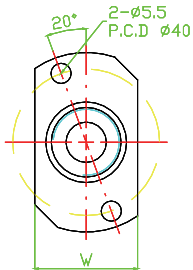
BLANK=on request

ER筒夾是另購品 // ER COLLET TO BE ORDERED SEPARATELY

S-ERM

■ Sub-spindle short nose type straight shank ERM nut collet chucks

● 副主軸用短鼻型直柄 ERM 型螺帽筒夾延長桿



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STOCK	CODE	FIG.	L1	L2	I4	ØD1	ØD2	ØD3	Ød	止動螺絲 (M) Screw Page218	W	筒夾 COLLET Page208	螺帽 NUT Page216	扳手 WRENCH Page218	重量 (KG) Weight
◎	STAR-S22-ER16M-025 (#541-21-010)	72	25	33	-	22	22	-	0.5~10.0	-	28	ER16	N16MX nano	W-ER16M	0.25

產品FIG.72出貨附件為高速平衡奈米螺帽NxxMX nano*1pc // PRODUCTS IN FIG.72 EQUIP WITH BALANCED NANO NUT NxxMX nano*1pc
 STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK 無標示=接單生產品 // STOCK
 BLANK=on request
 ER筒夾和扳手是另購品 // ER COLLET AND WRENCH TO BE ORDERED SEPARATELY

ACCESSORIES



拉桿螺栓簡介:

拉桿螺栓品質非常重要
 它是刀桿與機床主軸結合的重要零件
 當拉桿螺栓因材料選用或熱處理方式不當
 就會為機床主軸及刀桿帶來重大的損害
 造成拉桿螺栓斷裂的關鍵在於抗剪力不足
 抗剪力的強度的提升來自於三個方面
 選用正確的材料
 適當的熱處理程序
 機構設計的改善

Introduction of PULLSTUD//RETENTION KNOB:

Quality of pullstud//retention knob is very important.
 It is the connecting part of the toolholder and the spindle of machine.
 With the wrong material or heat treatment process,
 it will damage the spindle of machine and toolholder seriously.
 The main reason of pullstud//retention breakage comes from low shear resistance strength.
 There are three keys to promote shear resistance:
 Correct material,
 Proper heat treatment process,
 Improvement in structure of design.

拉桿螺栓專利:

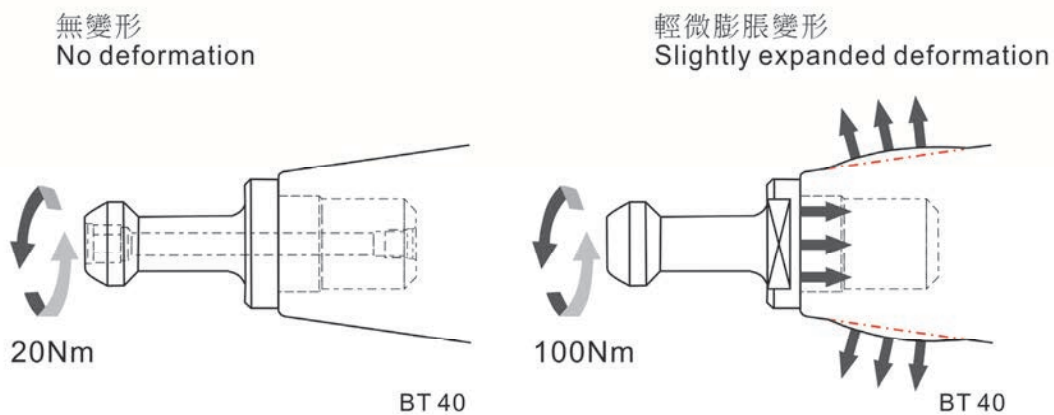
低扭力鎖緊加上專用的螺絲固定劑達到高扭力鎖固
 低扭力鎖緊可以讓刀桿保持原有精度使其錐度不變形
 六角扳手鎖固時不會有滑脫的狀況
 中心出水與中心止水兩用式整合的設計
 抗剪力提升的機構設計
 台灣新型第M 505360號
 大陸專利號:ZL2015 2 0716762.1

PULLSTUD//RETENTION KNOB patent:

Low tightening torque with specialized screw glue to reach high clamping torque.
 Low tightening torque will maintain the accuracy of toolholder from deformation.
 No more slip when tightening with hex wrench.
 Dual function design for with and without coolant through.
 Improvement in structure of design to promote shear resistance.
 Taiwan Patent NO:M 505360
 China Patent NO:ZL 2015 2 0716762.1

拉桿螺栓大鎖緊扭力鎖固造成錐度膨脹變形:

PULLSTUD//RETENTION KNOB deformation with high tighten torque:



拉桿螺栓使用說明:

PULLSTUD//RETENTION KNOB operation manual:

STEP1

清潔拉桿螺栓與刀桿的牙部及接觸端面
Cleaning pullstud and toolholder of thread and contact face.

STEP2

山謙的專利拉桿螺栓為出水/止水共用型設計
若加工機床為非中心出水型式請鎖上內附的止水螺絲
YAMAKEN's pullstud/retention knob is of dual function design.
You can use it with and without coolant through.
If your machine is without coolant through or coolant through frange,
lock the attached seal screw up before tighten it on toolholder.



STEP 3

使用LOCTITE#243螺絲固定劑
於拉桿螺栓底部第二牙處環繞塗布三點共約0.5ml
LOCTITE#243將會漫開於牙間
Use LOCTITE#243 screw glue on the thread part as following picture.
Put 0.5ml glue on the last the last two pitch of thread.
The screw glue will spread out in last few thread pitches.



STEP 4

將拉桿螺栓以手旋入刀桿
Screwing the pullstud/retention knob into the toolholder by hand.

注意

將造成鎖緊扭力過強而無法拆卸
****Caution****
Too much screw glue will bring too high clamping torque.
It may bring some difficulty to loosen it.



STEP 5

以扭力扳手鎖緊拉桿螺栓
鎖緊扭力為#30-10Nm//#40-20Nm//#50-40Nm
Use torque wrench to tighten pullstud/retention knob.
Tightening torque #30-10Nm//#40-20Nm//#50-40Nm.



STEP 6

LOCTITE#243螺絲固定劑初固時間五分鐘，全固時間24小時
全固化後再上線使用
LOCTITE#243 needs 5 minutes to solidify.
To solidify completely will take 24 hours.
Use it after it solidified completely.

拉桿螺栓RF表面防鏽鍍層

PULLSTUD//RETENTION KNOB RF rust-proof coating:



拉桿螺栓技術資料:

PULLSTUD//RETENTION KNOB technical information :

品名: RKBTP40T1-45
BT40-45度中心出水拉桿螺栓

ITEM: RKBTP40T1-45
BT40-45°coolant through pullstud//retention knob

材料: SNCM420/4320/20CrNi2Mo/
熱處理: 滲碳
硬度: HRC 58~60
抗拉力: 9,800kgf
抗剪力: 1,510kgf

MATERIAL: SNCM420/4320/20CrNi2Mo/
HEAT TREATMENT: CARBURIZING
HARDNESS: HRC 58~60
TENSILE RESISTANT STRENGTH: 9,800kgf
SHEAR RESISTANT STRENGTH : 1,510kgf

1kgf=9.8N

1kgf=9.8N

抗拉力是材料對於軸向的抵抗力
截面積越大者抗拉力就會越大

Tensile resistant strength is resistant force of material in axial direction.
The bigger the cross-sectional area, the higher the tensile resistant strength.

如果我們要計算材料的抗拉強度(N/mm²)
則需要先算出斷面面積

If we want to calculate the tensile resistant strength (N/mm²),
we need to calculate the cross-sectional area first.

RKBTP40T1-45
BT40-45度中心出水拉桿螺栓

RKBTP40T1-45
BT40-45 °coolant though pullstud//retention knob

這項產品的頸部是10mm 水孔是4mm
斷面面積是(10*10/4-4*4/4)*PI=21*3.1416=65.97mm²

The neck is 10mm, coolant hole is 4mm.
Cross-sectional area is (10*10/4-4*4/4)*PI=21*3.1416=65.97mm²

抗拉力是9,800kgf=96,040N
成品材料的抗拉強度是96,040N/65.97mm²=1,456N/mm²

Tensile resistant strength is 9,800kgf=96,040N
Average tensile resistant strength is 96,040N/65.97mm²=1,456N/mm²

抗剪力是材料對徑向的抵抗力
相同的截面積加上不同的機構設計
會產生不同的抗剪力

Shear resistant strength is resistant force of material in radial direction.
Different structure in design with the same cross-sectional area
will generate different shear resistant strength.

抗剪力是1,510kgf=14,798N
成品材料抗剪強度是14,798N/65.97mm²=224N/mm²

Shear resistant strength is 1,510kgf=14,798N
Average shear resistant strength is 14,798N/65.97mm²=224N/mm²

#40主軸的拉力
國際標準是1200kgf(11,760N)
拉桿螺栓的抗拉力與抗剪力需要達到足夠對抗主軸拉力強度
抗剪力不足的拉桿螺栓會產生斷裂
加工中斷裂的拉桿螺栓會讓運作中的主直軸直接損毀

#40 spindle pulling force
International standard is 1200kgf(11,760N)
The tensile and shear resistant strength of pullstud//retention knob
should be high enough to resist spindle pulling force.
Pullstud//retention knob may break with low shear resistant strength.
The breakage will destroy the spindle of machine and toolholder.

拉桿螺栓強度比較:

PULLSTUD//RETENTION KNOB comparison :

日本製的實心拉桿螺栓
抗拉力是11,360kgf=111,328N
抗剪力是1,300kgf=12,740N

Pullstud//retention knob that made in Japan are with
tensile resistant strength 11,360kgf=111,328N
shear resistant strength 1,300kgf=12,740N

實心拉桿螺栓的斷面面積是10*10/4*PI=78.54mm²

It is solid with cross-sectional area 10*10/4*PI=78.54mm²

成品材料的抗拉強度是111,328N/78.54mm²=1,417N/mm²
成品材料抗剪強度是12,740N/78.54mm²=162N/mm²

Average tensile resistant strength is 111,328N/78.54mm²=1,417N/mm²
Average shear resistant strength is 12,740N/78.54mm²=162N/mm²

山謙製的拉桿螺栓比日本製的在抗剪上多了16%

YAMAKEN's pullstud//retention knob are with 16% higher
in shear resistant strength than those made in Japan.

Tensile test

Shear test

金屬工業研究發展中心區域研發服務處(中區)
 METAL INDUSTRY RESEARCH & DEVELOPMENT CENTRE
 REGIONAL R&D SERVICE DEPARTMENT (TAICHUNG)
 40768 台中市工業區 37 路 25 號 TEL : (04)23502169
 No.25, 37th Road, Industrial Park, 40768 Taichung, Taiwan
 機械測試實驗室
 Mechanical Testing Laboratory

委託者: 山謙企業股份有限公司
 Applicant: YAMAKEN TOOL CO., LTD.
 取樣者: ---
 Sampler: ---
 工程名稱: ---
 Source of Sample: ---

檢測編號: E1001002-T01
 Application No: E1001002-T01
 收件日期: 2015/11/03
 Received Date: 2015/11/03
 寄發日期: 2015/11/04
 Date Issued: 2015/11/04
 Page 1 of 1

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 Applicant: YAMAKEN TOOL CO., LTD.
 取樣者: ---
 Sampler: ---
 工程名稱: ---
 Source of Sample: ---

檢測編號: E1001002-T04
 Application No: E1001002-T04
 收件日期: 2015/11/03
 Received Date: 2015/11/03
 寄發日期: 2015/11/04
 Date Issued: 2015/11/04
 Page 1 of 1

(1) Name of Article : PSBT4045-P40T1
 (2) Test Item : Tensile Test
 (3) Testing method : According to the applicant
 (4) Testing Instrument : Universal Testing Machine (No.TG0101)
 (5) Result :
 Max. Load : 9,800 kgf
 --- End ---



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報告簽署人: 
 Report Authorized Person

(1) Name of Article : PSBT4045-P40T1
 (2) Test Item : Bending Strength Test
 (3) Testing method : According to the applicant
 (4) Testing Instrument : Universal Testing Machine (No.TG0101)
 (5) Result :
 Max. Load : 1,510 kgf
 --- End ---



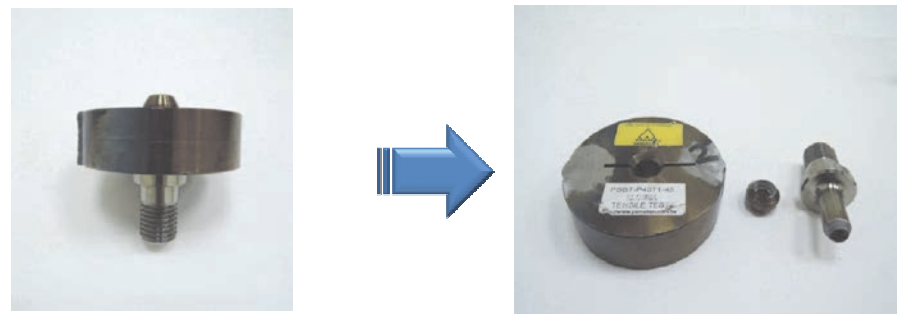
Testing



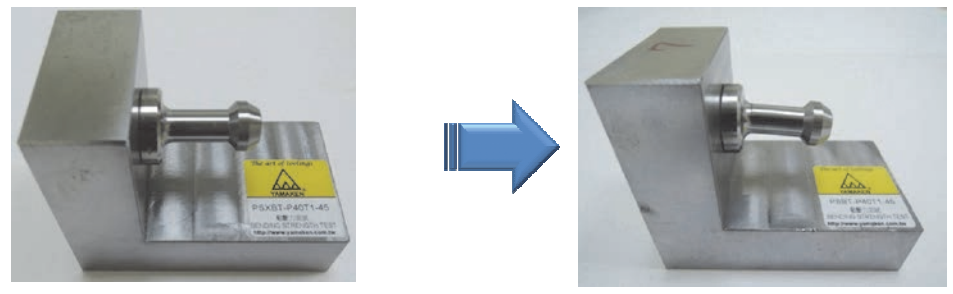
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拉桿螺栓抗拉力測試: PULLSTUD//RETENTION KNOB tensile test :



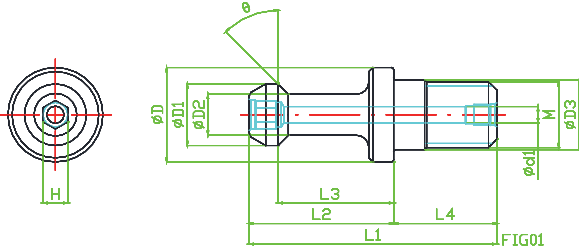
拉桿螺栓抗剪力測試: PULLSTUD//RETENTION KNOB shear test:



BT-RK

■ RK pullstuds / retention knobs

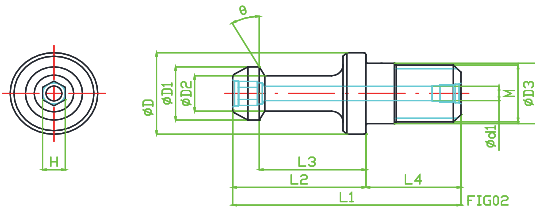
● RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RKBTP30T1-45	1	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	45°	2.5	4	0.04
◎	RKBTP40T1-45	1	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	45°	4.0	6	0.09
◎	RKBTP50T1-45	1	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	45°	6.0	10	0.30
◎	RKBTP30T1-45F	1	43.00	23.00	18.00	20.00	16.50	11.00	8.00	12.50	M12*P1.75	45°	3.8	4	0.04

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

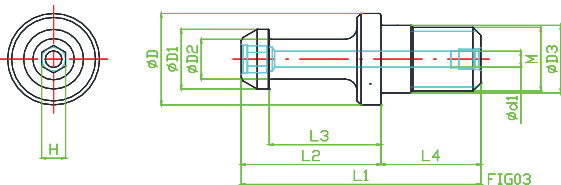
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RKBTP30T2-30	2	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	30°	2.5	4	0.04
◎	RKBTP40T2-30	2	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	30°	4.0	6	0.09
◎	RKBTP50T2-30	2	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	30°	6.0	10	0.30
◎	RKBTP30T2-30B	2	43.00	23.00	18.00	20.00	16.50	11.00	7.50	12.50	M12*P1.75	30°	2.5	4	0.04

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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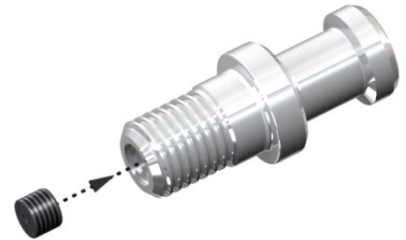
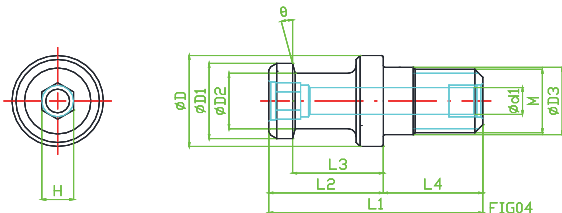
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKBTP30T3-90	3	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
◎	RKBTP40T3-90	3	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
◎	RKBTP50T3-90	3	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	90°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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■ RK pullstuds / retention knobs

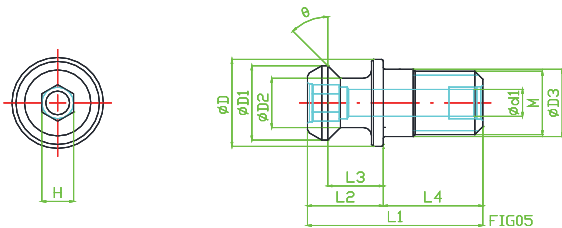
● RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RKBT30JISB6339-15	4	42.85	23.25	18.25	20.00	16.50	12.00	8.00	12.50	M12*P1.75	15°	3.8	4	0.04
◎	RKBT40JISB6339-15	4	53.85	28.85	22.85	25.00	23.00	19.00	14.00	17.00	M16*P2.00	15°	6.8	8	0.09
◎	RKBT50JISB6339-15	4	73.80	33.80	24.80	40.00	38.00	28.00	21.00	24.00	M24*P3.00	15°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

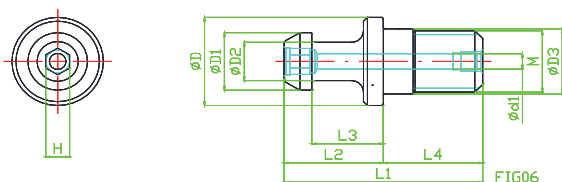
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKBT30ANSI-45YM	5	30.95	10.95	7.40	20.00	16.25	13.20	9.78	12.50	M12*P1.75	45°	3.8	4	0.04
◎	RKBT40ANSI-45YM	5	44.10	19.10	14.00	25.00	22.00	18.80	12.45	17.00	M16*P2.00	45°	6.8	8	0.09
◎	RKBT50ANSI-45YM	5	65.20	25.20	17.60	40.00	36.00	28.95	20.83	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKBTMP30-90MI	6	40.00	20.00	15.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
	RKBTMP40-90MI	6	50.00	25.00	18.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
	RKBTMP50-90MI	6	71.00	31.00	21.00	40.00	38.00	24.00	18.00	25.00	M24*P3.00	90°	6.0	10	0.30

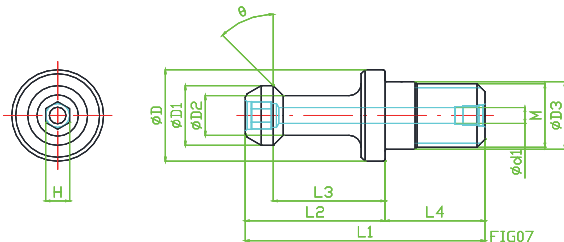
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STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

BT-RF RK

RF rust proof coating RK pullstuds / retention knobs

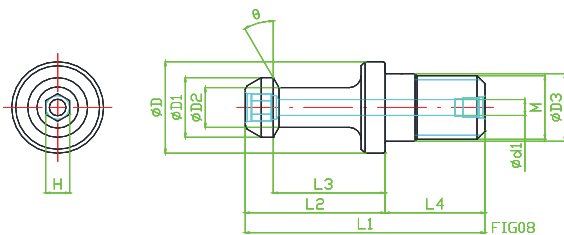
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RF RKBTP30T1-45	7	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	45°	2.5	4	0.04
◎	RF RKBTP40T1-45	7	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	45°	4.0	6	0.09
◎	RF RKBTP50T1-45	7	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	45°	6.0	10	0.30
◎	RF RKBTP30T1-45F	7	43.00	23.00	18.00	20.00	16.50	11.00	8.00	12.50	M12*P1.75	45°	3.8	4	0.04

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

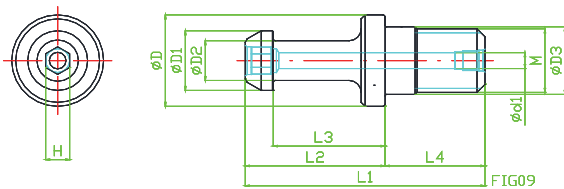
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RF RKBTP30T2-30	8	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	30°	2.5	4	0.04
◎	RF RKBTP40T2-30	8	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	30°	4.0	6	0.09
◎	RF RKBTP50T2-30	8	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	30°	6.0	10	0.30
◎	RF RKBTP30T2-30B	8	43.00	23.00	18.00	20.00	16.50	11.00	7.50	12.50	M12*P1.75	30°	2.5	4	0.04

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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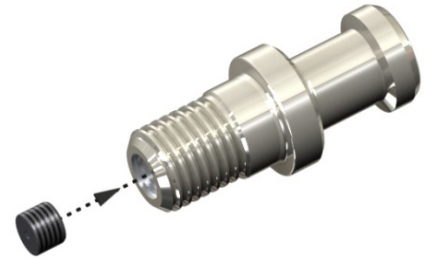
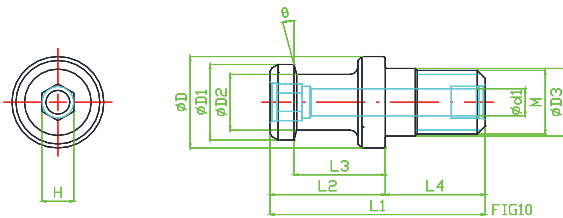
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RF RKBTP30T3-90	9	43.00	23.00	18.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
◎	RF RKBTP40T3-90	9	60.00	35.00	28.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
◎	RF RKBTP50T3-90	9	85.00	45.00	35.00	40.00	38.00	23.00	17.00	25.00	M24*P3.00	90°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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RF rust proof coating RK pullstuds / retention knobs

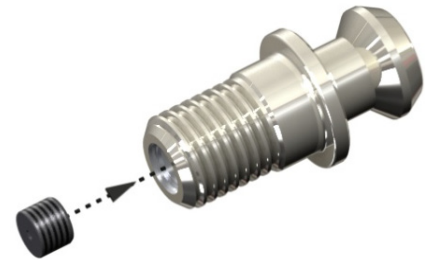
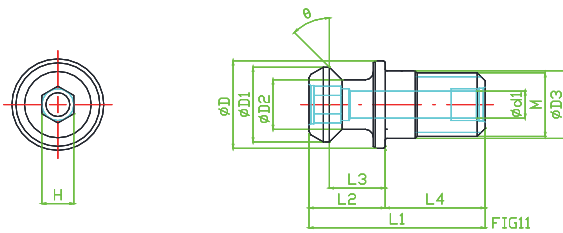
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
◎	RF RKB30JISB6339-15	10	42.85	23.25	18.25	20.00	16.50	12.00	8.00	12.50	M12*P1.75	15°	3.8	4	0.04
◎	RF RKB40JISB6339-15	10	53.85	28.85	22.85	25.00	23.00	19.00	14.00	17.00	M16*P2.00	15°	6.8	8	0.09
◎	RF RKB50JISB6339-15	10	73.80	33.80	24.80	40.00	38.00	28.00	21.00	24.00	M24*P3.00	15°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

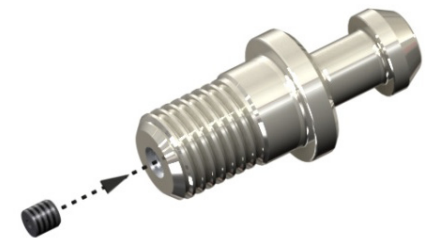
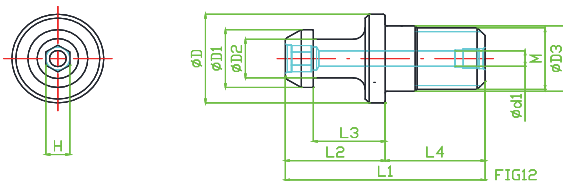
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKB30ANSI-45YM	11	30.95	10.95	7.40	20.00	16.25	13.20	9.78	12.50	M12*P1.75	45°	3.8	4	0.04
◎	RF RKB40ANSI-45YM	11	44.10	19.10	14.00	25.00	22.00	18.80	12.45	17.00	M16*P2.00	45°	6.8	8	0.09
◎	RF RKB50ANSI-45YM	11	65.20	25.20	17.60	40.00	36.00	28.95	20.83	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKBTMP30-90MI	12	40.00	20.00	15.00	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
	RF RKBTMP40-90MI	12	50.00	25.00	18.00	25.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
	RF RKBTMP50-90MI	12	71.00	31.00	21.00	40.00	38.00	24.00	18.00	25.00	M24*P3.00	90°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

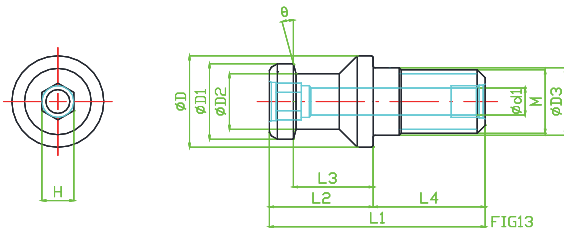
STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

SK-RK

■ RK pullstuds / retention knobs

● RK 拉桿螺柱

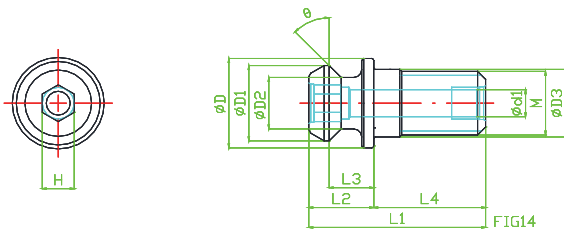
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSK30DIN69872-15	13	44.00	24.00	19.00	20.00	17.00	13.00	9.00	13.00	M12*P1.75	15°	3.8	4	0.04
◎	RKSK40DIN69872-15	13	54.00	26.00	20.00	28.00	23.00	19.00	14.00	17.00	M16*P2.00	15°	6.8	8	0.09
◎	RKSK50DIN69872-15	13	74.00	34.00	25.00	40.00	36.00	28.00	21.00	25.00	M24*P3.00	15°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

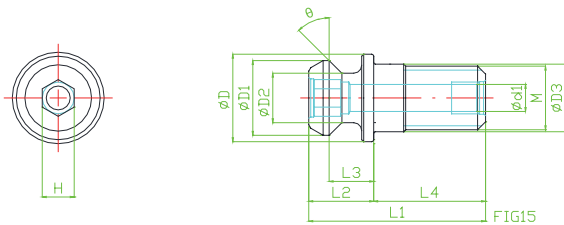
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSK30ISO7388U-45	14	31.70	11.70	8.15	20.00	16.25	13.20	9.15	13.00	M24*P3.00	45°	3.8	4	0.04
◎	RKSK40ISO7388U-45	14	44.25	16.25	11.15	28.00	22.00	18.80	12.80	17.00	M16*P2.00	45°	6.8	8	0.09
◎	RKSK50ISO7388U-45	14	65.40	25.40	17.80	40.00	36.00	28.95	19.45	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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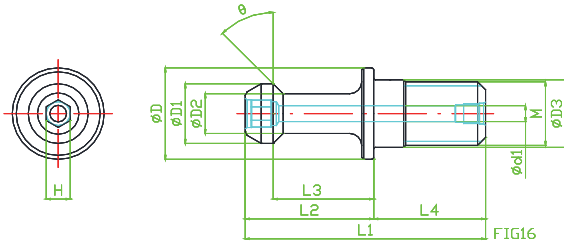
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSK30ANSI-45YM	15	31.70	11.70	8.15	20.00	16.25	13.20	9.78	13.00	M12*P1.75	45°	3.8	4	0.04
	RKSK40ANSI-45YM	15	44.25	16.25	11.15	28.00	22.00	18.80	12.45	17.00	M16*P2.00	45°	6.8	8	0.09
	RKSK50ANSI-45YM	15	65.40	25.40	17.80	40.00	36.00	28.95	20.83	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

■ RK pullstuds / retention knobs

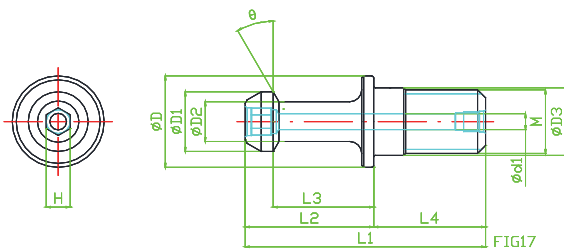
● RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSKP30T1-45	16	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	45°	2.5	4	0.04
◎	RKSKP40T1-45	16	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	45°	4.0	6	0.09
	RKSKP50T1-45	16	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	45°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

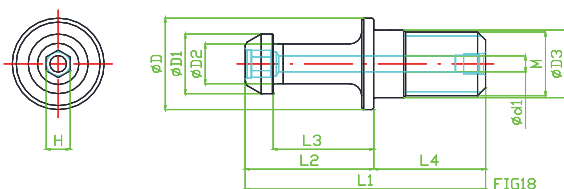
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSKP30T2-30	17	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	30°	2.5	4	0.04
◎	RKSKP40T2-30	17	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	30°	4.0	6	0.09
	RKSKP50T2-30	17	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	30°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKSKP30T3-90	18	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
◎	RKSKP40T3-90	18	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
	RKSKP50T3-90	18	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	90°	6.0	10	0.30

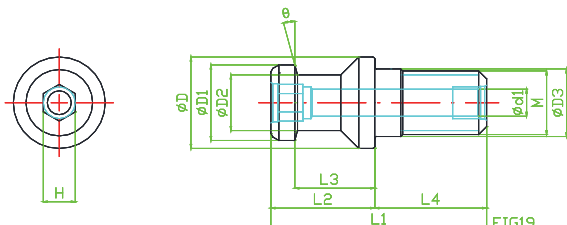
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SK-RF RK

RF rust proof coating RK pullstuds / retention knobs

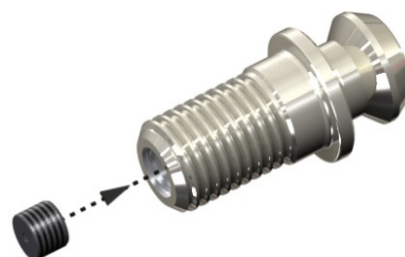
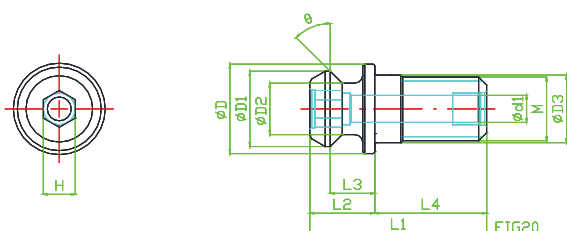
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RSK30DIN69872-15	19	44.00	24.00	19.00	20.00	17.00	13.00	9.00	13.00	M12*P1.75	15°	3.8	4	0.04
◎	RF RSK40DIN69872-15	19	54.00	26.00	20.00	28.00	23.00	19.00	14.00	17.00	M16*P2.00	15°	6.8	8	0.09
◎	RF RSK50DIN69872-15	19	74.00	34.00	25.00	40.00	36.00	28.00	21.00	25.00	M24*P3.00	15°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

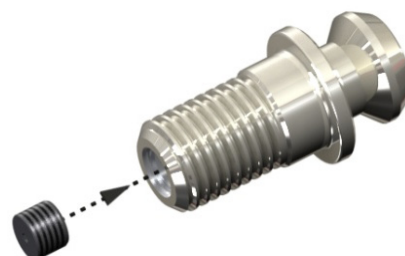
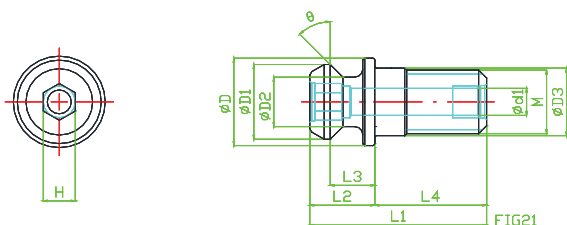
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RSK30ISO7388U-45	20	31.70	11.70	8.15	20.00	16.25	13.20	9.15	13.00	M24*P3.00	45°	3.8	4	0.04
◎	RF RSK40ISO7388U-45	20	44.25	16.25	11.15	28.00	22.00	18.80	12.80	17.00	M16*P2.00	45°	6.8	8	0.09
◎	RF RSK50ISO7388U-45	20	65.40	25.40	17.80	40.00	36.00	28.95	19.45	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



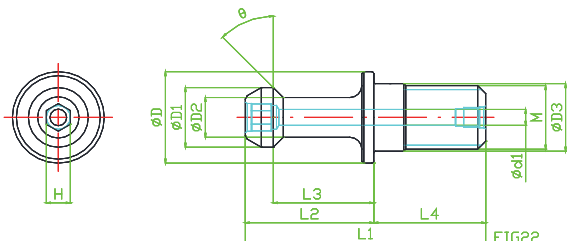
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RSK30ANSI-45YM	21	31.70	11.70	8.15	20.00	16.25	13.20	9.78	13.00	M12*P1.75	45°	3.8	4	0.04
	RF RSK40ANSI-45YM	21	44.25	16.25	11.15	28.00	22.00	18.80	12.45	17.00	M16*P2.00	45°	6.8	8	0.09
	RF RSK50ANSI-45YM	21	65.40	25.40	17.80	40.00	36.00	28.95	20.83	25.00	M24*P3.00	45°	10.0	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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RF rust proof coating RK pullstuds / retention knobs

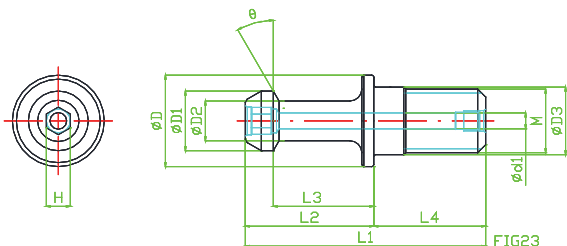
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKS KP30T1-45	22	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	45°	2.5	4	0.04
◎	RF RKS KP40T1-45	22	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	45°	4.0	6	0.09
	RF RKS KP50T1-45	22	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	45°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

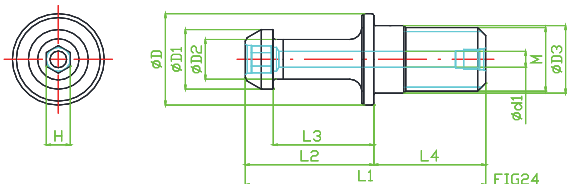
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKS KP30T2-30	23	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	30°	2.5	4	0.04
◎	RF RKS KP40T2-30	23	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	30°	4.0	6	0.09
	RF RKS KP50T2-30	23	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	30°	6.0	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKS KP30T3-90	24	43.75	23.75	18.75	20.00	16.50	11.00	7.00	12.50	M12*P1.75	90°	2.5	4	0.04
◎	RF RKS KP40T3-90	24	60.15	32.15	25.15	28.00	23.00	15.00	10.00	17.00	M16*P2.00	90°	4.0	6	0.09
	RF RKS KP50T3-90	24	85.20	45.20	35.20	40.00	38.00	23.00	17.00	25.00	M24*P3.00	90°	6.0	10	0.30

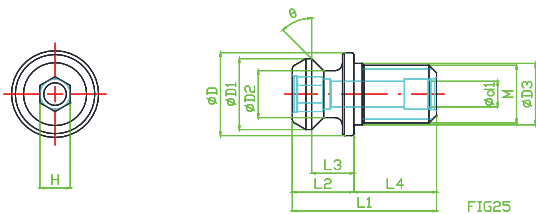
出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

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CAT-RF RK

■ RK pullstuds / retention knobs

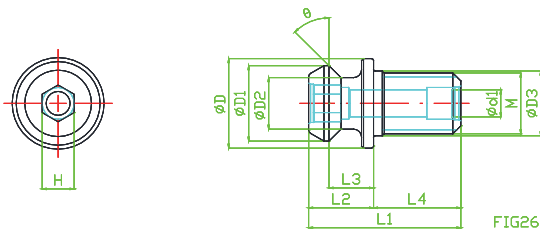
● RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCAT30ANSI-45	25	1.10"	0.46"	0.32"	0.64"	0.65"	0.52"	0.39"	0.52"	UNC1/2"-13	45°	0.15"	4	0.04
◎	RKCAT40ANSI-45	25	1.50"	0.64"	0.44"	0.86"	0.87"	0.74"	0.49"	0.64"	UNC5/8"-11	45°	0.27"	8	0.09
◎	RKCAT50ANSI-45	25	2.23"	1.00"	0.70"	1.30"	1.42"	1.14"	0.82"	1.03"	UNC1"-8	45°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

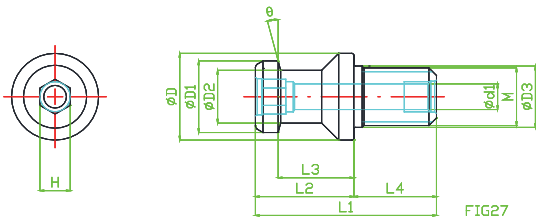
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCAT30ISO7388U-45	26	1.10"	0.46"	0.32"	0.64"	0.65"	0.52"	0.36"	0.52"	UNC1/2"-13	45°	0.15"	4	0.04
	RKCAT40ISO7388U-45	26	1.50"	0.64"	0.44"	0.86"	0.87"	0.74"	0.50"	0.64"	UNC5/8"-11	45°	0.27"	8	0.09
	RKCAT50ISO7388U-45	26	2.23"	1.00"	0.70"	1.30"	1.42"	1.14"	0.77"	1.03"	UNC1"-8	45°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



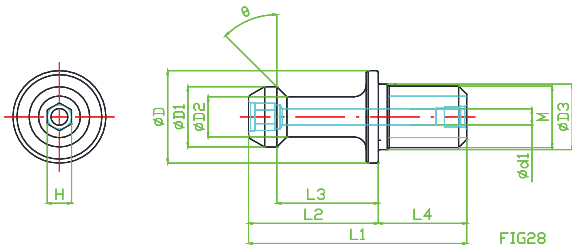
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCAT30DIN69872-15	27	1.58"	0.94"	0.75"	0.64"	0.67"	0.51"	0.35"	0.52"	UNC1/2"-13	15°	0.15"	4	0.04
◎	RKCAT40DIN69872-15	27	1.88"	1.02"	0.79"	0.86"	0.89"	0.75"	0.51"	0.64"	UNC5/8"-11	15°	0.27"	8	0.09
◎	RKCAT50DIN69872-15	27	2.64"	1.34"	0.98"	1.30"	1.46"	1.15"	0.77"	1.03"	UNC1"-8	15°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

RF rust proof coating RK pullstuds / retention knobs

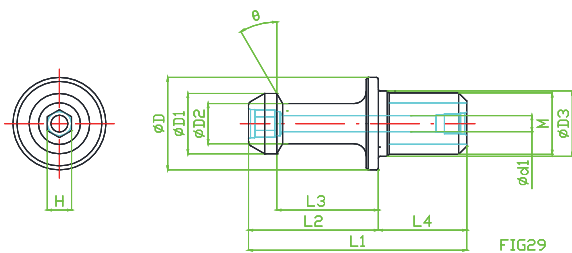
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCATP30T1-45	28	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	45°	0.10"	4	0.04
◎	RKCATP40T1-45	28	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	45°	0.16"	6	0.09
◎	RKCATP50T1-45	28	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	45°	0.24"	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

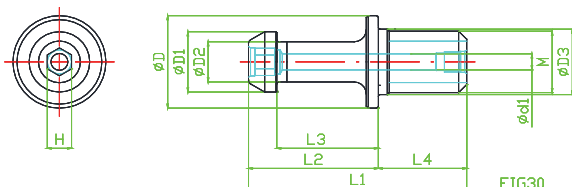
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCATP30T2-30	29	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	45°	0.10"	4	0.04
◎	RKCATP40T2-30	29	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	45°	0.16"	6	0.09
◎	RKCATP50T2-30	29	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	45°	0.24"	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RKCATP30T3-90	30	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	90°	0.10"	4	0.04
◎	RKCATP40T3-90	30	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	90°	0.16"	6	0.09
◎	RKCATP50T3-90	30	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	90°	0.24"	10	0.30

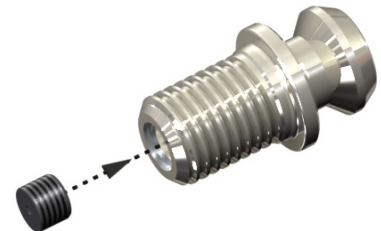
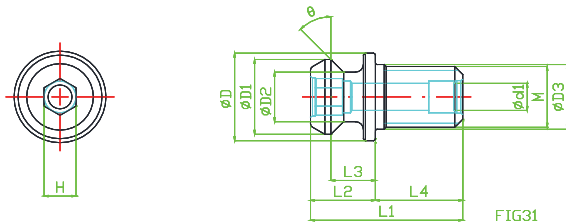
出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

CAT-RF RK

RF rust proof coating RK pullstuds / retention knobs

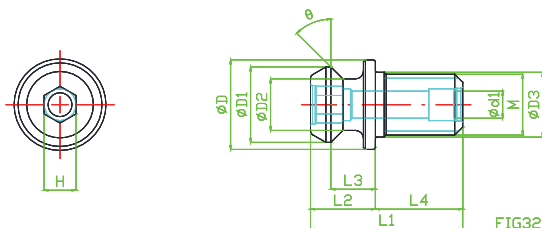
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCAT30ANSI-45	31	1.10"	0.46"	0.32"	0.64"	0.65"	0.52"	0.39"	0.52"	UNC1/2"-13	45°	0.15"	4	0.04
◎	RF RKCAT40ANSI-45	31	1.50"	0.64"	0.44"	0.86"	0.87"	0.74"	0.49"	0.64"	UNC5/8"-11	45°	0.27"	8	0.09
◎	RF RKCAT50ANSI-45	31	2.23"	1.00"	0.70"	1.30"	1.42"	1.14"	0.82"	1.03"	UNC1"-8	45°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

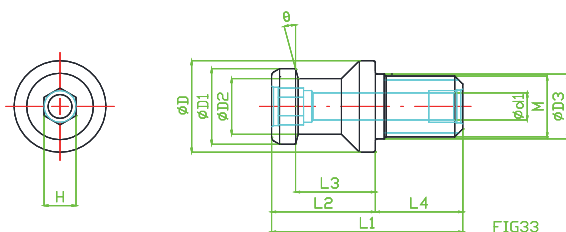
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCAT30ISO7388U-45	32	1.10"	0.46"	0.32"	0.64"	0.65"	0.52"	0.36"	0.52"	UNC1/2"-13	45°	0.15"	4	0.04
	RF RKCAT40ISO7388U-45	32	1.50"	0.64"	0.44"	0.86"	0.87"	0.74"	0.50"	0.64"	UNC5/8"-11	45°	0.27"	8	0.09
	RF RKCAT50ISO7388U-45	32	2.23"	1.00"	0.70"	1.30"	1.42"	1.14"	0.77"	1.03"	UNC1"-8	45°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



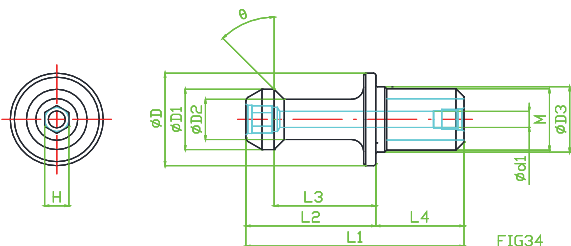
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCAT30DIN69872-15	33	1.58"	0.94"	0.75"	0.64"	0.67"	0.51"	0.35"	0.52"	UNC1/2"-13	15°	0.15"	4	0.04
◎	RF RKCAT40DIN69872-15	33	1.88"	1.02"	0.79"	0.86"	0.89"	0.75"	0.51"	0.64"	UNC5/8"-11	15°	0.27"	8	0.09
◎	RF RKCAT50DIN69872-15	33	2.64"	1.34"	0.98"	1.30"	1.46"	1.15"	0.77"	1.03"	UNC1"-8	15°	0.39"	12	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

RF rust proof coating RK pullstuds / retention knobs

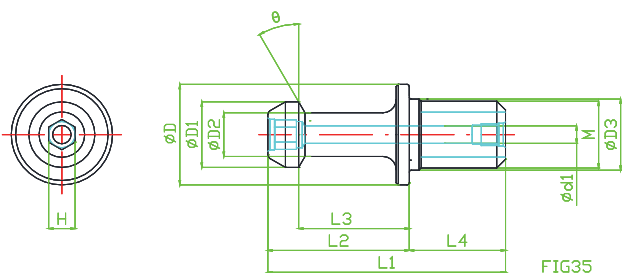
RF 防鏽鍍層 RK 拉桿螺栓



STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCATP30T1-45	34	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	45°	0.10"	4	0.04
◎	RF RKCATP40T1-45	34	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	45°	0.16"	6	0.09
◎	RF RKCATP50T1-45	34	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	45°	0.24"	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

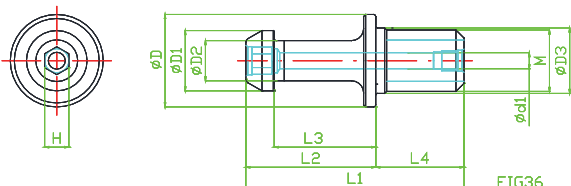
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STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCATP30T2-30	35	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	30°	0.10"	4	0.04
◎	RF RKCATP40T2-30	35	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	30°	0.16"	6	0.09
◎	RF RKCATP50T2-30	35	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	30°	0.24"	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request



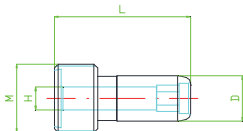
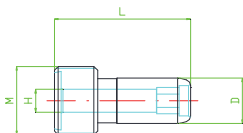
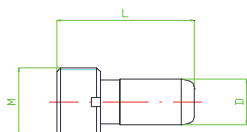
STOCK	CODE	FIG.	L1	L2	L3	L4	D	D1	D2	D3	M	θ	d1	H	W(KG)
	RF RKCATP30T3-90	36	1.57"	0.94"	0.74"	0.64"	0.65"	0.43"	0.28"	0.52"	UNC1/2"-13	90°	0.10"	4	0.04
◎	RF RKCATP40T3-90	36	2.13"	1.27"	0.99"	0.86"	0.91"	0.59"	0.39"	0.64"	UNC5/8"-11	90°	0.16"	6	0.09
◎	RF RKCATP50T3-90	36	3.08"	1.78"	1.39"	1.30"	1.50"	0.91"	0.67"	1.03"	UNC1"-8	90°	0.24"	10	0.30

出貨附件為止水螺絲BK-RK-Mxx*1pc // PRODUCTS EQUIP WITH SEAL SCREW BK-RK-Mxx*1PC

STOCK ◎=標準在庫品 // STOCK ◎=regular stock | STOCK ○=少量在庫品 // STOCK ○=few stock | STOCK無標示=接單生產品 // STOCK BLANK=on request

Coolant tube for HSK hollow shank short taper and wrench

HSK 中空短圓錐刀桿用出水導管與扳手



HSK中心出水導管 / HSK Coolant tube

STOCK	CODE	HSK	M	D	L	W(KG)
	HSK-CT-A032	32	M10*1.0	6	26.0	0.04
	HSK-CT-A040	40	M12*1.0	8	29.0	0.04
	HSK-CT-A050	50	M16*1.0	10	33.0	0.04
	HSK-CT-A063	63	M18*1.0	12	36.5	0.04
	HSK-CT-A080	80	M20*1.5	14	39.5	0.05
	HSK-CT-A100	100	M24*1.5	16	43.5	0.05

STOCK ☉=標準在庫品 // STOCK ☉=regular stock

HSK出水導管扳手 / HSK wrench for coolant tube

STOCK	CODE	HSK	W(KG)
	W-HSK-CT-A032	32	0.15
	W-HSK-CT-A040	40	0.15
	W-HSK-CT-A050	50	0.15
	W-HSK-CT-A063	63	0.15
	W-HSK-CT-A080	80	0.20
	W-HSK-CT-A100	100	0.20

STOCK ☉=標準在庫品 // STOCK ☉=regular stock

固定式HSK高壓中心出水導管 / Solid type HSK hi pressure coolant tube

STOCK	CODE	HSK	M	D	L	H	W(KG)
	HSK-CTSH-A032	32	M10*1.0	6	26.0	3	0.04
	HSK-CTSH-A040	40	M12*1.0	8	29.0	4	0.04
	HSK-CTSH-A050	50	M16*1.0	10	33.0	5	0.04
	HSK-CTSH-A063	63	M18*1.0	12	36.5	6	0.04
	HSK-CTSH-A080	80	M20*1.5	14	39.5	6	0.05
	HSK-CTSH-A100	100	M24*1.5	16	43.5	8	0.05

STOCK ☉=標準在庫品 // STOCK ☉=regular stock

RF防鏽鍍層固定式HSK高壓中心出水導管 / RF rust proof coating solid type HSK hi pressure coolant tube

STOCK	CODE	HSK	M	D	L	H	W(KG)
	RF HSK-CTSH-A032	32	M10*1.0	6	26.0	3	0.04
	RF HSK-CTSH-A040	40	M12*1.0	8	29.0	4	0.04
	RF HSK-CTSH-A050	50	M16*1.0	10	33.0	5	0.04
	RF HSK-CTSH-A063	63	M18*1.0	12	36.5	6	0.04
	RF HSK-CTSH-A080	80	M20*1.5	14	39.5	6	0.05
	RF HSK-CTSH-A100	100	M24*1.5	16	43.5	8	0.05

STOCK ☉=標準在庫品 // STOCK ☉=regular stock

RK拉桿螺栓止水螺絲 / RK seal screw

STOCK	CODE	W(KG)
	BK-NY-M03	0.001
	BK-NY-M04	0.001
	BK-NY-M05	0.001
	BK-NY-M06	0.001
	BK-NY-M08	0.001
	BK-NY-M10	0.003
	BK-NY-M12	0.005

RK拉桿螺栓螺絲固定膠 / RK seal glue

STOCK	CODE	W(KG)
	RK-GLU243005	0.01
	RK-GLU243100	0.15

SGER & ER // 筒夾

筒夾是筒夾刀桿的主要部件之一
用於夾持刀具讓螺帽鎖固於筒夾刀桿上
但是要生產精準的筒夾並不是很簡單
需要注意的有:

1. 材質的選用

使用材質不正確會減短筒夾壽命
震虎使用軸承鋼生產筒夾
這類的材料生產出來的筒夾有較長的壽命與穩定的重複精度

2. 筒夾的真圓度

真圓度不佳的筒夾組合刀桿會降低組合精度
震虎生產的筒夾真圓度是0.001mm

3. 筒夾的同心度

同心度不佳的筒夾組合刀桿會降低組合精度
震虎生產的AA級筒夾同心度是0.001mm
震虎生產的筒夾同心度是0.003mm

4. 筒夾組合刀桿與螺帽的組合精度

AA級ER筒夾+SGER螺帽組合精度0.003mm @3*d
AA級ER筒夾+ERM螺帽&ER螺帽組合精度0.005mm @3*d
ER筒夾+SGER螺帽組合精度0.006mm @3*d
ER筒夾+ERM螺帽&ER螺帽組合精度0.010mm @3*d

5. 筒夾的表面處理

為了避免生鏽而造成筒夾的毀損
震虎生產的ER筒夾全面做防鏽鍍層處理

SGER & ER // COLLET

Collet is one of the main parts for collet chuck
It holds the tool for nut to tighten it on the collet chuck
However, it is never easy to produce an accurate one
There are some points to notice

1. Material

Life of collet will be shortened if produced with WRONG material
SPEED TIGER produce collet with bearing steel
Life of collet with such steel is longer and repeat accuracy is good

2. Roundness of collet

Collet with poor roundness will reduce the accuracy when assemble with the chuck
SPEED TIGER produce the collet with roundness 0.001mm

3. Concentricity

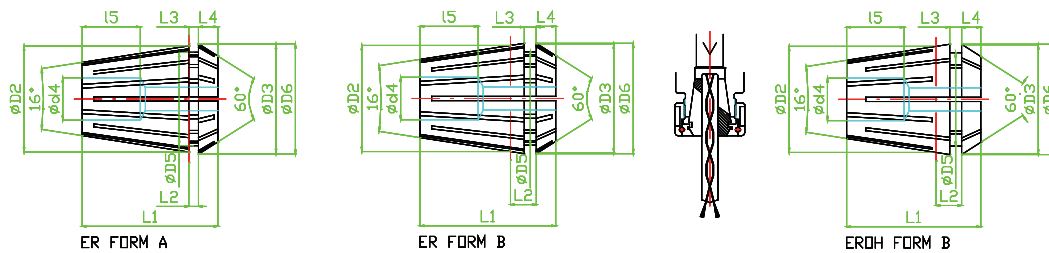
Collet with poor concentricity will reduce the accuracy when assemble with the chuck
SPEED TIGER produce the AA grade collet with concentricity 0.001mm
SPEED TIGER produce collet with concentricity 0.003mm

4. Assembly accuracy of collet with chuck and nut

AA grade ER collet + SGER nut assembly runout 0.003mm @3*d
AA grade ER collet + ERM nut & ER nut assembly runout 0.005mm @3*d
ER collet + SGER nut assembly runout 0.006mm @3*d
ER collet + ERM nut & ER nut assembly runout 0.010mm @3*d

5. Surface treatment of collet

To prevent the rust damaging the collet
all ER collets produced in SPEED TIGER are with "RUSTPROOF" coating



ER COLLET	ER11	ER16	ER20	ER25	ER32	ER40						
FORM A	1.0-2.5	3.0-6.0	1.0-4.5	5.0-10.0	1.0-6.5	7.0-13.0	1.0-7.5	8.0-16.0	2.0-7.5	8.0-20.0	3.0-8.5	9.0-26.0
ØD2	11	16	20	25	32	40						
ØD3 0/-0.2	11.30	16.74	20.74	25.74	32.74	40.74						
Ød4	5.0	7.0	9.0	10.0	12.0	14.0						
ØD5	9.5	13.8	17.4	22.0	29.2	36.2						
ØD6	11.6	17.1	21.1	26.1	33.1	41.1						
L1 max.	18.0	27.5	31.5	34.0	40.0	46.0						
L2	2.0	2.3	2.4	2.5	2.7	3.5						
L3	2.0	2.3	2.4	2.5	2.7	3.5						
L4 +/-0.2	2.5	4.0	4.8	5.0	5.5	7.0						
L5 min.	9	9.0	12.0	13.0	15	18						
ER COLLET	ER11	ER16	ER20	ER25	ER32	ER40						
FORM B	1.0-2.5	3.0-7.0	1.0-4.5	5.0-10.0	1.0-6.5	7.0-13.0	1.0-7.5	8.0-16.0	2.0-7.5	8.0-20.0	3.0-8.5	9.0-26.0
ØD2	11	16	20	25	32	40						
ØD3 0/-0.2	11.5	17.0	21.0	26.0	33.0	41.0						
Ød4	5.0	7.5	10.0	12.0	15.0	20.0						
ØD5	9.5	13.8	17.4	22.0	29.2	36.2						
ØD6	11.70	17.25	21.30	26.30	33.35	41.40						
L1 max.	18.0	27.5	31.5	34.0	40.0	46.0						
L2	3.80	6.26	6.36	6.66	7.16	7.66						
L3	2.0	2.7	2.8	3.1	3.6	4.1						
L4 +/-0.2	2.5	4.0	4.8	5.0	5.5	7.0						
L5 min.	9	9.0	12.0	13.0	15	18						

ER Collet 筒夾

防鏽鍍層AA級ER筒夾 DIN6499B/ISO15488B

AA級ER筒夾+SGER螺帽組合精度0.003mm @3*d

AA級ER筒夾+ERM螺帽&ER螺帽組合精度0.005mm @3*d

Rustproof coating AA grade ER collet DIN6499B/ISO15488B

AA grade ER collet + SGER nut assembly runout 0.003mm @3*d

AA grade ER collet + ERM nut & ER nut assembly runout 0.005mm @3*d

ER11AA (0.01kg/pc)			ER16AA (0.03kg/pc)			ER20AA (0.040kg/pc)		
Ød range	CODE	STOCK	CODE	STOCK	CODE	STOCK		
1.0-0.5	JARF ER11AA-010	◎	JARF ER16AA-010	◎	JARF ER20AA-010	◎		
1.5-2.0	JARF ER11AA-015	◎						
2.0-1.5	JARF ER11AA-020	◎						
2.5-2.0	JARF ER11AA-025	◎						
3.0-2.5	JARF ER11AA-030	◎						
3.5-3.0	JARF ER11AA-035	◎						
4.0-3.5	JARF ER11AA-040	◎						
4.5-4.0	JARF ER11AA-045	◎						
5.0-4.5	JARF ER11AA-050	◎						
5.5-5.0	JARF ER11AA-055	◎						
6.0-5.5	JARF ER11AA-060	◎						
6.5-6.0	JARF ER11AA-065	◎						
7.0-6.5	JARF ER11AA-070	◎						
2.0-1.0			JARF ER16AA-020	◎	JARF ER20AA-020	◎		
3.0-2.0			JARF ER16AA-030	◎	JARF ER20AA-030	◎		
4.0-3.0			JARF ER16AA-040	◎	JARF ER20AA-040	◎		
5.0-4.0			JARF ER16AA-050	◎	JARF ER20AA-050	◎		
6.0-5.0			JARF ER16AA-060	◎	JARF ER20AA-060	◎		
7.0-6.0			JARF ER16AA-070	◎	JARF ER20AA-070	◎		
8.0-7.0			JARF ER16AA-080	◎	JARF ER20AA-080	◎		
9.0-8.0			JARF ER16AA-080	◎	JARF ER20AA-090	◎		
10.0-9.0			JARF ER16AA-100	◎	JARF ER20AA-100	◎		
11.0-10.0					JARF ER20AA-110	◎		
12.0-11.0					JARF ER20AA-120	◎		
13.0-12.0					JARF ER20AA-130	◎		
ER25AA (0.09kg/pc)			ER32AA (0.16kg/pc)			ER40AA (0.30kg/pc)		
Ød range	CODE	STOCK	CODE	STOCK	CODE	STOCK		
1.0-0.5	JARF ER25AA-010	◎						
2.0-1.0	JARF ER25AA-020	◎						
3.0-2.0	JARF ER25AA-030	◎	JARF ER32AA-030	◎				
4.0-3.0	JARF ER25AA-040	◎	JARF ER32AA-040	◎	JARF ER40AA-040	◎		
5.0-4.0	JARF ER25AA-050	◎	JARF ER32AA-050	◎	JARF ER40AA-050	◎		
6.0-5.0	JARF ER25AA-060	◎	JARF ER32AA-060	◎	JARF ER40AA-060	◎		
7.0-6.0	JARF ER25AA-070	◎	JARF ER32AA-070	◎	JARF ER40AA-070	◎		
8.0-7.0	JARF ER25AA-080	◎	JARF ER32AA-080	◎	JARF ER40AA-080	◎		
9.0-8.0	JARF ER25AA-090	◎	JARF ER32AA-090	◎	JARF ER40AA-090	◎		
10.0-9.0	JARF ER25AA-100	◎	JARF ER32AA-100	◎	JARF ER40AA-100	◎		
11.0-10.0	JARF ER25AA-110	◎	JARF ER32AA-110	◎	JARF ER40AA-110	◎		
12.0-11.0	JARF ER25AA-120	◎	JARF ER32AA-120	◎	JARF ER40AA-120	◎		
13.0-12.0	JARF ER25AA-130	◎	JARF ER32AA-130	◎	JARF ER40AA-130	◎		
14.0-13.0	JARF ER25AA-140	◎	JARF ER32AA-140	◎	JARF ER40AA-140	◎		
15.0-14.0	JARF ER25AA-150	◎	JARF ER32AA-150	◎	JARF ER40AA-150	◎		
16.0-15.0	JARF ER25AA-160	◎	JARF ER32AA-160	◎	JARF ER40AA-160	◎		
17.0-16.0			JARF ER32AA-170	◎	JARF ER40AA-170	◎		
18.0-17.0			JARF ER32AA-180	◎	JARF ER40AA-180	◎		
19.0-18.0			JARF ER32AA-190	◎	JARF ER40AA-190	◎		
20.0-19.0			JARF ER32AA-200	◎	JARF ER40AA-200	◎		
21.0-20.0					JARF ER40AA-210	◎		
22.0-21.0					JARF ER40AA-220	◎		
23.0-22.0					JARF ER40AA-230	◎		
24.0-23.0					JARF ER40AA-240	◎		
25.0-24.0					JARF ER40AA-250	◎		
26.0-25.0					JARF ER40AA-260	◎		

ER Collet 筒夾

SPEED TIGER

防鏽鍍層ER筒夾 DIN6499B/ISO15488B

ER筒夾+SGER螺帽組合精度0.006mm @3*d

ER筒夾+ERM螺帽&ER螺帽組合精度0.010mm @3*d

Rustproof coating ER collet DIN6499B/ISO15488B

ER collet + SGER nut assembly runout 0.006mm @3*d

ER collet + ERM nut & ER nut assembly runout 0.010mm @3*d

Ød range	ER11 (0.01kg/pc)		ER16 (0.03kg/pc)		ER20 (0.04kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
1.0~0.5	GFRF ER11-010	◎	GFRF ER16-010	◎	GFRF ER20-010	◎
1.5~2.0	GFRF ER11-015	◎				
2.0~1.5	GFRF ER11-020	◎				
2.5~2.0	GFRF ER11-025	◎				
3.0~2.5	GFRF ER11-030	◎				
3.5~3.0	GFRF ER11-035	◎				
4.0~3.5	GFRF ER11-040	◎				
4.5~4.0	GFRF ER11-045	◎				
5.0~4.5	GFRF ER11-050	◎				
5.5~5.0	GFRF ER11-055	◎				
6.0~5.5	GFRF ER11-060	◎				
6.5~6.0	GFRF ER11-065	◎				
7.0~6.5	GFRF ER11-070	◎				
2.0~1.0			GFRF ER16-020	◎	GFRF ER20-020	◎
3.0~2.0			GFRF ER16-030	◎	GFRF ER20-030	◎
4.0~3.0			GFRF ER16-040	◎	GFRF ER20-040	◎
5.0~4.0			GFRF ER16-050	◎	GFRF ER20-050	◎
6.0~5.0			GFRF ER16-060	◎	GFRF ER20-060	◎
7.0~6.0			GFRF ER16-070	◎	GFRF ER20-070	◎
8.0~7.0			GFRF ER16-080	◎	GFRF ER20-080	◎
9.0~8.0			GFRF ER16-090	◎	GFRF ER20-090	◎
10.0~9.0			GFRF ER16-100	◎	GFRF ER20-100	◎
11.0~10.0					GFRF ER20-110	◎
12.0~11.0					GFRF ER20-120	◎
13.0~12.0					GFRF ER20-130	◎
Ød range	ER25 (0.09kg/pc)		ER32 (0.16kg/pc)		ER40 (0.30kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
1.0~0.5	GFRF ER25-010	◎				
2.0~1.0	GFRF ER25-020	◎				
3.0~2.0	GFRF ER25-030	◎	GFRF ER32-030	◎		
4.0~3.0	GFRF ER25-040	◎	GFRF ER32-040	◎	GFRF ER40-040	◎
5.0~4.0	GFRF ER25-050	◎	GFRF ER32-050	◎	GFRF ER40-050	◎
6.0~5.0	GFRF ER25-060	◎	GFRF ER32-060	◎	GFRF ER40-060	◎
7.0~6.0	GFRF ER25-070	◎	GFRF ER32-070	◎	GFRF ER40-070	◎
8.0~7.0	GFRF ER25-080	◎	GFRF ER32-080	◎	GFRF ER40-080	◎
9.0~8.0	GFRF ER25-090	◎	GFRF ER32-090	◎	GFRF ER40-090	◎
10.0~9.0	GFRF ER25-100	◎	GFRF ER32-100	◎	GFRF ER40-100	◎
11.0~10.0	GFRF ER25-110	◎	GFRF ER32-110	◎	GFRF ER40-110	◎
12.0~11.0	GFRF ER25-120	◎	GFRF ER32-120	◎	GFRF ER40-120	◎
13.0~12.0	GFRF ER25-130	◎	GFRF ER32-130	◎	GFRF ER40-130	◎
14.0~13.0	GFRF ER25-140	◎	GFRF ER32-140	◎	GFRF ER40-140	◎
15.0~14.0	GFRF ER25-150	◎	GFRF ER32-150	◎	GFRF ER40-150	◎
16.0~15.0	GFRF ER25-160	◎	GFRF ER32-160	◎	GFRF ER40-160	◎
17.0~16.0			GFRF ER32-170	◎	GFRF ER40-170	◎
18.0~17.0			GFRF ER32-180	◎	GFRF ER40-180	◎
19.0~18.0			GFRF ER32-190	◎	GFRF ER40-190	◎
20.0~19.0			GFRF ER32-200	◎	GFRF ER40-200	◎
21.0~20.0					GFRF ER40-210	◎
22.0~21.0					GFRF ER40-220	◎
23.0~22.0					GFRF ER40-230	◎
24.0~23.0					GFRF ER40-240	◎
25.0~24.0					GFRF ER40-250	◎
26.0~25.0					GFRF ER40-260	◎

EROH Collet 筒夾

防鏽鍍層AA級EROH止水筒夾 DIN6499B/ISO15488B Rustproof coating AA grade EROH coolant collet DIN6499B/ISO15488B
 AA級EROH筒夾+SGER螺帽組合精度0.003mm @3*d AA grade EROH collet + SGER nut assembly runout 0.003mm @3*d
 AA級EROH筒夾+ERM螺帽&ER螺帽組合精度0.005mm @3*d AA grade EROH collet + ERM nut & ER nut assembly runout 0.005mm @3*d

Ød range	ER11OHAA (0.01kg/pc)		ER16OHAA (0.03kg/pc)		ER20OHAA (0.04kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
3.0~2.9	JARF ER11OHAA-030		JARF ER16OHAA-030			
3.5~3.4	JARF ER11OHAA-035		JARF ER16OHAA-035			
4.0~3.9	JARF ER11OHAA-040		JARF ER16OHAA-040			
4.5~4.4	JARF ER11OHAA-045		JARF ER16OHAA-045			
5.0~4.9	JARF ER11OHAA-050		JARF ER16OHAA-050		JARF ER20OHAA-050	
5.5~5.4	JARF ER11OHAA-055					
6.0~5.9	JARF ER11OHAA-060					
6.5~6.4	JARF ER11OHAA-065					
7.0~6.9	JARF ER11OHAA-070					
5.5~5.0			JARF ER16OHAA-055		JARF ER20OHAA-055	
6.0~5.5			JARF ER16OHAA-060		JARF ER20OHAA-060	
6.5~6.0			JARF ER16OHAA-065		JARF ER20OHAA-065	
7.0~6.5			JARF ER16OHAA-070		JARF ER20OHAA-070	
7.5~7.0			JARF ER16OHAA-075		JARF ER20OHAA-075	
8.0~7.5			JARF ER16OHAA-080		JARF ER20OHAA-080	
8.5~8.0			JARF ER16OHAA-085		JARF ER20OHAA-085	
9.0~8.5			JARF ER16OHAA-090		JARF ER20OHAA-090	
9.5~9.0			JARF ER16OHAA-095		JARF ER20OHAA-095	
10.0~9.5			JARF ER16OHAA-100		JARF ER20OHAA-100	
10.5~10.0					JARF ER20OHAA-105	
11.0~10.5					JARF ER20OHAA-110	
11.5~11.0					JARF ER20OHAA-115	
12.0~11.5					JARF ER20OHAA-120	
12.5~12.0					JARF ER20OHAA-125	
13.0~12.5					JARF ER20OHAA-130	

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EROH Collet 筒夾

SPEED TIGER

防鏽鍍層AA級EROH止水筒夾 DIN6499B/ISO15488B Rustproof coating AA grade EROH coolant collet DIN6499B/ISO15488B
 AA級EROH筒夾+SGER螺帽組合精度0.003mm @3*d AA grade EROH collet + SGER nut assembly runout 0.003mm @3*d
 AA級EROH筒夾+ERM螺帽&ER螺帽組合精度0.005mm @3*d AA grade EROH collet + ERM nut & ER nut assembly runout 0.005mm @3*d

Ød range	ER25OHAA (0.09kg/pc)		ER32OHAA (0.16kg/pc)		ER40OHAA (0.30kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
6.0-5.5	JARF ER25OHAA-060					
6.5-6.0	JARF ER25OHAA-065					
7.0-6.5	JARF ER25OHAA-070					
7.5-7.0	JARF ER25OHAA-075					
8.0-7.5	JARF ER25OHAA-080		JARF ER32OHAA-080			
8.5-8.0	JARF ER25OHAA-085		JARF ER32OHAA-085			
9.0-8.5	JARF ER25OHAA-090		JARF ER32OHAA-090			
9.5-9.0	JARF ER25OHAA-095		JARF ER32OHAA-095			
10.0-9.5	JARF ER25OHAA-100		JARF ER32OHAA-100		JARF ER40OHAA-100	
10.5-10.0	JARF ER25OHAA-105		JARF ER32OHAA-105		JARF ER40OHAA-105	
11.0-10.5	JARF ER25OHAA-110		JARF ER32OHAA-110		JARF ER40OHAA-110	
11.5-11.0	JARF ER25OHAA-115		JARF ER32OHAA-115		JARF ER40OHAA-115	
12.0-11.5	JARF ER25OHAA-120		JARF ER32OHAA-120		JARF ER40OHAA-120	
12.5-12.0	JARF ER25OHAA-125		JARF ER32OHAA-125		JARF ER40OHAA-125	
13.0-12.5	JARF ER25OHAA-130		JARF ER32OHAA-130		JARF ER40OHAA-130	
13.5-13.0	JARF ER25OHAA-135		JARF ER32OHAA-135		JARF ER40OHAA-135	
14.0-13.5	JARF ER25OHAA-140		JARF ER32OHAA-140		JARF ER40OHAA-140	
14.5-14.0	JARF ER25OHAA-145		JARF ER32OHAA-145		JARF ER40OHAA-145	
15.0-14.5	JARF ER25OHAA-150		JARF ER32OHAA-150		JARF ER40OHAA-150	
15.5-15.0	JARF ER25OHAA-155		JARF ER32OHAA-155		JARF ER40OHAA-155	
16.0-15.5	JARF ER25OHAA-160		JARF ER32OHAA-160		JARF ER40OHAA-160	
16.5-16.0			JARF ER32OHAA-165		JARF ER40OHAA-165	
17.0-16.5			JARF ER32OHAA-170		JARF ER40OHAA-170	
17.5-17.0			JARF ER32OHAA-175		JARF ER40OHAA-175	
18.0-17.5			JARF ER32OHAA-180		JARF ER40OHAA-180	
18.5-18.0			JARF ER32OHAA-185		JARF ER40OHAA-185	
19.0-18.5			JARF ER32OHAA-190		JARF ER40OHAA-190	
19.5-19.0			JARF ER32OHAA-195		JARF ER40OHAA-195	
20.0-19.5			JARF ER32OHAA-200		JARF ER40OHAA-200	
20.5-20.0					JARF ER40OHAA-205	
21.0-20.5					JARF ER40OHAA-210	
21.5-21.0					JARF ER40OHAA-215	
22.0-21.5					JARF ER40OHAA-220	
22.5-22.0					JARF ER40OHAA-225	
23.0-22.5					JARF ER40OHAA-230	
23.5-23.0					JARF ER40OHAA-235	
24.0-23.5					JARF ER40OHAA-240	
24.5-24.0					JARF ER40OHAA-245	
25.0-24.5					JARF ER40OHAA-250	
25.5-25.0					JARF ER40OHAA-255	
26.0-25.5					JARF ER40OHAA-260	

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EROH Collet 筒夾

防鏽鍍層EROH止水筒夾 DIN6499B/ISO15488B

EROH筒夾+SGER螺帽組合精度0.006mm @3*d

EROH筒夾+ERM螺帽&ER螺帽組合精度0.010mm @3*d

Rustproof coating EROH coolant collet DIN6499B/ISO15488B

EROH collet + SGER nut assembly runout 0.006mm @3*d

EROH collet + ERM nut & ER nut assembly runout 0.010mm @3*d

Ød range	ER11OH (0.01kg/pc)		ER16OH (0.03kg/pc)		ER20OH (0.04kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
3.0~2.9	JARF ER11OH-030		JARF ER16OH-030			
3.5~3.4	JARF ER11OH-035		JARF ER16OH-035			
4.0~3.9	JARF ER11OH-040		JARF ER16OH-040			
4.5~4.4	JARF ER11OH-045		JARF ER16OH-045			
5.0~4.9	JARF ER11OH-050		JARF ER16OH-050		JARF ER20OH-050	
5.5~5.4	JARF ER11OH-055					
6.0~5.9	JARF ER11OH-060					
6.5~6.4	JARF ER11OH-065					
7.0~6.9	JARF ER11OH-070					
5.5~5.0			JARF ER16OH-055		JARF ER20OH-055	
6.0~5.5			JARF ER16OH-060		JARF ER20OH-060	
6.5~6.0			JARF ER16OH-065		JARF ER20OH-065	
7.0~6.5			JARF ER16OH-070		JARF ER20OH-070	
7.5~7.0			JARF ER16OH-075		JARF ER20OH-075	
8.0~7.5			JARF ER16OH-080		JARF ER20OH-080	
8.5~8.0			JARF ER16OH-085		JARF ER20OH-085	
9.0~8.5			JARF ER16OH-090		JARF ER20OH-090	
9.5~9.0			JARF ER16OH-095		JARF ER20OH-095	
10.0~9.5			JARF ER16OH-100		JARF ER20OH-100	
10.5~10.0					JARF ER20OH-105	
11.0~10.5					JARF ER20OH-110	
11.5~11.0					JARF ER20OH-115	
12.0~11.5					JARF ER20OH-120	
12.5~12.0					JARF ER20OH-125	
13.0~12.5					JARF ER20OH-130	

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EROH Collet 筒夾

SPEED TIGER

防鏽鍍層EROH止水筒夾 DIN6499B/ISO15488B

EROH筒夾+SGER螺帽組合精度0.006mm @3*d

EROH筒夾+ERM螺帽&ER螺帽組合精度0.010mm @3*d

Rustproof coating EROH coolant collet DIN6499B/ISO15488B

EROH collet + SGER nut assembly runout 0.006mm @3*d

EROH collet + ERM nut & ER nut assembly runout 0.010mm @3*d

Ød range	ER25OH (0.09kg/pc)		ER32OH (0.16kg/pc)		ER40OH (0.30kg/pc)	
	CODE	STOCK	CODE	STOCK	CODE	STOCK
6.0~5.5	JARF ER25OH-060					
6.5~6.0	JARF ER25OH-065					
7.0~6.5	JARF ER25OH-070					
7.5~7.0	JARF ER25OH-075					
8.0~7.5	JARF ER25OH-080		JARF ER32OH-080			
8.5~8.0	JARF ER25OH-085		JARF ER32OH-085			
9.0~8.5	JARF ER25OH-090		JARF ER32OH-090			
9.5~9.0	JARF ER25OH-095		JARF ER32OH-095			
10.0~9.5	JARF ER25OH-100		JARF ER32OH-100		JARF ER40OH-100	
10.5~10.0	JARF ER25OH-105		JARF ER32OH-105		JARF ER40OH-105	
11.0~10.5	JARF ER25OH-110		JARF ER32OH-110		JARF ER40OH-110	
11.5~11.0	JARF ER25OH-115		JARF ER32OH-115		JARF ER40OH-115	
12.0~11.5	JARF ER25OH-120		JARF ER32OH-120		JARF ER40OH-120	
12.5~12.0	JARF ER25OH-125		JARF ER32OH-125		JARF ER40OH-125	
13.0~12.5	JARF ER25OH-130		JARF ER32OH-130		JARF ER40OH-130	
13.5~13.0	JARF ER25OH-135		JARF ER32OH-135		JARF ER40OH-135	
14.0~13.5	JARF ER25OH-140		JARF ER32OH-140		JARF ER40OH-140	
14.5~14.0	JARF ER25OH-145		JARF ER32OH-145		JARF ER40OH-145	
15.0~14.5	JARF ER25OH-150		JARF ER32OH-150		JARF ER40OH-150	
15.5~15.0	JARF ER25OH-155		JARF ER32OH-155		JARF ER40OH-155	
16.0~15.5	JARF ER25OH-160		JARF ER32OH-160		JARF ER40OH-160	
16.5~16.0			JARF ER32OH-165		JARF ER40OH-165	
17.0~16.5			JARF ER32OH-170		JARF ER40OH-170	
17.5~17.0			JARF ER32OH-175		JARF ER40OH-175	
18.0~17.5			JARF ER32OH-180		JARF ER40OH-180	
18.5~18.0			JARF ER32OH-185		JARF ER40OH-185	
19.0~18.5			JARF ER32OH-190		JARF ER40OH-190	
19.5~19.0			JARF ER32OH-195		JARF ER40OH-195	
20.0~19.5			JARF ER32OH-200		JARF ER40OH-200	
20.5~20.0					JARF ER40OH-205	
21.0~20.5					JARF ER40OH-210	
21.5~21.0					JARF ER40OH-215	
22.0~21.5					JARF ER40OH-220	
22.5~22.0					JARF ER40OH-225	
23.0~22.5					JARF ER40OH-230	
23.5~23.0					JARF ER40OH-235	
24.0~23.5					JARF ER40OH-240	
24.5~24.0					JARF ER40OH-245	
25.0~24.5					JARF ER40OH-250	
25.5~25.0					JARF ER40OH-255	
26.0~25.5					JARF ER40OH-260	

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ER NUT 螺帽

ER螺帽是DIN6499/ISO15488規範
與DIN6499/ISO15488規範的A型&B型ER筒夾組合使用
螺帽是筒夾刀桿的主要部件之一
用於將夾持刀具的筒夾鎖固於筒夾刀桿上
但是要生產精準的螺帽並不是很簡單
需要注意的有:

1. 材質的選用

使用滲碳用鋼材生產的螺帽容易脆裂
震虎使用調質鋼生產ERM螺帽&ER螺帽
震虎使用軸承鋼生產SGER螺帽
這類的鋼材生產出來的螺帽不易脆裂

2. 螺帽的真圓度

真圓度不佳的螺帽組合刀桿會降低組合精度
震虎生產的螺帽真圓度是0.002mm

3. 螺帽的同心度

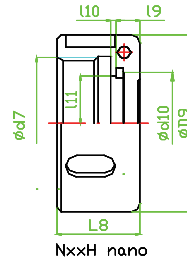
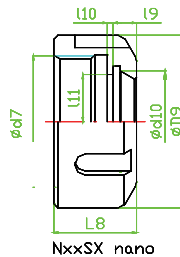
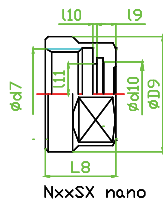
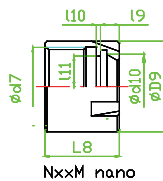
同心度不佳的螺帽組合刀桿會降低組合精度
震虎生產的螺帽同心度是0.002mm

4. 螺帽內牙的公差

螺帽牙部精度要求在DIN6499/ISO15488規範是ISO6H
震虎生產的標準是ISO5H

5. 螺帽組合刀桿與筒夾的組合精度

SGER螺帽+AA級ER筒夾組合精度0.003mm @3*d
ERM螺帽&ER螺帽+AA級ER筒夾組合精度0.005mm @3*d
SGER螺帽+ER筒夾組合精度0.006mm @3*d
ERM螺帽&ER螺帽+ER筒夾組合精度0.010mm @3*d



ER NUT	ER11M N11MX nano	ER16M N16MX nano	ER20M N20MX nano	ER25M N25MX nano
$\phi d7$ ISO5H	M13*P0.75	M19*P1.0	M24*P1.0	M30*P1.0
$\phi D9$	16	22	28	35
$\phi d10 +0.1/0$	12.3	17.7	21.7	27.0
L8	12	18	19	20
I9	3.6	4.6	5.6	5.8
I10 0/-0.2	1.0	1.1	1.2	1.3
I11 max.	5.0	7.2	9.2	11.5

ER NUT	ER11 N11SX nano	ER16 N16SX nano	ER20 N20SX nano	ER25 N25SX nano	ER32 N32SX nano	ER40 N40SX nano
$\phi d7$ ISO5H	M14*P0.75	M22*P1.5	M25*P1.5	M32*P1.5	M40*P1.5	M50*P1.5
$\phi D9$	19	28	34	42	50	63
$\phi d10 +0.1/0$	12.3	17.7	21.7	27.0	34.0	42.0
L8	11.5	17.0	19.0	20.0	23.0	26.0
I9	3.1	4.6	5.6	5.8	6.3	7.5
I10 0/-0.2	1.0	1.1	1.2	1.3	1.6	2.1
I11 max.	5.0	7.2	9.2	11.5	14.9	18.5
W 0/-0.2	17	25	30			

NUT	N16H	N20H	N25H	N32H	N40H
$\phi D9$	32	36	43	51	63

ER nut is in the norm DIN6499/ISO15488
It assembles with form A & form B ER collet in the norm of DIN6499/ISO15488
Nut is one of the main parts for collet chuck
It tightens the collet with tool on the collet chuck
However, it is never easy to produce an accurate one
There are some points to notice

1. Material

It will easily crack if produce the nut with carburizing material
SPEED TIGER produce ERM nut & ER nut with through hardening steel
SPEED TIGER produce SGER nut with bearing steel
It will not crack easily with such material

2. Roundness of nut

Nut with poor roundness will reduce the accuracy when assemble with the chuck
SPEED TIGER produce the nut with roundness 0.002mm

3. Concentricity

Nut with poor concentricity will reduce the accuracy when assemble with the chuck
SPEED TIGER produce the nut with concentricity 0.002mm

4. Tolerance of internal thread

Accuracy of nut at thread part in the norm DIN6499/ISO15488 is ISO6H
SPEED TIGER produce it ISO5H

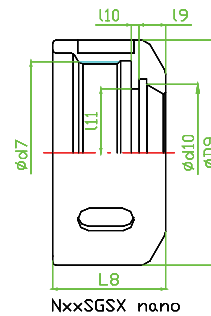
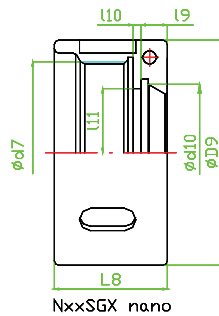
5. Assembly accuracy of nut with chuck and collet

SGER nut + AA grade ER collet assembly runout 0.003mm @3*d
ERM nut & ER nut + AA grade ER collet assembly runout 0.005mm @3*d
SGER nut + ER collet assembly runout 0.006mm @3*d
ERM nut & ER nut + ER collet assembly runout 0.010mm @3*d

ER螺帽鎖緊力表			ER nut clamping torque chart		
ER螺帽 ER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE	ER螺帽 ER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE
N11MX nano	ER11(1.0~2.5)	10Nm	N11SX nano	ER11(1.0~2.5)	12Nm
	ER11(3.0~0.0)	12Nm		ER11(3.0~0.0)	25Nm
N16MX nano	ER16(1.0~4.5)	15Nm	N16SX nano	ER16(1.0~4.5)	30Nm
	ER16(5.0~10.0)	17Nm		ER16(5.0~10.0)	55Nm
N20MX nano	ER20(1.0~6.5)	21Nm	N20SX nano	ER20(1.0~6.5)	45Nm
	ER20(7.0~13.0)	23Nm		ER20(7.0~13.0)	80Nm
N25MX nano	ER25(1.0~6.5)	24Nm	N25SX nano	ER25(1.0~6.5)	55Nm
	ER25(7.0~16.0)	40Nm		ER25(7.0~16.0)	100Nm
			N32SX nano	ER32(2.0~6.5)	70Nm
				ER32(7.0~20.0)	135Nm
			N40SX nano	ER40(3.0~7.5)	100Nm
				ER40(8.0~26.0)	170Nm

NxxMX(SX) nano與NxxMX(SX)使用相同扭力值

NxxMX(SX) nano & NxxMX(SX) are with the same torque



SGER	SGER16	SGER20	SGER25	SGER32	SGER40
NUT	N16SGX nano N16SGSX nano	N20SGX nano N20SGSX nano	N25SGX nano N25SGSX nano	N32SGX nano N32SGSX nano	N40SGX nano N40SGSX nano
Ød7 ISO5H	M24*P1.0	M28*P1.0	M34*P1.0	M42*P1.0	M52*P1.0
ØD9	34	38	44	52	62
Ød10 +0.1/0	17.7	21.7	27.0	34.0	42.0
L8	20.6	22.5	24.0	26.0	29.0
I9	4.6	5.6	5.8	6.3	7.5
I10 0/-0.2	-1.1	1.2	1.3	1.6	2.1
I11 max.	7.2	9.2	11.5	14.9	18.5

SGER螺帽鎖緊力表 // SGER nut clamping torque chart

SGER螺帽 SGER NUT	ER筒夾 ER COLLET	最大鎖緊力 MAX. TORQUE
N16SGX	ER16(1.0~4.5)	30Nm
	ER16(5.0~10.0)	55Nm
N20SGX	ER20(1.0~6.5)	45Nm
	ER20(7.0~13.0)	80Nm
N25SGX	ER25(1.0~6.5)	55Nm
	ER25(7.0~16.0)	100Nm
N32SGX	ER32(2.0~6.5)	70Nm
	ER32(7.0~20.0)	135Nm
N40SGX	ER40(3.0~7.5)	100Nm
	ER40(8.0~26.0)	170Nm

NxxSGX nano與NxxSGSX nano使用相同扭力值

NxxSGX nano & NxxSGSX nano are with the same torque

ERM & ER NUT

ERM高速平衡奈米螺帽NxxMX nano // ERM balanced nano nut NxxMX nano

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N08MX nano	M10*P0.75	12	10.8	5Nm	0.004
◎	N11MX nano	M13*P0.75	16	12.0	12Nm	0.008
◎	N16MX nano	M19*P1.0	22	18.0	17Nm	0.016
◎	N20MX nano	M24*P1.0	28	19.0	23Nm	0.030
◎	N25MX nano	M30*P1.0	35	20.0	40Nm	0.050

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ERM高速平衡螺帽NxxMX // ERM balanced nut NxxMX

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N08MX	M10*P0.75	12	10.8	5Nm	0.004
◎	N11MX	M13*P0.75	16	12.0	12Nm	0.008
◎	N16MX	M19*P1.0	22	18.0	17Nm	0.016
◎	N20MX	M24*P1.0	28	19.0	23Nm	0.030
◎	N25MX	M30*P1.0	35	20.0	40Nm	0.050

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ER高速平衡奈米螺帽NxxSX nano // ER balanced nano nut NxxSX nano

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N11SX nano	M14*P0.75	19	11.5	25Nm	0.012
◎	N16SX nano	M22*P1.5	28	17.0	55Nm	0.035
◎	N20SX nano	M25*P1.5	34	19.0	80Nm	0.060
◎	N16MN nano	M19*P1.0	24	18.0	17Nm	0.020
◎	N16CC nano	M22*P1.5	28	13.0	55Nm	0.030

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ER高速平衡螺帽NxxSX // ER balanced nut NxxSX

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N11SX	M14*P0.75	19	11.5	25Nm	0.012
◎	N16SX	M22*P1.5	28	17.0	55Nm	0.035
◎	N20SX	M25*P1.5	34	19.0	80Nm	0.060
◎	N16MN	M19*P1.0	24	18.0	17Nm	0.020
◎	N16CC	M22*P1.5	28	13.0	55Nm	0.030

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ER高速平衡奈米螺帽NxxSX nano // ER balanced nano nut NxxSX nano

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N25SX nano	M32*P1.5	42	20.0	100Nm	0.090
◎	N32SX nano	M40*P1.5	50	23.0	135Nm	0.150
◎	N40SX nano	M50*P1.5	63	26.0	170Nm	0.260

ER高速平衡螺帽NxxSX // ER balanced nut NxxSX

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N25SX	M32*P1.5	42	20.0	100Nm	0.090
◎	N32SX	M40*P1.5	50	23.0	135Nm	0.150
◎	N40SX	M50*P1.5	63	26.0	170Nm	0.260

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ER高速平衡鋼珠螺帽NxxH // ER ball bearing nut NxxH

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)
◎	N16H	M22*P1.5	34	17.0	55Nm	0.10
◎	N20H	M25*P1.5	36	19.0	80Nm	0.15
◎	N25H	M32*P1.5	43	20.0	100Nm	0.20
◎	N32H	M40*P1.5	51	23.0	135Nm	0.25
◎	N40H	M50*P1.5	63	26.0	170Nm	0.40

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◊=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



SGER NUT

SPEED TIGER



supERgrip SGER高速平衡奈米鋼珠螺帽NxxSGX
supERgrip SGER balanced nano ball bearing nut NxxSGX

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)	GROUP
◎	N16SGX nano	M24*P1.0	34	20.6	55Nm	0.10	B
◎	N20SGX nano	M28*P1.0	38	22.5	80Nm	0.15	B
◎	N25SGX nano	M34*P1.0	44	24.0	100Nm	0.20	B
◎	N32SGX nano	M42*P1.0	52	26.0	135Nm	0.25	B
◎	N40SGX nano	M52*P1.0	62	29.0	170Nm	0.40	B

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request



supERgrip SGER高速平衡奈米螺帽NxxSGSX
supERgrip SGER balanced nano nut NxxSGSX

STOCK	CODE	Ød7 ISO5H	Ød9	l8	max. Nm	W(KG)	GROUP
◎	N16SGSX nano	M24*P1.0	34	20.6	55Nm	0.10	C
◎	N20SGSX nano	M28*P1.0	38	22.5	80Nm	0.15	C
◎	N25SGSX nano	M34*P1.0	44	24.0	100Nm	0.20	C
◎	N32SGSX nano	M42*P1.0	52	26.0	135Nm	0.25	C
◎	N40SGSX nano	M52*P1.0	62	29.0	170Nm	0.40	C

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request

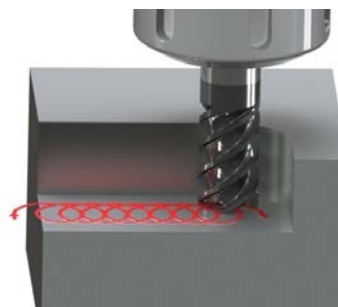
SGX



適用範圍:仕上精修 Finishing



SGSX



適用範圍:擺線粗銑 HPM roughing



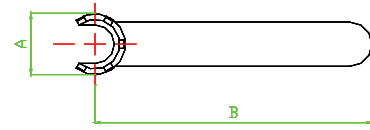
Accessories

配件

ERM螺帽扳手NxxMX nano & NxxMX // ERM nut wrench for NxxMX nano & NxxMX

STOCK	CODE	A	B	W(KG)
	W-ER08M (N08M nano, N08M)	12.4	70	0.03
◎	W-ER11M (N11M nano, N11M)	16.8	90	0.04
◎	W-ER16M (N16M nano, N16M)	22.8	110	0.06
◎	W-ER20M (N20M nano, N20M)	29.0	120	0.07
	W-ER25M (N25M nano, N25M)	36.0	130	0.12

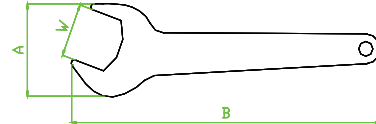
STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request



ER螺帽扳手NxxSX nano & NxxSX // ER nut wrench for NxxSX nano & NxxSX

STOCK	CODE	W	A	B	W(KG)
	W-ER11 (N11SX nano, N11S)	17	32	95	0.13
◎	W-ER16 (N11SX nano, N11S)	25	44	145	0.15
◎	W-ER20 (N11SX nano, N11S)	30	52	170	0.20

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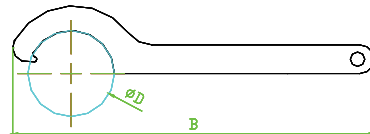


ER螺帽&ER鋼珠螺帽扳手NxxSX nano & NxxSX & NxxH

ER nut wrench for NxxSX nano & NxxSX & NxxH

STOCK	CODE	ØD	B	W(KG)
◎	W-FK04 (N16H)	32	170	0.07
◎	W-FK05 (N20H)	36	170	0.10
◎	W-FK06 (N25H, N25SX nano, N25SX)	43	170	0.11
◎	W-FK08 (N32H, N32SX nano, N32SX)	51	210	0.19
◎	W-FK09 (N40H, N40SX nano, N40SX)	63	230	0.27

STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request

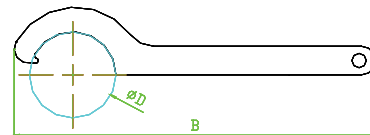


supERgrip SGER奈米鋼珠螺帽 & SGER奈米螺帽扳手 NxxSGX & NxxSGSX

supERgrip SGER nut wrench for NxxSGX & NxxSGSX

STOCK	CODE	ØD	B	W(KG)
◎	W-FK04 (N16SGX nano) (N16SGSX nar)	32	170	0.07
◎	W-FK05 (N20SGX nano) (N20SGSX nar)	36	170	0.10
◎	W-FK06 (N25SGX nano) (N25SGSX nar)	43	170	0.11
◎	W-FK08 (N32SGX nano) (N32SGSX nar)	51	210	0.19
◎	W-FK09 (N40SGX nano) (N40SGSX nar)	63	230	0.27

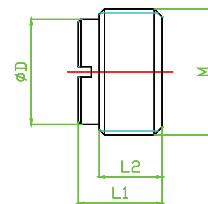
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止動螺絲 // Backup screw

STOCK	CODE	ØD	L1	L2	W(KG)
◎	BK-ER11-M08*P1.0	6	10	7	0.01
◎	BK-ER16-M11*P1.0	8	12	9	0.01
◎	BK-ER20-M14*P1.0	11	13	9	0.02
◎	BK-ER25-M18*P1.5	15	14	10	0.02
◎	BK-ER32-M24*P1.5	20	16	12	0.03
◎	BK-ER40-M28*P1.5	25	18	14	0.04

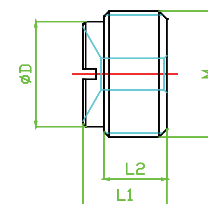
STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request



中心出水止動螺絲 // Coolant though backup screw

STOCK	CODE	ØD	L1	L2	W(KG)
◎	BK-ER11C-M08*P1.0	6	10	7	0.01
◎	BK-ER16C-M11*P1.0	8	12	9	0.01
◎	BK-ER20C-M14*P1.0	11	13	9	0.02
◎	BK-ER25C-M18*P1.5	15	14	10	0.02
◎	BK-ER32C-M24*P1.5	20	16	12	0.03
◎	BK-ER40C-M28*P1.5	25	18	14	0.04

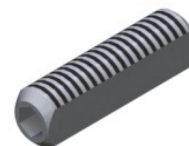
STOCK ◎=標準在庫品 // STOCK ◉=regular stock | STOCK ◌=少量在庫品 // STOCK ◍=few stock | STOCK 無標示=接單生產 // STOCK BLANK=on request



ezShrink 中心出水止動螺絲 / ezShrink coolant through backup screw

STOCK	CODE		W(KG)
◎	BK-EZ-M05*P0.8	FOR EZ06	0.01
◎	BK-EZ-M06*P1.0	FOR EZ08	0.01
◎	BK-EZ-M08*P1.0	FOR EZ10	0.02
◎	BK-EZ-M10*P1.0	FOR EZ12/EZ14	0.02
◎	BK-EZ-M12*P1.0	FOR EZ16/EZ18	0.03
◎	BK-EZ-M16*P1.0	FOR EZ20/EZ25/EZ32	0.04

STOCK ◎=標準在庫品 // STOCK ○=regular stock



ezShrink+ezKool 中心出水止動螺絲 / ezShrink+ezKool coolant through backup screw

STOCK	CODE		W(KG)
◎	BK-EZKK-M05*P0.8	FOR EZ06KK	0.01
◎	BK-EZKK-M06*P1.0	FOR EZ08KK	0.01
◎	BK-EZKK-M08*P1.0	FOR EZ10KK	0.02
◎	BK-EZKK-M10*P1.0	FOR EZ12KK/EZ14KK	0.02
◎	BK-EZKK-M12*P1.0	FOR EZ16KK/EZ18KK	0.03
◎	BK-EZKK-M16*P1.0	FOR EZ20KK/EZ25KK/EZ32KK	0.04

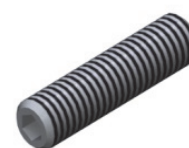
STOCK ◎=標準在庫品 // STOCK ○=regular stock



ezShrink 中心出水止動螺絲 / ezShrink coolant through backup screw

STOCK	CODE		W(KG)
◎	BK-EZ-M05*P0.8	FOR EZ06	0.01
◎	BK-EZ-M06*P1.0	FOR EZ08	0.01
◎	BK-EZ-M08*P1.25	FOR EZ10	0.02
◎	BK-EZ-M10*P1.5	FOR EZ12/EZ14	0.02
◎	BK-EZ-M12*P1.75	FOR EZ16/EZ18	0.03
◎	BK-EZ-M16*P2.0	FOR EZ20/EZ25/EZ32	0.04

STOCK ◎=標準在庫品 // STOCK ○=regular stock



Accessories

配件

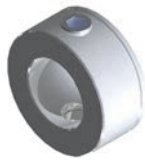


ezShrink 長度調整器 / ezShrink length setting adaptor

STOCK	CODE	W(KG)
	EZAA06	1.00
	EZAA08	1.00
	EZAA10	1.00
	EZAA12	1.00
	EZAA14	1.00
	EZAA16	1.00
	EZAA18	1.00
	EZAA20	1.00
	EZAA25	1.00
	EZAA32	1.00

STOCK ◎=標準在庫品 // STOCK ⊙=regular stock | STOCK ◐=少量在庫品 // STOCK ◑=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

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ezShrink 刀具柄部固定器 / ezShrink cutter shank holder

STOCK	CODE	W(KG)
	EZSH03	0.01
	EZSH04	0.01
	EZSH05	0.01
	EZSH06	0.02
	EZSH08	0.20
	EZSH10	0.02
	EZSH12	0.02
	EZSH14	0.03
	EZSH16	0.03
	EZSH18	0.30
	EZSH20	0.03
	EZSH25	0.04
	EZSH32	0.40

STOCK ◎=標準在庫品 // STOCK ⊙=regular stock | STOCK ◐=少量在庫品 // STOCK ◑=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request



ezShrink 不鏽鋼熱膨脹燒結刀桿導熱套 / ezShrink heating sleeve for stainless shrink chuck

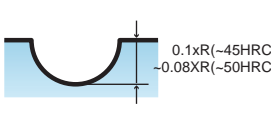
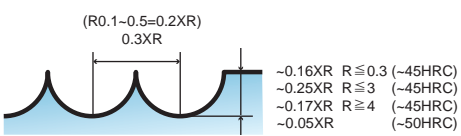
STOCK	CODE	W(KG)	
	EZHS060	CS0803 CS1203 SLSA03	0.02
	EZHS070	CS0804 CS1204 SLSA04	0.02
	EZHS075	CR0803 CR1203 SLRA03	0.02
	EZHS080	CS1205 SLSA05	0.02
	EZHS090	CS0806 CS1206 SLSA06	0.02
	EZHS095	CF0803 CF1203 SLFB03	0.02
	EZHS100	CR0804 CS1207 CR1204 SLSA07 SLRB06 SLRA04	0.04
	EZHS110	CS0808 CS1208 SLSA08	0.04
	EZHS120	CR0806 CF0804 CS1209 CR1206 CF1204 SLSA09 SLRA06 SLFB04	0.04
	EZHS130	CS1210 SLSA10 SLRB08 SLRA06 SLFA06	0.04
	EZHS140	CR0808 CF0806 CS1211 CR1208 CF1206 SLSA11 SLRA08 SLRB06 SLFB06	0.04
	EZHS150	CS1212 SLSA12	0.04
	EZHS160	CF0808 CR1210 CF1208 SLRB10 SLRA08 SLRA10 SLFA08	0.04
	EZHS180	CF1210 SLRB08 SLFB08	0.04
	EZHS190	SLSB12 SLRA10 SLFA10	0.04
	EZHS200	CR1212 CF1212 SLRA12	0.04
	EZHS220	SLRA12 SLRB10 SLFA12 SLFB12	0.04
	EZHS260	SLSB20 SLRA16 SLRB12 SLFB12	0.06
	EZHS290	SLSB20	0.06
	EZHS320	SLRA20 SLRB16 SLFB16	0.06

STOCK ◎=標準在庫品 // STOCK ⊙=regular stock | STOCK ◐=少量在庫品 // STOCK ◑=few stock | STOCK 無標示=接單生產品 // STOCK BLANK=on request

• SBS 2 Flutes Standard Cutting Conditions

切削條件表

Work Material 被削材	Carbon Steels S50C 碳素鋼		Alloy Steels Prehardened Steels SCM SKD SUS HPM NAK 合金鋼，調質鋼		Hardened Steels SKD61(-50HRC) 調質鋼		Aluminum 鋁		Copper 銅	
	150m/min		120~150m/min		80~100m/min		150~m/min		100~150m/min	
Cutting Speed 切削速度	150m/min		120~150m/min		80~100m/min		150~m/min		100~150m/min	
R	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度
D0.15R	40,000	400	40,000	360	40,000	330	40,000	440	40,000	400
D0.2R	40,000	500	40,000	480	40,000	500	40,000	480	40,000	480
D0.25R	40,000	620	40,000	610	40,000	620	40,000	540	40,000	540
D0.3R	40,000	750	40,000	750	40,000	750	40,000	600	40,000	600
D0.4R	40,000	960	40,000	1,000	36,000	900	40,000	800	40,000	800
D0.5R	40,000	1,200	38,000	1,200	29,000	900	40,000	1,000	40,000	830
D0.75R	30,000	1,270	25,500	1,100	19,000	700	40,000	1,360	30,000	1,160
D1R	24,000	1,160	19,000	800	14,300	600	40,000	2,000	24,000	1,200
D1.25R	19,000	1,000	15,300	670	11,500	510	38,000	2,400	19,000	1,200
D1.5R	16,000	930	13,000	600	9,600	460	32,000	2,400	16,000	1,200
D1.75R	13,700	930	11,400	580	8,200	450	27,300	2,400	13,600	1,200
D2R	12,000	930	10,000	570	7,200	450	24,000	2,400	12,000	1,200
D2.5R	9,600	930	8,000	560	5,700	450	19,000	2,400	9,600	1,200
D3R	8,000	930	6,400	540	4,800	450	16,000	2,400	8,000	1,200
D4R	6,000	900	4,800	540	3,600	450	12,000	2,400	6,000	1,200
D5R	4,800	900	3,800	540	2,900	450	9,600	2,300	4,800	1,150
D6R	4,000	900	3,200	540	2,400	450	8,000	2,100	4,000	1,050
D7R	3,400	900	2,750	540	2,050	450	6,800	2,000	3,400	1,000
D8R	3,000	900	2,400	540	1,800	450	6,000	2,000	3,000	1,000
D10R	2,400	900	1,900	520	1,450	450	4,800	2,000	2,400	1,000
D12.5R	1,900	720	1,520	450	1,160	420	3,840	1,900	1,920	940

Depth of cut (R:球頭半徑) 切削量基準		
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1. When slotting, reduce the feed by 60% from above values.
2. Length of overhang is 4 times dia, as standard. When it is longer then 4 times dia, follow figures of above table.
3. Use Oil-mist coolant or Air blow.
4. Adjust both spindle speed and feed according to milling conditions and machine rigidity.

1. 溝加工時之進給速度，請設定為上述值之 60%。
2. 刀具夾持突出量以 4D 為基準，超出上述場合時，請將切削條件作適度之調整。
3. 請使用油霧 (Oil-mist) 冷卻或吹氣方式 (Air blow) 進行切削。
4. 主軸迴轉速及床台進給速度，請以相同比例作適度調整。

● SBS 2 Flutes Standard Cutting Conditions

高速切削條件表

Work Material 被削材	Carbon Steels S50C 碳素鋼		Alloy Steels SCM, SKD, SUS 合金鋼		Prehardened Steels HPM, NAK 調質鋼		Hardened Steels SKD61(~50HRC) 調質鋼	
Cutting Speed 切削速度	250m/min		200m/min		180m/min		100m/min	
R	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度
D0.15R	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	350
D0.2R	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	480
D0.25R	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	520
D0.3R	~ 40,000	~ 1,200	~ 40,000	~ 960	~ 40,000	~ 800	~ 40,000	560
D0.4R	~ 40,000	~ 2,400	~ 40,000	~ 2,000	~ 40,000	~ 1,760	40,000	1,000
D0.5R	~ 40,000	~ 2,400	~ 40,000	~ 2,000	~ 40,000	~ 1,760	32,000	1,500
D0.75R	~ 40,000	~ 3,700	~ 40,000	~ 3,000	38,000	2,700	21,300	1,500
D1R	40,000	5,000	32,000	3,200	29,000	2,900	16,000	1,500
D1.25R	32,000	5,000	25,000	3,200	23,000	2,900	12,800	1,500
D1.5R	27,000	5,000	21,000	3,200	19,000	2,900	10,600	1,500
D1.75R	23,000	5,000	18,000	3,200	16,400	2,900	9,100	1,500
D2R	20,000	4,000	16,000	3,200	14,000	2,900	8,000	1,500
D2.5R	16,000	3,500	12,800	2,500	11,500	2,300	6,400	1,300
D3R	13,500	3,000	10,600	2,000	9,500	1,800	5,300	1,200
D4R	10,000	3,000	8,000	2,000	7,200	1,800	4,000	1,200
D5R	8,000	3,000	6,400	2,000	5,700	1,800	3,200	1,200
D6R	6,700	2,500	5,300	1,800	4,800	1,600	2,700	1,200
D8R	5,000	2,000	4,000	1,500	3,600	1,300	2,000	800
D10R	4,000	1,500	3,200	1,200	2,900	1,000	1,600	800
D12.5R	3,200	1,200	2,550	900	2,300	700	1,280	760

Depth of cut
切削量基準
(R:球頭半徑)

1. When slotting, reduce the feed by 60% from above values.
2. Length of overhang is 4 times dia. as standard. When it is longer than 4 times dia., follow figures of above table.
3. Recommend Oil-mist coolant or Air blow.
4. If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
5. Use a rigid machine and holder.

1. 溝加工時之進給速度，請設定為上述值之 60%。
2. 刀具夾持突出量以 4D 為基準，超出上述場合時，請將切削條件作適度之調整。
3. 請使用油霧 (Oil-mist) 冷卻或吹氣方式 (Air blow) 進行切削。
4. 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低迴轉數及進給速度。
5. 請使用較具剛性之機械設備及夾頭。

● SBS 4 FLUTES Standard Cutting Conditons 切削條件表

WORK MATERIAL 被切削材	Carbon Steels S50C 碳素鋼		Alloy Steels Prehardened Steels SCM SKD HPM NAK 合金鋼、調質鋼		Hardened Steels SKD61(-50HRC) 調質鋼		Aluminum 鋁		Copper 銅	
Cutting Speed 切削速度	150m/min		120~150m/min		80~100m/min		150~m/min		100~150m/min	
R	SPEED (min ⁻¹) 迴轉速	Feed Rate (mm/min) 進給速度	SPEED (min ⁻¹) 迴轉速	Feed Rate (mm/min) 進給速度	SPEED (min ⁻¹) 迴轉速	Feed Rate (mm/min) 進給速度	SPEED (min ⁻¹) 迴轉速	Feed Rate (mm/min) 進給速度	SPEED (min ⁻¹) 迴轉速	Feed Rate (mm/min) 進給速度
D0.15R	40,000	800	40,000	720	40,000	660	40,000	880	40,000	800
D0.2R	40,000	1,000	40,000	960	40,000	1,000	40,000	960	40,000	960
D0.25R	40,000	1,240	40,000	1,220	40,000	1,240	40,000	1,080	40,000	1,080
D0.3R	40,000	1,500	40,000	1,500	40,000	1,500	40,000	1,200	40,000	1,200
D0.4R	40,000	1,920	40,000	2,000	36,000	1,800	40,000	1,600	40,000	1,600
D0.5R	40,000	2,400	38,000	2,400	29,000	1,800	40,000	2,000	40,000	1,660
D0.75R	30,000	2,540	25,500	2,200	19,000	1,400	40,000	2,720	30,000	2,320
D1R	24,000	2,320	19,000	1,600	14,300	1,200	40,000	4,000	24,000	2,400
D1.25R	19,000	2,000	15,300	1,340	11,500	1,020	38,000	4,800	19,000	2,400
D1.5R	16,000	1,860	13,000	1,200	9,600	920	32,000	4,800	16,000	2,400
D1.75R	13,700	1,860	11,400	1,160	8,200	900	27,300	4,800	13,600	2,400
D2R	12,000	1,860	10,000	1,140	7,200	900	24,000	4,800	12,000	2,400
D2.5R	9,600	1,860	8,000	1,120	5,700	900	19,000	4,800	9,600	2,400
D3R	8,000	1,860	6,400	1,080	4,800	900	16,000	4,800	8,000	2,400
D4R	6,000	1,800	4,800	1,080	3,600	900	12,000	4,800	6,000	2,400
D5R	4,800	1,800	3,800	1,080	2,900	900	9,600	4,600	4,800	2,300
D6R	4,000	1,800	3,200	1,080	2,400	900	8,000	4,200	4,000	2,100
D7R	3,400	1,800	2,750	1,080	2,050	900	6,800	4,000	3,400	2,000
D8R	3,000	1,800	2,400	1,080	1,800	900	6,000	4,000	3,000	2,000
D10R	2,400	1,800	1,900	1,040	1,450	900	4,800	4,000	2,400	2,000
D12.5R	1,900	1,440	1,520	900	1,160	420	3,840	3,800	1,920	940

DEPTH OF CUT 加工深度	<p>0.1xR(-45HRC) 0.08xR(-50HRC)</p>	<p>(R0.1~0.5=0.2XR) 0.3XR</p> <p>-0.16XR R≦0.3 (-45HRC) -0.25XR R≦3 (-45HRC) -0.17XR R≦4 (-45HRC) -0.05XR (-50HRC)</p>
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RTAS 2 Flutes Standard Cutting Conditions 切削條件表

Work material 被削材	Carbon Steels, Alloy Steels S50C, SCM, 鑄鐵FC250等 AiSi 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)			Alloy Steels, Tool Steels 調質鋼SKD61, NAK等 Prehardened steels, AiSi H13 合金鋼、工具鋼、預硬鋼 (30~45HRC)			Austenitic stainless steels SUS304, SUS316等 AiSi 304, AiSi 316 沃斯田鐵系列不銹鋼			Hardened steels SKD61, SKD11, NAK, STAVAX等 AiSi H13 熱處理鋼 (45~50HRC)		
Cutting Speed 切削速度	50~100m/min			50~70m/min			30~60m/min			20~40m/min		
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	
		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝
8	4000	450	360	2400	240	190	1600	220	130	1200	65	50
10	3200	390	310	1900	190	150	1300	190	110	1000	65	50
12	2700	330	260	1600	160	130	1000	150	90	800	65	50
Depth of cut (D:直徑Dia) 切削量基準												

RTAS 2 Flutes High-Speed Milling Conditions 高速切削條件表

Work material 被削材	Carbon Steels, Alloy Steels S50C, SCM, 鑄鐵FC250等 AiSi 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)		Alloy Steels, Tool Steels 調質鋼SKD61, NAK等 Prehardened steels, AiSi H13 合金鋼、工具鋼、預硬鋼 (30~45HRC)		Hardened steels SKD61, SKD11, NAK, STAVAX等 AiSi H13 熱處理鋼 (45~55HRC)	
Cutting Speed 切削速度	250m/min		150m/min		100m/min	
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度
10	7900	1100	4800	650	3200	200
12	6600	1000	4000	560	2600	200
(mm) Ad Milling Amount 軸方向切削量	Ad=0.05D		Ad=0.03D		Ad=0.02D	

▲ Caution

1. Please use SI coating tools for work materials of 50~60HRC.
2. In cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.
3. If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
4. When drilling, please set the feed rate at 1/3 or below of the above value.

▲ 注意事項

1. 切削50~60HRC以上之材料時，請使用Si鍍膜之刀具。
2. 切削沃斯田鐵系列不銹鋼時，請使用非水溶性切削油效果較好。
3. 機械設備或工作的夾持剛性不足、出現震動時，請以相同比例按上表降低迴轉數及進給速度。
4. 縱向進給時，進給速度請設定為上表1/3以下。

RTAS 4 Flutes Standard Cutting Conditions 切削條件表

Work material 被削材	Carbon Steels, Alloy Steels S50C, SCM, 鑄鐵 FC250等 AiSi 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)		(30-45HRC) Alloy Steels, Tool Steels 調質鋼 SKD61, NAK等 Prehardened steels, AiSi H13 合金鋼、工具鋼、預硬鋼		Austenitic stainless steels SUS304, SUS316等 AiSi 304, AiSi 316 沃斯田鐵系列不銹鋼		Hardened steels SKD61, SKD11, NAK, STAVAX 等 AiSi H13 熱處理鋼 (45-50HRC)		Hardened steels SKD11, 等 AiSi D2 熱處理鋼 (55-60HRC)			
Cutting Speed 切削速度	50-100m/min		50-70m/min		30-60m/min		20-40m/min		15-30m/min			
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	
		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝
8	4000	680		2400	360		2000	330		1600	130	
10	3200	590		1900	290		1600	290		1300	120	
12	2700	500		1600	240		1300	230		1100	100	
Depth of cut (D:直徑Dia) 切削量基準												

RTAS 4 Flutes High-Speed Milling Conditions 高速切削條件表

Work material 被削材	Carbon Steels, Alloy Steels S50C, SCM, 鑄鐵 FC250等 AiSi 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)		Alloy Steel, Tool Steel 預硬鋼, SKD61, NAK等 Pre-hardnad steel AiSi H13 合金鋼, 工具鋼 (30-45HRC)		Hardened steels SKD61, SKD11, NAK, STAVAX等 AiSi H13 熱處理鋼 (45-55HRC)		Hardened steels SKD11等 AiSi D2 熱處理鋼 (55-60HRC)		
Cutting Speed 切削速度	300m/min		200m/min		150m/min		50m/min		
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	
		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝
8	11900	2325		7900	1485		5900	470	
10	9500	2000		6300	1290		4700	410	
12	7900	1800		5300	1125		3900	360	
(mm) Ad Milling Amount 軸方向 切削量	Ad=0.05D		Ad=0.03D		Ad=0.02D		Ad=0.02D		

▲ Caution

1. Please use Si coating tools for work materials of 50-60HRC.
2. In cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.
3. If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
4. When drilling, please set the feed rate at 1/3 or below of the above value.

▲ 注意事項

1. 切削50-60HRC以上之材料時，請使用Si鍍膜之刀具。
2. 切削沃斯田鐵系列不銹鋼時，請使用非水溶性切削油效果較好。
3. 機械設備或工作的夾持剛性不足、出現震動時，請以相同比例按上表降低迴轉數及進給速度。
4. 縱向進給時，進給速度請設定為上表1/3以下。

• SES 2Flutes Standard Cutting Conditions

切削條件表

Work material 被削材	Copper 銅			Carbon Steel, Alloy Steel S50C, SCM, 鑄鐵FC250等 AISI 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)			(30~45HRC) Alloy Steels, Tool Steels 調質鋼SKD61, NAK等 Prehardened steels, AISI H13 合金鋼、工具鋼、預硬鋼			Austenitic stainless steels SUS304, SUS316等 AISI 304, AISI 316 沃斯田鐵系列不銹鋼			Hardened steels SKD61, SKD11, NAK, STAVAX 等AISI H13 熱處理鋼 (45~50HRC)		
Cutting Speed 切削速度	80~150m/min			50~100m/min			50~70m/min			30~60m/min			20~40m/min		
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	
		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝
8	6000	1000	330	4000	520	410	2800	350	280	1600	260	150	1200	65	50
10	4800	1000	330	3200	450	360	2200	300	240	1300	230	130	1000	65	50
12	4000	1000	330	2700	410	320	1900	270	210	1100	210	120	800	65	50
16	3000	1000	330	2000	240	190	1400	210	160	840	160	100	600	60	45
20	2400	1000	330	1600	200	160	1100	170	130	680	140	80	480	50	40

Depth of cut (D:直徑Dia)
切削量基準

• SES 4Flutes Standard Cutting Conditions

切削條件表

Work material 被削材	Carbon Steels, Alloy Steels S50C, SCM, 鑄鐵FC250等 AISI 1049, Cast iron 炭素鋼, 合金鋼 (~30HRC)			(30~45HRC) Alloy Steels, Tool Steels 調質鋼SKD61, NAK等 Prehardened steels, AISI H13 合金鋼、工具鋼、預硬鋼			Austenitic stainless steels SUS304, SUS316等 AISI 304, AISI 316 沃斯田鐵系列不銹鋼			Hardened steels SKD61, SKD11, NAK, STAVAX等 AISI H13 熱處理鋼 (45~50HRC)		
Cutting Speed 切削速度	50~100m/min			50~70m/min			30~60m/min			20~40m/min		
Diameter 直徑(mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度	
		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝		Side Milling 側面	Slotting 溝
8	4000	780	620	2800	520	410	1600	390	230	2000	160	125
10	3200	680	540	2200	450	360	1300	340	200	1600	140	110
12	2700	620	490	1900	410	320	1100	310	180	1300	120	95
16	2000	360	280	1400	310	240	840	240	140	1000	100	80
20	1600	300	240	1100	250	200	680	210	120	800	90	70

Depth of cut (D:直徑Dia)
切削量基準

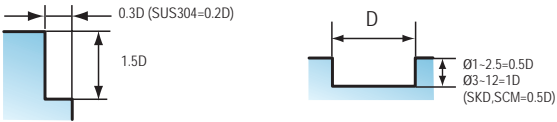
▲ Caution

- In cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.
- If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
- When drilling, please set the feed rate at 1/3 or below of the above value.

▲ 注意事項

- 切削沃斯田鐵系列不銹鋼以及耐熱合金時，請使用非水溶性切削油效果較好。
- 機械設備或工作的夾持剛性不足、出現震動時，請以相同比例按上表降低迴轉數及進給速度。
- 縱向進給時，進給速度請設定為上表之1/3以下。

● PES 3Flutes Standard Cutting Conditions 切削條件表

Work material 被削材	Carbon Steels S50C 炭素鋼				Alloy Tool Steels, SCM, SKD 合金工具鋼				Stainless Steels, Titanium Alloys SUS304, SUS316等 不銹鋼, 鈦合金				Prehardened Steels, HPM, NAK 調質鋼 (~40HRC)			
Cutting Speed 切削速度	~100m/min				~50m/min				~35m/min				~56m/min			
Diameter 直徑 (mm)	Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度			Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度			Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度			Speed (min ⁻¹) 迴轉數	Feed Rate (mm/min) 進給速度		
		Side Milling 側面	Slotting 溝	Drilling 縱向		Side Milling 側面	Slotting 溝	Drilling 縱向		Side Milling 側面	Slotting 溝	Drilling 縱向		Side Milling 側面	Slotting 溝	Drilling 縱向
8	3600	1000	760	300	1600	400	300	120	1400	300	120	-	2200	600	330	100
10	3000	900	800	300	1300	350	200	100	1100	300	100	-	1700	400	200	80
12	2600	850	740	280	1100	340	180	80	900	270	100	-	1500	340	180	70
Depth of cut (D:直徑Dia) 切削量基準																

▲ Caution

1. Use a rigid and precise machine and holder.
2. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
3. Air blow is recommended.
4. Non-water cutting fluid is recommended for cutting stainless steels.

▲ 注意事項

1. 請使用剛性及精準度較佳之機械及夾頭。
2. 當切削量過大或機械剛性不足時，請降低迴轉速及進給速度。
3. 請使用吹氣方式進行切削。
4. 切削不銹鋼時，請使用非水溶性切削油。

• AES5 2 Flutes Standard Cutting Conditions

切削條件表

Work material 被削材	Aluminum 1070 鋁				Aluminum Alloy 2017.5052.7075 鋁合金				Aluminum Alloy Cast AC8C 鍛造鋁			
Cutting Speed 切削速度	300m/min		220m/min		330m/min		240m/min		250m/min		160m/min	
Diameter 直徑(mm)	Side Milling 側面		Slotting 溝		Side Milling 側面		Slotting 溝		Side Milling 側面		Slotting 溝	
	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度
8	12000	1650	8800	1125	13000	2400	9600	1200	9900	1800	6400	750
10	9600	1650	7000	1200	10500	2550	7600	1275	8000	1950	5100	825
12	8000	1800	5800	1200	8800	2550	6400	1350	6600	1950	4200	900

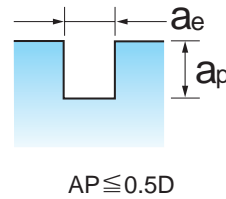
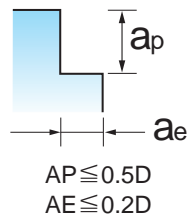
Depth of cut (D:直徑Dia) 切削量基準	<p>$AP \leq 0.5D$ $AE \leq 0.2D$</p>	<p>$AP \leq 0.5D$</p>
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• AES5 3 Flutes Standard Cutting Conditions

切削條件表

Work material 被削材	Aluminum 1070 鋁				Aluminum Alloy 2017.5052.7075 鋁合金				Aluminum Alloy Cast AC8C 鍛造鋁			
Cutting Speed 切削速度	300m/min		220m/min		330m/min		240m/min		250m/min		160m/min	
Diameter 直徑(mm)	Side Milling 側面		Slotting 溝		Side Milling 側面		Slotting 溝		Side Milling 側面		Slotting 溝	
	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度	Speed (min^{-1}) 迴轉數	Feed Rate (mm/min) 進給速度
8	12000	1100	8800	750	13000	1600	9600	800	9900	1200	6400	500
10	9600	1100	7000	800	10500	1700	7600	850	8000	1300	5100	550
12	8000	1200	5800	800	8800	1700	6400	900	6600	1300	4200	600

Depth of cut
(D:直徑Dia)
切削量基準





● FHPCS 4 Flutes Side Milling 側面切削

Work material 被削材	Mild steels Carbon steels, Cast iron SS400, S55c, FC250 (~750N/mm ²) 一般構造用鋼、碳素鋼、 鑄鐵		Alloy steels, Tool steels, SCM, SKT, SKS, SKD (~30HRC) 合金鋼、工具鋼		Hardened steels, Prehardened steels, (Free-cutting) SKT, SKD, NAK55, HPM1 調質鋼 (30~38HRC)		Hardened steels, Stainless steels SUS304, SKD 調質鋼 (38~45HRC)		Hardened steels, Titanium alloys, Heat resistant alloys steels, 調質鋼 (45~55HRC)		Hardened steels, 調質鋼 (55~60HRC)													
Cutting Speed 切削速度	100m/min		78m/min		66m/min		62m/min		60m/min		30m/min													
Mill DIA. (mm) 直徑	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度												
3	8480	975	6640	760	5600	560	5280	555	4828	485	2560	190												
4	6360	1000	4960	820	4200	565	3960	590	3800	515	1920	190												
5	5080	1050	3960	845	3360	590	3160	630	3040	535	1520	190												
6	4240	1250	3320	945	2800	700	2640	660	2560	545	1280	190												
8	3200	1250	2480	895	2120	660	1960	640	1920	555	960	175												
10	2560	1100	2000	855	1680	605	1560	590	1520	525	764	160												
12	2120	1100	1640	850	1400	565	1320	535	1280	475	636	160												
16	1600	955	1240	745	1040	500	1000	445	960	400	476	160												
20	1280	765	1000	595	840	455	788	395	764	355	380	160												
Depth of cut 加工深度	<table border="1"> <tr><td>a_p</td><td>a_e</td></tr> <tr><td>1.5D</td><td>0.2D</td></tr> </table>						a_p	a_e	1.5D	0.2D	<table border="1"> <tr><td>a_p</td><td>a_e</td></tr> <tr><td>1.5D</td><td>0.1D</td></tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr><td>a_p</td><td>a_e</td></tr> <tr><td>1D</td><td>0.05D</td></tr> </table>				a_p	a_e	1D	0.05D
a_p	a_e																							
1.5D	0.2D																							
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1D	0.05D																							

● FHPCS 4 Flutes Slotting 溝切削

Work material 被削材	Mild steels Carbon steels, Cast iron SS400, S55c, FC250 (~750N/mm ²) 一般構造用鋼、碳素鋼、 鑄鐵		Alloy steels, Tool steels, SCM, SKT, SKS, SKD (~30HRC) 合金鋼、工具鋼		Hardened steels, Prehardened steels, (Free-cutting) SKT, SKD, NAK55, HPM1 調質鋼 (30~38HRC)		Hardened steels, Stainless steels SUS304, SKD 調質鋼 (38~45HRC)		Hardened steels, Titanium alloys, Heat resistant alloys steels, 調質鋼 (45~55HRC)		Hardened steels, 調質鋼 (55~60HRC)	
Cutting Speed 切削速度	100m/min		78m/min		66m/min		62m/min		60m/min		30m/min	
Mill DIA. (mm) 直徑	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度	Speed (mm ¹) 迴轉速度	Speed (mm/min) 送速度
3	6800	705	5080	959	4680	455	4400	400	3560	320	1680	110
4	5080	705	3800	675	3520	455	3320	450	2680	360	1280	120
5	4080	715	3040	660	2800	475	2640	475	2120	385	1000	125
6	3400	715	2560	560	2320	500	2200	495	1800	400	840	125
8	2560	660	1920	550	1760	545	1640	515	1320	415	636	125
10	2040	610	1520	535	1400	475	1320	470	1080	380	508	115
12	1680	610	1280	475	1160	450	1120	440	880	355	424	115
16	1280	610	960	430	880	370	840	370	668	300	320	88
20	1000	510	764	380	700	350	664	330	536	265	256	89
Depth of cut 加工深度	<p>$a_p = 0.5D$</p>						<p>$a_p = 0.05D$</p>					

▲ Caution

1. Use a rigid and precise machine and holder.
2. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
3. Please use a suitable fluid with high smoke retardant properties.
4. During Dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and the eliminate chip packing.

▲ 注意事項

1. 請使用準確性和高剛性之機器及刀把
2. 當切削深度過大或機器剛性不足請調整轉速
3. 請使用有效抑制煙霧之液體
4. 在乾式切削時請使用吹氣去除切削範圍之廢屑

FHPCS 4 Flutes High Speed Side Milling 高速側面切削

The conditions below are for high speed / high precision machining centers.

Work material 被削材	Mild steels Carbon steels, Cast iron SS400, S55c, FC250 (~750N/mm ²) 一般構造用鋼、碳素鋼、鑄鐵		合金鋼、工具鋼 Alloy steels, Tool steels, SCM, SKT, SKS, SKD (~30HRC)		調質鋼 (30~38HRC) Hardened steels, Prehardened steels, (Free-cutting) SKT, SKD, NAK55, HPM1		調質鋼 (38~45HRC) Hardened steels, Stainless steels SUS304, SKD		調質鋼 (45~55HRC) Hardened steels, Titanium alloys, Heat resistant alloys steels,		調質鋼 (55~60HRC) Hardened steels,	
	Cutting Speed 切削速度 100m/min		78m/min		66m/min		62m/min		60m/min		30m/min	
Mill DIA.(mm) 直徑	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度
3	16960	2150	16960	2400	16960	1300	12720	1150	8480	680	6800	440
4	12720	2050	12720	2300	12720	1300	9520	1250	6360	795	5080	460
5	10160	1900	10160	2150	10160	1250	7640	1350	5080	840	4080	510
6	8480	3050	8480	2650	8480	2000	6360	1450	4240	910	3400	610
8	6360	2800	6360	2400	6360	1900	4760	1400	3200	860	2560	575
10	5080	2550	5080	2200	5080	1850	3800	1350	2560	830	2040	510
12	4240	2550	4240	2200	4240	1800	3200	1350	2120	830	1680	510
16	3200	1900	3200	1900	3200	1700	2400	1350	1600	830	1280	510
20	2560	1550	2560	1550	2560	1550	1920	1150	1280	730	1000	510

Depth of cut 加工深度	ap		ae	
	D<Ø6	Ø6=D	D<Ø6	Ø6=D
	1.5D	1.5D	0.02D	0.05D
	aeMax=0.5mm			

▲ Caution

Sparks generated during operation or heat caused by tool breakage can cause fire. Be sure to use all proper fire-prevention measures.

▲ 注意事項

當刀具斷裂而持續使用即會產生火花及發熱，請確實遵守預防火災之措施。

FHPCS 4 Flutes High Speed Slotting 高速溝切削

The conditions below are for high speed / high precision machining centers.

Work material 被削材	Mild steels Carbon steels, Cast iron SS400, S55c, FC250 (~750N/mm ²) 一般構造用鋼、碳素鋼、鑄鐵		合金鋼、工具鋼 Alloy steels, Tool steels, SCM, SKT, SKS, SKD (~30HRC)		Hardened steels, Prehardened steels, (Free-cutting) SKT, SKD, NAK55, HPM1 調質鋼 (30~38HRC)		Hardened steels, Stainless steels SUS304, SKD 調質鋼 (38~45HRC)	
	Cutting Speed 切削速度 100m/min		78m/min		66m/min		62m/min	
Mill DIA.(mm) 直徑	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度	Speed(mm ⁻¹) 迴轉速度	Speed (mm/min) 送速度
3	10160	1050	8480	935	7640	745	5080	460
4	7640	1150	6360	1000	5720	745	4120	560
5	6120	1200	5600	1100	5080	865	3320	595
6	2920	1550	4680	1150	4240	910	2960	670
8	3800	1450	3520	1300	3200	985	2240	690
10	3040	1400	2800	1200	2560	865	1800	635
12	2560	1250	2320	1150	2120	815	1480	595
16	1920	1050	1760	965	1600	675	1120	500
20	1520	840	1400	770	1280	635	880	445

Depth of cut 加工深度	ap	
	D<Ø6	Ø6=D
	0.2D	3mm
	apMax=3mm	

▲ Caution

1. Use a rigid and precise machine and holder.
2. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
3. Please use a suitable fluid with high smoke retardant properties.
4. During Dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and the eliminate chip packing.

▲ 注意事項

1. 請使用準確性和高剛性之機器及刀把
2. 當切削深度過大或機器剛性不足請調整轉速
3. 請使用有效抑止煙霧之流體
4. 在乾式切削時請使用吹氣去除切削範圍之廢屑

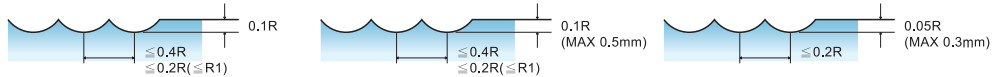


● KTGS 2 Flutes Standard Cutting Conditions

標準切削條件表

Work material 被削材	Alloy steels, Tool steels, Prehardened steels, SCM, SKD61, SKD11, NAK, AISI H3, AISI D2 ect. 合金鋼、工具鋼、預硬鋼 (~45HRC)				Hardened steels, SKD61, SKD11, STAVAX, AISI H13 ect. 調質鋼 (45~55HRC)				Hardened steels, SKD11, SKH, SKS, ASP23, AISI H13 ect. 調質鋼 (55~62HRC)				
R (mm) 球頭半徑	Inclination of Machining Surface 加工面 傾斜角	Speed (min ⁻¹) 迴轉速度	Feed (mm/ min) 進給速度	切削量 (mm)		Speed (min ⁻¹) 迴轉速度	Feed (mm/ min) 進給速度	切削量 (mm)		Speed (min ⁻¹) 迴轉速度	Feed (mm/ min) 進給速度	切削量 (mm)	
				Pf	Ad			Pf	Ad			Pf	Ad
				Pick feed	Milling Amount			Pick feed	Milling Amount			Pick feed	Milling Amount
D0.5R	$\alpha \leq 15^\circ$	40000	3120	$\leq 0.2R$	$\leq 0.1R$	35000	2340	$\leq 0.2R$	$\leq 0.1R$	21000	1300	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	35000	2080	$\leq 0.2R$	$\leq 0.1R$	30000	1430	$\leq 0.2R$	$\leq 0.1R$	15000	740	$\leq 0.2R$	$\leq 0.05R$
D0.75R	$\alpha \leq 15^\circ$	40000	3900	$\leq 0.2R$	$\leq 0.1R$	30000	2470	$\leq 0.2R$	$\leq 0.1R$	14000	1160	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	30000	2210	$\leq 0.4R$	$\leq 0.1R$	25000	1560	$\leq 0.4R$	$\leq 0.1R$	10000	610	$\leq 0.2R$	$\leq 0.05R$
D1R	$\alpha \leq 15^\circ$	35000	3900	$\leq 0.4R$	$\leq 0.1R$	25000	2340	$\leq 0.4R$	$\leq 0.1R$	11000	1040	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	25000	2210	$\leq 0.4R$	$\leq 0.1R$	20000	1430	$\leq 0.4R$	$\leq 0.1R$	8000	560	$\leq 0.2R$	$\leq 0.05R$
D1.25R	$\alpha \leq 15^\circ$	33000	3900	$\leq 0.4R$	$\leq 0.1R$	22000	2210	$\leq 0.4R$	$\leq 0.1R$	9300	920	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	24000	2210	$\leq 0.4R$	$\leq 0.1R$	17000	1300	$\leq 0.4R$	$\leq 0.1R$	6500	480	$\leq 0.2R$	$\leq 0.05R$
D1.5R	$\alpha \leq 15^\circ$	30000	3900	$\leq 0.4R$	$\leq 0.1R$	20000	2210	$\leq 0.4R$	$\leq 0.1R$	8000	870	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	23000	2210	$\leq 0.4R$	$\leq 0.1R$	15000	1300	$\leq 0.4R$	$\leq 0.1R$	5600	450	$\leq 0.2R$	$\leq 0.05R$
D2R	$\alpha \leq 15^\circ$	25000	3900	$\leq 0.4R$	$\leq 0.1R$	17000	2210	$\leq 0.4R$	$\leq 0.1R$	6400	830	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	20000	2210	$\leq 0.4R$	$\leq 0.1R$	13000	1300	$\leq 0.4R$	$\leq 0.1R$	4500	440	$\leq 0.2R$	$\leq 0.05R$
D2.5R	$\alpha \leq 15^\circ$	23000	3900	$\leq 0.4R$	$\leq 0.1R$	15000	2210	$\leq 0.4R$	$\leq 0.1R$	5000	710	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	17000	2210	$\leq 0.4R$	$\leq 0.1R$	11000	1300	$\leq 0.4R$	$\leq 0.1R$	3500	380	$\leq 0.2R$	$\leq 0.05R$
D3R	$\alpha \leq 15^\circ$	20000	3900	$\leq 0.4R$	$\leq 0.1R$	13000	2210	$\leq 0.4R$	$\leq 0.1R$	4200	690	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	15000	2210	$\leq 0.4R$	$\leq 0.1R$	10000	1300	$\leq 0.4R$	$\leq 0.1R$	2900	350	$\leq 0.2R$	$\leq 0.05R$
D4R	$\alpha \leq 15^\circ$	15000	3900	$\leq 0.4R$	$\leq 0.1R$	10000	2210	$\leq 0.4R$	$\leq 0.1R$	3200	700	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	11000	2210	$\leq 0.4R$	$\leq 0.1R$	7500	1300	$\leq 0.4R$	$\leq 0.1R$	2200	360	$\leq 0.2R$	$\leq 0.05R$
D5R	$\alpha \leq 15^\circ$	12000	3770	$\leq 0.4R$	$\leq 0.1R$	8000	2080	$\leq 0.4R$	$\leq 0.1R$	2500	660	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	9000	2080	$\leq 0.4R$	$\leq 0.1R$	6000	1170	$\leq 0.4R$	$\leq 0.1R$	1800	350	$\leq 0.2R$	$\leq 0.05R$
D6R	$\alpha \leq 15^\circ$	10000	3250	$\leq 0.4R$	$\leq 0.1R$	6600	1820	$\leq 0.4R$	$\leq 0.1R$	2100	570	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	7500	1820	$\leq 0.4R$	$\leq 0.1R$	5000	1040	$\leq 0.4R$	$\leq 0.1R$	1500	300	$\leq 0.2R$	$\leq 0.05R$

Depth of
cut
加工深度



● KTGS 2 Flutes High Speed Milling Conditions

高速切削條件表

D0.5R	粗 (R)	40000	3120	0.2	0.05	40000	2470	0.15	0.04	30000	1560	0.1	0.03
	精 (F)	40000	3900	0.1	0.05	40000	3120	0.8	0.04	30000	1950	0.6	0.03
D1R	粗 (R)	40000	6240	0.2	0.2	40000	4940	0.2	0.15	20000	2080	0.15	0.12
	精 (F)	40000	7800	0.2	0.1	40000	6240	0.1	0.1	20000	2600	0.1	0.06
D2R	粗 (R)	30000	6240	0.4	0.3	30000	4940	0.3	0.2	20000	2470	0.25	0.15
	精 (F)	30000	7800	0.2	0.15	30000	6240	0.2	0.1	20000	3120	0.2	0.1
D3R	粗 (R)	20000	5200	0.6	0.4	20000	4160	0.5	0.3	16000	2470	0.3	0.2
	精 (F)	20000	6500	0.2	0.2	20000	5200	0.2	0.2	16000	3120	0.2	0.2
D4R	粗 (R)	16000	4940	1	0.8	16000	3900	0.8	0.6	10000	1820	0.7	0.5
	精 (F)	16000	6240	0.2	0.2	16000	4940	0.2	0.2	10000	2340	0.2	0.2
D5R	粗 (R)	12000	4680	2	1	12000	3640	1	0.8	8000	1560	1	0.7
	精 (F)	12000	5850	0.3	0.3	12000	4680	0.2	0.2	8000	2080	0.2	0.2
D6R	粗 (R)	10000	3900	3	1.2	10000	3120	1.5	1.2	6400	1248	1.5	1
	精 (F)	10000	4870	0.3	0.3	10000	3900	0.2	0.2	6400	1560	0.2	0.2

Depth of
cut
加工深度



▲ Caution

- α is the inclination of machining surface.
- If the rigidity of the machine or the work material installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
- Cutting condition may be considerably different due to the overhang (milling depth and neck length), depth of cut, and machine tools.
- If the depth of cut is shallow, the revolution and feed rate can be increased.

▲ 注意事項

- α 為加工面的傾斜角。
- 機械設備或工件的夾持剛性不足、出現震動或異常聲音時，請以相同比例按上表降低迴轉數及進給速度。此外，重視加工精度時，建議降低進給速度。
- 有時候切削條件會因為刀具伸出長度、材料、機械設備的差異性而需要做調整，上表僅供一般情況參考用。
- 切削深度較小時，可以提高迴轉數及進給速度。

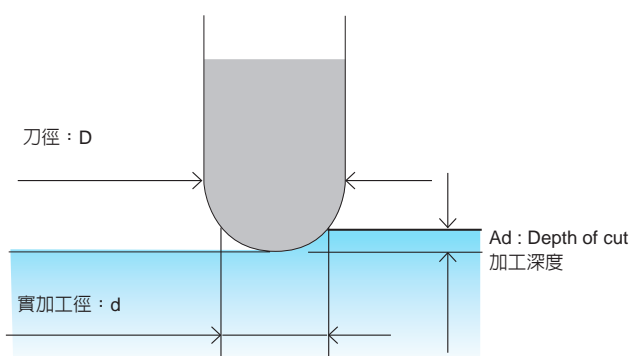
● KTGS 2 Flutes Ball End Milling Actual Diameter 球型銑刀實際加工直徑速查表

R R半徑	D 刀徑	Depth of cut (mm) 加工深度														
Radius	Dia	0.01	0.02	0.03	0.04	0.05	0.08	0.1	0.15	0.2	0.3	0.5	0.8	1	2	3
0.1	0.2	0.087	0.12	0.143	0.16	0.173	0.196	0.2								
0.2	0.4	0.125	0.174	0.211	0.24	0.265	0.32	0.35	0.39	0.4						
0.3	0.6	0.154	0.215	0.262	0.299	0.332	0.41	0.45	0.52	0.57	0.6					
0.4	0.8	0.178	0.25	0.304	0.349	0.387	0.48	0.53	0.62	0.69	0.77					
0.5	1	0.199	0.28	0.341	0.392	0.436	0.54	0.6	0.71	0.8	0.92	1				
1	2	0.282	0.398	0.486	0.56	0.624	0.78	0.87	1.05	1.2	1.43	1.73	1.96	2		
1.5	3	0.346	0.488	0.597	0.688	0.768	0.97	1.08	1.31	1.5	1.8	2.24	2.65	2.83		
2	4	0.399	0.564	0.69	0.796	0.889	1.12	1.25	1.52	1.74	2.11	2.65	3.2	3.46	4	
2.5	5	0.447	0.631	0.722	0.891	0.995	1.25	1.4	1.71	1.96	2.37	3	3.67	4	4.9	
3	6	0.489	0.692	0.846	0.977	1.091	1.38	1.54	1.87	2.15	2.62	3.32	4.08	4.47	5.66	6
4	8	0.565	0.799	0.978	1.129	1.261	1.59	1.78	2.17	2.5	3.04	3.87	4.8	5.29	6.93	7.75
5	10	0.632	0.894	1.094	1.262	1.411	1.78	1.99	2.43	2.8	3.41	4.36	5.43	6	8	9.17
6	12	0.693	0.979	1.198	1.383	1.546	1.95	2.18	2.67	3.07	3.75	4.8	5.99	6.63	8.94	10.39
7	14	0.748	1.058	1.295	1.495	1.67	2.11	2.36	2.88	3.32	4.05	5.2	6.5	7.21	9.8	11.49
8	16	0.8	1.131	1.384	1.598	1.786	2.26	2.52	3.08	3.56	4.34	5.57	6.97	7.75	10.58	12.49
9	18	0.848	1.199	1.468	1.695	1.895	2.39	2.68	3.27	3.77	4.61	5.92	7.42	8.25	11.31	13.42
10	20	0.894	1.264	1.548	1.787	1.997	2.52	2.82	3.45	3.98	4.86	6.24	7.84	8.72	12	14.28

Calculation of Actual Dia

計算公式

$$d = 2 \sqrt{Ad (D - Ad)}$$



● KCRS 4 Flutes High Speed Milling Conditions 高速切削條件表

Work material 被削材	Mild steels arbor steels, Cast iron SS400, S55c, FC250 (~750N/mm2) 一般構造用鋼、碳素鋼、 鑄鐵		Alloy steels, Tool steels, SCM, KT,SKS SKD (~30HRC) 合金鋼、工具鋼		Hardened steels, Prehardened steels, (Free-cutting) SKT, SKD, NAK55, HPM1 調質鋼 (30~38HRC)		Hardened steels, Stainless steels US304, SKD 調質鋼 (38~45HRC)		Hardened steels, Titanium alloys, Heat resistant alloys steels, 調質鋼 (45~55HRC)		Hardened steels, 調質鋼 (55~60HRC)																	
	Mill DIA. (mm) 直徑	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度															
D10xR2	6030	13300	6030	12060	6030	12060	4510	9070	4510	8170	3040	3610																
D11xR2	5510	12060	5510	11020	5510	11020	4130	8260	4130	7410	2750	3320																
D12xR3	5030	13300	5030	12060	5030	12060	3800	9070	3800	8170	2520	3610																
D13xR3	4650	12250	4650	11210	4650	11210	3460	8360	3460	7550	2330	3370																
加工深度 Depth of cut							<table border="1"> <tr> <th>aa</th> <th>ar</th> </tr> <tr> <td>0.1 x R</td> <td>0.3D</td> </tr> </table>		aa	ar	0.1 x R	0.3D	<table border="1"> <tr> <th>aa</th> <th>ar</th> </tr> <tr> <td>R ≤ 2</td> <td>0.1 x R, 0.3D</td> </tr> <tr> <td>2 < R</td> <td>0.2mm, 0.3D</td> </tr> </table>		aa	ar	R ≤ 2	0.1 x R, 0.3D	2 < R	0.2mm, 0.3D	<table border="1"> <tr> <th>aa</th> <th>ar</th> </tr> <tr> <td>R ≤ 2</td> <td>0.05 x R, 0.3D</td> </tr> <tr> <td>2 < R</td> <td>0.1mm, 0.3D</td> </tr> </table>		aa	ar	R ≤ 2	0.05 x R, 0.3D	2 < R	0.1mm, 0.3D
	aa	ar																										
0.1 x R	0.3D																											
aa	ar																											
R ≤ 2	0.1 x R, 0.3D																											
2 < R	0.2mm, 0.3D																											
aa	ar																											
R ≤ 2	0.05 x R, 0.3D																											
2 < R	0.1mm, 0.3D																											

▲ Caution

Sparks generated during operation or caused by tool breakage can cause fire. Be sure to use all proper fire-prevention measures. The conditions above are for high speed/high precision machining centers.

1. Use a rigid and precise machine and holder.
2. These milling conditions based on milling with circular interpolation at corners. For milling without circular interpolation (such as right angle corners), reduce the speed to 50~70% and the cutting depth to 50~80% of the above conditions.
3. We recommend using an air blow or MQL(mist).
4. Please adjust the speed, feed and cutting depth according to actual cutting conditions.
5. When KCRS enter in Z axis, reduce the feed speed to 30~60% of the above conditions with machining incline angle (β) $\leq 2^\circ$.
6. These milling conditions are for a tool extension length : less than 4x D. For a longer tool extension, reduce the speed, feed rate, and the cutting depth in accordance with the respective coefficients, to prevent chattering.

▲ 注意事項

在操作或由於工具發熱而損壞所引起的火花易起火災。請務必使用適當的防火措施。以上條件適用於高速精密加工機器。

1. 使用一台堅固且準確的機器和刀把。
2. 這些研磨條件須以有R角的研磨為基礎，研磨無R角的角度（如90度垂直研磨），將使速度降低到50~70%及減低切削深度50~80%。
3. 我們建議使用一種吹風或者油霧。
4. 請根據實際切削條件調整速度，進給率及切削深度。
5. 在上述條件下操作傾斜角度 (β) $\leq 2^\circ$ 時，當KCRS進入Z軸裡，請降低進給速度30~60%。
6. 這些研磨條件適用於工具延展長度：少於4×D。對於一個延展性長的工具來說，協調個別係數，降低速度、進給率和切削深度以防止吵雜聲。

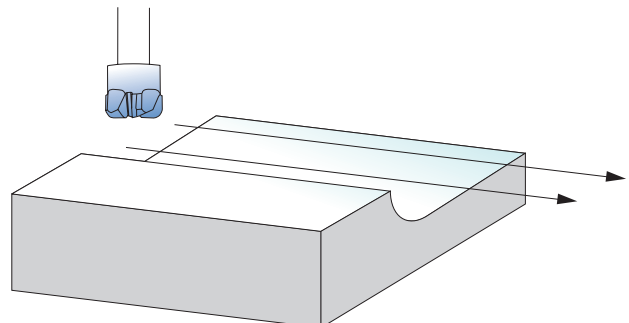
Tool extension coefficients 工具突出量係數

Overshank Length 工具突出量	Milling Speed 切削速度	aa 軸方向切削	Feed Speed 進給速度
L/D ≤ 4	100	100	100
L/D ≤ 5	60~80	60~80	70~90
L/D ≤ 6	40~60	40~60	60~80

Ultra-high speed conditions 超高速條件用

When milling flat areas with a stable load, the speed and the feed rate of the high-speed conditions can be further increased to 150-200%. The ultra-high speed conditions are for a tool extension length: less than 4x D. If the tool extension length is over 4 D, do not refer to it.

在高速及穩定負荷下研磨平坦區域，速度和進給率能更進一步增加150~200%。在高速條件適用於一個工具擴展長度：少於4xD。如果工具擴展長度是在4D上方，請勿參照該條件。



● KCRS 4 Flutes Regular Milling Low-speed, high-feed milling 標準切削條件表

Work material 被削材	Mild steels Carbon steels, Cast iron SS400, S55c, FC250 (~750N/mm ²) 一般構造用鋼、碳素鋼、鑄鐵		Alloy steels, Tool steels, SCM, SKT,SKS,SKD (~30HRC) 合金鋼、工具鋼		Hardened steels, Prehardened steels (Free-cutting) SKT, SKD, NAK55, HPM1 調質鋼 (30~38HRC)		Hardened steels, Stainless steels SUS304, SKD 調質鋼 (38~45HRC)		Hardened steels, Titanium alloys, Heat resistant alloys steels, 調質鋼 (45~55HRC)		Hardened steels, 調質鋼 (55~60HRC)																												
	Mill DIA. (mm) 直徑	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度	Speed (min ⁻¹) 迴轉速度	Feed (mm/min) 進給速度																										
D8xR2	3800	6650	3800	6030	3040	4840	2660	4230	1900	2710	1140	1090																											
D9xR2	3370	5890	3370	5370	2710	4320	2370	3750	1660	2420	1000	950																											
D10xR2	3040	6650	3040	6030	2420	4840	2140	4230	1520	2710	910	1090																											
D11xR2	2750	6030	2750	5510	2180	4420	1950	3840	1380	2470	830	1000																											
D12xR3	2520	6650	2520	6030	2000	4840	1760	4230	1280	2710	750	1090																											
D13xR3	2330	6130	2330	5600	1850	4460	1610	3900	1140	2520	700	1000																											
加工深度 Depth of cut							<table border="1"> <thead> <tr> <th></th> <th>aa</th> <th>ar</th> </tr> </thead> <tbody> <tr> <td>R ≤ 2</td> <td>0.2 x R</td> <td>0.5D</td> </tr> <tr> <td>2 < R</td> <td>0.5mm</td> <td>0.5D</td> </tr> </tbody> </table>			aa	ar	R ≤ 2	0.2 x R	0.5D	2 < R	0.5mm	0.5D	<table border="1"> <thead> <tr> <th></th> <th>aa</th> <th>ar</th> </tr> </thead> <tbody> <tr> <td>R ≤ 2</td> <td>0.2 x R</td> <td>0.5D</td> </tr> <tr> <td>2 < R</td> <td>0.4mm</td> <td>0.5D</td> </tr> </tbody> </table>			aa	ar	R ≤ 2	0.2 x R	0.5D	2 < R	0.4mm	0.5D	<table border="1"> <thead> <tr> <th></th> <th>aa</th> <th>ar</th> </tr> </thead> <tbody> <tr> <td>R ≤ 2</td> <td>0.1 x R</td> <td>0.5D</td> </tr> <tr> <td>2 < R</td> <td>0.2mm</td> <td>0.5D</td> </tr> </tbody> </table>			aa	ar	R ≤ 2	0.1 x R	0.5D	2 < R	0.2mm	0.5D
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2 < R	0.2mm	0.5D																																					

▲ Caution

Sparks generated during operation or heat caused by tool breakage can cause fire.
Be sure to use all proper fire-prevention measures.
The conditions above are for high speed/high precision machining centers.

▲ 注意事項

在操作或由於工具發熱而損壞所起的火花易起火災。
請務必使用適當的防火措施。
以上條件適用於高速精密加工機器。

1. Use a rigid and precise machine and holder.
2. These milling conditions based on milling with circular interpolation at corners. For milling without circular interpolation (such as right angle corners), reduce the speed to 50~70% and the cutting depth to 50~80% of the above conditions.
3. We recommend using an air blow or MQL(mist).
4. Please adjust the speed, feed and cutting depth according to actual cutting conditions.
5. When KCRS enters in Z axis, reduce the feed speed to 30~60% of the above conditions with machining incline angle (β) $\leq 2^\circ$.
6. These milling conditions are for a tool extension length: less than $4 \times D$. For a longer tool extension, reduce the speed, feed rate, and the cutting depth in accordance with therespective coefficients, to prevent chattering.

1. 使用一台堅固且準確的機器和刀把。
2. 這些研磨條件須以有R角的研磨為基礎，研磨無R角的角度（如90度垂直研磨），將使速度降低到50~70%及減低切削深度50~80%。
3. 我們建議使用一種吹風或者油霧。
4. 請根據實際切削條件調整速度，進給率及切削深度。
5. 在上述條件下操作傾斜角度 (β) $\leq 2^\circ$ 時，當KCRS進入Z軸裡，請降低進給速度30~60%。
6. 這些研磨條件適用於工具延展長度：少於 $4 \times D$ 。對於一個延展性長的工具來說，協調個別係數，降低速度、進給率和切削深度以防止吵雜聲。

Tool extension coefficients 工具突出量係數

Overshank Length 工具突出量	Milling Speed 切削速度	aa 軸方向切削	Feed Speed 進給速度
L/D ≤ 4	100	100	100
L/D ≤ 5	80~100	70~90	80~90
L/D ≤ 6	60~80	50~70	60~80

• **RD Cutting Condition**
切削條件表

Work Material 加工材質	Hardness 硬度	Cutting Speed 切削速度	Feed 進給	Feed per Tooth 進給 fz(mm /tooth)				
				Diameter 直徑 ØD (mm)				
		(m/min)	fz(mm/t)	2.5R	3.5R	5R	6R	8R
Carbon Steel 碳素鋼	HB 160~260	140~200	0.15~0.35	0.1~0.5	0.15~1.	0.2~1.	0.5~1.5	0.5~2.
Pre-Hardened Steel 預硬鋼	HB 280~400	100~160	0.1~0.2	0.1~0.5	0.15~0.8	0.2~1.	0.2~1.2	0.3~1.5
Hardened steel 淬火鋼	HRC 40~52	80~120	0.1~0.15	0.07~0.2	0.1~0.6	0.15~0.8	0.15~1.2	0.2~1.2
	HRC 52~63	60~80	0.07~0.15	0.05~0.1	0.05~0.2	0.07~0.5	0.1~0.8	0.15~1.
Stainless Steel 不銹鋼	HB 150~250		0.1~0.15	0.1~0.3	0.1~0.5	0.15~0.8	0.2~1.	0.2~1.2
Gray Cast Iron 灰口鑄鐵	HB 170~300	120~185	0.12~0.3	0.1~0.5	0.15~1.	0.2~1.	0.5~1.5	0.5~2.
Aluminum Alloy 鋁合金(un-coating 無塗層)	HB 90~150	250~400	0.05~0.35		0.15~0.8	0.2~1.	0.5~1.5	0.5~2.
Aluminum Alloy 鋁合金(TB coating 塗層)		300~700	0.05~0.35		0.15~0.8	0.2~1.	0.5~1.5	0.5~2.

WRH Cutting Condition 切削條件表

	Hardness 硬度	Cutting Speed 切削速度 (m/min)	Feed per Tooth 進給 fz(mm/tooth)						
			Diameter 直徑 ØD (mm)						
			10	12	16	20	25	30	32
Carbon Steel 碳素鋼	HB 180~280	160~280	0.3~0.4	0.3~0.5	0.3~0.6	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Alloy Steel 低合金鋼	HB 180~280	200~320	0.3~0.4	0.3~0.5	0.3~0.6	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Pre-Hardened Steel 預硬鋼	HB 280~400	180~300	0.2~0.4	0.3~0.5	0.3~0.6	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Die Steel 模具鋼	HB 180~250	160~250	0.2~0.4	0.3~0.5	0.3~0.6	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Hardened steel 淬火鋼	HRC 40~55	140~220	0.15~0.35	0.2~0.4	0.2~0.5	0.25~0.6	0.25~0.6	0.3~0.8	0.3~0.8
	HRC 56~63	120~180	0.15~0.3	0.2~0.4	0.2~0.5	0.35~0.7	0.25~0.5	0.3~0.6	0.3~0.6
Stainless Steel 不銹鋼	HB 150~250	100~220	0.3~0.4	0.2~0.4	0.25~0.5	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Gray Cast Iron 灰口鑄鐵	HB 160~260	300~400	0.3~0.5	0.4~0.6	0.5~0.7	0.5~0.8	0.6~0.8	0.8~1.	0.8~1.
Ductile Cast Iron 球墨鑄鐵	HB 170~300	240~300	0.3~0.4	0.3~0.4	0.3~0.6	0.5~0.8	0.5~0.8	0.6~0.8	0.6~0.8
Copper Alloy 銅合金	HB 80~150	220~320	0.3~0.5	0.4~0.5	0.4~0.6	0.35~0.7	0.4~0.8	0.5~0.8	0.5~0.8
Aluminum Alloy 鋁合金	HB 30~100	300~400	0.3~0.5	0.4~0.6	0.4~0.7	0.35~0.7	0.4~0.8	0.5~1.	0.5~1.
Graphite 石墨	-	400~550	0.3~0.5	0.4~0.6	0.4~0.8	0.35~0.7	0.4~0.8	0.5~1.	0.5~1.

Cutting Condition Method 球刀片計算圖

轉速

Rotation speed

$$N = \frac{V \times 1000}{\pi \times D_e} \text{ (min)}^{-1}$$

$$D_e = 2 \times \sqrt{A_p \times (D - A_p)} \text{ (mm)}$$

進給

Feed rate

$$F = N \times f_z \text{ (mm/min)}$$

$$f_z = h_{max} \times \frac{D}{\sqrt{A_p \times (D - A_p)}} \text{ (mm/rev)}$$

N = 轉速 (min)⁻¹
Rotation speed

V = 切削速度 (mm/min)
Cutting speed

D_e = 有效刀具直徑 (mm)
Cutting length of diameter

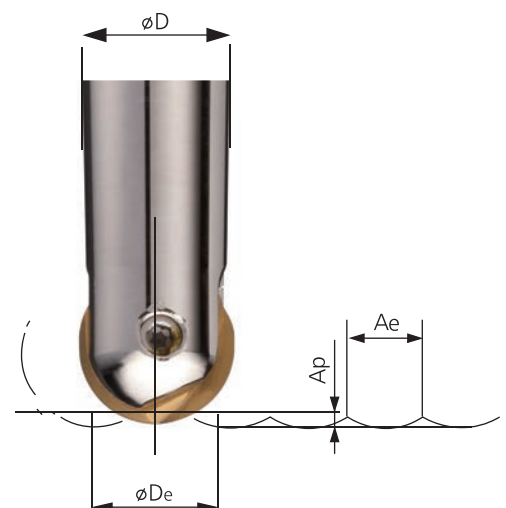
A_p = 軸向切深 (mm)
Depth of cut (a_p)

A_e = 步距/徑向切深 (mm)
Depth of cut (a_e)

F = 進給速度 (mm/min)
Feed rate

f_z = 每轉進給 (mm/rev)
Feed rate of rotation speed

h_{max} = 有效刀具直徑 (mm/min)
Cutting length of diameter



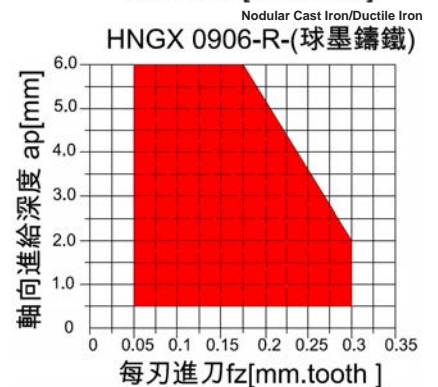
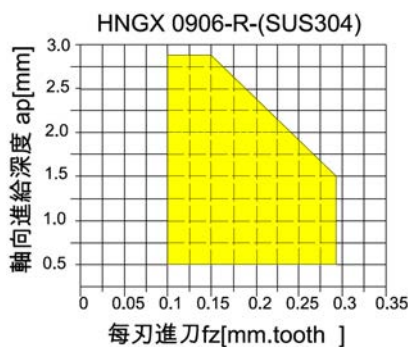
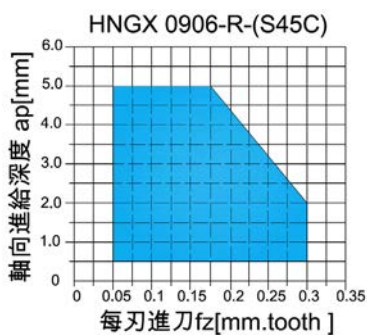
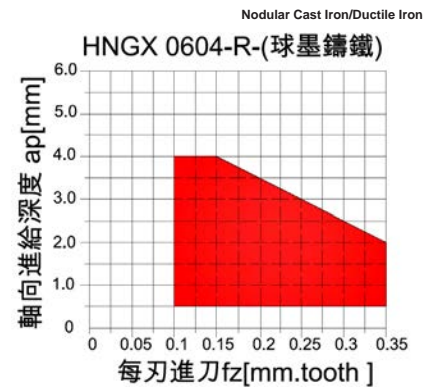
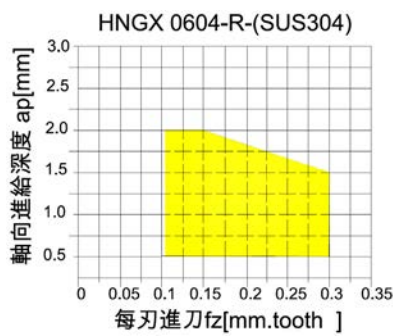
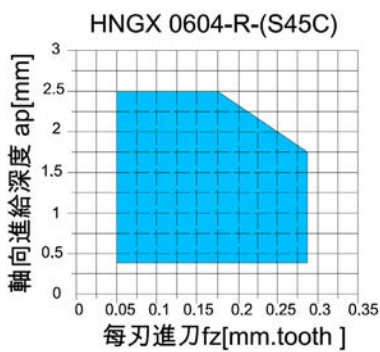


● **HN Cutting Condition**
 切削條件表

HNGX

Item Code 規格碼	Cutting Condition 切削條件參數		ISO Standard for Carbide Tools (Application Range) ISO 碳化物切削刀具標準 (適用切削材料範圍)		
			P	M	K
HNGX0604-R-4225	每刃進給(Fz)	[mm/tooth]	0.05 ~ 0.27	0.1 ~ 0.3	0.1~0.35
	軸向進刀量(Ap)	[mm]	0.5~2.5	0.5~ 2.0	0.5 ~ 4
	切削速度(Vc)	[m/min]	200 ~250	60 ~ 100	135 ~ 182
HNGX0906-R-4225	每刃進給(Fz)	[mm/tooth]	0.1~ 0.3	0.1 ~ 0.27	0.3 ~ 0.5
	軸向進刀量(Ap)	[mm]	1.0 ~ 5.0	1.0 ~ 2.7	0.05 ~ 0.3
	切削速度(Vc)	[m/min]	160 ~230	60 ~ 90	168 ~ 224
HNGX0604-R-3225	每刃進給(Fz)	[mm/tooth]	0.1 ~ 0.27	0.1 ~ 0.3	0.1~0.35
	軸向進刀量(Ap)	[mm]	0.5~2.5	0.5~ 2.0	0.5 ~ 4
	切削速度(Vc)	[m/min]	200 ~250	60 ~ 100	135 ~ 182
HNGX0906-R-3225	每刃進給(Fz)	[mm/tooth]	0.1~ 0.3	0.1 ~ 0.27	0.3 ~ 0.5
	軸向進刀量(Ap)	[mm]	1.0 ~ 5.0	1.0 ~ 2.7	0.05 ~ 0.3
	切削速度(Vc)	[m/min]	160 ~230	60 ~ 90	168 ~ 224

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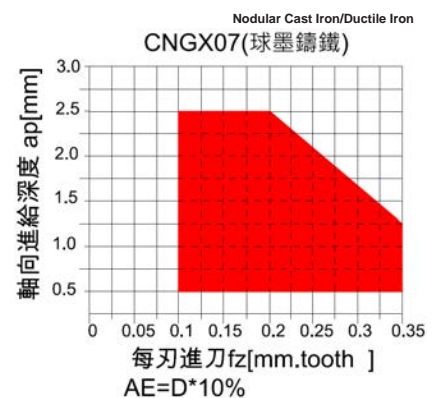
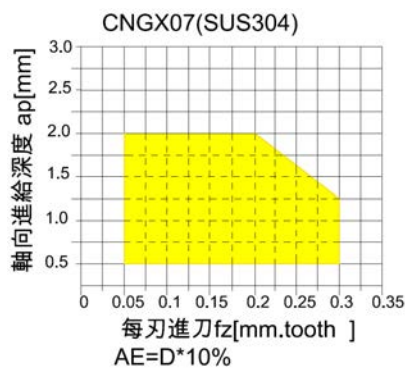
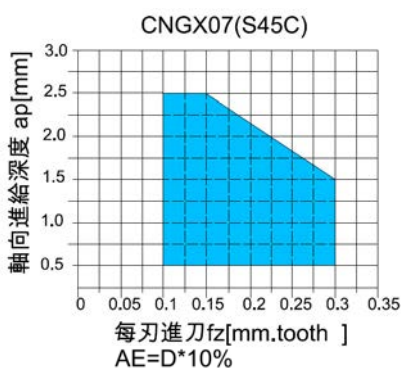


● CN Cutting Condition 切削條件表

CNGX

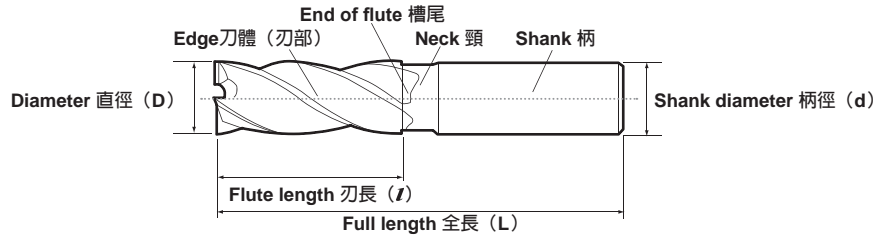
Item Code 規格碼	Cutting Condition 切削條件參數		ISO Standard for Carbide Tools (Application Range) ISO 碳化物切削刀具標準 (適用切削材料範圍)		
			P	M	K
CNGX07-3225	每刃進給(Fz)	[mm/tooth]	0.10 ~ 0.3	0.05 ~ 0.3	0.1 ~ 0.35
	軸向進刀量(Ap)	[mm]	0.5 ~ 2.5	0.2 ~ 2	0.5~2.5
	切削速度(Vc)	[m/min]	140 ~ 196	70 ~ 112	150 ~ 200
CNGX07-4225	每刃進給(Fz)	[mm/tooth]	0.10 ~ 0.3	0.05 ~ 0.3	0.1 ~ 0.35
	軸向進刀量(Ap)	[mm]	0.5 ~ 2.5	0.2 ~ 2	0.5~2.5
	切削速度(Vc)	[m/min]	140 ~ 196	70 ~ 112	150 ~ 200
CNGX07-3220	每刃進給(Fz)	[mm/tooth]	0.10 ~ 0.3	0.05 ~ 0.3	0.1 ~ 0.35
	軸向進刀量(Ap)	[mm]	0.5 ~ 2.5	0.2 ~ 2	0.5~2.5
	切削速度(Vc)	[m/min]	140 ~ 196	70 ~ 112	150 ~ 200
CNGX07-4220	每刃進給(Fz)	[mm/tooth]	0.10 ~ 0.3	0.05 ~ 0.3	0.1 ~ 0.35
	軸向進刀量(Ap)	[mm]	0.5 ~ 2.5	0.2 ~ 2	0.5~2.5
	切削速度(Vc)	[m/min]	140 ~ 196	70 ~ 112	150 ~ 200

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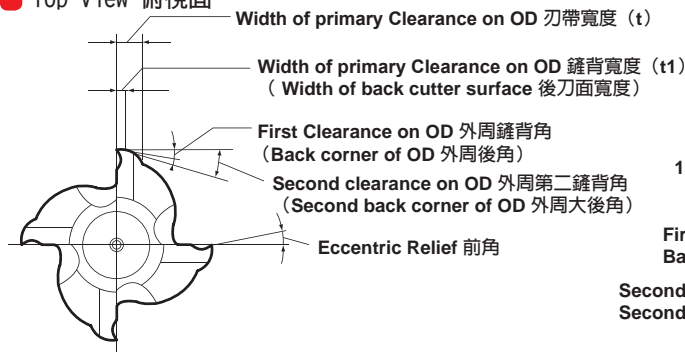


Detail of the end mill 立銑刀各部份名稱

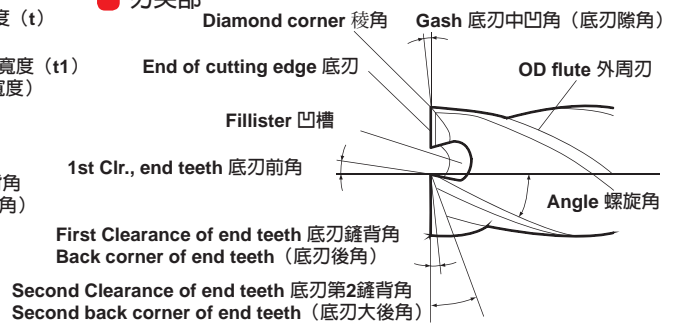
Side view 側視面



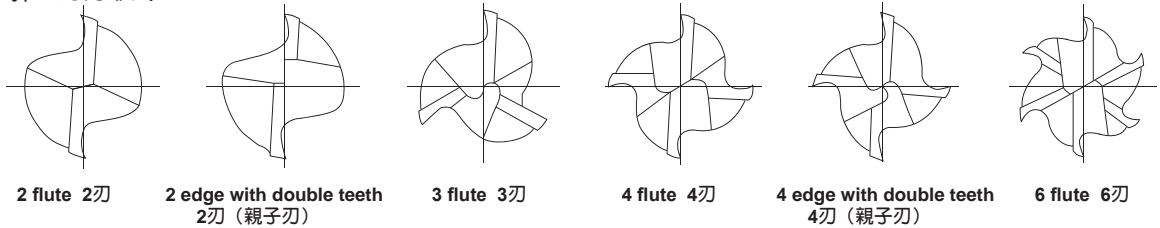
Top view 俯視面



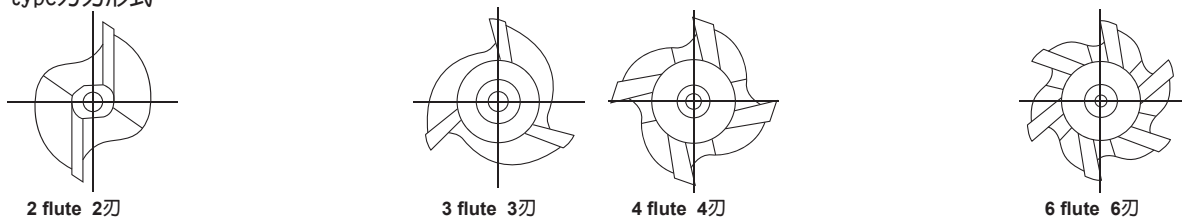
刃尖部



Flute type 刀刃形式



Flute type 刀刃形式

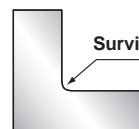


Shape in end teeth of the end mill 立銑刀的底刃形狀

Tip protection 尖角保護



During the tip protection 尖角保護時

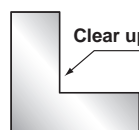


- Batter rigidity of the tip, protecting the edge. 尖角部剛性好，不易崩刃。
- Tip sharp drop. 尖角部鋒利度下降。

Tip 尖角



During the tip 尖角型時



- Use for clear up tip. 工作直角時使用。
- Sharp tip, easy to break. 尖角部鋒利，但易崩刃。
- Can be use in carbone steel and steel, specially using in Aluminum and non-ferrous material. 碳素鋼和調質鋼也能使用，尤其廣泛應用於鋁材等非鐵材質的加工，對於高硬度的工件，因崩刃而無法適用。

Failure analyzed and solvent

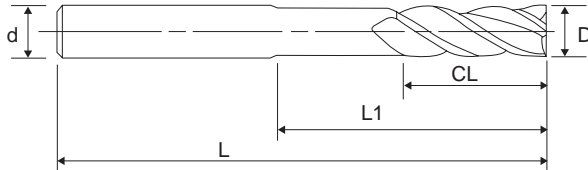
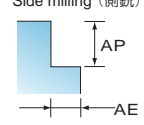
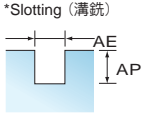
Item	Fault	Reason	Solution	
● Precision of cutting surface	● Rough surface	● Vibration	<ul style="list-style-type: none"> ▶ Fix the working material as well as possible ▶ Adjust the failed part of machine ▶ Reduce rotating speed ▶ Downcut ▶ Tools minimum length out of fixture 	
		● The heterogeneity in hardness of working material	▶ measuring the hardness of working material	
		● The tip was unsuitable	<ul style="list-style-type: none"> ▶ Tool rake angle and clearance angle ▶ Improve cutting roughness 	
		● Chip lump and fuse attach material	<ul style="list-style-type: none"> ▶ Remove chip lump and fuse attach material ▶ Check on the degenerative condition of cutting fluids 	
		● Passivation of cutting edge	▶ Determine the adequate time to regrinding	
		● Cutting rate (speed) too fast	▶ Reduce the cutting rate (speed)	
	● Buckling cracking of the of machined surface	● Misfit cutting fluids or deficient of cutting fluids	● Unbalance friction of cutting edge	▶ Regrinding to reduce friction
			● Fuse attach material on the cutting edge	<ul style="list-style-type: none"> ▶ Remove fuse attach material ▶ Change cutting fluids
			● Cutting edge deformation	▶ To pay attention to use and safekeeping
	● The corrugation of machined surface	● Lesser cutting flute	● Bigger cutting depth and feed rate	▶ To Reduce the Feed Rate of Machine
			● A larger Helix Angle	▶ Decrease the Helix Angle
			● Lesser cutting flute	▶ Increase the number of flutes from 2 flutes to 4 flutes and then 6 flutes
● Shape precision	● Perpendicularity	● Cutting depth and feed rate is too large	▶ Reduce the depth of cutting and feed rate	
		● Tool stretches out over longer	▶ Use the end mill stretches out shortest from chuck	
		● Perpendicularity of holder not reach	▶ Improve the perpendicularity of holder	
● End mill life	● Shorter life for regrinding end mill	● Work material hardness too high	<ul style="list-style-type: none"> ▶ Improve to suitable hardness by heat treatment process ▶ Reduce the feed rate for high hardness work material or change more hardness tool 	
		● Unsuitable feed rate	▶ Adjust to suitable feed rate	
		● Chip lump and fuse attach material	<ul style="list-style-type: none"> ▶ Remove chip lump and fuse attach material ▶ Use suitable cutting liquid 	
		● Unsuitable cutting liquid	<ul style="list-style-type: none"> ▶ Use suitable cutting liquid ▶ Use enough cutting liquid 	
	● Huge friction of cutting edge	● The fault of work material	● Unsuitable edge angle	▶ Regrind to suitable angle
			● End mill cutting function go down	▶ Surface treatment
			● Unsuitable cutting liquid	<ul style="list-style-type: none"> ▶ Adjust to suitable cutting liquid ▶ Adjust offer method of liquid
			● Unsuitable regrind schedule	▶ Manage the regrind schedule
			● Vibration	▶ Strengthen the install tool of work material
	● Flute damage	● The fault of work material	● Unsuitable feed rate	▶ Reduce the feed rate
			● Cutter become dull	▶ Regrind the tools
			● Cutting liquid go off	▶ Change the cutting liquid
			● Work material unsuitable fixed	<ul style="list-style-type: none"> ▶ Indeed fix the work material ▶ Improve install tool
			● Break	▶ Regrind process
	● Break	● End mill with incorrect operation	● End mill with incorrect operation	▶ Be careful of keep and operate
			● Chip jam	▶ Use cutting liquid in large, during dry milling use air blow to remove chips

立銑刀故障分析與對策

end mill expert

項目	故障	原因	對策	
● 加工面精度	● 加工面較粗	● 振動、顫振	<ul style="list-style-type: none"> ▶ 提高工件安裝剛性 ▶ 改正機械的不良部位 ▶ 降低立銑刀的轉速 ▶ 進行逆銑 ▶ 將立銑刀的刃長伸出長度控制在最小範圍 	
		● 加工工件的硬度不均一	▶ 測量硬度後進行選擇適合的刀具	
		● 先端形狀不合適	<ul style="list-style-type: none"> ▶ 採用合適的前角、後角 ▶ 改善磨削面的表面粗糙度 	
		● 有積屑瘤、熔附物	<ul style="list-style-type: none"> ▶ 除去積屑瘤、熔附物 ▶ 檢查切削液的變質情況 	
		● 刃尖鈍化	▶ 確定適當的再研磨時期	
		● 切削速度過快	▶ 減慢切削速度	
		● 切削液不適、不足	▶ 改變切削液或供給方法	
	● 加工面擠裂	● 切削刃的摩擦不平衡	▶ 通過再研磨除去摩擦	
		● 刃部有熔附物	<ul style="list-style-type: none"> ▶ 除去熔附物 ▶ 更換切削液 	
		● 切削刃有打痕	▶ 注意使用、保管	
	● 加工面波紋	● 刃數較少	▶ 按2刃→4刃→6刃增加刃數	
		● 切入量、進給量過大	▶ 減小切深、進給量	
		● 螺旋角過大	▶ 減小螺旋角	
	● 形狀精度	● 垂直度	● 切入量、進給量過大	▶ 減小切深、進給量
			● 伸出長度過長	▶ 使用刃長伸出長度最短的立銑刀
● 安裝用具的工件支撐面垂直度不夠			▶ 改善支撐面垂直度	
● 立銑刀的壽命	● 再研磨後的壽命較短	● 工件材料的硬度較高	<ul style="list-style-type: none"> ▶ 熱處理為適合的硬度 ▶ 工件材料為高硬度時減小進給量或者更換為更高硬度刀具材料 	
		● 進給量不適	▶ 改變為適合的進給量	
		● 有積屑瘤、熔附物	<ul style="list-style-type: none"> ▶ 除去積屑瘤、熔附物 ▶ 選擇合適的切削液 	
		● 切削液不適	<ul style="list-style-type: none"> ▶ 選擇合適的切削液 ▶ 使用足量的切削液 	
	● 切削刃的摩擦過大	● 加工工件材料的缺陷	<ul style="list-style-type: none"> ▶ 實現工件材料內部組織的平均化 ▶ 消除硬度不均 	
		● 刃尖角度不適合	▶ 再研磨為適合的前角、後角	
		● 立銑刀的切削性能下降	▶ 進行表面處理	
		● 切削液不適	<ul style="list-style-type: none"> ▶ 變更為合適的切削液 ▶ 變換給油方式 	
		● 再研磨時期不適	▶ 對再研磨時間進行管理	
	● 刀刃缺損	● 振動、顫振	▶ 加強加工工件安裝用具	
		● 工件材料的缺陷	<ul style="list-style-type: none"> ▶ 實現內部組織的平均化 ▶ 使用合適的硬度、消除硬度不均 ▶ 檢查是否有硬質異物、砂等混入材料 	
		● 進給量不適	▶ 減少進給量	
		● 切削刃鈍化	▶ 實施再研磨	
		● 切削液劣化	▶ 更換切削液	
	● 折斷	● 工件固定不當	<ul style="list-style-type: none"> ▶ 確實固定加工工件 ▶ 改善安裝用具 	
		● 切削刃鈍化	▶ 實施再研磨	
		● 立銑刀使用不當	▶ 注意保管、使用	
		● 切屑堵塞	▶ 大量使用切削液、乾式時用高壓空氣吹去切屑	



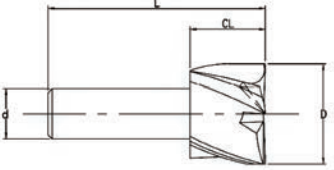
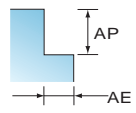
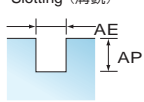
Custom Tool Design Inquiry Form

Work piece Material			
Hardness	<input type="checkbox"/> HRC_____ <input type="checkbox"/> HB_____ <input type="checkbox"/> Other_____		
Type of Coating	<input type="checkbox"/> ST standard(refer to our catalogue) <input type="checkbox"/> Uncoated <input type="checkbox"/> Customers Requirement _____		
Type of Flute Spiral	<input type="checkbox"/> Right <input type="checkbox"/> Left		
No of Flutes	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> Other_____		
Type of End Cut	<input type="checkbox"/> Square	<input type="checkbox"/> Corner Radius r=_____	<input type="checkbox"/> Ball R=_____
Type of Shank	<input type="checkbox"/> No Side Lock <input type="checkbox"/> Side Lock		
Specification			
	D _____ CL _____ L1 _____ L _____ d _____		
Application	<input type="checkbox"/> Side Milling	Common side milling Cavity	<input type="checkbox"/> Side milling (側銑) 
			ap: _____ ae: _____
	<input type="checkbox"/> Slotting		<input type="checkbox"/> Slotting (溝銑) 
	<input type="checkbox"/> Drilling & Milling		ap: _____ ae: _____
	Machine Processing	<input type="checkbox"/> Finishing <input type="checkbox"/> Roughing <input type="checkbox"/> General Purpose <input type="checkbox"/> Other_____	
	Coolant Type	<input type="checkbox"/> Soluble <input type="checkbox"/> Oil Coolant <input type="checkbox"/> Oil Mist <input type="checkbox"/> Dry Cutting <input type="checkbox"/> Air Cooling <input type="checkbox"/> Other_____	
	Tool Life Standard	<input type="checkbox"/> Cutting Time <input type="checkbox"/> Load of Machine <input type="checkbox"/> Finish <input type="checkbox"/> Tool Wear <input type="checkbox"/> Vibration and Sound <input type="checkbox"/> Other_____	
	Desired Life		
Finish Requirement	<input type="checkbox"/> Required Roughness _____ <input type="checkbox"/> Not Required		
Other	Special Requirement		



Custom Tool Design Inquiry Form

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Work piece Material				
Hardness	<input type="checkbox"/> HRC_____ <input type="checkbox"/> HB_____ <input type="checkbox"/> Other_____			
Type of Coating	<input type="checkbox"/> ST standard(refer to our catalogue) <input type="checkbox"/> Uncoated <input type="checkbox"/> Customers Requirement _____			
Type of Flute Spiral	<input type="checkbox"/> Right <input type="checkbox"/> Left			
No of Flutes	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> Other_____			
Type of End Cut	<input type="checkbox"/> Square 	<input type="checkbox"/> Corner Radius  r=_____	<input type="checkbox"/> Ball R=_____	
Type of Shank	<input type="checkbox"/> No Side Lock <input type="checkbox"/> Side Lock			
Specification			Make your Drawing:	
	D_____ CL_____ L_____ d_____			
Application	<input type="checkbox"/> Side Milling	Common side milling	<input type="checkbox"/> Side milling (側銑) 	ap:_____
		Cavity		ae:_____
	<input type="checkbox"/> Slotting		<input type="checkbox"/> Slotting (溝銑) 	ap:_____
	<input type="checkbox"/> Drilling & Milling			ae:_____
	Machine Processing		<input type="checkbox"/> Finishing <input type="checkbox"/> Roughing <input type="checkbox"/> General Purpose <input type="checkbox"/> Other_____	
	Coolant Type		<input type="checkbox"/> Soluble <input type="checkbox"/> Oil Coolant <input type="checkbox"/> Oil Mist <input type="checkbox"/> Dry Cutting <input type="checkbox"/> Air Cooling <input type="checkbox"/> Other_____	
	Tool Life Standard		<input type="checkbox"/> Cutting Time <input type="checkbox"/> Load of Machine <input type="checkbox"/> Finish <input type="checkbox"/> Tool Wear <input type="checkbox"/> Vibration and Sound <input type="checkbox"/> Other_____	
	Desired Life			
Finish Requirement		<input type="checkbox"/> Required Roughness_____ <input type="checkbox"/> Not Required		
Other	Special Requirement			



國家磐石獎

國家磐石獎主要表彰國內優質中小企業發揮升級轉型精神，鼓勵以創新研發帶動產業發展的新契機，進而鞏固產業永續發展的競爭利基，期藉由國家磐石獎的選拔與推展，延伸國家磐石獎的效益，肯定現有的優秀企業，找出未來希望的潛力新秀。此獎項為中小企業最高榮譽。

SMEs are an important part in Taiwan, as they help generate economic growth. Furthermore, the awards are built on a branding and publicity programme dedicated to raising the profiles and awareness of its winners. The National Award of Outstanding SMEs is also a platform in which socially responsible business leaders are given the opportunity to connect with each other, share business ideas and practices as well as growing to become an active community of socially responsible leaders.



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