



shaping your dreams



螺帽絲攻系列

Vol.1

NUT TAP

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⚠️ 安全使用注意事項

- 使用工具時，工具可能有破損的風險，請務必使用上蓋、護目鏡、安全鞋等等防護物品，以策安全。
- 請勿空手碰觸切屑與切刃。
- 工具切刃銳利度下降時，請停止使用。
- 發生異音、異常震動時，請立刻停止使用。
- 請勿修改工具樣式。
- 加工前，請確認工具尺寸。

⚠️ Safe use of cutting tools

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges and chips with bare hands.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any abnormal cutting sounds.
- Do not modify tools.
- Please use appropriate tools for the operation. Check dimensions to ensure proper selection.

大寶精密工具代理店

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- 製品經常進行研究、改良，本目錄中的工具樣式如有更改，恕不另行通知。
- 本目錄內容請勿任意轉載及複製。

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高品質、長壽命 螺帽攻牙工具首選

High quality, extraordinary tool life. The first choice for Taps



OSG螺帽絲攻以台灣為起點、向全世界拓展

OSG's Taps start from Taiwan and expand to the world.

大寶精密工具，從民國58年在台灣成立，經過了五十個年頭，從一家製造傳統SKS螺絲攻工廠，到現在成為有八個海內外分據點的亞洲精密切削刀具大廠，一路以來始終秉持著以達成客戶需求為服務原則，並透過工具與客戶進行最有效率的溝通。

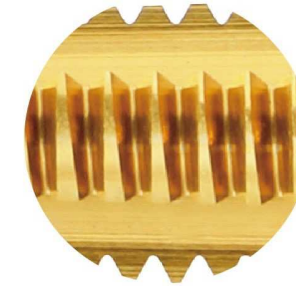
TAIHO Tool Mfg. Co., Ltd was founded in 1969. Fifty years have passed by, we went from a traditional SKS Taps factory to an Asia large precise cutting tools factory that had eight branches in Taiwan and oversea. Throughout the years TAIHO has put the customers' need in top priority and achieved effective communication through our products.

OSG集團的口號，『shaping your dream』，意思就是創造客戶的夢想，我們藉由溝通瞭解客戶，並且達成他們的期待。目前台灣大寶也正在進行各種領域的製品及加工技術開發，大寶的技術開發人員，也會和客戶一起參與開發的過程，貢獻我們的專業，幫助客戶達成夢想。

The tagline of OSG Corporation "shaping your dream" is to fulfill the customers' dream. We understand our customers through communication and reach their expectation. TAIHO is now developing products and processing technique in various fields. Our engineers also participate in product developing with the customers. We dedicated our profession to accomplish the customers' dream.

在OSG的全球戰略中，大寶精密將擔任螺帽絲攻的生產製作與供應商，向世界的螺絲產業做出貢獻外，扮演OSG螺帽絲攻在世界市場占有率第一的重要角色。

In the OSG global network, TAIHO is not only a supplier for taps and rolling dies making contribution to the world screw industry, but also an important role in the OSG nut taps to reach the world's NO.1 market share.



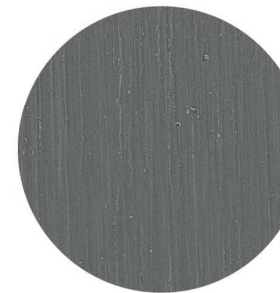
OSG自製專用研磨機
展現高品質螺紋研磨技術
可嚴格控管絲攻精度

OSG's grinding machine performs high quality thread grinding technique that can strictly control thread limit.



對應不同種類、
被削材的螺帽加工
槽型多樣化對應、提升排屑性

Correspond to different kinds and materials of nut processing. Various flutes shapes increase the ability of chip evacuation.



獨家開發的表面處理
可有效延長工具壽命

Exclusive coating with smooth surface can effectively extend tool life.



圖示種類 Guide of Icons

1 材質 Materials

HSS-Co 含鈷高速鋼
Cobalt HSS

2 表面處理 Coating

V V氮化鈦鍍層(複合多層表面處理)
V (Composite multi-layered) coating

TIN TIN氮化鈦鍍層
TiN Coating

螺帽絲攻種類介紹 Types of Nut Tap

短柄型螺帽絲攻 SNT (Short Nut Tap)



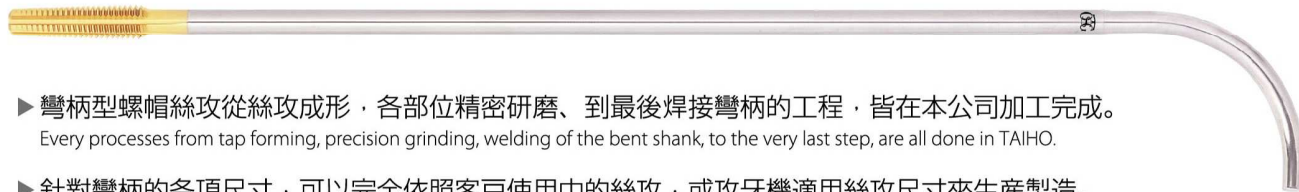
- ▶ 客戶可自行連接彎柄，方便絲攻新舊替換。
Customer can connect the taps with bent shank on their own, and can replace the old taps with new ones easily.
- ▶ 短柄型螺帽絲攻被廣泛使用於緊固件及螺帽加工產業。
It's widely used in fasteners and nut processing industries.
- ▶ 根據國內外市場需求，本公司有規劃公制、美制螺紋標準在庫品方便客戶選購。
To meet the requirements from domestic and oversea market, we offer taps with Metric, Unified threads, with standard designs in stock.

柄牙型螺帽絲攻 NBT (Nib TAP)



- ▶ 此類型絲攻可搭配客戶所使用之套筒(Coupler)來連接彎柄，大幅縮減加工前的調整時間。
This type of taps could be connected with bent shanks by couplers, which would substantially shorten the adjusting time.
- ▶ 使用套筒連接絲攻與彎柄，亦可降低攻牙扭力過大時絲攻折斷的機率。
Using couplers to connect taps and bent shank could also lower the possibility of tap breakage caused by the strong torque.

彎柄型螺帽絲攻 BNT (Bent shank TAP)



- ▶ 彎柄型螺帽絲攻從絲攻成形，各部位精密研磨，到最後焊接彎柄的工程，皆在本公司加工完成。
Every processes from tap forming, precision grinding, welding of the bent shank, to the very last step, are all done in TAIHO.
- ▶ 針對彎柄的各項尺寸，可以完全依照客戶使用中的絲攻，或攻牙機適用絲攻尺寸來生產製造。
We are able to manufacture the bent shanks in different sizes per the samples offered and also suitable sizes for different tapping machines.

被削材別選定絲攻系列 Choose the tap by work material

被削材 Work material	絲攻系列 Tap series	品牌 Brand	精度 Thread limit	牙長(山數) Number of thread	表面 Coating	特長 Feature
低・中碳鋼材 Low・Medium Carbon Steels	HS系列		GH級	25山	TiN	適用於使用碳鋼(俗稱黑鐵)等材料而成型之螺帽。表面施予TiN處理。對於冷，熱間成型的中低碳鋼螺帽的加工可有效發揮。 It is for nuts in carbon steel materials with TiN coating, it works effectively on processing low carbon steel nuts.
不銹鋼材 Stainless Steels	SUS系列		GH級	30山	V	適用於加工不銹鋼材質(俗稱白鐵)之螺帽。採用耐熱、耐磨耗性佳的含鈷高速鋼，表面施予V處理，並設定不銹鋼用切削溝槽，讓切屑可順利排出。 It is a series made by Cobalt HSS with TiCN coating which is suitable for processing stainless steels. Special flute design also gives good chip evacuation performance.
高碳鋼材 High Carbon Steels 不銹鋼材 Stainless Steels	HP-SUS系列		A級	30山	V	HY-PRO品牌，日本直接技術轉移。採用兼具極佳耐磨性與韌性的高速工具鋼，表面施予V處理，對於高碳鋼、不銹鋼材質螺帽，有更顯著的長壽命與高切削性能。全系列採A級精度，降低螺帽有效徑之偏差。 HY-PRO brand introduced processing method directly from Japan. It possess better resistance and toughness by TiCN coating and high speed tool steel material. It shows better tool life and higher cutting performance on processing hardened steel or alloy steel materials. The tolerance of this series is classified with A class, which would lower the deviation of pitch diameter.

螺帽絲攻精度 Nut tap limit

GH級與A級精度之區別 Differences between class GH and class A

GH精度等級：Class GH

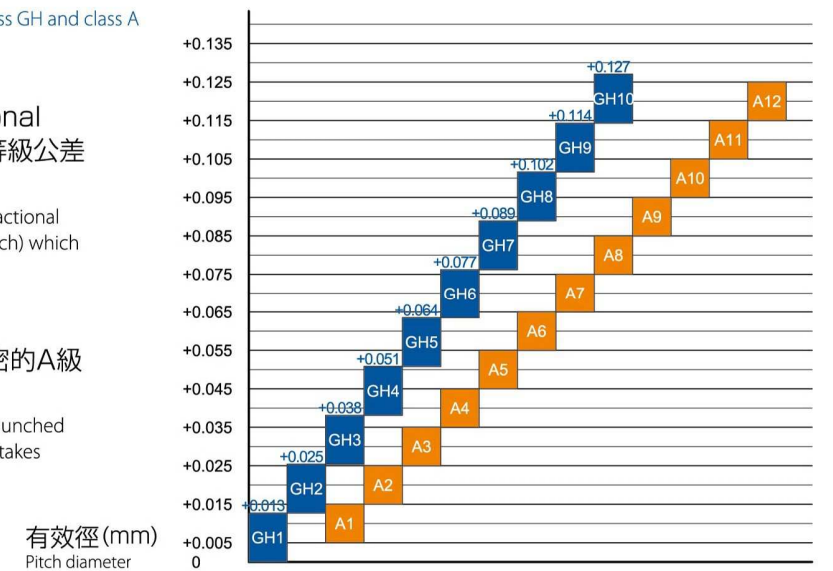
採用 ANSI B94.9 TABLE 33 (Fractional Size Taps) 中的公差域設定方式，每一等級公差為0.0005"(inch)，亦即0.0127mm。

Adopted the tolerance setting of ANSI B94.9 TABLE 33 (Fractional Size Taps), every tolerance range of the limit is 0.0005"(inch) which is 0.0127mm.

A精度等級：Class A

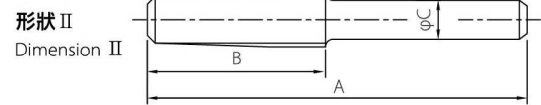
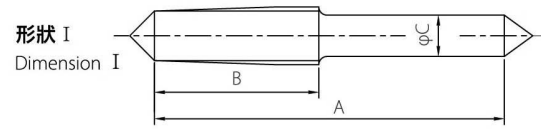
為貼近客戶使用習慣，本公司設定出更精密的A級精度，每一等級公差為0.01mm。

In order to satisfied the customer's using habit, TOSG has launched another limit which is more accurate. Every tolerance class takes 0.01mm as a class.



HS-SNT

HS-SNT 形狀與外觀 HS-SNT Dimension and Outer Appearance



■ 形狀範圍：M7、U1/4、W1/4以下
Dimension range : M7, U1/4, W1/4 and below



■ 形狀範圍：M8、U5/16、W5/16以上
Dimension range : M8, U5/16, W5/16 and above

螺紋在庫表 Stock Chart



公制螺紋(M) Metric Screw Threads(M)

單位 Unit : mm

產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
16345 *	M 3 × 0.5	58.6	12.5	2.3	3	I
16348 *	M 4 × 0.7	58.2	17.5	3		
16350 *	M 5 × 0.8	62.8	20	3.8		
16351 *	M 6 × 1	67.4	25	4.5		
16353 *	M 7 × 1	70	25	5.6		
16354 *	M 8 × 1.25	77	31.3	6.05		
16355 *	M 8 × 1	77	25	6.4		
16356 *	M 10 × 1.5	89	37.5	7.8		
16357 *	M 10 × 1.25	89	31.3	8.1		
16358 *	M 10 × 1	89	25	8.4		
16359 *	M 12 × 1.75	102	43.8	9.5	5	II
16360 *	M 12 × 1.5	102	37.5	9.8		
16361 *	M 12 × 1.25	102	31.3	10.1		
16362 *	M 12 × 1	102	25	10.5		
16363 *	M 14 × 2	114	50	11.2		
16364 *	M 14 × 1.5	114	37.5	11.2		
16366 *	M 16 × 2	127	50	13.1		
16367 *	M 16 × 1.5	127	37.5	13.1		
16369 *	M 18 × 2.5	133	62.5	14		
16370 *	M 18 × 2	133	50	15		
16372 *	M 20 × 2.5	133	62.5	16.5		
16373 *	M 20 × 2	133	50	16.5		
16371 *	M 20 × 1.5	133	37.5	16.5		
16375 *	M 22 × 2.5	146	62.5	17.5		
16376 *	M 22 × 2	146	50	19		
16378 *	M 24 × 3	165	75	18.5		
16380 *	M 24 × 2	165	50	20		
16381 *	M 24 × 1.5	165	37.5	21.5		

商品EDP欄內 [*] 代表GH精度。 [*] indicate GH class limit. 例Ex:M3X0.5 GH6→EDP=163456

美制螺紋(U) Unified Screw Threads(U)

單位 Unit : mm

產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
16421 *	NO.4 - 40 UNC	58.9	15.9	2	3	I
16422 *	NO.4 - 48 UNF	58.9	13.2	2		
16423 *	NO.5 - 40 UNC	58.6	15.9	2.2		
16424 *	NO.5 - 44 UNF	58.6	14.4	2.2		
16425 *	NO.6 - 32 UNC	60.6	19.8	2.4		
16426 *	NO.6 - 40 UNF	60.6	15.9	2.6		
16427 *	NO.8 - 32 UNC	60.2	19.8	3.1		
16428 *	NO.8 - 36 UNF	60.2	17.6	3.1		
16429 *	NO.10 - 24 UNC	69	26.5	3.4		
16430 *	NO.10 - 32 UNF	68.7	19.8	3.7		
16431 *	NO.12 - 24 UNC	69.7	26.5	4	5	II
16432 *	NO.12 - 28 UNF	69.5	22.7	4.2		
16434 *	1/4 - 20 UNC	72.3	31.8	4.5		
16435 *	1/4 - 28 UNF	71.9	22.7	5		
16436 *	5/16 - 18 UNC	77	35.3	6		
16437 *	5/16 - 24 UNF	77	26.5	6.3		
16438 *	3/8 - 16 UNC	89	39.7	7.3		
16439 *	3/8 - 24 UNF	89	26.5	8		
16440 *	7/16 - 14 UNC	102	45.4	8.6		
16441 *	7/16 - 20 UNF	102	31.8	9.3		
16442 *	1/2 - 13 UNC	102	48.8	10		
16443 *	1/2 - 20 UNF	102	31.8	10.9		
16444 *	9/16 - 12 UNC	114	52.9	11		
16445 *	9/16 - 18 UNF	114	35.3	11.4		
16446 *	5/8 - 11 UNC	127	57.7	12.8		
16447 *	5/8 - 18 UNF	127	35.3	13.1		
16448 *	3/4 - 10 UNC	133	63.5	15		
16449 *	3/4 - 16 UNF	133	39.7	15		
16450 *	7/8 - 9 UNC	133	70.6	17		
16451 *	7/8 - 14 UNF	133	45.4	18		
16452 *	1 - 8 UNC	165	79.4	20		
16453 *	1 - 12 UNF	165	52.9	21		

商品EDP欄內 [*] 代表GH精度。 [*] indicate GH class limit. 例Ex:1/4-20UNC GH6→EDP=164346

英制螺紋(W) Whitworth Screw Threads(W)

單位 Unit : mm

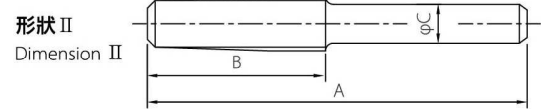
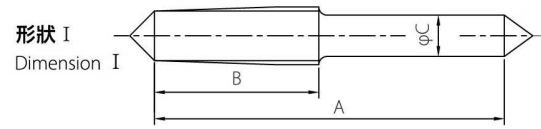
產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
12709 *	W 3/16 - 24	69	26.5	3.2	3	I
16310 *	W 1/4 - 20	72.4	31.8	4.5		
16311 *	W 5/16 - 18	77	35.3	6	5	II
16312 *	W 3/8 - 16	89	39.7	7.3		
16313 *	W 7/16 - 14	102	45.4	8.6		
16314 *	W 1/2 - 12	102	52.9	9.5		
16315 *	W 9/16 - 12	114	52.9	10.5		
16316 *	W 5/8 - 11	127	57.7	12		
16318 *	W 3/4 - 10	133	63.5	15		
16320 *	W 7/8 - 9	133	70.6	17		
16322 *	W 1 - 8	165	79.4	20		

商品EDP欄內 [*] 代表GH精度。 [*] indicate GH class limit. 例Ex:W5/8-11 GH7→EDP=163167



HP-SUS-SNT

HP-SUS-SNT 形狀與外觀 HP-SUS-SNT Dimension and Outer Appearance



■ 形狀範圍：M7、U1/4、W1/4以下
Dimension range : M7, U1/4, W1/4 and below



■ 形狀範圍：M8、U5/16、W5/16以上
Dimension range : M8, U5/16, W5/16 and above

螺紋在庫表 Stock Chart



公制螺紋(M) Metric Screw Threads(M)

單位 Unit : mm

產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
6345 **	M 3 × 0.5	58.6	15	2.3	3	I
6348 **	M 4 × 0.7	58.2	21	3		
6350 **	M 5 × 0.8	62.8	24	3.8		
6351 **	M 6 × 1	67.4	30	4.5		
6353 **	M 7 × 1	70	30	5.6		
6354 **	M 8 × 1.25	85	37.5	6.05		
6355 **	M 8 × 1	85	30	6.4		
6356 **	M 10 × 1.5	89	45	7.8		
6357 **	M 10 × 1.25	89	37.5	8.1		
6358 **	M 10 × 1	89	30	8.4		
6359 **	M 12 × 1.75	102	52.5	9.5	5	II
6360 **	M 12 × 1.5	102	45	9.8		
6361 **	M 12 × 1.25	102	37.5	10.1		
6362 **	M 12 × 1	102	30	10.5		
6363 **	M 14 × 2	114	60	11.2		
6364 **	M 14 × 1.5	114	45	11.2		
6366 **	M 16 × 2	127	60	13.1		
6367 **	M 16 × 1.5	127	45	13.1		
6369 **	M 18 × 2.5	133	75	14		
6370 **	M 18 × 2	133	60	15		
6372 **	M 20 × 2.5	133	75	15.5		
6373 **	M 20 × 2	133	60	16.5		
6371 **	M 20 × 1.5	133	45	16.5		
6375 **	M 22 × 2.5	146	75	16.5		
6376 **	M 22 × 2	146	60	19		
6378 **	M 24 × 3	165	90	18.5		
6380 **	M 24 × 2	165	60	20		
6381 **	M 24 × 1.5	165	45	21.5		

商品EDP欄內【*】代表GH精度。【*】 indicate GH class limit. 例Ex:M3X0.5 A6→EDP=634506

美制螺紋(U) Unified Screw Threads(U)

單位 Unit : mm

產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
6421 **	NO.4 - 40 UNC	58.9	19.1	2	3	I
6422 **	NO.4 - 48 UNF	58.9	15.9	2		
6423 **	NO.5 - 40 UNC	58.6	19.1	2.2		
6424 **	NO.5 - 44 UNF	58.6	17.3	2.2		
6425 **	NO.6 - 32 UNC	60.6	23.8	2.4		
6426 **	NO.6 - 40 UNF	60.6	19.1	2.6		
6427 **	NO.8 - 32 UNC	60.2	23.8	3.1		
6428 **	NO.8 - 36 UNF	60.2	21.2	3.1		
6429 **	NO.10 - 24 UNC	69	31.8	3.4		
6430 **	NO.10 - 32 UNF	68.7	23.8	3.7		
6431 **	NO.12 - 24 UNC	69.7	31.8	4	5	II
6432 **	NO.12 - 28 UNF	69.5	27.2	4.2		
6434 **	1/4 - 20 UNC	72.3	38.1	4.5		
6435 **	1/4 - 28 UNF	71.9	27.2	5		
6436 **	5/16 - 18 UNC	80	42.3	6		
6437 **	5/16 - 24 UNF	80	31.8	6.3		
6438 **	3/8 - 16 UNC	89	47.6	7.3		
6439 **	3/8 - 24 UNF	89	31.8	8		
6440 **	7/16 - 14 UNC	102	54.4	8.6		
6441 **	7/16 - 20 UNF	102	38.1	9.3		
6442 **	1/2 - 13 UNC	102	58.6	10		
6443 **	1/2 - 20 UNF	102	38.1	10.9		
6444 **	9/16 - 12 UNC	114	63.5	11		
6445 **	9/16 - 18 UNF	114	42.3	11.4		
6446 **	5/8 - 11 UNC	127	69.3	12.8		
6447 **	5/8 - 18 UNF	127	42.3	13.1		
6448 **	3/4 - 10 UNC	133	76.2	15		
6449 **	3/4 - 16 UNF	133	47.6	15		
6450 **	7/8 - 9 UNC	146	84.7	17		
6451 **	7/8 - 14 UNF	146	54.4	18.5		
6452 **	1 - 8 UNC	165	95.3	20		
6453 **	1 - 12 UNF	165	63.5	21		

商品EDP欄內【*】代表GH精度。【*】 indicate GH class limit. 例Ex:1/4-20UNC A6→EDP=643406

英制螺紋(W) Whitworth Screw Threads(W)

單位 Unit : mm

產品編號 EDP NO.	螺紋尺寸 Thread Size	全長(A) Overall length	螺紋長(B) Thread length	柄徑(C) Shank dia.	刃數 Flutes	形狀 Dimension
2709 **	W 3/16 - 24	69	31.8	3.2	3	I
6310 **	W 1/4 - 20	72.4	38.1	4.5		
6311 **	W 5/16 - 18	80	42.3	6	5	II
6312 **	W 3/8 - 16	89	47.6	7.3		
6313 **	W 7/16 - 14	102	54.4	8.6		
6314 **	W 1/2 - 12	102	63.5	9.5		
6315 **	W 9/16 - 12	114	63.5	10.5		
6316 **	W 5/8 - 11	127	69.3	12		
6318 **	W 3/4 - 10	133	76.2	15		
6320 **	W 7/8 - 9	133	84.7	17		
6322 **	W 1 - 8	165	95.3	20		

商品EDP欄內【*】代表GH精度。【*】 indicate GH class limit. 例Ex:W5/8-11 A7→EDP=631607



精度選定表 Limit selection chart

▶ 公制螺紋(M) Metric Screw Threads(M)

GH級精度選定表 GH class limit selection chart

螺紋規格 Thread size	螺距 Pitch	螺絲攻精度 Tap limit			
		ISO 4H、5H內螺紋 (舊JIS1級相當) ISO 4H 5H Internal thread		ISO 6H內螺紋 (舊JIS2級相當) ISO 6H Internal thread	
M2	0.4	GH2	-	GH3	GH4
M2.5	0.45	GH2	GH3	GH4	GH5
M2.6	0.45	GH2	GH3	GH4	GH5
M3	0.5	GH3	GH4	GH5	GH6
M4	0.7	GH4	GH5	GH6	GH7
M5	0.8	GH4	GH5	GH6	GH7
M6	1	GH4	GH5	GH6	GH7
M7	1	GH4	GH5	GH6	GH7
M8	1.25	GH5	GH6	GH7	GH8
	1	GH4	GH5	GH6	GH7
M10	1.5	GH5	GH6	GH7	GH8
	1.25	GH5	GH6	GH7	GH8
	1	GH4	GH6	GH7	GH8
M12	1.75	GH5	GH7	GH8	GH9
	1.5	GH5	GH6	GH7	GH8
	1.25	GH5	GH6	GH7	GH8
	1	GH4	GH6	GH7	GH8
M14	2	GH6	GH7	GH8	GH9
	1.5	GH5	GH7	GH8	GH9
M16	2	GH6	GH7	GH8	GH9
	1.5	GH5	GH7	GH8	GH9
M18	2.5	GH6	GH8	GH9	GH10
	2	GH6	GH8	GH9	GH10
M20	2.5	GH6	GH8	GH9	GH10
	2	GH6	GH8	GH9	GH10
	1.5	GH5	GH7	GH8	GH9
M22	2.5	GH6	GH8	GH9	GH10
	2	GH6	GH8	GH9	GH10
M24	3	GH6	GH8	GH9	GH10
	2	GH6	GH8	GH9	GH10
	1.5	GH5	GH7	GH8	GH9

A級精度選定表 A class limit selection chart

螺紋規格 Thread size	螺距 Pitch	螺絲攻精度 TAP limit			
		ISO 4H、5H內螺紋 (舊JIS1級相當) ISO 4H 5H Internal thread		ISO 6H內螺紋 (舊JIS2級相當) ISO 6H Internal thread	
M2	0.4	A2	A4	A5	A6
M2.5	0.45	A2	A4	A5	A6
M2.6	0.45	A2	A4	A5	A6
M3	0.5	A2	A5	A6	A7
M4	0.7	A3	A6	A7	A8
M5	0.8	A3	A6	A7	A8
M6	1	A4	A6	A7	A8
M7	1	A4	A6	A7	A8
M8	1.25	A5	A8	A9	A10
	1	A4	A6	A7	A8
M10	1.5	A5	A8	A9	A10
	1.25	A5	A8	A9	A10
	1	A4	A8	A9	A10
M12	1.75	A6	A9	A10	A11
	1.5	A5	A8	A9	A10
	1.25	A5	A8	A9	A10
	1	A4	A8	A9	A10
M14	2	A7	A9	A10	A11
	1.5	A6	A9	A10	A11
M16	2	A7	A9	A10	A11
	1.5	A6	A9	A10	A11
M18	2.5	A8	A10	A11	A12
	2	A7	A10	A11	A12
M20	2.5	A8	A10	A11	A12
	2	A7	A10	A11	A12
	1.5	A6	A9	A10	A11
M22	2.5	A8	A10	A11	A12
	2	A7	A10	A11	A12
M24	3	A9	A11	A12	A13
	2	A7	A10	A11	A12
	1.5	A6	A9	A10	A11

▶ 美制螺紋(U) Unified Screw Threads(U)

GH級精度選定表 GH class limit selection chart

螺紋規格 Thread size	牙山數 Number of thread	螺絲攻精度 Tap limit			
		3B內螺紋 3B Internal thread		2B內螺紋 2B Internal thread	
NO.2	56UNC	GH2	-	GH3	GH4
	64UNF	GH2	-	GH3	GH4
NO.4	40UNC	GH3	GH4	GH5	GH5
	48UNF	GH3	-	GH4	GH5
NO.5	40UNC	GH3	GH4	GH5	GH6
	44UNF	GH3	GH4	GH5	GH6
NO.6	32UNC	GH4	-	GH5	GH6
	40UNF	GH3	GH4	GH5	GH6
NO.8	32UNC	GH4	-	GH5	GH6
	36UNF	GH4	-	GH5	GH6
NO.10	24UNC	GH4	-	GH5	GH6
	32UNF	GH4	-	GH5	GH6
NO.12	24UNC	GH4	-	GH5	GH6
	28UNF	GH4	-	GH5	GH6
1/4	20UNC	GH4	GH5	GH6	GH7
	28UNF	GH4	-	GH5	GH6
5/16	18UNC	GH5	GH6	GH7	GH8
	24UNF	GH5	-	GH6	GH7
3/8	16UNC	GH5	GH6	GH7	GH8
	24UNF	GH5	-	GH6	GH7
7/16	14UNC	GH5	GH6	GH7	GH8
	20UNF	GH5	GH6	GH7	GH8
1/2	13UNC	GH6	GH7	GH8	GH9
	20UNF	GH5	GH6	GH7	GH8
9/16	12UNC	GH6	GH7	GH8	GH9
	18UNF	GH6	GH7	GH8	GH9
5/8	11UNC	GH7	GH8	GH9	GH10
	18UNF	GH6	GH7	GH8	GH9
3/4	10UNC	GH7	GH8	GH9	GH10
	16UNF	GH6	GH7	GH8	GH9
7/8	9UNC	GH7	GH8	GH9	GH10
	14UNF	GH6	GH7	GH8	GH9
1	8UNC	GH8	GH9	GH10	GH11
	12UNF	GH7	GH8	GH9	GH10

A級精度選定表 A class limit selection chart

螺紋規格 Thread size	牙山數 Number of thread	螺絲攻精度 Tap limit			
		3B內螺紋 3B Internal thread		2B內螺紋 2B Internal thread	
NO.2	56UNC	A3	A4	A5	A6
	64UNF	A3	A4	A5	A6
NO.4	40UNC	A3	A5	A6	A7
	48UNF	A3	A4	A5	A6
NO.5	40UNC	A3	A5	A6	A7
	44UNF	A3	-	A6	A7
NO.6	32UNC	A5	-	A6	A7
	40UNF	A3	A5	A6	A7
NO.8	32UNC	A5	-	A6	A7
	36UNF	A3	A5	A6	A7
NO.10	24UNC	A5	-	A6	A7
	32UNF	A5	-	A6	A7
NO.12	24UNC	A5	-	A6	A7
	28UNF	A5	-	A6	A7
1/4	20UNC	A5	A6	A7	A8
	28UNF	A5	-	A6	A7
5/16	18UNC	A5	A8	A9	A10
	24UNF	A5	A6	A7	A8
3/8	16UNC	A6	A8	A9	A10
	24UNF	A5	A6	A7	A8
7/16	14UNC	A6	A8	A9	A10
	20UNF	A5	A8	A9	A10
1/2	13UNC	A7	A9	A10	A11
	20UNF	A6	A8	A9	A10
9/16	12UNC	A7	A9	A10	A11
	18UNF	A6	A9	A10	A11
5/8	11UNC	A8	A10	A11	A12
	18UNF	A7	A9	A10	A11
3/4	10UNC	A8	A10	A11	A12
	16UNF	A7	A9	A10	A11
7/8	9UNC	A9	A10	A11	A12
	14UNF	A8	A9	A10	A11
1	8UNC	A9	A11	A12	A13
	12UNF	A8	A10	A11	A12



■ 精度選定表 Limit selection chart

▶ 英制螺紋(W) Whitworth Screw Threads(W)

GH級精度選定表 GH class limit selection chart

螺紋規格 Thread size	牙山數 Number of thread	螺絲攻精度 Tap limit	
		2級內螺紋 Class II internal thread	
W 3/16	24	GH4	GH5
W 1/4	20	GH5	GH6
W 5/16	18	GH6	GH7
W 3/8	16	GH7	GH8
W 7/16	14	GH7	GH8
W 1/2	12	GH8	GH9
W 9/16	12	GH8	GH9
W 5/8	11	GH9	GH10
W 3/4	10	GH9	GH10
W 7/8	9	GH9	GH10
W 1	8	GH10	GH11

A級精度選定表 A class limit selection chart

螺紋規格 Thread size	牙山數 Number of thread	螺絲攻精度 Tap limit	
		2級內螺紋 Class II internal thread	
W 3/16	24	A5	A6
W 1/4	20	A6	A7
W 5/16	18	A7	A8
W 3/8	16	A9	A10
W 7/16	14	A9	A10
W 1/2	12	A10	A11
W 9/16	12	A10	A11
W 5/8	11	A11	A12
W 3/4	10	A11	A12
W 7/8	9	A11	A12
W 1	8	A12	A13



■ 推薦螺帽孔徑 Recommended drill hole size

▶ 公制螺紋(M) Metric Screw Threads(M)

單位 Unit : mm

螺紋規格 Thread size	螺距 Pitch	6H(2級)用 For 6H (class II)	
		最小 (Min)	最大 (Max)
M2	0.4	1.57	1.67
M2.5	0.45	2.02	2.13
M2.6	0.45	2.11	2.24
M3	0.5	2.46	2.59
M4	0.7	3.25	3.42
M5	0.8	4.14	4.33
M6	1	4.92	5.15
M7	1	5.92	6.15
M8	1.25	6.65	6.91
	1	6.92	7.15
M10	1.5	8.38	8.67
	1.25	8.65	8.91
	1	8.92	9.15
M12	1.75	10.11	10.44
	1.5	10.38	10.67
	1.25	10.65	10.91
	1	10.92	11.15
M14	2	11.84	12.20
	1.5	12.38	12.67
M16	2	13.90	14.20
	1.5	14.40	14.60
M18	2.5	15.30	15.70
	2	15.90	16.20
M20	2.5	17.30	17.70
	2	17.90	18.20
	1.5	18.40	18.60
M22	2.5	19.30	19.70
	2	19.90	20.20
M24	3	20.80	21.20
	2	21.90	22.20
	1.5	22.40	22.60

▶ 美制螺紋(U) Unified Screw Threads(U)

單位 Unit : mm

螺紋規格 Thread size	牙山數 Number of thread	2B用 For 2B	
		最小 (Min)	最大 (Max)
NO.2	56UNC	1.70	1.87
	64UNF	1.76	1.91
NO.4	40UNC	2.16	2.38
	48UNF	2.28	2.45
NO.5	40UNC	2.49	2.69
	44UNF	2.56	2.74
NO.6	32UNC	2.65	2.89
	40UNF	2.82	3.02
NO.8	32UNC	3.31	3.53
	36UNF	3.41	3.60
NO.10	24UNC	3.69	3.96
	32UNF	3.97	4.16
NO.12	24UNC	4.35	4.59
	28UNF	4.50	4.72
1/4	20UNC	4.98	5.25
	28UNF	5.36	5.58
5/16	18UNC	6.41	6.73
	24UNF	6.79	7.03
3/8	16UNC	7.80	8.15
	24UNF	8.39	8.63
7/16	14UNC	9.15	9.55
	20UNF	9.73	10.03
1/2	13UNC	10.60	11.02
	20UNF	11.33	11.60
9/16	12UNC	11.99	12.40
	18UNF	12.80	13.00
5/8	11UNC	13.40	13.80
	18UNF	14.40	14.60
3/4	10UNC	16.40	16.80
	16UNF	17.40	17.60
7/8	9UNC	19.20	19.70
	14UNF	20.30	20.60
1	8UNC	22.00	22.60
	12UNF	23.20	23.50



■ 推薦螺帽孔徑及其相關公式 Recommended drill hole size and Other Formulas

▶ 英制螺紋(W) Whitworth Screw Threads(W) 單位 Unit : mm

螺紋規格 Thread size	牙山數 Number of thread	2B用 For 2B	
		最小 (Min)	最大 (Max)
W 3/16	24	3.50	3.70
W 1/4	20	4.95	5.15
W 5/16	18	6.40	6.65
W 3/8	16	7.80	8.05
W 7/16	14	9.10	9.40
W 1/2	12	10.40	10.70
W 9/16	12	12.00	12.40
W 5/8	11	13.30	13.70
W 3/4	10	16.20	16.70
W 7/8	9	19.10	19.60
W 1	8	21.90	22.40

■ 切削速度計算公式 Formula of Tapping speed

$$v = \frac{\pi \times d \times N}{1000}$$

v = 切削速度 (m/min)
Cutting Speed
 d = 絲攻外徑 (mm)
Outside Diameter of Tap
 N = 迴轉速度 [rpm] (min^{-1})
Rotation Speed per minute

$$N = \left(T + \frac{t}{P} + K \right) \times n$$

T = 絲攻牙部山數
Number of Threads
 t = 螺帽厚度 (mm)
Height of Nut (mm)
 P = 螺距 (mm)
Pitch of Thread
 K = 2(定數)
Allowance
 n = 每分鐘加工個數
Output per minute (pcs)

■ 下孔徑計算公式 Formula of Drill Hole diameter

$$\text{下孔徑} = d - 2 \times H \times \left(\frac{\text{咬合率}}{100} \right)$$

$$\text{Drill Hole diameter} = d - 2 \times H \times \left(\frac{\text{Percentage of thread engagement}}{100} \right)$$

d = 外螺紋外徑 (mm)
Major diameter of External thread (mm)

H = 牙山高度 (mm)
Outside Diameter of Tap (mm)

公制、美制 $H = 0.541266 \times P$ H of Metric screw threads & Unified screw threads are 0.541266P.

英制 $H = 0.5403 \times P$ H of Whitworth screw threads is 0.5403P.

P = 螺距 (mm) P= Pitch of Thread (mm)

咬合率：外螺紋旋入內螺紋後，彼此牙山的嵌合程度。(ISO 6H或舊JIS II級的設定範圍通常為80%~100%)
Percentage of thread engagement : For ISO 6H or previous JIS class II , the setting range is usually 80%~100%.

■ 簡易下孔徑計算公式 Simple Formula of Drill Hole diameter

$$\text{下孔徑} \doteq d - P$$

$$\text{Drill Hole diameter} \doteq d - P$$

d = 外螺紋外徑 (mm)
Major diameter of External thread (mm)

P = 螺距 (mm)
P= Pitch of Thread (mm)

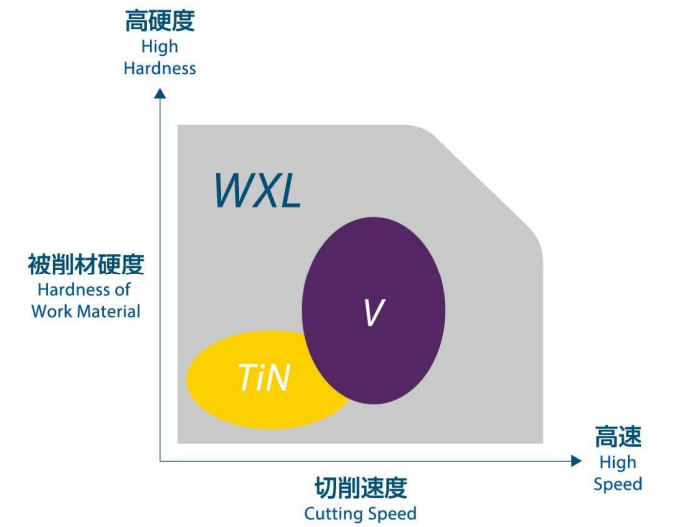
■ 表面耐磨性與耐熱性能提升的WXL鍍層
WXL coating improves on wear resistance and heat resistance

■ WXL的特長 Feature of WXL

1. 引進OSG獨自開發的高效能表面處理技術、可對應更廣泛的切削領域加工。
Introducing OSG's exclusive high-efficiency coating which can correspond to a wider range of cutting field
2. 針對碳鋼類、不銹鋼、調質鋼(25HRC以下)的螺帽攻牙、可以展現與以往不同的壽命表現。
It performs an extraordinary tool life for carbon steels, stainless steels and hardened steels(under 25HRC)



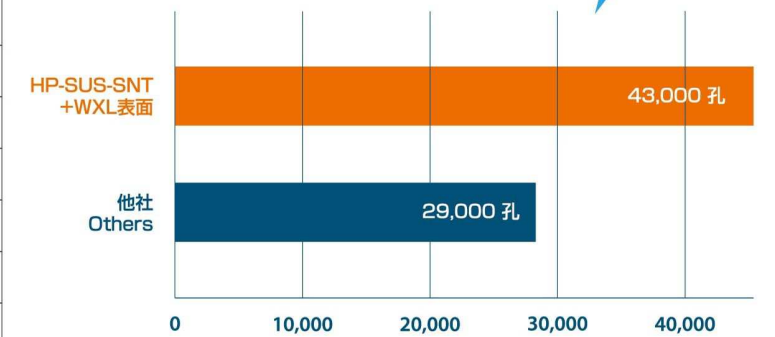
施予WXL表面的螺帽絲攻後呈現光滑、黑灰色
After WXL coating the surface is smooth and dark grey.



■ WXL切削性能表現 WXL's Cutting performance

使用工具 Tool	HP-SUS-SNT (表面施予WXL處理) (The surface is WXL coated) 3/8-16UNC A9
被削材質 Work material	SUS316
下孔徑 Drill hole	φ8.00mm
螺帽形狀 Nut shape	六角螺帽 Hex Nut 全長 6mm OAL 6mm
切削速度 Cutting speed	35 個/分 35 pcs/min
切削油劑 Cutting oil	油性 Oily
使用機械 M/C	4 軸攻牙機 4 spindle tapping machine

Compare to others, WXL Coating improve 48% on tool life!!
WXL表面壽命較他牌提升48%UP !!



■ WXL鍍層的運用 Use of WXL

1. 針對難削材質的螺帽加工，或者希望提升攻牙效率時，工具表面推薦使用WXL鍍層。
For materials hard to process, or to improve the efficiency of processing, WXL coating is recommended.
2. 此表面處理以特殊品受注生產。訂購時請先選定螺帽絲攻系列，再註明表面處理指定WXL即可。
Choose from nut tap series and noted WXL coating to place customized order.

■ 其他螺帽加工用絲攻 Other kinds of Tap

1 直槽絲攻
Straight Fluted Tap (HT)



2 先端絲攻
Spiral Pointed Tap (POT)



3 螺旋絲攻
Spiral Fluted Tap (SFT)



4 轉造絲攻
Fluteless Tap (NRT)



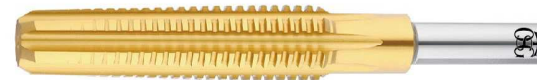
3 彎柄絲攻 Tap with Bent Shank



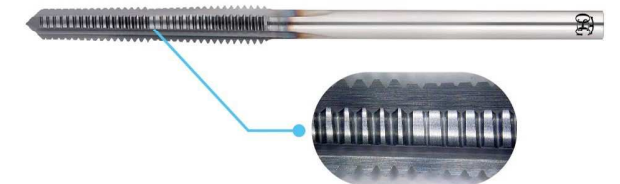
4 特殊柄部螺紋絲攻
Tap with Special Shank



5 縮小柄絲攻
Tap with Reduced Shank



6 兩段食付絲攻
Tandem Tap



■ 特殊製作絲攻 Special Taps

1 逆螺旋槽絲攻
Reverse Spiral Fluted Tap



2 鎖入式引導徑絲攻
Tap with Lock-in Guide Pieces



7 管用絲攻
Pipe Tap



8 特殊螺紋絲攻
Tap with Special Thread



Lined writing area consisting of 20 horizontal lines.

