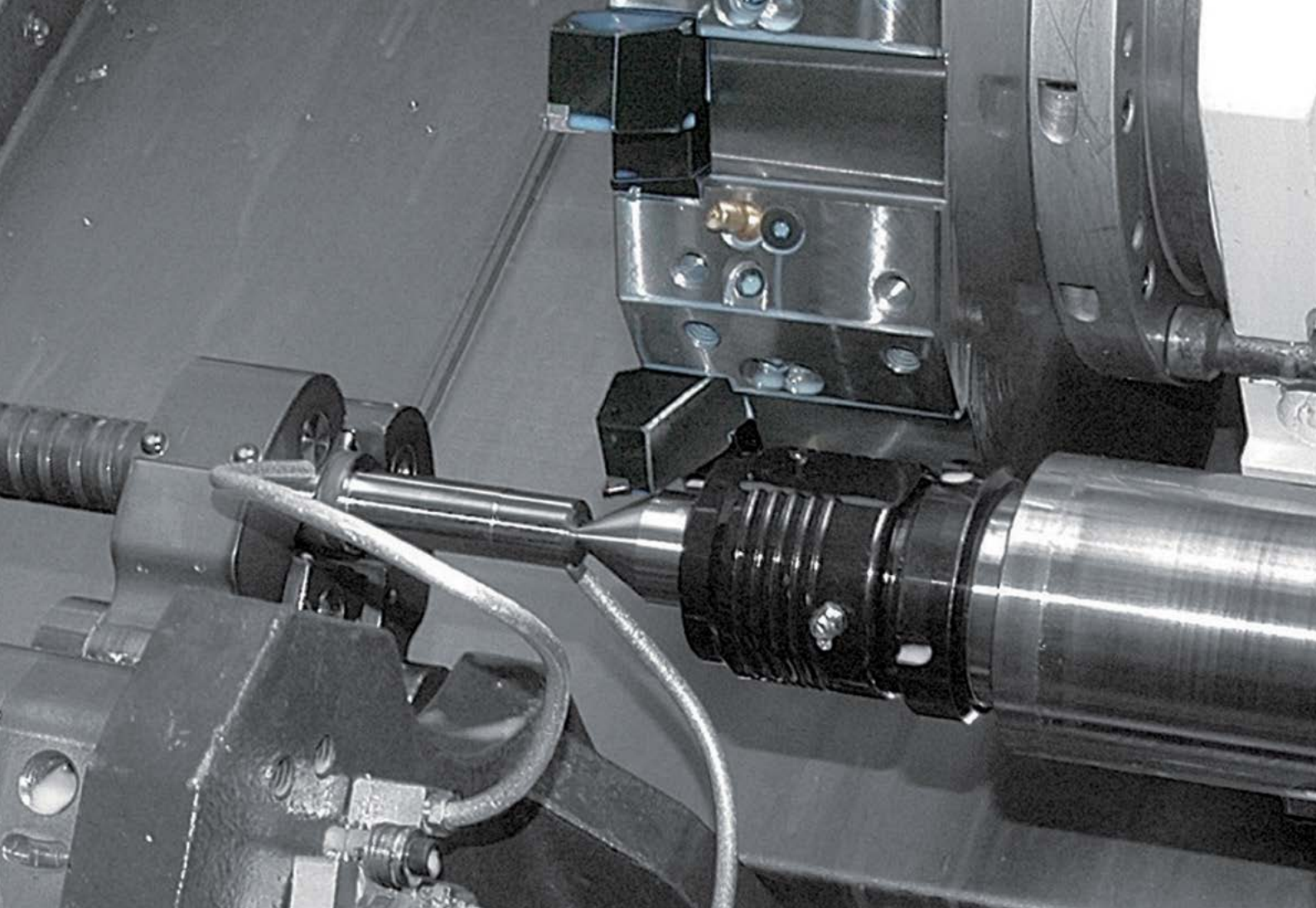


GIVING
ALL YOUR CUTTING NEEDS
提供全方位的金鋼石切削工具

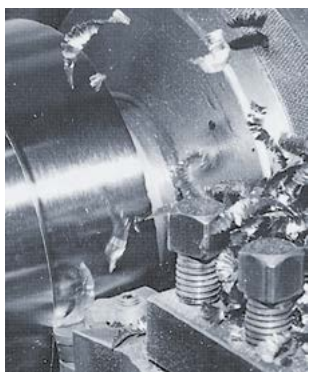




金鋼石及氮化硼車刀簡介

INTRODUCTION TO DIAMOND TURNING TOOLS

金鋼石刀具適用材料 - PCD POLYCRYSTALLINE DIAMOND



非鐵金屬材料 (Non-Ferrous)

- | | |
|-----------------|---|
| ▲黃銅青銅合金 | ▲ Brass & Bronze Alloys |
| ▲矽鋁合金 | ▲ Silicon-Aluminum Alloys |
| ▲銅合金 | ▲ Copper Alloys |
| ▲鎂合金 | ▲ Magnesium Alloys |
| ▲鋁合金 | ▲ Aluminum Alloys |
| ▲預燒結或全燒結
碳化鎢 | ▲ Presintered or Sintered
Tungsten Carbide |

非金屬材料 (Non-Metallic)

- | | |
|----------|-------------------------|
| ▲氧基樹脂 | ▲Epoxy Resins |
| ▲木材、複合木材 | ▲Wood , Compound Wood |
| ▲硬質橡膠 | ▲Hard Rubber |
| ▲玻璃纖維 | ▲Fibre Glass Composites |
| ▲陶瓷 | ▲Ceramics |
| ▲碳、石碳酸 | ▲Carbon-Phenolic |
| ▲塑膠 | ▲Plastics |
| ▲石墨 | ▲Graphite |

金鋼石及氮化硼刀具車削條件-

CUTTING CONDITIONS OF DIAMOND AND CBN CUTTING TOOLS

氮化硼刀具適用材料 - CBN CUBIC BORON NITRIDE

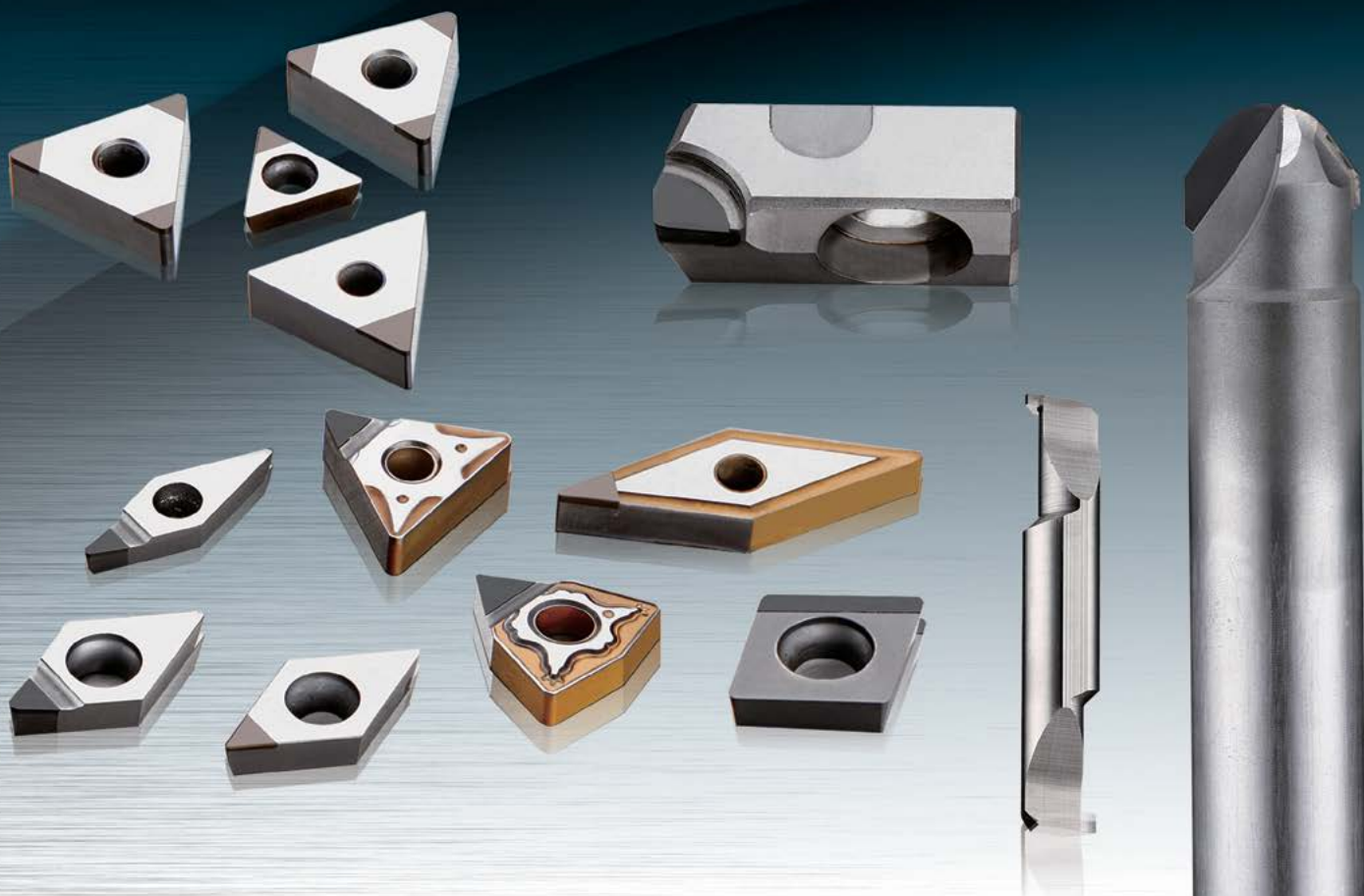


硬化鐵屬材料 (HRC 45以上)

工具鋼 AISI / SAE : 合金鋼: (AISI / SAE)
M-2, M-42, T-15, O-2 1055, 4140, 4340, 8620, 52100
(JIS)
(SKH9,-,SKH10,-) (S55C, SCM44H, SNCM439,
A-2, D-2, S-5 SNCM220, SUJ2)
(SKD12, SKD11,-) 鑄鐵 CAST IRON:
冷激鑄鐵, 硬鎳鑄鐵
Cold energized cast iron and
hard nickel cast iron.

高溫合金 (HRC 35以上)

鈷基合金 :
Stellite, Colmonoy, Wallex
鎳基合金 :
High cobalt powder metallurgy



金鋼石及氮化硼刀具之優點

FEATURES OF DIAMOND AND CBN CUTTING TOOLS

A. 提高生產力

1. 長時間維持工差，即提高加工之精密度。
2. 以車削取代研磨。
3. 切削速度及工件去除率（Stock Removal）增加，即提高生產力。
4. 較碳化鎢或陶瓷刀具每一切刃更有更高的產量。
5. 降低高投資機器的昂貴停機時間。

B. 精確度

1. 降低金相傷害。
2. 以切削加工的方法可在硬合金工件上得到好的表面光度。
3. 切刃磨耗低，維持正確工差時間長。
4. 一個切刃維持到底，因為刀刃不受磨損，加工中不須調整或補償刀刃之磨耗量。

A. INCREASED PRODUCTIVITY

1. To maintain proper tolerance for a long time and upgrade machining accuracy.
2. With turning to replace grinding.
3. To increase cutting speed and chip removal rate for increased productivity.
4. Higher productivity than that of tungsten carbide or ceramic cutting tool.
5. To reduce down time on a highly priced machine.

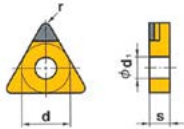
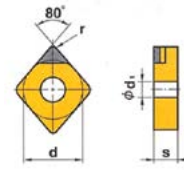
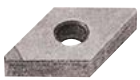
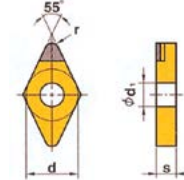
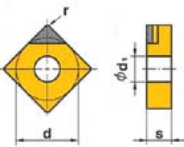
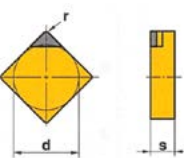
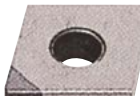
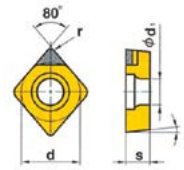
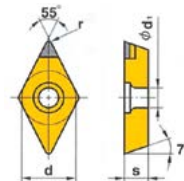
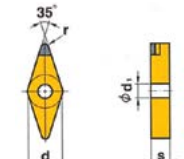
B. ACCURACY

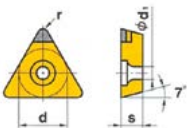
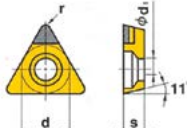
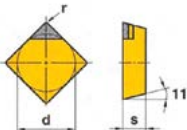
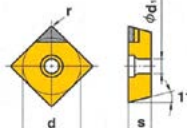
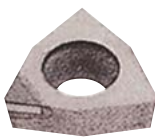
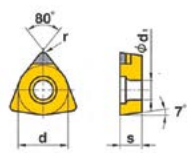
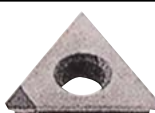
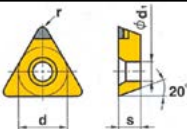
1. To reduce damage of metallurgical structure.
2. Better finish on extra hard alloy steel workpiece.
3. Low wear on cutting edge to maintain accurate tolerance for a long time.
4. Cutting edge lasts long. No need to adjust or compensate cutting edge wear during machining due to minimum wear.

硬化鐵屬材料 (HRC 45以上)

	金属材料 METALLIC MATERIALS	非金属材料 NON-METALLIC MATERIALS	備註 REMARK
進刀速度 Feed Speed	0.02 - 0.1mm / rev	0.2 - 0.5 mm / rev	隨加工面之粗細程度在此範圍內自行選定 Select feed speed in this range according to your desired finish of machining surface.
切削速度 Cutting Speed	80 - 120 m / min CBN	800 -1200 m / min PCD	在機械共振點之速度以外自行選擇 Select cutting speed out of machine's resonant point.
切入深度 Cutting depth	0.02 - 0.6mm	0.2 - 1.5 mm	根據材料物性不同而定 Depends on material property.
切削油劑 Cutting Oil	可用乾式；鋁合金可用輕油類 Dry machining: Use light oil for aluminum alloy	乾式切削均可 Dry machining	視加工條件而定 Depends on machining condition.

旋削用

ISO 符號	外觀	形狀	寸法 (mm)				CBN				PCD
							CN250	CN300	CN500	CN600	PDM010
TNGA 160402			d	s	r	d1					●
160404			9.525	4.76	0.2	3.81					
160408			9.525	4.76	0.4	3.81	●	●	●		
220404			9.525	4.76	0.8	3.81	●	●	●	●	
220408			12.70	4.76	0.4	5.16			●	●	
220412			12.70	4.76	0.8	5.16	●	●	●		
CNMA 120404			12.70	4.76	0.4	5.16	●	●	●	●	●
120408			12.70	4.76	0.8	5.16	●	●	●	●	●
120412			12.70	4.76	1.2	5.16		●	●	●	
DNGA 150404			12.70	4.76	0.4	5.16	●	●			●
150408			12.70	4.76	0.8	5.16	●	●			●
150412			12.70	4.76	1.2	5.16		●			
SNGA 120404			12.70	4.76	0.4	5.16					
120408			12.70	4.76	0.8	5.16	●	●	●	●	●
120412			12.70	4.76	1.2	5.16		●	●	●	
SNGN 090304			9.525	3.18	0.4	-					
090308			9.525	3.18	0.8	-					
120404			12.70	4.76	0.4	-					
120408			12.70	4.76	0.8	-	●	●	●		●
120412			12.70	4.76	1.2	-		●	●		
CCMW 060202			6.35	2.38	0.2	2.8					●
060204			6.35	2.38	0.4	2.8					●
09T302			9.525	3.97	0.2	4.4					●
09T304			9.525	3.97	0.4	4.4	●	●			●
09T308			9.525	3.97	0.8	4.4	●	●			
120404			12.70	4.76	0.4	5.5					
130408			12.70	4.76	0.8	5.5	●	●			
120412			12.70	4.76	1.2	5.5					
CDMW 070202			6.35	2.38	0.2	2.8					●
070204			6.35	2.38	0.4	2.8					●
11T302			9.525	3.97	0.2	4.4					●
11T304			9.525	3.97	0.4	4.4	●	●			●
11T308			9.525	3.97	0.8	4.4		●			●
VNGA 160404			9.525	4.76	0.4		●	●			●
160408			9.525	4.76	0.8	3.8	●	●			●

ISO 符號	外觀	形狀	寸法 (mm)				CBN				PCD
							CN250	CN300	CN500	CN600	
			d	s	r	d ₁					
TCMW 110202			6.35	2.38	0.2	2.8					●
110204			6.35	2.38	0.4	2.8					●
TPGX 080202			4.76	2.38	0.2	2.5			●	●	●
080204			4.75	2.38	0.4	2.5	●	●	●	●	●
080208			4.76	2.38	0.8	2.5					●
090202			5.56	2.38	0.2	3.0			●	●	●
090204			5.56	2.38	0.4	3.0	●	●	●	●	●
090208			5.56	2.38	0.8	3.0					●
110302			6.35	3.18	0.2	3.5					●
110304			6.35	3.18	0.4	3.5	●	●	●	●	●
110308			6.35	3.18	0.8	3.5	●	●	●	●	●
160304			9.525	3.18	0.4	4.8	●	●	●		●
160308			9.525	3.18	0.8	4.8	●	●	●		●
160404			9.525	4.76	0.4	4.8		●			
160408			9.525	4.76	0.8	4.8		●			
SPGN 090302			9.525	3.18	0.2	-					●
090304			9.525	3.18	0.4	-	●	●	●		●
090308			9.525	3.18	0.8	-	●	●	●		●
090312			9.525	3.18	1.2	-		●			
120304			12.70	3.18	0.4	-			●	●	●
120308			12.70	3.18	0.8	-	●	●	●	●	●
120312			12.70	3.18	1.2	-		●			●
120408			12.70	4.76	0.4	-					
120412			12.70	4.76	0.8	-					
SPGX 090304			9.525	3.18	0.4	4.8					●
090308			9.525	3.18	0.8	4.8					●
WCMW L30202			4.76	2.38	0.2	2.3					●
L30204			4.76	2.38	0.4	2.3					
040202			6.35	2.38	0.2	2.8					●
040204			6.35	2.38	0.4	2.8					
06T304			9.525	3.97	0.4	4.4					●
06T308			9.525	3.97	0.8	4.4					
TEGX 160302			9.525	3.18	0.2	4.3					●
160304			9.525	3.18	0.4	4.3					●

說明:

1. CN 100 - 低硬度滾輪切削
2. CN 250 - 熱處理鋼 連續 / 斷續切削
3. CN 300 - 熱處理鋼 斷續切削
4. CNZ 10 - 熱處理鋼 高速連續切削
5. CN 500 - 鑄鐵 高精度切削
6. CN 600 - 高硬度滾輪切削 耐熱合金切削 一般燒結品切削
7. PDM010 - 耐磨耗性高的非鐵系材料及非金屬材料
8. PDM002 - 精密加工及低矽含量之鋁合金

1. CN 100 - Low hardness roller cutting
2. CN 250 - Heat treatment pot, continuous / intermittent cutting
3. CN 300 - Heat treatment pot, intermittent cutting
4. CNZ 10 - Heat treatment pot, High speed continuous cutting
5. CN 500 - Cast iron, High accuracy cutting
6. CN 600 - High hardness roller cutting. Heat - resistant alloy cutting. General sintered part cutting.
7. PDM010 - High wear - resistance non-iron materials and non-metallic materials.
8. PDM002 - Precision machining and aluminum alloy with low silicone content.