



PCD&CBN 精密刀片系列

PRECISION INSERT SERIES

NO.503-1

耐磨損 / 抗高溫 / 穩定性佳 *Antiabrasive/Heat resistant/Durable*

適用產業

APPLICABLE WITH



WWW.CHMT.COM.TW

CUTTING
EDGE
SOLUTIONS

 **CHAIN
HEADWAY**

公司介紹 Introduction



Chain Headway was established in 1991 and quickly began extensive, international research and development programs. By 2010 we received many awards, including Taiwan Excellence and Golden Pin Design. By focusing on cutting edge solutions, our brands have consistently increased productivity, profits, and competitiveness for our customers. Our service strategies will work for you. Chain Headway is ISO 9001 certified to ensure that ease of communication, customer specifications and satisfaction will be achieved with every client. We undertake a strict testing process for all our products and services. It is important to us that Chain Headway can offer a variety of complete product lines and support. Your Trust is Our Pride. Chain Headway's professional team serves our clients with enthusiasm, knowledge, and efficiency, which has built our reputation as a trusted partner and reliable resource around the globe.

正河源機械配件有限公司成立於1991年，並開始積極開發海外市場並進行多項研發計畫。在2010年，正河源榮獲多項獎項，包括台灣精品獎及金典設計獎。在企業內為了快速解決客戶的加工需求並提供優異的服務品質，積極導入ISO9001管理制度，並透過與客戶良好的溝通及客製化產品，來有效提升加工效率、創造利潤、贏得商業競爭力。「您的信賴，我們的驕傲」一直是正河源秉持的品牌使命，正河源提供高性能優質的全工具產品線，我們具備服務客戶的高度熱忱、最嚴謹的檢測流程及專家級的研發知識，服務每一位顧客，也是讓客戶可絕對信賴的合作夥伴。

SPECIALIZED INDUSTRY 量身訂製

正河源銷售多達22,000多件的產品，也提供客製化產品的服務解決任何加工需求。我們有專業人員可提供最佳的整合方案為客戶創造最大的生產效益。正河源提供切削整合方案及創新研發的產品來幫助客戶在這千變萬化的產業中取得先機。

With over 22,000 products, Chain Headway is able to customize production to suit any of your manufacturing needs. Our specialists are trained to identify and integrate your tooling systems in order to optimize production. At Chain Headway, we offer cutting-edge solutions and innovative products that will help your company succeed in an ever-changing industry.

適用產業 APPLICABLE WITH





PCD&CBN

PRECISION INSERT SERIES

- **Antiabrasive**
耐磨損
- **Heat resistant**
抗高溫
- **Durable**
穩定性佳



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High-End 高端製造 *Manufacturing*



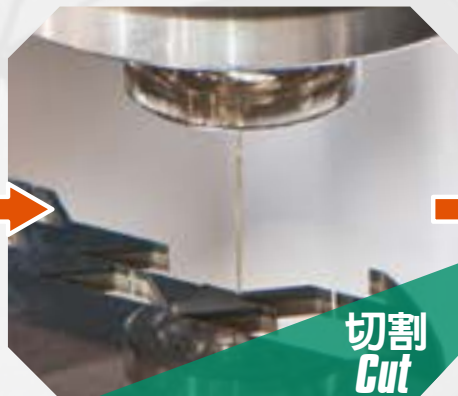
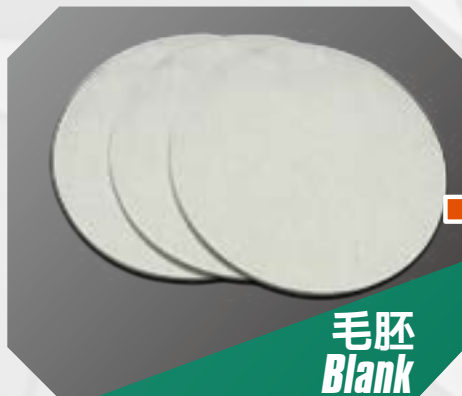
- STABLE PRODUCTION
生產穩定
- HIGH EFFICIENCY
增進效率
- HIGHLY ACCURATE
GRINDING
精密研磨



- WELDING PRECISION
精密焊接
- HIGH RESOLUTION
EVALUATION
高光學精度量測
- MAXIMUM OPTICAL
PRECISION
高解析量測

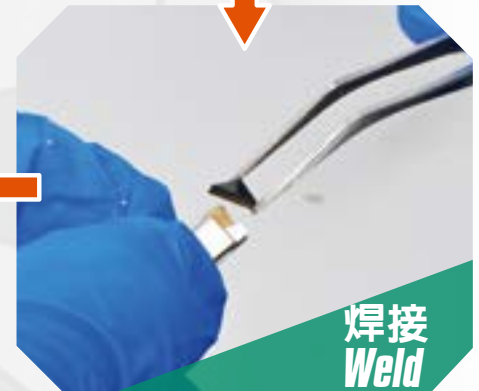


完整解決 *Cutting-Edge* 您的加工需求 Products



品質：無懈可擊的細節

因應各式各樣的加工需求，我們的產品線包含刀桿、切削刀具、刀片與輔助工具，而且在細節的注重上，我們說一不二。正河源的重要使命是為了解決顧客的需求，隨時做好溝通與協助的準備是不可或缺的。為了使命，我們設有嚴格的檢驗流程與標準，以此提供多樣化的產品線與親切友善地的專業人員。



QUALITY: IMPECCABLE

With so many cutting-edge products, such as arbors, holders, cutting tools, inserts, and accessories, our attention to detail is second to none. We undertake a strict testing process for all our products and services. It is important that Chain Headway can offer a variety of complete product lines and support from cordial, friendly specialists. In order to achieve our mutual goals, it is imperative to help clients with their needs and be ready to communicate and assist at any time.



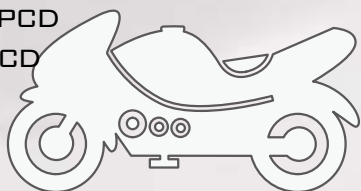
PCD系列刀片實現高精度加工 花最短時間成本獲得極大加工效益

DISCOVER THE SUPERIOR FINISH AND PRECISION OF OUR PCD SERIES OF INSERTS. WITH MAXIMIZED REMOVAL RATES AND IMPROVED CYCLE SPEED, YOU ARE SURE TO BE MORE PRODUCTIVE IN LESS TIME.



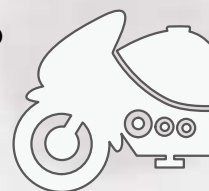
1

MATERIAL : AL6061-T6
EXTERNAL : TNMG160404 PCD
INTERNAL : DCGT11T304 PCD
S : 2000RPM
F : 0.08MM/REV
RA : 0.406UM



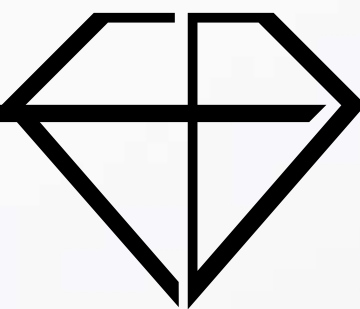
2

MATERIAL : AL6061-T6
EXTERNAL : TNMG160404 PCD
INTERNAL : TBGT060104 PCD
S : 2700RPM
F : 0.12MM/REV
RA : 0.16UM



PCD DIAMOND INSERT

SERIES



3

MATERIAL : AL6061-T6

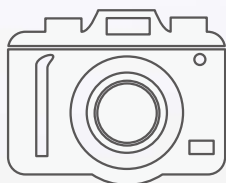
EXTERNAL : VCGT160404 PCD

INTERNAL : DCGT11T304 PCD

S : 2300RPM

F : 0.1MM/REV

RA : 0.183UM



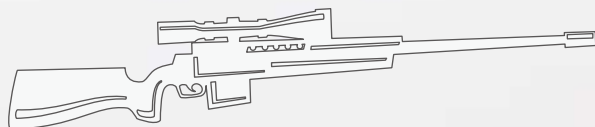
MATERIAL : AL6061-T6

EXTERNAL : VCGT160404 PCD

S : 2300RPM

F : 0.1MM/REV

RA : 0.485UM



4

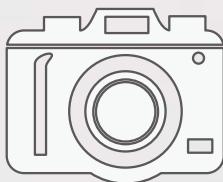
MATERIAL : AL6061-T6

EXTERNAL : VCGT160404 PCD

S : 2300RPM

F : 0.1MM/REV

RA : 1.016UM

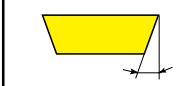


編碼規範 CODING KEY

記號 Code	形狀 Shape	角度 Angle	圖形 Graphics
H	正六角形 Regular hexagon	120°	
O	正八角形 Regular octagon	135°	
P	正五角形 Regular pentagon	108°	
S	正方形 Regular square	90°	
T	正三角形 Regular triangle	60°	
C	菱形 Rhombus	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
Y	多角形 Polygon	25°	
W	六角形 Hexagon	80°	
L	長方形 Rectangle	90°	
A	平行 四邊形 Parallelogram	85°	
B		82°	
K		55°	
R	圓形 Round	—	

① 形狀記號 Shape code

記號 Code	離隙角 Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	other



② 離隙角記號 Relief angle

記號 Code 級 (grade)	容許公差 Tolerance (mm)		
	高度 Height (mm)	厚度 Thickness (mm)	內接圓直徑 Inner circle diameter (φd)
A	± 0.005	± 0.025	± 0.025
F	± 0.005	± 0.025	± 0.013
C	± 0.013	± 0.025	± 0.025
H	± 0.013	± 0.025	± 0.013
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
J	± 0.005	± 0.025	± 0.005 ~ ± 0.13
K	± 0.013	± 0.025	± 0.05 ~ ± 0.13
L	± 0.025	± 0.025	± 0.05 ~ ± 0.13
M	± 0.08 ~ ± 0.18	± 0.13	± 0.05 ~ ± 0.13
N	± 0.08 ~ ± 0.18	± 0.025	± 0.05 ~ ± 0.13
U	± 0.13 ~ ± 0.38	± 0.13	± 0.08 ~ ± 0.25

③ 記號等級 Grade

①	②	③	④	⑤
T	N	M	G	16
T	N	M	G	16
①	②	③	④	⑤

④ 螺絲孔記號 Screw hole code				
記號 Code	孔 Hole	孔的形狀 Hole shape	斷屑槽 Chip breaker	形狀 Shape
N	無孔 no hole	—	無 no	
R			單面 single-sided	
F			雙面 both sides	
A	有孔 hole	有孔 hole	無 no	
M			單面 single-sided	
G			雙面 both sides	
W		有孔 hole 40°~60°	無 no	
T			單面 single-sided	
Q		有孔 hole 40°~60°	無 no	
U			雙面 both sides	
B		有孔 hole 70°~90°	無 no	
H			單面 single-sided	
C		有孔 hole 70°~90°	無 no	
J			雙面 both sides	
X	—	—	—	—

⑤ 長度記號 Length code															內接圓直徑 Inner circle diameter
記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	尺寸 Size	記號 Code	
*R		S		C		W		T		D		V		K	
		03	3.97	03	4.0			06	6.9	04	4.8				3.97
		04	4.76	04	4.8			08	8.2	05	5.8				4.76
*05	5	—	—	—	—	—	—	—	—	—	—	—	—	—	5
		05	5.56	05	5.6	03	3.8	09	9.6	06	6.8				5.56
*06	6	—	—	—	—	—	—	—	—	—	—	—	—	—	6
		06	6.35	06	6.5	04	4.3	11	11	07	7.8	11	11.2		6.35
		07	7.94	08	8.1	05	5.4	13	13.8	09	9.7				7.94
*08	8	—	—	—	—	—	—	—	—	—	—	—	—	—	8
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	9.525
*10	10	—	—	—	—	—	—	—	—	—	—	—	—	—	10
*12	12	—	—	—	—	—	—	—	—	—	—	—	—	—	12
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1		12.7
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4				15.875
*16	16	—	—	—	—	—	—	—	—	—	—	—	—	—	16
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3				19.05
*20	20	—	—	—	—	—	—	—	—	—	—	—	—	—	20
		22	22.225	22	22.6			38	38.5	27	27.1				22.225
*25	25	—	—	—	—	—	—	—	—	—	—	—	—	—	25
25	25.4	25	25.4	25	25.8			44	44	31	31				25.4
31	31.75	31	31.75	32	32.2			55	55	38	38.8				31.75
*32	32	—	—	—	—	—	—	—	—	—	—	—	—	—	32

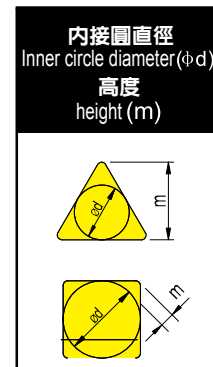
車削刀片規格介紹

DESIGNATION OF TURNING INSERTS

(unit : mm)

基準 內接圓 Inner circle	內接圓直徑 (φ d) 容許公差 Inner circle diameter (φ d) Tolerance		高度 (m)容許公差 Height (m) Tolerance		適用形狀 Shape
	J,K,L,M,N 級 (grade)	U 級 (grade)	J,K,L,M,N 級 (grade)	U 級 (grade)	
6.35	± 0.05	± 0.08	± 0.08	± 0.13	H W
9.525					
12.7					
15.875	± 0.1	± 0.18	± 0.13	± 0.2	O R
19.05					
25.4					
31.75	± 0.13	± 0.25	± 0.18	± 0.38	P
32					
32	± 0.15	± 0.25	± 0.2	± 0.38	S
					T
					C、E、M

基準 內接圓 Inner circle	內接圓直徑 (φ d) 容許公差 Inner circle diameter (φ d) Tolerance	高度 (m)容許公差 Height (m) Tolerance	適用形狀 Shape
6.35	± 0.05	± 0.11	D
9.525			
12.7			
15.875	± 0.1	± 0.18	
19.05			
6.35	± 0.05	± 0.16	V
9.525			Y



厚度 Thickness (mm)	
記號 Code	厚度 Thickness (mm)
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52
⑥ 厚度記號 Thickness code	

⑥ 04	⑦ 08	⑧ T	⑨ N	-	⑩ M01
⑥ 04	⑦ 08	⑧ T	⑨ N	-	⑩ M01

⑦ r角記號 r code	
記號 Code	刀尖圓弧半徑 r angle radius
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

⑧ 刃邊處理 Cutting Edge Condition		
記號 Code	切削刃狀態 Cutting Edge	形狀 Shape
F	大銳角前角 Sharp cutting edges	
E	大銳角前角 Round cutting edges	
W.T	雙切削導角 Chamfered cutting edges	
S	導角及圓切削角 Chamfered with round cutting edges	

⑨ 切削方向 Cutting direction	
記號 Code	方向 Direction
R	右邊 Right
L	左邊 left
N	中間 Intermediate
N	
R	
L	

⑩ 特別記號 Special code	
記號 Code	斷屑槽等級 Chip breaker code
R01	粗切削 Rough cutting
M01	中切削 Middle cutting
F01	精切削 Finish cutting

編碼規範 CODING KEY

記號 Code	孔 Hole	孔的形狀 Hole shape	斷屑槽 Chip breaker	形狀 Shape
N	無孔 No hole	—	無 No	
R			單面 Single-sided	
F			兩面 Both sides	
W	有孔 Hole	有孔 Hole	無 No	
T		40°~60°	單面 Single-sided	
Q		40°~60°	無 No	
U		40°~60°	兩面 Both sides	
B		有孔 Hole	無 No	
H		70°~90°	單面 Single-sided	
C	有孔 Hole	70°~90°	無 No	
J		70°~90°	兩面 Both sides	
X	—	—	—	—

④ 斷屑槽・螺絲孔記號 Chip breaker・screw hole code

形狀 Graphics	切刃長 Cutter length (ℓ)
S	
T	
R	
H	
A	

⑤ 切刃長記號
Cutter length code

記號 Code	厚度 Thickness (mm)
02	2.38
03	3.18
T3	3.97
04	4.76
06	6.35

⑥ 厚度記號
Thickness code

(ISO)

① S

② E

③ E

④ N

⑤ 12

(ANSI)

① S

② D

③ K

④ N

⑤ 4

記號 Code	形狀 Shape	刀尖角 Angle	圖形 Graphics
H	正六角形 Regular hexagon	120°	
S	正方形 Regular square	90°	
T	正三角形 Regular triangle	60°	
C	菱形 Rhombus	80°	
E		75°	
G		70°	
L	長方形 Rectangle	90°	
A	平行四邊形 Parallelogram	85°	
R	圓形 Round	—	
W	六角形 Hexagon	80°	
X	修光刃刀片 Wiper	—	
Y	特殊形狀 Special graphics	其它 other	
Z		35°	

記號 Code	離隙角 Relief angle
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	其它 Other
X	
S	

記號 Code	刀尖位置容許公差 r-angle tolerance	厚度容許公差 Thickness tolerance	內接圓直徑容許公差 Inner circle diameter tolerance
A	± 0.005	± 0.025	± 0.025
C	± 0.013	± 0.025	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
H	± 0.013	± 0.025	± 0.013
K	± 0.013	± 0.025	± 0.05 ~ ± 0.13
M	± 0.08 ~ ± 0.18	± 0.13	± 0.05 ~ ± 0.13
N	± 0.08 ~ ± 0.18	± 0.025	± 0.05 ~ ± 0.13

基準 內接圓 Inner circle diameter	內接圓直徑 (φd) 容許公差 Inner circle diameter (φd) tolerance		刀尖高 (mm) 容許公差 r-angle (mm) tolerance	
	J.K.L.M.N 級 (grade)	U 級 (grade)	M.N 級 (grade)	U 級 (grade)
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525				
12.7	± 0.08	± 0.13	± 0.13	± 0.2
15.875				
19.05	± 0.1	± 0.18	± 0.15	± 0.27
25.4	± 0.13	± 0.25	± 0.18	± 0.38

銑削刀片規格介紹

DESIGNATION OF MILLING INSERTS

記號 Code	切削角 Cutting angle
A	45°
D	60°
E	75°
F	85°
H	87°
P	90°
Z	特殊 Specail

記號 Code	離隙角 Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	特殊 Specail

記號 Code	切削刃狀態 Cutting Edge	形狀 Shape
F	大銳角削角 Sharp cutting edges	
E	圓角削角 Round cutting edges	
T	雙切削導角 Chamfered cutting edges	
S	導角及圓切削角 Chamfered with round cutting edges	
P	雙導角及圓切削角 Double Chamfered with round cutting edges	

記號 Code	方向 direction
R	右 right
L	左 left
N	中間 intermediate

記號 Code	斷屑槽等級 Chip breaker code
R01	粗切削 rough cutting
M01	中切削 middle cutting
F01	精切削 finish cutting

6	03	7	A	8	G	9	T	10	N	-	11	M01
6	2	7	Z	9	T	10	N	11	12			

4 斷屑槽·螺絲孔記號 Chip breaker · screw hole code		
記號 Code	斷屑槽狀況 Chip breaker	孔 Hole
A	無 No	有孔 Hole
F	雙面 Both sides	無孔 No hole
G	雙面 Both sides	有孔 Hole
M	單面 Single-sided	有孔 Hole
N	無 No	無孔 No hole
W	無 No	無孔 No hole

5 內接圓記號 Inner circle code		
記號 Code	內接圓直徑 (mm) Inner circle diameter (mm)	
3	9.525	
4	12.7	
5	15.875	
6	19.05	

6 厚度記號 Thickness code		
記號 Code	厚度 Thickness (mm)	
2	3.18	
3	4.76	
4	6.35	
6	9.52	

7 刀尖代號 r angle code	
記號 Code	刀尖圓弧半徑 r angle radius (mm)
1	0.4 (0.397)
2	0.8 (0.794)
3	1.2 (1.191)
4	1.6 (1.588)
5	2.0 (1.984)
6	2.4 (2.381)

修磨規格介紹

REGRINDABLE TYPE

1	SEEW120404	-	2	RE
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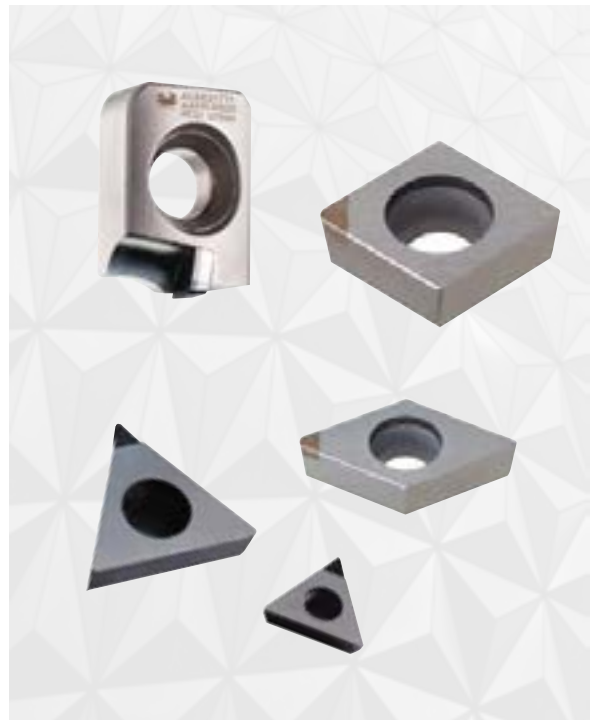
1	ISO刀片記號 ISO insert code
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2 修磨類型 Regrindable type	
記號 Code	形狀 Shape
RE	再研磨記號 Regrind type
CB	斷屑槽記號 Chipbreaker type

Poly Crystalline Diamond: 聚晶鑽石

聚晶鑽石通常用來進行精密切削加工和普通半精密加工，還可用作較大切削量的粗加工和斷續加工（如：銑削等）。其焊接性、機械磨削性和斷裂韌性最高。經過嚴格篩選過的人造鑽石顆粒，經過高壓高溫技術燒結並將人造超微粒子鑽石結晶的集積層僅密切合於碳化鎢基座上而成。

GENERALLY USE ON PRECISION CUTTING AND SEMI-PRECISION CUTTING, ALSO USE ON HEAVY ROUGH CUTTING AND NON CONTINUOUS CUTTING (LIKE MILLING ETC..). GOOD PROPERTY ON SOLDERING / SHARPING AND DUCTILE METAL. STRICTLY SELECTED SYNTHETIC DIAMOND, POWDER BONDED TOGETHER BY SINTERING AT HIGH PRESSURES AND TEMPERATURE, PRODUCED ON A CEMENTED CARBIDE SUBSTRATE.



▶ 鑽石刀片適用材料 - 非鐵金系材料

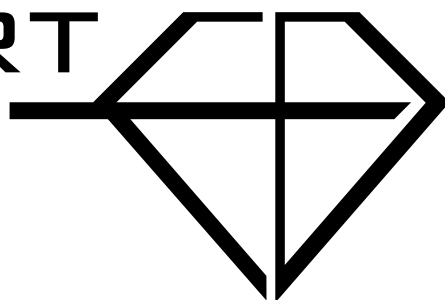
PCD POLYCRYSTALLINE DIAMOND - NON-FERROUS

- | | |
|--------------------------------|-------------------------------|
| - 黃銅青銅合金 BRASS&BRONZE ALLOYS | - 氧基樹脂 EPOXY RESINS |
| - 矽鋁合金 SILICON-ALUMINUM ALLOYS | - 木材、複合木材 WOOD, COMPOUND WOOD |
| - 銅合金 COPPER ALLOYS | - 硬質橡膠 HARD RUBBER |
| - 鎂合金 MAGNESIUM ALLOY | - 玻璃纖維 FIBRE GLASS COMPOSITES |
| - 鋁合金 ALUMINUM ALLOYS | - 陶瓷 CERAMICS |
| - 預燒結或全燒結碳化鎢 | - 碳、石碳酸 CARBON-PHENOLIC |
| PRESINTERED OR SINTERED | - 塑膠 PLASTIC |
| TUNGSTEN CARBIDE | - 石墨 GRAPHITE |



PCD DIAMOND INSERT

SERIES



▶ 粒度及特性 Grain size&feature

被加工材質 Machining Materials	材質 Material	粒度 Grain size	ISO 範圍 ISO scope	顏色 Color	硬度 Hv	切削速度 Vc(m/min)
N	鋁及鋁合金 Aluminum&Al	PCD010	-	黑色 Black	7000~8000	300~3000
		PCD020			8000~9000	200~3000
		PCD100			9000~10000	100~2500
		PCD250			10000~11000	50~2000

材質 Material	特點 Features	應用 Application
PCD010	 超細晶粒結構擁有極強的刀口鋒利度和刀口耐用度，適用於需要鏡面拋光效果的應用場合。 Ultrafine grain structure allows precisely sharpened and durable cutting edges. It's most suitable for mirror polishing.	鋁合金的銑削和粗切，也適用於鈦及鈦合金和複合材料的機加工。 Milling and roughing for aluminum material and also can process titanium and titanium alloys and composite material.
PCD020	 鈷含量更高，便於加工，適用於需要重度加工的複雜工具。 Increased cobalt levels improve processing. It is suitable for heavy-cutting.	非鐵金屬的一般精加工、壓模成形表面加工、ERP、硬質橡膠、木材、無機板材等的切割及端面加工。 Finishing for non-ferrous, surface milling for press forming, and face milling for ERP, hard rubber, wood, and inorganic plates.
PCD100	 平均粒徑為 10μm，廣泛適用於需要良好的韌性和較高的耐磨性的情況。 The average grain size is 10μm. It processes high tolerance and wear resistant workpieces.	非鐵金屬的一般加工、陶瓷燒結品、壓模成形表面加工、ERP、硬質橡膠、石墨加工、木材、無機板材等的切割及端面加工。 Processing for non-ferrous, surface milling for shrink-fitting ceramic and press forming, and face-milling for ERP, hard rubber, graphite, wood, and inorganic plates.
PCD250	 平均粒徑為 25μm，適用於需要高耐磨性的加工場合。 The average grain size is 25μm. It processes highly wear-resistant workpieces.	高矽鋁合金加工、鋁複合材料的加工、硬質合金、陶瓷半燒結品、壓模成形的粗加工、陶瓷燒結加工、石材、岩石加工。 Processing for silicon-aluminum alloys, aluminum composite, cemented carbide, and shrink-fitting semi-ceramic; roughing for press forming, shrink-fitting ceramic, and rock.

▶ 車削加工數據 Turning cutting data

被加工材質 Machining Materials	ISO 範圍 ISO scope	精切削 Fine cutting	中切削 Middle cutting	重切削 Heavy cutting
N 鋁及鋁合金 Aluminum&Al	-	PCD		

▶ 銑削加工數據 Milling cutting data

被加工材質 Machining Materials	ISO 範圍 ISO scope	精切削 Fine cutting	中切削 Middle cutting	重切削 Heavy cutting
N Aluminum&Al	-	PCD		

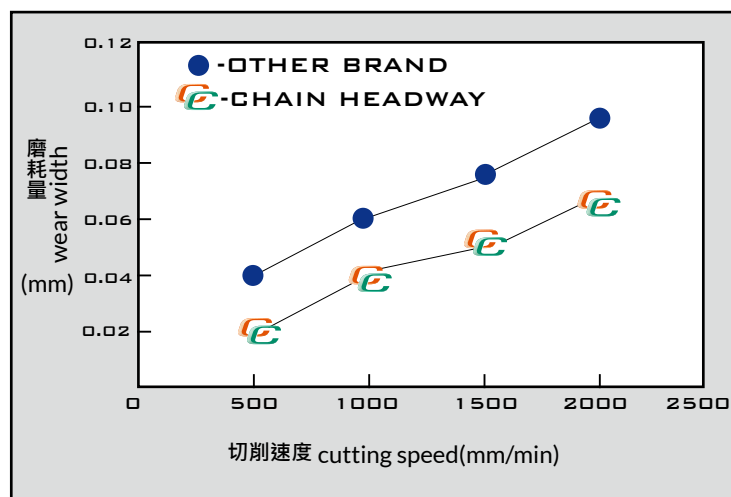
▶ 鑽石刀片切削標準 PCD Diamond insert cutting standard

加工材料 Cutting Materials	加工工序 Cutting Operations	線速度 (m/min) Speed(m/min)	進給 f (mm/rev) Feed(mm/rev)	切削深度 Ap(mm) Cutting Depth(mm)
鋁合金 Aluminum 4~8% SI	車削 Turning	900~3500	0.1~0.4	0.1~0.4
	銑削 Milling	1000~5000	0.1~0.3	0.1~0.3
鋁合金 Aluminum 9~13% SI	車削 Turning	600~2400	0.1~0.4	0.1~0.4
	銑削 Milling	700~3000	0.1~0.3	0.1~0.3
銅合金 Copper Alloy (銅、鋅、黃銅) (Copper, zinc, brass)	車削 Turning	400~1260	0.03~0.3	0.05~2.0
	銑削 Milling			
木材 wood	車削 Turning	1000~4000	0.1~0.4	0.1~0.4
	銑削 Milling			

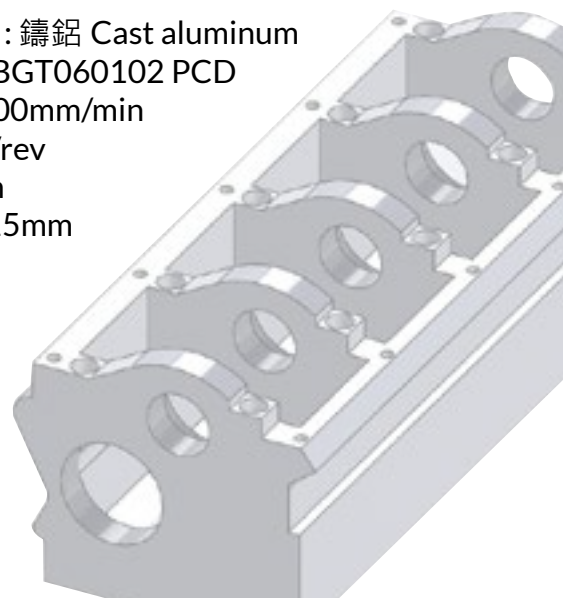
▶ 它牌材質對照 Brand grades comparison listing

材質 Materials	正河源 CHAIN HEADWAY	住友 SUMITOMO	三菱 MITSUBISHI	京瓷 KYOCERA	山高 SECO
N	PCD010	DA1000	MD230	KPD001	PCD10
	PCD020	DA2000	MD220	-	PCD20
	PCD100	DA150	MD220	KPD010	-
	PCD250	DA90	MD205	KPD230	PCD30 PCD30M

▶ 加工實例 Cutting Example



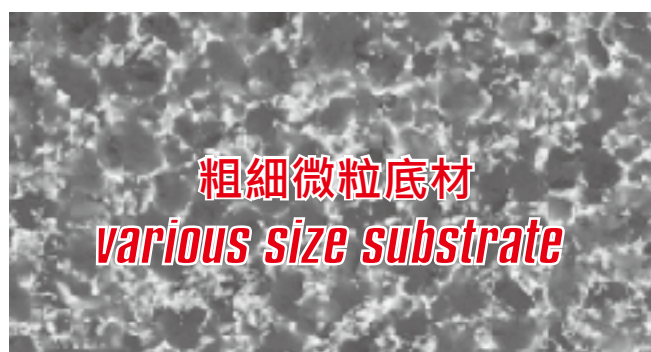
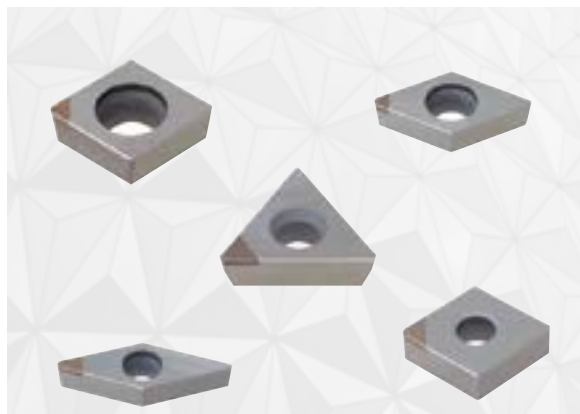
MATERIAL : 鑄鋁 Cast aluminum
 INSERT : TBGT060102 PCD
 S : 500~2000mm/min
 F : 120mm/rev
 Ap: 260mm
 Ae: 0.1~0.15mm
 Ra<3.2μm



Cubic Boron Nitride: 立方氮化硼

加入特殊陶瓷成份作為結合劑，在超高壓高溫的條件下燒結合成，與原來材質相比，具有更高的硬度和更優秀的耐熱性。

WITH CERAMIC BONDED, PRODUCED BY SINTERING AT HIGH PRESSURE AND HIGH TEMPERATURE. COMPARED WITH ORIGINAL ONE, THERE HAS GREATER HARDNESS AND HEAT RESISTANCE.



氮化硼刀片適用材料

MATERIAL FOR INSERT CBN

硬化鐵系材料 HRC45 以上

HARDENED FERROUS (HRC45)

- 工具鋼 TOOL STEEL : (AISI/SAE)

M-2 , M-42 , T-15 , O-2

(JIS)

(SKH9 , -SKH10 , -)

A-2 , D-2 , S-5

(SKD12 , SKD11 , -)

- 合金鋼 ALLOY STEEL : (AISI/SAE)

1055 , 4140 , 4340 , 8620 , 52100

(JIS)

(S55C , CM440H , SNCM439 , SNCM22 , SUJ2)

- 鑄鐵 CAST IRON

- 冷激鑄鐵 CHILLED CAST IRON

- 硬鎳鑄鐵 HARDENED NI CAST IRON

高溫合金 HRC35 以上

HIGH TEMPERATURE ALLOY (HRC35)

- 鈷基合金 COBALT-BASED ALLOY

STELLITE , COLMONEY , WALLEX

- 鎳基合金 NICKEL-BASED ALLOY

INCONEL , RENE , MONEL , INCOLOY , WASPOLOY

- 高鈷粉末金屬

POWDERED METAL WITH MORE COBALT

▶ 粒度及特性 Grain size&Feature

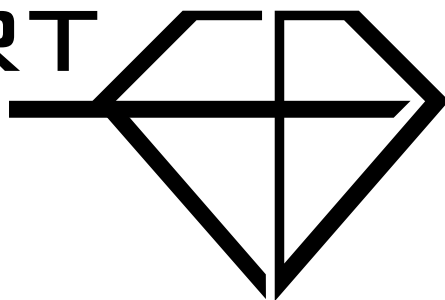
被加工材質 Machining Materials	材質 Material	粒度 Grain size	ISO 範圍 ISO scope	顏色 Color	硬度 Hv	切削速度 Vc(m/min)
H	高硬度材質 High Hardness Material	CBN250	-	鐵灰色 Iron gray	2400	100~400
		CBN300			2400	100~400
		CBN400			2400	800~220

被加工材質 Machining Materials	材質 Material	粒度 Grain size	ISO 範圍 ISO scope	顏色 Color	硬度 Hv	切削速度 Vc(m/min)
K	鑄鐵 Cast Iron	CBN250	-	鐵灰色 Iron gray	2400	120~1800

材質 Material	特點 Features	應用 Application
CBN250	是耐磨與耐崩刃性的通用材質。適合刀具使用壽命更長的應用。在對灰鑄鐵和硬鑄鐵進行斷續加工、淬硬鋼銑削對大多數鐵基閥座環加工時表現優異。是大多數鐵基粉末金屬的優先選擇材質。 CBN 250 is a universally adopted material to improve abrasion and wear resistance to lengthen the cutter's life. The enhanced performance is best for interrupted cutting of grey and hard cast iron, milling of quenched steel, and in the machining of most valve seat ring alloys.	超硬燒結合金 Super-hard sintered alloy
CBN300	提高了粒子間的結合強度，是切刃強度最高的材質。適用於所有常見硬化鋼的中度到重度斷續車削。在韌性、月牙溝和後刀面耐磨性之間實現很好的平衡。還可用於鐵基閥座環的插銑加工。 Our improved powder combination and strength makes CBN300 the most cutting edge material of this type. It is suitable for moderate to heavy interrupted turning of all common hardened steel. It provides an excellent balance of toughness with crater and flank wear resistance. Also it can be used for plunge machining of valve seat rings.	中切削硬化鋼 Interrupted cutting of hardened steel
CBN400	適用於汽車用鋼的輕度斷續切削，由於具有較優的耐磨性，所以非常適用在冷作工具鋼和某些閥座用合金。還建議用於拋光粗糙的高強度鑄鐵。 It is suitable for continuous and lightly interrupted cutting of automotive industries. Excellent abrasion resistance makes CBN400 the ideal choice for cold work tool steels and certain valve seat alloys. It is also recommended for finishing abrasive high strength cast irons.	連續~ 輕切削加工 Continuous~ Light interrupted cutting

CBN DIAMOND INSERT

SERIES



▶ 車削加工數據 Turning cutting data

被加工材質 Machining Materials		ISO 範圍 ISO scope	精切削 Fine cutting	中切削 Middle cutting	重切削 Heavy cutting
H	High Hardness Material	-	CBN250		
		-	CBN300		
		-	CBN400		
K	Cast Iron	-	CBN250		

▶ 銑削加工數據 Milling cutting data

被加工材質 Machining Materials		ISO 範圍 ISO scope	精切削 Fine cutting	中切削 Middle cutting	重切削 Heavy cutting
H	High Hardness Material	-	CBN250		
		-	CBN300		
		-	CBN400		
K	Cast Iron	-	CBN250		

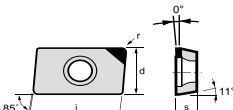
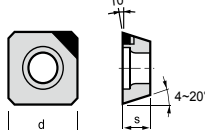
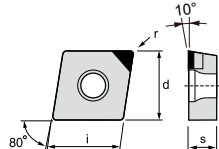
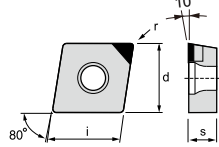
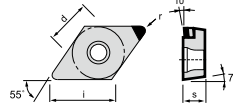
▶ 它牌材質對照 Brand grades comparison listing

材質 Materials	正河源 CHAIN HEADWAY	住友 SUMITOMO	三菱 MITSUBISHI	京瓷 KYOCERA	山高 SECO
H	CBN250	BN250	MB8025	KBN30M	CBN160C
	CBN300	BN350	MB835	KBN35M	CBN160C
	CBN400	BN1000	MB810	KBN510	CBN060K
K	CBN250	BN7000	MB4020 MB730	KBN60M	-



鑽石刀片

POLYCRYSTALLINE DIAMOND INSERTS

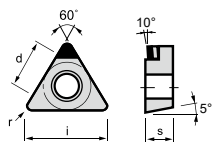
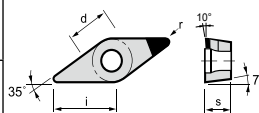
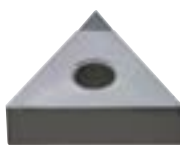
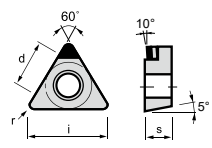
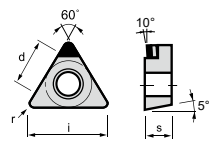
ISO 分類	P	合金鋼 Alloyed Steels					切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels								
	K	鑄鐵 Cast Iron								
	N	鋁及鋁合金 Aluminum&Al	●	●	●	●				
	S	高溫合金 Refractory Alloys								
	H	高硬度材 Hard Material								
形狀 Form	規格 Specification	聚晶鑽石 Polycrystalline diamond				尺寸 (mm)				圖形 Drawing
		DP				Size				
		PCD010	PCD020	PCD100	PCD250	d	i	s	r	
	APEW160404		●			9.525	16.5	4.76	-	
	APEW1604PDER		●			9.525	16.5	4.76	-	
	SEEW120404		●			12.7	-	4.76	-	
	SEEW1204APAN		●			12.7	-	4.76	-	
	CCEW060202		●			6.35	6.5	2.38	0.2	
	CCEW060204		●			6.35	6.5	2.38	0.4	
	CCEW09T304		●			9.525	9.7	3.97	0.4	
	CCEW120404		●			12.7	12.9	4.76	0.4	
	CNEW120404		●			12.7	12.9	4.76	0.4	
	DCEW070202		●			6.35	7.8	2.38	0.2	
	DCEW070204		●			6.35	7.8	2.38	0.4	
	DCEW11T302		●			9.525	11.6	3.97	0.2	
	DCEW11T304		●			9.525	11.6	3.97	0.4	

● - 標準庫存 STANDARD STOCK



鑽石刀片

POLYCRYSTALLINE DIAMOND INSERTS

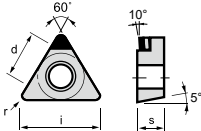
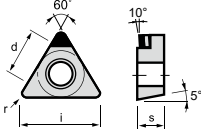
ISO 分類	P	合金鋼 Alloyed Steels					切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels								
	K	鑄鐵 Cast Iron								
	N	鋁及鋁合金 Aluminum&Al	●	●	●	●				
	S	高溫合金 Refractory Alloys								
	H	高硬度材 Hard Material								
形狀 Form	規格 Specification	聚晶鑽石 Polycrystalline diamond				尺寸 (mm)				圖形 Drawing
		DP				Size				
		PCD010	PCD020	PCD100	PCD250	d	i	s	r	
	TCEW110202		●			6.35	11	2.38	0.2	
	TCEW110204		●			6.35	11	2.38	0.4	
	TCEW16T304		●			9.525	16.5	3.97	0.4	
	VCEW160402		●			9.525	16.5	4.76	0.2	
	VCEW160404		●			9.525	16.5	4.76	0.4	
	VCEW160408		●			9.525	16.5	4.76	0.8	
	TNEW160402		●			9.525	16.5	4.76	0.2	
	TNEW160404		●			9.525	16.5	4.76	0.4	
	TBEW060102		●			3.97	6.4	1.59	0.2	
	TBEW060104		●			3.97	6.4	1.59	0.4	

● - 標準庫存 STANDARD STOCK



鑽石刀片

POLYCRYSTALLINE DIAMOND INSERTS

ISO 分類	P	合金鋼 Alloyed Steels					切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels								
	K	鑄鐵 Cast Iron								
	N	鋁及鋁合金 Aluminum&Al	●	●	●	●				
	S	高溫合金 Refractory Alloys								
	H	高硬度材 Hard Material								
形狀 Form	規格 Specification	聚晶鑽石 Polycrystalline diamond				尺寸 (mm)				圖形 Drawing
		DP				Size				
		PCD010	PCD020	PCD100	PCD250	d	i	s	r	
	TPEW090202		●			5.56	9.6	2.38	0.2	
	TPEW090204		●			5.56	9.6	2.38	0.4	
	TPEW110302		●			6.35	11	3.18	0.2	
	TPEW110304		●			6.35	11	3.18	0.4	
	TPEW080202		●			4.76	8.2	2.38	0.2	
	TPEW080204		●			4.76	8.2	2.38	0.4	

● - 標準庫存 STANDARD STOCK

► PCD 鑽石材質由高含量中細金剛石顆粒燒結而成，具有極高的耐磨性，可實現高速高效高精度加工。
PCD CONSISTS OF MICRO-DIAMOND POWDERS BONDED TOGETHER BY SINTERING AT HIGH PRESSURES AND TEMPERATURE. PCD WITH HIGH WEAR RESISTANCE CAN PROCESS WITH HIGH SPEED, HIGH EFFICIENT, AND HIGH PRECISION.

工件材質 WORKPIECE MATERIAL:AL6061

外徑車刀架 OUTER DIAMETER TOOL HOLDER:WTJNR-2525M-16

使用刀片 USE INSERT:TNMG160404 PCD

內徑車刀架 INNER DIAMETER TOOL HOLDER:S20R-SDJCR-11

使用刀片 USE INSERT:DCGT11T304 PCD

轉速 (S):2000RPM

進給 (F):0.05MM/REV

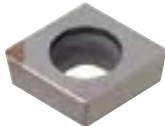
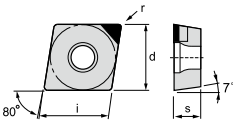
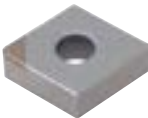
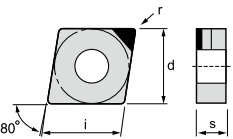
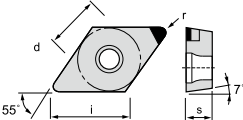
切削量 (CUTTING CAPACITY) : 0.2MM

Ra=0.378	Ra=0.235	Ra=0.294	Ra=0.318	Ra=0.500



氮化硼刀片

CUBIC BORON NITRIDE INSERTS

ISO 分類	P	合金鋼 Alloyed Steels				切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels							
	K	鑄鐵 Cast Iron							
	N	鋁及鋁合金 Aluminum&Al							
	S	高溫合金 Refractory Alloys							
	H	高硬度材 Hard Material	●	●	●				
形狀 Form	規格 Specification	氮化硼 BN			尺寸 (mm)				圖形 Drawing
		BN			Size				
		CBN250	CBN300	CBN400	d	i	s	r	
	CCEW060202	●			6.35	6.5	2.38	0.2	
	CCEW060204	●			6.35	6.5	2.38	0.4	
	CCEW060208	●			6.35	6.5	2.38	0.8	
	CCEW09T302	●			9.525	9.7	3.97	0.2	
	CCEW09T304	●			9.525	9.7	3.97	0.4	
	CCEW09T308	●			9.525	9.7	3.97	0.8	
	CCEW120404	●			12.7	12.9	4.76	0.4	
	CNEW120404	●			12.7	12.9	4.76	0.4	
	CNEW120408	●			12.7	12.9	4.76	0.8	
	DCEW070202	●			6.35	7.8	2.38	0.2	
	DCEW070204	●			6.35	7.8	2.38	0.4	
	DCEW070208	●			6.35	7.8	2.38	0.8	
	DCEW11T302	●			9.525	11.6	3.97	0.2	
	DCEW11T304	●			9.525	11.6	3.97	0.4	

● - 標準庫存 STANDARD STOCK



氮化硼刀片

CUBIC BORON NITRIDE INSERTS

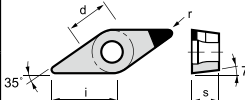
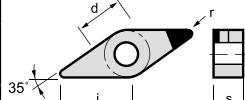
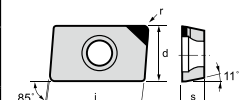
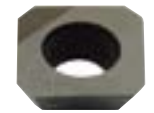
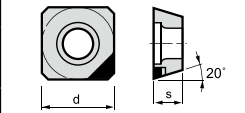
ISO 分類	P	合金鋼 Alloyed Steels				切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels							
	K	鑄鐵 Cast Iron							
	N	鋁及鋁合金 Aluminum&Al							
	S	高溫合金 Refractory Alloys							
	H	高硬度材 Hard Material	●	●	●				
形狀 Form	規格 Specification	氮化硼 BN			尺寸 (mm)				圖形 Drawing
		BN			Size				
		CBN250	CBN300	CBN400	d	i	s	r	
	TBEW060104	●			3.97	6.4	1.59	0.4	
	TPEW080202	●			4.76	8.2	2.38	0.2	
	TPEW080204	●			4.76	8.2	2.38	0.4	
	TPEW090202	●			5.56	9.6	2.38	0.2	
	TPEW090204	●			5.56	9.6	2.38	0.4	
	TPEW110302	●			6.35	11	3.18	0.2	
	TPEW110304	●			6.35	11	3.18	0.4	
	TPEW110308	●			6.35	11	3.18	0.8	
	TPEW16T302	●			9.525	16.5	3.97	0.2	
	TPEW16T304	●			9.525	16.5	3.97	0.4	
	TNEW160402	●			9.525	16.5	4.76	0.2	
	TNEW160404	●			9.525	16.5	4.76	0.4	
	TNEW160408	●			9.525	16.5	4.76	0.8	

● - 標準庫存 STANDARD STOCK



氮化硼刀片

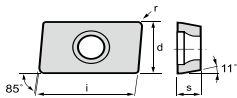
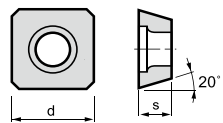
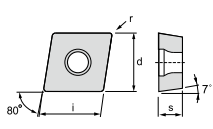
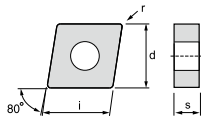
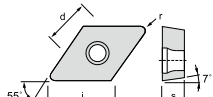
CUBIC BORON NITRIDE INSERTS

ISO 分類	P	合金鋼 Alloyed Steels				切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels							
	K	鑄鐵 Cast Iron							
	N	鋁及鋁合金 Aluminum&Al							
	S	高溫合金 Refractory Alloys							
	H	高硬度材 Hard Material	●	●	●				
形狀 Form	規格 Specification	氮化硼 BN			尺寸 (mm)				圖形 Drawing
		BN			Size				
		CBN250	CBN300	CBN400	d	i	s	r	
	VCEW110302	●			6.35	11	3.18	0.2	
	VCEW110304	●			6.35	11	3.18	0.4	
	VCEW160402	●			9.525	16.5	4.76	0.2	
	VCEW160404	●			9.525	16.5	4.76	0.4	
	VCEW160408	●			9.525	16.5	4.76	0.8	
	VNEW160404	●			9.525	16.5	4.76	0.4	
	VNEW160408	●			9.525	16.5	4.76	0.8	
	APEW1604PDER	●			9.525	16.5	4.76	-	
	SEEW1204APAN	●			12.7	-	4.76	-	

● - 標準庫存 STANDARD STOCK



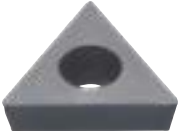
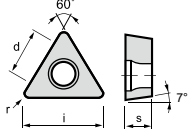
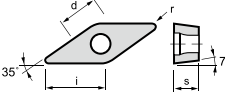
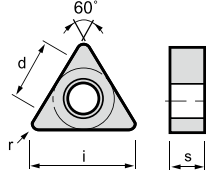
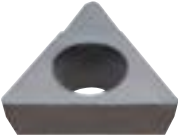
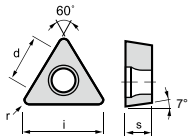
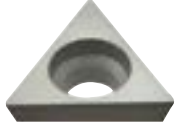
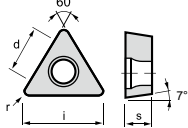
毛胚刀片 BLANK INSERTS

ISO 分類	P	合金鋼 Alloyed Steels					切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels								
	K	鑄鐵 Cast Iron								
	N	鋁及鋁合金 Aluminum&Al								
	S	高溫合金 Refractory Alloys								
	H	高硬度材 Hard Material								
形狀 Form	規格 Specification	硬質合金 Carbide				尺寸 (mm)				圖形 Drawing
		HC				Size				
		BM				d	i	s	r	
	APEW1003	●				6.68	10.5	3.18	-	
	APEW1604	●				9.525	16.5	4.76	-	
	SEEW1204	●				12.7	-	4.76	-	
	CCEW0602	●				6.35	6.5	2.38	-	
	CCEW09T3	●				9.525	9.7	3.97	-	
	CCEW1204	●				12.7	12.9	4.76	-	
	CNEW1204	●				12.7	12.9	4.76	-	
	DCEW0702	●				6.35	7.8	2.38	-	
	DCEW11T3	●				9.525	11.6	3.97	-	



毛胚刀片

BLANK INSERTS

ISO 分類	P	合金鋼 Alloyed Steels					切削狀態 CUTTING CONDITION : ● 連續切削 CONTINUOUS CUTTING ○ 一般切削 GENERAL CUTTING ■ 斷續切削 INTERRUPTED CUTTING			
	M	不鏽鋼 Stainless Steels								
	K	鑄鐵 Cast Iron								
	N	鋁及鋁合金 Aluminum&Al								
	S	高溫合金 Refractory Alloys								
	H	高硬度材 Hard Material								
形狀 Form	規格 Specification	硬質合金 Carbide				尺寸 (mm)				圖形 Drawing
		HC				Size				
		BM				d	i	s	r	
	TCEW0902	●				5.56	9.6	2.38	-	
	TCEW1102	●				6.35	11	2.38	-	
	TCEW16T3	●				9.525	16.5	3.97	-	
	VCEW1103	●				6.35	11.2	3.78	-	
	VCEW1604	●				9.525	16.5	4.76	-	
	TNEW1604	●				9.525	16.5	4.76	-	
	TBEW0601	●				3.97	6.4	1.59	-	
	TPEW0802	●				4.76	8.2	2.38	-	
	TPEW0902	●				5.56	9.6	2.38	-	
	TPEW1103	●				6.35	11	3.18	-	
	TPEW16T3	●				9.525	16.5	3.97	-	



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