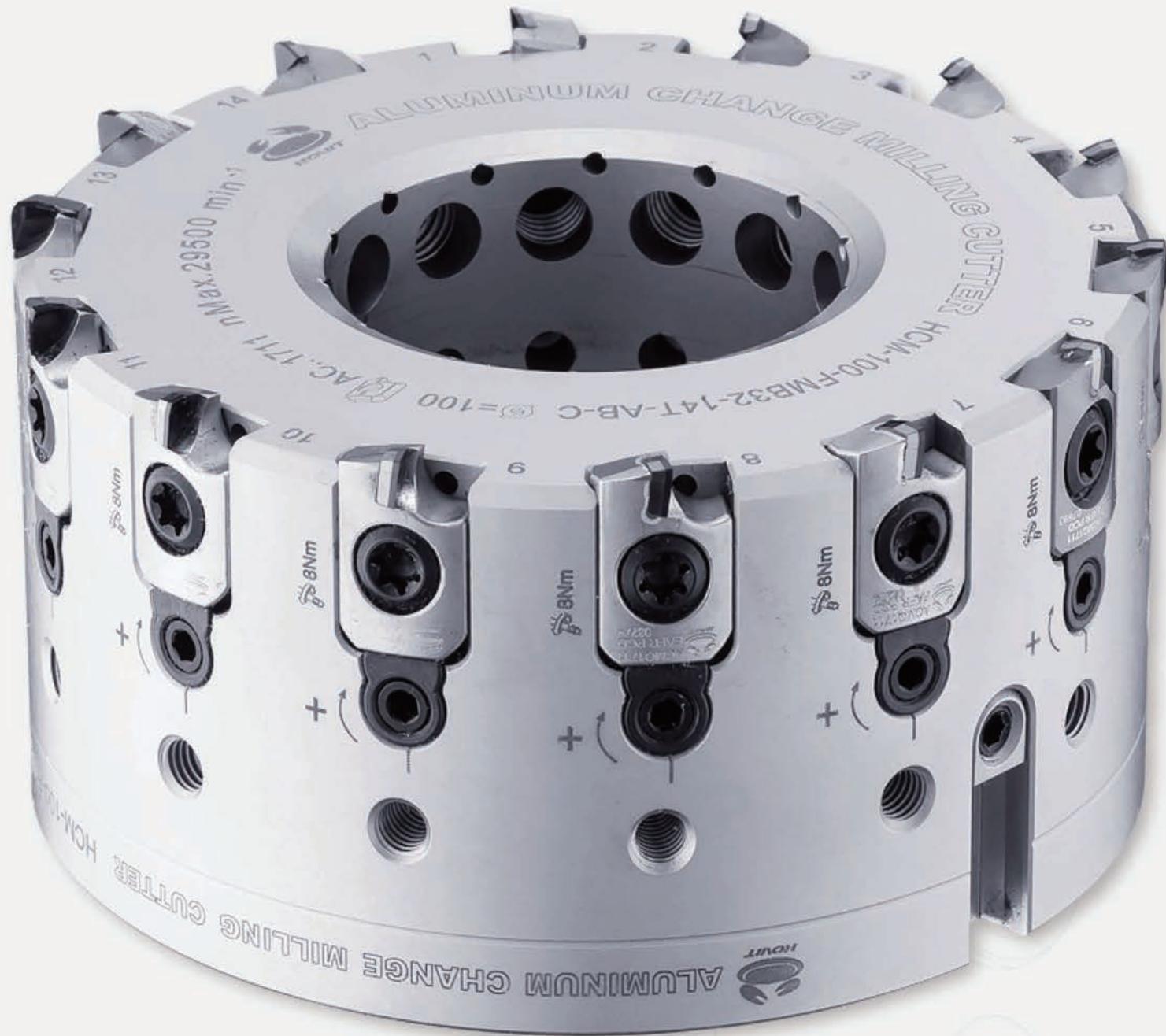




HCM/ACM/SCM 面銑刀頭系列
Milling Cutter Series

 **CHAIN
HEADWAY**
Cutting Edge Solution



ALUMINUM CHANGE MILLING CUTTER

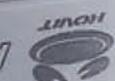
MAX. 29500 min⁻¹



HCM-100-FMB32-14T-AB-C

AC-1711

ALUMINUM CHANGE MILLING CUTTER



HCM

鋁合金密齒型銑刀頭

因應電子相關周邊配件高速加工需求，須精密加工之領域如新航太、自行車、機車、模具等產業。

- 刀座具微調結構，使刀片進行 μ 級調整，和刀頭緊密結合可防止高速旋轉時發生脫離；切削過程中亦能有效排屑，預防切削過程中表面損壞。
- 刀頭具出水孔設計，可針對切削刀尖點作中心出水，有效冷卻工件減少熱應變，以延長刀具壽命。
- 刀頭具徑向及軸向調整動平衡裝置，利用移動槽中的質量以改變質量所在平面，藉以減小對刀把與刀頭結合處的力矩，提升刀具動平衡等級，使刀具壽命增長；提升刀具不平衡量等級，能得到較精確的加工尺寸，確保機械主軸的使用壽命。
- 聚晶鑽石刀片，具硬度高、抗壓强度高及耐磨度良好等優點，適合在高速切削的場合，最高轉速可達33000 rpm，可獲最佳的加工精度和效率，達到免研磨、達鏡面。



免研磨 達鏡面 重環保 愛地球

High-speed processing requirements for electronic industries, such as Aerospace, bicycle, locomotive, mold and other industries.

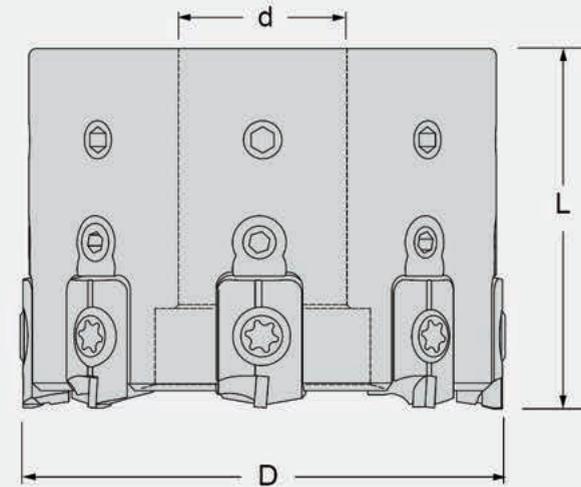
- The insert seat has a fine-tuning structure, which makes the insert adjust the μ level, and the cutter is tightly combined with the, insert seat to prevent detachment during high-speed rotation. The cutting process can also effectively remove chips and prevent surface damage during cutting.
- Through-tool coolant to efficiently cool the work-piece and improve cutter life.
- Special radial and axial dynamic balance adjustments for improving the cutter's dynamic balance.
- Polycrystalline diamond insert has the advantages of high hardness, high compressive strength and good wear resistance. It is suitable for high-speed cutting. The maximum speed can reach 33000 rpm, which can obtain the best processing precision and efficiency. Mirror surface.

Aluminum



HCM 鋁合金密齒型替換式刀頭

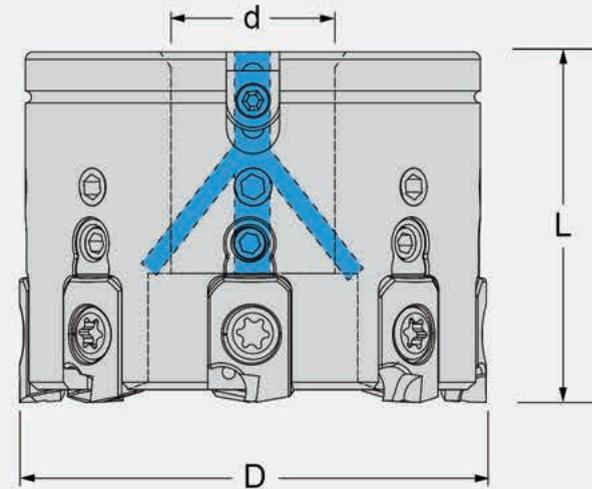
HCM Aluminum Changeable Milling Cutter



規格 Spec.	D	L	d	刃數 T	建議最高轉速 Spindle speed n max	淨重 (KGS) Weight	重量 (KGS) Weight
HCM-50-FMB16-6T	50	48	16	6	max. 33000rpm	0.19	1.26
HCM-63-FMB22-8T	63	48	22	8	max. 33000rpm	0.31	1.40
HCM-80-FMB27-10T	80	50	27	10	max. 33000rpm	0.49	1.60
HCM-100-FMB32-14T	100	50	32	14	max. 29500rpm	0.82	2.02
HCM-125-FMB40-18T	125	63	40	18	max. 25500rpm	1.63	3.68
HCM-160-FMB40-24T	160	63	40	24	max. 22200rpm	2.48	6.65
HCM-200-FS60F-28T	200	63	60	28	max. 18100rpm	3.42	7.56
HCM-250-FS60F-36T	250	63	60	36	max. 14500rpm	6.50	10.58
HCM-315-FS60F-46T	315	80	60	46	max. 11500rpm	12.44	16.60
HCM-400-FS60F-58T	400	80	60	58	max. 9000rpm	20.76	28.22

HCM 鋁合金密齒型替換式刀頭(動平衡及出水結構)

HCM Aluminum Changeable Milling Cutter(Dynamic balancing&Through hole)



規格 Spec.	D	L	d	刃數 T	建議最高轉速 Spindle speed n max	淨重 (KGS) Weight	重量 (KGS) Weight
HCM-50-FMB16-6T-AB-C	50	48	16	6	max. 33000rpm	0.20	1.26
HCM-63-FMB22-8T-AB-C	63	48	22	8	max. 33000rpm	0.30	1.40
HCM-80-FMB27-10T-AB-C	80	50	27	10	max. 33000rpm	0.48	1.60
HCM-100-FMB32-14T-AB-C	100	50	32	14	max. 29500rpm	0.81	2.02
HCM-125-FMB40-18T-AB-C	125	63	40	18	max. 25500rpm	1.88	3.68

HCM-PCD刀片座

HCM PCD Insert Seat

聚晶
PCD

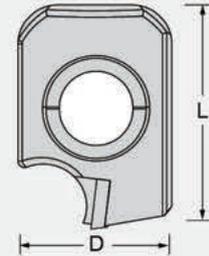


Fig.1

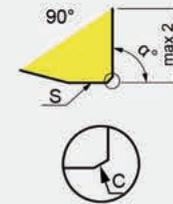


Fig.2

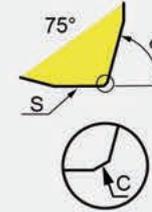
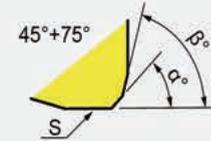


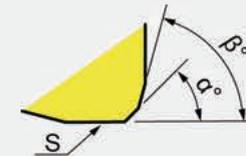
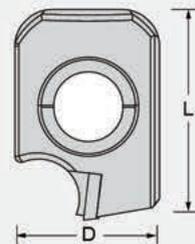
Fig.3



適合刀具 Cutting Tool	規格 Spec.	聚晶鑽石 Polycrystalline Diamond				尺寸 (mm)						最大切深 Cutting Max.	Fig.
		DP				Size						mm	
		PCD				L	D	α°	β°	S	C	AP	
HCM	ACMQ1711PAFR	●				17	11	90°	-	1.2	0.15	2	1
	ACMQ1711EAFR	●				17	11	75°	-	1.2	0.15	2	2
	ACMQ1711AAFR	●				17	11	45°	75°	1.2	-	1.13	3

※ 如有特殊角度需求，請與我司聯繫 If have the special angle need, please contact us.

聚晶
PCD



修光刃刀片 Wiper inserts:

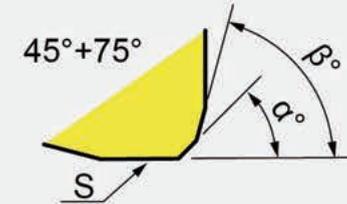
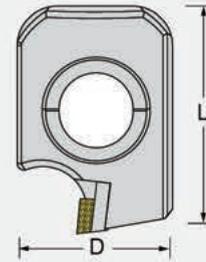
適合刀具 Cutting Tool	規格 Spec.	聚晶鑽石 Polycrystalline Diamond				尺寸 (mm)						最大切深 Cutting Max.
		DP				Size						mm
		PCD				L	D	α°	β°	r	C	AP
HCM	ACMQ1711AAFR-R300	●				17	11	45°	75°	300	-	2
	ACMQ1711AAFR-R500	●				17	11	45°	75°	500	-	1.13

※ 如有特殊角度需求，請與我司聯繫 If have the special angle need, please contact us.



HCM-PCD刀片座 HCM PCD Insert Seat

單晶
MD

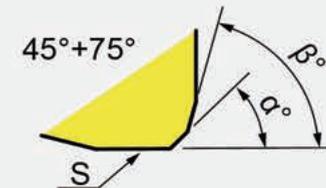
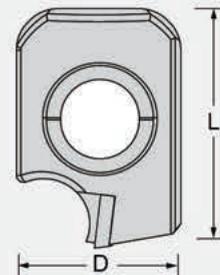


單晶刀片 Single crystal diamond:

適合刀具 Cutting Tool	規格 Spec.	單晶鑽石 Single crystal diamond				尺寸 (mm) Size						最大切深 Cutting Max.
		MD				Size						mm
		MD100				L	D	α°	β°	S	C	AP
HCM	ACMQ1711ACFR	●				17	11	45°	75°	1.2	-	1.13

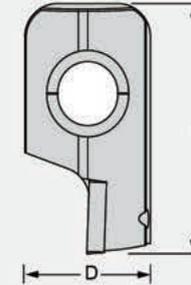
HCM鎢鋼刀片座 HCM PCD Insert Seat

鎢鋼
WC



規格 Spec.	L	D	α°	β°	S	重量 (KGS) Weight
ACMQ1711AAFR-WC	17	11	45°	75°	1.2	0.02

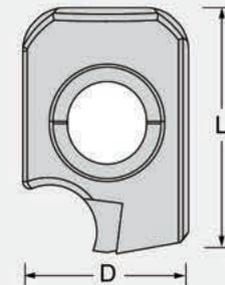
HCM 捨棄式刀片座 HCM Supplemental Insert Seat



規格 Spec.	L	D	刀片 Insert	螺絲 Screw	扳手 Wrench	扭力值 (N.m) Torque	重量 (KGS) Weight
ACMQ1711-TB06	22.13	11	TB..0601	M2-5.0-2.7-60	T6	0.6	0.02

※ 可自行搭配刀片材質 Can collocation insert material.

HCM 刀片基座 HCM Insert Base Seat



規格 Spec.	L	D	重量 (KGS) Weight
ACMQ1711-AS	17	11	0.02

※ 可用於刀頭配重或自行焊接各項材質 Can be used for weight or self-welding head of the material.

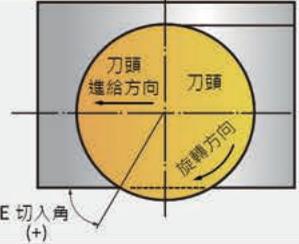
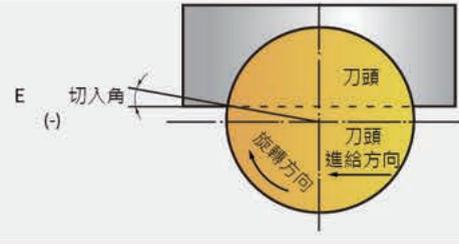
標準配件 Standard Accessories

圖示 Fig.					
規格 Spec.	HCM-AW-8L	M8-1.25P-M5-0.8P-10L	M5-15-7.0-60-T25	M5-0.5P-LH-RH-17-P2.5	M5-0.8P-10L
名稱 Name	調整楔塊 wedge adjustment	牙套 teeth sleeve	刀片座螺絲 insert holder screw	雙頭螺絲 both headed screw	動平衡螺絲 balance screw
功能 Function	調整尺寸精度 Dimension accuracy adjustment	調整尺寸精度 Dimension accuracy adjustment	鎖固刀座 fix the holder	固定調整楔塊 fix the wedge	平衡配重 mass-balance weight
圖示 Fig.					
規格 Spec.	TW-80-SB	BIT-T25-50L	PT2.5	T25	
名稱 Name	TW 扭力起子 TW torque driver	50mm 起子頭 50mm bits torx	T 型扳手 T-type wrench	L 型星型扳手 L-type wrench	
功能 Function	鎖固螺絲 lock screws				

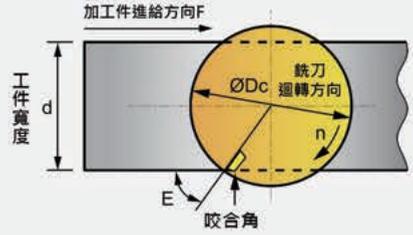
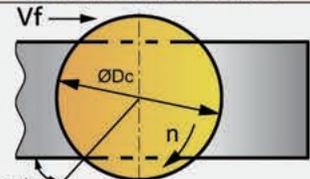
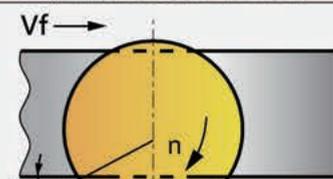
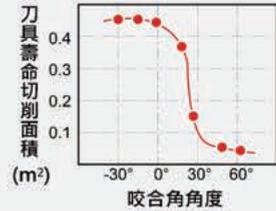
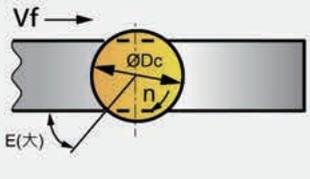
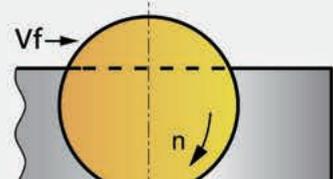
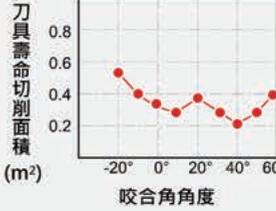
HCM 切削技術資料

HCM Cutting Technology Information

依工件寬度搭配面銑刀具直徑 According to the width of the workpiece with the face milling cutter diameter

形式 Form			
			
說明 Description			
零件材質 Part material	刀具直徑 Cutter Diameter		選擇適當刃數 Choice suitable teeth
	E 建議的切入角 E The recommended cut-in angle	建議刀具直徑與工件寬度比 Recommended tool diameter to workpiece width ratio	按直徑 (mm) 計算 Calculated by diameter (mm) 結果 Result
鋁合金 Aluminum	+40°以上	5:3	$\left(\frac{4}{100} \sim \frac{6}{100}\right) \times \varnothing D$ <p>多則易變形；少則易起毛邊 More teeth easily deformed; less teeth easy to burr.</p>

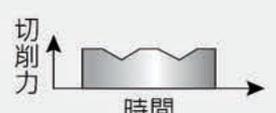
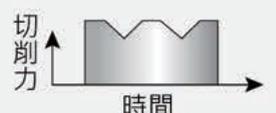
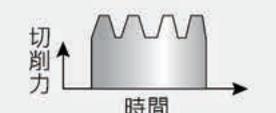
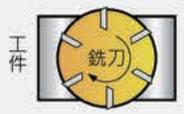
咬合角和刀具壽命 Bite angle and tool life

形式 Form			說明 Description
咬合角與銑刀尺寸的關係 Relation to Cutter Diameter	咬合角與銑刀位置的關係 Relation to Cutter Position	與刀具壽命的關係 Relation to Tool Life	 <p>咬合角是銑刀中心與刀刃切進點的連線與進給方向所成的夾角。E 越大刀具壽命越短。 改變 E 的方法有：1. 加大銑刀直徑 2. 錯開位置 Engage angle denotes the angle by which the full length of the cutting edge comes in contact with the work material, with reference to the feed direction. The large E is, the shorter the tool life. To change the value of E: 1. increase the cutter size. 2. shift the position of the cutter.</p>
 <p>銑刀直徑 (大)</p>		 <p>刀具壽命切削面積 (m²)</p> <p>咬合角角度</p>	
 <p>銑刀直徑 (小)</p>		 <p>刀具壽命切削面積 (m²)</p> <p>咬合角角度</p>	

HCM 切削技術資料

HCM Cutting Technology Information

切削的刃數與切削力變動的關係 Relation between the number of simultaneously engaged cutting edges and cutting force

形式 Form				
				
				
同時參與切削刃數為 0 或者 1 時 0 or 1 edge in contact at same time.	常態為 1 片切削時 Only 1 edge in contact at any time.	1 片或 2 片切削時 1 or 2 edges in contact.	2 片切削時 2 edge in contact at any time.	2~3 片切削時 2 to 3 edge in contact.
說明 Description				
<p>通常切削寬度如 D 的狀態·銑刀直徑在 70%~80% 較為適當·但由於受機台和工件的剛性·機台馬力的影響·無法一概而論 Normally, cutting width is considered to be appropriate with 70 to 80% of the cutter diameter engaged as shown in example D. However, this may not apply due to the actual rigidity of the machine or work piece, and machine horsepower.</p>				

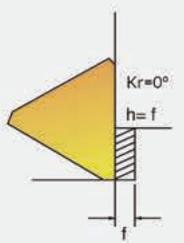
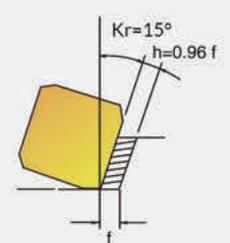
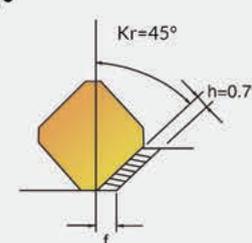
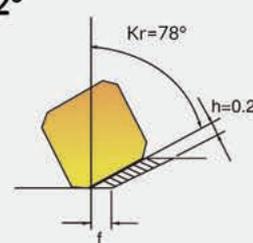
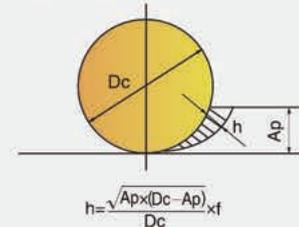
建議使用刀具尺寸規格 Recommended Cutter Spec.

建議使用刀具尺寸規格 Suggest used the cutter spec.										
規格 Spec.	HCM50	HCM63	HCM80	HCM100	HCM125	HCM160	HCM200	HCM250	HCM315	HCM400
工件寬度範圍 Workpiece width range	30~40mm	37~50mm	48~64mm	60~80mm	70~95mm	96~128mm	120~160mm	150~200mm	189~252mm	240~320mm

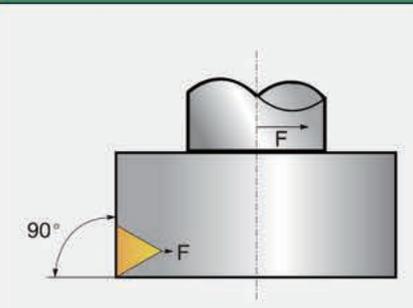
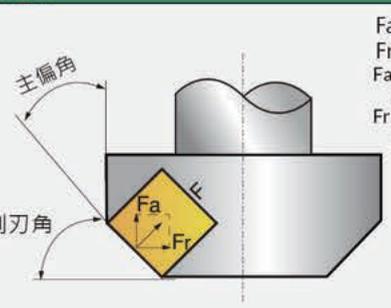
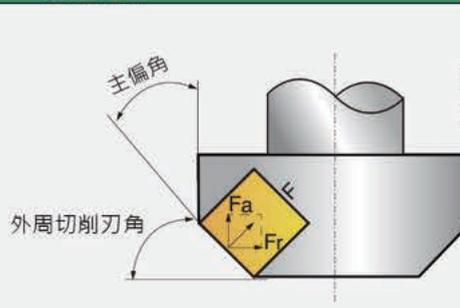
HCM 切削技術資料

HCM Cutting Technology Information

選擇刀片座種類 Chose the insert seat type

形式 Form				
<p>90°</p> 	<p>75°</p> 	<p>45°</p> 	<p>12°</p> 	<p>Dc=100 f=0.05 Ap=0.2</p>  $h = \frac{\sqrt{Ap \times (Dc - Ap)}}{Dc} \times f$
<p>適用： 1. 加工壁薄件 2. 加工夾持剛性差工件 3. 大切削 General: 1. Processing of thin pieces. 2. Processing clamping rigid workpiece. 3. Large cutting.</p>	<p>適用： 1. 加工粗胚 2. 中大切削工件 General: 1. Processing of rough embryos. 2. Large cutting parts.</p>	<p>適用： 1. 加工深腔體工件 2. 中切深 General: 1. Processing of deep cavity workpiece. 2. In the depth of cut.</p>	<p>適用： 1. 加工大量粗切削 2. 小切深、大進給 General: 1. Processing a large number of rough cutting. 2. Small depth of cut, large feed.</p>	<p>範例 Example: $h = \frac{\sqrt{0.2 \times (100 - 0.2)}}{100} \times 0.05$ h = 2.23</p>
說明 Description				
<p>外周切削刃角 (主偏角的餘角) 越大，則切屑厚度越大，切削阻力增加，刃口強度降低；反之則切屑厚度越薄，切削阻力減少，加工餘量受限。一般加工選用切削力，切屑厚度適中的 45° 角。 The larger the chip angle is, the greater the chip thickness is, and the cutting resistance is increased. Otherwise, the cutting edge strength is reduced. General processing selection of cutting force, chip thickness of moderate 45° angle.</p>				

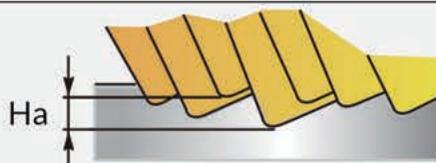
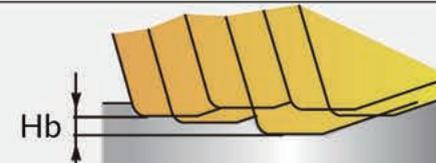
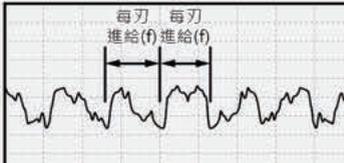
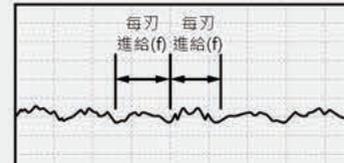
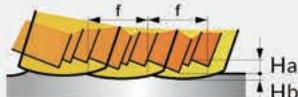
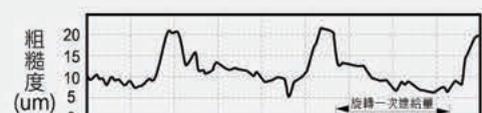
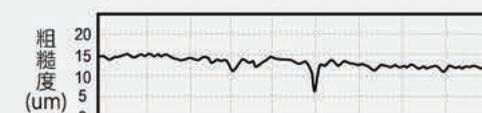
外周切削刃角與切削刃的關係 Relationship between cutting edge angle and cutting edge

形式 Form	說明 Description
	<p>Fa: 切削力的軸向分力 Fr: 切削力的徑向分力 Fa: Axial component of cutting force. Fr: Radial component of cutting force.</p> 
	<p>刀具外徑切削刃角越大，徑向分力越大；軸向分力越小，適合加工薄壁件，軸向剛性較差的零件加工。 刀具外徑切削刃角越小，軸向分力越大；徑向分力越小，適應於大懸長加工。 The greater the peripheral cutting edge angle, the greater the radial component; the smaller the axial component force, more suitable for machining thin walled parts with less axial rigidity. The smaller the peripheral cutting edge angle, the larger the axial component; the smaller the radial component force is, it is suitable for long-length processing.</p>

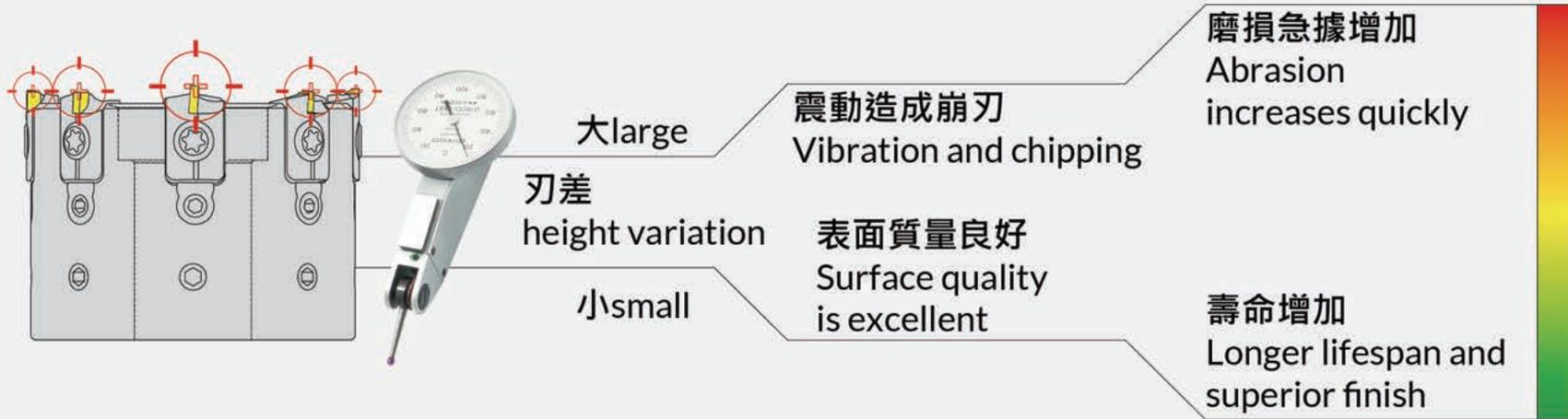
HCM 切削技術資料

HCM Cutting Technology Information

如何搭配刀片座類型 How to Properly match insert seat type

形式 Form	
Ha : 不使用修光刀刀片的粗糙度 Ha: Without wiper insert	Hb : 使用修光刀刀片的粗糙度 Hb: With wiper insert
	
	
<p>切削數據： ◆工件：Al7075 ◆刀頭 HCM-63 ◆Vc=700m/min ◆fZ=0.1mm/t ◆Ap=0.1mm</p>	
<p>h: 修光刀刀片突出量 鋁合金(Al): 0.03mm</p> 	<p>f: 每刃進給(mm/rev) Ha: 普通刀片的精加工粗糙度 Hb: 修光刀刀片的精加工粗糙度</p> 
<p>一般捨棄式刀片</p> 	<p>修光刀刀片</p> 
說明 Description	
<ul style="list-style-type: none"> - 帶修光刃的刀片：所有刀片帶有修光刃，相對刀片的跳動高度，利用高度最突出的刀片修光刃刮光表面的方法。 - With wiper insert: All insert have a wiper edge, relative to the beating height of the insert, using the most prominent insert to wiper the surface of the wiper. - 加入修光刀刀片的方式：在一般刀片中，加入 1~2 片呈圓滑線型的修光刀刀片比其它刃刀片稍突出。 - Wiper insert to join the way: in the general insert, add 1 to 2 was rounded linear wiper insert than other edge insert slightly prominent. 	

調整刀刃的差異性 Adjust the difference between the insert edge



轉速(min^{-1})	JIS等級 ISO 1940-1/8821 (JIS B0905)
~20,000	G16
~30,000	G6.3
30,000~	G2.5

⚠ 在高速旋轉 ($10,000 \text{ min}^{-1}$ 以上) 使用時，刀具本體與刀桿的組合，請參考以下數值進行選配
When operating at high rotation speeds ($10,000 \text{ min}^{-1}$ or more), perform balancing of the tool body and arbor combination according to the reference values listed here.

⚠ 請不要超過建議的最高轉速加工數據，避免造成離心力影響而使刀片或零件的飛散，導致刀頭受損
Do not use at rotation speeds exceeding the maximum rotation speed stated. Inserts and other parts may fly apart and cause bodily harm due to the high velocity of centrifugal force.

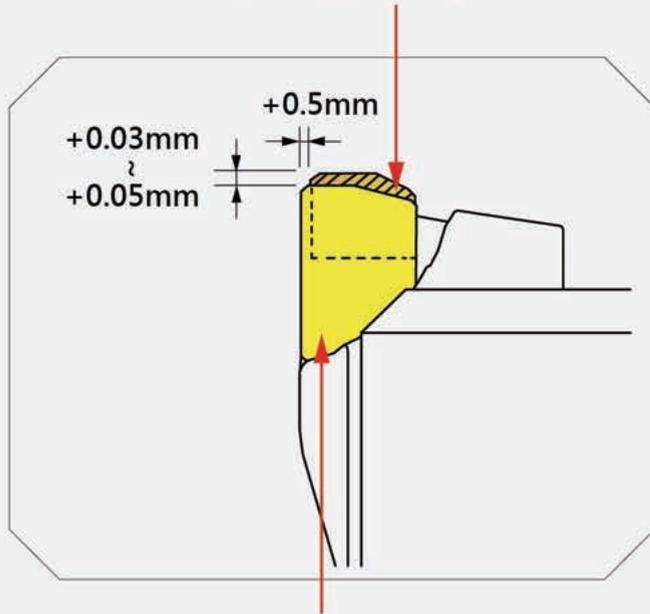
切削數據

Cutting Conditions

	材料 Materials	材料編號 Materials examples	抗拉強度 Strength(N/mm ²)	線速度 Vc(m/min)	每刃進給量 f(mm/rev)	
					Ap<1mm	Ap:1~2mm
N	鋁合金 (Aluminium)	鋁合金 (Al99)		max.6000	0.1~0.2mm/rev	0.05~0.1mm/rev
	鋁合金 (Aluminium) 7% 矽 (Si)	鑄造鋁合金 (AlSi7)				
	鋁合金 (Aluminium) 7-12% 矽 (Si)	鋁合金 (AlSi9) 鋁合金 (AlSi9Cu)				
	鋁合金 (Aluminium) 12% 矽 (Si)	鋁合金 (AlSi12) 鋁合金 (AlSi17)		max.2000		
	銅 (Copper) 非合金銅 (unalloyed)	銅合金 (SE-Cu)	< 300	max.6000		
	銅 (Copper)	銅錫合金 (CuSn6)	> 300	max.2000		
	黃銅 (Brass) 青銅 (bronze) 紅銅 (red brass)	銅錫合金 (CuZn33) 銅合金 (CuAl9Mn3)	< 1.200			
	石墨 (Graphite)	-				
	塑料 (Plastic) 熱可塑性樹脂 (Thermoplastics)	尼龍 (PA), 塑膠 (PE), 聚碳酸酯 (PC), 聚苯乙烯 (PS), 聚氯乙烯 (PVC), 聚丙烯 (PP), 聚四氟乙烯 (PTFE), 聚甲醛 (POM), 聚甲基丙烯酸甲酯 PMMA				
	塑料 (Plastic) 熱固性塑膠 (Thermoset plastics)	聚氨酯 (PU), 電木粉 (PF), 環氧樹脂 (EP), 聚酯樹脂 (UP), 塑膠 (VE), 氯丁橡膠 (CR)				
C	塑料 (Plastic matrix) 碳纖維複合材料 (CFRP/GFRP)	聚酯 (IMS), 高溫合金 (HTA)		Max.100~500	0.1~0.4mm/rev	0.1~0.2mm/rev
	塑料 (Plastic matrix) 碳纖維複合材料 (CFRP/GFRP)	玻璃纖維 (GMT-PP), 聚醚醚酮 (PEEK)				
	碳纖維複合材料 Carbon matrix 碳纖維強化碳基材料複合材料 carbon fibre reinforced (CFC)	碳纖維 (CF222, CF225, CF226, CF227, CF260)		Max. 100~300	0.1~0.2mm/rev	0.05~0.1mm/rev

安裝注意事項 Use Notice

修光刃刀片座 Wiper insert



PCD刀片座 PCD insert

- ⚠ 安裝修光刃刀片(R300、R500)時，應比PCD刀片高出+0.03mm~+0.05mm
When installing wiper inserts (R300 or R500) be sure they are 0.03 ~ 0.05mm higher than the PCD insert.



請務必使調整楔塊與刀頭外徑平行
Make sure the wedge and the insert are parallel.



一般精度：0.01mm
精密精度：0.003mm ~ 0.005mm
General accuracy: 0.01mm
Precision accuracy: 0.003mm 0.005mm



每刃皆有一顆動平衡螺絲，
可調整每刃不平衡量
Each insert seat has a
dedicated dynamic
balance adjustment

ACM特點 Feature



SE..1204



AP..1604



RP..1204

HIGH-SPEED Ø80~Ø315 高速輕量化

可調整刀片與刀片之間的刃差(精度可調整至0.005mm以內)。

刀具結合方式採取內包覆式，可降低高速加工回轉時產生的風阻現象，進而提高切削效率。

刀具與刀頭定位方式為方型緊配，利於刀具定位。

刀頭材質採用特殊鋁合金，並做硬陽處理，可提高鋼性。

三種卡式刀座可替換。

The flute difference between inserts can be adjusted within 0.005mm.

Covered within to decrease wind resistance and increase efficiency.

The arbor and cutting head is mounted tightly for increased precision.

The aluminum alloy cutting head is anodized to increase rigidity.

3 interchangeable cartridges are available.

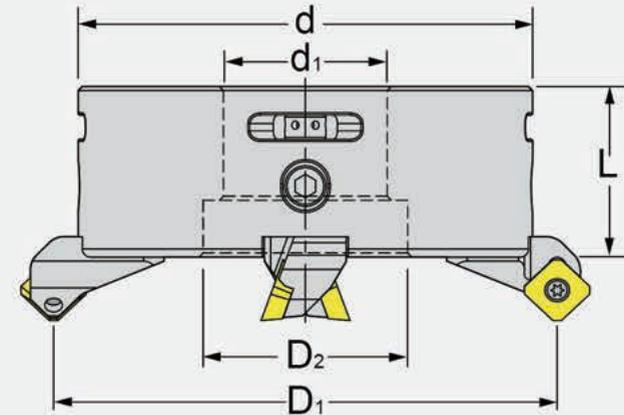
LIGHTWEIGHT

PAT.NO: M343543
ZL 200820110686.X



ACM 鋁合金替換式刀頭

HCM Aluminum Changeable Milling Cutter



規格 Spec.	L	D ₁	D ₂	d	d ₁	刃數 Teeth		刀座 Insert Seat	螺絲 Screw	淨量 (KGS) Weight	重量 (KGS) Weight
						標準 Standard	選配 Option				
ACM-80-FMB22-S	42	80	18	66	22	4	-	ACM-SE12 ACM-AP16 ACM-RP12	SH-M6-20	0.62	2.60
ACM-80-FMA25.4-S	42	80	20	66	25.4	4	-		SH-M6-20	0.64	2.90
ACM-100-FMB22-S	42	100	18	86	22	4	-		SH-M6-25	-	2.86
ACM-100-FMA25.4-S	42	100	20	86	25.4	4	-		SH-M6-25	0.90	2.80
ACM-125-FMB32-S	42	125	42	111	32	4	-		SH-M6-25	-	3.62
ACM-125-FMA31.75-S	42	125	42	111	31.75	4	-		SH-M6-25	1.16	3.15
ACM-160-FMB40-S	42	160	50	146	40	4	4		SH-M6-25	1.74	3.79
ACM-160-FMA38.1-S	42	160	46	146	38.1	4	4		SH-M6-25	1.76	3.60

規格 Spec.	L	D ₁	D ₂	d	d ₁	刃數 Teeth		刀座 Insert Seat	螺絲  Screw	淨量 (KGS) Weight	重量 (KGS) Weight
						標準 Standard	選配 Option				
ACM-200-FS60F-S	45	200	60	186	60	4	4	ACM-SE1204 ACM-SE12T3 ACM-AP1604 ACM-RP1204	SH-M6-25	2.52	6.62
ACM-200-FMA38.1-S	45	200	48	186	38.1	4	4		SH-M6-25	2.50	7.03
ACM-200-FMA47.625-S	45	200	47.625	186	47.625	4	4		SH-M6-25	2.56	6.44
ACM-250-FS60F-S	47	250	60	236	60	4	8		SH-M6-25	3.86	8.40
ACM-250-FMA38.1-S	47	250	48	236	38.1	4	8		SH-M6-25	4.06	8.26
ACM-250-FMA47.625-S	47	250	47.625	236	47.625	4	8		SH-M6-25	4.00	7.92
ACM-315-FS60F-S	47	315	60	301	60	4	12		SH-M6-25	6.32	10.35
ACM-315-FMA38.1-S	47	315	48	301	38.1	4	12		SH-M6-25	-	10.24
ACM-315-FMA47.625-S	47	315	47.625	301	47.62	4	12		SH-M6-25	6.32	10.80

● S- 為雙微調 S: dual micro-adjustment

配件表 Accessories

刀片 Insert	螺絲  Screw	扳手  Wrench	扭力值 (N.m) Torque
SE..1204、SE..12T3 AP..1604、RP..1204	SH-M6-20	P5	6.0
	SH-M6-25	P5	6.0

SCM特點

Feature



SE..1204



AP..1604



RP..1204

Ø80~Ø250

刀具結合方式採取內包覆式，可降低高速加工回轉時產生的風阻現象，進而提高切削效率。

刀具與刀頭定位方式為方型緊配，利於刀具定位。

刀頭材質採用特殊合金鋼，可提高剛性。

三種卡式刀座可替換。

Covered within to decrease wind resistance and increase efficiency.

The arbor and cutting head is mounted tightly to increase the precision.

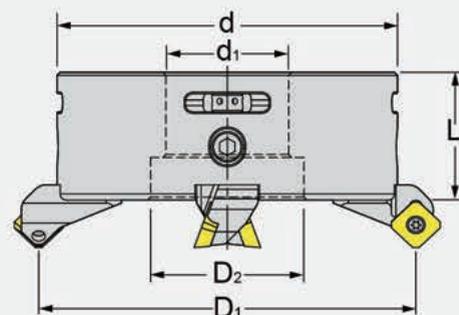
The alloy steel cutting head is anodized to increase the rigidity.

3 interchangeable cartridges are available.

ALLOY STEEL

SCM合金鋼替換式刀頭

SCM Alloy Steel Changeable Milling Cutter



規格 Spec.	L	D ₁	D ₂	d	d ₁	刃數 Teeth		刀座 Insert Seat	螺絲 Screw	淨量 (KGS) Weight	重量 (KGS) Weight
						標準 Standard	選配 Option				
SCM-80-FMB22-S	42	80	18	66	22	4	-	ACM-SE1204 ACM-SE12T3 ACM-AP1604 ACM-RP1204	SH-M6-20	1.06	2.96
SCM-80-FMA25.4-S	42	80	20	66	25.4	4	-		SH-M6-20	1.02	3.00
SCM-100-FMB22-S	42	100	18	86	22	4	-		SH-M6-25	1.76	3.72
SCM-100-FMA25.4-S	42	100	20	86	25.4	4	-		SH-M6-25	1.74	4.15
SCM-125-FMB32-S	42	125	42	111	32	4	-		SH-M6-25	2.60	4.56
SCM-125-FMA31.75-S	42	125	42	111	31.75	4	-		SH-M6-25	2.52	4.86
SCM-160-FMB40-S	42	160	50	146	40	4	4		SH-M6-25	4.12	6.09
SCM-160-FMA38.1-S	42	160	46	146	38.1	4	4		SH-M6-25	4.20	6.45
SCM-200-FS60F-S	45	200	60	186	60	4	4		SH-M6-25	6.06	10.50
SCM-200-FMA38.1-S	45	200	48	186	38.1	4	4		SH-M6-25	6.46	10.40
SCM-200-FMA47.625-S	45	200	47.625	186	47.625	4	4		SH-M6-25	6.43	14.60
SCM-250-FS60F-S	47	250	60	236	60	4	8		SH-M6-25	10.54	14.50
SCM-250-FMA38.1-S	47	250	48	236	38.1	4	8		SH-M6-25	10.98	14.70
SCM-250-FMA47.625-S	47	250	47.625	236	47.625	4	8		SH-M6-25	10.70	14.66

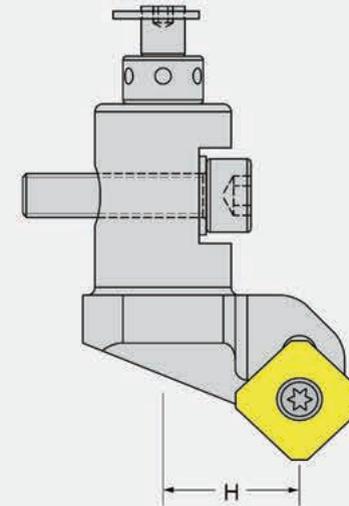
● S- 為雙微調 S: dual micro-adjustment

配件表 Accessories

刀片 Insert	螺絲 Screw	扳手 Wrench	扭力值 (N.m) Torque
SE.1204、SE.12T3 AP.1604、RP.1204	SH-M6-20	P5	6.0
	SH-M6-25	P5	6.0

ACM&SCM 鋁合金替換式刀座

ACM&SCM Aluminum Changeable Insert Seat

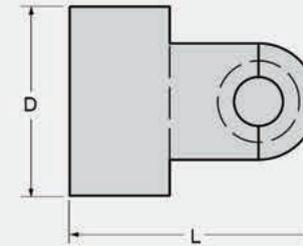


規格 Spec.	H	刀片 Insert	螺絲 Screw	扳手 Wrench	扭力值 (N.m) Torque	重量 (KGS) Weight
ACM-SE12-S	-	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-A-S	-3	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-B-S	+3	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-C-S	-2	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-D-S	+2	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-E-S	-1	SE..1204	M5-11-7.0-55	T20	5.0	0.11
● ACM-SE12-F-S	+1	SE..1204	M5-11-7.0-55	T20	5.0	0.11
ACM-SE12-L-S (左旋)	-	SE..1204	M5-11-7.0-55	T20	5.0	0.11
ACM-AP16-S	-	AP..1604	M4-10-5.7-60	T15	3.0	0.13
ACM-RP12-S	-	RP..1204	M4-10-5.0-43	T15	3.0	0.13
● ACM-SE12T3-S	-	SE..12T3	M3.5-11.7-5.3-60	T15	3.0	-

● - 接單生產 -produced order by order.

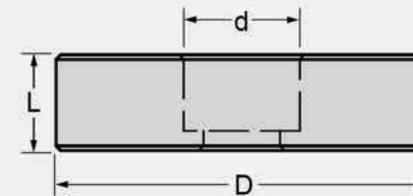


ACM 轉換鍵 ACM Converter Key



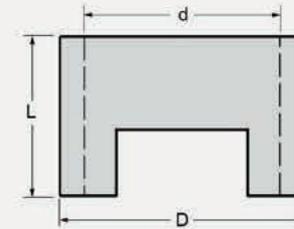
規格 Spec.	L	D	重量 (KGS) Weight
ACM-16.1-25.4	33.35	25.4	0.11

ACM 鋁合金墊圈 ACM Aluminum Washers



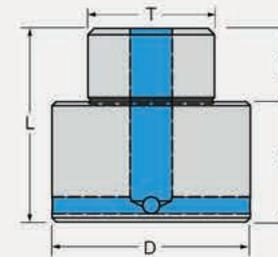
規格 Spec.	L	D	d	重量 (KGS) Weight
ACM-AW80	20.5	80	25	0.25

ACM 轉換套 ACM Converter Kits



規格 Spec.	L	D	d	重量 (KGS) Weight
ACM-38.1-47.625	31.5	47.625	38.1	0.04

ACM 給水螺帽 ACM Water Screw



規格 Spec.	L	l ₁	l ₂	D	T	重量 (KGS) Weight
ACM-WS47	46.4	18	29	47	M24×2.0	0.3



標準配件 Standard Accessories

圖示 Fig.							
名稱 Name	調整螺絲 Adjust Screw	側固螺絲 Fixed Screw	G 型扣環 G-Type Ring	墊片 Shim	調整扳手 Adjust Wrench	PL 型扳手 PL-Type Wrench	PL 型扳手 PL-Type Wrench
規格 Spec.	AD-M6	M6x20	GTW-6.7	W-0.5	ADW-2	PL3	PL5
功能 Function	調整刀具高度 Adjust cutter height	鎖固卡式刀座 Fix cartridge	固定調整螺絲 Fix adjust screw	迫緊螺絲 Fasten screw	調整卡式刀座 Adjust cartridge	調整卡式刀座 Adjust cartridge	鎖固扳手 Fasten

選購配件 Optional Accessories

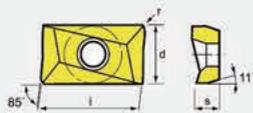
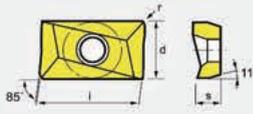
圖示 Fig.	
名稱 Name	彈簧鉗 Spring Pliers
規格 Spec.	F-26
功能 Function	安裝 G 型扣環 Assemble G Type Ring

適用刀片 Application Insert

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	不銹鋼 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 Spec.	氮化硼 BN		鍍層超微粒 Layer coating ultra-micro			聚晶鑽石 Polycrystalline diamond			超硬微粒 Ultra-hard microprogram				尺寸 (mm)				圖形 Drawing
		BN		CHF			DP			HF				Size				
		CBN250	CBN500	OM4010	OM4025	RM4130	PCD	PCD020			GH1	GH05	OM5005	OM5060	d	i	s	
	APEX1604PDFR-F01											●	●	9.525	16.4	4.76	-	
	APEX160400PDFR-F01											●	●	9.525	16.4	4.76	-	
	APEX160402PDFR-F01											●	●	9.525	16.4	4.76	0.2	
	APEX160404PDFR-F01											●	●	9.525	16.4	4.76	0.4	
	APEX160408PDFR-F01											●	●	9.525	16.4	4.76	0.8	
	APEX160420PDFR-F01											●	●	9.525	16.4	4.76	2.0	
	APKT160404						●							9.525	16.5	4.76	-	
	APKT1604PDER						●							9.525	16.5	4.76	-	
	APEW160404							●						9.525	16.5	4.76	-	
	APEW1604PDER							●						9.525	16.5	4.76	-	



適用刀片 Application Insert

形狀 Form	規格 Spec.	氮化硼 BN		鍍層超微粒 Layer coating ultra-micro				聚晶鑽石 Polycrystalline diamond				超硬微粒 Ultra-hard microprogram			尺寸 (mm) Size				圖形 Drawing		
		BN		CHF				DP				HF									
		CBN250	CBN500	OM4010	OM4025	OM4025N	RM3130	RM4130	PCD	PCD020				GH1	GH05	OM5005	d	i		s	r
	APKT160408-M01				●	●										9.525	16.6	4.76	0.8		
	APKT160408PDER-M02						●	●								9.525	16.4	4.76	0.8		

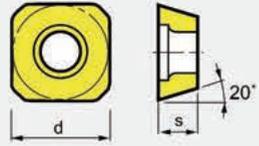
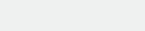
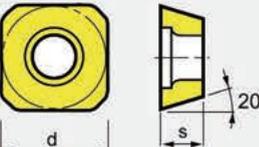
切削狀態 Cutting Condition :

● 連續切削 Continuous Cutting

○ 一般切削 General Cutting

■ 斷續切削 Interrupted Cutting

適用刀片 Application Insert

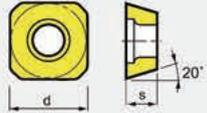
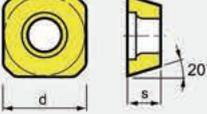
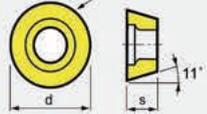
ISO 分類	P 合金鋼 Alloyed Steels				○	○	○												
	M 不鏽鋼 Stainless Steels				○	○	○												
	K 鑄鐵 Cast Iron			○	○	○													
	N 鋁及鋁合金 Aluminum&Al							○			■	■	■	○					
S 高溫合金 Refractory Alloys																			
H 高硬度材 Hard Material		○		○															
形狀 Form	規格 Spec.	氮化硼 BN		鍍層超微粒 Layer coating ultra-micro			聚晶鑽石 Polycrystalline diamond			超硬微粒 Ultra-hard microprogram				尺寸 (mm)				圖形 Drawing	
		BN		CHF			DP			HF				Size					
		CBN250	CBN500	OM4010	OM4025	RM4130	PCD	PCD020				GH1	GH05	OM5005	OM5060	d	i		s
	SEHT1204APAN	●	●				●								12.7	-	4.76	-	
	SEHT120404						●								12.7	-	4.76	-	
	SEEW120404							●							12.7	-	4.76	-	
	SEEW1204APAN							●							12.7	-	4.76	-	
	SEKW1204AFN				●										12.7	-	4.76	-	
	SEHT1204AFEN-M01			●	●										12.7	-	4.76	Facet	

切削狀態 Cutting Condition:

- 連續切削 Continuous Cutting
- 一般切削 General Cutting
- 斷續切削 Interrupted Cutting



適用刀片 Application Insert

ISO 分類	P	合金鋼 Alloyed Steels				○	○	○																																																	
	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 Spec.	氮化硼 BN		鍍層超微粒 Layer coating ultra-micro			聚晶鑽石 Polycrystalline diamond		超硬微粒 Ultra-hard microprogram				尺寸 (mm)				圖形 Drawing																																								
		BN		CHF			DP		HF				Size																																												
		CBN250	CBN500	OM4010	OM4025	RM4130	RM4230	PCD	PCD020		GH1	GH05	OM5005	OM5060	d	i		s	r																																						
	SEHT1204AFFN																			●				●	12.7	-	4.76	-																													
	SEHT1204AFEN-M02																																			●	12.7	-	4.76	Facet																	
	RPET1204MOE-M01																																		●	●																●	12	-	4.76	6	
	RPMT1204MON																																			●	12	-	4.76	6																	

切削狀態 Cutting Condition:

● 連續切削 Continuous Cutting

○ 一般切削 General Cutting

■ 斷續切削 Interrupted Cutting

切削條件數據表 Cutting Conditions

AP_16

被加工材質 Machining Materials		刀片材質 Grade	切削速度 Vc(m/min)	每刃進給 fz(mm/rev)	切深 Ap(mm)
P	合金鋼 Low-Alloy Steels	OM4025	220~300	0.14~0.24	1.0~2.0
		OM4025N	180~230	0.15~0.35	0.5~1.5
		RM4130	60~300	0.10~0.25	1.0~2.0
M	不鏽鋼 Stainless Steels	OM4025	180~230	0.15~0.35	0.5~1.5
		RM4130	120~160	0.10~0.25	0.5~1.5
K	鑄鐵 Cast Iron	OM4025	200~300	0.06~0.30	1.5~3.0
		RM3130	200~300	0.06~0.30	1.5~3.0
		RM4140	200~300	0.06~0.30	1.5~3.0
N	鋁及鋁合金 Aluminum&Al	GH05	300~800	0.04~0.20	3.0~8.0
		OM5005	400~850	0.05~0.30	1.5~0.3
		OM5060	600~1200	0.05~0.30	1.5~0.3

※ ACM適用加工類型：N類；SCM適用加工類型：P、M、K類

SE_12

被加工材質 Machining Materials		刀片材質 Grade	切削速度 Vc(m/min)	每刃進給 fz(mm/rev)	切深 Ap(mm)
P	合金鋼 Low-Alloy Steels	OM4010	220~260	0.20~0.45	1.0~3.0
		OM4025	220~260	0.20~0.45	1.0~3.0
		RM4130	60~300	0.10~0.25	1.0~2.0
M	不鏽鋼 Stainless Steels	OM4010	140~180	0.10~0.30	1.0~2.0
		OM4025	140~180	0.10~0.30	1.0~2.0
		RM4130	60~300	0.10~0.25	1.0~2.0
		RM4230	60~300	0.10~0.25	1.0~2.0
K	鑄鐵 Cast Iron	OM4025	180~300	0.15~0.35	1.0~3.0
		CBN500	700~1500	0.06~0.10	0.1~0.2

※ ACM適用加工類型：N類；SCM適用加工類型：P、M、K類



切削條件數據表 Cutting Conditions

SE_12

被加工材質 Machining Materials		刀片材質 Grade	切削速度 Vc(m/min)	每刃進給 fz(mm/rev)	切深 Ap(mm)
N	鋁及鋁合金 Aluminum&Al	OM5060	500~850	0.15~0.35	3.6~6.0
		GH1	275~450	0.15~0.35	3.0~6.0
		PCD	1000~2000	0.06~0.10	0.05~0.1
H	高硬度材 Hard Material	CBN250	700~1500	0.05~0.10	0.10~0.50

※ ACM適用加工類型：N類；SCM適用加工類型：P、M、K類

RP_12

被加工材質 Machining Materials		刀片材質 Grade	切削速度 Vc(m/min)	每刃進給 fz(mm/rev)	切深 Ap(mm)
P	低合金鋼 Low-Alloy Steels	OM4010	220~300	0.08~0.16	0.1~6.0
		OM4025	180~220	0.08~0.16	0.1~6.0
		RM4130	200~240	0.08~0.16	0.1~6.0
	合金鋼 Alloy Steels	OM4010	100~200	0.08~0.16	0.1~6.0
		OM4025	120~140	0.08~0.16	0.1~6.0
		RM4130	140~160	0.08~0.16	0.1~6.0
M	不鏽鋼 Stainless Steels	OM4010	80~140	0.08~0.14	0.1~3.0
		OM4025	80~120	0.08~0.14	0.1~3.0
		RM4130	100~140	0.08~0.14	0.1~3.0
K	鑄鐵 Cast Iron	OM4025	220~350	0.08~0.25	0.1~6.0
N	鋁合金 Aluminum&Al	OM5005	700~1000	0.06~0.12	0.1~6.0

※ ACM適用加工類型：N類；SCM適用加工類型：P、M、K類



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