

CH / LCL

鎢鋼銑刀頭 鎢鋼抗震刀桿

THREAD-CARBIDE END MILLS & CARBIDE ANTI-VIBRATION HOLDER

- 全新整體鎢鋼銑刀頭，提供平刀、圓鼻刀、球刀型
可替換式刀頭，滿足客戶不同的加工需求。
Three kind of end mills head(square/corner radius/
ball nosed) satisfied different kind work.
- 提供全長最高300mm，適合各種精密模具深腔加工用。
Maximun length with 300mm for any kind of mold machining.
- 適合加工泛用鋼材、鋁合金。
For general steel and aluminum alloy.
- 適合中加工、精加工用。
Use for semi finishing cutting, finishing.



/ CEU

CARBIDE ENGRAVING END MILLS- 1 Flute

鎢鋼雕刻刀



- ① 提供刀尖0.1、0.25、0.5、0.75、1.5mm
寬度，讓設計者有更多的選擇。
We provide tip width 0.1, 0.25, 0.5, 0.75
and 1.5mm for designer.
- ② 適合加工泛用鋼材、鋁合金、黃銅、塑膠、木材。
For general steel, aluminum, brass, plastic and wood.
- ③ 適合中加工、精加工用。
Use for semi finishing cutting, finishing.



THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Square Type- 4F

刃徑 d	公差 Tolerance
$\phi < 3$	0 ~ -0.02
$3 \leq \phi \leq 10$	-0.01 ~ -0.03
$10 < \phi$	-0.01 ~ -0.04

超精銑 Bright Finishing	—
精銑 Finishing	○
中銑 Semi Finishing	◎
粗銑 Roughing	○



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→ 技術資料
Technical Data

THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Ball Nose- 4F

Technical drawing of a drill bit. The drawing shows the bit from a side perspective. Dimensions are indicated as follows: L is the total length of the bit; L_1 is the length of the cutting edge; d_1 is the diameter of the shank; M is the thread pitch; and R is the radius of the cutting edge.

超精銑 Bright Finishing	—
精銑 Finishing	○
中銑 Semi Finishing	◎
粗銑 Roughing	○



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2025

S220 Carbide End Mills

S220 鎢鋼銑刀系列

→ 技術資料
Technical Data

THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Corner Radius- 4F

Technical drawing of a twist drill bit. The drawing shows the bit from a side perspective. Key dimensions are labeled: R is the radius of the cutting edge; d is the outer diameter of the cutting edge; d_1 is the diameter of the cylindrical body; L_1 is the length of the cutting edge; L is the total length of the bit; and M is the thread pitch of the shank. The brand name 'SINCE' is visible on the cylindrical body.

超精銑 Bright Finishing	—
精銑 Finishing	○
中銑 Semi Finishing	◎
粗銑 Roughing	◎



→ 搭配刀桿 P.029, 030
 Holder

→ 切削條件表 P.606
 Cutting Condition

→ 技術資料 P.622
 Technical Data

鎢鋼抗震刀桿

CARBIDE ANTI-VIBRATION HOLDER

· LCL000-000L



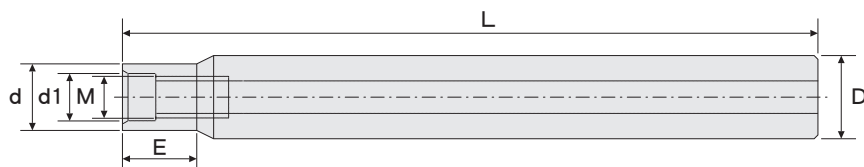
螺紋M Thread	柄徑 D	全長 L	d1	訂購編號 Order No.
M4 × 0.7	8	60	4.5	LCL008-060L
M4 × 0.7	8	100	4.5	LCL008-100L
M4 × 0.7	8	120	4.5	LCL008-120L
M5 × 0.8	10	75	5.5	LCL010-075L
M5 × 0.8	10	100	5.5	LCL010-100L
M5 × 0.8	10	150	5.5	LCL010-150L
M6 × 1.0	12	75	6.5	LCL012-075L
M6 × 1.0	12	100	6.5	LCL012-100L
M6 × 1.0	12	150	6.5	LCL012-150L
M6 × 1.0	12	200	6.5	LCL012-200L
M8 × 1.25	16	100	8.5	LCL016-100L
M8 × 1.25	16	150	8.5	LCL016-150L
M8 × 1.25	16	200	8.5	LCL016-200L
M8 × 1.25	16	250	8.5	LCL016-250L
M10 × 1.5	20	100	10.5	LCL020-100L
M10 × 1.5	20	150	10.5	LCL020-150L
M10 × 1.5	20	200	10.5	LCL020-200L
M10 × 1.5	20	250	10.5	LCL020-250L
M10 × 1.5	20	300	10.5	LCL020-300L
M12 × 1.75	25	100	12.5	LCL025-100L
M12 × 1.75	25	150	12.5	LCL025-150L
M12 × 1.75	25	200	12.5	LCL025-200L
M12 × 1.75	25	250	12.5	LCL025-250L
M12 × 1.75	25	300	12.5	LCL025-300L
M16 × 2.0	32	100	17.0	LCL032-100L
M16 × 2.0	32	150	17.0	LCL032-150L
M16 × 2.0	32	200	17.0	LCL032-200L
M16 × 2.0	32	250	17.0	LCL032-250L
M16 × 2.0	32	300	17.0	LCL032-300L

S220

S220 Carbide End Mills

S220 鎢鋼銑刀系列

CARBIDE ANTI- VIBRATION HOLDER- NECK

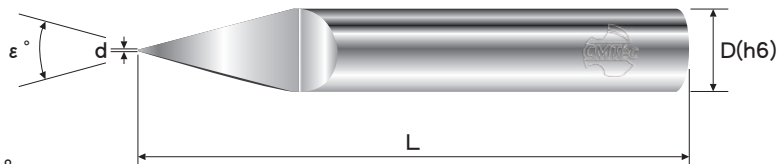
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鎢鋼雕刻刀- 標準型- 1 刃

CARBIDE ENGRAVING END MILLS- Standard- 1F

· CEUM000000

· CEU000000



加工材質：鋼材、鋁合金、黃銅、塑膠、木材。

For steel, aluminum, brass, plastic, wood.

※ 其他刀徑公差規格依需求生產。

Special tolerance(φ) is on request.

超精銑 Bright Finishing	—
精銑 Finishing	◎
中銑 Semi Finishing	○
粗銑 Roughing	—



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切 削 實 例
CUT EXAMPLES

頂角 ε°	刀徑 d	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.
30°	0.10	50	4	1	CEUM001030
30°	0.25	50	4	1	CEUM002530
30°	0.50	50	4	1	CEUM005030
30°	0.75	50	4	1	CEUM007530
30°	0.10	50	6	1	CEU001030
30°	0.25	50	6	1	CEU002530
30°	0.50	50	6	1	CEU005030
30°	0.75	50	6	1	CEU007530
60°	0.10	50	4	1	CEUM001060
60°	0.25	50	4	1	CEUM002560
60°	0.50	50	4	1	CEUM005060
60°	0.75	50	4	1	CEUM007560
60°	1.50	50	4	1	CEUM015060
60°	0.10	50	6	1	CEU001060
60°	0.25	50	6	1	CEU002560
60°	0.50	50	6	1	CEU005060
60°	0.75	50	6	1	CEU007560
60°	1.50	50	6	1	CEU015060
90°	0.10	50	4	1	CEUM001090
90°	0.25	50	4	1	CEUM002590
90°	0.50	50	4	1	CEUM005090
90°	0.75	50	4	1	CEUM007590
90°	1.50	50	4	1	CEUM015090
90°	0.10	50	6	1	CEU001090
90°	0.25	50	6	1	CEU002590
90°	0.50	50	6	1	CEU005090
90°	0.75	50	6	1	CEU007590
90°	1.50	50	6	1	CEU015090

→ 切削條件表 P.555
Cutting Condition

→ 技術資料 P.622
Technical Data

SPECIAL

Carbide Special End Mills

鎢鋼成型銑刀系列

Table 179

CHS / CHCR 鎖牙式- S220鎢鋼銑刀頭 4刃 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

側銑加工 Side Milling

加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	120m/min		100m/min		65m/min		65m/min		170m/min	
外徑 Diameter	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
8mm	4,780	1,000	3,980	800	2,590	520	2,590	620	6,770	1,090
10mm	3,810	920	3,190	770	2,070	420	2,070	500	5,420	870
12mm	3,190	770	2,660	640	1,730	350	1,730	420	4,520	730
16mm	2,390	580	1,990	480	1,300	260	1,300	320	3,390	550
20mm	1,910	450	1,600	390	1,040	210	1,040	250	2,710	440
25mm	1,530	370	1,280	310	830	170	830	200	2,170	350
備註 Remarks	$A_p \leq 0.5D$ $A_e \leq 0.15D$ 		$A_p \leq 0.5D$ $A_e \leq 0.15D$ 		$A_p \leq 0.5D$ $A_e \leq 0.1D$ 		$A_p \leq 0.5D$ $A_e \leq 0.1D$ 		$A_p \leq 0.5D$ $A_e \leq 0.2D$ 	

溝銑加工 Slot Milling

加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	90m/min		70m/min		50m/min		50m/min		150m/min	
外徑 Diameter	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
8mm	3,590	720	2,790	560	1,990	320	1,990	400	5,970	900
10mm	2,870	600	2,230	450	1,600	250	1,600	320	4,780	720
12mm	2,390	500	1,860	380	1,330	220	1,330	270	3,980	600
16mm	1,800	380	1,400	280	1,000	150	1,000	200	2,990	450
20mm	1,440	300	1,120	230	800	130	800	150	2,390	360
25mm	1,150	250	900	180	640	100	640	130	1,910	290
備註 Remarks	$A_p \leq 0.3D$ 		$A_p \leq 0.3D$ 		$A_p \leq 0.1D$ 		$A_p \leq 0.25D$ 		$A_p \leq 0.3D$ 	

※ 切削公式 Cutting Formula : S (主軸轉速) = V_c (切削速度) $\times 1000 / D$ (外徑) $/ \pi$ (3.14) F (進給速度) = f_z (每刃進給量) $\times Z$ (刃數) $\times S$ (主軸轉速)

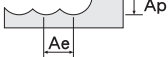
- 當加工聲音尖銳時，請調降主軸轉速(S) (10~40%)。 When the sound is piercing, please lower the spindle speed(S) (10~40%).
- 當機台震動太大時，請調降進給速度(F) (10~40%)。 When the machine is vibrating, please decrease the feed rate(F) (10~40%).
- 當主軸負載太大時，請調降進給速度(F) (10~40%)。 When the spindle load is high, please decrease the feed rate(F) (10~40%).
- 以上數據為建議值，適當的條件仍需視機台狀況，夾治具品質，潤滑冷卻系統...等而改變。

These are recommended values which depend on the condition of the machine, fixture, lubricating & cooling systems... etc. They may have to be adapted.

Table 180

CHB 鎖牙式- S220鎢鋼球刀頭 4刃 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

加工材質 Material	碳素鋼 / 合金鋼 Carbon Steels Alloy Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C SCM,SKT,SKD		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	120m/min		100m/min		65m/min		65m/min		170m/min	
半徑 R	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
4.0R	4,780	1,440	3,980	1,200	2,590	520	2,590	650	6,770	1,700
5.0R	3,810	1,150	3,190	960	2,070	420	2,070	520	5,420	1,470
6.0R	3,190	960	2,660	800	1,730	350	1,730	440	4,520	1,360
8.0R	2,390	720	1,990	600	1,300	260	1,300	330	3,390	1,020
10.0R	1,910	580	1,600	480	1,040	210	1,040	260	2,710	820
12.5R	1,530	460	1,280	390	830	170	830	210	2,170	650
備註 Remarks	Ap=0.05D Ae=0.15D 				Ap=0.04D Ae=0.1D		Ap=0.05D Ae=0.15D		Ap=0.05D Ae=0.15D	

※ 切削公式 Cutting Formula : $S(\text{主軸轉速}) = Vc(\text{切削速度}) \times 1000 / D(\text{外徑}) / \pi (3.14)$ $F(\text{進給速度}) = fz(\text{每刃進給量}) \times Z(\text{刃數}) \times S(\text{主軸轉速})$

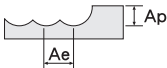
1. 當加工聲音尖銳時，請調降主軸轉速(S) (10~40%)。 When the sound is piercing, please lower the spindle speed(S) (10~40%).
2. 當機台震動太大時，請調降進給速度(F) (10~40%)。 When the machine is vibrating, please decrease the feed rate(F) (10~40%).
3. 當主軸負載太大時，請調降進給速度(F) (10~40%)。 When the spindle load is high, please decrease the feed rate(F) (10~40%).
4. 以上數據為建議值，適當的條件仍需視機台狀況，夾治具品質，潤滑冷卻系統... 等而改變。

These are recommended values which depend on the condition of the machine, fixture, lubricating & cooling systems... etc. They may have to be adapted.

Table 41

N620 奈米鎢鋼短刃長頸型球刀- 2刃(鍍膜) 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

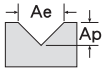
加工材質 Material	合金鋼 Alloy Steels				合金鋼 Alloy Steels				調質鋼 Hardened Steels				調質鋼 Hardened Steels				鑄鐵 Cast Iron			
工件料號 Material Code	SCM,SKT,SKD				SCM,SKT,SKD				SKT,SKD				SKT,SKD				FC,FCD			
硬度 Hardness	HRC20~30				HRC30~45				HRC45~55				HRC55~63				HRC<30			
切削速度 Vc	79m/min				73m/min				56m/min				31m/min				79m/min			
半徑 R	S (rpm)	F (mm/min)	Ap (mm)	Ae (mm)	S (rpm)	F (mm/min)	Ap (mm)	Ae (mm)	S (rpm)	F (mm/min)	Ap (mm)	Ae (mm)	S (rpm)	F (mm/min)	Ap (mm)	Ae (mm)	S (rpm)	F (mm/min)	Ap (mm)	Ae (mm)
0.30R- 3E	27,000	360	0.03	0.12	22,500	225	0.03	0.12	21,600	180	0.03	0.06	15,300	135	0.02	0.04	27,000	360	0.03	0.12
0.30R- 4E	27,000	360	0.03	0.12	22,500	225	0.03	0.12	21,600	180	0.03	0.06	15,300	135	0.02	0.04	27,000	360	0.03	0.12
0.40R- 4E	24,300	540	0.04	0.16	20,700	405	0.04	0.16	18,900	270	0.04	0.08	13,050	180	0.04	0.08	24,300	540	0.04	0.16
0.40R- 6E	21,600	360	0.04	0.12	18,900	225	0.04	0.12	17,100	180	0.02	0.04	10,800	135	0.02	0.04	21,600	360	0.04	0.12
0.50R- 6E	18,900	360	0.05	0.20	17,100	270	0.05	0.20	14,400	180	0.05	0.10	10,350	135	0.05	0.10	18,900	360	0.05	0.20
0.50R- 8E	18,900	360	0.05	0.15	17,100	270	0.05	0.15	14,400	180	0.03	0.05	10,350	135	0.03	0.05	18,900	360	0.05	0.15
0.75R- 9E	15,300	540	0.08	0.30	13,500	270	0.08	0.30	10,800	225	0.08	0.15	7,200	180	0.08	0.15	15,300	540	0.08	0.30
0.75R- 12E	15,300	540	0.08	0.23	13,500	270	0.08	0.23	10,800	225	0.08	0.15	7,200	180	0.08	0.15	15,300	540	0.08	0.23
1.00R- 12E	12,600	630	0.10	0.40	11,700	450	0.10	0.40	9,000	270	0.10	0.20	4,950	180	0.10	0.20	12,600	630	0.10	0.40
1.00R- 16E	12,600	630	0.10	0.30	11,700	450	0.10	0.30	9,000	270	0.06	0.10	4,950	180	0.06	0.10	12,600	630	0.10	0.30
1.50R- 12E	9,000	540	0.15	0.60	7,650	270	0.15	0.60	5,850	225	0.15	0.30	2,700	135	0.15	0.30	9,000	540	0.15	0.60
1.50R- 25E	9,000	540	0.15	0.60	7,650	270	0.15	0.60	5,850	225	0.09	0.15	2,700	135	0.09	0.15	9,000	540	0.15	0.60
2.00R- 25E	6,300	540	0.20	0.80	5,400	360	0.20	0.80	4,500	225	0.20	0.40	2,250	90	0.20	0.40	6,300	540	0.20	0.80
2.00R- 30E	6,300	540	0.20	0.80	5,400	360	0.20	0.80	4,500	225	0.12	0.20	2,250	90	0.12	0.20	6,300	540	0.20	0.80
2.50R- 30E	5,400	450	0.25	1.00	4,500	450	0.25	1.00	3,600	225	0.25	0.50	2,700	90	0.25	0.50	5,400	450	0.25	1.00
2.50R- 40E	5,400	450	0.25	1.00	4,500	450	0.25	1.00	3,600	225	0.25	0.50	2,700	90	0.25	0.50	5,400	450	0.25	1.00
3.00R- 30E	4,500	450	0.30	1.20	3,600	360	0.30	1.20	3,600	270	0.30	0.60	2,700	180	0.30	0.60	4,500	450	0.30	1.20
3.00R- 45E	4,500	450	0.30	1.20	3,600	360	0.30	1.20	3,600	270	0.30	0.60	2,700	180	0.30	0.60	4,500	450	0.30	1.20
切削量 Cutting Amount (mm)																				

※ 切削公式 Cutting Formula : $S(\text{主軸轉速}) = Vc(\text{切削速度}) \times 1000 / D(\text{外徑}) / \pi (3.14)$ $F(\text{進給速度}) = fz(\text{每刃進給量}) \times Z(\text{刃數}) \times S(\text{主軸轉速})$

Table 42

鎢鋼雕刻銑刀- 1刃(白刀) 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

加工材質 Material	碳素鋼 Carbon Steels		不銹鋼 Stainless Steels		鑄鐵 Cast Iron		鋁合金 Aluminum Alloys		高溫合金 High-Temp Alloys		非金屬 Non-metal	
工件料號 Material Code	S35C,S45C,S50C		SUS304		FC,FCD		Al 6061		Ti-6Al-4V		塑膠 Plastic	
硬度 Hardness	—		—		HRC<30		—		HRC<30		—	
切削速度 Vc	75m/min		40m/min		75m/min		75m/min		30m/min		75m/min	
角度 Angle	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
30°	6,000	90	3,180	70	6,000	150	6,000	150	2,390	70	6,000	220
60°	6,000	120	3,180	100	6,000	200	6,000	200	2,390	100	6,000	300
切削量 Cutting Amount (mm)	$Ap \leq 0.25$ 											

※ 切削公式 Cutting Formula : $S(\text{主軸轉速}) = Vc(\text{切削速度}) \times 1000 / D(\text{外徑}) / \pi (3.14)$ $F(\text{進給速度}) = fz(\text{每刃進給量}) \times Z(\text{刃數}) \times S(\text{主軸轉速})$

- 當加工聲音尖銳時，請調降主軸轉速(S) (10~40%)。When the sound is piercing, please lower the spindle speed(S) (10~40%).
- 當機台震動太大時，請調降進給速度(F) (10~40%)。When the machine is vibrating, please decrease the feed rate(F) (10~40%).
- 當主軸負載太大時，請調降進給速度(F) (10~40%)。When the spindle load is high, please decrease the feed rate(F) (10~40%).
- 以上數據為建議值，適當的條件仍需視機台狀況，夾治具品質，潤滑冷卻系統...等而改變。

These are recommended values which depend on the condition of the machine, fixture, lubricating & cooling systems... etc. They may have to be adapted.