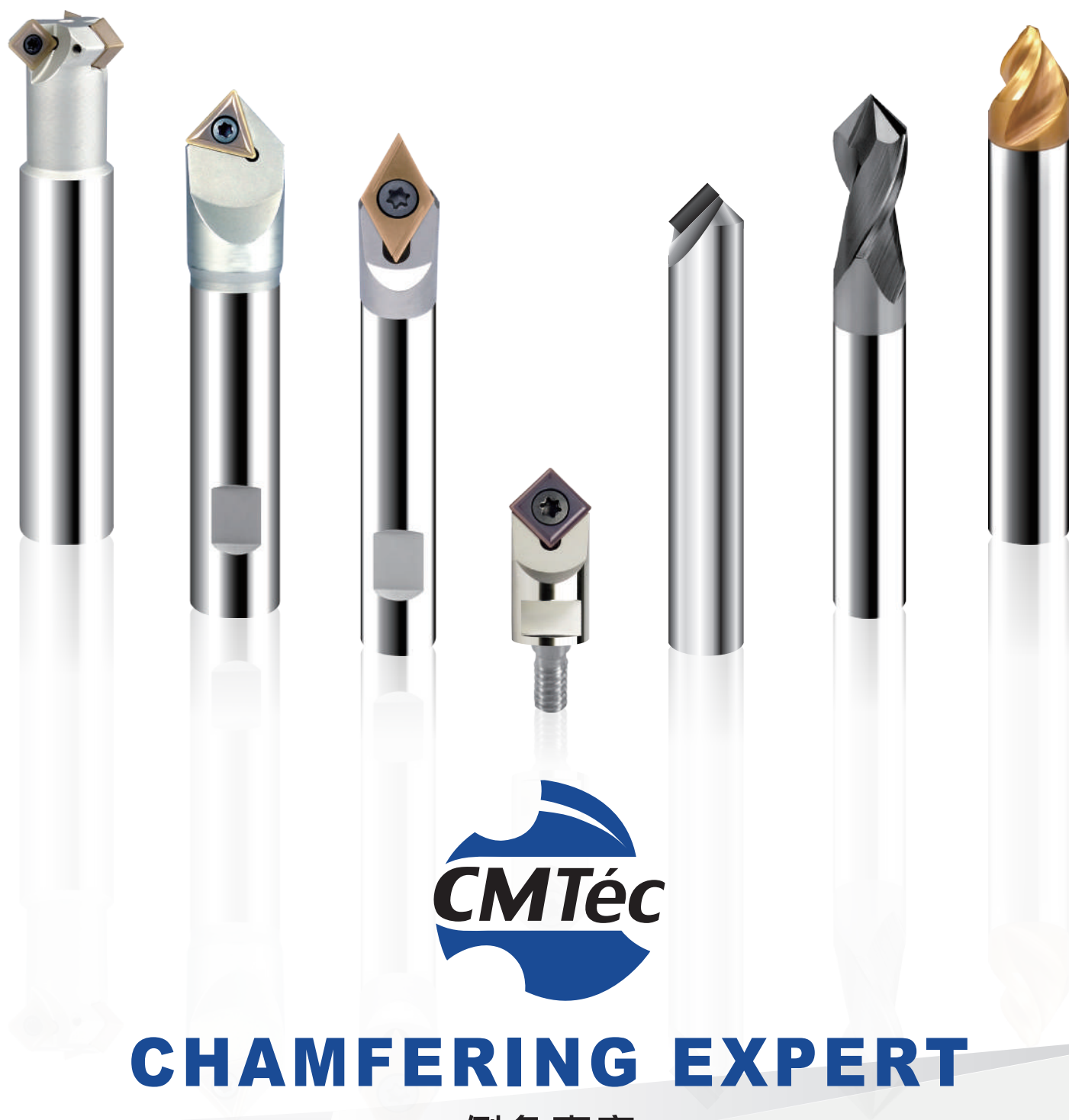




CHAMFERING EXPERT

倒角專家

2021- No.25

CHIN MING Corporation

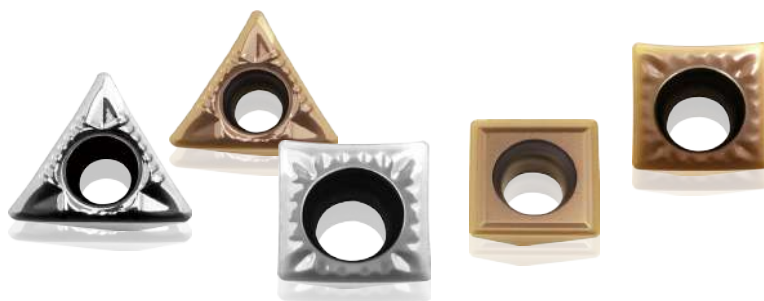


西門德克

—— 完美 · 精準 · 效率 ——

本公司提供各式倒角切削刀具，可應用不同材質之加工，同時針對模具深腔倒角加工，提供刀具 $\Phi 3\sim 50\text{mm}$ 和全長 $50\sim 230\text{mm}$ ，讓您依不同加工孔徑和深度，有更多的刀具選擇，且專業 · 設計 · 製造客製化非標、精密成型刀具，最佳倒角解決方案與技術支援盡在CMTec。

CMTec provides a wide range of chamfering cutting tools for machining different materials and deep cavity chamfering for molds, with tools ranging from $\Phi 3\sim 50\text{mm}$ and $50\sim 230\text{mm}$ in length, so that you can have more choices of cutting tools according to different hole diameters and depths. CMTec provide professional-design and manufacturing of customized non-standard and precision molding tools, as well as the best chamfering solutions and technical support.



SINCE 1987

CHIN MING Corporation

索引 / INDEX

 NEW CEFC1	品 名：CEFC1 鎢鋼鋁用標準 & 長柄型倒角銑刀- 1刃 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving. 刃徑範圍 Diameter：Φ 3~12mm 全長範圍 O.A.L.：50~100mm 倒角角度 Angle：60°、90°	頁數 P.03
 NEW MEFCD	品 名：MEFCD 鎢鋼高硬用標準 & 長柄型倒角銑刀- 3刃 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving. 刃徑範圍 Diameter：Φ 3~12mm 全長範圍 O.A.L.：50~100mm 倒角角度 Angle：60°、90°	頁數 P.04
 NEW MEFC	品 名：MEFC 鎢鋼標準 & 長柄型倒角銑刀- 3刃 加工方式：精準倒角加工(可由編程精準控制倒角尺寸)、定點加工、雕刻加工。 Cut Mode：Precision Chamfering & Countersinking, Spotting, Engraving. 刃徑範圍 Diameter：Φ 3~12mm 全長範圍 O.A.L.：50~100mm 倒角角度 Angle：60°、90°	頁數 P.05
 CEFC	品 名：CEFC 鎢鋼扁形倒角銑刀- 2刃 加工方式：倒角加工。 Cut Mode：Chamfering & Countersinking. 刃徑範圍 Diameter：Φ 3~16mm 全長範圍 O.A.L.：50~75mm 倒角角度 Angle：60°、90°、120°	頁數 P.06
 CEC	品 名：CEC 鎢鋼倒角兼用銑刀- 2刃 加工方式：倒角加工、側銑加工、鑽孔加工、定點加工、開V槽加工。 Cut Mode：Chamfering & Countersinking, Side Milling, Drilling, Spotting, V-Grooving. 刃徑範圍 Diameter：Φ 3~20mm 全長範圍 O.A.L.：50~100mm 倒角角度 Angle：90°、120°	頁數 P.07
 PEFC	品 名：PCD 聚晶鑽石倒角銑刀- 1刃 加工方式：倒角加工。 Cut Mode：Chamfering & Countersinking. 刃徑範圍 Diameter：Φ 4~6mm 全長範圍 O.A.L.：50~75mm 倒角角度 Angle：60°、90°	頁數 P.08
 CECS	品 名：CECS 鎢鋼鳩尾槽銑刀 加工方式：倒角加工。 Cut Mode：Chamfering. 刃徑範圍 Diameter：Φ 3~12mm 全長範圍 O.A.L.：60~75mm 倒角角度 Angle：90°、120°	頁數 P.09
 CECSW	品 名：CECSW 鎢鋼等角鳩尾槽銑刀 加工方式：倒角加工。 Cut Mode：Chamfering & Countersinking. 刃徑範圍 Diameter：Φ 6~12mm 全長範圍 O.A.L.：60~75mm 倒角角度 Angle：60°、90°	頁數 P.10

 ECSC	品 名：ECSC 多功能倒角型銑刀桿 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工、車削加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving, Turning. 刃徑範圍 Diameter：φ 13mm 全長範圍 O.A.L.：100~150mm 倒角角度 Angle：90°	頁數 P.11
 HCSC	品 名：HCSC 多功能倒角型銑刀頭 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving. 刃徑範圍 Diameter：φ 13mm 全長範圍 O.A.L.：105~230mm 倒角角度 Angle：90°	頁數 P.12
 ECDC	品 名：ECDC 多功能倒角型銑刀桿 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工、車削加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving, Turning. 刃徑範圍 Diameter：φ 12mm 全長範圍 O.A.L.：60~100mm 倒角角度 Angle：60°	頁數 P.13
 ECTCX	品 名：ECTCX 多功能倒角型銑刀桿 加工方式：倒角加工、定點加工、開V槽加工、雕刻加工、車削加工。 Cut Mode：Chamfering & Countersinking, Spotting, V-Grooving, Engraving, Turning. 刃徑範圍 Diameter：φ 20mm 全長範圍 O.A.L.：120~150mm 倒角角度 Angle：90°	頁數 P.14
 ECSP	品 名：ECSP 倒角型銑刀桿 加工方式：倒角加工。 Cut Mode：Chamfering & Countersinking. 刃徑範圍 Diameter：φ 15~50mm 全長範圍 O.A.L.：120~150mm 倒角角度 Angle：90°	頁數 P.15
切削條件表 Cutting Condition		頁數 P.16
計算倒角加工寬度Ae How to calculate Ae		頁數 P.22

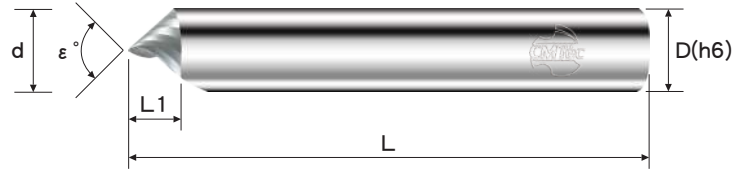
CEFC1 鎢鋼鋁用倒角銑刀- 標準&長柄型- 1刃

NEW

CEFC1- MICRO GRAIN CARBIDE CHAMFERING CUTTER- For Aluminum- Standard & Long Shank- 1F

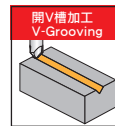
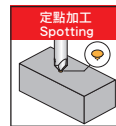
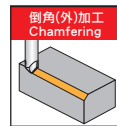


01



切削刃中心小平面 $\leq$ 切削刃徑的10%。
The cutting edge's center flat is $\leq 10\%$ of the cutting diameter.

角度	公差 Tolerance
ε°	$\pm 1^\circ$



頂角 ε°	刃徑 d	刃長 L1	全長 L	柄徑 D	白刀訂購編號 Uncoated Order No.
60°	3.0	2.59	50	3	CEFC103060
60°	4.0	3.46	50	4	CEFC104060
60°	6.0	5.19	50	6	CEFC106060
60°	8.0	6.92	60	8	CEFC108060
60°	10.0	8.66	60	10	CEFC110060
60°	12.0	10.39	60	12	CEFC112060
90°	3.0	1.50	50	3	CEFC103090
90°	4.0	2.00	50	4	CEFC104090
90°	6.0	3.00	50	6	CEFC106090
90°	8.0	4.00	60	8	CEFC108090
90°	10.0	5.00	60	10	CEFC110090
90°	12.0	6.00	60	12	CEFC112090
60°	3.0	2.59	75	3	CEFCL103060
60°	4.0	3.46	75	4	CEFCL104060
60°	6.0	5.19	75	6	CEFCL106060
60°	8.0	6.92	100	8	CEFCL108060
60°	10.0	8.66	100	10	CEFCL110060
60°	12.0	10.39	100	12	CEFCL112060
90°	3.0	1.50	75	3	CEFCL103090
90°	4.0	2.00	75	4	CEFCL104090
90°	6.0	3.00	75	6	CEFCL106090
90°	8.0	4.00	100	8	CEFCL108090
90°	10.0	5.00	100	10	CEFCL110090
90°	12.0	6.00	100	12	CEFCL112090

應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	—	—	—	—	—	—	—	◎	—

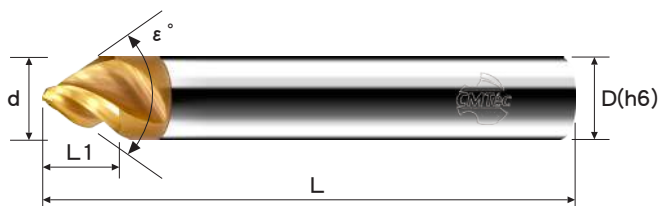
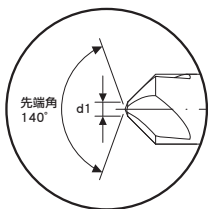
MEFCD 鎢鋼高硬度倒角銑刀- 標準 & 長柄型- 3刃

NEW

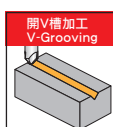
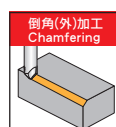
MEFCD- ULTRA CARBIDE CHAMFERING CUTTER- For High Hardness- Standard & Long Shank- 3F



02



角度	公差 Tolerance
ε°	$\pm 1^\circ$



頂角 ε°	刃徑 d	先端徑 d1	刃長 L1	全長 L	柄徑 D	鍍膜訂購編號 Coated Order No.
60°	3.0	0.6	2.17	50	3	MEFCD303060A
60°	4.0	0.8	2.91	50	4	MEFCD304060A
60°	6.0	1.2	4.37	50	6	MEFCD306060A
60°	8.0	1.6	5.83	60	8	MEFCD308060A
60°	10.0	2.0	7.28	60	10	MEFCD310060A
60°	12.0	2.4	8.74	60	12	MEFCD312060A
90°	3.0	0.6	1.30	50	3	MEFCD303090A
90°	4.0	0.8	1.74	50	4	MEFCD304090A
90°	6.0	1.2	2.61	50	6	MEFCD306090A
90°	8.0	1.6	3.49	60	8	MEFCD308090A
90°	10.0	2.0	4.36	60	10	MEFCD310090A
90°	12.0	2.4	5.23	60	12	MEFCD312090A
60°	3.0	0.6	2.17	75	3	MEFCDL303060A
60°	4.0	0.8	2.91	75	4	MEFCDL304060A
60°	6.0	1.2	4.37	75	6	MEFCDL306060A
60°	8.0	1.6	5.83	100	8	MEFCDL308060A
60°	10.0	2.0	7.28	100	10	MEFCDL310060A
60°	12.0	2.4	8.74	100	12	MEFCDL312060A
90°	3.0	0.6	1.30	75	3	MEFCDL303090A
90°	4.0	0.8	1.74	75	4	MEFCDL304090A
90°	6.0	1.2	2.61	75	6	MEFCDL306090A
90°	8.0	1.6	3.49	100	8	MEFCDL308090A
90°	10.0	2.0	4.36	100	10	MEFCDL310090A
90°	12.0	2.4	5.23	100	12	MEFCDL312090A

應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	○	◎	◎	◎	—	○	◎	—	—

→ 切削條件表
Cutting Condition P.016

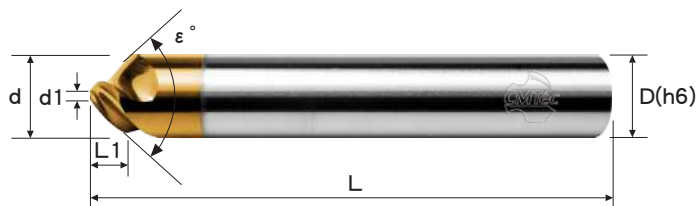
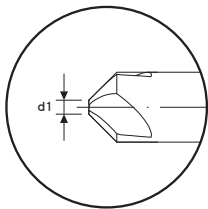
MEFC 鎢鋼倒角銑刀- 標準 & 長柄型- 3刃

NEW

MEFC- ULTRA CARBIDE CHAMFERING CUTTER- Standard & Long Shank- 3F



03

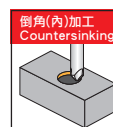
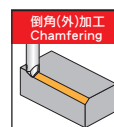


先端徑 d1	公差 Tolerance
d1 ≤ 1	0 ~ -0.02
d1 > 1	0 ~ -0.05

角度	公差 Tolerance
ε°	± 0.5°

產品特色：精準倒角加工
(可由編程精準控制倒角尺寸)。

Features : Precise Chamfering
Programming control chamfer dimension.



頂角 ε°	刃徑 d	先端徑 d1 (Max)	刃長 L1	全長 L	柄徑 D	鍍膜訂購編號 Coated Order No.
60°	3.0	0.8	1.90	50	3	MEFC303060A
60°	4.0	0.8	2.77	50	4	MEFC304060A
60°	6.0	1.0	4.33	50	6	MEFC306060A
60°	8.0	1.0	6.06	60	8	MEFC308060A
60°	10.0	2.0	6.92	60	10	MEFC310060A
60°	12.0	2.0	8.66	60	12	MEFC312060A
90°	3.0	0.8	1.10	50	3	MEFC303090A
90°	4.0	0.8	1.60	50	4	MEFC304090A
90°	6.0	1.0	2.50	50	6	MEFC306090A
90°	8.0	1.0	3.50	60	8	MEFC308090A
90°	10.0	2.0	4.00	60	10	MEFC310090A
90°	12.0	2.0	5.00	60	12	MEFC312090A
60°	3.0	0.8	1.90	75	3	MEFCL303060A
60°	4.0	0.8	2.77	75	4	MEFCL304060A
60°	6.0	1.0	4.33	75	6	MEFCL306060A
60°	8.0	1.0	6.06	100	8	MEFCL308060A
60°	10.0	2.0	6.92	100	10	MEFCL310060A
60°	12.0	2.0	8.66	100	12	MEFCL312060A
90°	3.0	0.8	1.10	75	3	MEFCL303090A
90°	4.0	0.8	1.60	75	4	MEFCL304090A
90°	6.0	1.0	2.50	75	6	MEFCL306090A
90°	8.0	1.0	3.50	100	8	MEFCL308090A
90°	10.0	2.0	4.00	100	10	MEFCL310090A
90°	12.0	2.0	5.00	100	12	MEFCL312090A

應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	◎	◎	◎	○	—	○	◎	—	—

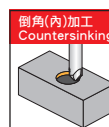
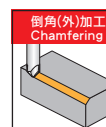
→ 切削條件表 P.017
Cutting Condition

CEFC 鎢鋼扁形倒角銑刀- 2刃

CEFC- MICRO GRAIN CARBIDE FLAT CHAMFERING END MILLS- 2F



04



角度	公差 Tolerance
ε°	$\pm 1^\circ$

頂角 ε°	刃徑 d	刃長 L1	全長 L	柄徑 D	白刀訂購編號 Uncoated Order No.
60°	3.0	2.59	50	3	CEFC03060
60°	4.0	3.46	50	4	CEFC04060
60°	6.0	5.19	50	6	CEFC06060
60°	8.0	6.92	50	8	CEFC08060
60°	10.0	8.66	75	10	CEFC10060
60°	12.0	10.39	75	12	CEFC12060
60°	16.0	13.85	75	16	CEFC16060
90°	3.0	1.50	50	3	CEFC03090
90°	4.0	2.00	50	4	CEFC04090
90°	6.0	3.00	50	6	CEFC06090
90°	8.0	4.00	50	8	CEFC08090
90°	10.0	5.00	75	10	CEFC10090
90°	12.0	6.00	75	12	CEFC12090
90°	16.0	8.00	75	16	CEFC16090
120°	3.0	0.86	50	3	CEFC030C0
120°	4.0	1.15	50	4	CEFC040C0
120°	6.0	1.73	50	6	CEFC060C0
120°	8.0	2.30	50	8	CEFC080C0
120°	10.0	2.88	75	10	CEFC100C0
120°	12.0	3.46	75	12	CEFC120C0
120°	16.0	4.61	75	16	CEFC160C0

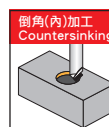
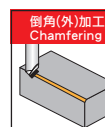
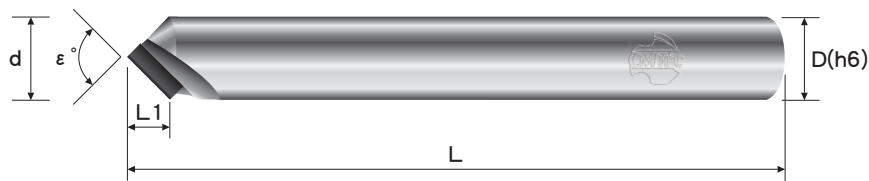
應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	○	—	—	—	—	—	—	◎	—

PCD 聚晶鑽石倒角銑刀- 1刃

PCD- POLYCRYSTALLINE COMPOUND DIAMOND- Chamfering Cutters- 1F



06



角度	公差 Tolerance
ε°	$\pm 1^\circ$

[illegible]

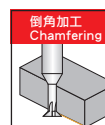
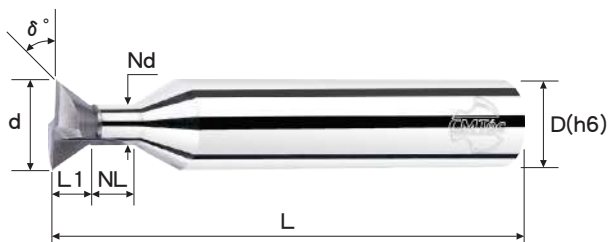
應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	—	—	—	—	—	—	—	◎	○

CECS- MICRO GRAIN CARBIDE ANGULAR CUTTER (Dovetail)- Flat Flute



Milling Table

07

[illegible]

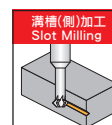
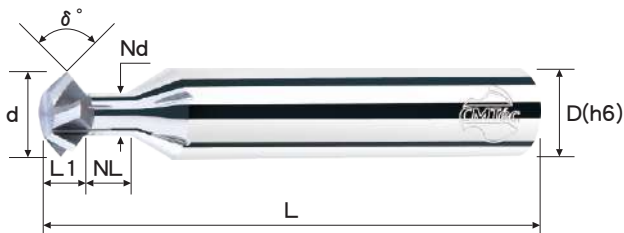
應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	○	—	—	—	—	○	—	◎	—

CECSW 鎢鋼等角鳩尾槽銑刀

CECSW- MICRO GRAIN CARBIDE W-ANGULAR CUTTER (Dovetail)



07



角度	公差 Tolerance
δ°	$\pm 1^\circ$

[illegible]

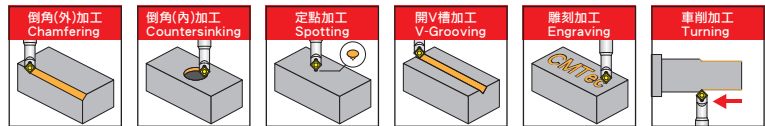
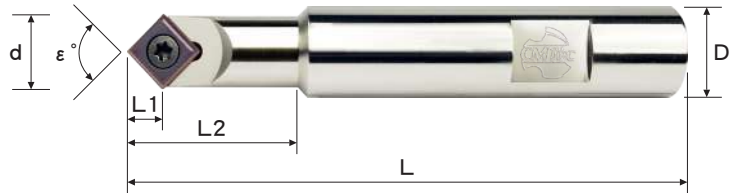
應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	○	—	—	—	—	○	—	◎	—

ECSC 多功能倒角型銑刀桿

ECSC- INDEXABLE- Multipurpose Chamfering Cutter



08



頂角 ε °	刃徑 d	刃長 L1	有效長 L2	全長 L	柄徑 D	刀片 數量 Teeth	螺絲 Screw	螺絲 扳手 Wrench	刀桿訂購編號 Cutter Order No.
90°	13	5.5	29	100	10	1	TS3520	ETF15	ECSC09-01013-100L
90°	13	5.5	29	100	12	1			ECSC09-01013-100L-12
90°	13	5.5	29	100	16	1			ECSC09-01013-100L-16
90°	13	5.5	29	150	16	1			ECSC09-01013-150L-16

刀片2D圖 Drawing	尺寸 Dimension (mm)					刀 片 Insert	刀片訂購編號 Insert Order No.
	A	B	S	r	d1		
	9.53	9.53	3.97	0.4	4.4		SCGX09T304-AG-CM10
	9.53	9.53	3.97	0.4	4.4		SCGX09T304-AG-CM6012
	9.53	9.53	3.97	0.4	4.4		SCMX09T304-SM-CM6032
	9.53	9.53	3.97	0.4	4.4		SCMX09T304-SP-CM6032

※ SP斷屑槽【SCMX09T304-SP】不適合用於雕刻加工。※ SP chip breaker is not suitable for engraving.

應用材質 Work Material 刀片 Insert	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
SCGX09T304-AG-CM10	—	—	—	—	—	—	—	◎	—
SCGX09T304-AG-CM6012	—	—	—	—	—	—	—	◎	—
SCMX09T304-SM-CM6032	◎	◎	◎	—	—	○	◎	—	○
SCMX09T304-SP-CM6032	◎	◎	◎	○	—	—	◎	—	—

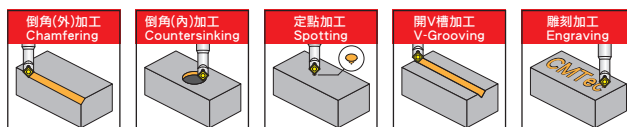
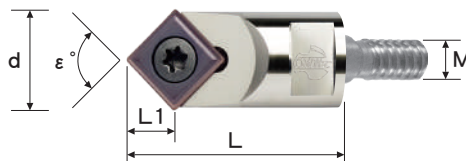
HCSC 多功能倒角型銑刀頭

NEW

HCSC- THREAD- INDEXABLE- Multipurpose Chamfering Cutter



08



頂角 ϵ°	刃徑 d	刃長 L1	全長 L	螺紋M Thread	刀片 數量 Teeth	螺絲 Screw	螺絲 扳手 Wrench	開口 扳手 Wrench	刀桿訂購編號 Cutter Order No.
90°	13	5.5	30	M6×1.0	1	TS3520	ETF15	TC08	HCSC09-01013

刀片2D圖 Drawing	尺寸 Dimension (mm)					刀 片 Insert	刀片訂購編號 Insert Order No.
	A	B	S	r	d1		
	9.53	9.53	3.97	0.4	4.4		SCGX09T304-AG-CM10
	9.53	9.53	3.97	0.4	4.4		SCGX09T304-AG-CM6012
	9.53	9.53	3.97	0.4	4.4		SCM09T304-SM-CM6032
	9.53	9.53	3.97	0.4	4.4		SCM09T304-SP-CM6032

外徑 Diameter	全長 L	螺紋M Thread	刀 桿 Holder	鎢鋼抗震刀桿訂購編號 CARBIDE ANTI-VIBRATION HOLDER Order No.
12	75	M6×1.0		LCL012-075L
12	100	M6×1.0		LCL012-100L
12	150	M6×1.0		LCL012-150L
12	200	M6×1.0		LCL012-200L

※ SP斷屑槽【SCM09T304-SP】不適合用於雕刻加工。※ SP chip breaker is not suitable for engraving.

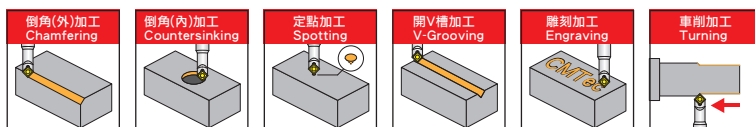
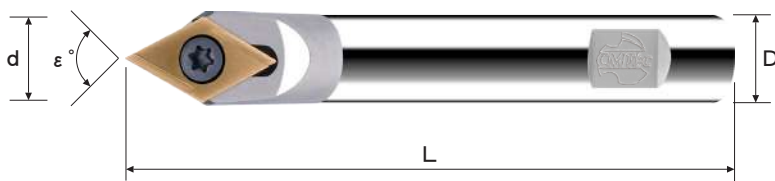
應用材質 Work Material 刀片 Insert	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
SCGX09T304-AG-CM10	—	—	—	—	—	—	—	◎	—
SCGX09T304-AG-CM6012	—	—	—	—	—	—	—	◎	—
SCM09T304-SM-CM6032	◎	◎	◎	—	—	○	◎	—	○
SCM09T304-SP-CM6032	◎	◎	◎	○	—	—	◎	—	—

➡ 切削條件表
Cutting Condition P.020

ECDC- INDEXABLE- Multipurpose Chamfering Cutter



08



頂角 ϵ°	刃徑 d	全長 L	柄徑 D	刀片 數量 Teeth	螺絲 Screw	螺絲 扳手 Wrench	搭配刀片 Insert	刀桿訂購編號 Cutter Order No.
60°	12	60	10	1	TS3520	ETF15	DCEX11T3..	ECDC11-01012-060L
60°	12	100	12	1				ECDC11-01012-100L

刀片2D圖 Drawing	尺寸 Dimension (mm)		刀 片 Insert	刀片訂購編號 Insert Order No.
	S	r		
	3.97	0.1		DCEX11T301-XF-CM6032
	3.97	0.2		DCEX11T302-XF-CM6032
	3.97	0.4		DCEX11T304-XF-CM6032
	3.97	0.4		DCEX11T304-XR-CM6032
	3.97	0.8		DCEX11T308-XR-CM6032

應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30
	◎	◎	◎	○	—	◎	◎	—	○

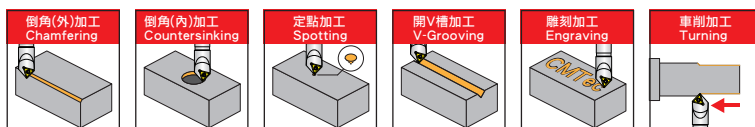
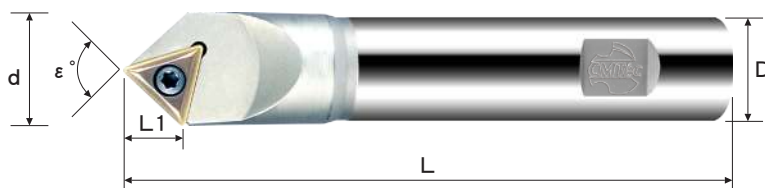
ECTCX 多功能倒角型銑刀桿

NEW

ECTCX- INDEXABLE- Multipurpose Chamfering Cutter



08



頂角 ϵ°	刃徑 d	刃長 L1	全長 L	柄徑 D	刀片 數量 Teeth	螺絲 Screw	螺絲 扳手 Wrench	搭配刀片 Insert	刀桿訂購編號 Cutter Order No.
90°	20	10.68	120	20	1	TS3521	ETF15	TCGX16T3.. TCMX16T3..	ECTCX16-01020-120L
90°	20	10.68	150	20	1				ECTCX16-01020-150L

刀片2D圖 Drawing	尺寸 Dimension (mm)					刀 片 Insert	刀片訂購編號 Insert Order No.
	A	B	S	r	d1		
	16.5	—	3.97	0.8	—		TCGX16T308-AG-CM10
	16.5	—	3.97	0.8	—		TCGX16T308-AG-CM6012
	16.5	—	3.97	0.8	—		TCMX16T308-MP-CM6032

※ MP斷屑槽【TCMX16T308-MP】不適合用於雕刻加工。 ※ MP chip breaker is not suitable for engraving.

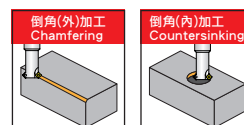
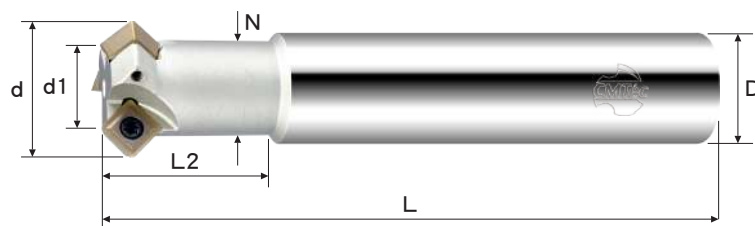
刀片 Insert	應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30	
TCGX16T308-AG-CM10	—	—	—	—	—	—	—	⊙	—	
TCGX16T308-AG-CM6012	⊙	○	—	—	—	○	⊙	⊙	○	
TCMX16T308-MP-CM6032	⊙	⊙	⊙	○	—	—	⊙	—	—	

➡ 切削條件表
Cutting Condition P.020

ECSP- INDEXABLE- Chamfering Cutter



10



倒角角度 Chamfer Angle	刃徑 d	d1	L2	N	全長 L	柄徑 D	刀片 數量 Teeth	螺絲 Screw	螺絲 扳手 Wrench	搭配刀片 Insert	刀桿訂購編號 Cutter Order No.
90°	15	8.26	20	10	120	12	2	TS2003	ETF06	SPMG0502..	ECSP05-02015-120L
90°	17	10.26	25	11	150	16	3				ECSP05-03017-150L
90°	19	12.26	30	13	150	16	3				ECSP05-03019-150L
90°	24	17.26	35	18	150	20	4				ECSP05-04024-150L
90°	22	13.85	30	16	120	16	3	TS2205	ETF06	SPMG0602..	ECSP06-03022-120L
90°	27	16.44	30	17	120	20	3	TS2511	ETF08	SPMG07T3..	ECSP07-03027-120L
90°	30	16.80	40	19	150	20	2	TS3504	ETF15	SPMG0904..	ECSP09-02030-150L
90°	40	26.80	40	29	150	25	3				ECSP09-03040-150L
90°	50	36.80	40	39	150	25	4				ECSP09-04050-150L

刀片2D圖 Drawing	尺寸 Dimension (mm)				刀 片 Insert	刀片訂購編號 Insert Order No.
	A	S	r	d1		
	5.00	2.38	0.4	2.30		SPMG050204-MG-CM6022
	6.00	2.38	0.4	2.65		SPMG060204-MG-CM6022
	7.94	3.97	0.8	2.85		SPMG07T308-MG-CM6022
	9.80	4.30	0.8	4.05		SPMG090408-MG-CM6022
	9.80	4.30	0.8	4.05		SPMG090408-RG-CM6022

刀片 Insert	應用材質 Work Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys	高溫合金 High Temp Alloys
	HRC<20	HRC20~30	HRC30~45	HRC45~55	HRC55~63	—	HRC<30	—	HRC<30	
	SPMG050204-MG-CM6022	◎	◎	◎	—	—	◎	◎	—	○
	SPMG060204-MG-CM6022	◎	◎	◎	—	—	◎	◎	—	○
	SPMG07T308-MG-CM6022	◎	◎	◎	—	—	◎	◎	—	○
	SPMG090408-MG-CM6022	◎	◎	◎	—	—	◎	◎	—	○
	SPMG090408-RG-CM6022	◎	◎	◎	—	—	◎	◎	—	○

Table 01 CEFC1 鎢鋼鋁用倒角銑刀- 1刃 切削條件表

CEFC1- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

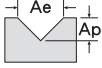
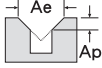
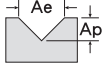
加工材質 Material	鋁合金 Aluminum Alloys					
工件料號 Material Code	Al 5052 / 6061 / 7075					
硬度 Hardness	—					
加工方式 Cutting Mode	定點加工 Spotting		倒角加工 Chamfering		雕刻加工 Engraving	
切削速度 Vc	100~200m/min		100~200m/min		100~200m/min	
外徑 Diameter	S (rpm)	f (mm/rev)	S (rpm)	f (mm/rev)	S (rpm)	f (mm/rev)
3mm	11,000~21,000	0.01	11,000~21,000	0.01~0.04	11,000~21,000	0.01~0.02
4mm	8,000~16,000	0.01	8,000~16,000	0.01~0.04	8,000~16,000	0.01~0.03
6mm	5,000~11,000	0.02	5,000~11,000	0.02~0.07	5,000~11,000	0.02~0.04
8mm	4,000~8,000	0.03	4,000~8,000	0.02~0.10	4,000~8,000	0.03~0.06
10mm	3,200~6,400	0.03	3,200~6,400	0.02~0.15	3,200~6,400	0.03~0.06
12mm	2,700~5,300	0.04	2,700~5,300	0.02~0.14	2,700~5,300	0.04~0.08
16mm	2,000~4,000	0.05	2,000~4,000	0.02~0.14	2,000~4,000	0.05~0.10
切削量 Cutting Amount (mm)			Ap=0.5~1.0mm 		Ap≤0.03D 	

Table 02 MEFCD 鎢鋼高硬用倒角銑刀- 3刃 切削條件表

MEFCD- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

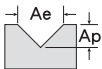
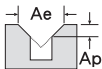
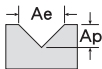
加工材質 Material	合金鋼 Alloy Steels					
工件料號 Material Code	SCM,SKT,SKD					
硬度 Hardness	HRC≤50					
加工方式 Cutting Mode	定點加工 Spotting		倒角加工 Chamfering		雕刻加工 Engraving	
切削速度 Vc	90~150m/min		90~150m/min		90~150m/min	
外徑 Diameter	S (rpm)	f (mm/rev)	S (rpm)	f (mm/rev)	S (rpm)	f (mm/rev)
3mm	9,550~15,920	0.01	9,550~15,920	0.03~0.06	9,550~15,920	0.02~0.04
4mm	7,170~11,940	0.02	7,170~11,940	0.03~0.06	7,170~11,940	0.02~0.04
6mm	4,780~7,960	0.02	4,780~7,960	0.05~0.10	4,780~7,960	0.03~0.08
8mm	3,580~5,970	0.03	3,580~5,970	0.10~0.20	3,580~5,970	0.03~0.08
10mm	2,870~4,780	0.05	2,870~4,780	0.15~0.30	2,870~4,780	0.05~0.13
12mm	2,390~3,980	0.07	2,390~3,980	0.20~0.35	2,390~3,980	0.10~0.15
16mm	1,790~2,990	0.08	1,790~2,990	0.20~0.35	1,790~2,990	0.10~0.15
切削量 Cutting Amount (mm)			Ap=0.5~1.0mm 		Ap≤0.03D 	

Table 03 MEFC 鎢鋼倒角銑刀- 3刃 切削條件表

MEFC- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

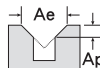
加工材質 Material	合金鋼 Alloy Steels			
工件料號 Material Code	SCM,SKT,SKD			
硬度 Hardness	HRC≤50			
加工方式 Cutting Mode	定點加工 Spotting		倒角加工 Chamfering	
切削速度 Vc	90~150m/min		90~150m/min	
外徑 Diameter	S (rpm)	f (mm/rev)	S (rpm)	f (mm/rev)
3mm	9,550~15,920	0.01	9,550~15,920	0.03~0.06
4mm	7,170~11,940	0.02	7,170~11,940	0.03~0.06
6mm	4,780~7,960	0.02	4,780~7,960	0.05~0.10
8mm	3,580~5,970	0.03	3,580~5,970	0.10~0.20
10mm	2,870~4,780	0.05	2,870~4,780	0.15~0.30
12mm	2,390~3,980	0.07	2,390~3,980	0.20~0.35
16mm	1,790~2,990	0.08	1,790~2,990	0.20~0.35
切削量 Cutting Amount (mm)			Ap=0.5~1.0mm 	

Table 04 CEFC 鎢鋼扁形倒角銑刀- 2刃 切削條件表

CEFC- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

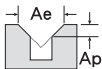
加工材質 Material	鋁合金 Aluminum Alloys	
工件料號 Material Code	Al 5052 / 6061 / 7075	
硬度 Hardness	—	
加工方式 Cutting Mode	倒角加工 Chamfering	
切削速度 Vc	100~200m/min	
外徑 Diameter	S (rpm)	f (mm/rev)
3mm	11,000~21,000	0.01~0.04
4mm	8,000~16,000	0.01~0.04
6mm	5,000~11,000	0.02~0.07
8mm	4,000~8,000	0.02~0.10
10mm	3,200~6,400	0.02~0.15
12mm	2,700~5,300	0.02~0.14
16mm	2,000~4,000	0.02~0.14
切削量 Cutting Amount (mm)	Ap=0.5~1.0mm 	

Table 05 CEC 鎢鋼倒角兼用銑刀- 2刃(鍍膜) 切削條件表

CEC- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

加工材質 Material	碳素鋼 Carbon Steels			合金鋼 Alloy Steels			不銹鋼 Stainless Steels			鋁合金 Aluminum Alloys		
工件料號 Material Code	S35C,S45C,S50C			SCM, SKT, SKD			SUS304			Al 5052 / 6061 / 7075		
硬度 Hardness	HRC<20			HRC20~30			—			—		
切削速度 Vc	60m/min			50m/min			40m/min			50m/min		
外徑 Diameter	S (rpm)	縱向 F Vertical (mm/min)	橫向 F Horizontal (mm/min)	S (rpm)	縱向 F Vertical (mm/min)	橫向 F Horizontal (mm/min)	S (rpm)	縱向 F Vertical (mm/min)	橫向 F Horizontal (mm/min)	S (rpm)	縱向 F Vertical (mm/min)	橫向 F Horizontal (mm/min)
3mm	6,400	25	50	5,300	20	40	4,200	20	40	5,300	40	80
4mm	4,800	25	55	4,000	20	45	3,200	20	45	4,000	40	85
6mm	3,200	25	60	2,650	20	50	2,100	20	50	2,650	40	90
8mm	2,400	25	65	2,000	20	55	1,600	20	55	2,000	40	110
10mm	1,900	25	70	1,600	20	60	1,300	20	60	1,600	40	110
12mm	1,600	25	70	1,350	20	60	1,050	20	60	1,350	40	120
16mm	1,200	30	80	1,000	25	65	800	25	65	1,000	50	120
20mm	950	30	80	800	25	65	640	25	65	800	50	110
備註 Remarks												

Table 06 PCD 聚晶鑽石倒角銑刀- 1刃 切削條件表

PCD END MILLS- CUTTING CONDITION TABLE

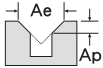
加工材質 Material	鋁合金 Aluminum Alloys		鈦合金 Titanium Alloys		非金屬 Non-metal	
工件料號 Material Code	Al 5052 / 6061 / 7075		—		木材 Wood	
硬度 Hardness	—		HRC<30		—	
切削速度 Vc	300m/min		35m/min		600m/min	
外徑 Diameter	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
4mm	23,890	55~300	2,790	40~200	47,770	60~340
6mm	15,920	55~300	1,860	40~200	31,850	60~340
備註 Remarks						

Table 07 CECS 鳩尾槽銑刀 / CECSW 等角鳩尾槽銑刀 切削條件表

CECS / CECSW- SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

加工材質 Material	碳素鋼 Carbon Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		—		—	
切削數值 Vc	25m/min		15m/min		60m/min	
外徑 Diameter	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
4mm	1,990	80	1,190	50	4,780	80
6mm	1,330	80	800	50	3,180	80
8mm	980	90	600	60	2,400	90
10mm	790	70	480	50	1,900	90
12mm	670	70	400	50	1,600	90
14mm	580	70	330	50	1,360	90
16mm	500	70	300	50	1,200	100
18mm	450	70	260	50	1,060	100
20mm	400	60	240	40	950	80
25mm	320	60	190	40	760	80
30mm	270	60	160	40	640	80
40mm	200	60	120	30	480	80
備註 Remarks						

Table 08 ECSC / HCSC / ECDC / ECTCX 多功能倒角型銑刀桿 切削條件表

ECSC / HCSC / ECDC / ECTCX- INDEXABLE TOOLS- CUTTING CONDITION TABLE

加工方式 Cutting Mode	倒角加工 Chamfering				
加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	Al 5052 / 6061 / 7075
硬度 Hardness	HRC<20	HRC20~30	—	HRC<30	—
切削速度 Vc	150~300m/min	100~250m/min	60~120m/min	150~250m/min	150~350m/min
每轉進給量 f	0.15~0.20mm/rev	0.1~0.2mm/rev	0.1~0.2mm/rev	0.15~0.25mm/rev	0.15~0.30mm/rev
切削量 Cutting Amount (mm)	Ap=0.5~1mm 	Ap=0.5~1mm 	Ap=0.5~1mm 	Ap=0.5~1mm 	Ap=0.5~1mm 

加工方式 Cutting Mode	定點加工 Spotting				
加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	Al 5052 / 6061 / 7075
硬度 Hardness	HRC<20	HRC20~30	—	HRC<30	—
切削速度 Vc	60~250m/min	50~200m/min	60~120m/min	100~200m/min	100~300m/min
每轉進給量 f	0.05~0.10mm/rev	0.04~0.06mm/rev	0.03~0.06mm/rev	0.05~0.10mm/rev	0.05~0.10mm/rev
切削量 Cutting Amount (mm)	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 

加工方式 Cutting Mode	開V槽加工 V-Grooving				
加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	Al 5052 / 6061 / 7075
硬度 Hardness	HRC<20	HRC20~30	—	HRC<30	—
切削速度 Vc	60~250m/min	50~200m/min	60~120m/min	100~200m/min	100~300m/min
每轉進給量 f	0.05~0.07mm/rev	0.04~0.06mm/rev	0.03~0.06mm/rev	0.05~0.07mm/rev	0.05~0.07mm/rev
切削量 Cutting Amount (mm)	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 	Ap≤5.5mm 

加工方式 Cutting Mode	雕刻加工 Engraving				
加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	Al 5052 / 6061 / 7075
硬度 Hardness	HRC<20	HRC20~30	—	HRC<30	—
切削速度 Vc	60~250m/min	50~200m/min	60~120m/min	100~200m/min	100~300m/min
每轉進給量 f	0.02~0.05mm/rev	0.02~0.03mm/rev	0.01~0.02mm/rev	0.02~0.05mm/rev	0.02~0.05mm/rev
切削量 Cutting Amount (mm)	Ap=0.2~1mm 	Ap=0.2~1mm 	Ap=0.2~1mm 	Ap=0.2~1mm 	Ap=0.2~1mm 

Table 09 ECTC 倒角型銑刀桿 切削條件表**ECTC- INDEXABLE TOOLS- CUTTING CONDITION TABLE**

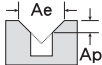
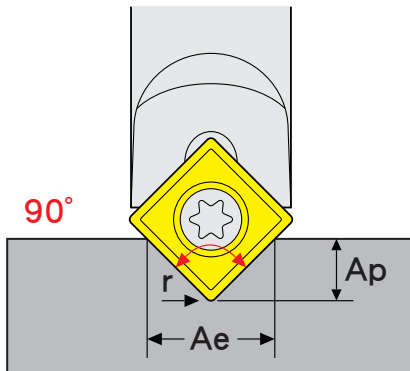
加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鋁合金 Aluminum Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	Al 5052 / 6061 / 7075
硬度 Hardness	HRC<30	HRC30~45	—	HRC<30	—
加工方式 Cutting Mode	倒角加工 Chamfering				
切削數值 Vc	120~250m/min	50~100m/min	80~180m/min	120~250m/min	150~350m/min
外徑 Diameter	每轉進給量 f (mm/rev)	每轉進給量 f (mm/rev)	每轉進給量 f (mm/rev)	每轉進給量 f (mm/rev)	每轉進給量 f (mm/rev)
20~25mm	0.06~0.12	0.03~0.06	0.05~0.10	0.06~0.12	0.12~0.25
30~40mm	0.12~0.24	0.05~0.10	0.10~0.17	0.12~0.24	0.15~0.30
備註 Remarks	Ap=0.5~1mm 				

Table 10 ECSP 倒角型銑刀桿 切削條件表**ECSP- INDEXABLE TOOLS- CUTTING CONDITION TABLE**

加工材質 Material	碳素鋼 Carbon Steels	合金鋼 Alloy Steels	不銹鋼 Stainless Steels	鑄鐵 Cast Iron	鈦合金 Titanium Alloys
工件料號 Material Code	S35C,S45C,S50C	SCM,SKT,SKD	SUS304	FC,FCD	—
硬度 Hardness	HRC<30	HRC30~45	—	HRC<30	HRC<30
加工方式 Cutting Mode	倒角加工 Chamfering				
切削數值 Vc	120~250m/min	50~100m/min	80~180m/min	120~250m/min	40~100m/min
外徑 Diameter	每刃進給量 fz (mm)	每刃進給量 fz (mm)	每刃進給量 fz (mm)	每刃進給量 fz (mm)	每刃進給量 fz (mm)
11~15mm	0.06~0.12	0.03~0.06	0.05~0.10	0.06~0.12	0.03~0.06
16~22mm	0.06~0.12	0.03~0.06	0.05~0.10	0.06~0.12	0.03~0.06
23~33mm	0.06~0.12	0.03~0.06	0.05~0.10	0.06~0.12	0.03~0.06
34~41mm	0.12~0.24	0.05~0.10	0.10~0.17	0.12~0.24	0.05~0.10
42~50mm	0.12~0.25	0.05~0.10	0.10~0.17	0.12~0.25	0.05~0.10
備註 Remarks	Ap=0.5~1mm 				

計算倒角加工寬度 Ae

How to calculate Ae

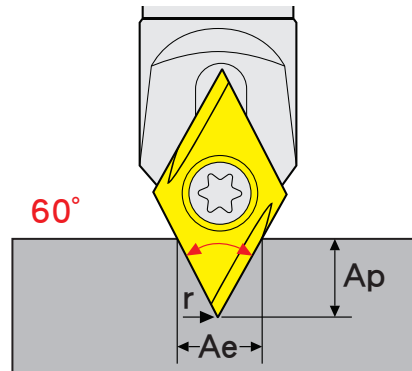


倒角角度 90°

Chamfering Angle 90°

Formula :

公式 : $Ae \cong 2 \times (Ap + 0.4r)$



倒角角度 60°

Chamfering Angle 60°

Formula :

公式 : $Ae \cong 0.58 \times (Ap + r) \times 2$

範例1.

倒角角度 = 90°

加工深度 $Ap = 1\text{mm}$

刀尖r角 = 0.4mm

求加工寬度Ae?

$$\begin{aligned} Ae &\cong 2 \times (Ap + 0.4r) \\ &\cong 2 \times (1 + (0.4 \times 0.4)) \\ &\cong 2 \times 1.16 \\ &\cong \mathbf{2.32\text{mm}} \end{aligned}$$

範例3.

倒角角度 = 60°

加工深度 $Ap = 1\text{mm}$

刀尖r角 = 0.1mm

求加工寬度Ae?

$$\begin{aligned} Ae &\cong 0.58 \times (Ap + r) \times 2 \\ &\cong 0.58 \times (1 + 0.1) \times 2 \\ &\cong 0.58 \times 1.1 \times 2 \\ &\cong \mathbf{1.27\text{mm}} \end{aligned}$$

範例2.

倒角角度 = 90°

加工深度 $Ap = 3\text{mm}$

刀尖r角 = 0.4mm

求加工寬度Ae?

$$\begin{aligned} Ae &\cong 2 \times (Ap + 0.4r) \\ &\cong 2 \times (3 + (0.4 \times 0.4)) \\ &\cong 2 \times 3.16 \\ &\cong \mathbf{6.32\text{mm}} \end{aligned}$$

範例4.

倒角角度 = 60°

加工深度 $Ap = 3\text{mm}$

刀尖r角 = 0.4mm

求加工寬度Ae?

$$\begin{aligned} Ae &\cong 0.58 \times (Ap + r) \times 2 \\ &\cong 0.58 \times (3 + 0.4) \times 2 \\ &\cong 0.58 \times 3.4 \times 2 \\ &\cong \mathbf{3.94\text{mm}} \end{aligned}$$

[illegible]

MEMO

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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切削影片

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