

M520 極細鎢鋼圓鼻銑刀- 長頸型- 4刃

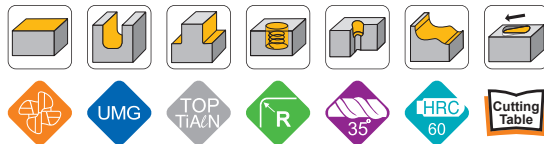
M520 ULTRA CARBIDE END MILLS- Corner Radius- Long Neck- 4F

MECRN4000000000A

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

半徑 R	公差 Tolerance
R	± 0.02

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



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刃徑 d	R角 R	刃長 L1	有效長 L2	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.	鍍膜訂購編號 Coated Order No.
1.0	0.2	1.5	4	50	4	4	MECRN4010002040	MECRN4010002040A
1.0	0.2	1.5	6	50	4	4	MECRN4010002060	MECRN4010002060A
1.0	0.2	1.5	8	50	4	4	MECRN4010002080	MECRN4010002080A
1.0	0.2	1.5	10	50	4	4	MECRN4010002100	MECRN4010002100A
1.0	0.2	1.5	12	50	4	4	MECRN4010002120	MECRN4010002120A
1.5	0.2	2.3	6	50	4	4	MECRN4015002060	MECRN4015002060A
1.5	0.2	2.3	8	50	4	4	MECRN4015002080	MECRN4015002080A
1.5	0.2	2.3	10	50	4	4	MECRN4015002100	MECRN4015002100A
1.5	0.2	2.3	12	50	4	4	MECRN4015002120	MECRN4015002120A
1.5	0.2	2.3	16	50	4	4	MECRN4015002160	MECRN4015002160A
2.0	0.2	3.0	6	50	4	4	MECRN4020002060	MECRN4020002060A
2.0	0.2	3.0	8	50	4	4	MECRN4020002080	MECRN4020002080A
2.0	0.2	3.0	10	50	4	4	MECRN4020002100	MECRN4020002100A
2.0	0.2	3.0	12	50	4	4	MECRN4020002120	MECRN4020002120A
2.0	0.2	3.0	16	50	4	4	MECRN4020002160	MECRN4020002160A
2.0	0.2	3.0	20	60	4	4	MECRN4020002200	MECRN4020002200A
2.0	0.3	3.0	6	50	4	4	MECRN4020003060	MECRN4020003060A
2.0	0.3	3.0	8	50	4	4	MECRN4020003080	MECRN4020003080A
2.0	0.3	3.0	10	50	4	4	MECRN4020003100	MECRN4020003100A
2.0	0.3	3.0	12	50	4	4	MECRN4020003120	MECRN4020003120A
2.0	0.3	3.0	16	50	4	4	MECRN4020003160	MECRN4020003160A
2.0	0.3	3.0	20	60	4	4	MECRN4020003200	MECRN4020003200A
2.0	0.5	3.0	6	50	4	4	MECRN4020005060	MECRN4020005060A
2.0	0.5	3.0	8	50	4	4	MECRN4020005080	MECRN4020005080A
2.0	0.5	3.0	10	50	4	4	MECRN4020005100	MECRN4020005100A
2.0	0.5	3.0	12	50	4	4	MECRN4020005120	MECRN4020005120A
2.0	0.5	3.0	16	50	4	4	MECRN4020005160	MECRN4020005160A
2.0	0.5	3.0	20	60	4	4	MECRN4020005200	MECRN4020005200A
2.5	0.2	3.5	10	50	4	4	MECRN4025002100	MECRN4025002100A
2.5	0.2	3.5	16	50	4	4	MECRN4025002160	MECRN4025002160A
2.5	0.2	3.5	20	60	4	4	MECRN4025002200	MECRN4025002200A
2.5	0.3	3.5	10	50	4	4	MECRN4025003100	MECRN4025003100A
2.5	0.3	3.5	16	50	4	4	MECRN4025003160	MECRN4025003160A
2.5	0.3	3.5	20	60	4	4	MECRN4025003200	MECRN4025003200A
2.5	0.5	3.5	10	50	4	4	MECRN4025005100	MECRN4025005100A
2.5	0.5	3.5	16	50	4	4	MECRN4025005160	MECRN4025005160A
2.5	0.5	3.5	20	60	4	4	MECRN4025005200	MECRN4025005200A

→ 切削條件表
Cutting Condition

P.551

→ 技術資料
Technical Data

P.622

M520

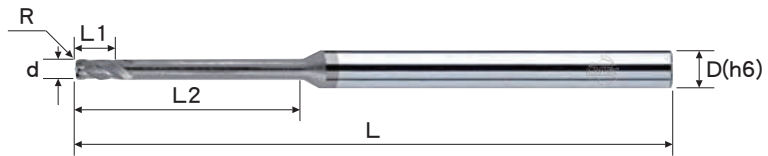
M520 Ultra Carbide End Mills

M520 極細鎢鋼銑刀系列

M520 極細鎢鋼圓鼻銑刀- 長頸型- 4刃

M520 ULTRA CARBIDE END MILLS- Corner Radius- Long Neck- 4F

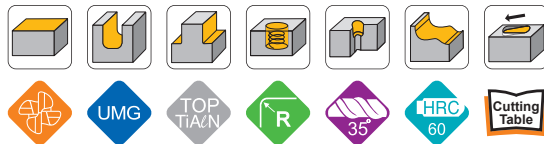
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刃徑 d	公差 Tolerance
$\phi < 3$	0 ~ -0.02
$3 \leq \phi \leq 10$	-0.01 ~ -0.03
$10 < \phi$	-0.01 ~ -0.04

半徑 R	公差 Tolerance
R	± 0.02

超精銑 Bright Finishing	☐
精銑 Finishing	☒
中銑 Semi Finishing	☐
粗銑 Roughing	☐



刃徑 d	R角 R	刃長 L1	有效長 L2	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.	鍍膜訂購編號 Coated Order No.
3.0	0.2	4.5	10	50	6	4	MECRN4030002100	MECRN4030002100A
3.0	0.2	4.5	16	50	6	4	MECRN4030002160	MECRN4030002160A
3.0	0.2	4.5	20	60	6	4	MECRN4030002200	MECRN4030002200A
3.0	0.3	4.5	10	50	6	4	MECRN4030003100	MECRN4030003100A
3.0	0.3	4.5	16	50	6	4	MECRN4030003160	MECRN4030003160A
3.0	0.3	4.5	20	60	6	4	MECRN4030003200	MECRN4030003200A
3.0	0.5	4.5	10	50	6	4	MECRN4030005100	MECRN4030005100A
3.0	0.5	4.5	16	50	6	4	MECRN4030005160	MECRN4030005160A
3.0	0.5	4.5	20	60	6	4	MECRN4030005200	MECRN4030005200A
3.0	1.0	4.5	10	50	6	4	MECRN4030010100	MECRN4030010100A
3.0	1.0	4.5	16	50	6	4	MECRN4030010160	MECRN4030010160A
3.0	1.0	4.5	20	60	6	4	MECRN4030010200	MECRN4030010200A
4.0	0.2	6.0	12	50	6	4	MECRN4040002120	MECRN4040002120A
4.0	0.2	6.0	16	50	6	4	MECRN4040002160	MECRN4040002160A
4.0	0.2	6.0	20	60	6	4	MECRN4040002200	MECRN4040002200A
4.0	0.2	6.0	25	60	6	4	MECRN4040002250	MECRN4040002250A
4.0	0.3	6.0	12	50	6	4	MECRN4040003120	MECRN4040003120A
4.0	0.3	6.0	16	50	6	4	MECRN4040003160	MECRN4040003160A
4.0	0.3	6.0	20	60	6	4	MECRN4040003200	MECRN4040003200A
4.0	0.3	6.0	25	60	6	4	MECRN4040003250	MECRN4040003250A
4.0	0.5	6.0	12	50	6	4	MECRN4040005120	MECRN4040005120A
4.0	0.5	6.0	16	50	6	4	MECRN4040005160	MECRN4040005160A
4.0	0.5	6.0	20	60	6	4	MECRN4040005200	MECRN4040005200A
4.0	0.5	6.0	25	60	6	4	MECRN4040005250	MECRN4040005250A
4.0	1.0	6.0	12	50	6	4	MECRN4040010120	MECRN4040010120A
4.0	1.0	6.0	16	50	6	4	MECRN4040010160	MECRN4040010160A
4.0	1.0	6.0	20	60	6	4	MECRN4040010200	MECRN4040010200A
4.0	1.0	6.0	25	60	6	4	MECRN4040010250	MECRN4040010250A
5.0	0.2	7.0	16	60	6	4	MECRN4050002160	MECRN4050002160A
5.0	0.2	7.0	20	60	6	4	MECRN4050002200	MECRN4050002200A
5.0	0.2	7.0	25	60	6	4	MECRN4050002250	MECRN4050002250A
5.0	0.2	7.0	30	60	6	4	MECRN4050002300	MECRN4050002300A
5.0	0.3	7.0	16	60	6	4	MECRN4050003160	MECRN4050003160A
5.0	0.3	7.0	20	60	6	4	MECRN4050003200	MECRN4050003200A
5.0	0.3	7.0	25	60	6	4	MECRN4050003250	MECRN4050003250A
5.0	0.3	7.0	30	60	6	4	MECRN4050003300	MECRN4050003300A

M520 ULTRA CARBIDE END MILLS- Corner Radius- Long Neck- 4F

Technical drawing of a drill bit. The drawing shows a side view of the drill bit with the following dimensions labeled: R (radius of the tip), $L1$ (length of the tip), d (minor diameter), $L2$ (length of the cutting edge), L (total length), and $D(h6)$ (major diameter).

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



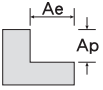
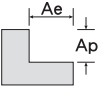
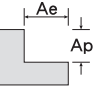
➡ 切削條件表 P.551
Cutting Condition

➡ 技術資料 P.622
Technical Data

Table 33

M520 極細鎢鋼圓鼻銑刀- 4刃(鍍膜) 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

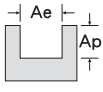
加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鑄鐵 Cast Iron	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SCM,SKT,SKD		SKT,SKD		SKT,SKD		SUS304		FC,FCD	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		HRC45~55		HRC55~63		—		HRC<30	
切削速度 Vc	94m/min		75m/min		63m/min		37m/min		28m/min		75m/min		110m/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)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
3mm	10,580	690	8,060	480	6,550	230	4,230	280	3,220	210	8,060	480	12,100	1,260
4mm	7,560	690	6,050	480	5,040	230	3,020	280	2,270	210	6,050	480	9,070	1,510
5mm	6,300	690	4,790	480	4,030	230	2,520	280	1,890	210	4,790	480	7,060	1,510
6mm	5,040	690	4,030	480	3,280	230	2,020	280	1,510	210	4,030	480	6,050	1,510
8mm	3,780	690	3,020	480	2,520	245	1,510	280	1,130	210	3,020	480	4,540	1,510
10mm	3,020	710	2,390	500	2,020	245	1,200	290	910	220	2,390	500	3,530	1,640
12mm	2,520	710	2,020	500	1,680	245	1,010	290	760	220	2,020	500	3,020	1,760
14mm	2,520	780	1,900	560	1,600	270	1,010	320	760	240	1,900	560	2,800	1,960
16mm	2,180	840	1,680	590	1,400	280	870	340	660	250	1,680	590	2,520	2,100
18mm	1,960	840	1,480	590	1,230	280	780	340	590	250	1,480	590	2,240	2,100
20mm	1,680	840	1,340	590	1,120	280	670	340	500	250	1,340	590	1,960	2,240
切削量 Cutting Amount (mm)	Ap=1.5D Ae≤0.1D 						Ap=1D Ae≤0.05D 						Ap=1.5D Ae≤0.1D 	

※ 切削公式 Cutting Formula : S(主軸轉速) = Vc(切削速度) × 1000 / D(外徑) / π (3.14) F(進給速度) = fz(每刃進給量) × Z(刃數) × S(主軸轉速)

Table 34

N620 奈米鎢鋼短刃型銑刀- 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	118m/min		108m/min		68m/min		48m/min		118m/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)
1mm	28,310	510	25,245	405	18,910	270	12,570	120	29,900	540
2mm	15,345	520	13,365	405	9,800	270	6,630	120	15,740	550
3mm	10,490	570	8,415	405	6,290	280	4,750	140	10,490	600
4mm	8,670	560	7,080	400	5,100	270	3,720	135	8,670	560
6mm	6,290	530	5,250	530	3,660	250	2,630	130	6,290	530
8mm	4,750	530	3,960	380	2,770	250	1,980	130	4,750	530
10mm	3,760	530	3,170	380	2,230	250	1,580	130	3,760	530
12mm	3,170	530	2,620	380	1,840	250	1,340	130	3,170	530
切削量 Cutting Amount (mm)	D≤3, Ap=0.15D D>3, Ap=0.2D D≤6, Ap=0.1D D>6, Ap=0.15D 									

※ 切削公式 Cutting Formula : S(主軸轉速) = Vc(切削速度) × 1000 / D(外徑) / π (3.14) F(進給速度) = fz(每刃進給量) × Z(刃數) × 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.