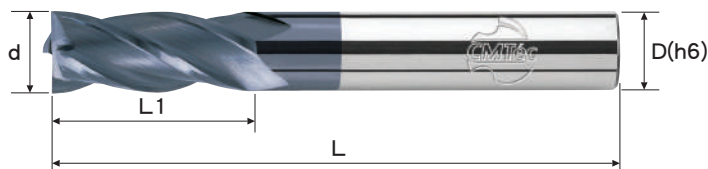
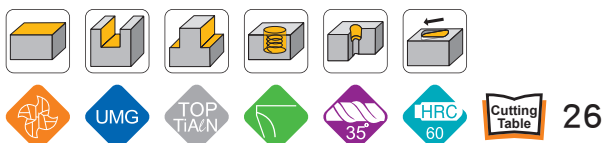


M520 ULTRA CARBIDE END MILLS- Square Type- 4F

▪ **MESM40000A**



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



→ 切削條件表 P.547
Cutting Condition

→ 技術資料
Technical Data

M520 ULTRA CARBIDE END MILLS- Square Type- 4F

Technical drawing of a double-flute drill bit. The drawing shows the bit's profile with the following dimensions labeled:

- d : Diameter of the drill bit.
- L_1 : Length of the cutting edge (flute length).
- L : Total length of the drill bit.
- $D(h6)$: Diameter of the drill bit shank.

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



→ 技術資料 P.622
Technical Data

Table 25

M520 極細鎢鋼短刀型 / 短刀長柄型銑刀- 2刃(鍍膜) 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

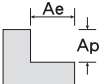
加工材質 Material	合金鋼 Alloy Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		調質鋼 Hardened Steels		鑄鐵 Cast Iron	
工件料號 Material Code	SCM,SKT,SKD		SCM,SKT,SKD		SKT,SKD		SKT,SKD		FC,FCD	
硬度 Hardness	HRC20~30		HRC30~45		HRC45~55		HRC55~63		HRC<30	
切削速度 Vc	94m/min		79m/min		55m/min		39m/min		94m/min	
外徑 Diameter	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	22,650	410	20,200	320	15,130	220	10,060	100	23,920	430
2mm	12,280	420	10,690	320	7,840	220	5,300	100	12,590	440
3mm	8,390	460	6,730	320	5,030	220	3,800	110	8,390	480
4mm	6,940	450	5,660	320	4,080	220	2,980	110	6,940	450
6mm	5,030	420	4,200	420	2,930	200	2,100	100	5,030	420
8mm	3,800	420	3,170	300	2,220	200	1,580	100	3,800	420
10mm	3,010	420	2,540	300	1,780	200	1,260	100	3,010	420
12mm	2,540	420	2,100	300	1,470	200	1,070	100	2,540	420
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 : $S(\text{主軸轉速}) = Vc(\text{切削速度}) \times 1000 / D(\text{外徑}) / \pi (3.14)$ $F(\text{進給速度}) = fz(\text{每刃進給量}) \times Z(\text{刃數}) \times S(\text{主軸轉速})$

Table 26

M520 極細鎢鋼銑刀- 3 / 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		HRC 30~45		HRC45~55		HRC55~63		—		HRC<30	
切削速度 Vc	136m/min		107m/min		90m/min		54m/min		41m/min		107m/min		158m/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	15,120	735	11,520	517	9,360	247	6,040	300	4,600	225	11,520	517	17,280	1,350
4mm	10,800	735	8,640	517	7,200	247	4,320	300	3,240	225	8,640	517	12,960	1,620
5mm	9,000	735	6,840	517	5,760	247	3,600	300	2,700	225	6,840	517	10,080	1,620
6mm	7,200	735	5,760	517	4,680	247	2,880	300	2,160	225	5,760	517	8,640	1,620
8mm	5,400	735	4,320	517	3,600	262	2,160	300	1,620	225	4,320	517	6,480	1,620
10mm	4,320	757	3,420	540	2,880	262	1,720	315	1,300	232	3,420	540	5,040	1,755
12mm	3,600	757	2,880	540	2,400	262	1,440	315	1,080	232	2,880	540	4,320	1,890
14mm	3,600	840	2,720	600	2,280	285	1,440	345	1,080	255	2,720	600	4,000	2,100
16mm	3,120	900	2,400	630	2,000	300	1,240	360	940	270	2,400	630	3,600	2,250
18mm	3,120	900	2,120	630	1,760	300	1,120	360	940	270	2,120	630	3,200	2,250
20mm	2,400	900	1,920	630	1,600	300	960	360	720	270	1,920	630	2,800	2,400
切削量 Cutting Amount (mm)	Ap=1.5D Ae=0.06D 													

※ 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.