

M520 ULTRA CARBIDE END MILLS- Corner Radius- High R Tolerance Type- 4F

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

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

半徑 R	公差 Tolerance	刃徑 d	公差 Tolerance
0.5R	+0.01 ~ 0	3.0	-0.01~-0.02
1.0R	+0.01 ~ 0	3.0	-0.01~-0.02
0.5R	+0.01 ~ 0	4.0	-0.01~-0.02
1.0R	+0.01 ~ 0	4.0	-0.01~-0.02
0.5R	+0.01 ~ 0	5.0	-0.01~-0.02
1.0R	+0.01 ~ 0	5.0	-0.01~-0.02
0.5R	+0.01 ~ 0	6.0	-0.01~-0.02
1.0R	+0.01 ~ 0	6.0	-0.01~-0.02



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

[illegible]

→ 切削條件表 P.569
Cutting Condition

→ 技術資料
Technical Data

Table 66

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)
1mm	5,040	550	6,450	380	5,240	180	3,380	220	2,580	170	6,450	380	9,680	1,010
2mm	6,050	550	4,840	380	4,030	180	2,420	220	1,820	170	4,840	380	7,260	1,210
3mm	5,040	550	3,830	380	3,220	180	2,020	220	1,510	170	3,830	380	5,650	1,210
4mm	4,030	550	3,220	380	2,620	180	1,620	220	1,210	170	3,220	380	4,840	1,210
5mm	3,020	550	2,420	380	2,020	200	1,210	220	900	170	2,420	380	3,630	1,210
6mm	2,420	570	1,910	400	1,620	200	960	230	730	180	1,910	400	2,820	1,310
8mm	2,020	570	1,620	400	1,340	200	810	230	610	180	1,620	400	2,420	1,410
10mm	2,020	620	1,520	450	1,280	220	810	260	610	190	1,520	450	2,240	1,570
12mm	1,740	670	1,340	470	1,120	220	700	270	530	200	1,340	470	2,020	1,680
14mm	1,570	670	1,180	470	980	220	620	270	470	200	1,180	470	1,790	1,680
16mm	1,340	670	1,070	470	900	220	540	270	400	200	1,070	470	1,570	1,790
18mm	1,740	250	1,180	200	980	160	700	100	530	70	1,180	200	1,790	540
20mm	1,340	250	1,070	200	900	160	540	100	400	70	1,070	200	1,570	540
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 : $S(\text{主軸轉速}) = Vc(\text{切削速度}) \times 1000 / D(\text{外徑}) / \pi (3.14)$ $F(\text{進給速度}) = fz(\text{每刃進給量}) \times Z(\text{刃數}) \times S(\text{主軸轉速})$

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.