

S220 MICRO GRAIN CARBIDE END MILLS- Ball Nose- 3F

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.
- L1**: Length of the cutting edge.
- L**: Total length of the bit.
- D(h6)**: Diameter of the bit, with a tolerance of h6.

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



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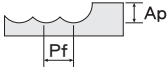
➡ 切削條件表 P.537
Cutting Condition

➡ 技術資料 P.622
Technical Data

Table 05

S220 鎢鋼球刀- 2 / 4刃(鍍膜) 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

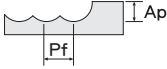
加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鑄鐵 Cast Iron	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SCM,SKT,SKD		SKT,SKD		SKT,SKD		SUS304		FC,FCD	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		HRC45~55		HRC55~63		—		HRC<30	
切削速度 Vc	80m/min		70m/min		60m/min		50m/min		35m/min		55m/min		80m/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)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
0.5R	25,480	620	22,290	500	19,110	320	15,920	170	11,150	110	17,520	230	25,480	620
1.0R	12,740	620	11,150	500	9,550	320	7,960	170	5,570	110	8,760	230	12,740	750
2.0R	6,370	620	5,570	500	4,780	360	3,980	220	2,790	140	4,380	300	6,370	750
3.0R	4,250	690	3,720	540	3,190	380	2,650	240	1,860	150	2,920	310	4,250	840
4.0R	3,190	840	2,790	630	2,390	450	1,990	260	1,390	170	2,190	370	3,190	1,040
5.0R	2,550	770	2,230	600	1,910	420	1,590	270	1,120	170	1,750	340	2,550	960
6.0R	2,120	710	1,860	560	1,590	390	1,330	250	930	160	1,460	340	2,120	880
8.0R	1,590	670	1,390	520	1,190	380	1,000	220	700	150	1,100	300	1,590	840
10.0R	1,270	620	1,120	460	960	360	800	200	560	140	880	300	1,270	750
切削量 Cutting Amount (mm)	Ap=0.05D Pf=0.1D 													

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

Table 06

S220 鎢鋼球刀- 3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	80m/min		70m/min		60m/min		50m/min		35m/min		55m/min		80m/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)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
0.5R	25,480	680	22,290	550	19,110	350	15,920	180	11,150	120	17,520	250	25,480	680
1.0R	12,740	680	11,150	550	9,550	350	7,960	180	5,570	120	8,760	250	12,740	830
2.0R	6,370	680	5,570	550	4,780	400	3,980	240	2,790	150	4,380	330	6,370	830
3.0R	4,250	760	3,720	590	3,190	420	2,650	260	1,860	170	2,920	340	4,250	920
4.0R	3,190	920	2,790	690	2,390	500	1,990	290	1,390	190	2,190	410	3,190	1,140
5.0R	2,550	850	2,230	660	1,910	460	1,590	300	1,120	190	1,750	370	2,550	1,060
6.0R	2,120	890	1,860	620	1,590	430	1,330	280	930	180	1,460	370	2,120	970
8.0R	1,590	740	1,390	570	1,190	420	1,000	240	700	170	1,100	330	1,590	920
10.0R	1,270	680	1,120	510	960	400	800	220	560	150	880	330	1,270	830
切削量 Cutting Amount (mm)	Ap=0.05D Pf=0.1D 													

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

- 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.