

THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Square Type- 4F

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

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



179

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→ 技術資料
Technical Data

THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Ball Nose- 4F

Technical drawing of a drill bit. The drawing shows the bit from a side perspective. Dimensions are indicated as follows: L is the total length of the bit; L_1 is the length of the cutting edge; d_1 is the diameter of the shank; M is the diameter of the threaded part; and R is the radius of the cutting edge.

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



 180

SSNO

S220 Carbide End Mills

S220 鎢鋼銑刀系列

→ 技術資料 P.622
Technical Data

THREAD- S220 MICRO GRAIN CARBIDE END MILLS- Corner Radius- 4F

Technical drawing of a double-flute drill bit. The drawing shows the bit from a side perspective. Key dimensions are labeled: R is the radius of the cutting edge; d is the outer diameter of the bit; L_1 is the length of the cutting edge; L is the total length of the bit; d_1 is the diameter of the shank; and M is the thread pitch of the shank. The bit has two flutes and a brand logo on the side.

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

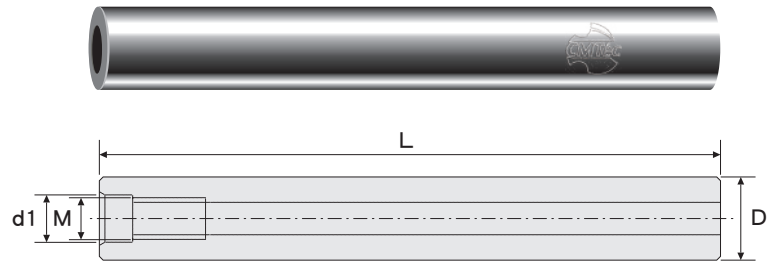


→ 搭配刀桿 P.029, 030 Holder
 → 切削條件表 P.606 Cutting Condition
 → 技術資料 P.622 Technical Data

鎢鋼抗震刀桿

CARBIDE ANTI-VIBRATION HOLDER

· LCL000-000L



螺紋M Thread	柄徑 D	全長 L	d1	訂購編號 Order No.
M4 × 0.7	8	60	4.5	LCL008-060L
M4 × 0.7	8	100	4.5	LCL008-100L
M4 × 0.7	8	120	4.5	LCL008-120L
M5 × 0.8	10	75	5.5	LCL010-075L
M5 × 0.8	10	100	5.5	LCL010-100L
M5 × 0.8	10	150	5.5	LCL010-150L
M6 × 1.0	12	75	6.5	LCL012-075L
M6 × 1.0	12	100	6.5	LCL012-100L
M6 × 1.0	12	150	6.5	LCL012-150L
M6 × 1.0	12	200	6.5	LCL012-200L
M8 × 1.25	16	100	8.5	LCL016-100L
M8 × 1.25	16	150	8.5	LCL016-150L
M8 × 1.25	16	200	8.5	LCL016-200L
M8 × 1.25	16	250	8.5	LCL016-250L
M10 × 1.5	20	100	10.5	LCL020-100L
M10 × 1.5	20	150	10.5	LCL020-150L
M10 × 1.5	20	200	10.5	LCL020-200L
M10 × 1.5	20	250	10.5	LCL020-250L
M10 × 1.5	20	300	10.5	LCL020-300L
M12 × 1.75	25	100	12.5	LCL025-100L
M12 × 1.75	25	150	12.5	LCL025-150L
M12 × 1.75	25	200	12.5	LCL025-200L
M12 × 1.75	25	250	12.5	LCL025-250L
M12 × 1.75	25	300	12.5	LCL025-300L
M16 × 2.0	32	100	17.0	LCL032-100L
M16 × 2.0	32	150	17.0	LCL032-150L
M16 × 2.0	32	200	17.0	LCL032-200L
M16 × 2.0	32	250	17.0	LCL032-250L
M16 × 2.0	32	300	17.0	LCL032-300L

S220

S220 Carbide End Mills

S220 鎢鋼銑刀系列

CARBIDE ANTI- VIBRATION HOLDER- NECK

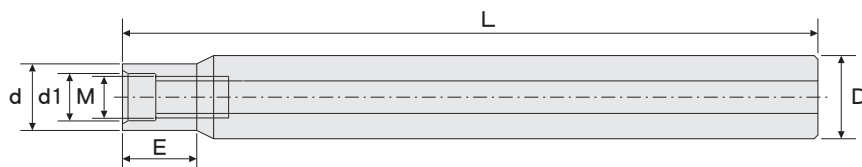
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Table 179

CHS / CHCR 鎖牙式- S220鎢鋼銑刀頭 4刃 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

側銑加工 Side Milling

加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	120m/min		100m/min		65m/min		65m/min		170m/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)
8mm	4,780	1,000	3,980	800	2,590	520	2,590	620	6,770	1,090
10mm	3,810	920	3,190	770	2,070	420	2,070	500	5,420	870
12mm	3,190	770	2,660	640	1,730	350	1,730	420	4,520	730
16mm	2,390	580	1,990	480	1,300	260	1,300	320	3,390	550
20mm	1,910	450	1,600	390	1,040	210	1,040	250	2,710	440
25mm	1,530	370	1,280	310	830	170	830	200	2,170	350
備註 Remarks	$A_p \leq 0.5D$ $A_e \leq 0.15D$ 		$A_p \leq 0.5D$ $A_e \leq 0.15D$ 		$A_p \leq 0.5D$ $A_e \leq 0.1D$ 		$A_p \leq 0.5D$ $A_e \leq 0.1D$ 		$A_p \leq 0.5D$ $A_e \leq 0.2D$ 	

溝銑加工 Slot Milling

加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	90m/min		70m/min		50m/min		50m/min		150m/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)
8mm	3,590	720	2,790	560	1,990	320	1,990	400	5,970	900
10mm	2,870	600	2,230	450	1,600	250	1,600	320	4,780	720
12mm	2,390	500	1,860	380	1,330	220	1,330	270	3,980	600
16mm	1,800	380	1,400	280	1,000	150	1,000	200	2,990	450
20mm	1,440	300	1,120	230	800	130	800	150	2,390	360
25mm	1,150	250	900	180	640	100	640	130	1,910	290
備註 Remarks	$A_p \leq 0.3D$ 		$A_p \leq 0.3D$ 		$A_p \leq 0.1D$ 		$A_p \leq 0.25D$ 		$A_p \leq 0.3D$ 	

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

Table 180

CHB 鎖牙式- S220鎢鋼球刀頭 4刃 切削條件表

SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

加工材質 Material	碳素鋼 / 合金鋼 Carbon Steels Alloy Steels		合金鋼 Alloy Steels		調質鋼 Hardened Steels		不銹鋼 Stainless Steels		鋁合金 Aluminum Alloys	
工件料號 Material Code	S35C,S45C,S50C SCM,SKT,SKD		SCM,SKT,SKD		SKT,SKD		SUS304		Al 5052 / 6061 / 7075	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		—		—	
切削速度 Vc	120m/min		100m/min		65m/min		65m/min		170m/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)
4.0R	4,780	1,440	3,980	1,200	2,590	520	2,590	650	6,770	1,700
5.0R	3,810	1,150	3,190	960	2,070	420	2,070	520	5,420	1,470
6.0R	3,190	960	2,660	800	1,730	350	1,730	440	4,520	1,360
8.0R	2,390	720	1,990	600	1,300	260	1,300	330	3,390	1,020
10.0R	1,910	580	1,600	480	1,040	210	1,040	260	2,710	820
12.5R	1,530	460	1,280	390	830	170	830	210	2,170	650
備註 Remarks	Ap=0.05D Pf=0.15D 				Ap=0.04D Pf=0.1D		Ap=0.05D Pf=0.15D		Ap=0.05D Pf=0.15D	

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

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.