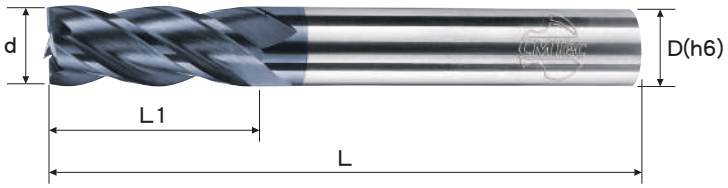
# S220 鎢鋼平銑刀- 石墨專用型- 4刃

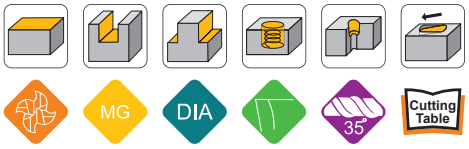
## S220 CARBIDE END MILLS FOR GRAPHITE- Square Type- 4F

· CESGM4□□□□A
· CESG4□□□□A




| 刃徑 d | 公差 Tolerance |
|---|---|
| Φ<3 | 0 ~ -0.02 |
| 3≦Φ≦10 | -0.01 ~ -0.03 |
| 10<Φ | -0.01 ~ -0.04 |

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

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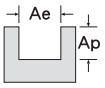
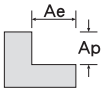
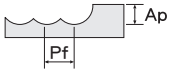
| 刃徑 d | 刃長 L1 | 全長 L | 柄徑 D | 刃數 F | 鍍膜訂購編號 Coated Order No. |
|---|---|---|---|---|---|
| 2.0 | 6 | 50 | 4 | 4 | CESGM40200A |
| 3.0 | 8 | 50 | 4 | 4 | CESGM40300A |
| 4.0 | 10 | 50 | 4 | 4 | CESGM40400A |
| | | | | | |
| 3.0 | 8 | 50 | 6 | 4 | CESG40300A |
| 4.0 | 10 | 50 | 6 | 4 | CESG40400A |
| 5.0 | 13 | 50 | 6 | 4 | CESG40500A |
| 6.0 | 15 | 50 | 6 | 4 | CESG40600A |
| 8.0 | 20 | 60 | 8 | 4 | CESG40800A |
| 10.0 | 25 | 75 | 10 | 4 | CESG41000A |
| 12.0 | 30 | 75 | 12 | 4 | CESG41200A |


➡ 切削條件表 Cutting Condition P.544
➡ 技術資料 Technical Data P.622

## Table 19 S220 鎢鋼石墨用銑刀- 2 / 4刃(鍍膜) 切削條件表

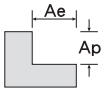
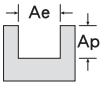
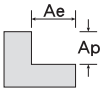
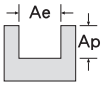
### SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

| 刀具 END MILLS | CESG2-A | | CESG4-A | | CEBG2-A | |
|---|---|---|---|---|---|---|
| 切削速度 Vc | 225m/min | | 250m/min | | 250m/min | |
| 外徑 Diameter | S (rpm) | F (mm/min) | S (rpm) | F (mm/min) | S (rpm) | F (mm/min) |
| 3mm | 23,000 | 800 | 25,000 | 960 | 25,000 | 1,000 |
| 4mm | 17,000 | 700 | 19,000 | 820 | 19,000 | 850 |
| 5mm | 14,000 | 650 | 15,500 | 750 | 15,500 | 800 |
| 6mm | 11,500 | 600 | 12,600 | 700 | 12,600 | 750 |
| 8mm | 8,500 | 400 | 9,300 | 600 | 9,300 | 640 |
| 10mm | 6,900 | 450 | 7,600 | 550 | 7,600 | 600 |
| 12mm | 5,700 | 400 | 6,300 | 340 | 6,300 | 580 |
| | | | | | | |
| 切削量 Cutting Amount (mm) |  | |  | |  | |

※ 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 20 S220 鎢鋼銅鋁用銑刀- 2刃(鍍膜) 切削條件表

### SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

| 加工材質 Material | 鋁合金 Aluminum Alloys | | | | 銅合金 Copper Alloys | | | |
|---|---|---|---|---|---|---|---|---|
| 切削速度 Vc | 150m/min | | 150m/min | | 80m/min | | 80m/min | |
| 外徑 Diameter | S (rpm) | F (mm/min) | S (rpm) | F (mm/min) | S (rpm) | F (mm/min) | S (rpm) | F (mm/min) |
| 0.5mm | 15,920 | 480 | 15,920 | 400 | 12,740 | 300 | 12,740 | 250 |
| 1.0mm | 15,920 | 480 | 15,920 | 400 | 12,740 | 300 | 12,740 | 250 |
| 1.5mm | 15,920 | 560 | 15,920 | 480 | 12,740 | 300 | 12,740 | 250 |
| 2.0mm | 15,920 | 560 | 15,920 | 480 | 12,740 | 300 | 12,740 | 250 |
| 2.5mm | 15,920 | 640 | 15,920 | 560 | 10,190 | 300 | 10,190 | 250 |
| 3.0mm | 15,920 | 640 | 15,920 | 560 | 8,490 | 300 | 8,490 | 250 |
| 4.0mm | 11,940 | 770 | 11,940 | 600 | 6,370 | 350 | 6,370 | 300 |
| 5.0mm | 9,550 | 770 | 9,550 | 600 | 5,100 | 350 | 5,100 | 300 |
| 6.0mm | 7,960 | 1,100 | 7,960 | 750 | 4,250 | 500 | 4,250 | 380 |
| 8.0mm | 5,970 | 1,270 | 5,970 | 900 | 3,190 | 580 | 3,190 | 450 |
| 10.0mm | 4,780 | 1,490 | 4,780 | 1,100 | 2,550 | 680 | 2,550 | 550 |
| 12.0mm | 3,980 | 1,870 | 3,980 | 1,350 | 2,120 | 850 | 2,120 | 680 |
| 切削量 Cutting Amount (mm) | Ap≦1D Ae≦0.25D  | | Ap≦0.5D  | | Ap≦1D Ae≦0.25D  | | Ap≦0.5D  | |

※ 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)

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.