

## S220 CARBIDE END MILLS FOR GRAPHITE- Square Type- 2F

- **CESG2000A**



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



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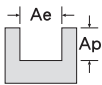
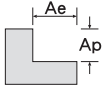
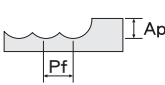
➡ 切削條件表 P.544  
Cutting Condition

→ 技術資料 P.622  
Technical Data

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

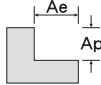
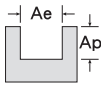
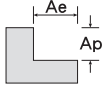
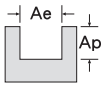
| 刀具<br>END MILLS               | CESG2-A                                                                           |               | CESG4-A                                                                           |               | CEBG2-A                                                                             |               |
|-------------------------------|-----------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|---------------|
| 切削速度 Vc                       | 225m/min                                                                          |               | 250m/min                                                                          |               | 250m/min                                                                            |               |
| 外徑<br>Diameter                | S<br>(rpm)                                                                        | F<br>(mm/min) | S<br>(rpm)                                                                        | F<br>(mm/min) | S<br>(rpm)                                                                          | F<br>(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<br>Cutting Amount<br>(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<br>Material              | 鋁合金<br>Aluminum<br>Alloys                                                                                    |               |                                                                                                  |               | 銅合金<br>Copper<br>Alloys                                                                                        |               |                                                                                                    |               |
|-------------------------------|--------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
| 切削速度 Vc                       | 150m/min                                                                                                     |               | 150m/min                                                                                         |               | 80m/min                                                                                                        |               | 80m/min                                                                                            |               |
| 外徑<br>Diameter                | S<br>(rpm)                                                                                                   | F<br>(mm/min) | S<br>(rpm)                                                                                       | F<br>(mm/min) | S<br>(rpm)                                                                                                     | F<br>(mm/min) | S<br>(rpm)                                                                                         | F<br>(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<br>Cutting Amount<br>(mm) | Ap ≤ 1D<br>Ae ≤ 0.25D<br> |               | Ap ≤ 0.5D<br> |               | Ap ≤ 1D<br>Ae ≤ 0.25D<br> |               | Ap ≤ 0.5D<br> |               |

※ 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)

- 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.