



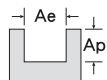
Table 35

N620 奈米鎢鋼短刃型銑刀- 3刃(鍍膜) 切削條件表

## SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

## 側銑加工 Side Milling

## 溝銑加工 Slot Milling

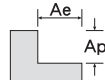
| 加工材質<br>Material              | 合金鋼<br>Alloy Steels                                                                                                               |               | 合金鋼<br>Alloy Steels |               | 調質鋼<br>Hardened Steels |               | 調質鋼<br>Hardened Steels |               | 鑄鐵<br>Cast Iron |               | 合金鋼<br>Alloy Steels                                                                                           |               | 合金鋼<br>Alloy Steels |               | 調質鋼<br>Hardened Steels |               | 鑄鐵<br>Cast Iron |               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|---------------|------------------------|---------------|------------------------|---------------|-----------------|---------------|---------------------------------------------------------------------------------------------------------------|---------------|---------------------|---------------|------------------------|---------------|-----------------|---------------|
| 工件料號<br>MaterialCode          | SCM,SKT,SKD                                                                                                                       |               | SCM,SKT,SKD         |               | SKT,SKD                |               | SKT,SKD                |               | FC,FCD          |               | SCM,SKT,SKD                                                                                                   |               | SCM,SKT,SKD         |               | SKT,SKD                |               | FC,FCD          |               |
| 硬度<br>Hardness                | HRC20~30                                                                                                                          |               | HRC30~45            |               | HRC45~55               |               | HRC55~63               |               | HRC<30          |               | HRC20~30                                                                                                      |               | HRC30~45            |               | HRC45~55               |               | HRC<30          |               |
| 切削速度 Vc                       | 179m/min                                                                                                                          |               | 179m/min            |               | 134m/min               |               | 90m/min                |               | 179m/min        |               | 90m/min                                                                                                       |               | 89m/min             |               | 58m/min                |               | 107m/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) | 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) | S<br>(rpm)      | F<br>(mm/min) |
| 3mm                           | 19,080                                                                                                                            | 1,260         | 19,080              | 790           | 14,310                 | 480           | 9,540                  | 310           | 19,080          | 1,575         | 9,540                                                                                                         | 625           | 8,595               | 355           | 6,210                  | 256           | 11,430          | 945           |
| 4mm                           | 14,310                                                                                                                            | 1,305         | 14,310              | 820           | 10,710                 | 520           | 7,160                  | 330           | 14,310          | 1,620         | 7,155                                                                                                         | 652           | 6,435               | 373           | 4,635                  | 270           | 8,595           | 990           |
| 6mm                           | 9,540                                                                                                                             | 1,440         | 9,540               | 945           | 7,155                  | 550           | 4,770                  | 360           | 9,540           | 1,800         | 4,770                                                                                                         | 747           | 4,275               | 409           | 3,105                  | 297           | 5,715           | 1,080         |
| 8mm                           | 7,155                                                                                                                             | 1,305         | 7,155               | 895           | 5,355                  | 500           | 3,600                  | 330           | 7,155           | 1,620         | 3,600                                                                                                         | 729           | 3,240               | 396           | 2,340                  | 270           | 4,275           | 945           |
| 10mm                          | 5,715                                                                                                                             | 1,170         | 5,715               | 880           | 4,275                  | 480           | 2,880                  | 280           | 5,715           | 1,440         | 3,600                                                                                                         | 706           | 2,565               | 378           | 1,845                  | 234           | 3,420           | 855           |
| 12mm                          | 4,770                                                                                                                             | 1,170         | 4,770               | 860           | 3,600                  | 450           | 2,385                  | 280           | 4,770           | 1,440         | 2,385                                                                                                         | 661           | 2,160               | 364           | 1,530                  | 234           | 2,880           | 855           |
| 切削量<br>Cutting Amount<br>(mm) | D≤6, Ap=1D, Ae=0.02D<br>D>6, Ap=1D, Ae=0.05D<br> |               |                     |               |                        |               |                        |               |                 |               | Ap=0.3D<br>Ap(Max)=3mm<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)

Table 36

N620 奈米鎢鋼短刃型銑刀- 4刃(鍍膜) 切削條件表

## SOLID CARBIDE END MILLS- CUTTING CONDITION TABLE

| 加工材質<br>Material           | 合金鋼<br>Alloy Steels                                                                                                              |               | 合金鋼<br>Alloy Steels |               | 調質鋼<br>Hardened Steels |               | 調質鋼<br>Hardened Steels |               | 鑄鐵<br>Cast Iron |               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|---------------|------------------------|---------------|------------------------|---------------|-----------------|---------------|
| 工件料號<br>Material Code      | SCM,SKT,SKD                                                                                                                      |               | SCM,SKT,SKD         |               | SKT,SKD                |               | SKT,SKD                |               | FC,FCD          |               |
| 硬度<br>Hardness             | HRC20~30                                                                                                                         |               | HRC30~45            |               | HRC45~55               |               | HRC55~63               |               | HRC<30          |               |
| 切削速度 Vc                    | 139m/min                                                                                                                         |               | 139m/min            |               | 118m/min               |               | 98m/min                |               | 158m/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) | S<br>(rpm)      | F<br>(mm/min) |
| 3mm                        | 14,750                                                                                                                           | 1,580         | 14,750              | 1,440         | 12,570                 | 1,040         | 10,490                 | 630           | 16,830          | 1,935         |
| 4mm                        | 10,990                                                                                                                           | 1,485         | 10,990              | 1,340         | 9,460                  | 980           | 7,875                  | 570           | 12,570          | 1,840         |
| 5mm                        | 8,810                                                                                                                            | 1,440         | 8,810               | 1,240         | 7,580                  | 910           | 6,290                  | 530           | 10,100          | 1,640         |
| 6mm                        | 7,380                                                                                                                            | 1,340         | 7,380               | 1,140         | 6,290                  | 830           | 5,250                  | 500           | 8,415           | 1,540         |
| 8mm                        | 5,500                                                                                                                            | 1,240         | 5,500               | 1,040         | 4,750                  | 760           | 3,960                  | 500           | 6,290           | 1,440         |
| 10mm                       | 4,410                                                                                                                            | 1,240         | 4,410               | 1,040         | 3,760                  | 760           | 3,170                  | 500           | 5,050           | 1,440         |
| 12mm                       | 3,660                                                                                                                            | 1,240         | 3,660               | 1,040         | 3,170                  | 760           | 2,630                  | 500           | 4,210           | 1,440         |
| 切削量<br>Cutting Amount (mm) | D≤6, Ap=1D, Ae=0.02D<br>D>6, Ap=1D, Ae=0.05D  |               |                     |               |                        |               |                        |               |                 |               |

※ 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.