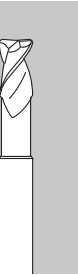




銑削系列

MILLING



銑刀系列 88



單刃立銑刀 102



雙刃立銑刀 107



三刃立銑刀 118



四刃立銑刀 128



多刃銑刀 132



高效率粗銑刀 134



圓鼻銑刀 137



球型銑刀 142



鑽石和PCD銑刀 100



複合材質專用銑刀 151



客製化銑刀 152



銑刀幾何及其他資訊 153



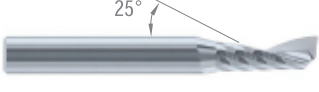
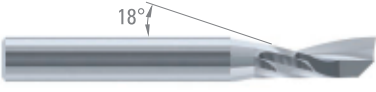
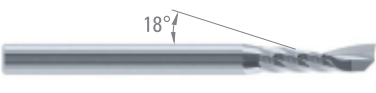
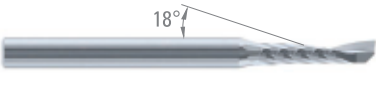
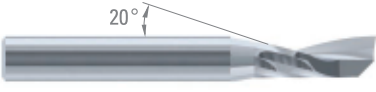
切削條件 154

✓ = 標準庫存

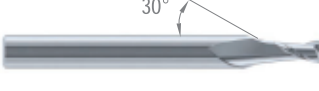
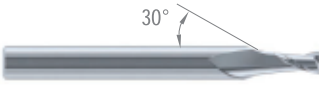
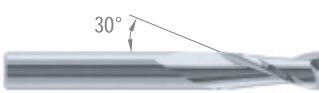
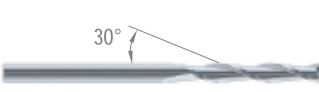
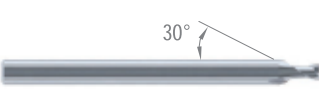
\* = 非鐵金屬用

## 銑刀系列

### 立銑刀 Z=1

|                                    | Z | 頁數  | 粗銑<br>精修                   |                                                                                     | 無<br>鍍<br>層 | TiAIN | C-TOP | DLC* | DIAMANT* |
|------------------------------------|---|-----|----------------------------|-------------------------------------------------------------------------------------|-------------|-------|-------|------|----------|
| <b>DIXI 7561</b><br>Ø 2.00 - 12.00 | 1 | 102 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       | ✓*   |          |
| <b>DIXI 7301</b><br>Ø 2.00 - 8.00  | 1 | 102 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       |      |          |
| <b>DIXI 7302</b><br>Ø 3.00 - 12.00 | 1 | 103 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       |      |          |
| <b>DIXI 7303</b><br>Ø 2.00 - 4.00  | 1 | 103 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       |      |          |
| <b>DIXI 7311</b><br>Ø 1.00 - 12.00 | 1 | 104 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |   | ✓           |       |       |      |          |
| <b>DIXI 7060</b><br>Ø 0.50 - 6.00  | 1 | 105 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           |       |       |      |          |
| <b>DIXI 7063</b><br>Ø 0.40 - 4.00  | 1 | 106 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           |       |       |      |          |

### 立銑刀 Z=2

|                                    |   |     |                            |                                                                                                           |   |   |   |  |    |
|------------------------------------|---|-----|----------------------------|-----------------------------------------------------------------------------------------------------------|---|---|---|--|----|
| <b>DIXI 7242</b><br>Ø 0.10 - 18.00 | 2 | 107 | 粗銑<br>●●●●○<br>精修<br>●●●●○ | <br>DIN 6527<br>D1 > 6 | ✓ | ✓ |   |  |    |
| <b>DIXI 7342</b><br>Ø 0.10 - 12.00 | 2 | 108 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |                        | ✓ |   | ✓ |  |    |
| <b>DIXI 7202</b><br>Ø 1.50 - 12.00 | 2 | 109 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |                        | ✓ | ✓ |   |  | ✓* |
| <b>DIXI 7222</b><br>Ø 3.00 - 20.00 | 2 | 110 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |                        | ✓ | ✓ |   |  | ✓* |
| <b>DIXI 7240</b><br>Ø 0.04 - 5.50  | 2 | 111 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |                        | ✓ | ✓ |   |  |    |
| <b>DIXI 7237</b><br>Ø 0.15 - 3.00  | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |                        | ✓ | ✓ |   |  |    |



| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀<br>金 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|---------------|------------|---|----|----|
|           |      |      |           |                       |    |      |           | ○             |            | ◎ |    | ○  |
|           |      |      |           |                       |    |      |           |               |            |   |    | ◎  |
|           |      |      |           |                       |    |      |           |               |            |   |    | ◎  |
|           |      |      |           |                       |    |      |           |               |            |   |    | ◎  |
|           |      |      |           |                       |    |      |           |               |            |   |    | ◎  |
|           |      |      |           |                       | ○  |      |           | ◎             | ○          | ○ |    | ○  |
|           |      |      |           |                       | ○  |      |           | ◎             | ○          | ○ |    | ○  |

|   |   |   |   |  |   |   |   |   |   |   |   |   |
|---|---|---|---|--|---|---|---|---|---|---|---|---|
| ◎ | ○ | ○ | ○ |  | ◎ |   | ○ | ◎ | ○ | ○ |   | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ○ | ◎ | ○ | ◎ |   |   |   |
| ◎ | ○ |   | ○ |  |   |   | ○ | ◎ | ○ | ○ | ◎ | ○ |
| ◎ | ○ |   | ○ |  |   |   | ○ | ◎ | ○ | ○ | ◎ | ○ |
| ◎ | ○ | ○ | ○ |  | ◎ | ○ | ○ | ◎ | ○ | ○ |   | ○ |
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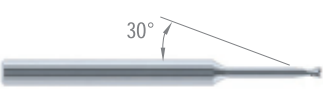
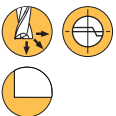
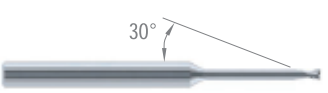
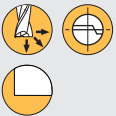
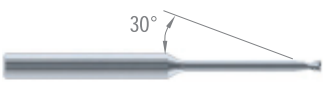
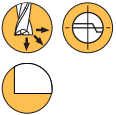
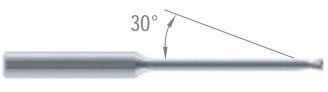
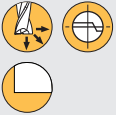
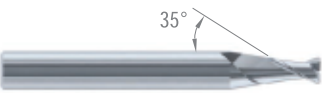
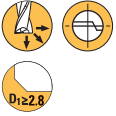
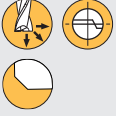
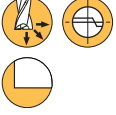


✓ = 標準庫存

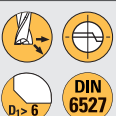
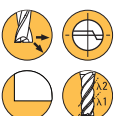
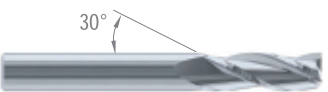
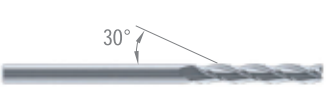
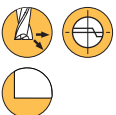
\* = 非鐵金屬用

## 銑刀系列

### 立銑刀 Z=2

|                                                                                                                            | Z | 頁數  | 粗銑<br>精修                   |                                                                                      | 無<br>鍍<br>層 | TiAIN | C-TOP | CUTINOX | DIAMANT* |
|----------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|-------------|-------|-------|---------|----------|
| <b>DIXI 7238</b><br>Ø 0.30 - 3.00<br>     | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |         |          |
| <b>DIXI 7239</b><br>Ø 0.40 - 3.00<br>     | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |         |          |
| <b>DIXI 7239-10D</b><br>Ø 0.50 - 3.00<br> | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |         |          |
| <b>DIXI 7239-12D</b><br>Ø 0.50 - 1.70<br> | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |         |          |
| <b>DIXI 7239-15D</b><br>Ø 0.50 - 1.35<br> | 2 | 112 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |   | ✓           | ✓     |       |         |          |
| <b>DIXI 7582</b><br>Ø 1.00 - 20.00<br>  | 2 | 116 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           | ✓     |       |         |          |
| <b>DIXI 7572</b><br>Ø 3.00 - 12.00<br>  | 2 | 117 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           | ✓     |       |         | ✓*       |
| <b>DIXI 7232</b><br>Ø 2.00 - 8.00<br>   | 2 | 117 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           |       |       |         |          |

### 立銑刀 Z=3

|                                                                                                                           |   |     |                            |                                                                                      |   |   |   |   |    |
|---------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|---|---|---|---|----|
| <b>DIXI 7243</b><br>Ø 0.35 - 20.00<br> | 3 | 118 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |   |   |    |
| <b>DIXI 7343</b><br>Ø 0.30 - 16.00<br> | 3 | 119 | 粗銑<br>●●●●●<br>精修<br>●●●●● |  | ✓ |   | ✓ |   |    |
| <b>DIXI 7203</b><br>Ø 2.00 - 20.00<br> | 3 | 120 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |   |   |    |
| <b>DIXI 7223</b><br>Ø 3.00 - 16.00<br> | 3 | 121 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |   |   | ✓* |
| <b>DIXI 7333</b><br>Ø 0.30 - 10.00<br> | 3 | 122 | 粗銑<br>●●●●●<br>精修<br>●●●●○ |  | ✓ |   |   | ✓ |    |



| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|----|
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ○         | ◎        | ○          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ○         | ◎        | ○          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ○         | ◎        | ○          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ○         | ◎        | ○          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ○         | ◎        | ○          | ○ |    | ○  |
| ○         |      |      |           |                       | ○  |      | ◎         | ○        | ○          | ◎ |    | ○  |
| ○         |      |      |           |                       |    |      |           | ○        | ○          | ◎ | ◎  | ○  |
|           |      |      |           |                       | ○  |      |           | ◎        |            | ◎ |    | ○  |

|   |   |   |   |  |   |   |   |   |   |   |   |   |
|---|---|---|---|--|---|---|---|---|---|---|---|---|
| ◎ | ○ | ○ | ○ |  | ◎ |   | ○ | ◎ | ○ | ◎ |   | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ◎ | ◎ | ○ | ◎ |   |   |   |
| ◎ | ○ | ○ | ○ |  | ◎ |   | ○ | ◎ | ○ | ◎ |   | ○ |
| ◎ | ○ | ○ | ○ |  | ◎ |   | ○ | ◎ | ○ | ◎ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ◎ | ○ | ◎ | ○ | ◎ | ○ |   | ○ |

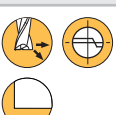
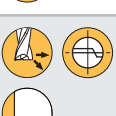
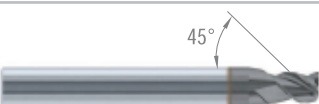
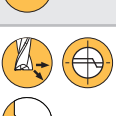
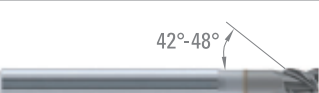
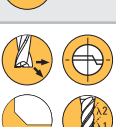
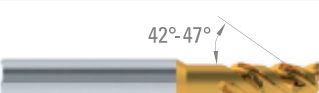
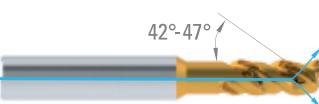
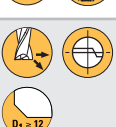


✓ = 標準庫存

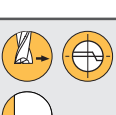
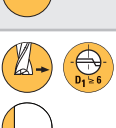
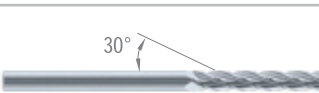
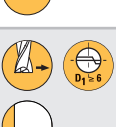
\* = 非鐵金屬用

## 銑刀系列

### 立銑刀 Z=3

|                                                                                                                              | Z   | 頁數  | 粗銑<br>精修                   |                                                                                      | 無<br>鍍<br>層 | TiAIN | XIDUR | CUTINOX | DIXAL | DLC* | DIAMANT |
|------------------------------------------------------------------------------------------------------------------------------|-----|-----|----------------------------|--------------------------------------------------------------------------------------|-------------|-------|-------|---------|-------|------|---------|
| <b>DIXI 7333-3D</b><br>Ø 0.30 - 4.00<br>    | 3   | 123 | 粗銑<br>●●●●●<br>精修<br>●●●●○ |    | ✓           |       |       | ✓       |       |      |         |
| <b>DIXI 7333-5D</b><br>Ø 0.30 - 3.00<br>    | 3   | 123 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       | ✓       |       |      |         |
| <b>DIXI 7333-8D</b><br>Ø 0.30 - 3.00<br>    | 3   | 123 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           |       |       | ✓       |       |      |         |
| <b>DIXI 7543</b><br>Ø 1.00 - 12.00<br>      | 3   | 124 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    |             |       | ✓     |         |       |      |         |
| <b>DIXI 7583</b><br>Ø 0.30 - 6.00<br>       | 3   | 125 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |         |       | ✓*   |         |
| <b>DIXI 7253</b><br>Ø 3.00 - 16.00<br>    | 3   | 126 | 粗銑<br>●●●●●<br>精修<br>●●●●○ |  |             |       |       | ✓       |       |      |         |
| <b>DIXI 7563</b><br>Ø 4.00 - 20.00<br>    | 3   | 126 | 粗銑<br>●●●●○<br>精修<br>●●●●● |  |             |       |       |         | ✓     |      |         |
| <b>DIXI 7563-FC</b><br>Ø 6.00 - 20.00<br> | 3   | 126 | 粗銑<br>●●●●○<br>精修<br>●●●●● |  |             |       |       |         | ✓     |      |         |
| <b>DIXI 7273</b><br>Ø 3.00 - 20.00<br>    | 3   | 127 | 粗銑<br>●●●●○<br>精修<br>●●●●● |  | ✓           | ✓     |       |         |       |      |         |
| <b>DIXI 7593</b><br>Ø 6.00 - 20.00<br>    | 3-4 | 127 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓           |       |       |         |       |      |         |

### 立銑刀 Z=4

|                                                                                                                           |   |     |                            |                                                                                      |   |   |  |  |  |  |    |
|---------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|---|---|--|--|--|--|----|
| <b>DIXI 7244</b><br>Ø 0.40 - 20.00<br> | 4 | 128 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |  |  |  |  | ✓* |
| <b>DIXI 7204</b><br>Ø 2.00 - 6.00<br>  | 4 | 129 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |  |  |  |  |    |
| <b>DIXI 7224</b><br>Ø 3.00 - 20.00<br> | 4 | 129 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |  |  |  |  | ✓* |



| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|----|
| ◎         | ◎    | ◎    | ◎         |                       | ◎  | ○    | ◎         | ○        | ◎          | ○ |    | ○  |
| ◎         | ◎    | ◎    | ◎         |                       | ◎  | ○    | ◎         | ○        | ◎          | ○ |    | ○  |
| ◎         | ◎    | ◎    | ◎         |                       | ◎  | ○    | ◎         | ○        | ◎          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ○  |      | ○         |          |            |   |    |    |
| ○         | ○    | ○    | ○         |                       | ○  |      | ○         | ○        | ○          | ◎ |    | ○  |
| ○         | ◎    | ◎    | ◎         |                       | ○  | ◎    | ◎         |          |            |   |    |    |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    | ○  |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    | ○  |
| ◎         | ○    |      |           |                       | ○  |      | ○         | ○        | ○          | ◎ |    | ○  |
|           |      |      |           |                       |    |      |           |          |            | ◎ |    |    |

|   |   |   |   |  |   |  |   |   |   |   |   |   |
|---|---|---|---|--|---|--|---|---|---|---|---|---|
| ◎ | ○ | ○ | ○ |  | ◎ |  | ○ | ◎ | ○ | ◎ | ◎ | ○ |
| ◎ | ○ | ○ | ○ |  | ◎ |  | ○ | ◎ | ○ | ◎ |   | ○ |
| ◎ | ○ |   |   |  | ○ |  | ○ | ◎ | ○ | ◎ | ◎ | ○ |



✓ = 標準庫存

\* = 非鐵金屬用

## 銑刀系列

### 立銑刀 Z=4

|                                       | Z | 頁數  | 粗銑<br>精修                   |  | 無<br>鍍<br>層 | TiAIN | XIDUR | CUTINOX | DAC | DLC* |
|---------------------------------------|---|-----|----------------------------|--|-------------|-------|-------|---------|-----|------|
| <b>DIXI 7264</b><br>Ø 1.50 - 20.00    | 4 | 130 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |             |       |       | ✓       |     |      |
| <b>DIXI 7264-3D</b><br>Ø 6.00 - 20.00 | 4 | 130 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |             |       |       | ✓       |     |      |
| <b>DIXI 7254</b><br>Ø 3.00 - 16.00    | 4 | 131 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |             |       |       | ✓       |     |      |

### 多刃銑刀

|                                    |      |     |                            |  |   |   |   |  |  |    |
|------------------------------------|------|-----|----------------------------|--|---|---|---|--|--|----|
| <b>DIXI 7560</b><br>Ø 0.35 - 20.00 | 3-8  | 132 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |   |  |  | ✓* |
| <b>DIXI 7520</b><br>Ø 0.40 - 16.00 | 3-10 | 133 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |   |   | ✓ |  |  |    |

### 高效率粗銑刀

|                                       |   |     |                            |  |   |   |  |   |  |  |
|---------------------------------------|---|-----|----------------------------|--|---|---|--|---|--|--|
| <b>DIXI 7210</b><br>Ø 3.00 - 12.00    | 3 | 134 | 粗銑<br>●●●●○<br>精修<br>○●●●○ |  | ✓ |   |  | ✓ |  |  |
| <b>DIXI 7213</b><br>Ø 4.00 - 20.00    | 3 | 134 | 粗銑<br>●●●●○<br>精修<br>○●●●○ |  | ✓ | ✓ |  |   |  |  |
| <b>DIXI 7214</b><br>Ø 6.00 - 20.00    | 4 | 135 | 粗銑<br>●●●●○<br>精修<br>○●●●○ |  | ✓ | ✓ |  |   |  |  |
| <b>DIXI 7215</b><br>Ø 6.00 - 16.00    | 3 | 135 | 粗銑<br>●●●●○<br>精修<br>○●●●○ |  |   |   |  | ✓ |  |  |
| <b>DIXI 7215-FC</b><br>Ø 6.00 - 16.00 | 3 | 135 | 粗銑<br>●●●●○<br>精修<br>○●●●○ |  |   |   |  | ✓ |  |  |

### 高進給立銑刀

|                                    |   |     |                            |  |  |  |   |  |  |  |
|------------------------------------|---|-----|----------------------------|--|--|--|---|--|--|--|
| <b>DIXI 7702</b><br>Ø 0.50 - 12.00 | 2 | 136 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |  |  | ✓ |  |  |  |
|------------------------------------|---|-----|----------------------------|--|--|--|---|--|--|--|

○良好    ◎最佳

| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|----|
| ○         | ◎    | ◎    | ◎         |                       | ○  | ◎    | ◎         |          |            |   |    |    |
| ○         | ◎    | ◎    | ◎         |                       | ○  | ◎    | ◎         |          |            |   |    |    |
| ○         | ◎    | ◎    | ◎         |                       | ○  | ◎    | ◎         |          |            |   |    |    |
| ◎         | ◎    | ○    | ◎         |                       | ◎  | ○    | ○         | ◎        | ◎          |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
| ◎         | ◎    | ○    | ◎         |                       | ◎  |      | ◎         | ○        | ○          | ◎ |    |    |
| ◎         | ○    | ○    | ○         |                       | ◎  |      | ○         | ○        | ○          | ○ |    |    |
| ◎         | ○    | ○    | ○         |                       | ◎  |      | ○         | ○        | ○          | ○ |    |    |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    |    |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    |    |
| ◎         | ◎    | ◎    | ◎         | ◎                     | ◎  | ◎    | ◎         | ◎        | ◎          | ○ |    |    |

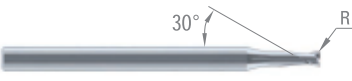
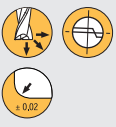
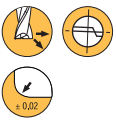
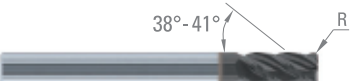
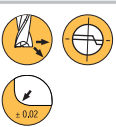
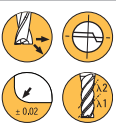
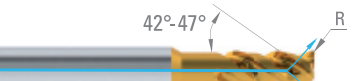


✓ = 標準庫存

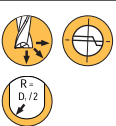
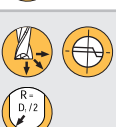
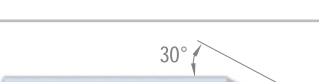
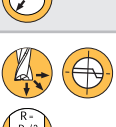
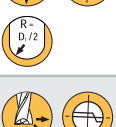
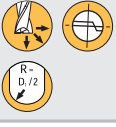
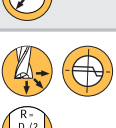
\* = 非鐵金屬用

## 銑刀系列

### 圓鼻銑刀

|                                                                                                                              | Z     | 頁數  | 粗銑<br>精修                   |                                                                                      | 無<br>鍍<br>層 | TITAN | DICUT | XIDUR | CUTINOX | DIXAL | DIAMANT* |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----|----------------------------|--------------------------------------------------------------------------------------|-------------|-------|-------|-------|---------|-------|----------|
| <b>DIXI 7237-10</b><br>Ø 0.40 - 3.00<br>    | 2     | 137 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |       |         |       |          |
| <b>DIXI 7070</b><br>Ø 3.00 - 12.00<br>      | 4 - 6 | 138 | 粗銑<br>●●●●○<br>精修<br>●●●●● |    |             |       |       | ✓     |         |       |          |
| <b>DIXI 7265</b><br>Ø 2.00 - 12.00<br>      | 4     | 139 | 粗銑<br>●●●●○<br>精修<br>●●●●● |    |             |       |       |       | ✓       |       |          |
| <b>DIXI 7554</b><br>Ø 2.00 - 12.00<br>      | 4     | 140 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |    | ✓           | ✓     |       |       |         |       |          |
| <b>DIXI 7552</b><br>Ø 3.00 - 16.00<br>      | 2     | 140 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |   | ✓           |       | ✓     |       |         |       |          |
| <b>DIXI 7565</b><br>Ø 4.00 - 20.00<br>    | 3     | 141 | 粗銑<br>●●●●○<br>精修<br>●●●●● |  |             |       |       |       |         | ✓     |          |
| <b>DIXI 7565-FC</b><br>Ø 6.00 - 20.00<br> | 3     | 141 | 粗銑<br>●●●●○<br>精修<br>●●●●● |  |             |       |       |       |         | ✓     |          |

### 球型銑刀

|                                                                                                                               |   |     |                            |                                                                                      |   |   |   |  |  |  |    |
|-------------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|---|---|---|--|--|--|----|
| <b>DIXI 7032</b><br>Ø 0.06 - 20.00<br>     | 2 | 142 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ | ✓ |  |  |  | ✓* |
| <b>DIXI 7042</b><br>Ø 2.00 - 20.00<br>     | 2 | 143 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ |   |  |  |  | ✓* |
| <b>DIXI 7046</b><br>Ø 0.20 - 12.00<br>     | 2 | 144 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ | ✓ |  |  |  | ✓* |
| <b>DIXI 7045</b><br>Ø 0.20 - 12.00<br>     | 2 | 145 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ | ✓ |  |  |  | ✓* |
| <b>DIXI 7047-8D</b><br>Ø 0.20 - 12.00<br>  | 2 | 145 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ | ✓ |  |  |  | ✓* |
| <b>DIXI 7047-10D</b><br>Ø 0.20 - 12.00<br> | 2 | 145 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ | ✓ | ✓ |  |  |  | ✓* |



| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|----|
| ◎         | ○    | ○    | ○         |                       | ◎  | ○    | ◎         | ◎        | ◎          | ○ |    | ○  |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
| ◎         | ○    | ○    | ○         |                       | ◎  |      | ◎         | ○        | ○          | ○ |    | ○  |
| ◎         | ○    | ○    | ○         |                       | ◎  |      | ◎         | ○        | ○          | ○ |    | ○  |
| ○         | ○    |      |           |                       | ○  |      | ◎         | ○        | ◎          | ○ |    | ○  |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    | ○  |
|           |      |      |           |                       |    |      |           | ○        | ○          | ◎ |    | ○  |

|   |   |   |   |  |   |   |   |   |   |   |   |   |
|---|---|---|---|--|---|---|---|---|---|---|---|---|
| ◎ | ○ | ○ | ○ |  | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ |
| ◎ | ○ | ○ | ○ |  | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ |  | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

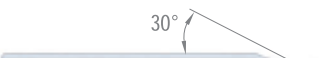


✓ = 標準庫存

\* = 非鐵金屬用

## 銑刀系列

### 球型銑刀

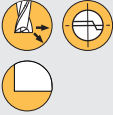
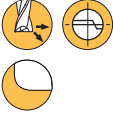
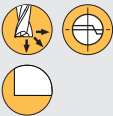
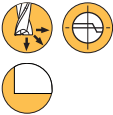
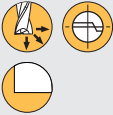
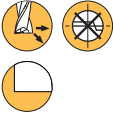
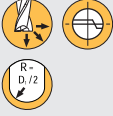
|                                                                                                                              | Z | 頁數  | 粗銑<br>精修                   |                                                                                                                                                                                                                                                                       | 無<br>鍍<br>層<br>□ | TiAIN<br>■ | DICUT<br>■ | XIDUR<br>■ | DIAMANT*<br>■ |
|------------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|------------|------------|---------------|
| <b>DIXI 7047-12D</b><br>Ø 0.20 - 5.00<br>   | 2 | 145 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br>       | ✓                | ✓          | ✓          |            | ✓*            |
| <b>DIXI 7047-15D</b><br>Ø 0.20 - 4.00<br>   | 2 | 145 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br>       | ✓                | ✓          | ✓          |            | ✓*            |
| <b>DIXI 7047-18D</b><br>Ø 0.20 - 3.00<br>   | 2 | 145 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br>       | ✓                | ✓          | ✓          |            | ✓*            |
| <b>DIXI 7532</b><br>Ø 0.20 - 8.00<br>       | 2 | 147 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br>       |                  |            |            | ✓          |               |
| <b>DIXI 7532-3D</b><br>Ø 0.20 - 10.00<br>   | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br>      |                  |            |            | ✓          |               |
| <b>DIXI 7532-5D</b><br>Ø 0.20 - 10.00<br> | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7532-8D</b><br>Ø 0.20 - 4.00<br>  | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7532-10D</b><br>Ø 0.40 - 3.00<br> | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7532-12D</b><br>Ø 0.50 - 2.00<br> | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7532-15D</b><br>Ø 0.60 - 2.00<br> | 2 | 148 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7542</b><br>Ø 1.00 - 12.00<br>    | 2 | 149 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> |                  |            |            | ✓          |               |
| <b>DIXI 7033</b><br>Ø 1.00 - 10.00<br>    | 3 | 150 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> | ✓                | ✓          |            |            |               |
| <b>DIXI 7034</b><br>Ø 8.00 - 20.00<br>    | 4 | 150 | 粗銑<br>●○○○○<br>精修<br>●●●●● | <br><br> | ✓                | ✓          |            |            |               |

| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料 |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|----|
| ◎         | ◎    | ◎    | ◎         |                       | ○  | ○    | ◎         | ○        | ◎          | ○ | ◎  | ○  |
| ◎         | ◎    | ◎    | ◎         |                       | ○  | ○    | ◎         | ○        | ◎          | ○ | ◎  | ○  |
| ◎         | ◎    | ◎    | ◎         |                       | ○  | ○    | ◎         | ○        | ◎          | ○ | ◎  | ○  |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
|           |      | ○    |           | ◎                     |    | ○    |           |          |            |   |    |    |
| ◎         | ◎    | ◎    | ○         |                       | ◎  | ○    | ○         | ◎        |            | ◎ |    | ◎  |
| ◎         | ◎    | ◎    | ○         |                       | ◎  | ○    | ○         | ○        | ○          | ○ |    | ○  |

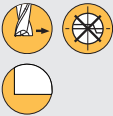


銑刀系列

鑽石和PCD銑刀

|                                                                                                                                | Z     | 頁數       | 粗銑<br>精修                   |                                                                                      | 無<br>鍍<br>層<br>□ | PCD<br>● | DIA<br>◆ |  |
|--------------------------------------------------------------------------------------------------------------------------------|-------|----------|----------------------------|--------------------------------------------------------------------------------------|------------------|----------|----------|--|
| <b>DIXI 72420-SH</b><br>Ø 1.00 - 20.00<br>    | 1 - 2 | 請洽<br>業務 | 粗銑<br>●●●●●<br>精修<br>●●●●● |    |                  | ✓        |          |  |
| <b>DIXI 70520-SH</b><br>Ø 1.00 - 20.00<br>    | 1 - 2 | 請洽<br>業務 | 粗銑<br>●●●●●<br>精修<br>●●●●● |    |                  | ✓        |          |  |
| <b>DIXI 70600 PCD</b><br>Ø 1.00 - 10.00<br>   | 1     | 請洽<br>業務 | 粗銑<br>●●●●●<br>精修<br>●●●●● |    |                  | ✓        |          |  |
| <b>DIXI 70600 DIA</b><br>Ø 3.00 - 6.00<br>    | 1     | 請洽<br>業務 | 粗銑<br>○●●●○<br>精修<br>●●●●● |    |                  |          | ✓        |  |
| <b>DIXI 72310 DIA</b><br>Ø 0.30 - 2.00<br>    | 1     | 請洽<br>業務 | 粗銑<br>○●●●○<br>精修<br>●●●●● |   |                  |          | ✓        |  |
| <b>DIXI 72421 DIA</b><br>Ø 6.00 - 12.00<br> | 1     | 請洽<br>業務 | 粗銑<br>○●●●○<br>精修<br>●●●●● |  |                  |          | ✓        |  |
| <b>DIXI 70320-SH</b><br>Ø 2.00 - 20.00<br>  | 1 - 2 | 請洽<br>業務 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  |                  | ✓        |          |  |

複合材質專用銑刀 / KEVLAR®

|                                                                                                                           |   |     |                            |                                                                                      |   |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|---|--|--|--|
| <b>DIXI 7112</b><br>Ø 5.00 - 12.70<br> | 2 | 151 | 粗銑<br>●●●●○<br>精修<br>●●●●○ |  | ✓ |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------|---|--|--|--|



○良好    ⊙最佳

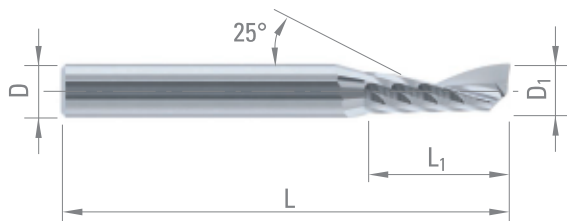
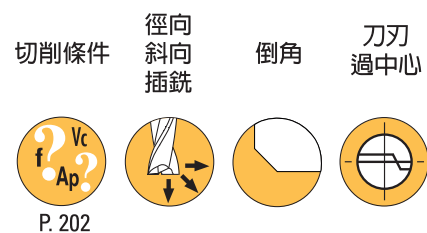
| 含鉛<br>快削鋼 | 低合金鋼 | 高合金鋼 | 雙相<br>不銹鋼 | 熱處理鋼<br>鑄鐵<br>>HRC 45 | 鑄鐵 | 耐熱合金 | 純鈦<br>鈦合金 | 銅合金<br>銀 | 難加工<br>銅合金 | 鋁 | 石墨 | 塑料                  |
|-----------|------|------|-----------|-----------------------|----|------|-----------|----------|------------|---|----|---------------------|
|           |      |      |           |                       |    |      |           | ⊙        | ⊙          | ⊙ | ⊙  | ⊙                   |
|           |      |      |           |                       |    |      |           | ⊙        | ⊙          | ⊙ | ⊙  | ⊙                   |
|           |      |      |           |                       |    |      |           | ⊙        | ⊙          | ⊙ | ⊙  | ⊙                   |
|           |      |      |           |                       |    |      |           | ⊙        | ○          | ⊙ |    | ⊙                   |
|           |      |      |           |                       |    |      |           | ⊙        | ○          | ⊙ |    | ⊙                   |
|           |      |      |           |                       |    |      |           |          |            |   |    | ⊙                   |
|           |      |      |           |                       |    |      |           | ⊙        | ⊙          | ⊙ | ⊙  | ⊙                   |
|           |      |      |           |                       |    |      |           |          |            |   |    | 複合<br>材質<br>Kevlar® |
|           |      |      |           |                       |    |      |           |          |            |   |    | ⊙                   |



## DIXI 7561

單刀鋁合金專用銑刀

Z = 1



銅合金  
銀  
金

鋁

塑料

粗銑



精修



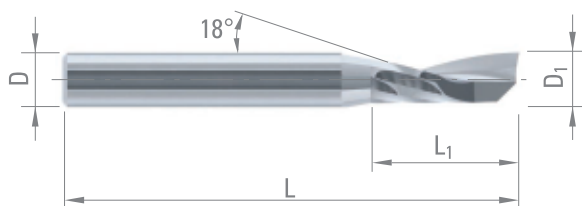
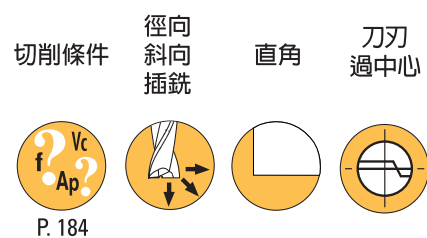
| D <sub>1</sub> e8 |            | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   | DLC*   |
|-------------------|------------|----------------|-----------------|----|-------|--------|
| 2.00              | 0.10 x 45° | 4.0            | 3               | 38 | 46560 | 97284  |
| 3.00              | 0.15 x 45° | 6.0            | 3               | 38 | 46561 | 97285  |
| 4.00              | 0.15 x 45° | 12.0           | 4               | 50 | 46562 | 97286  |
| 5.00              | 0.15 x 45° | 14.0           | 5               | 50 | 46563 | 960345 |
| 6.00              | 0.20 x 45° | 16.0           | 6               | 50 | 46564 | 967038 |
| 8.00              | 0.20 x 45° | 20.0           | 8               | 60 | 46565 | 992675 |
| 10.00             | 0.20 x 45° | 22.0           | 10              | 70 | 46566 | 996345 |
| 12.00             | 0.20 x 45° | 25.0           | 12              | 70 | 46567 | 965525 |

\* 非鐵金屬用

## DIXI 7301

單刀塑膠專用短刃銑刀

Z = 1



塑膠

粗銑



精修



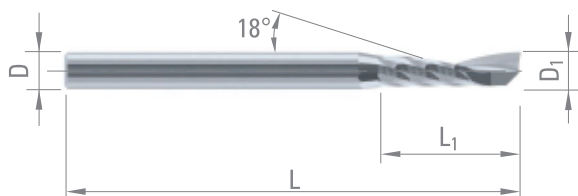
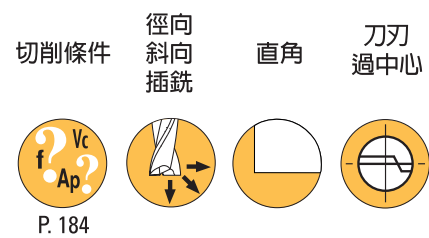
| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    |
|-------------------|----------------|-----------------|----|--------|
| 2.00              | 6.0            | 3               | 38 | 965241 |
| 3.00              | 12.0           | 3               | 50 | 963955 |
| 4.00              | 16.0           | 4               | 50 | 964011 |
| 5.00              | 16.0           | 5               | 50 | 964012 |
| 6.00              | 16.0           | 6               | 50 | 964014 |
| 8.00              | 23.0           | 8               | 50 | 964016 |



## DIXI 7302

單刃塑膠專用長刀銑刀

Z = 1



塑膠

粗銑



精修

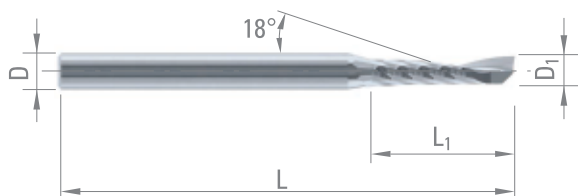
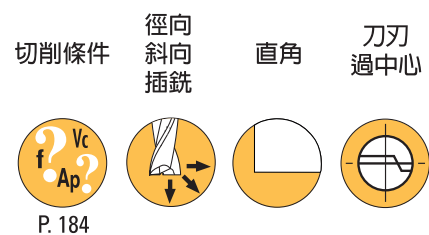


| D <sub>1 e8</sub> | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層    |
|-------------------|----------------|-----------------|-----|--------|
| 3.00              | 17.0           | 3               | 61  | 963956 |
| 4.00              | 23.0           | 4               | 61  | 964031 |
| 5.00              | 23.0           | 5               | 61  | 964032 |
| 6.00              | 23.0           | 6               | 75  | 964033 |
| 8.00              | 32.0           | 8               | 75  | 964034 |
| 10.00             | 33.0           | 10              | 75  | 964093 |
| 12.00             | 33.0           | 12              | 100 | 964094 |

## DIXI 7303

高剛性單刃塑膠專用長刀銑刀

Z = 1



塑膠

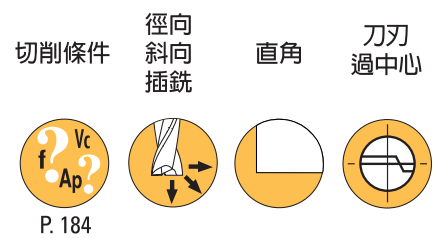
粗銑



精修

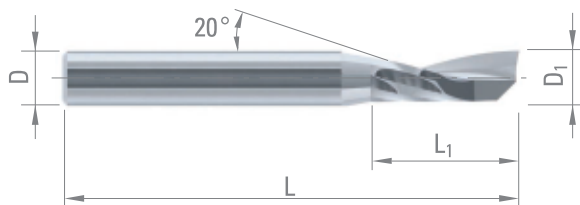


| D <sub>1 e8</sub> | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    |
|-------------------|----------------|-----------------|----|--------|
| 2.00              | 8.0            | 6               | 50 | 964147 |
| 3.00              | 18.0           | 6               | 75 | 963957 |
| 4.00              | 23.0           | 6               | 75 | 964079 |



## 單刀塑膠專用銑刀

Z = 1



塑膠

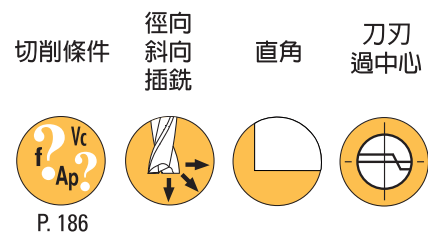
粗銑



精修

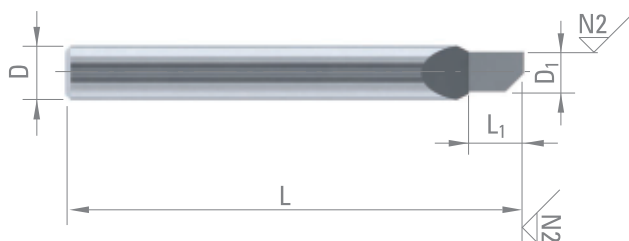


| $D_{1e8}$ | $L_1$ | $D_{h5}$ | L  | 無鍍層    |
|-----------|-------|----------|----|--------|
| 1.00      | 4.0   | 3        | 30 | 305388 |
| 1.50      | 6.0   | 3        | 30 | 305390 |
| 2.00      | 8.0   | 3        | 30 | 305391 |
|           | 8.0   | 6        | 58 | 974194 |
|           | 10.0  | 6        | 58 | 974195 |
| 2.50      | 10.0  | 6        | 58 | 974197 |
| 3.00      | 10.0  | 3        | 58 | 974198 |
|           | 15.0  | 3        | 58 | 974199 |
|           | 20.0  | 3        | 58 | 305392 |
|           | 10.0  | 6        | 58 | 974200 |
|           | 15.0  | 6        | 58 | 974201 |
|           | 20.0  | 6        | 58 | 305393 |
| 4.00      | 12.0  | 4        | 58 | 974206 |
|           | 15.0  | 4        | 58 | 305394 |
|           | 22.0  | 4        | 58 | 974207 |
|           | 30.0  | 4        | 75 | 305395 |
|           | 12.0  | 6        | 58 | 974208 |
|           | 22.0  | 6        | 58 | 974209 |
| 5.00      | 14.0  | 5        | 58 | 974214 |
|           | 22.0  | 5        | 58 | 974215 |
|           | 14.0  | 6        | 58 | 974216 |
|           | 22.0  | 6        | 58 | 974217 |
| 6.00      | 16.0  | 6        | 58 | 974222 |
|           | 22.0  | 6        | 58 | 305778 |
|           | 32.0  | 6        | 75 | 974223 |
|           | 38.0  | 6        | 80 | 305396 |
| 8.00      | 22.0  | 8        | 64 | 974227 |
|           | 30.0  | 8        | 80 | 974228 |
|           | 38.0  | 8        | 80 | 974229 |
|           | 42.0  | 8        | 80 | 305397 |
| 10.00     | 30.0  | 10       | 80 | 974230 |
| 12.00     | 30.0  | 12       | 83 | 974231 |



## 直刃開槽銑刀（刃口鏡面研磨）

Z = 1



鑄鐵

銅合金  
銀  
金難加工  
銅合金

鋁

塑膠

粗銑



精修



| $D_{1 \pm 0.01}$ | $L_1$ | $D_{h5}$ | L  | 無鍍層    |
|------------------|-------|----------|----|--------|
| 0.50             | 1.0   | 4        | 35 | 965456 |
| 0.60             | 1.2   | 4        | 35 | 965457 |
| 0.70             | 1.5   | 4        | 35 | 965458 |
| 0.80             | 1.5   | 4        | 35 | 960645 |
| 0.90             | 1.5   | 4        | 35 | 960646 |
| 1.00             | 1.5   | 4        | 35 | 960647 |
| 1.00 >           | 2.5   | 4        | 35 | 964328 |
| 1.10             | 2.0   | 4        | 35 | 960648 |
| 1.20             | 2.0   | 4        | 35 | 960649 |
| 1.30             | 2.0   | 4        | 35 | 960650 |
| 1.40             | 2.0   | 4        | 35 | 960651 |
| 1.50             | 2.0   | 4        | 35 | 960652 |
| 1.60             | 2.0   | 4        | 35 | 960653 |
| 1.70             | 2.5   | 4        | 35 | 960654 |
| 1.80             | 2.5   | 4        | 35 | 960655 |
| 1.90             | 2.5   | 4        | 35 | 960656 |
| 2.00             | 2.5   | 4        | 35 | 960657 |
| 2.50             | 3.0   | 4        | 35 | 960658 |
| 3.00             | 3.5   | 4        | 42 | 960659 |
| 3.50             | 4.0   | 4        | 42 | 960660 |
| 4.00             | 5.0   | 4        | 42 | 960661 |
| 4.50             | 6.0   | 6        | 50 | 960662 |
| 5.00             | 7.0   | 6        | 50 | 960663 |
| 6.00             | 7.0   | 8        | 50 | 960664 |

切削條件 徑向斜向插銑 直角 刀刃過中心

$f$   $V_c$   $A_p$  P. 186

3/4單刃立銑刀（刃口鏡面研磨）

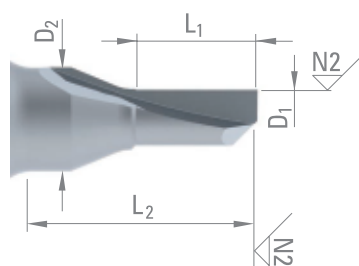
Z = 1



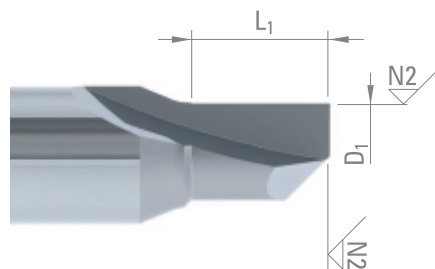
鑄鐵 銅合金 銀 金 難加工 銅合金 鋁 塑膠

粗銑 精修

| $D_1 \pm 0.01$ | $L_1$ | $D_2$ | $L_2$ | $D_{h5}$ | L  | 無鍍層    |
|----------------|-------|-------|-------|----------|----|--------|
| 0.40           | 0.8   | 1.5   | 4.6   | 4        | 35 | 987593 |
| 0.50           | 1.0   | 1.5   | 4.6   | 4        | 35 | 983250 |
| 0.60           | 1.2   | 1.5   | 4.6   | 4        | 35 | 987594 |
| 0.70           | 1.5   | 1.5   | 4.6   | 4        | 35 | 987595 |
| 0.80           | 1.5   | 1.5   | 4.6   | 4        | 35 | 987596 |
| 0.90           | 1.5   | 2.0   | 5.1   | 4        | 35 | 987581 |
| 1.00           | 1.5   | 2.0   | 5.1   | 4        | 35 | 983251 |
| 1.00 >         | 2.5   | 2.0   | 5.1   | 4        | 35 | 987582 |
| 1.10           | 2.5   | 2.0   | 6.0   | 4        | 35 | 987597 |
| 1.20           | 2.5   | 2.0   | 6.0   | 4        | 35 | 987598 |
| 1.30           | 2.5   | 3.0   | 6.0   | 4        | 35 | 987599 |
| 1.40           | 2.5   | 3.0   | 6.0   | 4        | 35 | 987583 |
| 1.50           | 2.5   | 3.0   | 6.0   | 4        | 35 | 983252 |
| 1.50 >         | 3.5   | 3.0   | 6.5   | 4        | 35 | 987600 |
| 1.60           | 3.5   | 3.0   | 6.5   | 4        | 35 | 987585 |
| 1.70           | 3.5   | 3.0   | 6.5   | 4        | 35 | 987586 |



| $D_1 \pm 0.01$ | $L_1$ | $D_{h5}$ | L  | 無鍍層    |
|----------------|-------|----------|----|--------|
| 1.80           | 3.5   | 4        | 35 | 987601 |
| 1.90           | 3.5   | 4        | 35 | 987602 |
| 2.00           | 4.0   | 4        | 35 | 983253 |
| 2.20           | 4.0   | 4        | 35 | 987603 |
| 2.50           | 4.0   | 4        | 35 | 987604 |
| 2.80           | 4.0   | 4        | 35 | 987605 |
| 3.00           | 4.0   | 4        | 35 | 983254 |
| 4.00           | 5.0   | 4        | 35 | 987584 |



# DIXI 7242

## 高剛性開槽立銑刀

Z = 2

切削條件

P. 162

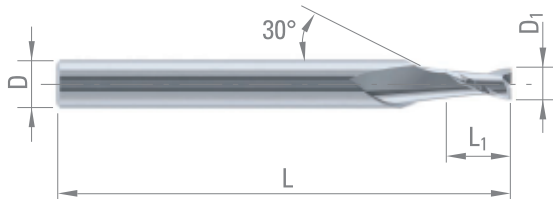
徑向  
斜向  
插銑

倒角

D<sub>1</sub> > 6

刀刃  
過中心

DIN 6527



含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

塑膠

粗銑

精修

| D <sub>1</sub>                                                                             | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | TiAlN  |
|--------------------------------------------------------------------------------------------|----------------|-----------------|----|--------|--------|
| $\emptyset < 2.00 - 0/-0.01$<br>$\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                 |    |        |        |
| 0.10                                                                                       | 0.25           | 3               | 38 | 334534 |        |
| 0.15                                                                                       | 0.3            | 3               | 38 | 52628  | 64920  |
| 0.20                                                                                       | 0.4            | 3               | 38 | 45705  | 60021  |
| 0.25                                                                                       | 0.6            | 3               | 38 | 47916  | 64921  |
| 0.30                                                                                       | 0.6            | 3               | 38 | 42172  | 60121  |
| 0.30 >                                                                                     | 1.0            | 3               | 38 | 48850  | 60122  |
| 0.35                                                                                       | 0.8            | 3               | 38 | 47917  | 950699 |
| 0.40                                                                                       | 0.8            | 3               | 38 | 42126  | 60123  |
| 0.40 >                                                                                     | 2.0            | 3               | 38 | 48851  | 60124  |
| 0.45                                                                                       | 1.0            | 3               | 38 | 47918  | 952421 |
| 0.50                                                                                       | 1.0            | 3               | 38 | 35241  | 36230  |
| 0.50 >                                                                                     | 2.5            | 3               | 38 | 48852  | 60125  |
| 0.55                                                                                       | 1.2            | 3               | 38 | 47921  | 952422 |
| 0.60                                                                                       | 1.2            | 3               | 38 | 35242  | 36231  |
| 0.60 >                                                                                     | 3.0            | 3               | 38 | 48853  | 60126  |
| 0.65                                                                                       | 1.4            | 3               | 38 | 47922  | 952423 |
| 0.70                                                                                       | 1.4            | 3               | 38 | 35243  | 36232  |
| 0.70 >                                                                                     | 3.5            | 3               | 38 | 48854  | 57162  |
| 0.75                                                                                       | 1.6            | 3               | 38 | 47923  | 57163  |
| 0.80                                                                                       | 1.6            | 3               | 38 | 35244  | 36233  |
| 0.80 >                                                                                     | 4.0            | 3               | 38 | 48855  | 57164  |
| 0.85                                                                                       | 1.8            | 3               | 38 | 47066  | 57165  |
| 0.90                                                                                       | 1.8            | 3               | 38 | 35245  | 36234  |
| 0.90 >                                                                                     | 4.5            | 3               | 38 | 48856  | 57166  |
| 0.95                                                                                       | 2.0            | 3               | 38 | 42846  | 57167  |
| 1.00                                                                                       | 2.0            | 3               | 38 | 35246  | 36235  |
| 1.00 >                                                                                     | 5.0            | 3               | 38 | 42735  | 55950  |
| 1.05                                                                                       | 2.2            | 3               | 38 | 47924  | 57168  |
| 1.10                                                                                       | 2.2            | 3               | 38 | 35247  | 57169  |
| 1.15                                                                                       | 2.4            | 3               | 38 | 47925  | 57170  |
| 1.20                                                                                       | 2.4            | 3               | 38 | 35248  | 36237  |
| 1.20 >                                                                                     | 6.0            | 3               | 38 | 48857  | 57171  |
| 1.25                                                                                       | 2.6            | 3               | 38 | 47926  | 57172  |
| 1.30                                                                                       | 2.6            | 3               | 38 | 35249  | 57173  |
| 1.35                                                                                       | 2.8            | 3               | 38 | 47927  | 57174  |
| 1.40                                                                                       | 2.8            | 3               | 38 | 35250  | 36239  |
| 1.45                                                                                       | 3.0            | 3               | 38 | 47928  | 57175  |
| 1.50                                                                                       | 3.0            | 3               | 38 | 38489  | 36240  |
| 1.50 >                                                                                     | 7.0            | 3               | 38 | 48858  | 57176  |

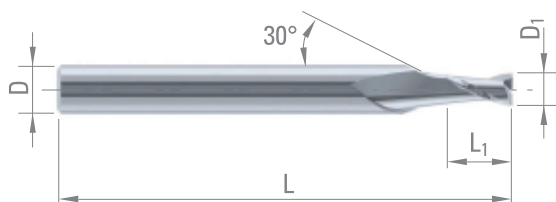
| D <sub>1</sub>                                                                             | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   | TiAlN |
|--------------------------------------------------------------------------------------------|----------------|-----------------|----|-------|-------|
| $\emptyset < 2.00 - 0/-0.01$<br>$\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                 |    |       |       |
| 1.60                                                                                       | 3.2            | 3               | 38 | 38490 | 57177 |
| 1.70                                                                                       | 3.4            | 3               | 38 | 38491 | 44939 |
| 1.80                                                                                       | 3.6            | 3               | 38 | 42096 | 38613 |
| 1.90                                                                                       | 4.0            | 3               | 38 | 38493 | 57178 |
| 2.00                                                                                       | 6.0            | 3               | 38 | 42784 | 39577 |
| 2.10                                                                                       | 7.0            | 3               | 38 | 44058 | 64794 |
| 2.20                                                                                       | 7.0            | 3               | 38 | 43956 | 64795 |
| 2.30                                                                                       | 7.0            | 3               | 38 | 44877 | 60627 |
| 2.40                                                                                       | 7.0            | 3               | 38 | 43527 | 64796 |
| 2.50                                                                                       | 7.0            | 3               | 38 | 42201 | 36242 |
| 3.00                                                                                       | 7.0            | 6               | 57 | 41806 | 46440 |
| 3.50                                                                                       | 7.0            | 6               | 57 | 43353 | 57179 |
| 4.00                                                                                       | 8.0            | 6               | 57 | 41856 | 57180 |
| 4.50                                                                                       | 8.0            | 6               | 57 | 42202 | 57181 |
| 5.00                                                                                       | 10.0           | 6               | 57 | 41996 | 36247 |
| 5.50                                                                                       | 10.0           | 6               | 57 | 41807 | 57182 |
| 6.00                                                                                       | 10.0           | 6               | 57 | 41907 | 57183 |
| 6.50                                                                                       | 13.0           | 8               | 63 | 28932 | 57184 |
| 7.00                                                                                       | 13.0           | 8               | 63 | 28933 | 57185 |
| 7.50                                                                                       | 16.0           | 8               | 63 | 28934 | 57186 |
| 8.00                                                                                       | 16.0           | 8               | 63 | 42271 | 57187 |
| 8.50                                                                                       | 16.0           | 10              | 72 | 28936 | 57195 |
| 9.00                                                                                       | 16.0           | 10              | 72 | 28937 | 57196 |
| 9.50                                                                                       | 19.0           | 10              | 72 | 43038 | 57197 |
| 10.00                                                                                      | 19.0           | 10              | 72 | 42352 | 57198 |
| 12.00                                                                                      | 22.0           | 12              | 83 | 39944 | 57199 |
| 18.00                                                                                      | 26.0           | 18              | 92 | 42355 | 57202 |



# DIXI 7342

## 高剛性開槽立銑刀

Z = 2



切削條件 徑向斜向插銑 直角 刀刃過中心

P. 188  
P. 190

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金

粗銑 精修

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | C-TOP  |
|--------------------|----------------|-----------------|----|--------|--------|
| Ø < 0.10 - 0/-0.01 |                |                 |    |        |        |
| Ø < 2.00 - 0/-0.02 |                |                 |    |        |        |
| Ø ≥ 6.00 - e8      |                |                 |    |        |        |
| 0.10               | 0.15           | 4               | 38 | 334850 | 334910 |
| 0.15               | 0.23           | 4               | 38 | 334851 | 334911 |
| 0.20               | 0.30           | 4               | 38 | 334852 | 334912 |
| 0.25               | 0.38           | 4               | 38 | 334853 | 334913 |
| 0.30               | 0.45           | 4               | 38 | 334854 | 334914 |
| 0.35               | 0.53           | 4               | 38 | 334855 | 334915 |
| 0.40               | 0.60           | 4               | 38 | 334856 | 334916 |
| 0.50               | 0.75           | 4               | 38 | 334857 | 334917 |
| 0.60               | 0.90           | 4               | 38 | 334858 | 334918 |
| 0.70               | 1.05           | 4               | 38 | 334859 | 334919 |
| 0.80               | 1.20           | 4               | 38 | 334860 | 334920 |
| 0.90               | 1.35           | 4               | 38 | 334861 | 334921 |
| 1.00               | 1.50           | 4               | 38 | 334862 | 334922 |
| 1.10               | 1.65           | 4               | 38 | 334863 | 334923 |
| 1.20               | 1.80           | 4               | 38 | 334864 | 334924 |
| 1.30               | 1.95           | 4               | 38 | 334865 | 334925 |
| 1.40               | 2.10           | 4               | 38 | 334866 | 334926 |
| 1.50               | 2.25           | 4               | 38 | 334867 | 334927 |
| 1.60               | 2.40           | 4               | 38 | 334868 | 334928 |
| 1.70               | 2.55           | 4               | 38 | 334869 | 334929 |
| 1.80               | 2.70           | 4               | 38 | 334870 | 334930 |
| 1.90               | 2.85           | 4               | 38 | 334871 | 334931 |
| 2.00               | 3.00           | 4               | 38 | 334872 | 334932 |
| 2.50               | 3.75           | 4               | 38 | 334873 | 334933 |
| 3.00               | 4.50           | 6               | 55 | 334874 | 334934 |
| 4.00               | 6.00           | 6               | 55 | 334875 | 334935 |
| 5.00               | 7.50           | 6               | 55 | 334876 | 334936 |
| 6.00               | 9.00           | 6               | 55 | 334877 | 334937 |
| 8.00               | 12.00          | 8               | 64 | 334878 | 334938 |
| 10.00              | 15.00          | 10              | 67 | 334879 | 334939 |
| 12.00              | 18.00          | 12              | 74 | 334880 | 334940 |



# DIXI 7202

## 開槽立銑刀

Z = 2

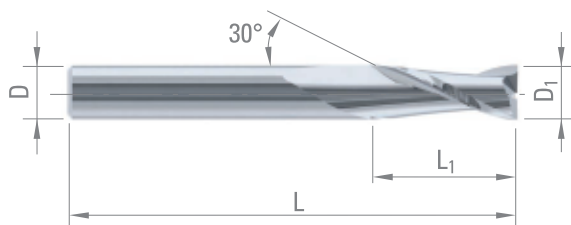
切削條件

徑向  
斜向  
插銑

直角

刀刃  
過中心

P. 162



含鉛  
快削鋼

低合金鋼

雙相  
不銹鋼

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑  
●○○○○

精修  
●●●●○

| $D_1$ e8<br>$\emptyset < 2.00 - 0/-0.01$<br>$\emptyset \geq 2.00 - e8$ | $L_1$ | $D_{h5}$ | L  | 無鍍層   | TiAlN | DIAMANT* |
|------------------------------------------------------------------------|-------|----------|----|-------|-------|----------|
| 1.50                                                                   | 6     | 2.0      | 32 | 690   | 57063 |          |
| 2.00                                                                   | 8     | 2.0      | 32 | 691   | 57064 | 61616    |
| 2.50                                                                   | 8     | 2.5      | 32 | 692   | 57065 |          |
| 3.00                                                                   | 10    | 3.0      | 38 | 693   | 57066 | 36199    |
| 3.50                                                                   | 12    | 3.5      | 38 | 34760 | 57067 |          |
| 4.00                                                                   | 12    | 4.0      | 50 | 694   | 57068 | 63847    |
| 4.50                                                                   | 12    | 4.5      | 50 | 41135 | 57069 |          |
| 5.00                                                                   | 14    | 5.0      | 50 | 34623 | 57070 |          |
| 6.00                                                                   | 16    | 6.0      | 50 | 34624 | 57071 | 62991    |
| 7.00                                                                   | 18    | 7.0      | 60 | 29769 | 57072 |          |
| 8.00                                                                   | 20    | 8.0      | 63 | 698   | 57073 | 67513    |
| 9.00                                                                   | 20    | 9.0      | 67 | 43726 |       |          |
| 10.00                                                                  | 22    | 10.0     | 72 | 699   | 57075 |          |
| 11.00                                                                  | 22    | 11.0     | 73 | 28686 |       |          |
| 12.00                                                                  | 22    | 12.0     | 73 | 30940 | 57077 |          |

\* 非鐵金屬用



切削條件

徑向  
斜向  
插銑

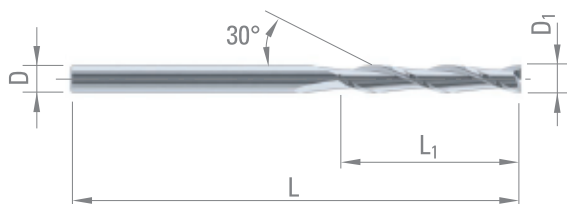
直角

刀刃  
過中心

P. 178

長刃開槽立銑刀

Z = 2



含鉛  
快削鋼

低合金鋼

雙相  
不銹鋼

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑  
●○○○○

精修  
●●●●○

| $D_{1\ e8}$ | $L_1$ | $D_{h5}$ | L   | 無鍍層   | TiAlN | DIAMANT* |
|-------------|-------|----------|-----|-------|-------|----------|
| 3.00        | 30.0  | 3        | 60  | 44756 | 57124 | 60231    |
| 4.00        | 30.0  | 4        | 60  | 44757 | 57125 | 60232    |
| 5.00        | 35.0  | 5        | 75  | 44758 | 57133 | 60233    |
| 6.00        | 40.0  | 6        | 100 | 44759 | 57134 | 60234    |
| 8.00        | 40.0  | 8        | 100 | 44760 | 57135 | 60235    |
| 10.00       | 40.0  | 10       | 100 | 44761 | 57136 | 60236    |
| 12.00       | 45.0  | 12       | 100 | 44762 | 57137 | 60237    |
| 16.00       | 65.0  | 16       | 150 | 44764 |       |          |
| 20.00       | 65.0  | 20       | 150 | 44766 | 57140 |          |

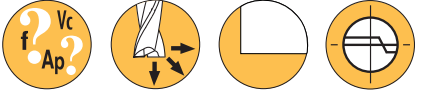
\* 非鐵金屬用

# DIXI 7240

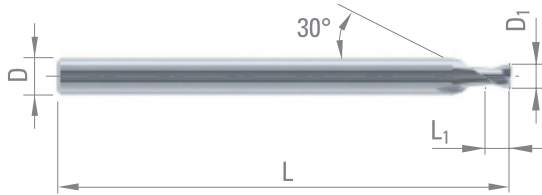
## 超短刃開槽立銑刀

Z = 2

切削條件 徑向斜向插銑 直角 刀刃過中心



P. 162



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金 鋁

塑膠 粗銑 精修

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | TiAlN  |
|--------------------|----------------|-----------------|----|--------|--------|
| Ø < 2.00 - 0/-0.01 |                |                 |    |        |        |
| Ø < 3.00 - 0/-0.02 |                |                 |    |        |        |
| Ø ≥ 3.00 - e8      |                |                 |    |        |        |
| 0.04               | 0.04           | 3               | 38 | 954084 |        |
| 0.05               | 0.05           | 3               | 38 | 954085 |        |
| 0.06               | 0.06           | 3               | 38 | 951973 |        |
| 0.07               | 0.07           | 3               | 38 | 954087 |        |
| 0.08               | 0.08           | 3               | 38 | 954086 |        |
| 0.09               | 0.09           | 3               | 38 | 954089 |        |
| 0.10               | 0.10           | 3               | 38 | 63609  | 64354  |
| 0.12               | 0.12           | 3               | 38 | 954090 | 956316 |
| 0.15               | 0.15           | 3               | 38 | 63608  | 64355  |
| 0.20               | 0.20           | 3               | 38 | 63610  | 64356  |
| 0.25               | 0.25           | 3               | 38 | 63678  | 64357  |
| 0.30               | 0.30           | 3               | 38 | 63679  | 64253  |
| 0.35               | 0.35           | 3               | 38 | 63680  | 64358  |
| 0.40               | 0.40           | 3               | 38 | 56551  | 61443  |
| 0.45               | 0.45           | 3               | 38 | 63681  | 64359  |
| 0.50               | 0.50           | 3               | 38 | 63682  | 64254  |
| 0.55               | 0.55           | 3               | 38 | 63683  | 64360  |
| 0.60               | 0.60           | 3               | 38 | 45571  | 64361  |
| 0.65               | 0.65           | 3               | 38 | 63684  | 64362  |
| 0.70               | 0.70           | 3               | 38 | 63685  | 64363  |
| 0.75               | 0.75           | 3               | 38 | 63686  | 64364  |
| 0.80               | 0.80           | 3               | 38 | 63687  | 64255  |
| 0.85               | 0.85           | 3               | 38 | 63688  | 64365  |
| 0.90               | 0.90           | 3               | 38 | 63689  | 62538  |
| 0.95               | 0.95           | 3               | 38 | 63690  | 64366  |
| 1.00               | 1.00           | 3               | 38 | 50547  | 64367  |
| 1.05               | 1.05           | 3               | 38 | 63691  | 64368  |
| 1.10               | 1.10           | 3               | 38 | 63692  | 64369  |
| 1.15               | 1.15           | 3               | 38 | 63805  | 64370  |
| 1.20               | 1.20           | 3               | 38 | 63806  | 64371  |
| 1.25               | 1.25           | 3               | 38 | 63807  | 64372  |
| 1.30               | 1.30           | 3               | 38 | 63808  | 64373  |
| 1.35               | 1.35           | 3               | 38 | 63809  | 64374  |
| 1.40               | 1.40           | 3               | 38 | 63810  | 64375  |
| 1.45               | 1.45           | 3               | 38 | 63811  | 64376  |

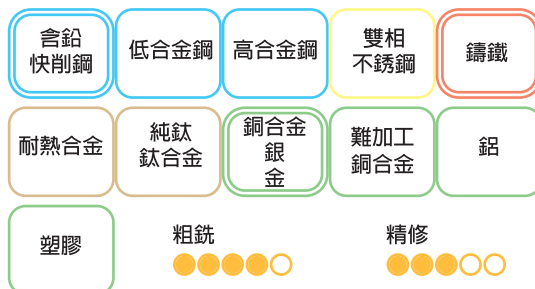
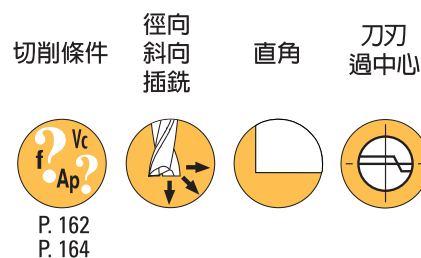
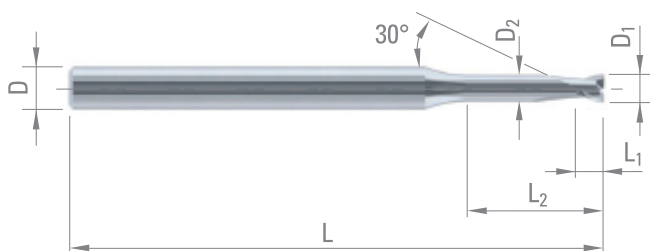
| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   | TiAlN |
|--------------------|----------------|-----------------|----|-------|-------|
| Ø < 2.00 - 0/-0.01 |                |                 |    |       |       |
| Ø < 3.00 - 0/-0.02 |                |                 |    |       |       |
| Ø ≥ 3.00 - e8      |                |                 |    |       |       |
| 1.50               | 1.50           | 3               | 38 | 50548 | 56840 |
| 1.55               | 1.55           | 3               | 38 | 63812 | 64377 |
| 1.60               | 1.60           | 3               | 38 | 63813 | 64378 |
| 1.65               | 1.65           | 3               | 38 | 63814 | 64379 |
| 1.70               | 1.70           | 3               | 38 | 63815 | 64380 |
| 1.75               | 1.75           | 3               | 38 | 63816 | 64381 |
| 1.80               | 1.80           | 3               | 38 | 63817 | 64382 |
| 1.85               | 1.85           | 3               | 38 | 63818 | 64383 |
| 1.90               | 1.90           | 3               | 38 | 63819 | 64384 |
| 1.95               | 1.95           | 3               | 38 | 63820 | 64385 |
| 2.00               | 2.00           | 6               | 50 | 63821 | 64386 |
| 2.10               | 2.10           | 6               | 50 | 63823 | 64387 |
| 2.20               | 2.20           | 6               | 50 | 63824 | 64388 |
| 2.30               | 2.30           | 6               | 50 | 63825 | 64389 |
| 2.40               | 2.40           | 6               | 50 | 63826 | 64390 |
| 2.50               | 2.50           | 6               | 50 | 63827 | 64391 |
| 3.00               | 3.00           | 6               | 50 | 63828 | 64392 |
| 3.50               | 3.50           | 6               | 50 | 63829 | 64393 |
| 4.00               | 4.00           | 6               | 50 | 63830 | 64394 |
| 4.50               | 4.50           | 6               | 50 | 63831 | 64395 |
| 5.00               | 5.00           | 6               | 50 | 63832 | 64397 |
| 5.50               | 5.50           | 6               | 50 | 63833 | 64398 |



# DIXI 7237 - 7238 - 7239 - 7239-D

長頸深溝專用超短刃開槽立銑刀

Z = 2



D<sub>1</sub> L<sub>1</sub> D<sub>2</sub> D<sub>h5</sub> L L<sub>2</sub> DIXI 無鍍層 TiAlN

Ø < 2.00 - 0/-0.01  
Ø < 3.00 - 0/-0.02  
Ø ≥ 3.00 - e8

|      |      |      |   |    |       |          |        |        |
|------|------|------|---|----|-------|----------|--------|--------|
| 0.15 | 0.15 | 0.13 | 3 | 38 | 0.45  | 7237     | 66047  | 66149  |
| 0.20 | 0.20 | 0.17 | 3 | 38 | 0.60  | 7237     | 66068  | 66150  |
| 0.25 | 0.25 | 0.22 | 3 | 38 | 0.75  | 7237     | 66070  | 66151  |
| 0.30 | 0.30 | 0.27 | 3 | 38 | 0.90  | 7237     | 66071  | 66152  |
|      |      |      |   |    | 1.50  | 7238     | 66196  | 66254  |
| 0.35 | 0.35 | 0.32 | 3 | 38 | 1.05  | 7237     | 66072  | 66153  |
|      |      |      |   |    | 1.75  | 7238     | 66197  | 66255  |
| 0.40 | 0.40 | 0.37 | 3 | 38 | 1.20  | 7237     | 66073  | 66154  |
|      |      |      |   |    | 2.00  | 7238     | 66199  | 66256  |
|      |      |      |   |    | 3.20  | 7239     | 66296  | 66355  |
|      |      |      |   |    | 1.35  | 7237     | 66074  | 66155  |
| 0.45 | 0.45 | 0.42 | 3 | 38 | 2.25  | 7238     | 66201  | 66257  |
|      |      |      |   |    | 3.60  | 7239     | 66297  | 66356  |
|      |      |      |   |    | 1.50  | 7237     | 66075  | 66156  |
|      |      |      |   |    | 2.50  | 7238     | 66202  | 66258  |
| 0.50 | 0.50 | 0.45 | 3 | 38 | 4.00  | 7239     | 66298  | 66357  |
|      |      |      |   |    | 5.00  | 7239-10D | 978569 | 979371 |
|      |      |      |   |    | 6.00  | 7239-12D | 979313 | 979447 |
|      |      |      |   |    | 7.50  | 7239-15D | 979475 | 979497 |
|      |      |      |   |    | 1.65  | 7237     | 66076  | 66157  |
| 0.55 | 0.55 | 0.50 | 3 | 38 | 2.75  | 7238     | 66203  | 66259  |
|      |      |      |   |    | 4.40  | 7239     | 66299  | 66358  |
|      |      |      |   |    | 5.50  | 7239-10D | 979332 | 979373 |
|      |      |      |   |    | 6.60  | 7239-12D | 979413 | 979448 |
|      |      |      |   |    | 8.25  | 7239-15D | 979478 | 979498 |
| 0.60 | 0.60 | 0.55 | 3 | 38 | 1.80  | 7237     | 66077  | 66158  |
|      |      |      |   |    | 3.00  | 7238     | 66205  | 66260  |
|      |      |      |   |    | 4.80  | 7239     | 66300  | 66366  |
|      |      |      |   |    | 6.00  | 7239-10D | 979333 | 979374 |
|      |      |      |   |    | 7.20  | 7239-12D | 979416 | 979449 |
|      |      |      |   |    | 9.00  | 7239-15D | 979480 | 979499 |
| 0.65 | 0.65 | 0.60 | 3 | 38 | 1.95  | 7237     | 66078  | 66159  |
|      |      |      |   |    | 3.25  | 7238     | 66206  | 66261  |
|      |      |      |   |    | 5.20  | 7239     | 66301  | 66367  |
|      |      |      |   |    | 6.50  | 7239-10D | 979334 | 979375 |
|      |      |      |   |    | 7.80  | 7239-12D | 979417 | 979450 |
|      |      |      |   |    | 9.75  | 7239-15D | 979482 | 979500 |
| 0.70 | 0.70 | 0.65 | 3 | 38 | 2.10  | 7237     | 66079  | 66160  |
|      |      |      |   |    | 3.50  | 7238     | 66207  | 66262  |
|      |      |      |   |    | 5.60  | 7239     | 66302  | 66368  |
|      |      |      |   |    | 7.00  | 7239-10D | 979335 | 979376 |
|      |      |      |   |    | 8.40  | 7239-12D | 979419 | 979451 |
|      |      |      |   |    | 10.50 | 7239-15D | 979483 | 979503 |
|      |      |      |   |    | 2.25  | 7237     | 66080  | 66161  |
| 0.75 | 0.75 | 0.70 | 3 | 38 | 3.75  | 7238     | 66208  | 66263  |
|      |      |      |   |    | 6.00  | 7239     | 66303  | 66369  |
|      |      |      |   |    | 7.50  | 7239-10D | 979336 | 979377 |
|      |      |      |   |    | 9.00  | 7239-12D | 979420 | 979452 |
|      |      |      |   |    | 11.25 | 7239-15D | 979484 | 979505 |
|      |      |      |   |    | 2.40  | 7237     | 66081  | 66162  |
| 0.80 | 0.80 | 0.75 | 3 | 38 | 4.00  | 7238     | 66209  | 66264  |
|      |      |      |   |    | 6.40  | 7239     | 66304  | 66370  |
|      |      |      |   |    | 8.00  | 7239-10D | 979337 | 979378 |
|      |      |      |   |    | 9.60  | 7239-12D | 979421 | 979453 |
|      |      |      |   |    | 12.00 | 7239-15D | 979485 | 979506 |
|      |      |      |   |    |       |          |        |        |

**DIXI 7237** L<sub>2</sub> = 3 x D<sub>1</sub>

**DIXI 7238** L<sub>2</sub> = 5 x D<sub>1</sub>

**DIXI 7239** L<sub>2</sub> = 8 x D<sub>1</sub>

**DIXI 7239-10D** L<sub>2</sub> = 10 x D<sub>1</sub>

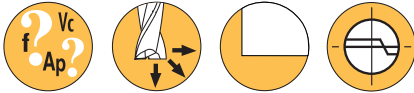
**DIXI 7239-12D** L<sub>2</sub> = 12 x D<sub>1</sub>

**DIXI 7239-15D** L<sub>2</sub> = 15 x D<sub>1</sub>



# DIXI 7237 - 7238 - 7239 - 7239-D

切削條件 徑向斜向插銑 直角 刀刃過中心



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P. 164

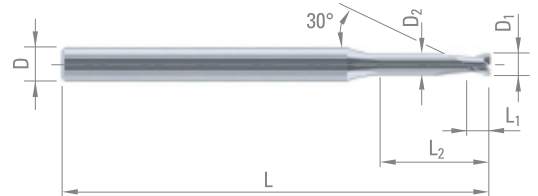
| D <sub>1</sub>                                                                             | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | 無鍍層    | TiAlN  |
|--------------------------------------------------------------------------------------------|----------------|----------------|-----------------|----|----------------|----------|--------|--------|
| $\emptyset < 2.00 - 0/-0.01$<br>$\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                |                 |    |                |          |        |        |
| 0.85                                                                                       | 0.85           | 0.80           | 3               | 38 | 2.55           | 7237     | 66082  | 66164  |
|                                                                                            |                |                |                 |    | 4.25           | 7238     | 66210  | 66265  |
|                                                                                            |                |                |                 |    | 6.80           | 7239     | 66305  | 66371  |
|                                                                                            |                |                |                 |    | 8.50           | 7239-10D | 979338 | 979409 |
|                                                                                            |                |                |                 |    | 10.20          | 7239-12D | 979423 | 979454 |
|                                                                                            |                |                |                 |    | 12.75          | 7239-15D | 979486 | 979507 |
| 0.90                                                                                       | 0.90           | 0.85           | 3               | 38 | 2.70           | 7237     | 66083  | 66165  |
|                                                                                            |                |                |                 |    | 4.50           | 7238     | 66211  | 66266  |
|                                                                                            |                |                |                 |    | 7.20           | 7239     | 66306  | 66372  |
|                                                                                            |                |                |                 |    | 9.00           | 7239-10D | 979339 | 979379 |
|                                                                                            |                |                |                 |    | 10.80          | 7239-12D | 979430 | 979455 |
|                                                                                            |                |                |                 |    | 13.50          | 7239-15D | 979487 | 979509 |
| 0.95                                                                                       | 0.95           | 0.90           | 3               | 38 | 2.85           | 7237     | 66084  | 66166  |
|                                                                                            |                |                |                 |    | 4.75           | 7238     | 66212  | 66267  |
|                                                                                            |                |                |                 |    | 7.60           | 7239     | 66307  | 66373  |
|                                                                                            |                |                |                 |    | 9.50           | 7239-10D | 979340 | 979380 |
|                                                                                            |                |                |                 |    | 11.40          | 7239-12D | 979431 | 979456 |
|                                                                                            |                |                |                 |    | 14.25          | 7239-15D | 979488 | 979510 |
| 1.00                                                                                       | 1.00           | 0.95           | 3               | 38 | 3.00           | 7237     | 66110  | 66167  |
|                                                                                            |                |                |                 |    | 5.00           | 7238     | 66213  | 66268  |
|                                                                                            |                |                |                 |    | 8.00           | 7239     | 66308  | 66374  |
|                                                                                            |                |                |                 |    | 10.00          | 7239-10D | 979341 | 979381 |
|                                                                                            |                |                |                 |    | 12.00          | 7239-12D | 979206 | 979457 |
|                                                                                            |                |                |                 |    | 15.00          | 7239-15D | 979489 | 979511 |
| 1.05                                                                                       | 1.05           | 1.00           | 3               | 38 | 3.15           | 7237     | 66113  | 66168  |
|                                                                                            |                |                |                 |    | 5.25           | 7238     | 66214  | 66269  |
|                                                                                            |                |                |                 |    | 8.40           | 7239     | 66309  | 66375  |
|                                                                                            |                |                |                 |    | 10.50          | 7239-10D | 979342 | 979382 |
|                                                                                            |                |                |                 |    | 12.60          | 7239-12D | 979432 | 979458 |
|                                                                                            |                |                |                 |    | 15.75          | 7239-15D | 979490 | 979512 |
| 1.10                                                                                       | 1.10           | 1.05           | 3               | 38 | 3.30           | 7237     | 66115  | 66169  |
|                                                                                            |                |                |                 |    | 5.50           | 7238     | 66218  | 66270  |
|                                                                                            |                |                |                 |    | 8.80           | 7239     | 66310  | 66376  |
|                                                                                            |                |                |                 |    | 11.00          | 7239-10D | 979343 | 979383 |
|                                                                                            |                |                |                 |    | 13.20          | 7239-12D | 979433 | 979459 |
|                                                                                            |                |                |                 |    | 16.50          | 7239-15D | 979491 | 979513 |
| 1.15                                                                                       | 1.15           | 1.10           | 3               | 38 | 3.45           | 7237     | 66116  | 66170  |
|                                                                                            |                |                |                 |    | 5.75           | 7238     | 66219  | 66271  |
|                                                                                            |                |                |                 |    | 9.20           | 7239     | 66313  | 66377  |
|                                                                                            |                |                |                 |    | 11.50          | 7239-10D | 979344 | 979384 |
|                                                                                            |                |                |                 |    | 13.80          | 7239-12D | 979434 | 979460 |
|                                                                                            |                |                |                 |    | 17.25          | 7239-15D | 979492 | 979514 |
| 1.20                                                                                       | 1.20           | 1.15           | 3               | 38 | 3.60           | 7237     | 66117  | 66171  |
|                                                                                            |                |                |                 |    | 6.00           | 7238     | 66220  | 66272  |
|                                                                                            |                |                |                 |    | 9.60           | 7239     | 66314  | 66378  |
|                                                                                            |                |                |                 |    | 12.00          | 7239-10D | 979345 | 979385 |
|                                                                                            |                |                |                 |    | 14.40          | 7239-12D | 979435 | 979461 |
|                                                                                            |                |                |                 |    | 18.00          | 7239-15D | 979493 | 979515 |
| 1.25                                                                                       | 1.25           | 1.20           | 3               | 38 | 3.75           | 7237     | 66118  | 66172  |
|                                                                                            |                |                |                 |    | 6.25           | 7238     | 66221  | 66273  |
|                                                                                            |                |                |                 |    | 10.00          | 7239     | 66315  | 66379  |
|                                                                                            |                |                |                 |    | 12.50          | 7239-10D | 979346 | 979386 |
|                                                                                            |                |                |                 |    | 15.00          | 7239-12D | 979437 | 979462 |
|                                                                                            |                |                |                 |    | 18.75          | 7239-15D | 979494 | 979516 |
| 1.30                                                                                       | 1.30           | 1.25           | 3               | 38 | 3.90           | 7237     | 66119  | 66173  |
|                                                                                            |                |                |                 |    | 6.50           | 7238     | 66222  | 66274  |
|                                                                                            |                |                |                 |    | 10.40          | 7239     | 66316  | 66380  |
|                                                                                            |                |                |                 |    | 13.00          | 7239-10D | 979347 | 979387 |
|                                                                                            |                |                |                 |    | 15.60          | 7239-12D | 979438 | 979463 |
|                                                                                            |                |                |                 |    | 19.50          | 7239-15D | 979495 | 979517 |
| 1.35                                                                                       | 1.35           | 1.30           | 3               | 38 | 4.05           | 7237     | 66120  | 66174  |
|                                                                                            |                |                |                 |    | 6.75           | 7238     | 66223  | 66275  |
|                                                                                            |                |                |                 |    | 10.80          | 7239     | 66317  | 66381  |
|                                                                                            |                |                |                 |    | 13.50          | 7239-10D | 979348 | 979388 |
|                                                                                            |                |                |                 |    | 16.20          | 7239-12D | 979439 | 979464 |
|                                                                                            |                |                |                 |    | 20.25          | 7239-15D | 979496 | 979518 |

含鉛快削鋼
低合金鋼
高合金鋼
雙相不銹鋼
鑄鐵

耐熱合金
純鈦鈦合金
銅合金銀金
難加工銅合金
鋁

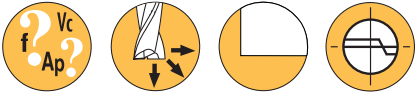
塑膠
粗銑
精修

- DIXI 7237**  $L_2 = 3 \times D_1$
- DIXI 7238**  $L_2 = 5 \times D_1$
- DIXI 7239**  $L_2 = 8 \times D_1$
- DIXI 7239-10D**  $L_2 = 10 \times D_1$
- DIXI 7239-12D**  $L_2 = 12 \times D_1$
- DIXI 7239-15D**  $L_2 = 15 \times D_1$



# DIXI 7237 - 7238 - 7239 - 7239-D

切削條件 徑向斜向插銑 直角 刀刃過中心



P. 162  
P. 164

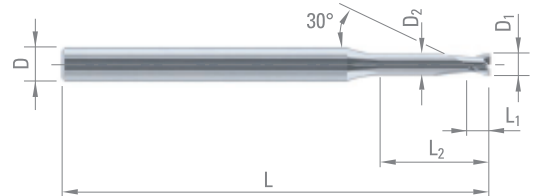
| D <sub>1</sub>                                                                                   | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | 無鍍層    | TiAlN  |
|--------------------------------------------------------------------------------------------------|----------------|----------------|-----------------|----|----------------|----------|--------|--------|
| $\varnothing < 2.00 - 0/-0.01$<br>$\varnothing < 3.00 - 0/-0.02$<br>$\varnothing \geq 3.00 - e8$ |                |                |                 |    |                |          |        |        |
| 1.40                                                                                             | 1.40           | 1.35           | 3               | 38 | 4.20           | 7237     | 66123  | 66175  |
|                                                                                                  |                |                |                 |    | 7.00           | 7238     | 66224  | 66276  |
|                                                                                                  |                |                |                 |    | 11.20          | 7239     | 66318  | 66382  |
|                                                                                                  |                |                |                 |    | 14.00          | 7239-10D | 979349 | 979389 |
|                                                                                                  |                |                |                 |    | 16.80          | 7239-12D | 979440 | 979465 |
| 1.45                                                                                             | 1.45           | 1.35           | 3               | 38 | 4.35           | 7237     | 66124  | 66176  |
|                                                                                                  |                |                |                 |    | 7.25           | 7238     | 66225  | 66277  |
|                                                                                                  |                |                |                 |    | 11.60          | 7239     | 66319  | 66383  |
|                                                                                                  |                |                |                 |    | 14.50          | 7239-10D | 979350 | 979390 |
|                                                                                                  |                |                |                 |    | 17.40          | 7239-12D | 979441 | 979466 |
| 1.50                                                                                             | 1.50           | 1.45           | 3               | 38 | 4.50           | 7237     | 66125  | 66177  |
|                                                                                                  |                |                |                 |    | 7.50           | 7238     | 66226  | 66278  |
|                                                                                                  |                |                |                 |    | 12.00          | 7239     | 66320  | 66384  |
|                                                                                                  |                |                |                 |    | 15.00          | 7239-10D | 979351 | 979391 |
|                                                                                                  |                |                |                 |    | 18.00          | 7239-12D | 979442 | 979467 |
| 1.55                                                                                             | 1.55           | 1.50           | 3               | 38 | 4.65           | 7237     | 66126  | 66178  |
|                                                                                                  |                |                |                 |    | 7.75           | 7238     | 66227  | 66279  |
|                                                                                                  |                |                |                 |    | 12.40          | 7239     | 66323  | 66385  |
|                                                                                                  |                |                |                 |    | 15.50          | 7239-10D | 979352 | 979392 |
|                                                                                                  |                |                |                 |    | 18.60          | 7239-12D | 979443 | 979468 |
| 1.60                                                                                             | 1.60           | 1.55           | 3               | 38 | 4.80           | 7237     | 66127  | 66179  |
|                                                                                                  |                |                |                 |    | 8.00           | 7238     | 66228  | 66280  |
|                                                                                                  |                |                |                 |    | 12.80          | 7239     | 66324  | 66386  |
|                                                                                                  |                |                |                 |    | 16.00          | 7239-10D | 979353 | 979393 |
|                                                                                                  |                |                |                 |    | 19.20          | 7239-12D | 979444 | 979469 |
| 1.65                                                                                             | 1.65           | 1.60           | 3               | 38 | 4.95           | 7237     | 66128  | 66180  |
|                                                                                                  |                |                |                 |    | 8.25           | 7238     | 66229  | 66281  |
|                                                                                                  |                |                |                 |    | 13.20          | 7239     | 66325  | 66387  |
|                                                                                                  |                |                |                 |    | 16.50          | 7239-10D | 979354 | 979394 |
|                                                                                                  |                |                |                 |    | 19.80          | 7239-12D | 979445 | 979470 |
| 1.70                                                                                             | 1.70           | 1.65           | 3               | 38 | 5.10           | 7237     | 66129  | 66182  |
|                                                                                                  |                |                |                 |    | 8.50           | 7238     | 66230  | 66282  |
|                                                                                                  |                |                |                 |    | 13.60          | 7239     | 66326  | 66388  |
|                                                                                                  |                |                |                 |    | 17.00          | 7239-10D | 979355 | 979395 |
|                                                                                                  |                |                |                 |    | 20.40          | 7239-12D | 979446 | 979471 |
| 1.75                                                                                             | 1.75           | 1.70           | 3               | 38 | 5.25           | 7237     | 66130  | 66183  |
|                                                                                                  |                |                |                 |    | 8.75           | 7238     | 66231  | 66283  |
|                                                                                                  |                |                |                 |    | 14.00          | 7239     | 66327  | 66389  |
|                                                                                                  |                |                |                 |    | 17.50          | 7239-10D | 979356 | 979396 |
|                                                                                                  |                |                |                 |    | 5.40           | 7237     | 66133  | 66184  |
| 1.80                                                                                             | 1.80           | 1.75           | 3               | 38 | 9.00           | 7238     | 66232  | 66284  |
|                                                                                                  |                |                |                 |    | 14.40          | 7239     | 66328  | 66390  |
|                                                                                                  |                |                |                 |    | 18.00          | 7239-10D | 979357 | 979398 |
|                                                                                                  |                |                |                 |    | 5.55           | 7237     | 66134  | 66185  |
|                                                                                                  |                |                |                 |    | 9.25           | 7238     | 66233  | 66285  |
| 1.85                                                                                             | 1.85           | 1.80           | 3               | 38 | 14.80          | 7239     | 66329  | 66391  |
|                                                                                                  |                |                |                 |    | 18.50          | 7239-10D | 979358 | 979399 |
|                                                                                                  |                |                |                 |    | 5.70           | 7237     | 66135  | 66186  |
|                                                                                                  |                |                |                 |    | 9.50           | 7238     | 66234  | 66286  |
|                                                                                                  |                |                |                 |    | 15.20          | 7239     | 66330  | 66392  |
| 1.90                                                                                             | 1.90           | 1.85           | 3               | 38 | 19.00          | 7239-10D | 979359 | 979400 |
|                                                                                                  |                |                |                 |    | 5.85           | 7237     | 66136  | 66187  |
|                                                                                                  |                |                |                 |    | 9.75           | 7238     | 66235  | 66287  |
|                                                                                                  |                |                |                 |    | 15.60          | 7239     | 66333  | 66393  |
|                                                                                                  |                |                |                 |    | 19.50          | 7239-10D | 979360 | 979401 |
| 2.00                                                                                             | 2.00           | 1.95           | 6               | 50 | 6.00           | 7237     | 66137  | 66188  |
|                                                                                                  |                |                |                 |    | 10.00          | 7238     | 66236  | 66288  |
|                                                                                                  |                |                |                 |    | 16.00          | 7239     | 66334  | 66394  |
|                                                                                                  |                |                |                 |    | 20.00          | 7239-10D | 979361 | 979402 |
|                                                                                                  |                |                |                 |    | 6.30           | 7237     | 66138  | 66189  |
| 2.10                                                                                             | 2.10           | 2.00           | 6               | 50 | 10.50          | 7238     | 66237  | 66289  |
|                                                                                                  |                |                |                 |    | 16.80          | 7239     | 66335  | 66395  |
|                                                                                                  |                |                |                 |    | 21.00          | 7239-10D | 979362 | 979403 |
|                                                                                                  |                |                |                 |    | 6.60           | 7237     | 66194  | 66195  |
|                                                                                                  |                |                |                 |    | 11.00          | 7238     | 66238  | 66290  |
| 2.20                                                                                             | 2.20           | 2.10           | 6               | 50 | 17.60          | 7239     | 66350  | 66396  |
|                                                                                                  |                |                |                 |    | 22.00          | 7239-10D | 979363 | 979404 |

會鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金 鋁

塑膠 粗銑 精修

- DIXI 7237  $L_2 = 3 \times D_1$
- DIXI 7238  $L_2 = 5 \times D_1$
- DIXI 7239  $L_2 = 8 \times D_1$
- DIXI 7239-10D  $L_2 = 10 \times D_1$
- DIXI 7239-12D  $L_2 = 12 \times D_1$
- DIXI 7239-15D  $L_2 = 15 \times D_1$



DIXI 7237 - 7238 - 7239 - 7239-D

切削條件

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徑向  
斜向  
插銑

直角

刀刃  
過中心

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | 無鍍層    | TiAlN  |
|--------------------|----------------|----------------|-----------------|----|----------------|----------|--------|--------|
| Ø < 2.00 - 0/-0.01 |                |                |                 |    |                |          |        |        |
| Ø < 3.00 - 0/-0.02 |                |                |                 |    |                |          |        |        |
| Ø ≥ 3.00 - e8      |                |                |                 |    |                |          |        |        |
| 2.30               | 2.30           | 2.20           | 6               | 50 | 6.90           | 7237     | 66139  | 66190  |
|                    |                |                |                 |    | 11.50          | 7238     | 66239  | 66291  |
|                    |                |                |                 |    | 18.40          | 7239     | 66351  | 66397  |
|                    |                |                |                 |    | 23.00          | 7239-10D | 979364 | 979405 |
|                    |                |                |                 |    | 7.20           | 7237     | 66140  | 66191  |
| 2.40               | 2.40           | 2.30           | 6               | 50 | 12.00          | 7238     | 66240  | 66292  |
|                    |                |                |                 |    | 19.20          | 7239     | 66352  | 66398  |
|                    |                |                |                 |    | 24.00          | 7239-10D | 979368 | 979406 |
|                    |                |                |                 |    | 7.50           | 7237     | 66143  | 66192  |
|                    |                |                |                 |    | 12.50          | 7238     | 66241  | 66293  |
| 2.50               | 2.50           | 2.40           | 6               | 50 | 20.00          | 7239     | 66353  | 66399  |
|                    |                |                |                 |    | 25.00          | 7239-10D | 979369 | 979407 |
|                    |                |                |                 |    | 9.00           | 7237     | 66144  | 66193  |
|                    |                |                |                 |    | 15.00          | 7238     | 66294  | 66295  |
|                    |                |                |                 |    | 24.00          | 7239     | 66354  | 66400  |
| 3.00               | 3.00           | 2.90           | 6               | 50 | 30.00          | 7239-10D | 979370 | 979408 |

含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

耐熱合金

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

塑膠

粗銑  
●●●●○

精修  
●●●●○

- DIXI 7237

L<sub>2</sub> = 3 x D<sub>1</sub>
- DIXI 7238

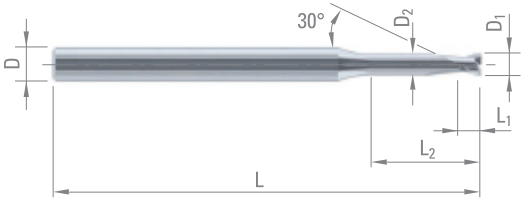
L<sub>2</sub> = 5 x D<sub>1</sub>
- DIXI 7239

L<sub>2</sub> = 8 x D<sub>1</sub>
- DIXI 7239-10D

L<sub>2</sub> = 10 x D<sub>1</sub>
- DIXI 7239-12D

L<sub>2</sub> = 12 x D<sub>1</sub>
- DIXI 7239-15D

L<sub>2</sub> = 15 x D<sub>1</sub>



# DIXI 7582

## 高剛性開槽立銑刀

Z = 2

切削條件

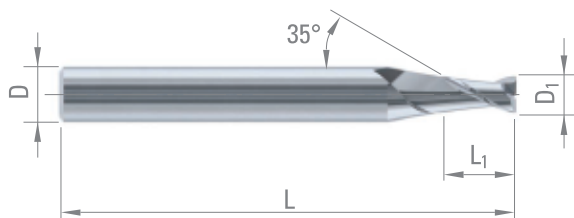
徑向  
斜向  
插銑

倒角

刀刃  
過中心

P. 202

$D_1 \geq 2.8$



含鉛  
快削鋼

鑄鐵

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

塑膠

粗銑 ●●●○○○ 精修 ●●●○○○

$D_1$   
 $\emptyset < 2.00 - 0/-0.01$   
 $\emptyset < 3.00 - 0/-0.02$   
 $\emptyset \geq 3.00 - e8$

$L_1$

$D_{h5}$

$L$

無鍍層 TiAlN

|       |      |    |     |       |       |
|-------|------|----|-----|-------|-------|
| 1.00  | 2.0  | 3  | 38  | 47357 | 56304 |
| 1.50  | 3.0  | 3  | 38  | 47358 | 56305 |
| 2.00  | 4.0  | 4  | 50  | 47359 | 56306 |
| 2.50  | 5.0  | 4  | 50  | 47360 | 56307 |
| 2.80  | 6.0  | 6  | 50  | 35734 | 36304 |
| 3.00  | 6.0  | 6  | 50  | 30298 | 36305 |
| 3.80  | 8.0  | 6  | 50  | 34973 | 36306 |
| 4.00  | 8.0  | 6  | 50  | 30299 | 36607 |
| 4.50  | 10.0 | 6  | 50  | 35709 | 56983 |
| 5.00  | 10.0 | 6  | 50  | 30300 | 36309 |
| 5.50  | 10.0 | 6  | 50  | 35735 | 56303 |
| 6.00  | 10.0 | 6  | 50  | 29100 | 36299 |
| 8.00  | 15.0 | 8  | 60  | 29101 | 36300 |
| 10.00 | 18.0 | 10 | 66  | 29102 | 56334 |
| 12.00 | 20.0 | 12 | 73  | 30521 | 36302 |
| 16.00 | 25.0 | 16 | 82  | 30523 | 56318 |
| 20.00 | 35.0 | 20 | 104 | 31858 | 56335 |



# DIXI 7572

長刃開槽立銑刀

Z = 2

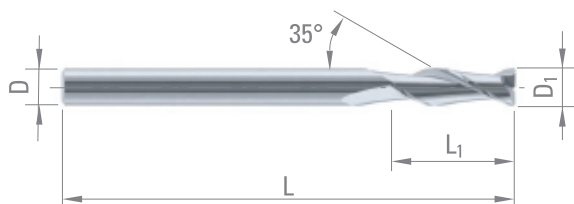
切削條件

徑向  
斜向  
插銑

倒角

刀刃  
過中心

P. 202



含鉛  
快削鋼

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑

●●○○○

精修

●●●○○

| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAlN | DIAMANT* |
|-------------------|----------------|-----------------|-----|-------|-------|----------|
| 3.00              | 14.0           | 3               | 50  | 32484 | 56320 | 57045    |
| 4.00              | 16.0           | 4               | 50  | 32485 | 56321 | 57046    |
| 5.00              | 18.0           | 5               | 60  | 32486 | 56322 | 57047    |
| 6.00              | 20.0           | 6               | 75  | 32487 | 56337 | 57048    |
| 7.00              | 22.0           | 7               | 75  | 32488 |       |          |
| 8.00              | 25.0           | 8               | 75  | 32489 | 56336 | 57050    |
| 10.00             | 30.0           | 10              | 90  | 32491 | 56341 |          |
| 12.00             | 36.0           | 12              | 100 | 32492 | 56342 |          |

\* 非鐵金屬用

# DIXI 7232

直刃開槽銑刀

Z = 2

切削條件

徑向  
斜向  
插銑

直角

刀刃  
過中心

P. 186



鑄鐵

銅合金  
銀  
金

鋁

塑膠

粗銑

●●○○○

精修

●●●○○

| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   |
|-------------------|----------------|-----------------|----|-------|
| 2.00              | 6.0            | 2               | 38 | 42540 |
| 3.00              | 7.0            | 3               | 38 | 42541 |
| 4.00              | 8.0            | 4               | 50 | 42542 |
| 6.00              | 10.0           | 6               | 57 | 42543 |
| 8.00              | 16.0           | 8               | 63 | 42544 |



# DIXI 7243

## 高剛性立銑刀

Z = 3

切削條件

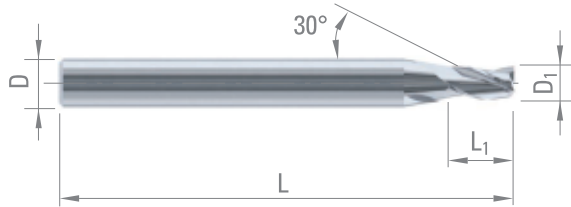
徑向斜向

倒角

刀刀過中心

P. 166

D<sub>1</sub> > 6



含鉛快削鋼

低合金鋼

高合金鋼

雙相不銹鋼

鑄鐵

純鈦鈦合金

銅合金銀金

難加工銅合金

鋁

塑膠

粗銑

精修

| D <sub>1</sub>                                            | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | TiAlN  |
|-----------------------------------------------------------|----------------|-----------------|----|--------|--------|
| Ø < 2.00 - 0/-0.01<br>Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                 |    |        |        |
| 0.35                                                      | 1.0            | 3               | 38 | 956955 | 956956 |
| 0.40                                                      | 1.2            | 3               | 38 | 956957 | 956958 |
| 0.50                                                      | 1.5            | 3               | 38 | 48089  | 60914  |
| 0.60                                                      | 1.8            | 3               | 38 | 61842  | 61841  |
| 0.70                                                      | 2.1            | 3               | 38 | 61843  | 61844  |
| 0.75                                                      | 2.4            | 3               | 38 | 48090  | 57205  |
| 0.80                                                      | 2.4            | 3               | 38 | 66799  | 61845  |
| 0.90                                                      | 2.7            | 3               | 38 | 60383  | 952308 |
| 1.00                                                      | 3.0            | 3               | 38 | 48091  | 57206  |
| 1.10                                                      | 3.3            | 3               | 38 | 59356  | 950790 |
| 1.20                                                      | 3.6            | 3               | 38 | 39932  | 61352  |
| 1.25                                                      | 3.9            | 3               | 38 | 48092  | 57207  |
| 1.30                                                      | 3.9            | 3               | 38 | 49835  | 950044 |
| 1.40                                                      | 4.2            | 3               | 38 | 60201  | 952191 |
| 1.50                                                      | 4.5            | 3               | 38 | 48093  | 57208  |
| 1.60                                                      | 4.8            | 3               | 38 | 64985  | 950045 |
| 1.70                                                      | 5.1            | 3               | 38 | 57785  | 67283  |
| 1.75                                                      | 5.4            | 3               | 38 | 48094  | 57209  |
| 1.80                                                      | 5.4            | 3               | 38 | 50297  | 66988  |
| 1.90                                                      | 5.7            | 3               | 38 | 66798  | 952309 |
| 2.00                                                      | 6.0            | 3               | 38 | 42203  | 40868  |
| 2.10                                                      | 7.0            | 3               | 38 | 45168  | 64847  |
| 2.20                                                      | 7.0            | 3               | 38 | 57873  | 67276  |
| 2.30                                                      | 7.0            | 3               | 38 | 40848  | 67277  |
| 2.40                                                      | 7.0            | 3               | 38 | 42329  | 64809  |
| 2.50                                                      | 7.0            | 3               | 38 | 41909  | 42105  |
| 3.00                                                      | 7.0            | 6               | 57 | 41855  | 42106  |
| 3.50                                                      | 7.0            | 6               | 57 | 41928  | 57210  |
| 4.00                                                      | 8.0            | 6               | 57 | 41880  | 42341  |
| 4.50                                                      | 8.0            | 6               | 57 | 41808  | 57211  |
| 5.00                                                      | 10.0           | 6               | 57 | 41858  | 42107  |
| 5.50                                                      | 10.0           | 6               | 57 | 41910  | 57690  |
| 6.00                                                      | 10.0           | 6               | 57 | 41908  | 35589  |
| 6.00 >                                                    | 12.0           | 8               | 63 | 43409  | 57214  |

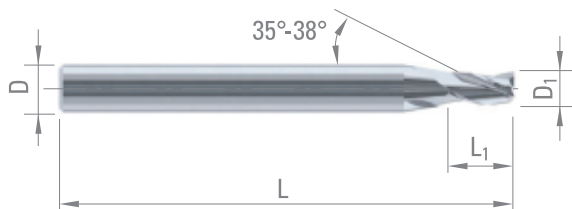
| D <sub>1</sub>                                            | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAlN |
|-----------------------------------------------------------|----------------|-----------------|-----|-------|-------|
| Ø < 2.00 - 0/-0.01<br>Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                 |     |       |       |
| 6.50                                                      | 13.0           | 8               | 63  | 28948 | 57691 |
| 7.00                                                      | 13.0           | 8               | 63  | 42562 | 57217 |
| 7.50                                                      | 16.0           | 8               | 63  | 43920 | 57218 |
| 8.00                                                      | 16.0           | 8               | 63  | 41809 | 36267 |
| 8.00 >                                                    | 15.0           | 10              | 63  | 28951 | 57692 |
| 8.50                                                      | 16.0           | 10              | 72  | 43215 | 57220 |
| 9.00                                                      | 16.0           | 10              | 72  | 28953 | 57221 |
| 9.50                                                      | 19.0           | 10              | 72  | 28954 | 57222 |
| 10.00                                                     | 19.0           | 10              | 72  | 42357 | 57223 |
| 12.00                                                     | 22.0           | 12              | 83  | 39945 | 57224 |
| 14.00                                                     | 22.0           | 14              | 83  | 27781 | 57225 |
| 16.00                                                     | 26.0           | 16              | 92  | 42358 | 57226 |
| 18.00                                                     | 26.0           | 18              | 92  | 42359 | 57227 |
| 20.00                                                     | 32.0           | 20              | 104 | 42360 | 57228 |



# DIXI 7343

## 雙螺旋角高剛性立銑刀

Z = 3



切削條件 徑向斜向 直角 雙螺旋角 刀刃過中心

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P. 194

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金

粗銑 精修

●●●●●● ●●●●●○

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | C-TOP  |
|--------------------|----------------|-----------------|----|--------|--------|
| Ø < 0.30 - 0/-0.01 |                |                 |    |        |        |
| Ø < 2.00 - 0/-0.02 |                |                 |    |        |        |
| Ø ≥ 6.00 - e8      |                |                 |    |        |        |
| 0.30               | 0.70           | 4               | 38 | 334881 | 334941 |
| 0.35               | 0.80           | 4               | 38 | 334882 | 334942 |
| 0.40               | 0.90           | 4               | 38 | 334883 | 334943 |
| 0.45               | 1.00           | 4               | 38 | 334884 | 334944 |
| 0.50               | 1.10           | 4               | 38 | 334885 | 334945 |
| 0.60               | 1.40           | 4               | 38 | 334886 | 334946 |
| 0.70               | 1.60           | 4               | 38 | 334887 | 334947 |
| 0.80               | 1.80           | 4               | 38 | 334888 | 334948 |
| 0.90               | 2.00           | 4               | 38 | 334889 | 334949 |
| 1.00               | 2.20           | 4               | 38 | 334890 | 334950 |
| 1.10               | 2.40           | 4               | 38 | 334891 | 334951 |
| 1.20               | 2.60           | 4               | 38 | 334892 | 334952 |
| 1.30               | 2.80           | 4               | 38 | 334893 | 334953 |
| 1.40               | 3.00           | 4               | 38 | 334894 | 334954 |
| 1.50               | 3.20           | 4               | 38 | 334895 | 334955 |
| 1.60               | 3.40           | 4               | 38 | 334896 | 334956 |
| 1.70               | 3.60           | 4               | 38 | 334897 | 334957 |
| 1.80               | 3.80           | 4               | 38 | 334898 | 334958 |
| 1.90               | 4.00           | 4               | 38 | 334899 | 334959 |
| 2.00               | 4.30           | 4               | 38 | 334900 | 334960 |
| 2.50               | 5.30           | 4               | 38 | 334901 | 334961 |
| 3.00               | 6.30           | 6               | 55 | 334902 | 334962 |
| 4.00               | 8.30           | 6               | 55 | 334903 | 334963 |
| 5.00               | 10.30          | 6               | 55 | 334904 | 334964 |
| 6.00               | 13.00          | 6               | 55 | 334905 | 334965 |
| 8.00               | 18.00          | 8               | 64 | 334906 | 334966 |
| 10.00              | 22.00          | 10              | 67 | 334907 | 334967 |
| 12.00              | 26.00          | 12              | 74 | 334908 | 334968 |
| 16.00              | 30.00          | 16              | 83 | 334909 | 334969 |



# DIXI 7203

立銑刀

Z = 3

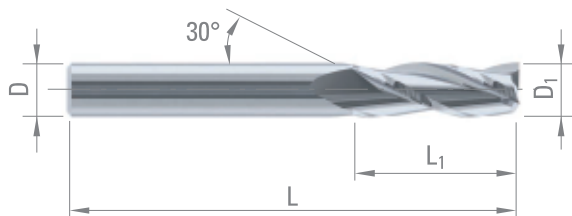
切削條件

徑向斜向

直角

刀刃過中心

P. 166



含鉛快削鋼

低合金鋼

高合金鋼

雙相不銹鋼

鑄鐵

純鈦鈦合金

銅合金銀金

難加工銅合金

鋁

塑膠

粗銑

●●○○○

精修

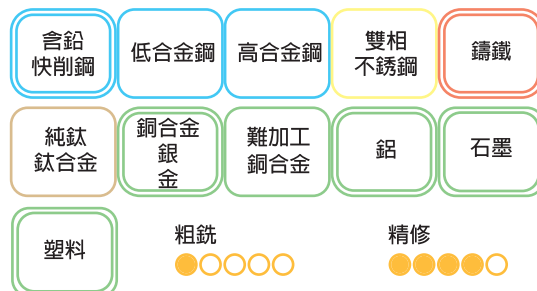
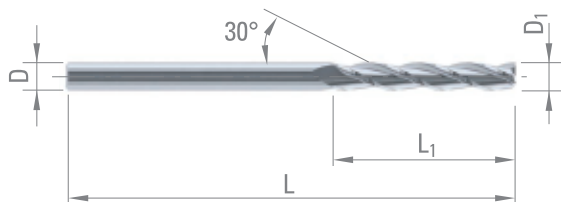
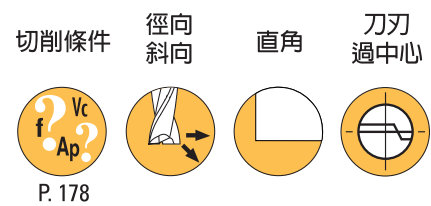
●●●●○

| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAlN |
|-------------------|----------------|-----------------|-----|-------|-------|
| 2.00              | 8.0            | 2.0             | 32  | 701   | 57082 |
| 2.50              | 8.0            | 2.5             | 32  | 702   | 57089 |
| 3.00              | 10.0           | 3.0             | 38  | 703   | 57090 |
| 3.50              | 12.0           | 3.5             | 38  | 34761 | 57101 |
| 4.00              | 12.0           | 4.0             | 50  | 704   | 57102 |
| 5.00              | 15.0           | 5.0             | 50  | 34626 | 57103 |
| 6.00              | 18.0           | 6.0             | 50  | 34627 | 57104 |
| 7.00              | 20.0           | 7.0             | 60  | 27097 | 57105 |
| 8.00              | 25.0           | 8.0             | 63  | 707   | 57106 |
| 9.00              | 25.0           | 9.0             | 67  | 43184 | 57107 |
| 10.00             | 30.0           | 10.0            | 72  | 30853 | 57108 |
| 11.00             | 30.0           | 11.0            | 73  | 30938 | 57109 |
| 12.00             | 30.0           | 12.0            | 73  | 30854 | 57110 |
| 13.00             | 30.0           | 13.0            | 75  | 23885 | 57111 |
| 15.00             | 30.0           | 15.0            | 75  | 23886 | 57113 |
| 16.00             | 30.0           | 16.0            | 92  | 27072 | 57114 |
| 18.00             | 40.0           | 18.0            | 125 | 26086 | 57115 |
| 20.00             | 40.0           | 20.0            | 130 | 26087 | 57117 |



## 長刃立銑刀

Z = 3



| $D_{1\ e8}$ | $L_1$ | $D_{h5}$ | L   | 無鍍層   | TiAlN | DIAMANT* |
|-------------|-------|----------|-----|-------|-------|----------|
| 3.00        | 30.0  | 3        | 60  | 44695 | 57141 | 60249    |
| 4.00        | 30.0  | 4        | 60  | 44696 | 57142 | 60250    |
| 5.00        | 35.0  | 5        | 75  | 44697 | 57143 | 60251    |
| 6.00        | 40.0  | 6        | 100 | 44698 | 57144 | 59009    |
| 8.00        | 40.0  | 8        | 100 | 44699 | 57145 | 60252    |
| 10.00       | 40.0  | 10       | 100 | 44700 | 57146 | 60253    |
| 12.00       | 45.0  | 12       | 100 | 44701 | 57147 | 60254    |
| 14.00       | 65.0  | 14       | 150 | 44702 | 57149 |          |
| 16.00       | 65.0  | 16       | 150 | 44703 | 57150 |          |

\* 非鐵金屬用

# DIXI 7333

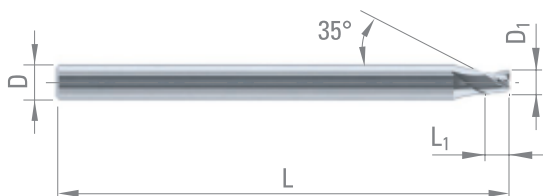
## 超短刃開槽立銑刀

Z = 3

切削條件 徑向斜向 直角 刀刃過中心

P. 180



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦 鈦合金 銅合金 銀 金 難加工銅合金 鋁

塑膠 粗銑 精修

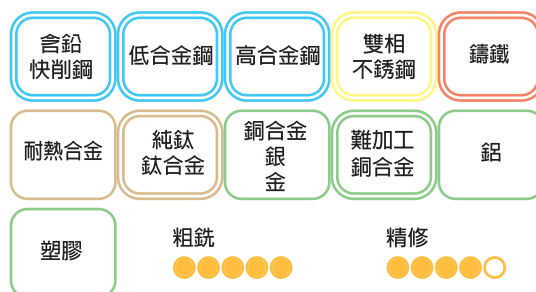
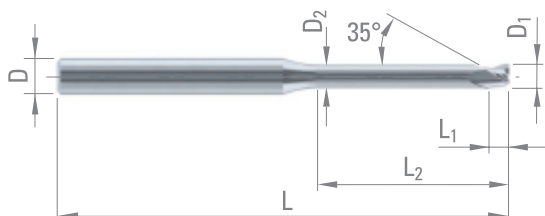
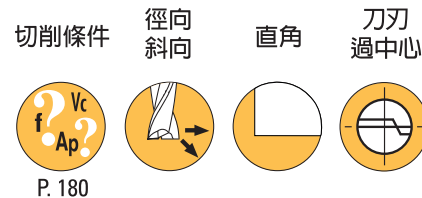
| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | CUTINOX |
|--------------------|----------------|-----------------|----|--------|---------|
| Ø < 2.00 - 0/-0.01 |                |                 |    |        |         |
| Ø < 3.00 - 0/-0.02 |                |                 |    |        |         |
| Ø ≥ 3.00 - e8      |                |                 |    |        |         |
| 0.30               | 0.3            | 3               | 38 | 977779 | 977815  |
| 0.40               | 0.4            | 3               | 38 | 977780 | 977816  |
| 0.50               | 0.5            | 3               | 38 | 977781 | 977817  |
| 0.60               | 0.6            | 3               | 38 | 977782 | 977818  |
| 0.70               | 0.7            | 3               | 38 | 977783 | 977819  |
| 0.80               | 0.8            | 3               | 38 | 977784 | 977820  |
| 0.90               | 0.9            | 3               | 38 | 977785 | 977821  |
| 1.00               | 1.0            | 3               | 38 | 977786 | 977822  |
| 1.10               | 1.1            | 3               | 38 | 977787 | 977823  |
| 1.20               | 1.2            | 3               | 38 | 977788 | 977825  |
| 1.30               | 1.3            | 3               | 38 | 977789 | 977826  |
| 1.40               | 1.4            | 3               | 38 | 977790 | 977827  |
| 1.50               | 1.5            | 3               | 38 | 977791 | 977828  |
| 1.60               | 1.6            | 3               | 38 | 977792 | 977829  |
| 1.70               | 1.7            | 3               | 38 | 977793 | 977830  |
| 1.80               | 1.8            | 3               | 38 | 977794 | 977831  |
| 1.90               | 1.9            | 3               | 38 | 977795 | 977832  |
| 2.00               | 2.0            | 3               | 38 | 977796 | 977833  |
| 2.50               | 2.5            | 3               | 38 | 977797 | 977834  |
| 3.00               | 3.0            | 3               | 38 | 977798 | 977835  |
| 4.00               | 4.0            | 4               | 42 | 977799 | 977836  |
| 5.00               | 5.0            | 5               | 50 | 977800 | 977837  |
| 6.00               | 6.0            | 6               | 50 | 977801 | 977838  |
| 8.00               | 8.0            | 8               | 63 | 977802 | 977839  |
| 10.00              | 10.0           | 10              | 72 | 977803 | 977840  |



# DIXI 7333-D

長頸深溝專用超短刃開槽立銑刀

Z = 3



D<sub>1</sub> L<sub>1</sub> D<sub>2</sub> D<sub>h5</sub> L L<sub>2</sub> DIXI 無鍍層 CUTINOX

|                    |     |      |   |    |       |         |        |        |  |
|--------------------|-----|------|---|----|-------|---------|--------|--------|--|
| Ø < 2.00 - 0/-0.01 |     |      |   |    |       |         |        |        |  |
| Ø < 3.00 - 0/-0.02 |     |      |   |    |       |         |        |        |  |
| Ø ≥ 3.00 - e8      |     |      |   |    |       |         |        |        |  |
| 0.30               | 0.3 | 0.27 | 3 | 38 | 0.90  | 7333-3D | 978791 | 978793 |  |
|                    |     |      |   |    | 1.50  | 7333-5D | 978895 | 978896 |  |
|                    |     |      |   |    | 2.40  | 7333-8D | 978591 | 978922 |  |
|                    |     |      |   |    | 1.20  | 7333-3D | 978794 | 978795 |  |
| 0.40               | 0.4 | 0.37 | 3 | 38 | 2.00  | 7333-5D | 978897 | 978898 |  |
|                    |     |      |   |    | 3.20  | 7333-8D | 978928 | 979009 |  |
|                    |     |      |   |    | 1.50  | 7333-3D | 978796 | 978798 |  |
| 0.50               | 0.5 | 0.45 | 3 | 38 | 2.50  | 7333-5D | 978899 | 978900 |  |
|                    |     |      |   |    | 4.00  | 7333-8D | 979010 | 979011 |  |
|                    |     |      |   |    | 1.80  | 7333-3D | 978799 | 978800 |  |
| 0.60               | 0.6 | 0.55 | 3 | 38 | 3.00  | 7333-5D | 978901 | 978902 |  |
|                    |     |      |   |    | 4.80  | 7333-8D | 979012 | 979014 |  |
|                    |     |      |   |    | 2.10  | 7333-3D | 978801 | 978802 |  |
| 0.70               | 0.7 | 0.65 | 3 | 38 | 3.50  | 7333-5D | 978903 | 978904 |  |
|                    |     |      |   |    | 5.60  | 7333-8D | 979016 | 979017 |  |
|                    |     |      |   |    | 2.40  | 7333-3D | 978803 | 978804 |  |
| 0.80               | 0.8 | 0.75 | 3 | 38 | 4.00  | 7333-5D | 978905 | 978906 |  |
|                    |     |      |   |    | 6.40  | 7333-8D | 979018 | 979019 |  |
|                    |     |      |   |    | 2.70  | 7333-3D | 978805 | 978806 |  |
| 0.90               | 0.9 | 0.85 | 3 | 38 | 4.50  | 7333-5D | 978907 | 978908 |  |
|                    |     |      |   |    | 7.20  | 7333-8D | 979020 | 979021 |  |
|                    |     |      |   |    | 3.00  | 7333-3D | 978807 | 978808 |  |
| 1.00               | 1.0 | 0.95 | 3 | 38 | 5.00  | 7333-5D | 978909 | 978910 |  |
|                    |     |      |   |    | 8.00  | 7333-8D | 979022 | 979023 |  |
|                    |     |      |   |    | 3.30  | 7333-3D | 978809 | 978811 |  |
| 1.10               | 1.1 | 1.05 | 3 | 38 | 5.50  | 7333-5D | 978911 | 978912 |  |
|                    |     |      |   |    | 8.80  | 7333-8D | 979024 | 979025 |  |
|                    |     |      |   |    | 3.60  | 7333-3D | 978812 | 978813 |  |
| 1.20               | 1.2 | 1.15 | 3 | 38 | 6.00  | 7333-5D | 978913 | 978914 |  |
|                    |     |      |   |    | 9.60  | 7333-8D | 979026 | 979027 |  |
|                    |     |      |   |    | 3.90  | 7333-3D | 978814 | 978815 |  |
| 1.30               | 1.3 | 1.25 | 3 | 38 | 6.50  | 7333-5D | 978915 | 978916 |  |
|                    |     |      |   |    | 10.40 | 7333-8D | 979028 | 979029 |  |
|                    |     |      |   |    | 4.20  | 7333-3D | 978816 | 978817 |  |
| 1.40               | 1.4 | 1.35 | 3 | 38 | 7.00  | 7333-5D | 978917 | 978918 |  |
|                    |     |      |   |    | 11.20 | 7333-8D | 979030 | 979031 |  |
|                    |     |      |   |    | 4.50  | 7333-3D | 978818 | 978819 |  |
| 1.50               | 1.5 | 1.45 | 3 | 38 | 7.50  | 7333-5D | 978919 | 978920 |  |
|                    |     |      |   |    | 12.00 | 7333-8D | 979032 | 979033 |  |
|                    |     |      |   |    | 4.80  | 7333-3D | 978820 | 978821 |  |
| 1.60               | 1.6 | 1.55 | 3 | 38 | 8.00  | 7333-5D | 978921 | 978923 |  |
|                    |     |      |   |    | 12.80 | 7333-8D | 979034 | 979035 |  |
|                    |     |      |   |    | 5.10  | 7333-3D | 978823 | 978824 |  |
| 1.70               | 1.7 | 1.65 | 3 | 38 | 8.50  | 7333-5D | 978924 | 978925 |  |
|                    |     |      |   |    | 13.60 | 7333-8D | 979036 | 979037 |  |
|                    |     |      |   |    | 5.40  | 7333-3D | 978826 | 978828 |  |
| 1.80               | 1.8 | 1.75 | 3 | 38 | 9.00  | 7333-5D | 978926 | 978927 |  |
|                    |     |      |   |    | 14.40 | 7333-8D | 979038 | 979039 |  |
|                    |     |      |   |    | 5.70  | 7333-3D | 978829 | 978830 |  |
| 1.90               | 1.9 | 1.85 | 3 | 38 | 9.50  | 7333-5D | 978929 | 978930 |  |
|                    |     |      |   |    | 15.20 | 7333-8D | 979041 | 979040 |  |

DIXI 7333-3D L<sub>2</sub> = 3 x D<sub>1</sub>

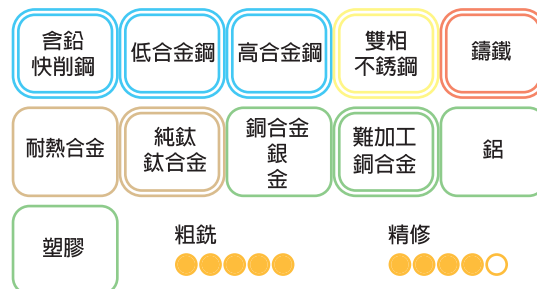
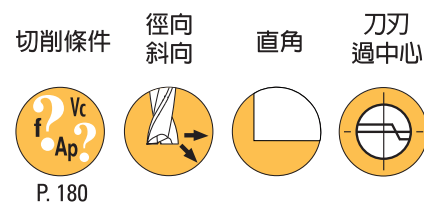
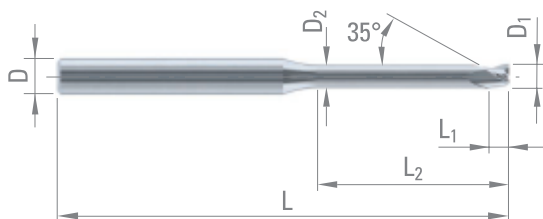
DIXI 7333-5D L<sub>2</sub> = 5 x D<sub>1</sub>

DIXI 7333-8D L<sub>2</sub> = 8 x D<sub>1</sub>



## DIXI 7333-D

Z = 3



| D <sub>1</sub>     | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI    | 無鍍層    | CUTINOX |
|--------------------|----------------|----------------|-----------------|----|----------------|---------|--------|---------|
| Ø < 2.00 - 0/-0.01 |                |                |                 |    |                |         |        |         |
| Ø < 3.00 - 0/-0.02 |                |                |                 |    |                |         |        |         |
| Ø ≥ 3.00 - e8      |                |                |                 |    |                |         |        |         |
| 2.00               | 2.0            | 1.90           | 3               | 38 | 6.00           | 7333-3D | 978848 | 978849  |
|                    |                |                |                 |    | 10.00          | 7333-5D | 978931 | 978932  |
|                    |                |                |                 |    | 16.00          | 7333-8D | 979042 | 979043  |
|                    |                |                |                 |    | 7.50           | 7333-3D | 978850 | 978851  |
| 2.50               | 2.5            | 2.40           | 3               | 38 | 12.50          | 7333-5D | 978933 | 978934  |
|                    |                |                |                 |    | 20.00          | 7333-8D | 979044 | 979045  |
|                    |                |                |                 |    | 9.00           | 7333-3D | 978852 | 978853  |
| 3.00               | 2.9            | 2.90           | 3               | 38 | 15.00          | 7333-5D | 978935 | 978936  |
|                    |                |                |                 |    | 24.00          | 7333-8D | 979046 | 979047  |
| 4.00               | 4.0            | 3.80           | 4               | 42 | 12.00          | 7333-3D | 978854 | 978855  |

DIXI 7333-3D L<sub>2</sub> = 3 x D<sub>1</sub>

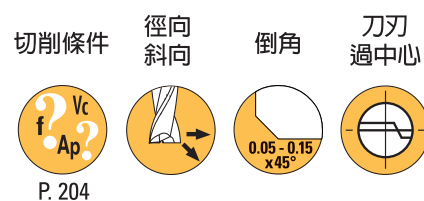
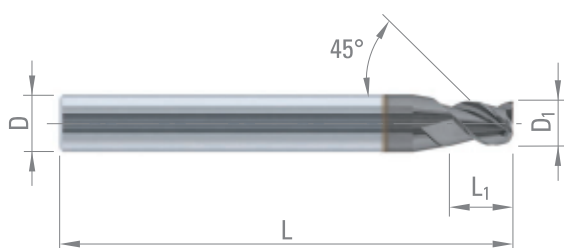
DIXI 7333-5D L<sub>2</sub> = 5 x D<sub>1</sub>

DIXI 7333-8D L<sub>2</sub> = 8 x D<sub>1</sub>

## DIXI 7543 XIDUR

高剛性立銑刀

Z = 3



| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | XIDUR |
|--------------------|----------------|-----------------|----|-------|
| Ø < 2.00 - 0/-0.01 |                |                 |    |       |
| Ø < 3.00 - 0/-0.02 |                |                 |    |       |
| Ø ≥ 3.00 - e8      |                |                 |    |       |
| 1.00               | 2.0            | 4               | 50 | 51704 |
| 1.50               | 3.0            | 4               | 50 | 63945 |
| 2.00               | 3.0            | 4               | 50 | 51705 |
| 2.50               | 3.0            | 4               | 50 | 63946 |
| 3.00               | 4.5            | 6               | 57 | 51706 |
| 4.00               | 6.0            | 6               | 57 | 51707 |
| 5.00               | 7.0            | 6               | 57 | 51708 |
| 6.00               | 8.0            | 8               | 63 | 51709 |
| 8.00               | 10.0           | 10              | 72 | 51710 |
| 10.00              | 12.0           | 10              | 72 | 51711 |
| 12.00              | 15.0           | 12              | 83 | 51712 |



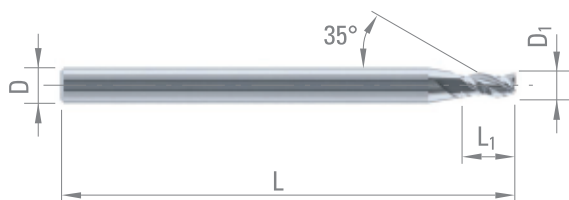
# DIXI 7583

## 高剛性立銑刀

Z = 3

切削條件 徑向斜向 直角 刀刃過中心

P. 166



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

純鈦鈦合金 銅合金銀金 難加工銅合金 鋁 塑膠

粗銑 精修

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層    | TiAlN  | DLC*   |
|--------------------|----------------|-----------------|----|--------|--------|--------|
| Ø < 2.00 - 0/-0.01 |                |                 |    |        |        |        |
| Ø < 3.00 - 0/-0.02 |                |                 |    |        |        |        |
| Ø ≥ 3.00 - e8      |                |                 |    |        |        |        |
| 0.30               | 0.6            | 3               | 38 | 972403 | 972404 | 975572 |
| 0.40               | 0.8            | 3               | 38 | 972405 | 972406 | 982427 |
| 0.50               | 1.0            | 3               | 38 | 52565  | 963644 | 977361 |
| 0.60               | 1.2            | 3               | 38 | 963676 | 963678 | 982428 |
| 0.70               | 1.4            | 3               | 38 | 963677 | 963679 | 973037 |
| 0.80               | 1.6            | 3               | 38 | 954650 | 963680 | 982429 |
| 0.90               | 1.8            | 3               | 38 | 951666 | 963681 | 983104 |
| 1.00               | 2.0            | 3               | 38 | 31445  | 44659  | 960097 |
| 1.10               | 2.2            | 3               | 38 | 66496  | 66497  | 983105 |
| 1.20               | 2.4            | 3               | 38 | 66498  | 66499  | 973027 |
| 1.30               | 2.6            | 3               | 38 | 66500  | 66501  | 983106 |
| 1.40               | 2.8            | 3               | 38 | 66502  | 66503  | 983107 |
| 1.50               | 3.0            | 3               | 38 | 29407  | 40913  | 957103 |
| 1.60               | 3.2            | 3               | 38 | 41962  | 66510  | 983108 |
| 1.70               | 3.4            | 3               | 38 | 66504  | 66505  | 983109 |
| 1.80               | 3.6            | 3               | 38 | 66506  | 66507  | 983111 |
| 1.90               | 3.8            | 3               | 38 | 66508  | 66509  | 983112 |
| 2.00               | 4.0            | 3               | 38 | 39304  | 40081  | 61971  |
| 2.50               | 5.0            | 3               | 38 | 39213  | 40580  | 61973  |
| 3.00               | 6.0            | 6               | 50 | 40739  | 41954  | 61974  |
| 4.00               | 8.0            | 6               | 50 | 34377  | 53324  | 984169 |
| 5.00               | 10.0           | 6               | 50 | 48700  | 53325  | 984170 |
| 6.00               | 12.0           | 6               | 50 | 978074 | 978075 | 984171 |

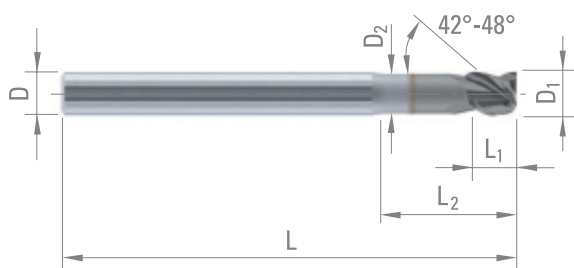
\* 非鐵金屬用



## DIXI 7253 CUTINOX

### 雙螺旋角細頸立銑刀

Z = 3



切削條件 徑向斜向 倒角 雙螺旋角 刀刃過中心

$f$   $V_c$   $A_p$   $0.10 - 0.20 \times 45^\circ$   $D_1 \geq 10$

P. 168  
P. 170

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金

粗銑 精修

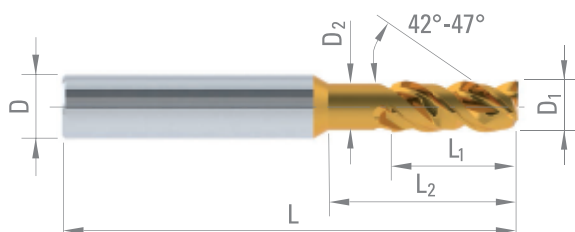
| $D_{1e8}$ | $L_1$ | $D_2$ | $L_2$ | $D_{h5}$ | L  | CUTINOX |
|-----------|-------|-------|-------|----------|----|---------|
| 3.00      | 4.0   | 2.80  | 9     | 6        | 57 | 968764  |
| 4.00      | 5.0   | 3.70  | 12    | 6        | 57 | 968765  |
| 5.00      | 6.0   | 4.60  | 15    | 6        | 57 | 968766  |
| 6.00      | 7.0   | 5.50  | 18    | 8        | 63 | 968767  |
| 8.00      | 9.0   | 7.50  | 24    | 10       | 72 | 968768  |
| 10.00     | 11.0  | 9.30  | 30    | 10       | 72 | 968769  |
| 12.00     | 13.0  | 11.20 | 36    | 12       | 83 | 968770  |
| 16.00     | 17.0  | 15.20 | 48    | 16       | 92 | 968771  |

## DIXI 7563 - 7563-FC DIXAL

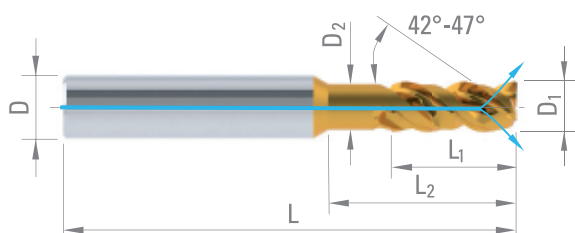
### 雙螺旋角立銑刀

Z = 3

7563



7563-FC



切削條件 徑向斜向 倒角 雙螺旋角 刀刃過中心

$f$   $V_c$   $A_p$   $0.10 - 0.20 \times 45^\circ$

P. 206

銅合金 銀金 難加工銅合金 鋁 塑膠

粗銑 精修

不支援中心出水 刀刃出水

7563 7563-FC

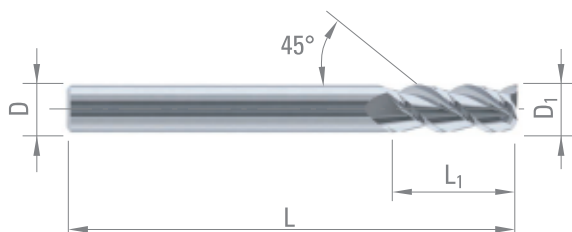
| $D_{1h10}$ | $L_1$ | $D_2$ | $L_2$ | $D_{h5}$ | L   | DIXAL  | DIXAL  |
|------------|-------|-------|-------|----------|-----|--------|--------|
| 4.00       | 9.0   | 3.60  | 14    | 4        | 57  | 991388 |        |
| 6.00       | 13.0  | 5.60  | 21    | 6        | 57  | 991389 | 321899 |
| 8.00       | 19.0  | 7.40  | 26    | 8        | 63  | 991390 | 321900 |
| 10.00      | 22.0  | 9.30  | 30    | 10       | 72  | 991391 | 321901 |
| 12.00      | 26.0  | 11.00 | 37    | 12       | 83  | 991392 | 321902 |
| 16.00      | 32.0  | 15.00 | 42    | 16       | 92  | 991393 | 321903 |
| 20.00      | 38.0  | 19.00 | 50    | 20       | 104 | 991394 | 322866 |



## DIXI 7273

精修用立銑刀

Z = 3



切削條件 徑向斜向 倒角 刀刃過中心

$f$   $V_c$   $A_p$   $0.20 \times 45^\circ$   $D_1 \geq 12$

P. 166

含鉛快削鋼 低合金鋼 鑄鐵 純鈦鈦合金 銅合金銀金

難加工銅合金 鋁 塑膠

粗銑



精修

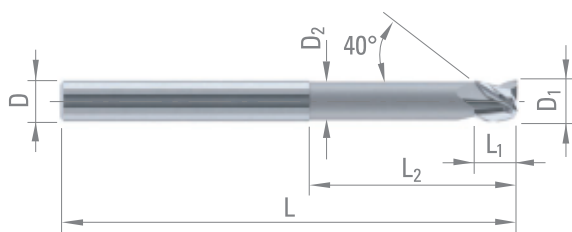


| $D_{1e8}$ | $L_1$ | $D_{h5}$ | L   | 無鍍層   | TiAlN |
|-----------|-------|----------|-----|-------|-------|
| 3.00      | 10.0  | 3        | 38  | 35741 | 57254 |
| 4.00      | 12.0  | 4        | 50  | 35742 | 57255 |
| 5.00      | 14.0  | 5        | 50  | 34225 | 57256 |
| 6.00      | 16.0  | 6        | 57  | 35743 | 57258 |
| 8.00      | 20.0  | 8        | 63  | 34227 | 57259 |
| 10.00     | 22.0  | 10       | 72  | 34228 | 57260 |
| 12.00     | 22.0  | 12       | 73  | 34229 | 57261 |
| 16.00     | 27.0  | 16       | 82  | 35745 |       |
| 20.00     | 35.0  | 20       | 104 | 35747 |       |

## DIXI 7593

長頸深溝專用立銑刀

Z = 3-4



切削條件 徑向斜向 直角 刀刃過中心

$f$   $V_c$   $A_p$   $P. 204$

鋁

粗銑



Finishing



| $D_{1h5}$ | $L_1$ | $D_2$ | $L_2$ | $D_{h5}$ | L   | Z | 無鍍層   |
|-----------|-------|-------|-------|----------|-----|---|-------|
| 6.00      | 6.0   | 5.6   | 30    | 6        | 66  | 3 | 49281 |
| 8.00      | 8.0   | 7.6   | 45    | 8        | 81  | 3 | 49282 |
| 10.00     | 10.0  | 9.6   | 50    | 10       | 90  | 3 | 49283 |
| 12.00     | 12.0  | 11.6  | 55    | 12       | 100 | 3 | 49284 |
| 16.00     | 16.0  | 15.6  | 72    | 16       | 120 | 3 | 49285 |
| 20.00     | 20.0  | 19.6  | 80    | 20       | 130 | 4 | 49286 |

# DIXI 7244

## 高剛性開槽立銑刀

Z = 4

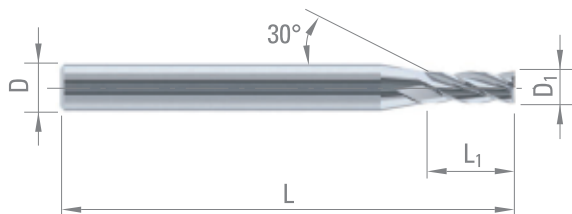
切削條件

徑向

直角

刀刀  
過中心

P. 176



含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑  
●●●●●

精修  
●●●●●

D<sub>1</sub> L<sub>1</sub> D<sub>h5</sub> L 無鍍層 TiAlN DIAMANT\*

Ø < 2.00 - 0/- 0.01  
Ø < 3.00 - 0/- 0.02  
Ø ≥ 3.00 - e8

|       |      |    |     |       |       |       |
|-------|------|----|-----|-------|-------|-------|
| 0.40  | 1.2  | 3  | 38  | 45695 | 61846 |       |
| 0.50  | 1.5  | 3  | 38  | 45696 | 61345 |       |
| 1.00  | 3.0  | 3  | 38  | 55964 | 57230 | 63697 |
| 1.50  | 4.0  | 3  | 38  | 56731 | 57231 | 63698 |
| 2.00  | 7.0  | 3  | 38  | 52357 | 57232 | 63699 |
| 3.00  | 8.0  | 6  | 57  | 28959 | 57233 | 63700 |
| 4.00  | 11.0 | 6  | 57  | 42123 | 57239 | 63701 |
| 4.50  | 11.0 | 6  | 57  | 42124 | 57241 |       |
| 5.00  | 13.0 | 6  | 57  | 41881 | 57242 | 63703 |
| 6.00  | 13.0 | 6  | 57  | 28965 | 57243 | 36278 |
| 7.00  | 16.0 | 8  | 63  | 28967 | 57244 |       |
| 8.00  | 19.0 | 8  | 63  | 42906 | 57245 |       |
| 9.00  | 19.0 | 10 | 72  | 28971 | 57246 |       |
| 10.00 | 22.0 | 10 | 72  | 42361 | 57247 |       |
| 12.00 | 26.0 | 12 | 83  | 39946 | 57248 |       |
| 14.00 | 26.0 | 14 | 83  | 42362 | 57249 |       |
| 16.00 | 32.0 | 16 | 92  | 42363 | 57251 |       |
| 20.00 | 38.0 | 20 | 104 | 42227 | 57253 |       |

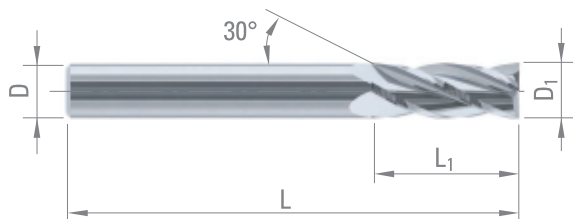
\* 非鐵金屬用



# DIXI 7204

立銑刀

Z = 4



切削條件

徑向

直角

刀刃  
過中心



P. 176



D<sub>1</sub> ≥ 6

含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

純鈦  
鈦合金

銅合金  
銀金

難加工  
銅合金

鋁

塑膠

粗銑



精修

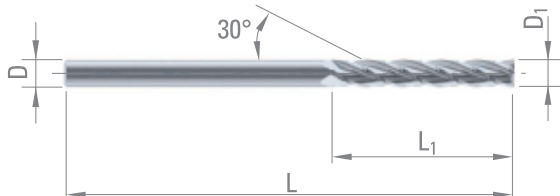


| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   | TiAlN |
|-------------------|----------------|-----------------|----|-------|-------|
| 2.00              | 8.0            | 2.0             | 32 | 32944 | 57118 |
| 2.50              | 8.0            | 2.5             | 32 | 32945 | 57119 |
| 3.00              | 10.0           | 3.0             | 38 | 710   | 57120 |
| 4.00              | 12.0           | 4.0             | 50 | 711   | 57121 |
| 5.00              | 14.0           | 5.0             | 50 | 34629 | 57122 |
| 6.00              | 16.0           | 6.0             | 50 | 34630 | 57123 |

# DIXI 7224

長刃立銑刀

Z = 4



切削條件

徑向

直角

刀刃  
過中心



P. 178



D<sub>1</sub> ≥ 6

含鉛  
快削鋼

低合金鋼

鑄鐵

純鈦  
鈦合金

銅合金  
銀金

難加工  
銅合金

鋁

石墨

塑膠

粗銑



精修



| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAlN | DIAMANT* |
|-------------------|----------------|-----------------|-----|-------|-------|----------|
| 3.00              | 30.0           | 3               | 60  | 44769 | 57152 | 60255    |
| 4.00              | 30.0           | 4               | 60  | 44770 | 57154 | 60258    |
| 5.00              | 35.0           | 5               | 75  | 44771 | 57155 | 60259    |
| 6.00              | 40.0           | 6               | 100 | 44706 | 57156 | 60260    |
| 8.00              | 40.0           | 8               | 100 | 44772 | 57157 | 60003    |
| 10.00             | 40.0           | 10              | 100 | 44707 | 57158 | 60004    |
| 12.00             | 45.0           | 12              | 100 | 44773 | 57159 | 60261    |
| 14.00             | 65.0           | 14              | 150 | 44708 | 57160 |          |
| 16.00             | 65.0           | 16              | 150 | 44709 | 55770 |          |
| 20.00             | 65.0           | 20              | 150 | 44776 | 57161 |          |

\* 非鐵金屬用

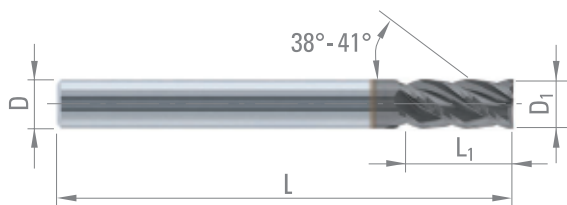


# DIXI 7264 - 7264-3D CUTINOX

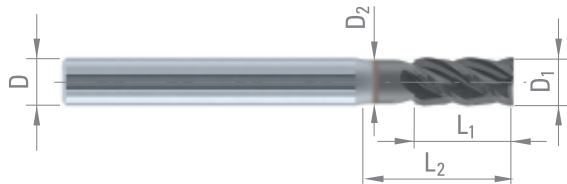
## 不等分割雙螺旋角立銑刀

Z = 4

7264



7264-3D



切削條件 徑向斜向 雙螺旋角 不等分割 倒角 刀刃過中心

$f$   $V_c$   $A_p$  P. 174

$\lambda_2$   $\lambda_1$

$0.10-0.20 \times 45^\circ$   $D_1 \geq 10$

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦 鈦合金

粗銑



精修



| $D_1$                        | $L_1$ | $D_{h5}$ | L | DIXI | $D_2$ | $L_2$ | CUTINOX |
|------------------------------|-------|----------|---|------|-------|-------|---------|
| $\emptyset < 3.00 - 0/-0.02$ |       |          |   |      |       |       |         |
| $\emptyset \geq 3.00 - e8$   |       |          |   |      |       |       |         |

|       |      |    |     |         |      |    |        |
|-------|------|----|-----|---------|------|----|--------|
| 1.50  | 3.0  | 3  | 38  | 7264    | -    | -  | 974805 |
| 2.00  | 4.0  | 3  | 38  | 7264    | -    | -  | 974804 |
| 3.00  | 8.0  | 6  | 57  | 7264    | -    | -  | 968672 |
| 4.00  | 11.0 | 6  | 57  | 7264    | -    | -  | 968678 |
| 5.00  | 13.0 | 6  | 57  | 7264    | -    | -  | 968679 |
| 6.00  | 13.0 | 6  | 57  | 7264    | -    | -  | 968680 |
|       |      |    |     | 7264-3D | 5.5  | 18 | 997930 |
| 8.00  | 19.0 | 8  | 63  | 7264    | -    | -  | 968681 |
|       |      |    |     | 7264-3D | 7.5  | 24 | 997931 |
| 10.00 | 22.0 | 10 | 72  | 7264    | -    | -  | 968682 |
|       |      |    |     | 7264-3D | 9.25 | 30 | 997932 |
| 12.00 | 26.0 | 12 | 83  | 7264    | -    | -  | 968683 |
|       |      |    |     | 7264-3D | 11.0 | 36 | 997933 |
| 16.00 | 32.0 | 16 | 92  | 7264    | -    | -  | 968684 |
|       |      |    |     | 7264-3D | 15.0 | 48 | 997934 |
| 20.00 | 38.0 | 20 | 104 | 7264    | -    | -  | 968685 |
|       |      |    |     | 7264-3D | 19.0 | 60 | 997935 |



# DIXI 7254 CUTINOX

## 雙螺旋角立銑刀

Z = 4

切削條件

徑向斜向

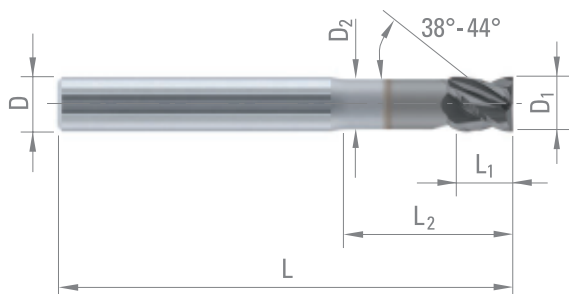
雙螺旋角

倒角

刀刃過中心

P. 170

$D_1 \geq 10$



含鉛快削鋼

低合金鋼

高合金鋼

雙相不銹鋼

鑄鐵

耐熱合金

純鈦鈦合金

粗銑

精修

| $D_{1e8}$ | $L_1$ | $D_2$ | $L_2$ | $D_{h5}$ | L  | CUTINOX |
|-----------|-------|-------|-------|----------|----|---------|
| 3.00      | 4.0   | 2.80  | 9     | 6        | 57 | 968686  |
| 4.00      | 5.0   | 3.70  | 12    | 6        | 57 | 968687  |
| 5.00      | 6.0   | 4.60  | 15    | 6        | 57 | 968688  |
| 6.00      | 7.0   | 5.50  | 18    | 8        | 63 | 968689  |
| 8.00      | 9.0   | 7.50  | 24    | 10       | 72 | 968690  |
| 10.00     | 11.0  | 9.30  | 30    | 10       | 72 | 968691  |
| 12.00     | 13.0  | 11.20 | 36    | 12       | 83 | 968692  |
| 16.00     | 17.0  | 15.20 | 48    | 16       | 92 | 968693  |



# DIXI 7560

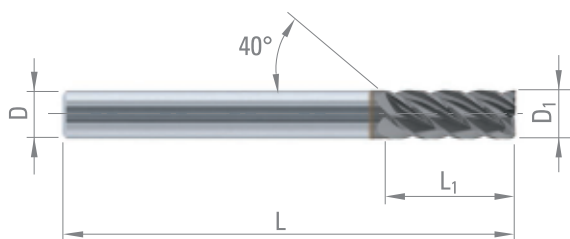
## 多刃立銑刀

Z = 3-8

切削條件 徑向 倒角 刀刃過中心

P. 182  $D_1 > 6$   $D_1 \leq 1.90$



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦 鈦合金 銅合金 銀金 難加工銅合金

粗銑  精修 



| D <sub>1</sub>                 | L <sub>1</sub> | D <sub>h5</sub> | L   | Z | 無鍍層    | TiAlN  | DLC*   |
|--------------------------------|----------------|-----------------|-----|---|--------|--------|--------|
| $\varnothing < 2.00 - 0/-0.01$ |                |                 |     |   |        |        |        |
| $\varnothing \geq 2.00 - e8$   |                |                 |     |   |        |        |        |
| 0.35                           | 0.90           | 3.0             | 38  | 3 | 964114 | 966117 | 966057 |
| 0.40                           | 1.00           | 3.0             | 38  | 3 | 964115 | 966118 | 966058 |
| 0.45                           | 1.10           | 3.0             | 38  | 3 | 964116 | 966119 | 966059 |
| 0.50                           | 1.25           | 3.0             | 38  | 3 | 964117 | 966120 | 966060 |
| 0.55                           | 1.40           | 3.0             | 38  | 3 | 964118 | 966121 | 966061 |
| 0.60                           | 1.50           | 3.0             | 38  | 3 | 964119 | 966122 | 966062 |
| 0.65                           | 1.70           | 3.0             | 38  | 3 | 964120 | 966123 | 966063 |
| 0.70                           | 1.75           | 3.0             | 38  | 3 | 964121 | 966124 | 966064 |
| 0.75                           | 1.90           | 3.0             | 38  | 3 | 964122 | 966125 | 966065 |
| 0.80                           | 2.00           | 3.0             | 38  | 3 | 964123 | 966126 | 966066 |
| 0.85                           | 2.15           | 3.0             | 38  | 3 | 964124 | 966127 | 966067 |
| 0.90                           | 2.25           | 3.0             | 38  | 3 | 964125 | 966128 | 966068 |
| 0.95                           | 2.40           | 3.0             | 38  | 3 | 964126 | 966129 | 966069 |
| 1.00                           | 2.50           | 3.0             | 38  | 3 | 964127 | 966130 | 966070 |
| 1.10                           | 2.75           | 3.0             | 38  | 3 | 964128 | 966131 | 966071 |
| 1.20                           | 3.00           | 3.0             | 38  | 3 | 964129 | 966132 | 966072 |
| 1.30                           | 3.25           | 3.0             | 38  | 3 | 964130 | 966133 | 966073 |
| 1.40                           | 3.50           | 3.0             | 38  | 3 | 964131 | 966134 | 966074 |
| 1.50                           | 3.75           | 3.0             | 38  | 3 | 964132 | 966136 | 966075 |
| 1.60                           | 4.00           | 3.0             | 38  | 3 | 964133 | 966138 | 966076 |
| 1.70                           | 4.25           | 3.0             | 38  | 3 | 964134 | 966139 | 966094 |
| 1.80                           | 4.50           | 3.0             | 38  | 3 | 964135 | 966140 | 966095 |
| 1.90                           | 4.75           | 3.0             | 38  | 3 | 964136 | 966142 | 966096 |
| 2.00                           | 8.00           | 3.0             | 38  | 5 | 964108 | 964112 | 964113 |
| 2.10                           | 5.25           | 3.0             | 38  | 5 | 964137 | 966145 | 966097 |
| 2.20                           | 5.50           | 3.0             | 38  | 5 | 964140 | 966146 | 966098 |
| 2.30                           | 5.75           | 3.0             | 38  | 5 | 964141 | 966147 | 966099 |
| 2.40                           | 6.00           | 3.0             | 38  | 5 | 964142 | 966148 | 966101 |
| 2.50                           | 8.00           | 3.0             | 38  | 5 | 964109 | 964110 | 964111 |
| 2.60                           | 6.50           | 3.0             | 38  | 5 | 964143 | 966149 | 966102 |
| 2.70                           | 6.75           | 3.0             | 38  | 5 | 964144 | 966150 | 966104 |
| 2.80                           | 7.00           | 3.0             | 38  | 5 | 964145 | 966151 | 966105 |
| 2.90                           | 7.00           | 3.0             | 38  | 5 | 964146 | 966152 | 966106 |
| 3.00                           | 10.00          | 3.0             | 38  | 5 | 45657  | 49683  | 966107 |
| 4.00                           | 12.00          | 4.0             | 50  | 5 | 45658  | 49684  | 964325 |
| 5.00                           | 14.00          | 5.0             | 50  | 5 | 45659  | 49685  | 966115 |
| 6.00                           | 16.00          | 6.0             | 57  | 5 | 45546  | 49686  | 966116 |
| 8.00                           | 19.00          | 8.0             | 63  | 5 | 45547  | 49688  |        |
| 9.00                           | 22.00          | 9.0             | 67  | 5 | 45661  | 49689  |        |
| 10.00                          | 22.00          | 10.0            | 72  | 6 | 45548  | 49690  |        |
| 12.00                          | 26.00          | 12.0            | 83  | 6 | 45662  | 49691  |        |
| 16.00                          | 32.00          | 16.0            | 92  | 6 | 45549  | 49693  |        |
| 20.00                          | 38.00          | 20.0            | 104 | 8 | 45550  | 49694  |        |

\* 非鐵金屬用





## DIXI 7210

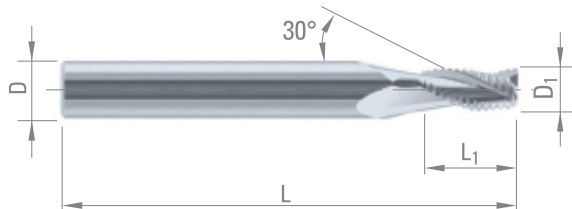
高效率粗銑刀

Z = 3

切削條件 徑向斜向 倒角 刀刃過中心

$f$   $V_c$   $A_p$   $0.20 \times 45^\circ$

P. 184



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

純鈦 鈦合金 銅合金 銀金 難加工銅合金 鋁

粗銑 精修

| $D_{1d12}$ | $L_1$ | $D_{h5}$ | L  | 無鍍層    | CUTINOX |
|------------|-------|----------|----|--------|---------|
| 3.00       | 8.0   | 6        | 57 | 955178 | 955179  |
| 4.00       | 10.0  | 6        | 57 | 955092 | 955091  |
| 5.00       | 13.0  | 6        | 57 | 955089 | 955090  |
| 6.00       | 13.0  | 8        | 63 | 955088 | 955087  |
| 7.00       | 16.0  | 8        | 63 | 955086 | 955085  |
| 8.00       | 16.0  | 8        | 63 | 955082 | 955033  |
| 10.00      | 22.0  | 10       | 72 | 955093 | 955094  |
| 12.00      | 25.0  | 12       | 83 | 959048 | 956993  |



## DIXI 7213

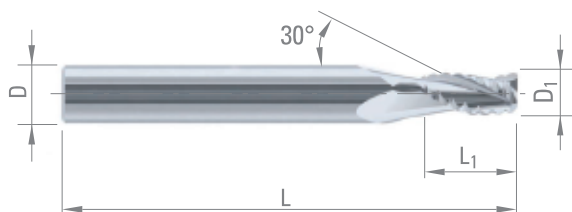
高效率粗銑刀

Z = 3

切削條件 徑向斜向 倒角 刀刃過中心

$f$   $V_c$   $A_p$   $0.20 \times 45^\circ$

P. 186



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

純鈦 鈦合金 銅合金 銀金 難加工銅合金 鋁

粗銑 精修

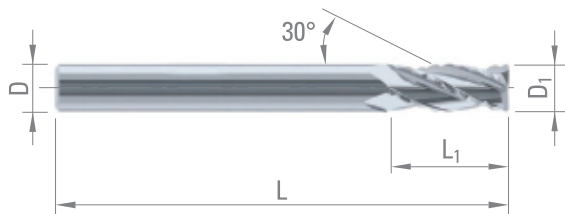
| $D_{1d12}$ | $L_1$ | $D_{h5}$ | L   | 無鍍層   | TiAlN |
|------------|-------|----------|-----|-------|-------|
| 4.00       | 10.0  | 6        | 57  | 31451 | 57018 |
| 5.00       | 13.0  | 6        | 57  | 37136 | 57019 |
| 6.00       | 13.0  | 8        | 63  | 37137 | 57020 |
| 7.00       | 16.0  | 8        | 63  | 37138 | 57021 |
| 8.00       | 16.0  | 10       | 72  | 43218 | 57022 |
| 10.00      | 22.0  | 10       | 72  | 43214 | 57024 |
| 11.00      | 22.0  | 12       | 83  | 37142 | 57025 |
| 12.00      | 25.0  | 12       | 83  | 37143 | 57026 |
| 14.00      | 27.0  | 14       | 83  | 37144 | 57027 |
| 16.00      | 36.0  | 16       | 100 | 37145 | 57028 |
| 20.00      | 40.0  | 20       | 104 | 37588 | 57029 |



## DIXI 7214

高效率粗銑刀

Z = 4



切削條件 徑向斜向 倒角 刀刃過中心

$f$   $V_c$   $A_p$   $0.20 \times 45^\circ$

P. 186

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

純鈦 鈦合金 銅合金 銀金 難加工銅合金 鋁

粗銑 精修

| $D_{1d12}$ | $L_1$ | $D_{h5}$ | L   | 無鍍層   | TiAlN |
|------------|-------|----------|-----|-------|-------|
| 6.00       | 15.0  | 6        | 57  | 45798 | 61412 |
| 8.00       | 16.0  | 10       | 72  | 39954 | 62426 |
| 10.00      | 22.0  | 10       | 72  | 37146 | 31133 |
| 12.00      | 25.0  | 12       | 83  | 37148 | 60949 |
| 16.00      | 36.0  | 16       | 100 | 37151 | 63333 |
| 20.00      | 40.0  | 20       | 104 | 37152 | 63334 |



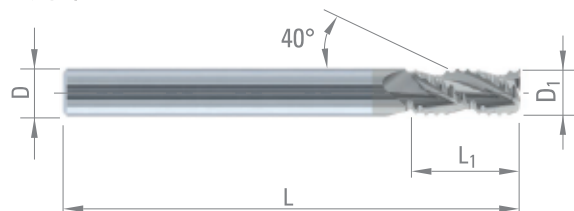
需訂製

## DIXI 7215 - 7215-FC DAC

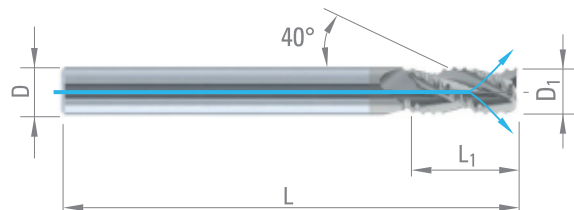
鋁合金用高效率粗銑刀

Z = 3

7215



7215-FC



切削條件 徑向斜向 倒角 刀刃過中心

$f$   $V_c$   $A_p$   $0.3 - 0.5 \times 45^\circ$

P. 212

銅合金 銀金 難加工銅合金 鋁

粗銑 精修

7215 7215-FC

不支援中心出水 刀刃出水

| $D_{1d12}$ | $L_1$ | $D_{h6}$ | L  | DAC    | DAC    |
|------------|-------|----------|----|--------|--------|
| 6.00       | 13.0  | 6        | 57 | 993017 | 995594 |
| 8.00       | 19.0  | 8        | 63 | 993018 | 995595 |
| 10.00      | 22.0  | 10       | 72 | 993003 | 995596 |
| 12.00      | 26.0  | 12       | 83 | 990143 | 995597 |
| 16.00      | 32.0  | 16       | 92 | 993019 | 307320 |



需訂製



DIXI 7702 XIDUR

高進給立銑刀

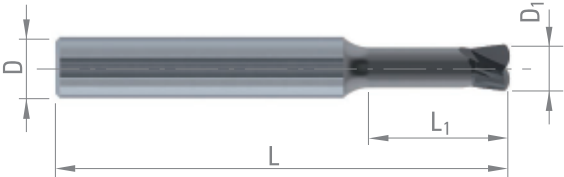
Z = 2

切削條件

徑向  
斜向

R角

P. 196



含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

熱處理鋼  
鑄鐵  
>HRC 45

鑄鐵

耐熱合金

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

粗銑

●●●●●

精修

●●●●●

| D <sub>1</sub> | L <sub>1</sub> | D <sub>h6</sub> | L  | XIDUR  |
|----------------|----------------|-----------------|----|--------|
| 0.50           | 1.50           | 6               | 40 | 305279 |
| 0.80           | 2.40           | 6               | 40 | 305280 |
| 1.00           | 3.00           | 6               | 40 | 997920 |
| 1.50           | 4.50           | 6               | 40 | 997921 |
| 2.00           | 6.00           | 6               | 40 | 997922 |
| 3.00           | 9.00           | 6               | 40 | 997923 |
| 4.00           | 12.00          | 6               | 57 | 997924 |
| 5.00           | 15.00          | 6               | 57 | 997925 |
| 6.00           | 18.00          | 8               | 63 | 997926 |
| 8.00           | 24.00          | 10              | 80 | 997927 |
| 10.00          | 30.00          | 10              | 80 | 997928 |
| 12.00          | 36.00          | 12              | 80 | 997929 |

www.dixipolytool.com 可下載切削條件及輪廓外型



# DIXI 7237-10

切削條件

P. 162

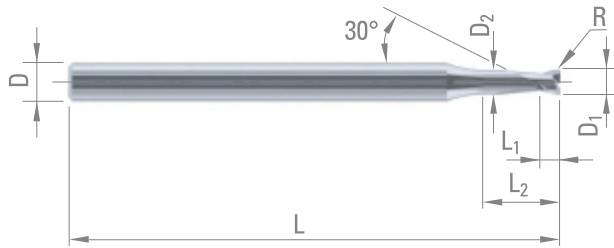
徑向斜向插銑

R角

刀刃過中心

長頸深溝專用超短刃開槽圓鼻銑刀  
 $L_2 = 3 \times D_1$

Z = 2



含鉛快削鋼

低合金鋼

高合金鋼

雙相不銹鋼

鑄鐵

耐熱合金

純鈦鈦合金

銅合金銀金

難加工銅合金

鋁

塑膠

粗銑

精修

| D <sub>1</sub>                                                                             | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L  | R    | 無鍍層    | TiAlN  |
|--------------------------------------------------------------------------------------------|----------------|----------------|----------------|-----------------|----|------|--------|--------|
| $\emptyset < 2.00 - 0/-0.01$<br>$\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                |                |                 |    |      |        |        |
| 0.40                                                                                       | 0.40           | 0.37           | 1.20           | 3               | 38 | 0.05 | 958447 | 958452 |
| 0.45                                                                                       | 0.45           | 0.42           | 1.35           | 3               | 38 | 0.05 | 958453 | 958454 |
| 0.50                                                                                       | 0.50           | 0.45           | 1.50           | 3               | 38 | 0.05 | 958455 | 958456 |
| 0.55                                                                                       | 0.55           | 0.50           | 1.65           | 3               | 38 | 0.05 | 958457 | 958458 |
| 0.60                                                                                       | 0.60           | 0.55           | 1.80           | 3               | 38 | 0.05 | 958465 | 958466 |
| 0.65                                                                                       | 0.65           | 0.60           | 1.95           | 3               | 38 | 0.05 | 958467 | 958468 |
| 0.70                                                                                       | 0.70           | 0.65           | 2.10           | 3               | 38 | 0.05 | 958469 | 958470 |
| 0.75                                                                                       | 0.75           | 0.70           | 2.25           | 3               | 38 | 0.05 | 958472 | 958473 |
| 0.80                                                                                       | 0.80           | 0.75           | 2.40           | 3               | 38 | 0.05 | 958474 | 958475 |
| 0.85                                                                                       | 0.85           | 0.80           | 2.55           | 3               | 38 | 0.05 | 958476 | 958477 |
| 0.90                                                                                       | 0.90           | 0.85           | 2.70           | 3               | 38 | 0.10 | 958478 | 958479 |
| 0.95                                                                                       | 0.95           | 0.90           | 2.85           | 3               | 38 | 0.10 | 958481 | 958482 |
| 1.00                                                                                       | 1.00           | 0.95           | 3.00           | 3               | 38 | 0.10 | 958483 | 958484 |
| 1.05                                                                                       | 1.05           | 1.00           | 3.15           | 3               | 38 | 0.10 | 958486 | 958487 |
| 1.10                                                                                       | 1.10           | 1.05           | 3.30           | 3               | 38 | 0.10 | 958488 | 958489 |
| 1.15                                                                                       | 1.15           | 1.10           | 3.45           | 3               | 38 | 0.10 | 958490 | 958491 |
| 1.20                                                                                       | 1.20           | 1.15           | 3.60           | 3               | 38 | 0.10 | 958492 | 958493 |
| 1.25                                                                                       | 1.25           | 1.20           | 3.75           | 3               | 38 | 0.10 | 958494 | 958495 |
| 1.30                                                                                       | 1.30           | 1.25           | 3.90           | 3               | 38 | 0.10 | 958496 | 958497 |
| 1.35                                                                                       | 1.35           | 1.30           | 4.05           | 3               | 38 | 0.10 | 958499 | 958501 |
| 1.40                                                                                       | 1.40           | 1.35           | 4.20           | 3               | 38 | 0.10 | 958502 | 958503 |
| 1.45                                                                                       | 1.45           | 1.40           | 4.35           | 3               | 38 | 0.10 | 958504 | 958505 |
| 1.50                                                                                       | 1.50           | 1.45           | 4.50           | 3               | 38 | 0.20 | 958506 | 958507 |
| 1.55                                                                                       | 1.55           | 1.50           | 4.65           | 3               | 38 | 0.20 | 958508 | 958509 |
| 1.60                                                                                       | 1.60           | 1.55           | 4.80           | 3               | 38 | 0.20 | 958510 | 958511 |
| 1.65                                                                                       | 1.65           | 1.60           | 4.95           | 3               | 38 | 0.20 | 958512 | 958513 |
| 1.70                                                                                       | 1.70           | 1.65           | 5.10           | 3               | 38 | 0.20 | 958514 | 958515 |
| 1.75                                                                                       | 1.75           | 1.70           | 5.25           | 3               | 38 | 0.20 | 958516 | 958517 |
| 1.80                                                                                       | 1.80           | 1.75           | 5.40           | 3               | 38 | 0.20 | 958518 | 958519 |
| 1.85                                                                                       | 1.85           | 1.80           | 5.55           | 3               | 38 | 0.20 | 958520 | 958521 |
| 1.90                                                                                       | 1.90           | 1.85           | 5.70           | 3               | 38 | 0.20 | 958522 | 958523 |
| 1.95                                                                                       | 1.95           | 1.90           | 5.85           | 3               | 38 | 0.20 | 958524 | 958525 |
| 2.00                                                                                       | 2.00           | 1.90           | 6.00           | 6               | 50 | 0.20 | 958527 | 958531 |
| 2.10                                                                                       | 2.10           | 2.00           | 6.30           | 6               | 50 | 0.20 | 958532 | 958533 |
| 2.20                                                                                       | 2.20           | 2.10           | 6.60           | 6               | 50 | 0.20 | 958534 | 958535 |
| 2.30                                                                                       | 2.30           | 2.20           | 6.90           | 6               | 50 | 0.20 | 958886 | 958887 |
| 2.40                                                                                       | 2.40           | 2.30           | 7.20           | 6               | 50 | 0.20 | 958888 | 958889 |
| 2.50                                                                                       | 2.50           | 2.40           | 7.50           | 6               | 50 | 0.20 | 958890 | 958891 |
| 3.00                                                                                       | 3.00           | 2.90           | 9.00           | 6               | 50 | 0.20 | 958892 | 958893 |



DIXI 7070 XIDUR

多刃硬化材專用圓鼻刀

Z = 4-6

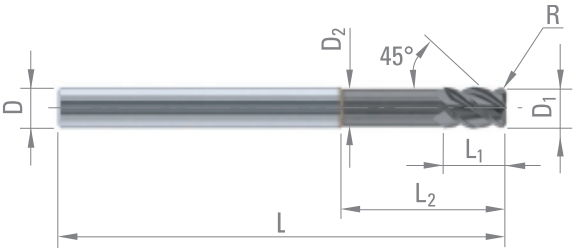
切削條件

徑向  
斜向

R角

刀刃  
過中心

P. 211



高合金鋼

熱處理鋼  
鑄鐵  
>HRC 45

耐熱合金

粗銑

●●●●●

精修

●●●●●

| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L  | Z | R   | XIDUR |
|-------------------|----------------|----------------|----------------|-----------------|----|---|-----|-------|
| 3.00              | 4.5            | 2.75           | 12.0           | 6               | 57 | 4 | 0.5 | 56643 |
| 4.00              | 6.0            | 3.70           | 13.5           | 6               | 57 | 4 | 0.5 | 56644 |
| 5.00              | 7.5            | 4.60           | 17.5           | 6               | 57 | 4 | 0.5 | 56645 |
| 6.00              | 9.0            | 5.50           | 24.0           | 6               | 66 | 4 | 0.5 | 56627 |
|                   |                |                |                |                 |    |   | 0.8 | 56646 |
|                   |                |                |                |                 |    |   | 1.0 | 56628 |
|                   |                |                |                |                 |    |   | 1.5 | 56647 |
|                   |                |                |                |                 |    |   | 0.5 | 56634 |
| 8.00              | 10.0           | 7.50           | 28.0           | 8               | 75 | 4 | 1.0 | 56635 |
|                   |                |                |                |                 |    |   | 1.5 | 56648 |
|                   |                |                |                |                 |    |   | 2.0 | 56649 |
|                   |                |                |                |                 |    |   | 0.5 | 56636 |
| 10.00             | 12.0           | 9.25           | 30.0           | 10              | 75 | 6 | 1.0 | 56637 |
|                   |                |                |                |                 |    |   | 1.5 | 56650 |
|                   |                |                |                |                 |    |   | 2.0 | 56651 |
|                   |                |                |                |                 |    |   | 2.5 | 56652 |
| 12.00             | 12.0           | 11.00          | 32.0           | 12              | 83 | 6 | 1.0 | 56653 |
|                   |                |                |                |                 |    |   | 1.5 | 56654 |
|                   |                |                |                |                 |    |   | 2.0 | 56655 |
|                   |                |                |                |                 |    |   | 3.0 | 56656 |



# DIXI 7265 CUTINOX

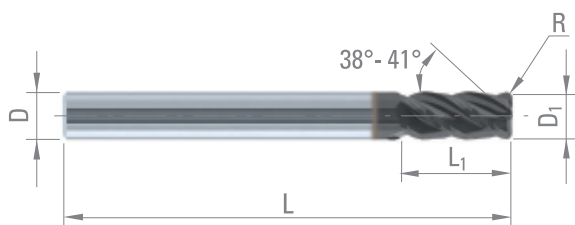
## 不等分割不同螺旋角圓鼻銑刀

Z = 4

切削條件 徑向斜向 雙螺旋角 不等分割 R角 刀刃過中心

$f$   $V_c$   $A_p$   $\lambda_2$   $\lambda_1$   $\pm 0.02$

P. 172  
P. 174



含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

純鈦 鈦合金 銅合金 銀金 難加工銅合金 鋁 塑膠

粗銑



精修



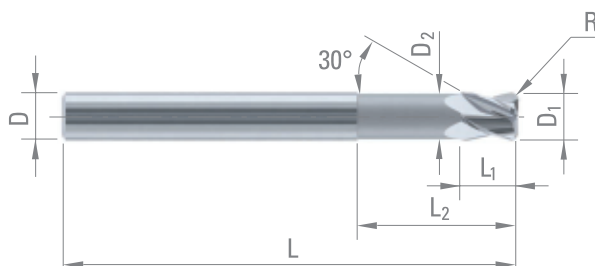
| $D_1$<br>$\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ | $L_1$ | $D_{h5}$ | L  | R   | CUTINOX |
|---------------------------------------------------------------------|-------|----------|----|-----|---------|
| 2.00                                                                | 4.0   | 3        | 38 | 0.5 | 997936  |
| 3.00                                                                | 8.0   | 6        | 57 | 0.5 | 997937  |
| 4.00                                                                | 11.0  | 6        | 57 | 0.5 | 997938  |
| 5.00                                                                | 13.0  | 6        | 57 | 0.5 | 997939  |
| 6.00                                                                | 13.0  | 6        | 57 | 0.5 | 997940  |
|                                                                     |       |          |    | 1.0 | 997941  |
| 8.00                                                                | 19.0  | 8        | 63 | 0.5 | 997942  |
|                                                                     |       |          |    | 1.0 | 997943  |
| 10.00                                                               | 22.0  | 10       | 72 | 0.5 | 997944  |
|                                                                     |       |          |    | 1.0 | 997945  |
| 12.00                                                               | 26.0  | 12       | 83 | 0.5 | 997946  |
|                                                                     |       |          |    | 1.0 | 997947  |



# DIXI 7554

圓鼻銑刀

Z = 4



切削條件  
  
 P. 176

徑向斜向

R角  
  
 $\pm 0.02$

刀刃過中心  
  
 $D_1 \geq 6$

含鉛快削鋼

低合金鋼

高合金鋼

雙相不銹鋼

鑄鐵

純鈦鈦合金

銅合金銀金

難加工銅合金

鋁

塑膠

粗銑

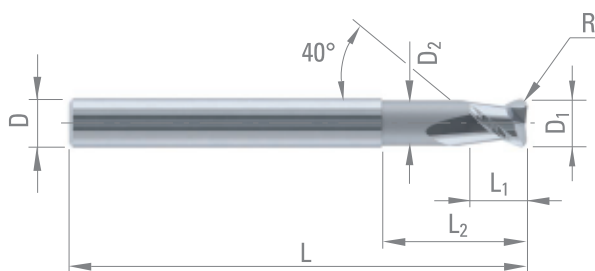
精修

| D <sub>1</sub>                                             | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L  | R   | 無鍍層   | TiAlN |
|------------------------------------------------------------|----------------|----------------|----------------|-----------------|----|-----|-------|-------|
| $\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                |                |                 |    |     |       |       |
| 2.00                                                       | 3.0            | 1.90           | 10             | 4               | 42 | 0.2 | 64465 | 64466 |
| 3.00                                                       | 4.0            | 2.80           | 15             | 6               | 57 | 0.2 | 64467 | 64468 |
| 4.00                                                       | 5.0            | 3.80           | 18             | 6               | 57 | 0.3 | 64469 | 64470 |
| 6.00                                                       | 7.0            | 5.70           | 20             | 6               | 57 | 0.5 | 64471 | 64472 |
|                                                            |                |                |                |                 |    | 1.0 | 64473 | 64474 |
| 8.00                                                       | 10.0           | 7.70           | 30             | 8               | 63 | 0.5 | 64475 | 64476 |
|                                                            |                |                |                |                 |    | 1.0 | 64477 | 64478 |
| 10.00                                                      | 12.0           | 9.60           | 35             | 10              | 72 | 0.5 | 64479 | 64480 |
|                                                            |                |                |                |                 |    | 1.0 | 64481 | 64482 |
| 12.00                                                      | 14.0           | 11.50          | 40             | 12              | 83 | 0.5 | 64485 | 64486 |
|                                                            |                |                |                |                 |    | 1.0 | 64487 | 64488 |

# DIXI 7552

圓鼻銑刀

Z = 2



切削條件  
  
 P. 202

徑向斜向  
 插銑

R角  
  
 $\pm 0.02$

刀刃過中心

含鉛快削鋼

低合金鋼

鑄鐵

純鈦鈦合金

銅合金銀金

難加工銅合金

鋁

塑膠

粗銑

精修

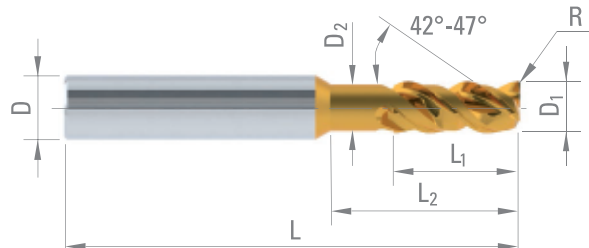
| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L  | R   | 無鍍層   | DICUT  |
|-------------------|----------------|----------------|----------------|-----------------|----|-----|-------|--------|
| 3.00              | 4.0            | 2.75           | 10             | 6               | 57 | 0.5 | 60765 | 63493  |
| 4.00              | 5.0            | 3.70           | 12             | 6               | 57 | 0.5 | 60766 | 63494  |
| 5.00              | 6.0            | 4.60           | 15             | 6               | 57 | 0.5 | 60767 | 63495  |
| 6.00              | 7.0            | 5.50           | 18             | 6               | 57 | 1.0 | 60768 | 63496  |
| 8.00              | 9.0            | 7.50           | 23             | 8               | 63 | 1.0 | 60769 | 63497  |
| 10.00             | 11.0           | 9.25           | 30             | 10              | 75 | 1.5 | 60770 | 63498  |
| 12.00             | 13.0           | 11.00          | 35             | 12              | 83 | 1.5 | 60771 | 63499  |
| 16.00             | 17.0           | 15.00          | 44             | 16              | 92 | 2.0 | 60772 | 952918 |



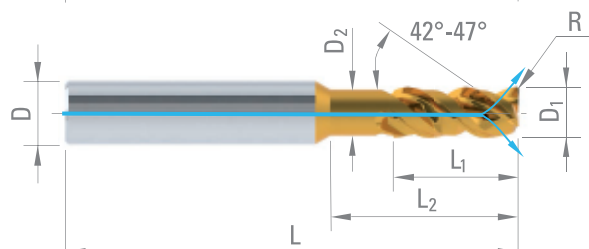
# DIXI 7565 - 7565-FC DIXAL

## 雙螺旋角圓鼻銑刀

7565



7565-FC



Z = 3

切削條件 徑向斜向 R角 雙螺旋角 刀刃過中心

銅合金 難加工 鋁 塑膠

銀金 銅合金

粗銑 精修

不支援 中心出水 刀刃出水

7565 7565-FC

| D <sub>1</sub> | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L   | R   | DIXAL  | DIXAL  |
|----------------|----------------|----------------|----------------|-----------------|-----|-----|--------|--------|
| 4.00           | 9.0            | 3.60           | 14             | 4               | 57  | 0.5 | 339042 |        |
|                |                |                |                |                 |     | 1.0 | 339043 |        |
| 6.00           | 13.0           | 5.60           | 21             | 6               | 57  | 0.5 | 339044 | 339067 |
|                |                |                |                |                 |     | 1.0 | 339045 | 339068 |
|                |                |                |                |                 |     | 1.5 | 339046 | 339069 |
| 8.00           | 19.0           | 7.40           | 26             | 8               | 63  | 0.5 | 339047 | 339070 |
|                |                |                |                |                 |     | 1.0 | 339048 | 339071 |
|                |                |                |                |                 |     | 2.0 | 339049 | 339072 |
|                |                |                |                |                 |     | 3.0 | 339050 | 339073 |
| 10.00          | 22.0           | 9.30           | 30             | 10              | 72  | 0.5 | 339051 | 339074 |
|                |                |                |                |                 |     | 1.0 | 339052 | 339075 |
|                |                |                |                |                 |     | 2.0 | 339053 | 339076 |
|                |                |                |                |                 |     | 3.0 | 339054 | 339077 |
| 12.00          | 26.0           | 11.00          | 37             | 12              | 83  | 0.5 | 339055 | 339078 |
|                |                |                |                |                 |     | 1.0 | 339056 | 339079 |
|                |                |                |                |                 |     | 2.0 | 339057 | 339080 |
|                |                |                |                |                 |     | 3.0 | 339058 | 339081 |
| 16.00          | 32.0           | 15.00          | 42             | 16              | 92  | 1.0 | 339059 | 339082 |
|                |                |                |                |                 |     | 2.0 | 339060 | 339083 |
|                |                |                |                |                 |     | 3.0 | 339061 | 339084 |
|                |                |                |                |                 |     | 4.0 | 339062 | 339085 |
| 20.00          | 38.0           | 19.00          | 50             | 20              | 104 | 1.0 | 339063 | 339086 |
|                |                |                |                |                 |     | 2.0 | 339064 | 339087 |
|                |                |                |                |                 |     | 3.0 | 339065 | 339088 |
|                |                |                |                |                 |     | 4.0 | 339066 | 339089 |



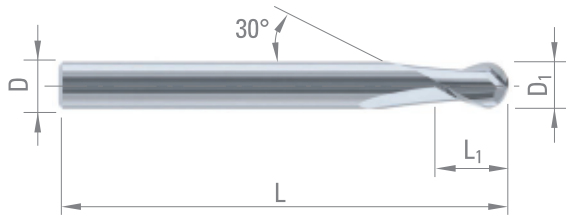
# DIXI 7032

## 球型銑刀

Z = 2

切削條件 徑向斜向插銑 R = D1/2 刀刃過中心

P. 154



圓弧公差

0.006

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

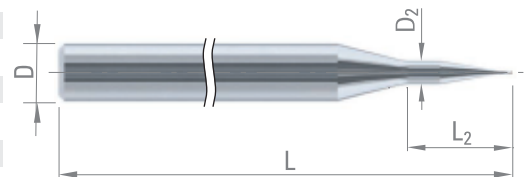
耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金 鋁

石墨 塑膠

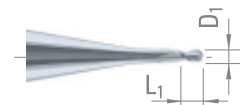
D<sub>1</sub> L<sub>1</sub> D<sub>h5</sub> L 無鍍層 TiAlN DICUT DIAMANT\* 粗銑 精修

Ø < 0.30 - 0/-0.01  
Ø < 3.00 - 0/-0.02  
Ø ≥ 3.00 - e8

|       |       |    |     |        |        |        |        |
|-------|-------|----|-----|--------|--------|--------|--------|
| 0.06  | 0.12  | 3  | 38  | 959060 |        |        |        |
| 0.08  | 0.16  | 3  | 38  | 959059 |        |        |        |
| 0.10  | 0.20  | 3  | 38  | 959058 |        |        |        |
| 0.15  | 0.30  | 3  | 38  | 954665 |        |        |        |
| 0.20  | 0.30  | 3  | 38  | 952795 | 952796 | 952797 | 952799 |
| 0.25  | 0.40  | 3  | 38  | 952800 | 952801 | 952802 | 952803 |
| 0.30  | 0.50  | 3  | 38  | 952804 | 952805 | 952806 | 58852  |
| 0.40  | 0.60  | 3  | 38  | 952807 | 952808 | 952809 | 952810 |
| 0.50  | 0.80  | 3  | 38  | 952811 | 952812 | 952813 | 952814 |
| 0.60  | 0.90  | 3  | 38  | 952815 | 952816 | 952817 | 952818 |
| 0.70  | 1.10  | 3  | 38  | 952819 | 952820 | 952821 | 950363 |
| 0.80  | 1.20  | 3  | 38  | 952822 | 952823 | 950703 | 950364 |
| 0.90  | 1.40  | 3  | 38  | 952825 | 952826 | 952824 | 950365 |
| 1.00  | 1.50  | 3  | 38  | 952827 | 952828 | 952829 | 952830 |
| 1.10  | 1.70  | 3  | 38  | 952832 | 952833 | 952831 | 950366 |
| 1.20  | 1.80  | 3  | 38  | 952835 | 952836 | 952834 | 950367 |
| 1.30  | 1.90  | 3  | 38  | 952838 | 952839 | 952837 | 950368 |
| 1.40  | 2.10  | 3  | 38  | 952841 | 952842 | 952840 | 950369 |
| 1.50  | 2.30  | 3  | 38  | 952843 | 952846 | 952845 | 952844 |
| 1.60  | 2.50  | 3  | 38  | 55539  | 955784 | 956236 | 956237 |
| 1.70  | 2.50  | 3  | 38  | 60112  | 956238 | 956239 | 956240 |
| 1.80  | 2.75  | 3  | 38  | 48747  | 956241 | 956242 | 956243 |
| 1.90  | 2.75  | 3  | 38  | 57714  | 956244 | 956245 | 956246 |
| 2.00  | 3.00  | 3  | 38  | 44604  | 56136  | 64280  | 59783  |
| 2.10  | 3.00  | 3  | 38  | 55540  | 956247 | 956248 | 956249 |
| 2.20  | 3.50  | 3  | 38  | 48457  | 956250 | 956251 | 956253 |
| 2.30  | 3.50  | 3  | 38  | 66547  | 62925  | 956254 | 956255 |
| 2.40  | 3.50  | 3  | 38  | 60788  | 62926  | 956256 | 956257 |
| 2.50  | 4.00  | 3  | 38  | 44605  | 56137  | 64288  | 60221  |
| 3.00  | 5.00  | 3  | 38  | 43115  | 56138  | 63876  | 59988  |
| 3.50  | 6.00  | 4  | 50  | 44607  | 56139  | 64289  | 950370 |
| 4.00  | 6.00  | 4  | 50  | 34120  | 56140  | 64290  | 59784  |
| 4.50  | 7.00  | 5  | 50  | 44609  | 56141  | 64291  | 950371 |
| 5.00  | 8.00  | 5  | 50  | 34748  | 36172  | 64292  | 60222  |
| 5.50  | 9.00  | 6  | 57  | 44611  | 56172  | 64293  | 950372 |
| 6.00  | 9.00  | 6  | 57  | 34749  | 56179  | 63923  | 46800  |
| 7.00  | 11.00 | 7  | 60  | 34740  | 56176  | 64294  | 66878  |
| 8.00  | 12.00 | 8  | 63  | 43389  | 36174  | 64295  | 58860  |
| 10.00 | 15.00 | 10 | 72  | 42940  | 56177  | 63924  | 36175  |
| 12.00 | 18.00 | 12 | 73  | 32387  | 56173  | 64296  | 60223  |
| 16.00 | 24.00 | 16 | 82  | 32136  | 56175  |        |        |
| 20.00 | 30.00 | 20 | 104 |        | 56183  |        |        |



當 D<sub>1</sub> ≤ 0.15:  
D<sub>2</sub> = 1.20  
L<sub>2</sub> = 5.30

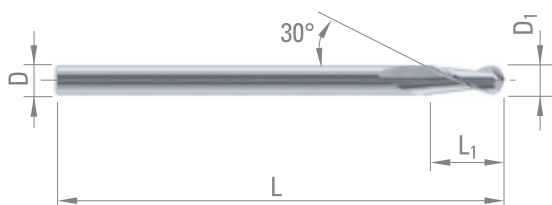
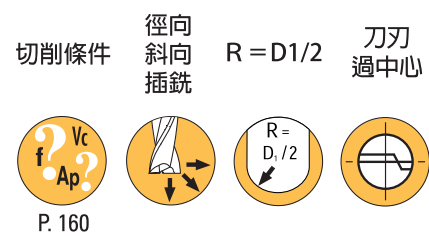


\* 非鐵金屬用

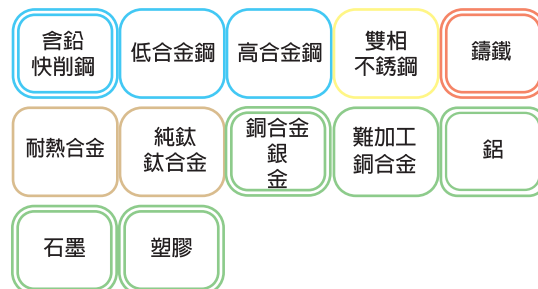
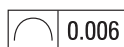


## 球型銑刀

Z = 2



圓弧公差



粗銑



精修



| D <sub>1</sub> e8 | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAIN | DIAMANT* |
|-------------------|----------------|-----------------|-----|-------|-------|----------|
| 2.00              | 10             | 2               | 61  | 41974 | 56238 | 60224    |
| 3.00              | 10             | 3               | 61  | 39512 | 56239 | 60225    |
| 4.00              | 12             | 4               | 75  | 38639 | 56240 | 60226    |
| 5.00              | 14             | 5               | 86  | 38942 | 56241 | 60227    |
| 6.00              | 16             | 6               | 93  | 38623 | 56242 | 60228    |
| 8.00              | 20             | 8               | 100 | 38640 | 56243 | 60229    |
| 10.00             | 24             | 10              | 100 | 38641 | 56244 | 58790    |
| 12.00             | 28             | 12              | 110 | 40728 | 56245 | 60230    |
| 16.00             | 36             | 16              | 120 | 40730 | 56247 |          |
| 20.00             | 45             | 20              | 150 | 40732 | 56248 |          |

\* 非鐵金屬用

# DIXI 7046

## 長頸深溝專用球型銑刀

Z = 2

切削條件

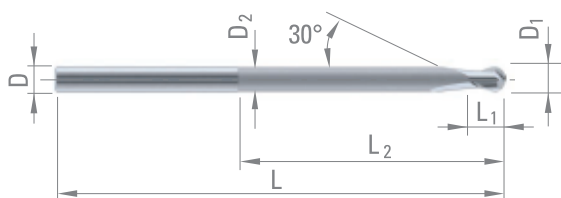
徑向  
斜向  
插銑

$R = D1/2$

刀刃  
過中心

$f$   $V_c$   $A_p$

P. 158



圓弧公差

0.006

含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

耐熱合金

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑

精修

| D <sub>1</sub>                                             | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L  | 無鍍層   | TiAlN | DICUT | DIAMANT* |
|------------------------------------------------------------|----------------|----------------|----------------|-----------------|----|-------|-------|-------|----------|
| $\emptyset < 3.00 - 0/-0.02$<br>$\emptyset \geq 3.00 - e8$ |                |                |                |                 |    |       |       |       |          |
| 0.20                                                       | 0.5            | 0.18           | 1.0            | 4               | 55 | 64714 | 64719 | 64724 | 64729    |
| 0.30                                                       | 0.6            | 0.27           | 1.5            | 4               | 55 | 64715 | 64720 | 64725 | 64730    |
| 0.40                                                       | 0.8            | 0.37           | 2.0            | 4               | 55 | 64716 | 64721 | 64726 | 64731    |
| 0.50                                                       | 1.0            | 0.45           | 3.0            | 4               | 55 | 64542 | 64556 | 64572 | 64584    |
| 0.60                                                       | 1.6            | 0.55           | 4.0            | 4               | 55 | 64717 | 64722 | 64727 | 64732    |
| 0.80                                                       | 1.8            | 0.75           | 5.0            | 4               | 55 | 64718 | 64723 | 64728 | 64733    |
| 1.00                                                       | 2.0            | 0.95           | 6.0            | 4               | 55 | 64544 | 64557 | 64573 | 64585    |
| 1.50                                                       | 2.5            | 1.45           | 9.0            | 4               | 55 | 64546 | 64558 | 64574 | 64586    |
| 2.00                                                       | 3.0            | 1.90           | 12.0           | 4               | 55 | 64547 | 64559 | 64575 | 64587    |
| 2.50                                                       | 4.0            | 2.40           | 12.0           | 4               | 55 | 64548 | 64560 | 64576 | 64588    |
| 3.00                                                       | 5.0            | 2.80           | 12.0           | 6               | 57 | 64549 | 64561 | 64577 | 64589    |
| 4.00                                                       | 6.0            | 3.80           | 15.0           | 6               | 57 | 64550 | 64562 | 64578 | 64590    |
| 5.00                                                       | 7.0            | 4.80           | 15.0           | 6               | 57 | 64551 | 64567 | 64579 | 64591    |
| 6.00                                                       | 8.0            | 5.70           | 15.0           | 6               | 57 | 64552 | 64568 | 64580 | 64592    |
| 8.00                                                       | 10.0           | 7.70           | 25.0           | 8               | 63 | 64553 | 64569 | 64581 | 64593    |
| 10.00                                                      | 12.0           | 9.60           | 30.0           | 10              | 72 | 64554 | 64570 | 64582 | 64594    |
| 12.00                                                      | 14.0           | 11.60          | 40.0           | 12              | 83 | 64555 | 64571 | 64583 | 64595    |

\* 非鐵金屬用



DIXI 7045 - 7047-D

長頸深溝專用球型銑刀

Z = 2

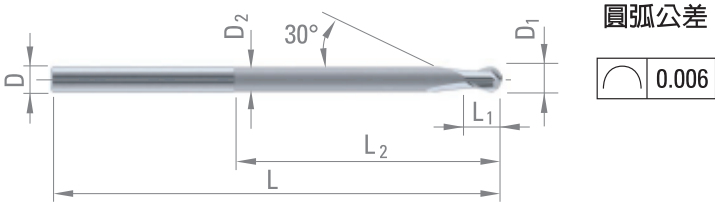
切削條件

徑向  
斜向  
插銑

$R = D1/2$

刀刃  
過中心

P. 158



含鉛  
快削鋼

低合金鋼

高合金鋼

雙相  
不銹鋼

鑄鐵

耐熱合金

純鈦  
鈦合金

銅合金  
銀  
金

難加工  
銅合金

鋁

石墨

塑膠

粗銑  
●○○○○

精修  
●●●●●

| D <sub>1</sub>                  | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | 無鍍層    | TiAlN  | DICUT  | DIAMANT |
|---------------------------------|----------------|----------------|-----------------|----|----------------|----------|--------|--------|--------|---------|
| Ø<3.00 - 0/-0.02<br>Ø≥3.00 - e8 |                |                |                 |    |                |          |        |        |        |         |
| 0.20                            | 0.5            | 0.18           | 4               | 62 | 1.0            | 7045     | 64694  | 64699  | 64704  | 64709   |
|                                 |                |                |                 |    | 1.6            | 7047-8D  | 979531 | 979555 | 979576 | 979595  |
|                                 |                |                |                 |    | 2.0            | 7047-10D | 64735  | 64742  | 64750  | 64755   |
|                                 |                |                |                 |    | 2.4            | 7047-12D | 979613 | 979626 | 979639 | 979664  |
|                                 |                |                |                 |    | 3.0            | 7047-15D | 979711 | 979722 | 979732 | 979744  |
|                                 |                |                |                 |    | 3.6            | 7047-18D | 979756 | 979768 | 979779 | 979790  |
|                                 |                |                |                 |    | 1.5            | 7045     | 64695  | 64700  | 64705  | 64710   |
|                                 |                |                |                 |    | 2.4            | 7047-8D  | 979534 | 979558 | 979578 | 979596  |
|                                 |                |                |                 |    | 3.0            | 7047-10D | 64738  | 64743  | 64751  | 64756   |
|                                 |                |                |                 |    | 3.6            | 7047-12D | 979614 | 979627 | 979640 | 979652  |
| 0.30                            | 0.6            | 0.27           | 4               | 62 | 4.5            | 7047-15D | 979712 | 979724 | 979733 | 979745  |
|                                 |                |                |                 |    | 5.4            | 7047-18D | 979757 | 979769 | 979780 | 979791  |
|                                 |                |                |                 |    | 2.0            | 7045     | 64696  | 64701  | 64706  | 64711   |
|                                 |                |                |                 |    | 3.2            | 7047-8D  | 979535 | 979559 | 979579 | 979597  |
|                                 |                |                |                 |    | 4.0            | 7047-10D | 64739  | 64744  | 64752  | 64757   |
| 0.40                            | 0.8            | 0.37           | 4               | 62 | 4.8            | 7047-12D | 979615 | 979628 | 979641 | 979653  |
|                                 |                |                |                 |    | 6.0            | 7047-15D | 979713 | 979723 | 979734 | 979746  |
|                                 |                |                |                 |    | 7.2            | 7047-18D | 979758 | 979770 | 979781 | 979792  |
|                                 |                |                |                 |    | 3.0            | 7045     | 64491  | 64503  | 64515  | 64527   |
|                                 |                |                |                 |    | 4.0            | 7047-8D  | 979536 | 979560 | 979580 | 979598  |
| 0.50                            | 1.0            | 0.45           | 4               | 62 | 5.0            | 7047-10D | 64596  | 64608  | 64623  | 64635   |
|                                 |                |                |                 |    | 6.0            | 7047-12D | 979616 | 979629 | 979642 | 979654  |
|                                 |                |                |                 |    | 7.5            | 7047-15D | 979714 | 979725 | 979735 | 979747  |
|                                 |                |                |                 |    | 9.0            | 7047-18D | 979759 | 979771 | 979782 | 979793  |
|                                 |                |                |                 |    | 4.0            | 7045     | 64697  | 64702  | 64707  | 64712   |
| 0.60                            | 1.6            | 0.55           | 4               | 62 | 4.8            | 7047-8D  | 979537 | 979561 | 979581 | 979599  |
|                                 |                |                |                 |    | 6.0            | 7047-10D | 64740  | 64745  | 64753  | 64758   |
|                                 |                |                |                 |    | 7.2            | 7047-12D | 979617 | 979630 | 979643 | 979655  |
|                                 |                |                |                 |    | 9.0            | 7047-15D | 979715 | 979726 | 979736 | 979748  |
|                                 |                |                |                 |    | 10.8           | 7047-18D | 979760 | 979772 | 979783 | 979794  |
| 0.80                            | 1.8            | 0.75           | 4               | 62 | 5.0            | 7045     | 64698  | 64703  | 64708  | 64713   |
|                                 |                |                |                 |    | 6.4            | 7047-8D  | 979538 | 979562 | 979582 | 979600  |
|                                 |                |                |                 |    | 8.0            | 7047-10D | 64741  | 64746  | 64754  | 64759   |
|                                 |                |                |                 |    | 9.6            | 7047-12D | 979618 | 979631 | 979644 | 979656  |
|                                 |                |                |                 |    | 12.0           | 7047-15D | 979716 | 979727 | 979737 | 979749  |
|                                 |                |                |                 |    | 14.4           | 7047-18D | 979761 | 979773 | 979784 | 979795  |
|                                 |                |                |                 |    | 6.0            | 7045     | 64492  | 64504  | 64516  | 64528   |
|                                 |                |                |                 |    | 8.0            | 7047-8D  | 979540 | 979563 | 979583 | 979601  |
|                                 |                |                |                 |    | 10.0           | 7047-10D | 64597  | 64609  | 64624  | 64636   |
|                                 |                |                |                 |    | 12.0           | 7047-12D | 979619 | 954101 | 979314 | 979657  |
| 1.00                            | 2.0            | 0.95           | 4               | 75 | 15.0           | 7047-15D | 975225 | 979728 | 979738 | 979750  |
|                                 |                |                |                 |    | 18.0           | 7047-18D | 979522 | 979774 | 979785 | 979523  |
|                                 |                |                |                 |    | 9.0            | 7045     | 64493  | 64505  | 64517  | 64529   |
|                                 |                |                |                 |    | 12.0           | 7047-8D  | 979541 | 979565 | 979585 | 979602  |
|                                 |                |                |                 |    | 15.0           | 7047-10D | 64598  | 64610  | 64625  | 64637   |
| 1.50                            | 2.5            | 1.45           | 4               | 75 | 18.0           | 7047-12D | 979620 | 979632 | 979645 | 979658  |
|                                 |                |                |                 |    | 22.5           | 7047-15D | 979717 | 979729 | 979739 | 979751  |
|                                 |                |                |                 |    | 27.0           | 7047-18D | 979763 | 979775 | 979786 | 979799  |

\* 非鐵金屬用



# DIXI 7045 - 7047-D

Z = 2

切削條件

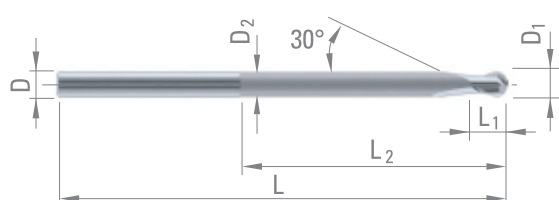
徑向  
斜向  
插銑

R = D1/2

刀刃  
過中心



P. 158



圓弧公差

0.006



| D <sub>1</sub>                      | L <sub>1</sub> | D <sub>2</sub> | D <sub>h5</sub> | L   | L <sub>2</sub> | DIXI     | 無鍍層    | TiAIN  | DICUT  | DIAMANT* |
|-------------------------------------|----------------|----------------|-----------------|-----|----------------|----------|--------|--------|--------|----------|
| Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                |                 |     |                |          |        |        |        |          |
| 2.00                                | 3.0            | 1.90           | 4               | 75  | 12.0           | 7045     | 64494  | 64506  | 64518  | 64530    |
|                                     |                |                |                 |     | 16.0           | 7047-8D  | 979542 | 979566 | 979588 | 979603   |
|                                     |                |                |                 |     | 20.0           | 7047-10D | 64599  | 64611  | 64626  | 64638    |
|                                     |                |                |                 |     | 24.0           | 7047-12D | 979621 | 979633 | 979646 | 979659   |
|                                     |                |                |                 |     | 30.0           | 7047-15D | 972993 | 954105 | 979740 | 979752   |
|                                     |                |                |                 |     | 36.0           | 7047-18D | 979765 | 979776 | 979787 | 979796   |
| 2.50                                | 4.0            | 2.40           | 4               | 75  | 12.0           | 7045     | 64495  | 64507  | 64519  | 64531    |
|                                     |                |                |                 |     | 20.0           | 7047-8D  | 979544 | 979567 | 979589 | 979604   |
|                                     |                |                |                 |     | 25.0           | 7047-10D | 64600  | 64612  | 64627  | 64639    |
|                                     |                |                |                 |     | 30.0           | 7047-12D | 979622 | 979635 | 979648 | 979660   |
|                                     |                |                |                 |     | 37.5           | 7047-15D | 979719 | 979718 | 979741 | 979753   |
|                                     |                |                |                 |     | 45.0           | 7047-18D | 979766 | 979777 | 979788 | 979797   |
| 3.00                                | 5.0            | 2.80           | 6               | 102 | 12.0           | 7045     | 64496  | 64508  | 64520  | 64532    |
|                                     |                |                |                 |     | 24.0           | 7047-8D  | 979545 | 979568 | 979590 | 979605   |
|                                     |                |                |                 |     | 30.0           | 7047-10D | 64601  | 64613  | 64628  | 64640    |
|                                     |                |                |                 |     | 36.0           | 7047-12D | 979623 | 979636 | 979649 | 979661   |
|                                     |                |                |                 |     | 45.0           | 7047-15D | 979720 | 979730 | 979742 | 979754   |
|                                     |                |                |                 |     | 54.0           | 7047-18D | 979767 | 979778 | 979789 | 979798   |
| 4.00                                | 6.0            | 3.80           | 6               | 102 | 15.0           | 7045     | 64497  | 64509  | 64521  | 64533    |
|                                     |                |                |                 |     | 32.0           | 7047-8D  | 979547 | 979569 | 979591 | 979607   |
|                                     |                |                |                 |     | 40.0           | 7047-10D | 64602  | 64614  | 64629  | 64641    |
|                                     |                |                |                 |     | 48.0           | 7047-12D | 979624 | 979637 | 979650 | 979662   |
|                                     |                |                |                 |     | 60.0           | 7047-15D | 979721 | 979731 | 979743 | 979755   |
|                                     |                |                |                 |     | 15.0           | 7045     | 64498  | 64510  | 64522  | 64534    |
| 5.00                                | 7.0            | 4.80           | 6               | 102 | 40.0           | 7047-8D  | 979549 | 979570 | 979592 | 979608   |
|                                     |                |                |                 |     | 50.0           | 7047-10D | 64603  | 64615  | 64630  | 64642    |
|                                     |                |                |                 |     | 60.0           | 7047-12D | 979625 | 979638 | 979651 | 979663   |
|                                     |                |                |                 |     | 15.0           | 7045     | 64499  | 64511  | 64523  | 64536    |
|                                     |                |                |                 |     | 48.0           | 7047-8D  | 979550 | 979571 | 979593 | 979609   |
|                                     |                |                |                 |     | 60.0           | 7047-10D | 64604  | 64616  | 64631  | 64643    |
| 8.00                                | 10.0           | 7.70           | 8               | 117 | 25.0           | 7045     | 64500  | 64512  | 64524  | 64537    |
|                                     |                |                |                 |     | 64.0           | 7047-8D  | 979551 | 979572 | 979594 | 979610   |
|                                     |                |                |                 |     | 80.0           | 7047-10D | 64605  | 64617  | 64632  | 64644    |
|                                     |                |                |                 |     | 30.0           | 7045     | 64501  | 64513  | 64525  | 64538    |
|                                     |                |                |                 |     | 80.0           | 7047-8D  | 979552 | 979573 | 979586 | 979611   |
|                                     |                |                |                 |     | 90.0           | 7047-10D | 64606  | 64618  | 64633  | 64645    |
| 10.00                               | 12.0           | 9.60           | 10              | 133 | 40.0           | 7045     | 64502  | 64514  | 64526  | 64539    |
|                                     |                |                |                 |     | 96.0           | 7047-8D  | 979553 | 979574 | 979587 | 979612   |
|                                     |                |                |                 |     | 110.0          | 7047-10D | 64607  | 64619  | 64634  | 64646    |

\* 非鐵金屬用

DIXI 7045

L<sub>2</sub> = 2.5-6 x D<sub>1</sub>

DIXI 7047-12D

L<sub>2</sub> = 12 x D<sub>1</sub>

DIXI 7047-8D

L<sub>2</sub> = 8 x D<sub>1</sub>

DIXI 7047-15D

L<sub>2</sub> = 15 x D<sub>1</sub>

DIXI 7047-10D

L<sub>2</sub> = 10 x D<sub>1</sub>

DIXI 7047-18D

L<sub>2</sub> = 18 x D<sub>1</sub>



DIXI 7532 XIDUR

硬化材專用球型銑刀

Z = 2

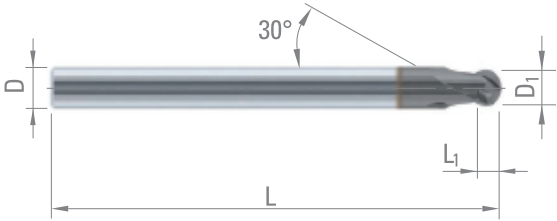
切削條件

徑向  
斜向  
插銑

$R = D_1/2$

刀刃  
過中心

P. 208



圓弧公差

0.006

高合金鋼

熱處理鋼  
鑄鐵  
>HRC 45

耐熱合金

粗銑

精修

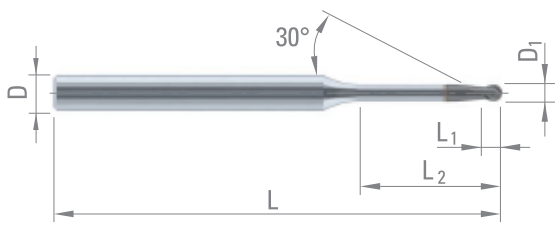
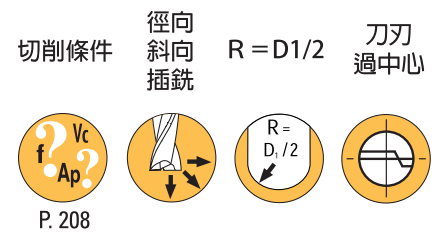
| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | XIDUR  |
|--------------------|----------------|-----------------|----|--------|
| Ø < 3.00 - 0/-0.02 |                |                 |    |        |
| Ø ≥ 3.00 - e8      |                |                 |    |        |
| 0.20               | 0.2            | 4               | 50 | 973380 |
| 0.30               | 0.3            | 4               | 50 | 972176 |
| 0.40               | 0.4            | 4               | 50 | 973379 |
| 0.50               | 0.5            | 4               | 50 | 973378 |
| 0.60               | 0.6            | 4               | 50 | 973377 |
| 0.70               | 0.7            | 4               | 50 | 972177 |
| 0.80               | 0.8            | 4               | 50 | 973376 |
| 0.90               | 0.8            | 4               | 50 | 973375 |
| 1.00               | 0.8            | 4               | 50 | 67253  |
| 1.50               | 1.2            | 4               | 50 | 67254  |
| 2.00               | 1.6            | 4               | 50 | 67257  |
| 3.00               | 2.4            | 6               | 57 | 67258  |
| 4.00               | 3.2            | 6               | 66 | 67259  |
| 5.00               | 4.0            | 6               | 66 | 67260  |
| 6.00               | 4.8            | 6               | 66 | 67261  |
| 8.00               | 6.4            | 8               | 75 | 67262  |



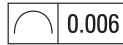
# DIXI 7532-D XIDUR

硬化材專用深溝球型銑刀

Z = 2



圓弧公差



高合金鋼

熱處理鋼  
鑄鐵  
>HRC 45

耐熱合金

粗銑



精修



| D <sub>1</sub>                      | L <sub>1</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | XIDUR  |
|-------------------------------------|----------------|-----------------|----|----------------|----------|--------|
| Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                 |    |                |          |        |
| 0.20                                | 0.2            | 4               | 50 | 0.6            | 7532-3D  | 978593 |
|                                     |                |                 |    | 1.0            | 7532-5D  | 979083 |
|                                     |                |                 |    | 1.6            | 7532-8D  | 979102 |
| 0.30                                | 0.3            | 4               | 50 | 0.9            | 7532-3D  | 979058 |
|                                     |                |                 |    | 1.5            | 7532-5D  | 979084 |
|                                     |                |                 |    | 2.4            | 7532-8D  | 979103 |
| 0.40                                | 0.4            | 4               | 50 | 1.2            | 7532-3D  | 979059 |
|                                     |                |                 |    | 2.0            | 7532-5D  | 979085 |
|                                     |                |                 |    | 3.2            | 7532-8D  | 979104 |
|                                     |                |                 |    | 4.0            | 7532-10D | 979116 |
| 0.50                                | 0.5            | 4               | 50 | 1.5            | 7532-3D  | 979060 |
|                                     |                |                 |    | 2.5            | 7532-5D  | 979086 |
|                                     |                |                 |    | 4.0            | 7532-8D  | 979105 |
|                                     |                |                 |    | 5.0            | 7532-10D | 979117 |
|                                     |                |                 |    | 6.0            | 7532-12D | 979136 |
|                                     |                |                 |    | 1.8            | 7532-3D  | 979061 |
| 0.60                                | 0.6            | 4               | 50 | 3.0            | 7532-5D  | 979087 |
|                                     |                |                 |    | 4.8            | 7532-8D  | 979106 |
|                                     |                |                 |    | 6.0            | 7532-10D | 979118 |
|                                     |                |                 |    | 7.2            | 7532-12D | 979137 |
|                                     |                |                 |    | 9.0            | 7532-15D | 979144 |
|                                     |                |                 |    | 2.1            | 7532-3D  | 979062 |
| 0.70                                | 0.7            | 4               | 50 | 3.5            | 7532-5D  | 979088 |
|                                     |                |                 |    | 5.6            | 7532-8D  | 979107 |
|                                     |                |                 |    | 7.0            | 7532-10D | 979119 |
|                                     |                |                 |    | 8.4            | 7532-12D | 979138 |
|                                     |                |                 |    | 10.5           | 7532-15D | 979145 |
|                                     |                |                 |    | 2.4            | 7532-3D  | 979063 |
| 0.80                                | 0.8            | 4               | 50 | 4.0            | 7532-5D  | 979089 |
|                                     |                |                 |    | 6.4            | 7532-8D  | 979108 |
|                                     |                |                 |    | 8.0            | 7532-10D | 979120 |
|                                     |                |                 |    | 9.6            | 7532-12D | 979139 |
|                                     |                |                 |    | 12.0           | 7532-15D | 979146 |
|                                     |                |                 |    | 2.7            | 7532-3D  | 979064 |
| 0.90                                | 0.8            | 4               | 50 | 4.5            | 7532-5D  | 979091 |
|                                     |                |                 |    | 7.2            | 7532-8D  | 979109 |
|                                     |                |                 |    | 9.0            | 7532-10D | 979121 |
|                                     |                |                 |    | 10.8           | 7532-12D | 979140 |
|                                     |                |                 |    | 13.5           | 7532-15D | 979147 |
|                                     |                |                 |    | 3.0            | 7532-3D  | 979065 |
| 1.00                                | 0.8            | 4               | 50 | 5.0            | 7532-5D  | 979092 |
|                                     |                |                 |    | 8.0            | 7532-8D  | 979111 |
|                                     |                |                 |    | 10.0           | 7532-10D | 979122 |
|                                     |                |                 |    | 12.0           | 7532-12D | 979141 |
|                                     |                |                 |    | 15.0           | 7532-15D | 979148 |
|                                     |                |                 |    | 4.5            | 7532-3D  | 979066 |
| 1.50                                | 1.2            | 4               | 50 | 7.5            | 7532-5D  | 979093 |
|                                     |                |                 |    | 12.0           | 7532-8D  | 979112 |
|                                     |                |                 |    | 15.0           | 7532-10D | 979123 |
|                                     |                |                 |    | 18.0           | 7532-12D | 979142 |
|                                     |                |                 |    | 22.5           | 7532-15D | 979149 |
|                                     |                |                 |    | 7.5            | 7532-5D  | 979093 |

DIXI 7532-3D

L<sub>2</sub> = 3 x D<sub>1</sub>

DIXI 7532-5D

L<sub>2</sub> = 5 x D<sub>1</sub>

DIXI 7532-8D

L<sub>2</sub> = 8 x D<sub>1</sub>

DIXI 7532-10D

L<sub>2</sub> = 10 x D<sub>1</sub>

DIXI 7532-12D

L<sub>2</sub> = 12 x D<sub>1</sub>

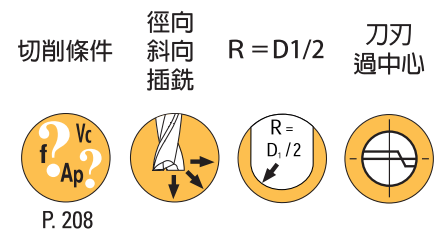
DIXI 7532-15D

L<sub>2</sub> = 15 x D<sub>1</sub>



## DIXI 7532-D XIDUR

Z = 2



| D <sub>1</sub>                      | L <sub>1</sub> | D <sub>h5</sub> | L  | L <sub>2</sub> | DIXI     | XIDUR  |
|-------------------------------------|----------------|-----------------|----|----------------|----------|--------|
| Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                 |    |                |          |        |
| 2.00                                | 1.6            | 4               | 50 | 6.0            | 7532-3D  | 979067 |
|                                     |                |                 |    | 10.0           | 7532-5D  | 979094 |
|                                     |                |                 |    | 16.0           | 7532-8D  | 979113 |
|                                     |                |                 |    | 20.0           | 7532-10D | 979124 |
|                                     |                |                 |    | 24.0           | 7532-12D | 979143 |
|                                     |                |                 |    | 30.0           | 7532-15D | 979150 |
| 3.00                                | 2.4            | 6               | 57 | 9.0            | 7532-3D  | 979068 |
|                                     |                |                 |    | 15.0           | 7532-5D  | 979095 |
|                                     |                |                 |    | 24.0           | 7532-8D  | 979114 |
|                                     |                |                 |    | 30.0           | 7532-10D | 979125 |
| 4.00                                | 3.2            | 6               | 66 | 12.0           | 7532-3D  | 979069 |
|                                     |                |                 |    | 20.0           | 7532-5D  | 979096 |
|                                     |                |                 |    | 32.0           | 7532-8D  | 979115 |
| 5.00                                | 4.0            | 6               | 66 | 15.0           | 7532-3D  | 979070 |
|                                     |                |                 |    | 25.0           | 7532-5D  | 979097 |
| 6.00                                | 4.8            | 6               | 66 | 18.0           | 7532-3D  | 979071 |
|                                     |                |                 |    | 30.0           | 7532-5D  | 979098 |
| 8.00                                | 6.4            | 8               | 66 | 24.0           | 7532-3D  | 979072 |
|                                     |                |                 |    | 40.0           | 7532-5D  | 979099 |
| 10.00                               | 8.0            | 10              | 66 | 30.0           | 7532-3D  | 979073 |
|                                     |                |                 |    | 50.0           | 7532-5D  | 979100 |

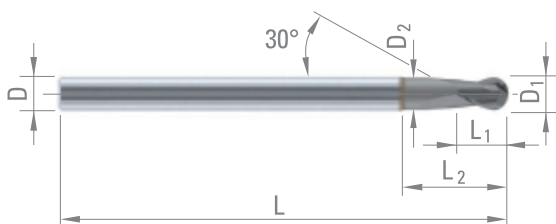
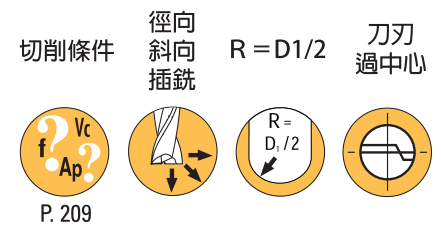


|               |                                      |
|---------------|--------------------------------------|
| DIXI 7532-3D  | L <sub>2</sub> = 3 x D <sub>1</sub>  |
| DIXI 7532-5D  | L <sub>2</sub> = 5 x D <sub>1</sub>  |
| DIXI 7532-8D  | L <sub>2</sub> = 8 x D <sub>1</sub>  |
| DIXI 7532-10D | L <sub>2</sub> = 10 x D <sub>1</sub> |
| DIXI 7532-12D | L <sub>2</sub> = 12 x D <sub>1</sub> |
| DIXI 7532-15D | L <sub>2</sub> = 15 x D <sub>1</sub> |

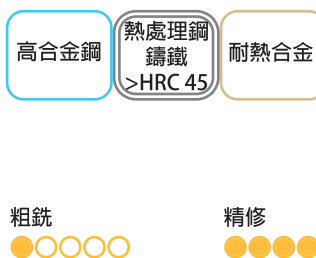
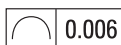
## DIXI 7542 XIDUR

硬化材專用長頸球型銑刀

Z = 2



圓弧公差



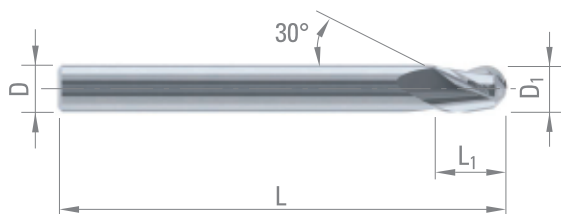
| D <sub>1</sub>                      | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | D <sub>h5</sub> | L   | XIDUR |
|-------------------------------------|----------------|----------------|----------------|-----------------|-----|-------|
| Ø < 3.00 - 0/-0.02<br>Ø ≥ 3.00 - e8 |                |                |                |                 |     |       |
| 1.00                                | 2.0            | 0.90           | 3.2            | 6               | 66  | 61355 |
| 1.50                                | 3.0            | 1.40           | 4.7            | 6               | 66  | 61356 |
| 2.00                                | 3.0            | 1.85           | 6.2            | 6               | 66  | 61357 |
| 3.00                                | 5.0            | 2.85           | 9.2            | 6               | 66  | 61358 |
| 4.00                                | 6.0            | 3.80           | 12.5           | 6               | 80  | 61359 |
| 5.00                                | 7.0            | 4.70           | 15.5           | 6               | 80  | 61360 |
| 6.00                                | 9.0            | 5.70           | 19.0           | 6               | 80  | 61361 |
| 8.00                                | 12.0           | 7.50           | 25.0           | 8               | 90  | 61362 |
| 10.00                               | 15.0           | 9.50           | 31.0           | 10              | 110 | 61363 |
| 12.00                               | 18.0           | 11.50          | 37.0           | 12              | 120 | 61364 |



# DIXI 7033

球型銑刀

Z = 3



切削條件 徑向斜向插銑 R = D1/2 刀刃過中心

$f$   $V_c$   $A_p$  P. 156

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 鋁 塑膠

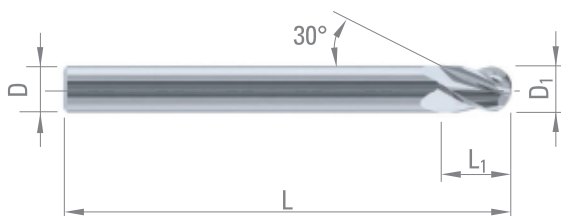
粗銑 精修

| D <sub>1</sub>     | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   | TiAlN |
|--------------------|----------------|-----------------|----|-------|-------|
| Ø < 3.00 - 0/-0.02 |                |                 |    |       |       |
| Ø ≥ 3.00 - e8      |                |                 |    |       |       |
| 1.00               | 2.0            | 3               | 38 | 45950 | 56154 |
| 1.50               | 2.5            | 3               | 38 | 45230 | 56155 |
| 2.00               | 3.0            | 3               | 38 | 45231 | 56156 |
| 2.50               | 4.0            | 3               | 38 | 45232 | 56157 |
| 3.00               | 5.0            | 3               | 38 | 43637 | 56158 |
| 4.00               | 6.0            | 4               | 50 | 43638 | 56159 |
| 5.00               | 8.0            | 5               | 50 | 43639 | 56162 |
| 6.00               | 9.0            | 6               | 57 | 42993 | 56163 |
| 8.00               | 12.0           | 8               | 63 | 32969 | 56165 |
| 10.00              | 15.0           | 10              | 72 | 32970 | 56166 |

# DIXI 7034

球型銑刀

Z = 4



切削條件 徑向斜向 R = D1/2 刀刃過中心

$f$   $V_c$   $A_p$  P. 156

含鉛快削鋼 低合金鋼 高合金鋼 雙相不銹鋼 鑄鐵

耐熱合金 純鈦鈦合金 銅合金銀金 難加工銅合金 鋁

粗銑 精修

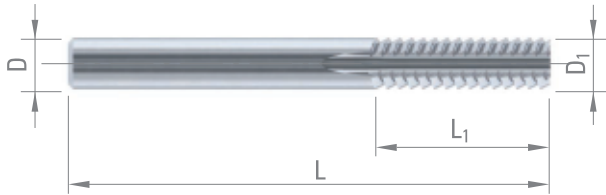
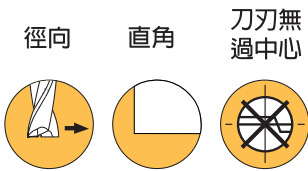
| D <sub>1 e8</sub> | L <sub>1</sub> | D <sub>h5</sub> | L   | 無鍍層   | TiAlN |
|-------------------|----------------|-----------------|-----|-------|-------|
| 8.00              | 12             | 8               | 63  | 43641 |       |
| 12.00             | 18             | 12              | 73  | 32975 | 56149 |
| 14.00             | 21             | 14              | 75  | 32976 |       |
| 16.00             | 24             | 16              | 82  | 42827 | 56151 |
| 20.00             | 30             | 20              | 104 | 35740 |       |



DIXI 7112

複合材質專用銑刀 / KEVLAR®

Z = 2



Kevllar®  
複合材料

粗銑  
●●●●○

精修  
●●○○○

| D <sub>1</sub> | 英吋   | L <sub>1</sub> | D <sub>h5</sub> | L  | 無鍍層   |
|----------------|------|----------------|-----------------|----|-------|
| 5.00           |      | 20             | 5.00            | 75 | 26252 |
| 6.00           |      | 25             | 6.00            | 75 | 26873 |
| 6.35           | 1/4" | 25             | 6.35            | 75 | 26264 |
| 8.00           |      | 25             | 8.00            | 75 | 27851 |
| 10.00          |      | 25             | 10.00           | 75 | 28072 |
| 12.70          | 1/2" | 27             | 12.70           | 75 | 26254 |

切削條件:

側銑                    Vc = 250 - 500 m/min  
                             Vf = 500 - 2000 mm/min





## 客製化銑刀

### DIXI 7631 SP 階梯銑刀

R ☐ L ☐ Z =



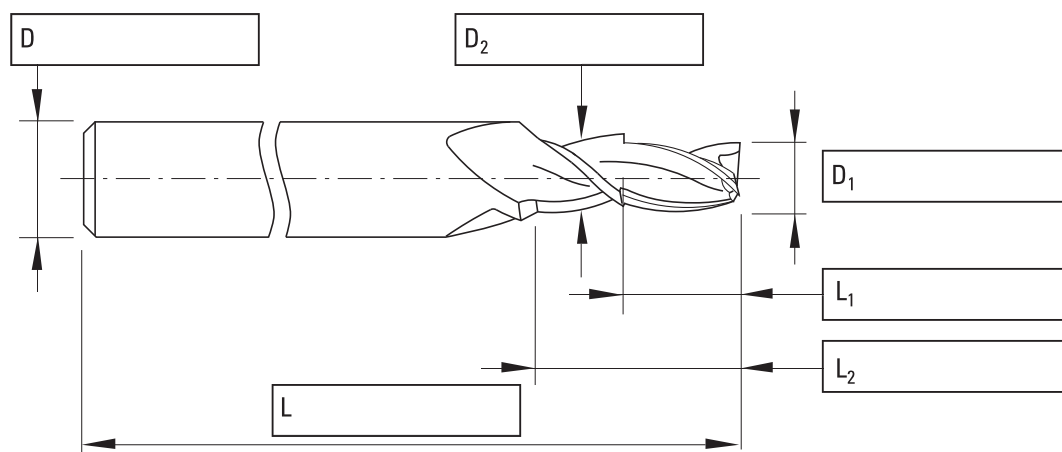
☐



☐

數量

加工材質



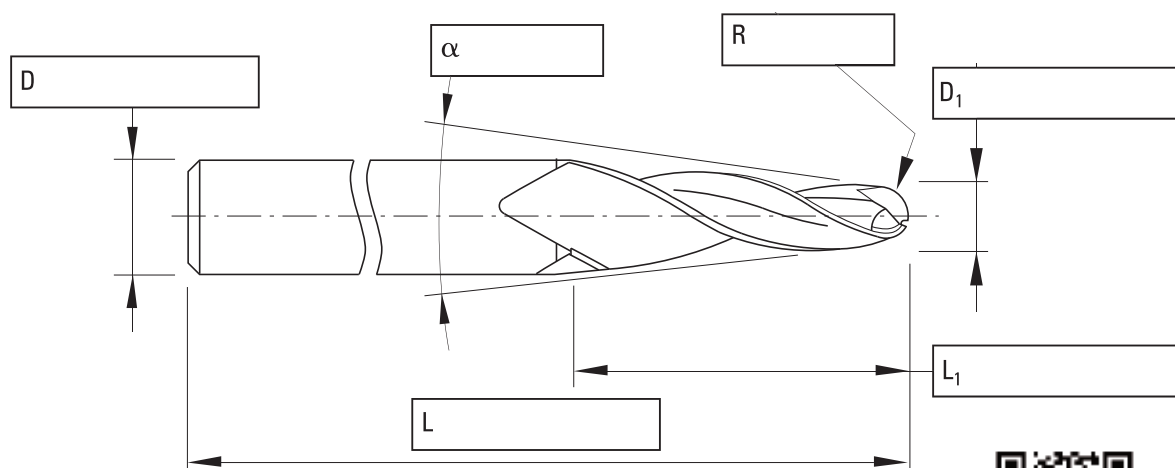
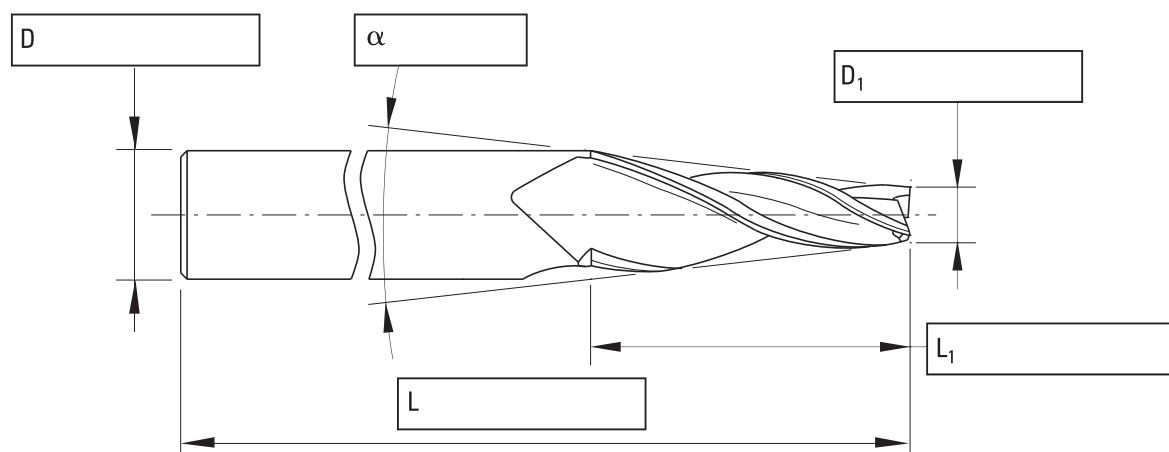
### DIXI 7645 SP 錐度銑刀

R ☐ L ☐

Z =

數量

加工材質

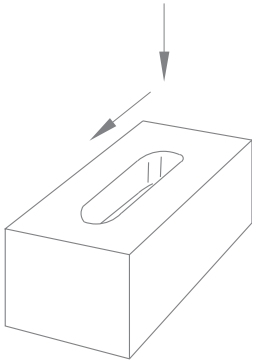


客製化詢價請參訪 [WWW.DIXIPOLYTOOL.COM](http://WWW.DIXIPOLYTOOL.COM)





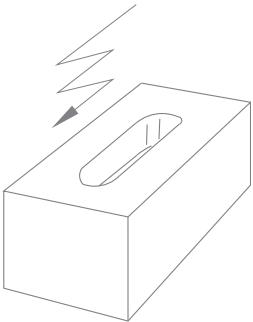
1 插銑開槽



Z 2



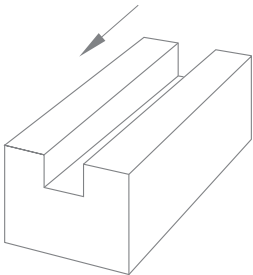
2 斜向進刀開槽



Z 2 - Z 3



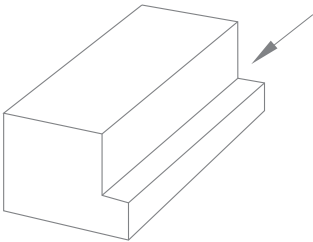
3 外側進刀開槽



Z 2 - Z 3



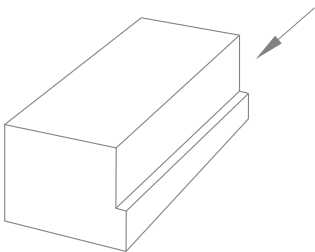
外型銑削(粗銑)



Z 3 - Z 4



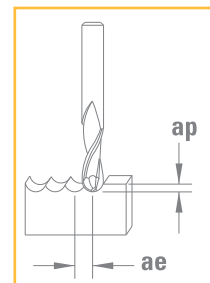
外型銑削(精修)



多刃



## 切削條件



## 加工材質

| 加工材質 |                     |                     | 無鍍層        |     | DICUT      |     | TiAlN      |     | DIAMANT    |     |  |             |
|------|---------------------|---------------------|------------|-----|------------|-----|------------|-----|------------|-----|-------------------------------------------------------------------------------------|-------------|
|      |                     |                     | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min] |     | ap [mm]                                                                             | ae [mm]     |
| P    | 非合金鋼/低合金鋼           | < 600 N/mm²         | 70         | 100 |            |     |            |     | 90         | 110 | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| P    | 非合金鋼/低合金鋼           | 600 – 1500 N/mm²    |            |     |            |     | 70         | 90  |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| P    | 含鉛快削鋼               |                     | 70         | 100 |            |     |            |     |            |     | <0.2 x ØD1                                                                          | <0.5 x ØD1  |
| P    | 高合金鋼                | 700 – 1500 N/mm²    |            |     |            |     | 40         | 70  |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| M    | 不銹鋼                 | 400 – 700 N/mm²     |            |     |            |     | 70         | 90  |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| M    | 雙相不銹鋼               | > 800 N/mm²         |            |     |            |     | 40         | 70  |            |     | <0.1 x ØD1                                                                          | <0.4 x ØD1  |
| K    | 灰鑄鐵/球墨鑄鐵            | < 250 HB            | 70         | 100 |            |     | 90         | 110 |            |     | <0.1 x ØD1                                                                          | <0.4 x ØD1  |
| K    | 合金鑄鐵/球墨鑄鐵           | > 250 HB            | 40         | 70  |            |     | 70         | 90  |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵          |                     | 70         | 100 |            |     | 90         | 110 |            |     | <0.1 x ØD1                                                                          | <0.4 x ØD1  |
| S    | 特殊合金/耐熱不銹鋼          | 英高鎳/鎳基合金/哈氏合金       |            |     |            |     | 25         | 35  |            |     | <0.05 x ØD1                                                                         | <0.25 x ØD1 |
| S    | 純鈦/鈦合金              |                     | 30         | 45  |            |     |            |     |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| N    | 銅合金 - 易於加工（黃銅 - 青銅） |                     | 140        | 160 |            |     |            |     |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| N    | 銅合金 - 難以加工/鋁青銅合金    | 鋁青銅<br>（安普科耐熱耐蝕銅合金） | 120        | 140 | 170        | 190 | 170        | 190 |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |
| N    | 鋁合金                 | Si < 8%             | 180        | 260 |            |     | 230        | 340 |            |     | <0.25 x ØD1                                                                         | <0.5 x ØD1  |
| N    | 鑄鋁材質                | Si > 8%             | 140        | 160 |            |     | 210        | 230 |            |     | <0.25 x ØD1                                                                         | <0.5 x ØD1  |
| N    | 石墨                  |                     |            |     |            |     |            |     | 200        | 300 | <0.3 x ØD1                                                                          | <0.6 x ØD1  |
| N    | 塑料                  |                     | 240        | 260 |            |     | 300        | 340 |            |     | <0.3 x ØD1                                                                          | <0.6 x ØD1  |
| N    | 金，銀                 |                     | 140        | 160 |            |     | 200        | 220 |            |     | <0.15 x ØD1                                                                         | <0.5 x ØD1  |

$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

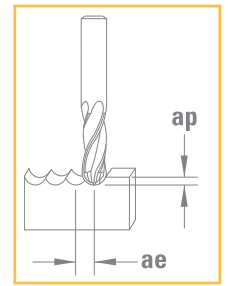
$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

毎刃進給

$f_z$  [mm]

| $\emptyset D_1$<br>0.06 - 0.60 | $\emptyset D_1$<br>0.60 - 1.00 | $\emptyset D_1$<br>1.00 - 1.50 | $\emptyset D_1$<br>1.50 - 3.00 | $\emptyset D_1$<br>3.00 - 5.00 | $\emptyset D_1$<br>5.00 - 7.00 | $\emptyset D_1$<br>7.00 - 10.00 | $\emptyset D_1$<br>10.00 - 14.00 | $\emptyset D_1$<br>14.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.0016 - 0.005                 | 0.003 - 0.009                  | 0.005 - 0.01                   | 0.008 - 0.02                   | 0.016 - 0.05                   | 0.026 - 0.06                   | 0.036 - 0.09                    | 0.05 - 0.13                      | 0.07 - 0.15                      | 0.08 - 0.18                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0020 - 0.008                 | 0.004 - 0.013                  | 0.007 - 0.02                   | 0.010 - 0.03                   | 0.020 - 0.07                   | 0.033 - 0.09                   | 0.046 - 0.13                    | 0.07 - 0.18                      | 0.09 - 0.21                      | 0.10 - 0.26                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0016 - 0.005                 | 0.003 - 0.009                  | 0.005 - 0.01                   | 0.008 - 0.02                   | 0.016 - 0.05                   | 0.026 - 0.06                   | 0.036 - 0.09                    | 0.05 - 0.13                      | 0.07 - 0.15                      | 0.08 - 0.18                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0016 - 0.005                 | 0.003 - 0.009                  | 0.005 - 0.01                   | 0.008 - 0.02                   | 0.016 - 0.05                   | 0.026 - 0.06                   | 0.036 - 0.09                    | 0.05 - 0.13                      | 0.07 - 0.15                      | 0.08 - 0.18                      |
|                                |                                | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0020 - 0.008                 | 0.004 - 0.013                  | 0.007 - 0.02                   | 0.010 - 0.03                   | 0.020 - 0.07                   | 0.033 - 0.09                   | 0.046 - 0.13                    | 0.07 - 0.18                      | 0.09 - 0.21                      | 0.10 - 0.26                      |
| 0.0012 - 0.004                 | 0.002 - 0.007                  | 0.004 - 0.01                   | 0.006 - 0.02                   | 0.012 - 0.03                   | 0.020 - 0.05                   | 0.027 - 0.07                    | 0.04 - 0.09                      | 0.05 - 0.10                      | 0.06 - 0.13                      |
| 0.0020 - 0.008                 | 0.004 - 0.013                  | 0.007 - 0.02                   | 0.010 - 0.03                   | 0.020 - 0.07                   | 0.033 - 0.09                   | 0.046 - 0.13                    | 0.07 - 0.18                      | 0.09 - 0.21                      | 0.10 - 0.26                      |
| 0.0020 - 0.008                 | 0.004 - 0.013                  | 0.007 - 0.02                   | 0.010 - 0.03                   | 0.020 - 0.07                   | 0.033 - 0.09                   | 0.046 - 0.13                    | 0.07 - 0.18                      | 0.09 - 0.21                      | 0.10 - 0.26                      |
| 0.0027 - 0.012                 | 0.005 - 0.020                  | 0.009 - 0.03                   | 0.014 - 0.05                   | 0.027 - 0.10                   | 0.046 - 0.14                   | 0.064 - 0.20                    | 0.09 - 0.27                      | 0.13 - 0.31                      | 0.15 - 0.39                      |
| 0.0027 - 0.012                 | 0.005 - 0.020                  | 0.009 - 0.03                   | 0.014 - 0.05                   | 0.027 - 0.10                   | 0.046 - 0.14                   | 0.064 - 0.20                    | 0.09 - 0.27                      | 0.13 - 0.31                      | 0.15 - 0.39                      |
| 0.0020 - 0.008                 | 0.004 - 0.013                  | 0.007 - 0.02                   | 0.010 - 0.03                   | 0.020 - 0.07                   | 0.033 - 0.09                   | 0.046 - 0.13                    | 0.07 - 0.18                      | 0.09 - 0.21                      | 0.10 - 0.26                      |





## 切削條件

### 加工材質

|          |                      |                              | 無鍍層        |     | TiAlN      |     |  |  | ap<br>[mm]  | ae<br>[mm] |
|----------|----------------------|------------------------------|------------|-----|------------|-----|--|--|-------------|------------|
|          |                      |                              | Vc [m/min] |     | Vc [m/min] |     |  |  |             |            |
| <b>P</b> | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 70         | 100 | 90         | 110 |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>P</b> | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | 70         | 90  |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>P</b> | 含鉛快削鋼                |                              | 70         | 100 |            |     |  |  | <0.2 x ØD1  | <0.3 x ØD1 |
| <b>P</b> | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | 40         | 70  |  |  | <0.1 x ØD1  | <0.2 x ØD1 |
| <b>M</b> | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | 70         | 90  |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>M</b> | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | 40         | 70  |  |  | <0.1 x ØD1  | <0.2 x ØD1 |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 70         | 100 | 90         | 110 |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 40         | 70  | 70         | 90  |  |  | <0.1 x ØD1  | <0.2 x ØD1 |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 70         | 100 | 90         | 110 |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>S</b> | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |     | 25         | 35  |  |  | <0.1 x ØD1  | <0.2 x ØD1 |
| <b>S</b> | 純鈦/鈦合金               |                              | 30         | 45  |            |     |  |  | <0.1 x ØD1  | <0.2 x ØD1 |
| <b>N</b> | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 140        | 160 |            |     |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>N</b> | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 120        | 140 | 170        | 190 |  |  | <0.15 x ØD1 | <0.3 x ØD1 |
| <b>N</b> | 鋁合金                  | Si < 8%                      | 180        | 260 | 230        | 340 |  |  | <0.25 x ØD1 | <0.3 x ØD1 |
| <b>N</b> | 鑄鋁材質                 | Si > 8%                      | 140        | 160 | 210        | 230 |  |  | <0.25 x ØD1 | <0.3 x ØD1 |
| <b>N</b> | 塑料                   |                              | 240        | 260 | 300        | 340 |  |  | <0.3 x ØD1  | <0.4 x ØD1 |
| <b>N</b> | 金, 銀                 |                              | 140        | 160 | 200        | 220 |  |  | <0.15 x ØD1 | <0.3 x ØD1 |

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

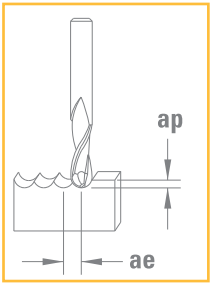
每刃進給

fz [mm]

| Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 7.00 | Ø D <sub>1</sub><br>7.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|
| 0.016 - 0.05                    | 0.026 - 0.06                    | 0.036 - 0.09                    | 0.05 - 0.13                     | 0.07 - 0.15                      | 0.08 - 0.18                       | 0.11 - 0.22                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.020 - 0.07                    | 0.033 - 0.09                    | 0.046 - 0.13                    | 0.07 - 0.18                     | 0.09 - 0.21                      | 0.10 - 0.26                       | 0.13 - 0.29                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.016 - 0.05                    | 0.026 - 0.06                    | 0.036 - 0.09                    | 0.05 - 0.13                     | 0.07 - 0.15                      | 0.08 - 0.18                       | 0.11 - 0.21                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.016 - 0.05                    | 0.026 - 0.06                    | 0.036 - 0.09                    | 0.05 - 0.13                     | 0.07 - 0.15                      | 0.08 - 0.18                       | 0.11 - 0.21                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.020 - 0.07                    | 0.033 - 0.09                    | 0.046 - 0.13                    | 0.07 - 0.18                     | 0.09 - 0.21                      | 0.10 - 0.26                       | 0.13 - 0.29                       |  |
| 0.012 - 0.03                    | 0.020 - 0.05                    | 0.027 - 0.07                    | 0.04 - 0.09                     | 0.05 - 0.10                      | 0.06 - 0.13                       | 0.09 - 0.17                       |  |
| 0.020 - 0.07                    | 0.033 - 0.09                    | 0.046 - 0.13                    | 0.07 - 0.18                     | 0.09 - 0.21                      | 0.10 - 0.26                       | 0.13 - 0.29                       |  |
| 0.020 - 0.07                    | 0.033 - 0.09                    | 0.046 - 0.13                    | 0.07 - 0.18                     | 0.09 - 0.21                      | 0.10 - 0.26                       | 0.13 - 0.29                       |  |
| 0.027 - 0.10                    | 0.046 - 0.14                    | 0.064 - 0.20                    | 0.09 - 0.27                     | 0.13 - 0.31                      | 0.15 - 0.39                       | 0.18 - 0.42                       |  |
| 0.020 - 0.07                    | 0.033 - 0.09                    | 0.046 - 0.13                    | 0.07 - 0.18                     | 0.09 - 0.21                      | 0.10 - 0.26                       | 0.13 - 0.29                       |  |



切削條件



| 加工材質 |                      |                              | 無鍍層        | DICUT      | TiAlN      | DIAMANT    | ap<br>[mm]  | ae<br>[mm] |
|------|----------------------|------------------------------|------------|------------|------------|------------|-------------|------------|
|      |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min] | Vc [m/min] |             |            |
| P    | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 70 100     |            | 90 110     |            | <0.15 x ØD1 | <0.5 x ØD1 |
| P    | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |            | 70 90      |            | <0.15 x ØD1 | <0.5 x ØD1 |
| P    | 含鉛快削鋼                |                              | 70 100     |            |            |            | <0.2 x ØD1  | <0.5 x ØD1 |
| P    | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |            | 40 70      |            | <0.1 x ØD1  | <0.4 x ØD1 |
| M    | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |            | 70 90      |            | <0.15 x ØD1 | <0.5 x ØD1 |
| M    | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |            | 40 70      |            | <0.1 x ØD1  | <0.4 x ØD1 |
| K    | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 70 100     |            | 90 110     |            | <0.15 x ØD1 | <0.5 x ØD1 |
| K    | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 40 70      |            | 70 90      |            | <0.1 x ØD1  | <0.4 x ØD1 |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 70 100     |            | 90 110     |            | <0.15 x ØD1 | <0.5 x ØD1 |
| S    | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |            | 25 35      |            | <0.1 x ØD1  | <0.1 x ØD1 |
| S    | 純鈦/鈦合金               |                              | 30 45      |            |            |            | <0.1 x ØD1  | <0.4 x ØD1 |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 140 160    |            |            |            | <0.15 x ØD1 | <0.5 x ØD1 |
| N    | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 120 140    | 170 190    | 170 190    |            | <0.15 x ØD1 | <0.5 x ØD1 |
| N    | 鋁合金                  | Si < 8%                      | 180 240    |            | 230 340    |            | <0.25 x ØD1 | <0.5 x ØD1 |
| N    | 鑄鋁材質                 | Si > 8%                      | 140 160    |            |            | 200 300    | <0.25 x ØD1 | <0.5 x ØD1 |
| N    | 石墨                   |                              |            |            |            | 200 300    | <0.3 x ØD1  | <0.6 x ØD1 |
| N    | 塑料                   |                              | 240 260    |            | 300 340    |            | <0.3 x ØD1  | <0.6 x ØD1 |
| N    | 金，銀                  |                              | 140 160    |            | 200 220    |            | <0.15 x ØD1 | <0.5 x ØD1 |

推薦的轉數( n )和進給速度 (Vf) ，應根據有效長度(L2)進行調整。



$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

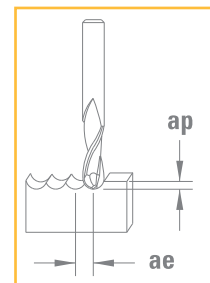
每刃進給

$f_z$  [mm]

| $\emptyset D_1$<br>0.20 - 0.60 | $\emptyset D_1$<br>0.60 - 1.00 | $\emptyset D_1$<br>1.00 - 1.50 | $\emptyset D_1$<br>1.50 - 3.00 | $\emptyset D_1$<br>3.00 - 5.00 | $\emptyset D_1$<br>5.00 - 7.00 | $\emptyset D_1$<br>7.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 |  |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|--|
| 0.0014 - 0.005                 | 0.003 - 0.008                  | 0.005 - 0.01                   | 0.007 - 0.02                   | 0.014 - 0.04                   | 0.023 - 0.06                   | 0.032 - 0.08                    | 0.05 - 0.11                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0017 - 0.007                 | 0.003 - 0.012                  | 0.006 - 0.02                   | 0.009 - 0.03                   | 0.017 - 0.06                   | 0.029 - 0.08                   | 0.040 - 0.12                    | 0.06 - 0.16                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0014 - 0.005                 | 0.003 - 0.008                  | 0.005 - 0.01                   | 0.007 - 0.02                   | 0.014 - 0.04                   | 0.023 - 0.06                   | 0.032 - 0.08                    | 0.05 - 0.11                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0014 - 0.005                 | 0.003 - 0.008                  | 0.005 - 0.01                   | 0.007 - 0.02                   | 0.014 - 0.04                   | 0.023 - 0.06                   | 0.032 - 0.08                    | 0.05 - 0.11                      |  |
|                                |                                | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0017 - 0.007                 | 0.003 - 0.012                  | 0.006 - 0.02                   | 0.009 - 0.03                   | 0.017 - 0.06                   | 0.029 - 0.08                   | 0.040 - 0.12                    | 0.06 - 0.16                      |  |
| 0.0010 - 0.003                 | 0.002 - 0.006                  | 0.003 - 0.01                   | 0.005 - 0.015                  | 0.010 - 0.03                   | 0.017 - 0.04                   | 0.024 - 0.06                    | 0.03 - 0.08                      |  |
| 0.0017 - 0.007                 | 0.003 - 0.012                  | 0.006 - 0.02                   | 0.009 - 0.03                   | 0.017 - 0.06                   | 0.029 - 0.08                   | 0.040 - 0.12                    | 0.06 - 0.16                      |  |
| 0.0017 - 0.007                 | 0.003 - 0.012                  | 0.006 - 0.02                   | 0.009 - 0.03                   | 0.017 - 0.06                   | 0.029 - 0.08                   | 0.040 - 0.12                    | 0.06 - 0.16                      |  |
| 0.0024 - 0.010                 | 0.005 - 0.017                  | 0.008 - 0.03                   | 0.012 - 0.04                   | 0.024 - 0.09                   | 0.040 - 0.12                   | 0.056 - 0.17                    | 0.08 - 0.24                      |  |
| 0.0024 - 0.010                 | 0.005 - 0.017                  | 0.008 - 0.03                   | 0.012 - 0.04                   | 0.024 - 0.09                   | 0.040 - 0.12                   | 0.056 - 0.17                    | 0.08 - 0.24                      |  |
| 0.0017 - 0.007                 | 0.003 - 0.012                  | 0.006 - 0.02                   | 0.009 - 0.03                   | 0.017 - 0.06                   | 0.029 - 0.08                   | 0.040 - 0.12                    | 0.06 - 0.16                      |  |



## 切削條件



## 加工材質

|   |                      |                              | 無鍍層        |     | TiAlN      |     | DIAMANT    |     | ap<br>[mm]  | ae<br>[mm] |
|---|----------------------|------------------------------|------------|-----|------------|-----|------------|-----|-------------|------------|
|   |                      |                              | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min] |     |             |            |
| P | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 60         | 90  | 80         | 100 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| P | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | 60         | 80  |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| P | 含鉛快削鋼                |                              | 60         | 90  | 80         | 100 |            |     | <0.15 x ØD1 | <0.3 x ØD1 |
| P | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | 30         | 60  |            |     | <0.05 x ØD1 | <0.2 x ØD1 |
| M | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | 60         | 80  |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| M | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | 30         | 60  |            |     | <0.05 x ØD1 | <0.2 x ØD1 |
| K | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 60         | 90  | 80         | 100 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| K | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 30         | 50  | 60         | 80  |            |     | <0.05 x ØD1 | <0.2 x ØD1 |
| K | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 60         | 90  | 80         | 100 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| S | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |     | 20         | 30  |            |     | <0.05 x ØD1 | <0.2 x ØD1 |
| S | 純鈦/鈦合金               |                              | 25         | 35  | 30         | 50  |            |     | <0.05 x ØD1 | <0.2 x ØD1 |
| N | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 100        | 130 | 140        | 180 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| N | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 90         | 110 | 130        | 160 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |
| N | 鋁合金                  | Si < 8%                      | 130        | 180 | 150        | 250 |            |     | <0.2 x ØD1  | <0.3 x ØD1 |
| N | 鑄鋁材質                 | Si > 8%                      | 100        | 130 |            |     | 200        | 300 | <0.2 x ØD1  | <0.3 x ØD1 |
| N | 石墨                   |                              |            |     |            |     | 200        | 300 | <0.25 x ØD1 | <0.4 x ØD1 |
| N | 塑料                   |                              | 180        | 220 | 200        | 250 |            |     | <0.25 x ØD1 | <0.4 x ØD1 |
| N | 金, 銀                 |                              | 100        | 130 | 140        | 180 |            |     | <0.1 x ØD1  | <0.3 x ØD1 |

$$n [\text{tr/min}] = \frac{V_c [\text{m/min}] \times 1000}{\pi \times D_1 [\text{mm}]}$$

$$V_f [\text{mm/min}] = n [\text{tr/min}] \times f_z [\text{mm}] \times Z$$

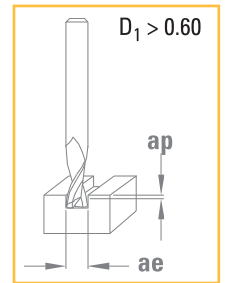
每刃進給

$f_z [\text{mm}]$

| $\emptyset D_1$<br>2.00 - 2.50 | $\emptyset D_1$<br>2.50 - 3.00 | $\emptyset D_1$<br>3.00 - 4.00 | $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 8.00 | $\emptyset D_1$<br>8.00 - 10.00 | $\emptyset D_1$<br>10.00 - 14.00 | $\emptyset D_1$<br>14.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.010 - 0.021                  | 0.012 - 0.03                   | 0.014 - 0.03                   | 0.019 - 0.04                   | 0.024 - 0.05                   | 0.029 - 0.07                   | 0.038 - 0.08                    | 0.05 - 0.12                      | 0.07 - 0.13                      | 0.08 - 0.17                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.012 - 0.030                  | 0.015 - 0.04                   | 0.018 - 0.05                   | 0.024 - 0.06                   | 0.030 - 0.07                   | 0.036 - 0.10                   | 0.048 - 0.12                    | 0.06 - 0.17                      | 0.08 - 0.19                      | 0.10 - 0.24                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.010 - 0.021                  | 0.012 - 0.03                   | 0.014 - 0.03                   | 0.019 - 0.04                   | 0.024 - 0.05                   | 0.029 - 0.07                   | 0.038 - 0.08                    | 0.05 - 0.12                      | 0.07 - 0.13                      | 0.08 - 0.17                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.010 - 0.021                  | 0.012 - 0.03                   | 0.014 - 0.03                   | 0.019 - 0.04                   | 0.024 - 0.05                   | 0.029 - 0.07                   | 0.038 - 0.08                    | 0.05 - 0.12                      | 0.07 - 0.13                      | 0.08 - 0.17                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.012 - 0.030                  | 0.015 - 0.04                   | 0.018 - 0.05                   | 0.024 - 0.06                   | 0.030 - 0.07                   | 0.036 - 0.10                   | 0.048 - 0.12                    | 0.06 - 0.17                      | 0.08 - 0.19                      | 0.10 - 0.24                      |
| 0.007 - 0.015                  | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                   | 0.022 - 0.05                   | 0.029 - 0.06                    | 0.04 - 0.08                      | 0.05 - 0.10                      | 0.06 - 0.12                      |
| 0.012 - 0.030                  | 0.015 - 0.04                   | 0.018 - 0.05                   | 0.024 - 0.06                   | 0.030 - 0.07                   | 0.036 - 0.10                   | 0.048 - 0.12                    | 0.06 - 0.17                      | 0.08 - 0.19                      | 0.10 - 0.24                      |
| 0.012 - 0.030                  | 0.015 - 0.04                   | 0.018 - 0.05                   | 0.024 - 0.06                   | 0.030 - 0.07                   | 0.036 - 0.10                   | 0.048 - 0.12                    | 0.06 - 0.17                      | 0.08 - 0.19                      | 0.10 - 0.24                      |
| 0.017 - 0.045                  | 0.021 - 0.05                   | 0.025 - 0.07                   | 0.034 - 0.09                   | 0.042 - 0.11                   | 0.050 - 0.14                   | 0.067 - 0.18                    | 0.08 - 0.25                      | 0.12 - 0.29                      | 0.13 - 0.36                      |
| 0.017 - 0.045                  | 0.021 - 0.05                   | 0.025 - 0.07                   | 0.034 - 0.09                   | 0.042 - 0.11                   | 0.050 - 0.14                   | 0.067 - 0.18                    | 0.08 - 0.25                      | 0.12 - 0.29                      | 0.13 - 0.36                      |
| 0.012 - 0.030                  | 0.015 - 0.04                   | 0.018 - 0.05                   | 0.024 - 0.06                   | 0.030 - 0.07                   | 0.036 - 0.10                   | 0.048 - 0.12                    | 0.06 - 0.17                      | 0.08 - 0.19                      | 0.10 - 0.24                      |



## 切削條件



## 加工材質

|          |                      |                              | 無鍍層        |     | TiAlN      |     | DIAMANT        |  | ap<br>[mm]  | ae<br>[mm] |
|----------|----------------------|------------------------------|------------|-----|------------|-----|----------------|--|-------------|------------|
|          |                      |                              | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min]     |  |             |            |
| <b>P</b> | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | <b>70</b>  | 100 | <b>90</b>  | 110 |                |  | < 1 x ØD1   | 1 x ØD1    |
| <b>P</b> | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | <b>70</b>  | 90  |                |  | < 0.6 x ØD1 | 1 x ØD1    |
| <b>P</b> | 含鉛快削鋼                |                              | <b>70</b>  | 100 |            |     |                |  | < 1 x ØD1   | 1 x ØD1    |
| <b>P</b> | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | <b>40</b>  | 70  |                |  | < 0.5 x ØD1 | 1 x ØD1    |
| <b>M</b> | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | <b>70</b>  | 90  |                |  | < 0.8 x ØD1 | 1 x ØD1    |
| <b>M</b> | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | <b>40</b>  | 70  |                |  | < 0.8 x ØD1 | 1 x ØD1    |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | <b>70</b>  | 100 | <b>90</b>  | 110 |                |  | < 1 x ØD1   | 1 x ØD1    |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | <b>40</b>  | 70  | <b>70</b>  | 90  |                |  | < 0.6 x ØD1 | 1 x ØD1    |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | <b>70</b>  | 100 | <b>90</b>  | 110 |                |  | < 0.6 x ØD1 | 1 x ØD1    |
| <b>S</b> | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |     | <b>25</b>  | 35  |                |  | < 0.4 x ØD1 | 1 x ØD1    |
| <b>S</b> | 純鈦/鈦合金               |                              | <b>30</b>  | 45  |            |     |                |  | < 0.5 x ØD1 | 1 x ØD1    |
| <b>N</b> | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | <b>140</b> | 160 |            |     |                |  | < 1 x ØD1   | 1 x ØD1    |
| <b>N</b> | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | <b>120</b> | 140 | <b>170</b> | 190 |                |  | < 0.7 x ØD1 | 1 x ØD1    |
| <b>N</b> | 鋁合金                  | Si < 8%                      | <b>180</b> | 260 | <b>230</b> | 340 |                |  | < 1.2 x ØD1 | 1 x ØD1    |
| <b>N</b> | 鑄鋁材質                 | Si > 8%                      | <b>140</b> | 160 | <b>210</b> | 230 |                |  | < 0.9 x ØD1 | 1 x ØD1    |
| <b>N</b> | 石墨                   |                              |            |     |            |     | <b>200</b> 300 |  | < 1 x ØD1   | 1 x ØD1    |
| <b>N</b> | 塑料                   |                              | <b>240</b> | 260 | <b>300</b> | 340 |                |  | < 1.2 x ØD1 | 1 x ØD1    |
| <b>N</b> | 金，銀                  |                              | <b>140</b> | 160 | <b>200</b> | 220 |                |  | < 0.9 x ØD1 | 1 x ØD1    |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n [\text{tr/min}] = \frac{V_c [\text{m/min}] \times 1000}{\pi \times D_1 [\text{mm}]}$$

$$V_f [\text{mm/min}] = n [\text{tr/min}] \times f_z [\text{mm}] \times Z$$

每刃進給

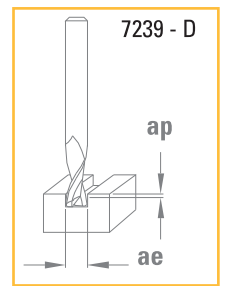
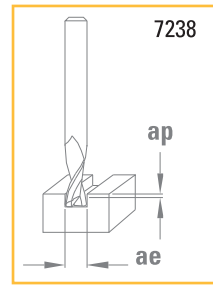
$f_z [\text{mm}]$

| $\emptyset D_1$<br>0.04 - 0.50 | $\emptyset D_1$<br>0.50 - 1.00 | $\emptyset D_1$<br>1.00 - 1.50 | $\emptyset D_1$<br>1.50 - 3.00 | $\emptyset D_1$<br>3.00 - 5.00 | $\emptyset D_1$<br>5.00 - 7.00 | $\emptyset D_1$<br>7.00 - 10.00 | $\emptyset D_1$<br>10.00 - 13.00 | $\emptyset D_1$<br>13.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |
| 0.002 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.002 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.002 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
|                                |                                | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.002 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.12                      | 0.06 - 0.13                      | 0.07 - 0.14                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.05 - 0.21                      | 0.10 - 0.24                      | 0.11 - 0.30                      |
| 0.003 - 0.01                   | 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     | 0.06 - 0.14                      | 0.07 - 0.16                      | 0.08 - 0.20                      |

根據加工材質，兩刃立銑刀(Z = 2)插銑的進給速度(V<sub>fp</sub>)必須減少40%至80%。



## 切削條件



## 加工材質

|   |                      |                              | 無鍍層        |            | TiAlN      |            | ap<br>[mm]   | ae<br>[mm] | ap<br>[mm]   | ae<br>[mm] |
|---|----------------------|------------------------------|------------|------------|------------|------------|--------------|------------|--------------|------------|
|   |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min] | Vc [m/min] |              |            |              |            |
| P | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 70         | 100        | 90         | 110        | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| P | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |            | 70         | 90         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| P | 含鉛快削鋼                |                              | 70         | 100        |            |            | < 0.12x ØD1  | 1 x ØD1    | < 0.06 x ØD1 | 1 x ØD1    |
| P | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |            | 40         | 70         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| M | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |            | 70         | 90         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| M | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |            | 40         | 70         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| K | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 70         | 100        | 90         | 110        | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| K | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 40         | 70         | 70         | 90         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| K | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 70         | 100        | 90         | 110        | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| S | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |            | 25         | 35         | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| S | 純鈦/鈦合金               |                              | 30         | 45         |            |            | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| N | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 140        | 160        |            |            | < 0.12 x ØD1 | 1 x ØD1    | < 0.06 x ØD1 | 1 x ØD1    |
| N | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 120        | 140        | 170        | 190        | < 0.1 x ØD1  | 1 x ØD1    | < 0.04 x ØD1 | 1 x ØD1    |
| N | 鋁合金                  | Si < 8%                      | 180        | 260        | 230        | 340        | < 0.12 x ØD1 | 1 x ØD1    | < 0.06 x ØD1 | 1 x ØD1    |
| N | 鑄鋁材質                 | Si > 8%                      | 140        | 160        | 210        | 230        | < 0.12 x ØD1 | 1 x ØD1    | < 0.06 x ØD1 | 1 x ØD1    |
| N | 塑料                   |                              | 240        | 260        | 300        | 340        | < 0.15 x ØD1 | 1 x ØD1    | < 0.10 x ØD1 | 1 x ØD1    |
| N | 金, 銀                 |                              | 140        | 160        | 200        | 220        | < 0.12 x ØD1 | 1 x ØD1    | < 0.06 x ØD1 | 1 x ØD1    |

$$D_1 \leq 0.1 \text{ mm} \Rightarrow (ap \ \& \ ae) -95 \%$$

$$D_1 \leq 0.2 \text{ mm} \Rightarrow (ap \ \& \ ae) -85 \%$$

$$D_1 \leq 0.3 \text{ mm} \Rightarrow (ap \ \& \ ae) -70 \%$$

$$D_1 \leq 0.4 \text{ mm} \Rightarrow (ap \ \& \ ae) -50 \%$$

$$D_1 \leq 0.5 \text{ mm} \Rightarrow (ap \ \& \ ae) -25 \%$$

推薦的轉數 n 和進給速度 Vf，應根據有效長度 L2 進行調整。

根據加工材質，立銑刀(Z = 2)插銑的進給速度 (Vfp) 必須減少40%至80%。

$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

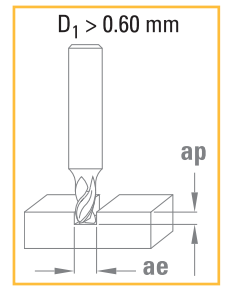
每刃進給

$f_z$  [mm]

| $\emptyset D_1$<br>0.15 - 0.30 | $\emptyset D_1$<br>0.30 - 0.40 | $\emptyset D_1$<br>0.40 - 0.60 | $\emptyset D_1$<br>0.60 - 0.90 | $\emptyset D_1$<br>0.90 - 1.20 | $\emptyset D_1$<br>1.20 - 1.50 | $\emptyset D_1$<br>1.50 - 1.80 | $\emptyset D_1$<br>1.80 - 2.10 | $\emptyset D_1$<br>2.10 - 2.50 | $\emptyset D_1$<br>2.50 - 3.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.0003 - 0.001                 | 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.0003 - 0.001                 | 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
|                                |                                | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |
| 0.002 - 0.003                  | 0.002 - 0.004                  | 0.003 - 0.01                   | 0.008 - 0.012                  | 0.010 - 0.015                  | 0.012 - 0.016                  | 0.013 - 0.02                   | 0.015 - 0.022                  | 0.02 - 0.025                   | 0.022 - 0.04                   |



## 切削條件



## 加工材質

|          |                      |                              | 無鍍層        |            | TiAlN      |            | ap<br>[mm]  | ae<br>[mm] |
|----------|----------------------|------------------------------|------------|------------|------------|------------|-------------|------------|
|          |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min] | Vc [m/min] |             |            |
| <b>P</b> | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 70         | 100        | 90         | 110        | < 1 x ØD1   | 1 x ØD1    |
| <b>P</b> | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> | 50         | 80         | 70         | 90         | < 0.6 x ØD1 | 1 x ØD1    |
| <b>P</b> | 含鉛快削鋼                |                              | 70         | 100        |            |            | < 1 x ØD1   | 1 x ØD1    |
| <b>P</b> | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |            | 40         | 70         | < 0.5 x ØD1 | 1 x ØD1    |
| <b>M</b> | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  | 40         | 60         | 70         | 90         | < 0.8 x ØD1 | 1 x ØD1    |
| <b>M</b> | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |            | 40         | 70         | < 0.5 x ØD1 | 1 x ØD1    |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 70         | 100        | 90         | 110        | < 1 x ØD1   | 1 x ØD1    |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 40         | 70         | 70         | 90         | < 0.6 x ØD1 | 1 x ØD1    |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 70         | 100        | 90         | 110        | < 0.6 x ØD1 | 1 x ØD1    |
| <b>S</b> | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            |            | 25         | 35         | < 0.4 x ØD1 | 1 x ØD1    |
| <b>S</b> | 純鈦/鈦合金               |                              | 30         | 45         |            |            | < 0.5 x ØD1 | 1 x ØD1    |
| <b>N</b> | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 140        | 160        |            |            | < 1 x ØD1   | 1 x ØD1    |
| <b>N</b> | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 120        | 140        | 170        | 190        | < 0.7 x ØD1 | 1 x ØD1    |
| <b>N</b> | 鋁合金                  | Si < 8%                      | 180        | 260        | 230        | 340        | < 1.2 x ØD1 | 1 x ØD1    |
| <b>N</b> | 鑄鋁材質                 | Si > 8%                      | 140        | 160        | 210        | 230        | < 0.9 x ØD1 | 1 x ØD1    |
| <b>N</b> | 石墨                   |                              | 140        | 160        | 200        | 220        | < 0.9 x ØD1 | 1 x ØD1    |
| <b>N</b> | 塑料                   |                              | 240        | 260        | 300        | 340        | < 1.2 x ØD1 | 1 x ØD1    |
| <b>N</b> | 金，銀                  |                              | 140        | 160        | 200        | 220        | < 0.9 x ØD1 | 1 x ØD1    |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (ap \ \& \ ae) - 95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (ap \ \& \ ae) - 85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (ap \ \& \ ae) - 70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (ap \ \& \ ae) - 50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (ap \ \& \ ae) - 25 \%$

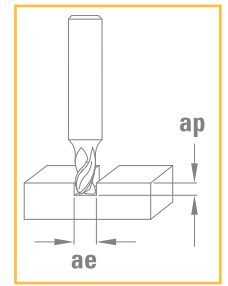
$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.30 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 7.00 | Ø D <sub>1</sub><br>7.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 14.00 | Ø D <sub>1</sub><br>14.00 - 16.00 | Ø D <sub>1</sub><br>16.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.14                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
|                                 | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.11                      | 0.05 - 0.11                       | 0.06 - 0.12                       | 0.07 - 0.13                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.005 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.21                       | 0.10 - 0.24                       | 0.11 - 0.30                       |  |
| 0.006 - 0.015                   | 0.005 - 0.020                   | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |





## 切削條件 - 開槽

### 加工材質

### CUTINOX

|          |            |                              | Vc [m/min]     | ap [mm]     |
|----------|------------|------------------------------|----------------|-------------|
| <b>P</b> | 非合金鋼/低合金鋼  | < 600 N/mm <sup>2</sup>      | <b>100</b> 170 | < 1 x ØD1   |
| <b>P</b> | 非合金鋼/低合金鋼  | 600 – 1500 N/mm <sup>2</sup> | <b>90</b> 150  | < 1 x ØD1   |
| <b>P</b> | 含鉛快削鋼      |                              | <b>120</b> 180 | < 1 x ØD1   |
| <b>P</b> | 高合金鋼       | 700 – 1500 N/mm <sup>2</sup> | <b>50</b> 90   | < 0.7 x ØD1 |
| <b>M</b> | 不銹鋼        | 400 – 700 N/mm <sup>2</sup>  | <b>60</b> 95   | < 1 x ØD1   |
| <b>M</b> | 雙相不銹鋼      | > 800 N/mm <sup>2</sup>      | <b>50</b> 90   | < 0.7 x ØD1 |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵   | < 250 HB                     | <b>140</b> 180 | < 1 x ØD1   |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵  | > 250 HB                     | <b>110</b> 150 | < 1 x ØD1   |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵 |                              | <b>100</b> 140 | < 1 x ØD1   |
| <b>S</b> | 特殊合金/耐熱不銹鋼 | 英高鎳/鎳基合金/哈氏合金                | <b>20</b> 40   | < 1 x ØD1   |
| <b>S</b> | 純鈦/鈦合金     |                              | <b>40</b> 70   | < 0.3 x ØD1 |

上述切削條件基於油性切削油潤滑。

對於高合金鋼 (> 12% 鉻)，不銹鋼，鈦合金，使用乳化液時切削速度應降低20%。

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

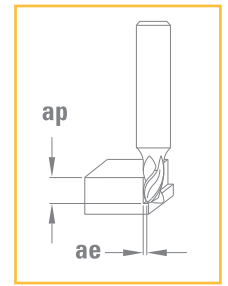
$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給

fz [mm]

| Ø D <sub>1</sub><br>3.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |
|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| 0.010 - 0.017                   | 0.013 - 0.035                   | 0.020 - 0.055                   | 0.023 - 0.070                    | 0.029 - 0.080                     | 0.035 - 0.090                     |
| 0.009 - 0.015                   | 0.012 - 0.030                   | 0.017 - 0.045                   | 0.020 - 0.060                    | 0.025 - 0.070                     | 0.030 - 0.080                     |
| 0.013 - 0.023                   | 0.017 - 0.045                   | 0.026 - 0.068                   | 0.030 - 0.090                    | 0.038 - 0.105                     | 0.045 - 0.120                     |
| 0.007 - 0.013                   | 0.010 - 0.025                   | 0.015 - 0.040                   | 0.017 - 0.050                    | 0.021 - 0.060                     | 0.026 - 0.070                     |
| 0.009 - 0.015                   | 0.012 - 0.030                   | 0.017 - 0.045                   | 0.020 - 0.060                    | 0.025 - 0.070                     | 0.030 - 0.080                     |
| 0.007 - 0.013                   | 0.010 - 0.025                   | 0.015 - 0.040                   | 0.017 - 0.050                    | 0.021 - 0.060                     | 0.026 - 0.070                     |
| 0.013 - 0.023                   | 0.017 - 0.045                   | 0.026 - 0.068                   | 0.030 - 0.090                    | 0.038 - 0.105                     | 0.045 - 0.120                     |
| 0.012 - 0.020                   | 0.016 - 0.040                   | 0.023 - 0.060                   | 0.027 - 0.080                    | 0.034 - 0.095                     | 0.041 - 0.110                     |
| 0.012 - 0.020                   | 0.016 - 0.040                   | 0.023 - 0.060                   | 0.027 - 0.080                    | 0.034 - 0.095                     | 0.041 - 0.110                     |
| 0.004 - 0.010                   | 0.005 - 0.013                   | 0.007 - 0.020                   | 0.010 - 0.023                    | 0.013 - 0.026                     | 0.013 - 0.033                     |
| 0.010 - 0.017                   | 0.013 - 0.035                   | 0.020 - 0.055                   | 0.023 - 0.070                    | 0.029 - 0.080                     | 0.035 - 0.090                     |





## 切削條件 - 側銑

## 加工材質

## CUTINOX

|          |            |                              | Vc [m/min]     |  | ap<br>[mm] | ae<br>[mm]  |
|----------|------------|------------------------------|----------------|--|------------|-------------|
| <b>P</b> | 非合金鋼/低合金鋼  | < 600 N/mm <sup>2</sup>      | <b>160</b> 200 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>P</b> | 非合金鋼/低合金鋼  | 600 – 1500 N/mm <sup>2</sup> | <b>130</b> 170 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>P</b> | 含鉛快削鋼      |                              | <b>160</b> 200 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>P</b> | 高合金鋼       | 700 – 1500 N/mm <sup>2</sup> | <b>70</b> 100  |  | < 1 x ØD1  | < 0.5 x ØD1 |
| <b>M</b> | 不銹鋼        | 400 – 700 N/mm <sup>2</sup>  | <b>80</b> 110  |  | < 1 x ØD1  | < 0.5 x ØD1 |
| <b>M</b> | 雙相不銹鋼      | > 800 N/mm <sup>2</sup>      | <b>70</b> 100  |  | < 1 x ØD1  | < 0.5 x ØD1 |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵   | < 250 HB                     | <b>160</b> 200 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵  | > 250 HB                     | <b>130</b> 170 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵 |                              | <b>110</b> 150 |  | < 1 x ØD1  | < 0.6 x ØD1 |
| <b>S</b> | 特殊合金/耐熱不銹鋼 | 英高鎳/鎳基合金/哈氏合金                | <b>20</b> 50   |  | < 1 x ØD1  | < 0.3 x ØD1 |
| <b>S</b> | 純鈦/鈦合金     |                              | <b>40</b> 70   |  | < 1 x ØD1  | < 0.6 x ØD1 |

上述切削條件基於油性切削油潤滑。

對於高合金鋼 (> 12% 鉻)，不銹鋼，鈦合金，使用乳化液時切削速度應降低20%。

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

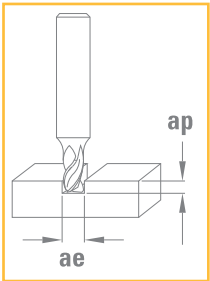
每刃進給

fz [mm]

| Ø D <sub>1</sub><br>3.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |
|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| 0.019 - 0.045                   | 0.029 - 0.070                   | 0.040 - 0.100                   | 0.052 - 0.115                    | 0.057 - 0.130                     | 0.063 - 0.155                     |
| 0.017 - 0.040                   | 0.023 - 0.065                   | 0.035 - 0.085                   | 0.046 - 0.105                    | 0.052 - 0.115                     | 0.058 - 0.135                     |
| 0.029 - 0.065                   | 0.035 - 0.100                   | 0.052 - 0.130                   | 0.069 - 0.155                    | 0.081 - 0.175                     | 0.086 - 0.210                     |
| 0.014 - 0.035                   | 0.017 - 0.050                   | 0.029 - 0.070                   | 0.040 - 0.085                    | 0.046 - 0.090                     | 0.052 - 0.110                     |
| 0.017 - 0.040                   | 0.023 - 0.065                   | 0.035 - 0.085                   | 0.046 - 0.105                    | 0.052 - 0.115                     | 0.058 - 0.135                     |
| 0.014 - 0.035                   | 0.017 - 0.050                   | 0.029 - 0.070                   | 0.040 - 0.085                    | 0.046 - 0.090                     | 0.052 - 0.110                     |
| 0.029 - 0.065                   | 0.035 - 0.100                   | 0.052 - 0.130                   | 0.069 - 0.155                    | 0.081 - 0.175                     | 0.086 - 0.210                     |
| 0.024 - 0.055                   | 0.029 - 0.085                   | 0.044 - 0.111                   | 0.059 - 0.132                    | 0.068 - 0.149                     | 0.073 - 0.179                     |
| 0.024 - 0.055                   | 0.029 - 0.085                   | 0.044 - 0.111                   | 0.059 - 0.132                    | 0.068 - 0.149                     | 0.073 - 0.179                     |
| 0.007 - 0.017                   | 0.009 - 0.025                   | 0.012 - 0.035                   | 0.017 - 0.040                    | 0.023 - 0.050                     | 0.026 - 0.060                     |
| 0.019 - 0.045                   | 0.029 - 0.070                   | 0.040 - 0.100                   | 0.052 - 0.115                    | 0.057 - 0.130                     | 0.063 - 0.155                     |



切削條件 - 開槽



| 加工材質 |            |                  | CUTINOX    |     |  | ap [mm]     |
|------|------------|------------------|------------|-----|--|-------------|
|      |            |                  | Vc [m/min] |     |  |             |
| P    | 非合金鋼/低合金鋼  | < 600 N/mm²      | 100        | 170 |  | < 1 x ØD1   |
| P    | 非合金鋼/低合金鋼  | 600 – 1500 N/mm² | 90         | 150 |  | < 1 x ØD1   |
| P    | 含鉛快削鋼      |                  | 120        | 180 |  | < 1 x ØD1   |
| P    | 高合金鋼       | 700 – 1500 N/mm² | 50         | 90  |  | < 0.7 x ØD1 |
| M    | 不銹鋼        | 400 – 700 N/mm²  | 60         | 95  |  | < 1 x ØD1   |
| M    | 雙相不銹鋼      | > 800 N/mm²      | 50         | 90  |  | < 0.7 x ØD1 |
| K    | 灰鑄鐵/球墨鑄鐵   | < 250 HB         | 140        | 180 |  | < 1 x ØD1   |
| K    | 合金鑄鐵/球墨鑄鐵  | > 250 HB         | 110        | 150 |  | < 1 x ØD1   |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵 |                  | 100        | 140 |  | < 1 x ØD1   |
| S    | 特殊合金/耐熱不銹鋼 | 英高鎳/鎳基合金/哈氏合金    | 20         | 50  |  | < 0.3 x ØD1 |
| S    | 純鈦/鈦合金     |                  | 40         | 70  |  | < 1 x ØD1   |

上述切削條件基於油性切削油潤滑。



$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

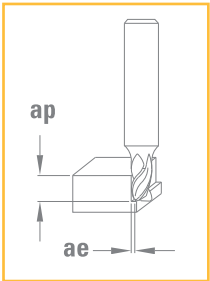
毎刃進給

**fz [mm]**

| Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 | Ø D <sub>1</sub><br>16.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.005</b> - 0.010            | <b>0.008</b> - 0.020            | <b>0.011</b> - 0.030            | <b>0.017</b> - 0.040            | <b>0.022</b> - 0.050             | <b>0.025</b> - 0.055              | <b>0.030</b> - 0.065              | <b>0.040</b> - 0.085              |  |
| <b>0.005</b> - 0.010            | <b>0.008</b> - 0.018            | <b>0.010</b> - 0.025            | <b>0.015</b> - 0.035            | <b>0.020</b> - 0.045             | <b>0.023</b> - 0.050              | <b>0.025</b> - 0.060              | <b>0.035</b> - 0.075              |  |
| <b>0.010</b> - 0.020            | <b>0.013</b> - 0.030            | <b>0.015</b> - 0.045            | <b>0.023</b> - 0.050            | <b>0.025</b> - 0.070             | <b>0.030</b> - 0.075              | <b>0.032</b> - 0.080              | <b>0.035</b> - 0.110              |  |
| <b>0.004</b> - 0.010            | <b>0.006</b> - 0.015            | <b>0.008</b> - 0.020            | <b>0.013</b> - 0.030            | <b>0.018</b> - 0.035             | <b>0.020</b> - 0.040              | <b>0.025</b> - 0.050              | <b>0.030</b> - 0.060              |  |
| <b>0.005</b> - 0.010            | <b>0.008</b> - 0.018            | <b>0.010</b> - 0.025            | <b>0.015</b> - 0.035            | <b>0.020</b> - 0.045             | <b>0.023</b> - 0.050              | <b>0.025</b> - 0.060              | <b>0.035</b> - 0.075              |  |
| <b>0.004</b> - 0.010            | <b>0.006</b> - 0.015            | <b>0.008</b> - 0.020            | <b>0.013</b> - 0.030            | <b>0.018</b> - 0.035             | <b>0.020</b> - 0.040              | <b>0.025</b> - 0.050              | <b>0.030</b> - 0.060              |  |
| <b>0.010</b> - 0.020            | <b>0.013</b> - 0.030            | <b>0.015</b> - 0.045            | <b>0.023</b> - 0.050            | <b>0.025</b> - 0.070             | <b>0.030</b> - 0.075              | <b>0.032</b> - 0.080              | <b>0.035</b> - 0.110              |  |
| <b>0.008</b> - 0.015            | <b>0.011</b> - 0.025            | <b>0.013</b> - 0.040            | <b>0.019</b> - 0.045            | <b>0.021</b> - 0.060             | <b>0.026</b> - 0.065              | <b>0.027</b> - 0.070              | <b>0.030</b> - 0.095              |  |
| <b>0.008</b> - 0.015            | <b>0.011</b> - 0.025            | <b>0.013</b> - 0.040            | <b>0.019</b> - 0.045            | <b>0.021</b> - 0.060             | <b>0.026</b> - 0.065              | <b>0.027</b> - 0.070              | <b>0.030</b> - 0.095              |  |
| <b>0.001</b> - 0.005            | <b>0.003</b> - 0.008            | <b>0.004</b> - 0.010            | <b>0.005</b> - 0.015            | <b>0.008</b> - 0.018             | <b>0.010</b> - 0.020              | <b>0.010</b> - 0.025              | <b>0.015</b> - 0.030              |  |
| <b>0.005</b> - 0.010            | <b>0.008</b> - 0.020            | <b>0.011</b> - 0.030            | <b>0.017</b> - 0.040            | <b>0.022</b> - 0.050             | <b>0.025</b> - 0.055              | <b>0.030</b> - 0.065              | <b>0.040</b> - 0.085              |  |



切削條件 - 側銑



| 加工材質 |            |                              | CUTINOX    |     | ap<br>[mm] | ae<br>[mm]  |
|------|------------|------------------------------|------------|-----|------------|-------------|
|      |            |                              | Vc [m/min] |     |            |             |
| P    | 非合金鋼/低合金鋼  | < 600 N/mm <sup>2</sup>      | 160        | 200 | < 2 x ØD1  | < 0.4 x ØD1 |
| P    | 非合金鋼/低合金鋼  | 600 – 1500 N/mm <sup>2</sup> | 130        | 170 | < 2 x ØD1  | < 0.3 x ØD1 |
| P    | 含鉛快削鋼      |                              | 160        | 200 | < 2 x ØD1  | < 0.4 x ØD1 |
| P    | 高合金鋼       | 700 – 1500 N/mm <sup>2</sup> | 70         | 100 | < 2 x ØD1  | < 0.3 x ØD1 |
| M    | 不銹鋼        | 400 – 700 N/mm <sup>2</sup>  | 80         | 110 | < 2 x ØD1  | < 0.3 x ØD1 |
| M    | 雙相不銹鋼      | > 800 N/mm <sup>2</sup>      | 70         | 100 | < 2 x ØD1  | < 0.3 x ØD1 |
| K    | 灰鑄鐵/球墨鑄鐵   | < 250 HB                     | 160        | 200 | < 2 x ØD1  | < 0.4 x ØD1 |
| K    | 合金鑄鐵/球墨鑄鐵  | > 250 HB                     | 130        | 170 | < 2 x ØD1  | < 0.4 x ØD1 |
| K    | 球墨鑄鐵/可鍛鑄鐵  |                              | 110        | 150 | < 2 x ØD1  | < 0.3 x ØD1 |
| S    | 特殊合金/耐熱不銹鋼 | 英高鎳/鎳基合金/哈氏合金                | 20         | 50  | < 2 x ØD1  | < 0.2 x ØD1 |
| S    | 純鈦/鈦合金     |                              | 40         | 70  | < 2 x ØD1  | < 0.3 x ØD1 |

切削條件為使用油性切削油潤滑。如果徑向寬度(ae) < 0.1 x 直徑(D)，則可增加切削速度(Vc)和每刃進給量(fz)25%。



$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

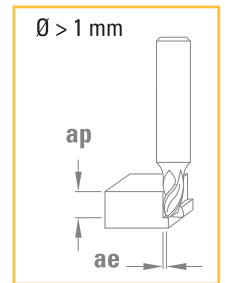
毎刃進給

**fz [mm]**

| Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 | Ø D <sub>1</sub><br>16.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.015</b> - 0.030            | <b>0.019</b> - 0.040            | <b>0.025</b> - 0.060            | <b>0.035</b> - 0.085            | <b>0.045</b> - 0.100             | <b>0.050</b> - 0.110              | <b>0.055</b> - 0.135              | <b>0.075</b> - 0.160              |  |
| <b>0.011</b> - 0.025            | <b>0.015</b> - 0.035            | <b>0.020</b> - 0.055            | <b>0.030</b> - 0.075            | <b>0.040</b> - 0.090             | <b>0.045</b> - 0.100              | <b>0.050</b> - 0.120              | <b>0.068</b> - 0.144              |  |
| <b>0.021</b> - 0.045            | <b>0.025</b> - 0.055            | <b>0.030</b> - 0.085            | <b>0.045</b> - 0.115            | <b>0.060</b> - 0.135             | <b>0.070</b> - 0.150              | <b>0.075</b> - 0.180              | <b>0.100</b> - 0.220              |  |
| <b>0.008</b> - 0.020            | <b>0.012</b> - 0.030            | <b>0.015</b> - 0.045            | <b>0.025</b> - 0.060            | <b>0.035</b> - 0.075             | <b>0.040</b> - 0.080              | <b>0.045</b> - 0.095              | <b>0.055</b> - 0.115              |  |
| <b>0.011</b> - 0.025            | <b>0.015</b> - 0.035            | <b>0.020</b> - 0.055            | <b>0.030</b> - 0.075            | <b>0.040</b> - 0.090             | <b>0.045</b> - 0.100              | <b>0.050</b> - 0.120              | <b>0.065</b> - 0.145              |  |
| <b>0.008</b> - 0.020            | <b>0.012</b> - 0.030            | <b>0.015</b> - 0.045            | <b>0.025</b> - 0.060            | <b>0.035</b> - 0.075             | <b>0.040</b> - 0.080              | <b>0.045</b> - 0.095              | <b>0.055</b> - 0.115              |  |
| <b>0.021</b> - 0.045            | <b>0.025</b> - 0.055            | <b>0.030</b> - 0.085            | <b>0.045</b> - 0.115            | <b>0.060</b> - 0.135             | <b>0.070</b> - 0.150              | <b>0.075</b> - 0.180              | <b>0.100</b> - 0.220              |  |
| <b>0.017</b> - 0.037            | <b>0.021</b> - 0.047            | <b>0.026</b> - 0.072            | <b>0.038</b> - 0.098            | <b>0.051</b> - 0.115             | <b>0.060</b> - 0.128              | <b>0.064</b> - 0.153              | <b>0.085</b> - 0.187              |  |
| <b>0.017</b> - 0.037            | <b>0.021</b> - 0.047            | <b>0.026</b> - 0.072            | <b>0.038</b> - 0.098            | <b>0.051</b> - 0.115             | <b>0.060</b> - 0.128              | <b>0.064</b> - 0.153              | <b>0.085</b> - 0.187              |  |
| <b>0.003</b> - 0.007            | <b>0.006</b> - 0.015            | <b>0.008</b> - 0.020            | <b>0.010</b> - 0.030            | <b>0.015</b> - 0.035             | <b>0.020</b> - 0.040              | <b>0.023</b> - 0.050              | <b>0.028</b> - 0.060              |  |
| <b>0.013</b> - 0.030            | <b>0.017</b> - 0.040            | <b>0.025</b> - 0.060            | <b>0.035</b> - 0.085            | <b>0.045</b> - 0.100             | <b>0.050</b> - 0.110              | <b>0.055</b> - 0.135              | <b>0.075</b> - 0.160              |  |



## 切削條件



| 加工材質 |                      |                              | 無鍍層        | TiAlN      | DIAMANT     |             |               |
|------|----------------------|------------------------------|------------|------------|-------------|-------------|---------------|
|      |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min]  | ap [mm]     | ae [mm]       |
| P    | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 70 100     | 90 110     |             | < 1 x ØD1   | < 0.3 x ØD1   |
| P    | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            | 70 90      |             | < 1 x ØD1   | < 0.2 x ØD1   |
| P    | 含鉛快削鋼                |                              | 70 100     |            |             | < 1.5 x ØD1 | < 0.3 x ØD1   |
| P    | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            | 40 55      |             | < 1 x ØD1   | < 0.2 x ØD1   |
| M    | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            | 70 90      |             | < 1 x ØD1   | < 0.3 x ØD1   |
| M    | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            | 40 55      |             | < 1 x ØD1   | < 0.2 x ØD1   |
| K    | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 70 100     | 90 110     |             | < 1 x ØD1   | < 0.3 x ØD1   |
| K    | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 40 70      | 70 90      |             | < 1 x ØD1   | < 0.3 x ØD1   |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 70 100     | 90 110     |             | < 1 x ØD1   | < 0.3 x ØD1   |
| S    | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | 30 45      |            |             | < 1 x ØD1   | < 0.3 x ØD1   |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 140 160    |            |             | < 1.5 x ØD1 | < 0.3 x ØD1   |
| N    | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 120 140    | 170 190    |             | < 1 x ØD1   | < 0.2 x ØD1   |
| N    | 鋁合金                  | Si < 8%                      | 180 220    | 230 270    |             | < 1.5 x ØD1 | < 0.3 x ØD1   |
| N    | 鑄鋁材質                 | Si > 8%                      | 140 160    | 210 230    |             | < 1.5 x ØD1 | < 0.3 x ØD1   |
| N    | 石墨                   |                              |            |            | 200 300     | < 1.5 x ØD1 | < 0.2 x ØD1   |
| N    | 塑料                   |                              | 240 260    | 300 340    | < 1.5 x ØD1 | < 0.3 x ØD1 | 0.006 - 0.015 |
| N    | 金, 銀                 |                              | 140 160    | 200 220    | < 1.5 x ØD1 | < 0.3 x ØD1 | 0.006 - 0.015 |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 25 \%$

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給

**fz [mm]**

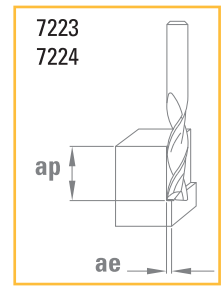
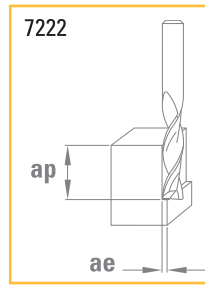
| Ø D <sub>1</sub><br>0.40 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 7.00 | Ø D <sub>1</sub><br>7.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 14.00 | Ø D <sub>1</sub><br>14.00 - 16.00 | Ø D <sub>1</sub><br>16.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.10                       | 0.06 - 0.11                       | 0.07 - 0.14                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.07                       | 0.06 - 0.08                       | 0.07 - 0.10                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.13                       | 0.06 - 0.14                       | 0.07 - 0.15                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.13                       | 0.06 - 0.14                       | 0.07 - 0.15                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.13                       | 0.06 - 0.14                       | 0.07 - 0.15                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.13                       | 0.06 - 0.14                       | 0.07 - 0.15                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.13                       | 0.06 - 0.14                       | 0.07 - 0.15                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.07                       | 0.06 - 0.08                       | 0.07 - 0.10                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.006 - 0.015                   | 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                      | 0.05 - 0.14                       | 0.07 - 0.16                       | 0.08 - 0.20                       |  |
| 0.012 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                     | 0.05 - 0.14                      | 0.07 - 0.16                       | 0.08 - 0.20                       |                                   |  |
| 0.005 - 0.02                    | 0.016 - 0.04                    | 0.02 - 0.06                     | 0.03 - 0.09                     | 0.04 - 0.12                     | 0.05 - 0.14                      | 0.07 - 0.16                       | 0.08 - 0.20                       |                                   |  |



## 切削條件

## 加工材質

|   |                      |                              | 無鍍層        |            | TiAlN      |            | ap<br>[mm] | ae<br>[mm]   | ap<br>[mm] | ae<br>[mm]   |
|---|----------------------|------------------------------|------------|------------|------------|------------|------------|--------------|------------|--------------|
|   |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min] | Vc [m/min] |            |              |            |              |
| P | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 45         | 50         | 50         | 60         | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.2 x ØD1  |
| P | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |            | 35         | 45         | 3 x ØD1    | < 0.2 x ØD1  | 3 x ØD1    | < 0.1 x ØD1  |
| P | 含鉛快削鋼                |                              | 45         | 50         |            |            | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.2 x ØD1  |
| P | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |            | 30         | 45         | 3 x ØD1    | < 0.15 x ØD1 | 3 x ØD1    | < 0.07 x ØD1 |
| M | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |            | 35         | 45         | 3 x ØD1    | < 0.2 x ØD1  | 3 x ØD1    | < 0.1 x ØD1  |
| M | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |            | 30         | 45         | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.07 x ØD1 |
| K | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 25         | 35         | 35         | 45         | 3 x ØD1    | < 0.15 x ØD1 | 3 x ØD1    | < 0.2 x ØD1  |
| K | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 25         | 35         | 35         | 45         | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.07 x ØD1 |
| K | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 25         | 35         | 35         | 45         | 3 x ØD1    | < 0.1 x ØD1  | 3 x ØD1    | < 0.2 x ØD1  |
| S | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | 15         | 25         |            |            | 3 x ØD1    | < 0.15 x ØD1 | 3 x ØD1    | < 0.03 x ØD1 |
| N | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 80         | 100        |            |            | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.2 x ØD1  |
| N | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 60         | 80         | 80         | 100        | 3 x ØD1    | < 0.3 x ØD1  | 3 x ØD1    | < 0.2 x ØD1  |
| N | 鋁合金                  | Si < 8%                      | 80         | 110        | 100        | 130        | 3 x ØD1    | < 0.4 x ØD1  | 3 x ØD1    | < 0.3 x ØD1  |
| N | 鑄鋁材質                 | Si > 8%                      | 80         | 100        | 100        | 120        | 3 x ØD1    | < 0.4 x ØD1  | 3 x ØD1    | < 0.3 x ØD1  |
| N | 塑料                   |                              | 90         | 110        | 110        | 130        | 3 x ØD1    | < 0.4 x ØD1  | 3 x ØD1    | < 0.3 x ØD1  |
| N | 金，銀                  |                              | 80         | 100        | 100        | 120        | 3 x ØD1    | < 0.4 x ØD1  | 3 x ØD1    | < 0.3 x ØD1  |



## DIXI 7222 - 7223 - 7224 DIAMANT

## 切削條件

## 加工材質

|   |    | DIAMANT    |            | ap<br>[mm] | ae<br>[mm]   |
|---|----|------------|------------|------------|--------------|
|   |    | Vc [m/min] | Vc [m/min] |            |              |
| N | 石墨 | 200        | 300        | 3 x ØD1    | < 0.30 x ØD1 |

$$n [\text{tr/min}] = \frac{V_c [\text{m/min}] \times 1000}{\pi \times D_1 [\text{mm}]}$$

$$V_f [\text{mm/min}] = n [\text{tr/min}] \times f_z [\text{mm}] \times Z$$

每刃進給

$f_z [\text{mm}]$

| $\emptyset D_1$<br>3.00 - 4.00 | $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 7.00 | $\emptyset D_1$<br>7.00 - 8.00 | $\emptyset D_1$<br>8.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 | $\emptyset D_1$<br>12.00 - 14.00 | $\emptyset D_1$<br>14.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                    | 0.02 - 0.04                      | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.008 - 0.02                   | 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.023 - 0.05                    | 0.03 - 0.06                      | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                    | 0.02 - 0.04                      | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.018 - 0.04                    | 0.02 - 0.04                      | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.008 - 0.02                   | 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.023 - 0.05                    | 0.03 - 0.06                      | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.005 - 0.01                   | 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.014 - 0.03                    | 0.02 - 0.03                      | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.008 - 0.02                   | 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.023 - 0.05                    | 0.03 - 0.06                      | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.008 - 0.02                   | 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.023 - 0.05                    | 0.03 - 0.06                      | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.011 - 0.03                   | 0.014 - 0.04                   | 0.018 - 0.05                   | 0.021 - 0.05                   | 0.025 - 0.06                   | 0.032 - 0.08                    | 0.04 - 0.09                      | 0.04 - 0.11                      | 0.05 - 0.12                      | 0.06 - 0.15                      |
| 0.008 - 0.02                   | 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.023 - 0.05                    | 0.03 - 0.06                      | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |

根據加工材質，立銑刀(Z = 2)插銑的進給速度(Vfp) 必須減少40%至80%。

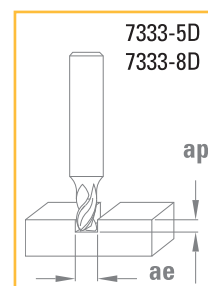
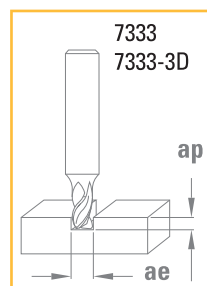
每刃進給

$f_z [\text{mm}]$

| $\emptyset D_1$<br>3.00 - 4.00 | $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 7.00 | $\emptyset D_1$<br>7.00 - 8.00 | $\emptyset D_1$<br>8.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 | $\emptyset D_1$<br>12.00 - 14.00 | $\emptyset D_1$<br>14.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.011 - 0.03                   | 0.014 - 0.04                   | 0.018 - 0.05                   | 0.021 - 0.05                   | 0.025 - 0.06                   | 0.032 - 0.08                    | 0.04 - 0.09                      | 0.04 - 0.11                      | 0.05 - 0.12                      | 0.06 - 0.15                      |



## 切削條件



加工材質

無鍍層 CUTINOX

| 加工材質 |                     |                     | 精加工        |            | 半精加工       |            | ap [mm]   | ae [mm]   | ap [mm]   | ae [mm]   |
|------|---------------------|---------------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|
|      |                     |                     | Vc [m/min] | Vc [m/min] | Vc [m/min] | Vc [m/min] |           |           |           |           |
| P    | 非合金鋼/低合金鋼           | < 600 N/mm²         | 50         | 80         | 80         | 120        | 1 x ØD1   | < 1 x ØD1 | 0.8 x ØD1 | < 1 x ØD1 |
| P    | 非合金鋼/低合金鋼           | 600 – 1500 N/mm²    | 30         | 60         | 70         | 100        | 1 x ØD1   | < 1 x ØD1 | 0.6 x ØD1 | < 1 x ØD1 |
| P    | 含鉛快削鋼               |                     | 80         | 120        | 100        | 180        | 1 x ØD1   | < 1 x ØD1 | 1 x ØD1   | < 1 x ØD1 |
| P    | 高合金鋼                | 700 – 1500 N/mm²    | 30         | 50         | 40         | 70         | 0.8 x ØD1 | < 1 x ØD1 | 0.5 x ØD1 | < 1 x ØD1 |
| M    | 不銹鋼                 | 400 – 700 N/mm²     | 40         | 60         | 60         | 90         | 0.8 x ØD1 | < 1 x ØD1 | 0.5 x ØD1 | < 1 x ØD1 |
| M    | 雙相不銹鋼               | > 800 N/mm²         | 20         | 40         | 30         | 60         | 0.7 x ØD1 | < 1 x ØD1 | 0.4 x ØD1 | < 1 x ØD1 |
| K    | 灰鑄鐵/球墨鑄鐵            | < 250 HB            | 100        | 150        | 150        | 200        | 1 x ØD1   | < 1 x ØD1 | 1 x ØD1   | < 1 x ØD1 |
| K    | 合金鑄鐵/球墨鑄鐵           | > 250 HB            | 50         | 80         | 60         | 100        | 1 x ØD1   | < 1 x ØD1 | 0.8 x ØD1 | < 1 x ØD1 |
| K    | 球墨鑄鐵/可鍛鑄鐵           |                     | 50         | 80         | 60         | 90         | 1 x ØD1   | < 1 x ØD1 | 0.8 x ØD1 | < 1 x ØD1 |
| S    | 特殊合金/耐熱不銹鋼          | 英高鎳/鎳基合金/哈氏合金       | 10         | 20         | 20         | 40         | 0.4 x ØD1 | < 1 x ØD1 | 0.2 x ØD1 | < 1 x ØD1 |
| S    | 純鈦/鈦合金              |                     | 30         | 60         | 40         | 70         | 1 x ØD1   | < 1 x ØD1 | 0.8 x ØD1 | < 1 x ØD1 |
| N    | 銅合金 - 易於加工（黃銅 - 青銅） |                     | 150        | 250        | 100        | 250        | 1 x ØD1   | < 1 x ØD1 | 1 x ØD1   | < 1 x ØD1 |
| N    | 銅合金 - 難以加工/鋁青銅合金    | 鋁青銅<br>（安普科耐熱耐蝕銅合金） | 80         | 150        | 80         | 150        | 1 x ØD1   | < 1 x ØD1 | 0.8 x ØD1 | < 1 x ØD1 |
| N    | 鋁合金                 | Si < 8%             | 150        | 300        | 150        | 300        | 1 x ØD1   | < 1 x ØD1 | 1 x ØD1   | < 1 x ØD1 |
| N    | 鑄鋁材質                | Si > 8%             | 100        | 150        | 150        | 250        | 1 x ØD1   | < 1 x ØD1 | 3 x ØD1   | < 1 x ØD1 |
| N    | 塑料                  |                     | 100        | 150        | 100        | 150        | 1 x ØD1   | < 1 x ØD1 | 3 x ØD1   | < 1 x ØD1 |
| N    | 金，銀                 |                     | 100        | 150        | 100        | 150        | 1 x ØD1   | < 1 x ØD1 | 1 x ØD1   | < 1 x ØD1 |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 95 \%$  $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 85 \%$  $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 70 \%$  $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 50 \%$  $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) - 25 \%$ 

推薦的轉數(n)和進給速度(Vf)，應根據有效長度(L2)進行調整。

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

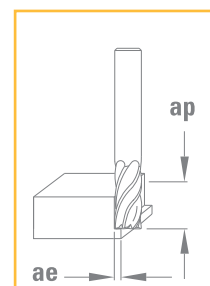
毎刃進給

**fz [mm]**

| Ø D <sub>1</sub><br>0.30 - 0.50 | Ø D <sub>1</sub><br>0.60 - 0.90 | Ø D <sub>1</sub><br>1.00 - 2.00 | Ø D <sub>1</sub><br>2.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|--|
| 0.0024 - 0.008                  | 0.0048 - 0.014                  | 0.008 - 0.028                   | 0.016 - 0.052                   | 0.031 - 0.07                    | 0.05 - 0.09                     | 0.06 - 0.10                      |  |
| 0.0022 - 0.007                  | 0.0043 - 0.012                  | 0.007 - 0.025                   | 0.014 - 0.047                   | 0.028 - 0.06                    | 0.04 - 0.08                     | 0.04 - 0.09                      |  |
| 0.0029 - 0.009                  | 0.0058 - 0.016                  | 0.010 - 0.034                   | 0.019 - 0.062                   | 0.037 - 0.09                    | 0.06 - 0.11                     | 0.07 - 0.12                      |  |
| 0.0019 - 0.006                  | 0.0038 - 0.011                  | 0.006 - 0.022                   | 0.013 - 0.042                   | 0.025 - 0.06                    | 0.04 - 0.07                     | 0.05 - 0.08                      |  |
| 0.0019 - 0.006                  | 0.0038 - 0.011                  | 0.006 - 0.022                   | 0.013 - 0.042                   | 0.025 - 0.06                    | 0.04 - 0.07                     | 0.05 - 0.08                      |  |
| 0.0017 - 0.005                  | 0.0034 - 0.009                  | 0.006 - 0.020                   | 0.011 - 0.036                   | 0.022 - 0.05                    | 0.03 - 0.06                     | 0.04 - 0.07                      |  |
| 0.003 - 0.009                   | 0.006 - 0.017                   | 0.010 - 0.035                   | 0.02 - 0.065                    | 0.039 - 0.09                    | 0.06 - 0.11                     | 0.08 - 0.13                      |  |
| 0.0024 - 0.008                  | 0.0048 - 0.014                  | 0.008 - 0.028                   | 0.016 - 0.052                   | 0.031 - 0.07                    | 0.05 - 0.09                     | 0.06 - 0.10                      |  |
| 0.0024 - 0.008                  | 0.0048 - 0.014                  | 0.008 - 0.028                   | 0.016 - 0.052                   | 0.031 - 0.07                    | 0.05 - 0.09                     | 0.06 - 0.10                      |  |
| 0.0012 - 0.004                  | 0.0024 - 0.007                  | 0.004 - 0.014                   | 0.008 - 0.026                   | 0.016 - 0.04                    | 0.02 - 0.04                     | 0.03 - 0.05                      |  |
| 0.0024 - 0.008                  | 0.0048 - 0.014                  | 0.008 - 0.028                   | 0.016 - 0.052                   | 0.031 - 0.07                    | 0.05 - 0.09                     | 0.06 - 0.10                      |  |
| 0.003 - 0.009                   | 0.006 - 0.017                   | 0.010 - 0.035                   | 0.02 - 0.065                    | 0.039 - 0.09                    | 0.06 - 0.11                     | 0.08 - 0.13                      |  |
| 0.0034 - 0.011                  | 0.0067 - 0.019                  | 0.011 - 0.039                   | 0.022 - 0.073                   | 0.044 - 0.10                    | 0.06 - 0.12                     | 0.09 - 0.14                      |  |
| 0.0034 - 0.011                  | 0.0067 - 0.019                  | 0.011 - 0.039                   | 0.022 - 0.073                   | 0.044 - 0.10                    | 0.06 - 0.12                     | 0.09 - 0.14                      |  |
| 0.0031 - 0.010                  | 0.0062 - 0.018                  | 0.010 - 0.036                   | 0.021 - 0.068                   | 0.041 - 0.09                    | 0.04 - 0.11                     | 0.08 - 0.13                      |  |
| 0.0034 - 0.011                  | 0.0067 - 0.019                  | 0.011 - 0.039                   | 0.022 - 0.073                   | 0.044 - 0.10                    | 0.06 - 0.12                     | 0.09 - 0.14                      |  |
| 0.0031 - 0.010                  | 0.0062 - 0.018                  | 0.010 - 0.036                   | 0.021 - 0.068                   | 0.041 - 0.09                    | 0.04 - 0.11                     | 0.08 - 0.13                      |  |



## 切削條件



| 加工材質     |                      |                              | 無鍍層        | TiAlN      | DLC        |  | ap<br>[mm] | ae<br>[mm]   |
|----------|----------------------|------------------------------|------------|------------|------------|--|------------|--------------|
|          |                      |                              | Vc [m/min] | Vc [m/min] | Vc [m/min] |  |            |              |
| <b>P</b> | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      | 90 110     | 110 130    |            |  | 1.5 x ØD1  | < 0.1 x ØD1  |
| <b>P</b> | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            | 80 100     |            |  | 1.5 x ØD1  | < 0.1 x ØD1  |
| <b>P</b> | 含鉛快削鋼                |                              | 80 110     |            |            |  | 1.5 x ØD1  | < 0.3 x ØD1  |
| <b>P</b> | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            | 60 80      |            |  | 1.5 x ØD1  | < 0.05 x ØD1 |
| <b>M</b> | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            | 80 100     |            |  | 1.5 x ØD1  | < 0.05 x ØD1 |
| <b>M</b> | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            | 60 80      |            |  | 1.5 x ØD1  | < 0.05 x ØD1 |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 80 110     | 110 140    |            |  | 1.5 x ØD1  | < 0.2 x ØD1  |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 50 70      | 80 100     |            |  | 1.5 x ØD1  | < 0.05 x ØD1 |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 80 110     | 110 130    |            |  | 1.5 x ØD1  | < 0.1 x ØD1  |
| <b>S</b> | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                |            | 35 50      |            |  | 1.5 x ØD1  | < 0.05 x ØD1 |
| <b>S</b> | 純鈦/鈦合金               |                              | 40 55      |            | 50 80      |  | 1.5 x ØD1  | < 0.1 x ØD1  |
| <b>N</b> | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 160 200    |            | 200 300    |  | 1.5 x ØD1  | < 0.3 x ØD1  |
| <b>N</b> | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 140 160    | 170 220    | 200 270    |  | 1.5 x ØD1  | < 0.1 x ØD1  |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

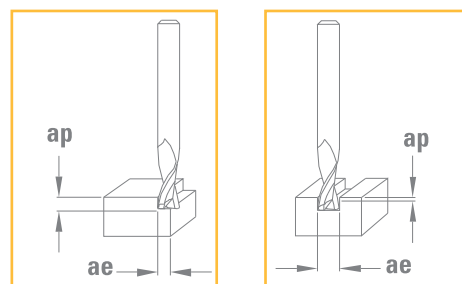
每刃進給

$f_z$  [mm]

| $\emptyset D_1$<br>0.35 - 1.90<br>(Z = 3) | $\emptyset D_1$<br>2.00 - 3.00<br>(Z = 5) | $\emptyset D_1$<br>3.00 - 5.00<br>(Z = 5) | $\emptyset D_1$<br>5.00 - 8.00<br>(Z = 5) | $\emptyset D_1$<br>8.00 - 10.00<br>(Z = 6) | $\emptyset D_1$<br>10.00 - 14.00<br>(Z = 6) | $\emptyset D_1$<br>14.00 - 16.00<br>(Z = 6) | $\emptyset D_1$<br>16.00 - 20.00<br>(Z = 6) |  |
|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--|
| 0.0021 - 0.03                             | 0.012 - 0.05                              | 0.02 - 0.08                               | 0.03 - 0.12                               | 0.04 - 0.13                                | 0.05 - 0.17                                 | 0.07 - 0.18                                 | 0.07 - 0.20                                 |  |
| 0.0019 - 0.03                             | 0.011 - 0.04                              | 0.02 - 0.07                               | 0.02 - 0.11                               | 0.04 - 0.12                                | 0.05 - 0.15                                 | 0.06 - 0.16                                 | 0.06 - 0.18                                 |  |
| 0.0025 - 0.03                             | 0.014 - 0.05                              | 0.02 - 0.09                               | 0.03 - 0.14                               | 0.05 - 0.16                                | 0.06 - 0.20                                 | 0.08 - 0.21                                 | 0.09 - 0.24                                 |  |
| 0.0017 - 0.02                             | 0.010 - 0.04                              | 0.01 - 0.06                               | 0.02 - 0.10                               | 0.03 - 0.10                                | 0.04 - 0.13                                 | 0.05 - 0.14                                 | 0.06 - 0.16                                 |  |
| 0.0017 - 0.02                             | 0.010 - 0.04                              | 0.01 - 0.06                               | 0.02 - 0.10                               | 0.03 - 0.10                                | 0.04 - 0.13                                 | 0.05 - 0.14                                 | 0.06 - 0.16                                 |  |
| 0.0015 - 0.02                             | 0.008 - 0.03                              | 0.01 - 0.05                               | 0.02 - 0.08                               | 0.03 - 0.09                                | 0.04 - 0.12                                 | 0.05 - 0.12                                 | 0.05 - 0.14                                 |  |
| 0.0026 - 0.04                             | 0.015 - 0.06                              | 0.02 - 0.09                               | 0.03 - 0.15                               | 0.05 - 0.16                                | 0.06 - 0.21                                 | 0.08 - 0.22                                 | 0.09 - 0.25                                 |  |
| 0.0021 - 0.03                             | 0.012 - 0.05                              | 0.02 - 0.08                               | 0.03 - 0.12                               | 0.04 - 0.13                                | 0.05 - 0.17                                 | 0.07 - 0.18                                 | 0.07 - 0.20                                 |  |
| 0.0021 - 0.03                             | 0.012 - 0.05                              | 0.02 - 0.08                               | 0.03 - 0.12                               | 0.04 - 0.13                                | 0.05 - 0.17                                 | 0.07 - 0.18                                 | 0.07 - 0.20                                 |  |
| 0.0011 - 0.01                             | 0.006 - 0.02                              | 0.01 - 0.04                               | 0.01 - 0.06                               | 0.02 - 0.07                                | 0.03 - 0.08                                 | 0.03 - 0.09                                 | 0.04 - 0.10                                 |  |
| 0.0021 - 0.03                             | 0.012 - 0.05                              | 0.02 - 0.08                               | 0.03 - 0.12                               | 0.04 - 0.13                                | 0.05 - 0.17                                 | 0.07 - 0.18                                 | 0.07 - 0.20                                 |  |
| 0.0026 - 0.04                             | 0.015 - 0.06                              | 0.02 - 0.09                               | 0.03 - 0.15                               | 0.05 - 0.16                                | 0.06 - 0.21                                 | 0.08 - 0.22                                 | 0.09 - 0.25                                 |  |
| 0.0029 - 0.04                             | 0.017 - 0.06                              | 0.03 - 0.11                               | 0.04 - 0.17                               | 0.06 - 0.18                                | 0.07 - 0.24                                 | 0.09 - 0.25                                 | 0.10 - 0.28                                 |  |



## 切削條件

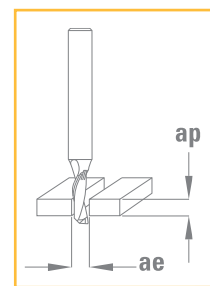


## 加工材質

| 加工材質 |                                  |                              | 無鍍層        |     | CUTINOX    |     | ae        |           | ae          |             |
|------|----------------------------------|------------------------------|------------|-----|------------|-----|-----------|-----------|-------------|-------------|
|      |                                  |                              | Vc [m/min] |     | Vc [m/min] |     | ap [mm]   | ae [mm]   | ap [mm]     | ae [mm]     |
| P    | 非合金鋼/低合金鋼                        | < 600 N/mm <sup>2</sup>      | 70         | 100 | 100        | 120 | 1.5 x ØD1 | 0.5 x ØD1 | < 1.3 x ØD1 | 1 x ØD1     |
| P    | 非合金鋼/低合金鋼                        | 600 – 1500 N/mm <sup>2</sup> |            |     | 80         | 100 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| P    | 含鉛快削鋼                            |                              | 70         | 100 |            |     | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| P    | 高合金鋼                             | 700 – 1500 N/mm <sup>2</sup> |            |     | 50         | 70  | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| M    | 不銹鋼                              | 400 – 700 N/mm <sup>2</sup>  |            |     | 80         | 100 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| K    | 灰鑄鐵/球墨鑄鐵                         | < 250 HB                     | 70         | 100 | 100        | 120 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| K    | 合金鑄鐵/球墨鑄鐵                        | > 250 HB                     | 40         | 70  | 80         | 100 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵                       |                              | 70         | 100 | 100        | 120 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| S    | 純鈦/鈦合金                           |                              | 30         | 45  |            |     | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| N    | 銅合金 - 易於加工（黃銅 - 青銅）              |                              | 160        | 180 | 220        | 240 | 1 x ØD1   | 1 x ØD1   | < 1.5 x ØD1 | 0.5 x ØD1   |
| N    | 銅合金 - 難以加工/鋁青銅合金<br>（安普科耐熱耐蝕銅合金） | 鋁青銅<br>（安普科耐熱耐蝕銅合金）          | 100        | 130 | 120        | 150 | 1 x ØD1   | 1 x ØD1   | < 1.5 x ØD1 | 0.5 x ØD1   |
| N    | 鋁合金                              | Si < 8%                      | 130        | 250 | 200        | 300 | 1.5 x ØD1 | 0.5 x ØD1 | < 1 x ØD1   | 1 x ØD1     |
| N    | 金，銀                              |                              | 140        | 160 | 200        | 220 | < 1 x ØD1 | 1 x ØD1   | < 1.5 x ØD1 | < 0.5 x ØD1 |

## DIXI 7301 - 7302 - 7303 - 7311

## 切削條件



## 加工材質

|   |    |  | 無鍍層        |     | ap<br>[mm]  | ae<br>[mm] |
|---|----|--|------------|-----|-------------|------------|
|   |    |  | Vc [m/min] |     |             |            |
| N | 塑膠 |  | 130        | 200 | < 1.5 x ØD1 | 1 x ØD1    |

根據加工材質，立銑刀(Z = 1)插銑的進給速度(Vfp)必須減少40%至80%。

$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

每刃進給

$f_z$  [mm]

| $\emptyset D_1$<br>3.00 - 4.00 | $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 7.00 | $\emptyset D_1$<br>7.00 - 8.00 | $\emptyset D_1$<br>8.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 |  |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|--|
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.02 - 0.03                    | 0.025 - 0.04                   | 0.028 - 0.045                  | 0.032 - 0.05                   | 0.035 - 0.06                   | 0.04 - 0.08                     | 0.06 - 0.10                      |  |
| 0.03 - 0.04                    | 0.04 - 0.06                    | 0.05 - 0.08                    | 0.06 - 0.09                    | 0.07 - 0.1                     | 0.08 - 0.11                     | 0.09 - 0.12                      |  |
| 0.01 - 0.03                    | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     |  |

每刃進給

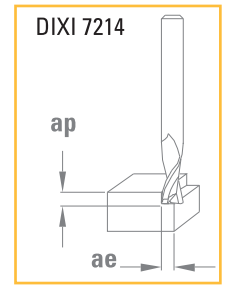
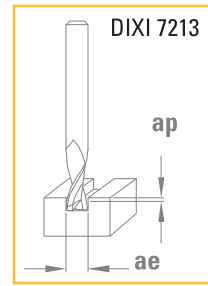
$f_z$  [mm]

| $\emptyset D_1$<br>2.00 - 2.50 | $\emptyset D_1$<br>2.50 - 3.00 | $\emptyset D_1$<br>3.00 - 4.00 | $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 8.00 | $\emptyset D_1$<br>8.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 |  |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|--|
| 0.020 - 0.05                   | 0.025 - 0.06                   | 0.03 - 0.08                    | 0.04 - 0.10                    | 0.05 - 0.12                    | 0.06 - 0.16                    | 0.08 - 0.20                     | 0.10 - 0.28                      |  |



## DIXI 7213 - 7214

### 切削條件



#### 加工材質

#### 無鍍層

#### TiAlN

|   |                                  |                     | Vc [m/min] | Vc [m/min] | ap [mm] | ae [mm] | ap [mm]     | ae [mm] |             |             |
|---|----------------------------------|---------------------|------------|------------|---------|---------|-------------|---------|-------------|-------------|
| P | 非合金鋼/低合金鋼                        | < 600 N/mm²         | 70         | 100        | 90      | 110     | < 1 x ØD1   | 1 x ØD1 | < 1 x ØD1   | < 0.5 x ØD1 |
| P | 非合金鋼/低合金鋼                        | 600 – 1500 N/mm²    |            |            | 70      | 90      | < 0.5 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.3 x ØD1 |
| P | 含鉛快削鋼                            |                     | 70         | 100        |         |         | < 1 x ØD1   | 1 x ØD1 | < 1.5 x ØD1 | < 0.5 x ØD1 |
| P | 高合金鋼                             | 700 – 1500 N/mm²    |            |            | 40      | 60      | < 0.5 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.3 x ØD1 |
| M | 不銹鋼                              | 400 – 700 N/mm²     |            |            | 80      | 100     | < 0.5 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.3 x ØD1 |
| K | 灰鑄鐵/球墨鑄鐵                         | < 250 HB            | 70         | 100        | 90      | 110     | < 1 x ØD1   | 1 x ØD1 | < 1 x ØD1   | < 0.5 x ØD1 |
| K | 合金鑄鐵/球墨鑄鐵                        | > 250 HB            | 40         | 70         | 70      | 90      | < 0.4 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.4 x ØD1 |
| K | 肥粒鐵鑄鐵/可鍛鑄鐵                       |                     | 70         | 100        | 90      | 110     | < 0.4 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.4 x ØD1 |
| S | 純鈦/鈦合金                           |                     | 30         | 45         |         |         | < 0.5 x ØD1 | 1 x ØD1 | < 1 x ØD1   | < 0.3 x ØD1 |
| N | 銅合金 - 易於加工（黃銅 - 青銅）              |                     | 140        | 160        |         |         | < 2 x ØD1   | 1 x ØD1 | < 1.5 x ØD1 | < 0.5 x ØD1 |
| N | 銅合金 - 難以加工/鋁青銅合金<br>（安普科耐熱耐蝕銅合金） | 鋁青銅<br>（安普科耐熱耐蝕銅合金） | 120        | 140        | 170     | 190     | < 1 x ØD1   | 1 x ØD1 | < 1 x ØD1   | < 0.3 x ØD1 |
| N | 鋁合金                              | Si < 8%             | 180        | 260        | 230     | 340     | < 2 x ØD1   | 1 x ØD1 | < 1.5 x ØD1 | < 0.5 x ØD1 |
| N | 鑄鋁材質                             | Si > 8%             | 140        | 160        | 210     | 230     | < 2 x ØD1   | 1 x ØD1 | < 1.5 x ØD1 | < 0.5 x ØD1 |
| N | 金，銀                              |                     | 140        | 160        | 200     | 220     | < 1 x ØD1   | 1 x ØD1 | < 1.5 x ØD1 | < 0.5 x ØD1 |

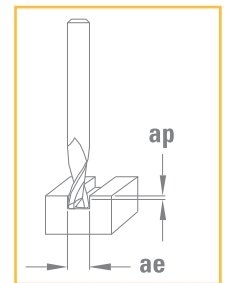
## DIXI 7060 - 7063 - 7232

### 切削條件

#### 加工材質

#### 無鍍層

|   |                     |          | Vc [m/min] | ap [mm]     | ae [mm] |
|---|---------------------|----------|------------|-------------|---------|
| K | 灰鑄鐵/球墨鑄鐵            | < 250 HB | 100 150    | < 1 x ØD1   | 1 x ØD1 |
| N | 銅合金 - 易於加工（黃銅 - 青銅） |          | 140 160    | < 1 x ØD1   | 1 x ØD1 |
| N | 塑膠                  |          | 140 160    | < 0.9 x ØD1 | 1 x ØD1 |
| N | 金，銀                 |          | 240 260    | < 1.2 x ØD1 | 1 x ØD1 |
| N | 鋁合金                 | Si < 8%  | 240 300    | < 1.2 x ØD1 | 1 x ØD1 |



$$n [\text{tr/min}] = \frac{V_c [\text{m/min}] \times 1000}{\pi \times D_1 [\text{mm}]}$$

$$V_f [\text{mm/min}] = n [\text{tr/min}] \times f_z [\text{mm}] \times Z$$

毎刃進給

$f_z [\text{mm}]$

| $\emptyset D_1$<br>4.00 - 5.00 | $\emptyset D_1$<br>5.00 - 6.00 | $\emptyset D_1$<br>6.00 - 7.00 | $\emptyset D_1$<br>7.00 - 8.00 | $\emptyset D_1$<br>8.00 - 9.00 | $\emptyset D_1$<br>9.00 - 10.00 | $\emptyset D_1$<br>10.00 - 12.00 | $\emptyset D_1$<br>12.00 - 14.00 | $\emptyset D_1$<br>14.00 - 16.00 | $\emptyset D_1$<br>16.00 - 20.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.016 - 0.03                   | 0.018 - 0.04                    | 0.020 - 0.04                     | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.016 - 0.03                   | 0.018 - 0.04                    | 0.020 - 0.04                     | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.008 - 0.02                   | 0.010 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                   | 0.016 - 0.03                   | 0.018 - 0.04                    | 0.020 - 0.04                     | 0.02 - 0.05                      | 0.03 - 0.06                      | 0.03 - 0.07                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.006 - 0.01                   | 0.008 - 0.02                   | 0.009 - 0.02                   | 0.011 - 0.02                   | 0.012 - 0.02                   | 0.014 - 0.03                    | 0.015 - 0.03                     | 0.02 - 0.04                      | 0.02 - 0.04                      | 0.02 - 0.05                      |
| 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |
| 0.010 - 0.03                   | 0.013 - 0.03                   | 0.015 - 0.04                   | 0.018 - 0.04                   | 0.020 - 0.05                   | 0.023 - 0.05                    | 0.025 - 0.06                     | 0.03 - 0.07                      | 0.04 - 0.08                      | 0.04 - 0.10                      |

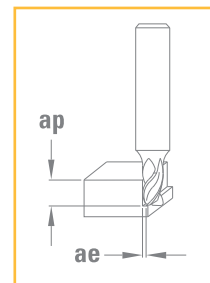
毎刃進給

$f_z [\text{mm}]$

| $\emptyset D_1$<br>0.40 - 1.00 | $\emptyset D_1$<br>1.00 - 1.50 | $\emptyset D_1$<br>1.50 - 3.00 | $\emptyset D_1$<br>3.00 - 5.00 | $\emptyset D_1$<br>5.00 - 7.00 | $\emptyset D_1$<br>7.00 - 10.00 |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|
| 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     |
| 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     |
| 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     |
| 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.11                     |
| 0.006 - 0.015                  | 0.012 - 0.020                  | 0.016 - 0.04                   | 0.02 - 0.06                    | 0.03 - 0.09                    | 0.04 - 0.1                      |



## 切削條件 - 側銑



## 加工材質

|          |                      |                              | 無鍍層        |     | C-TOP      |     | ap<br>[mm] | ae<br>[mm]  |
|----------|----------------------|------------------------------|------------|-----|------------|-----|------------|-------------|
|          |                      |                              | Vc [m/min] |     | Vc [m/min] |     |            |             |
| <b>P</b> | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      |            |     | <b>100</b> | 200 | <1.5 x ØD1 | <0.4 x ØD1  |
| <b>P</b> | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | <b>80</b>  | 170 | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>P</b> | 含鉛快削鋼                |                              |            |     | <b>120</b> | 200 | <1.5 x ØD1 | <0.4 x ØD1  |
| <b>P</b> | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | <b>70</b>  | 100 | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>M</b> | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | <b>80</b>  | 110 | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>M</b> | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | <b>50</b>  | 80  | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>K</b> | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | <b>120</b> | 150 | <b>160</b> | 200 | <1.5 x ØD1 | <0.4 x ØD1  |
| <b>K</b> | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | <b>100</b> | 130 | <b>130</b> | 170 | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>K</b> | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | <b>80</b>  | 110 | <b>110</b> | 150 | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>S</b> | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | <b>20</b>  | 45  | <b>30</b>  | 60  | <1.5 x ØD1 | <0.15 x ØD1 |
| <b>S</b> | 純鈦/鈦合金               |                              | <b>45</b>  | 75  | <b>50</b>  | 80  | <1.5 x ØD1 | <0.3 x ØD1  |
| <b>N</b> | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | <b>90</b>  | 130 | <b>120</b> | 200 | <1.5 x ØD1 | <0.4 x ØD1  |
| <b>N</b> | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | <b>70</b>  | 120 | <b>80</b>  | 140 | <1.5 x ØD1 | <0.4 x ØD1  |
| <b>N</b> | 金, 銀                 |                              | <b>140</b> | 190 | <b>150</b> | 200 | <1.5 x ØD1 | <0.4 x ØD1  |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

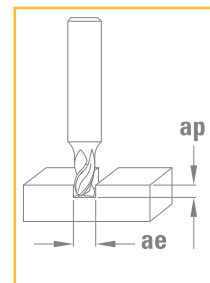
$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

毎刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.10 - 0.40 | Ø D <sub>1</sub><br>0.40 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 12.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|--|
| 0.0013 - 0.0075                 | 0.005 - 0.019                   | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    |  |
| 0.0011 - 0.0056                 | 0.004 - 0.017                   | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    |  |
| 0.0015 - 0.0075                 | 0.006 - 0.023                   | 0.012 - 0.034                   | 0.017 - 0.063                   | 0.032 - 0.126                   | 0.059 - 0.234                    |  |
| 0.0010 - 0.0070                 | 0.004 - 0.015                   | 0.008 - 0.023                   | 0.011 - 0.042                   | 0.021 - 0.084                   | 0.039 - 0.156                    |  |
| 0.0010 - 0.0060                 | 0.004 - 0.015                   | 0.008 - 0.023                   | 0.011 - 0.042                   | 0.021 - 0.084                   | 0.039 - 0.156                    |  |
| 0.0008 - 0.0045                 | 0.003 - 0.011                   | 0.006 - 0.017                   | 0.008 - 0.032                   | 0.016 - 0.063                   | 0.029 - 0.117                    |  |
| 0.0015 - 0.0075                 | 0.006 - 0.023                   | 0.012 - 0.034                   | 0.017 - 0.063                   | 0.032 - 0.16                    | 0.059 - 0.234                    |  |
| 0.0011 - 0.0056                 | 0.004 - 0.017                   | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    |  |
| 0.0011 - 0.0056                 | 0.004 - 0.017                   | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    |  |
| 0.0005 - 0.0030                 | 0.002 - 0.008                   | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.020 - 0.078                    |  |
| 0.0013 - 0.0075                 | 0.005 - 0.019                   | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    |  |
| 0.0020 - 0.0120                 | 0.008 - 0.030                   | 0.016 - 0.045                   | 0.023 - 0.084                   | 0.042 - 0.168                   | 0.078 - 0.312                    |  |
| 0.0013 - 0.0075                 | 0.005 - 0.019                   | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    |  |
| 0.0013 - 0.0075                 | 0.005 - 0.019                   | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    |  |



## 切削條件 - 開槽



| 加工材質 |                      |                              | 無鍍層        |  | C-TOP      |  | ap<br>[mm] | ae<br>[mm] |
|------|----------------------|------------------------------|------------|--|------------|--|------------|------------|
|      |                      |                              | Vc [m/min] |  | Vc [m/min] |  |            |            |
| P    | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      |            |  | 75 150     |  | <1.5 x ØD1 | <1 x ØD1   |
| P    | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |  | 60 130     |  | <1.2 x ØD1 | <1 x ØD1   |
| P    | 含鉛快削鋼                |                              |            |  | 90 150     |  | <1.5 x ØD1 | <1 x ØD1   |
| P    | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |  | 50 75      |  | <1 x ØD1   | <1 x ØD1   |
| M    | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |  | 60 80      |  | <1 x ØD1   | <1 x ØD1   |
| M    | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |  | 40 60      |  | <0.8 x ØD1 | <1 x ØD1   |
| K    | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 90 160     |  | 120 200    |  | <1.5 x ØD1 | <1 x ØD1   |
| K    | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 75 100     |  | 90 130     |  | <1 x ØD1   | <1 x ØD1   |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 60 80      |  | 80 110     |  | <1 x ØD1   | <1 x ØD1   |
| S    | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | 20 30      |  | 25 45      |  | <0.2 x ØD1 | <1 x ØD1   |
| S    | 純鈦/鈦合金               |                              | 35 60      |  | 35 60      |  | <1 x ØD1   | <1 x ØD1   |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 75 150     |  | 100 170    |  | <1.5 x ØD1 | <1 x ØD1   |
| N    | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 50 100     |  | 60 110     |  | <1 x ØD1   | <1 x ØD1   |
| N    | 金, 銀                 |                              | 100 150    |  | 110 150    |  | <1 x ØD1   | <1 x ØD1   |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

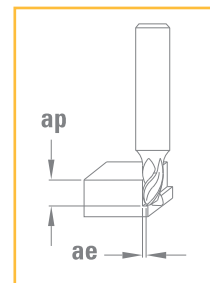
$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.10 - 0.40 | Ø D <sub>1</sub><br>0.40 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 12.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|--|
| 0.0006 - 0.0038                 | 0.0025 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.026                   | 0.013 - 0.053                   | 0.013 - 0.088                    |  |
| 0.0006 - 0.0028                 | 0.0022 - 0.008                  | 0.004 - 0.012                   | 0.006 - 0.023                   | 0.012 - 0.046                   | 0.011 - 0.077                    |  |
| 0.0008 - 0.0038                 | 0.0030 - 0.011                  | 0.006 - 0.017                   | 0.008 - 0.032                   | 0.016 - 0.063                   | 0.015 - 0.105                    |  |
| 0.0005 - 0.0035                 | 0.0020 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.010 - 0.070                    |  |
| 0.0005 - 0.0030                 | 0.0020 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.010 - 0.070                    |  |
| 0.0004 - 0.0023                 | 0.0015 - 0.006                  | 0.003 - 0.008                   | 0.004 - 0.016                   | 0.008 - 0.032                   | 0.008 - 0.053                    |  |
| 0.0008 - 0.0038                 | 0.0030 - 0.011                  | 0.006 - 0.017                   | 0.008 - 0.032                   | 0.016 - 0.063                   | 0.015 - 0.105                    |  |
| 0.0006 - 0.0028                 | 0.0022 - 0.008                  | 0.004 - 0.012                   | 0.006 - 0.023                   | 0.012 - 0.046                   | 0.011 - 0.077                    |  |
| 0.0006 - 0.0028                 | 0.0022 - 0.008                  | 0.004 - 0.012                   | 0.006 - 0.023                   | 0.012 - 0.046                   | 0.011 - 0.077                    |  |
| 0.0003 - 0.0015                 | 0.0010 - 0.004                  | 0.002 - 0.006                   | 0.003 - 0.011                   | 0.005 - 0.021                   | 0.005 - 0.035                    |  |
| 0.0006 - 0.0038                 | 0.0025 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.026                   | 0.013 - 0.053                   | 0.013 - 0.088                    |  |
| 0.0010 - 0.0060                 | 0.004 - 0.015                   | 0.008 - 0.023                   | 0.011 - 0.042                   | 0.021 - 0.084                   | 0.020 - 0.140                    |  |
| 0.0006 - 0.0038                 | 0.0025 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.026                   | 0.013 - 0.053                   | 0.013 - 0.088                    |  |
| 0.0006 - 0.0038                 | 0.0025 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.026                   | 0.013 - 0.053                   | 0.013 - 0.088                    |  |



## 切削條件 - 側銑



## 加工材質

|   |                      |                              | 無鍍層        |     | C-TOP      |     |  | ap<br>[mm] | ae<br>[mm]  |
|---|----------------------|------------------------------|------------|-----|------------|-----|--|------------|-------------|
|   |                      |                              | Vc [m/min] |     | Vc [m/min] |     |  |            |             |
| P | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      |            |     | 100        | 200 |  | <2 x ØD1   | <0.4 x ØD1  |
| P | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | 80         | 170 |  | <2 x ØD1   | <0.3 x ØD1  |
| P | 含鉛快削鋼                |                              |            |     | 120        | 200 |  | <2 x ØD1   | <0.4 x ØD1  |
| P | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | 70         | 100 |  | <2 x ØD1   | <0.3 x ØD1  |
| M | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | 80         | 110 |  | <2 x ØD1   | <0.3 x ØD1  |
| M | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | 50         | 80  |  | <2 x ØD1   | <0.3 x ØD1  |
| K | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 120        | 150 | 160        | 200 |  | <2 x ØD1   | <0.4 x ØD1  |
| K | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 100        | 130 | 130        | 170 |  | <2 x ØD1   | <0.3 x ØD1  |
| K | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 80         | 110 | 110        | 150 |  | <2 x ØD1   | <0.3 x ØD1  |
| S | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | 20         | 45  | 30         | 60  |  | <2 x ØD1   | <0.15 x ØD1 |
| S | 純鈦/鈦合金               |                              | 45         | 75  | 50         | 80  |  | <2 x ØD1   | <0.3 x ØD1  |
| N | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 90         | 130 | 120        | 200 |  | <2 x ØD1   | <0.4 x ØD1  |
| N | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 70         | 120 | 80         | 140 |  | <2 x ØD1   | <0.4 x ØD1  |
| N | 金, 銀                 |                              | 140        | 190 | 150        | 200 |  | <2 x ØD1   | <0.4 x ØD1  |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

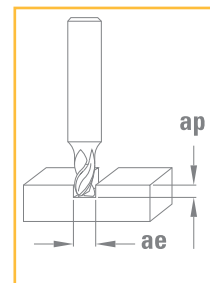
$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.30 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|--|
| 0.0030 - 0.019                  | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    | 0.090 - 0.260                     |  |
| 0.0033 - 0.017                  | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    | 0.079 - 0.229                     |  |
| 0.0045 - 0.023                  | 0.012 - 0.034                   | 0.017 - 0.063                   | 0.032 - 0.126                   | 0.059 - 0.234                    | 0.108 - 0.312                     |  |
| 0.0030 - 0.015                  | 0.008 - 0.023                   | 0.011 - 0.042                   | 0.021 - 0.084                   | 0.039 - 0.156                    | 0.072 - 0.208                     |  |
| 0.0030 - 0.015                  | 0.008 - 0.023                   | 0.011 - 0.042                   | 0.021 - 0.084                   | 0.039 - 0.156                    | 0.072 - 0.208                     |  |
| 0.0023 - 0.011                  | 0.006 - 0.017                   | 0.008 - 0.032                   | 0.016 - 0.063                   | 0.030 - 0.117                    | 0.048 - 0.156                     |  |
| 0.0045 - 0.023                  | 0.012 - 0.034                   | 0.017 - 0.063                   | 0.032 - 0.126                   | 0.059 - 0.234                    | 0.108 - 0.312                     |  |
| 0.0033 - 0.017                  | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    | 0.079 - 0.229                     |  |
| 0.0033 - 0.017                  | 0.009 - 0.025                   | 0.012 - 0.046                   | 0.023 - 0.092                   | 0.043 - 0.172                    | 0.079 - 0.229                     |  |
| 0.0015 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.020 - 0.078                    | 0.036 - 0.104                     |  |
| 0.0038 - 0.019                  | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    | 0.090 - 0.260                     |  |
| 0.0060 - 0.030                  | 0.016 - 0.045                   | 0.023 - 0.084                   | 0.042 - 0.168                   | 0.078 - 0.312                    | 0.144 - 0.416                     |  |
| 0.0038 - 0.019                  | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    | 0.090 - 0.260                     |  |
| 0.0038 - 0.019                  | 0.010 - 0.028                   | 0.014 - 0.053                   | 0.026 - 0.105                   | 0.049 - 0.195                    | 0.090 - 0.260                     |  |



## 切削條件 - 開槽



| 加工材質 |                      |                              | 無鍍層        |     | C-TOP      |     | ap<br>[mm] | ae<br>[mm] |
|------|----------------------|------------------------------|------------|-----|------------|-----|------------|------------|
|      |                      |                              | Vc [m/min] |     | Vc [m/min] |     |            |            |
| P    | 非合金鋼/低合金鋼            | < 600 N/mm <sup>2</sup>      |            |     | 75         | 150 | <2 x ØD1   | <1 x ØD1   |
| P    | 非合金鋼/低合金鋼            | 600 – 1500 N/mm <sup>2</sup> |            |     | 60         | 130 | <1.5 x ØD1 | <1 x ØD1   |
| P    | 含鉛快削鋼                |                              |            |     | 90         | 150 | <2 x ØD1   | <1 x ØD1   |
| P    | 高合金鋼                 | 700 – 1500 N/mm <sup>2</sup> |            |     | 50         | 75  | <1 x ØD1   | <1 x ØD1   |
| M    | 不銹鋼                  | 400 – 700 N/mm <sup>2</sup>  |            |     | 60         | 80  | <1 x ØD1   | <1 x ØD1   |
| M    | 雙相不銹鋼                | > 800 N/mm <sup>2</sup>      |            |     | 40         | 60  | <0.8 x ØD1 | <1 x ØD1   |
| K    | 灰鑄鐵/球墨鑄鐵             | < 250 HB                     | 90         | 160 | 120        | 200 | <2 x ØD1   | <1 x ØD1   |
| K    | 合金鑄鐵/球墨鑄鐵            | > 250 HB                     | 75         | 100 | 90         | 130 | <1 x ØD1   | <1 x ØD1   |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵           |                              | 60         | 80  | 80         | 110 | <1 x ØD1   | <1 x ØD1   |
| S    | 特殊合金/耐熱不銹鋼           | 英高鎳/鎳基合金/哈氏合金                | 20         | 30  | 25         | 45  | <0.2 x ØD1 | <1 x ØD1   |
| S    | 純鈦/鈦合金               |                              | 35         | 60  | 35         | 60  | <1 x ØD1   | <1 x ØD1   |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅) |                              | 75         | 150 | 100        | 170 | <2 x ØD1   | <1 x ØD1   |
| N    | 銅合金 - 難以加工/鋁青銅合金     | 鋁青銅<br>(安普科耐熱耐蝕銅合金)          | 50         | 100 | 60         | 110 | <1.5 x ØD1 | <1 x ØD1   |
| N    | 金, 銀                 |                              | 100        | 150 | 110        | 150 | <1 x ØD1   | <1 x ØD1   |

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$ 
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$ 
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$ 
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$ 
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

毎刃進給

**fz [mm]**

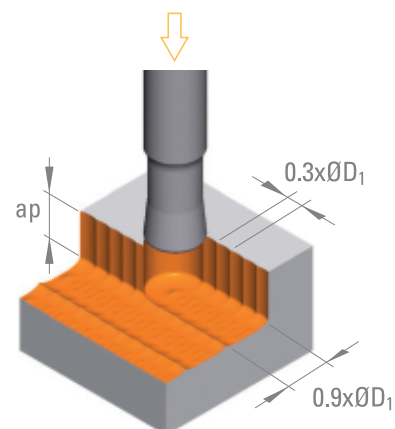
| Ø D <sub>1</sub><br>0.30 - 1.00 | Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|--|
| 0.0012 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.0426                  | 0.020 - 0.078                    | 0.036 - 0.104                     |  |
| 0.0013 - 0.007                  | 0.004 - 0.010                   | 0.005 - 0.018                   | 0.009 - 0.037                   | 0.017 - 0.069                    | 0.032 - 0.092                     |  |
| 0.0018 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.025                   | 0.013 - 0.050                   | 0.023 - 0.094                    | 0.043 - 0.125                     |  |
| 0.0012 - 0.006                  | 0.003 - 0.009                   | 0.005 - 0.017                   | 0.008 - 0.034                   | 0.016 - 0.062                    | 0.029 - 0.083                     |  |
| 0.0012 - 0.006                  | 0.003 - 0.009                   | 0.005 - 0.017                   | 0.008 - 0.034                   | 0.016 - 0.062                    | 0.029 - 0.083                     |  |
| 0.0009 - 0.005                  | 0.002 - 0.007                   | 0.003 - 0.013                   | 0.006 - 0.025                   | 0.012 - 0.47                     | 0.019 - 0.062                     |  |
| 0.0018 - 0.009                  | 0.005 - 0.014                   | 0.007 - 0.025                   | 0.013 - 0.050                   | 0.023 - 0.094                    | 0.043 - 0.125                     |  |
| 0.0013 - 0.007                  | 0.004 - 0.010                   | 0.005 - 0.018                   | 0.009 - 0.037                   | 0.017 - 0.69                     | 0.032 - 0.092                     |  |
| 0.0013 - 0.007                  | 0.004 - 0.010                   | 0.005 - 0.018                   | 0.009 - 0.037                   | 0.017 - 0.69                     | 0.032 - 0.092                     |  |
| 0.0006 - 0.003                  | 0.002 - 0.005                   | 0.002 - 0.008                   | 0.004 - 0.017                   | 0.008 - 0.031                    | 0.014 - 0.042                     |  |
| 0.0015 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.020 - 0.078                    | 0.036 - 0.104                     |  |
| 0.0024 - 0.012                  | 0.006 - 0.018                   | 0.009 - 0.034                   | 0.017 - 0.067                   | 0.031 - 0.125                    | 0.058 - 0.166                     |  |
| 0.0015 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.020 - 0.078                    | 0.036 - 0.104                     |  |
| 0.0015 - 0.008                  | 0.004 - 0.011                   | 0.006 - 0.021                   | 0.011 - 0.042                   | 0.020 - 0.078                    | 0.036 - 0.104                     |  |



## 切削條件

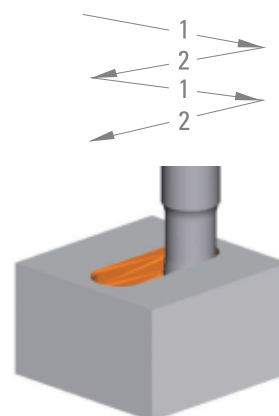
### 插銑

| 加工材質                                            | XIDUR<br>Vc<br>[m/min] | $\alpha$<br>[°]      |
|-------------------------------------------------|------------------------|----------------------|
| <b>P</b> 非合金鋼/低合金鋼 < 600 N/mm <sup>2</sup>      | 175                    | <1xØD <sub>1</sub>   |
| <b>P</b> 非合金鋼/低合金鋼 600 – 1500 N/mm <sup>2</sup> | 140                    | <1xØD <sub>1</sub>   |
| <b>P</b> 含鉛快削鋼                                  | 175                    | <1xØD <sub>1</sub>   |
| <b>P</b> 高合金鋼 700 – 1500 N/mm <sup>2</sup>      | 140                    | <1xØD <sub>1</sub>   |
| <b>H</b> 熱處理鋼 >50HRC                            | 50                     | <0.8xØD <sub>1</sub> |
| <b>M</b> 不銹鋼 400 – 700 N/mm <sup>2</sup>        | 80                     | <0.8xØD <sub>1</sub> |
| <b>M</b> 雙相不銹鋼 > 800 N/mm <sup>2</sup>          | 60                     | <1xØD <sub>1</sub>   |
| <b>K</b> 灰鑄鐵/球墨鑄鐵 < 250 HB                      | 110                    | <1xØD <sub>1</sub>   |
| <b>K</b> 合金鑄鐵/球墨鑄鐵 > 250 HB                     | 70                     | <1xØD <sub>1</sub>   |
| <b>K</b> 肥粒鐵鑄鐵/可鍛鑄鐵                             | 80                     | <1xØD <sub>1</sub>   |
| <b>S</b> 特殊合金/耐熱不銹鋼                             | 80                     | <0.8xØD <sub>1</sub> |
| <b>S</b> 純鈦/鈦合金                                 | 70                     | <0.8xØD <sub>1</sub> |
| <b>N</b> 銅合金 - 易於加工 (黃銅 - 青銅)                   | 280                    | <1xØD <sub>1</sub>   |
| <b>N</b> 銅合金 - 難以加工/鋁青銅合金                       | 200                    | <1xØD <sub>1</sub>   |
| <b>N</b> 鋁合金 Si < 8%                            | 300                    | <1xØD <sub>1</sub>   |
| <b>N</b> 鑄鋁材質 Si > 8%                           | 250                    | <1xØD <sub>1</sub>   |
| <b>N</b> 金，銀                                    | 200                    | <1xØD <sub>1</sub>   |



### 斜向進刀

| 加工材質                                            | XIDUR<br>Vc<br>[m/min] | $\alpha$<br>[°]    |
|-------------------------------------------------|------------------------|--------------------|
| <b>P</b> 非合金鋼/低合金鋼 < 600 N/mm <sup>2</sup>      | 200                    | <1xØD <sub>1</sub> |
| <b>P</b> 非合金鋼/低合金鋼 600 – 1500 N/mm <sup>2</sup> | 150                    | 0.75               |
| <b>P</b> 含鉛快削鋼                                  | 200                    | 0.75               |
| <b>P</b> 高合金鋼 700 – 1500 N/mm <sup>2</sup>      | 150                    | 0.75               |
| <b>H</b> 熱處理鋼 >50HRC                            | 200                    | 0.75               |
| <b>M</b> 不銹鋼 400 – 700 N/mm <sup>2</sup>        | 110                    | 0.50               |
| <b>M</b> 雙相不銹鋼 > 800 N/mm <sup>2</sup>          | 80                     | 0.50               |
| <b>K</b> 灰鑄鐵/球墨鑄鐵 < 250 HB                      | 150                    | 0.75               |
| <b>K</b> 合金鑄鐵/球墨鑄鐵 > 250 HB                     | 100                    | 0.75               |
| <b>K</b> 肥粒鐵鑄鐵/可鍛鑄鐵                             | 80                     | 0.75               |
| <b>S</b> 特殊合金/耐熱不銹鋼                             | 60                     | 0.50               |
| <b>S</b> 純鈦/鈦合金                                 | 80                     | 0.50               |
| <b>N</b> 銅合金 - 易於加工 (黃銅 - 青銅)                   | 330                    | 1.20               |
| <b>N</b> 銅合金 - 難以加工/鋁青銅合金                       | 250                    | 1.00               |
| <b>N</b> 鋁合金 Si < 8%                            | 350                    | 1.20               |
| <b>N</b> 鑄鋁材質 Si > 8%                           | 300                    | 1.00               |
| <b>N</b> 金，銀                                    | 250                    | 1.00               |



斜向進刀開槽計算

1.  $h = \ell \times \tan \alpha$   
 2. 返回水平位置  $\ell$

每刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.50 | Ø D <sub>1</sub><br>0.80 | Ø D <sub>1</sub><br>1.00 | Ø D <sub>1</sub><br>1.50 | Ø D <sub>1</sub><br>2.00 | Ø D <sub>1</sub><br>3.00 | Ø D <sub>1</sub><br>4.00 | Ø D <sub>1</sub><br>5.00 | Ø D <sub>1</sub><br>6.00 | Ø D <sub>1</sub><br>8.00 | Ø D <sub>1</sub><br>10.00 | Ø D <sub>1</sub><br>12.00 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.040                    | 0.048                    | 0.064                    | 0.080                     | 0.096                     |
| 0.003                    | 0.005                    | 0.006                    | 0.010                    | 0.013                    | 0.019                    | 0.026                    | 0.032                    | 0.038                    | 0.051                    | 0.064                     | 0.077                     |
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.040                    | 0.048                    | 0.064                    | 0.080                     | 0.096                     |
| 0.003                    | 0.005                    | 0.006                    | 0.010                    | 0.013                    | 0.019                    | 0.026                    | 0.032                    | 0.038                    | 0.051                    | 0.064                     | 0.077                     |
| 0.003                    | 0.004                    | 0.006                    | 0.008                    | 0.011                    | 0.017                    | 0.022                    | 0.028                    | 0.034                    | 0.045                    | 0.056                     | 0.067                     |
| 0.003                    | 0.004                    | 0.006                    | 0.008                    | 0.011                    | 0.017                    | 0.022                    | 0.028                    | 0.034                    | 0.045                    | 0.056                     | 0.067                     |
| 0.003                    | 0.004                    | 0.006                    | 0.008                    | 0.011                    | 0.017                    | 0.022                    | 0.028                    | 0.034                    | 0.045                    | 0.056                     | 0.067                     |
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.040                    | 0.048                    | 0.064                    | 0.080                     | 0.096                     |
| 0.003                    | 0.005                    | 0.006                    | 0.010                    | 0.013                    | 0.019                    | 0.026                    | 0.032                    | 0.038                    | 0.051                    | 0.064                     | 0.077                     |
| 0.003                    | 0.004                    | 0.006                    | 0.008                    | 0.011                    | 0.017                    | 0.022                    | 0.028                    | 0.034                    | 0.045                    | 0.056                     | 0.067                     |
| 0.002                    | 0.004                    | 0.005                    | 0.007                    | 0.010                    | 0.014                    | 0.019                    | 0.024                    | 0.029                    | 0.038                    | 0.048                     | 0.058                     |
| 0.003                    | 0.004                    | 0.006                    | 0.008                    | 0.011                    | 0.017                    | 0.022                    | 0.028                    | 0.034                    | 0.045                    | 0.056                     | 0.067                     |
| 0.006                    | 0.009                    | 0.012                    | 0.018                    | 0.024                    | 0.036                    | 0.048                    | 0.06                     | 0.072                    | 0.096                    | 0.12                      | 0.144                     |
| 0.005                    | 0.007                    | 0.010                    | 0.014                    | 0.019                    | 0.029                    | 0.038                    | 0.048                    | 0.058                    | 0.077                    | 0.096                     | 0.115                     |
| 0.006                    | 0.009                    | 0.012                    | 0.018                    | 0.024                    | 0.036                    | 0.048                    | 0.06                     | 0.072                    | 0.096                    | 0.12                      | 0.144                     |
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.04                     | 0.048                    | 0.064                    | 0.08                      | 0.096                     |
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.04                     | 0.048                    | 0.064                    | 0.08                      | 0.096                     |

每刃進給 **fz [mm]**

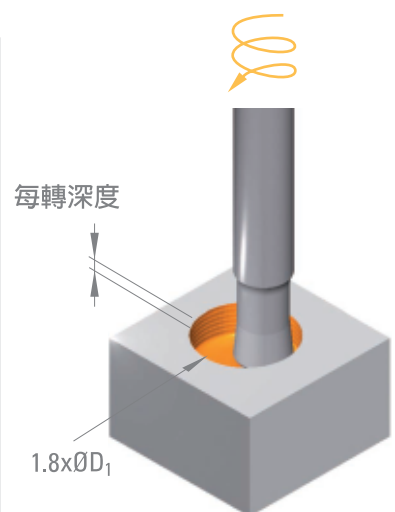
| Ø D <sub>1</sub><br>0.50 | Ø D <sub>1</sub><br>0.80 | Ø D <sub>1</sub><br>1.00 | Ø D <sub>1</sub><br>1.50 | Ø D <sub>1</sub><br>2.00 | Ø D <sub>1</sub><br>3.00 | Ø D <sub>1</sub><br>4.00 | Ø D <sub>1</sub><br>5.00 | Ø D <sub>1</sub><br>6.00 | Ø D <sub>1</sub><br>8.00 | Ø D <sub>1</sub><br>10.00 | Ø D <sub>1</sub><br>12.00 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|
| 0.013                    | 0.021                    | 0.026                    | 0.040                    | 0.053                    | 0.079                    | 0.106                    | 0.132                    | 0.158                    | 0.211                    | 0.264                     | 0.317                     |
| 0.012                    | 0.019                    | 0.024                    | 0.036                    | 0.048                    | 0.072                    | 0.096                    | 0.120                    | 0.144                    | 0.192                    | 0.240                     | 0.288                     |
| 0.013                    | 0.021                    | 0.026                    | 0.040                    | 0.053                    | 0.079                    | 0.106                    | 0.132                    | 0.158                    | 0.211                    | 0.264                     | 0.317                     |
| 0.012                    | 0.019                    | 0.024                    | 0.036                    | 0.048                    | 0.072                    | 0.096                    | 0.120                    | 0.144                    | 0.192                    | 0.240                     | 0.288                     |
| 0.004                    | 0.006                    | 0.008                    | 0.012                    | 0.016                    | 0.024                    | 0.032                    | 0.040                    | 0.048                    | 0.064                    | 0.080                     | 0.096                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.007                    | 0.012                    | 0.014                    | 0.022                    | 0.029                    | 0.043                    | 0.058                    | 0.072                    | 0.086                    | 0.115                    | 0.144                     | 0.173                     |
| 0.006                    | 0.010                    | 0.013                    | 0.019                    | 0.026                    | 0.038                    | 0.051                    | 0.064                    | 0.077                    | 0.102                    | 0.128                     | 0.154                     |
| 0.007                    | 0.012                    | 0.014                    | 0.022                    | 0.029                    | 0.043                    | 0.058                    | 0.072                    | 0.086                    | 0.115                    | 0.144                     | 0.173                     |
| 0.008                    | 0.013                    | 0.017                    | 0.025                    | 0.034                    | 0.050                    | 0.067                    | 0.084                    | 0.101                    | 0.134                    | 0.168                     | 0.202                     |
| 0.020                    | 0.032                    | 0.039                    | 0.060                    | 0.080                    | 0.119                    | 0.159                    | 0.198                    | 0.237                    | 0.317                    | 0.396                     | 0.476                     |
| 0.016                    | 0.025                    | 0.031                    | 0.048                    | 0.064                    | 0.095                    | 0.127                    | 0.158                    | 0.190                    | 0.253                    | 0.317                     | 0.380                     |
| 0.020                    | 0.032                    | 0.039                    | 0.060                    | 0.080                    | 0.119                    | 0.159                    | 0.198                    | 0.237                    | 0.317                    | 0.396                     | 0.476                     |
| 0.013                    | 0.021                    | 0.026                    | 0.040                    | 0.053                    | 0.079                    | 0.106                    | 0.132                    | 0.158                    | 0.211                    | 0.264                     | 0.317                     |
| 0.013                    | 0.021                    | 0.026                    | 0.040                    | 0.053                    | 0.079                    | 0.106                    | 0.132                    | 0.158                    | 0.211                    | 0.264                     | 0.317                     |



## 切削條件

## 螺旋下刀

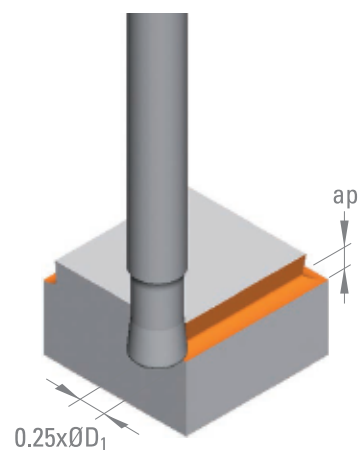
| 加工材質                                            | XIDUR<br>Vc<br>[m/min] | $\alpha$<br>[°] |
|-------------------------------------------------|------------------------|-----------------|
| <b>P</b> 非合金鋼/低合金鋼 < 600 N/mm <sup>2</sup>      | 250                    | 0.75            |
| <b>P</b> 非合金鋼/低合金鋼 600 – 1500 N/mm <sup>2</sup> | 200                    | 0.75            |
| <b>P</b> 含鉛快削鋼                                  | 250                    | 0.75            |
| <b>P</b> 高合金鋼 700 – 1500 N/mm <sup>2</sup>      | 200                    | 0.75            |
| <b>H</b> 熱處理鋼 >50HRC                            | 200                    | 0.75            |
| <b>M</b> 不銹鋼 400 – 700 N/mm <sup>2</sup>        | 150                    | 0.50            |
| <b>M</b> 雙相不銹鋼 > 800 N/mm <sup>2</sup>          | 110                    | 0.50            |
| <b>K</b> 灰鑄鐵/球墨鑄鐵 < 250 HB                      | 150                    | 0.75            |
| <b>K</b> 合金鑄鐵/球墨鑄鐵 > 250 HB                     | 100                    | 0.75            |
| <b>K</b> 肥粒鐵鑄鐵/可鍛鑄鐵                             | 80                     | 0.75            |
| <b>S</b> 特殊合金/耐熱不銹鋼                             | 80                     | 0.50            |
| <b>S</b> 純鈦/鈦合金                                 | 100                    | 0.50            |
| <b>N</b> 銅合金 - 易於加工 (黃銅 - 青銅)                   | 380                    | 1.20            |
| <b>N</b> 銅合金 - 難以加工/鋁青銅合金                       | 300                    | 1.00            |
| <b>N</b> 鋁合金 Si < 8%                            | 400                    | 1.20            |
| <b>N</b> 鑄鋁材質 Si > 8%                           | 350                    | 1.00            |
| <b>N</b> 金, 銀                                   | 300                    | 1.00            |



每轉吃深計算  
 $\text{每轉深度} = \pi \times D_1 \times \tan \alpha$

## 側銑

| 加工材質                                            | XIDUR<br>Vc<br>[m/min] | ap<br>[mm]           |
|-------------------------------------------------|------------------------|----------------------|
| <b>P</b> 非合金鋼/低合金鋼 < 600 N/mm <sup>2</sup>      | 250                    | <0.5xØD <sub>1</sub> |
| <b>P</b> 非合金鋼/低合金鋼 600 – 1500 N/mm <sup>2</sup> | 200                    | <0.5xØD <sub>1</sub> |
| <b>P</b> 含鉛快削鋼                                  | 250                    | <0.5xØD <sub>1</sub> |
| <b>P</b> 高合金鋼 700 – 1500 N/mm <sup>2</sup>      | 200                    | <0.5xØD <sub>1</sub> |
| <b>H</b> 熱處理鋼 >50HRC                            | 200                    | <0.4xØD <sub>1</sub> |
| <b>M</b> 不銹鋼 400 – 700 N/mm <sup>2</sup>        | 150                    | <0.4xØD <sub>1</sub> |
| <b>M</b> 雙相不銹鋼 > 800 N/mm <sup>2</sup>          | 110                    | <0.4xØD <sub>1</sub> |
| <b>K</b> 灰鑄鐵/球墨鑄鐵 < 250 HB                      | 150                    | <0.5xØD <sub>1</sub> |
| <b>K</b> 合金鑄鐵/球墨鑄鐵 > 250 HB                     | 100                    | <0.5xØD <sub>1</sub> |
| <b>K</b> 肥粒鐵鑄鐵/可鍛鑄鐵                             | 80                     | <0.5xØD <sub>1</sub> |
| <b>S</b> 特殊合金/耐熱不銹鋼                             | 80                     | <0.4xØD <sub>1</sub> |
| <b>S</b> 純鈦/鈦合金                                 | 100                    | <0.4xØD <sub>1</sub> |
| <b>N</b> 銅合金 - 易於加工 (黃銅 - 青銅)                   | 350                    | <0.5xØD <sub>1</sub> |
| <b>N</b> 銅合金 - 難以加工/鋁青銅合金                       | 300                    | <0.5xØD <sub>1</sub> |
| <b>N</b> 鋁合金 Si < 8%                            | 400                    | <0.5xØD <sub>1</sub> |
| <b>N</b> 鑄鋁材質 Si > 8%                           | 300                    | <0.5xØD <sub>1</sub> |
| <b>N</b> 金, 銀                                   | 300                    | <0.5xØD <sub>1</sub> |



每刃進給 **fz [mm]**

| Ø D <sub>1</sub><br>0.50 | Ø D <sub>1</sub><br>0.80 | Ø D <sub>1</sub><br>1.00 | Ø D <sub>1</sub><br>1.50 | Ø D <sub>1</sub><br>2.00 | Ø D <sub>1</sub><br>3.00 | Ø D <sub>1</sub><br>4.00 | Ø D <sub>1</sub><br>5.00 | Ø D <sub>1</sub><br>6.00 | Ø D <sub>1</sub><br>8.00 | Ø D <sub>1</sub><br>10.00 | Ø D <sub>1</sub><br>12.00 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|
| 0.018                    | 0.028                    | 0.035                    | 0.053                    | 0.070                    | 0.106                    | 0.141                    | 0.176                    | 0.211                    | 0.282                    | 0.352                     | 0.422                     |
| 0.016                    | 0.026                    | 0.032                    | 0.048                    | 0.064                    | 0.096                    | 0.128                    | 0.160                    | 0.192                    | 0.256                    | 0.320                     | 0.384                     |
| 0.018                    | 0.028                    | 0.035                    | 0.053                    | 0.070                    | 0.106                    | 0.141                    | 0.176                    | 0.211                    | 0.282                    | 0.352                     | 0.422                     |
| 0.016                    | 0.026                    | 0.032                    | 0.048                    | 0.064                    | 0.096                    | 0.128                    | 0.160                    | 0.192                    | 0.256                    | 0.320                     | 0.384                     |
| 0.005                    | 0.008                    | 0.010                    | 0.014                    | 0.019                    | 0.029                    | 0.038                    | 0.048                    | 0.058                    | 0.077                    | 0.096                     | 0.115                     |
| 0.013                    | 0.020                    | 0.026                    | 0.038                    | 0.051                    | 0.077                    | 0.102                    | 0.128                    | 0.154                    | 0.205                    | 0.256                     | 0.307                     |
| 0.013                    | 0.020                    | 0.026                    | 0.038                    | 0.051                    | 0.077                    | 0.102                    | 0.128                    | 0.154                    | 0.205                    | 0.256                     | 0.307                     |
| 0.013                    | 0.020                    | 0.026                    | 0.038                    | 0.051                    | 0.077                    | 0.102                    | 0.128                    | 0.154                    | 0.205                    | 0.256                     | 0.307                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.008                    | 0.012                    | 0.015                    | 0.023                    | 0.030                    | 0.046                    | 0.061                    | 0.076                    | 0.091                    | 0.122                    | 0.152                     | 0.182                     |
| 0.011                    | 0.018                    | 0.022                    | 0.034                    | 0.045                    | 0.067                    | 0.090                    | 0.112                    | 0.134                    | 0.179                    | 0.224                     | 0.269                     |
| 0.027                    | 0.042                    | 0.053                    | 0.080                    | 0.105                    | 0.159                    | 0.212                    | 0.264                    | 0.317                    | 0.423                    | 0.528                     | 0.633                     |
| 0.022                    | 0.034                    | 0.042                    | 0.064                    | 0.084                    | 0.127                    | 0.169                    | 0.211                    | 0.253                    | 0.338                    | 0.422                     | 0.506                     |
| 0.027                    | 0.042                    | 0.053                    | 0.080                    | 0.105                    | 0.159                    | 0.212                    | 0.264                    | 0.317                    | 0.423                    | 0.528                     | 0.633                     |
| 0.018                    | 0.028                    | 0.035                    | 0.053                    | 0.070                    | 0.106                    | 0.141                    | 0.176                    | 0.211                    | 0.282                    | 0.352                     | 0.422                     |
| 0.018                    | 0.028                    | 0.035                    | 0.053                    | 0.070                    | 0.106                    | 0.141                    | 0.176                    | 0.211                    | 0.282                    | 0.352                     | 0.422                     |

每刃進給 **fz [mm]**

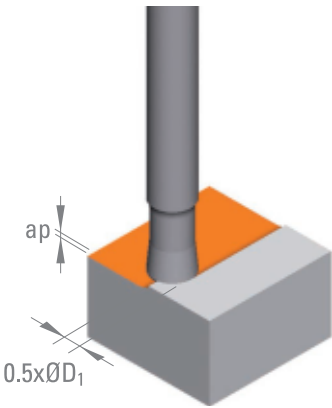
| Ø D <sub>1</sub><br>0.50 | Ø D <sub>1</sub><br>0.80 | Ø D <sub>1</sub><br>1.00 | Ø D <sub>1</sub><br>1.50 | Ø D <sub>1</sub><br>2.00 | Ø D <sub>1</sub><br>3.00 | Ø D <sub>1</sub><br>4.00 | Ø D <sub>1</sub><br>5.00 | Ø D <sub>1</sub><br>6.00 | Ø D <sub>1</sub><br>8.00 | Ø D <sub>1</sub><br>10.00 | Ø D <sub>1</sub><br>12.00 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|
| 0.010                    | 0.017                    | 0.021                    | 0.031                    | 0.042                    | 0.062                    | 0.083                    | 0.104                    | 0.125                    | 0.166                    | 0.208                     | 0.250                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.010                    | 0.017                    | 0.021                    | 0.031                    | 0.042                    | 0.062                    | 0.083                    | 0.104                    | 0.125                    | 0.166                    | 0.208                     | 0.250                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.005                    | 0.008                    | 0.010                    | 0.014                    | 0.019                    | 0.029                    | 0.038                    | 0.048                    | 0.058                    | 0.077                    | 0.096                     | 0.115                     |
| 0.008                    | 0.013                    | 0.016                    | 0.024                    | 0.032                    | 0.048                    | 0.064                    | 0.080                    | 0.096                    | 0.128                    | 0.160                     | 0.192                     |
| 0.008                    | 0.013                    | 0.016                    | 0.024                    | 0.032                    | 0.048                    | 0.064                    | 0.080                    | 0.096                    | 0.128                    | 0.160                     | 0.192                     |
| 0.008                    | 0.013                    | 0.016                    | 0.024                    | 0.032                    | 0.048                    | 0.064                    | 0.080                    | 0.096                    | 0.128                    | 0.160                     | 0.192                     |
| 0.006                    | 0.009                    | 0.011                    | 0.017                    | 0.022                    | 0.034                    | 0.045                    | 0.056                    | 0.067                    | 0.090                    | 0.112                     | 0.134                     |
| 0.005                    | 0.008                    | 0.010                    | 0.016                    | 0.021                    | 0.031                    | 0.042                    | 0.052                    | 0.062                    | 0.083                    | 0.104                     | 0.125                     |
| 0.006                    | 0.009                    | 0.011                    | 0.017                    | 0.022                    | 0.034                    | 0.045                    | 0.056                    | 0.067                    | 0.090                    | 0.112                     | 0.134                     |
| 0.007                    | 0.011                    | 0.014                    | 0.020                    | 0.027                    | 0.041                    | 0.054                    | 0.068                    | 0.082                    | 0.109                    | 0.136                     | 0.163                     |
| 0.012                    | 0.020                    | 0.025                    | 0.037                    | 0.050                    | 0.074                    | 0.100                    | 0.125                    | 0.150                    | 0.199                    | 0.250                     | 0.300                     |
| 0.010                    | 0.017                    | 0.021                    | 0.031                    | 0.042                    | 0.062                    | 0.083                    | 0.104                    | 0.125                    | 0.166                    | 0.208                     | 0.250                     |
| 0.012                    | 0.020                    | 0.025                    | 0.037                    | 0.050                    | 0.074                    | 0.100                    | 0.125                    | 0.150                    | 0.199                    | 0.250                     | 0.300                     |
| 0.010                    | 0.017                    | 0.021                    | 0.031                    | 0.042                    | 0.062                    | 0.083                    | 0.104                    | 0.125                    | 0.166                    | 0.208                     | 0.250                     |
| 0.010                    | 0.017                    | 0.021                    | 0.031                    | 0.042                    | 0.062                    | 0.083                    | 0.104                    | 0.125                    | 0.166                    | 0.208                     | 0.250                     |



切削條件

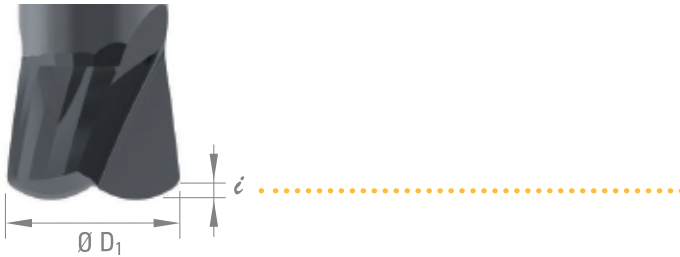
面銑

| 加工材質 |                            | XIDUR<br>Vc<br>[m/min] | ap<br>[mm]       |
|------|----------------------------|------------------------|------------------|
| P    | 非合金鋼/低合金鋼 < 600 N/mm²      | 250                    | <1x $\epsilon$   |
| P    | 非合金鋼/低合金鋼 600 – 1500 N/mm² | 200                    | <1x $\epsilon$   |
| P    | 含鉛快削鋼                      | 250                    | <1x $\epsilon$   |
| P    | 高合金鋼 700 – 1500 N/mm²      | 200                    | <1x $\epsilon$   |
| H    | 熱處理鋼 >50HRC                | 200                    | <0.8x $\epsilon$ |
| M    | 不銹鋼 400 – 700 N/mm²        | 150                    | <0.8x $\epsilon$ |
| M    | 雙相不銹鋼 > 800 N/mm²          | 110                    | <0.8x $\epsilon$ |
| K    | 灰鑄鐵/球墨鑄鐵 < 250 HB          | 150                    | <1x $\epsilon$   |
| K    | 合金鑄鐵/球墨鑄鐵 > 250 HB         | 100                    | <1x $\epsilon$   |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵                 | 80                     | <1x $\epsilon$   |
| S    | 特殊合金/耐熱不銹鋼                 | 80                     | <0.5x $\epsilon$ |
| S    | 純鈦/鈦合金                     | 100                    | <0.5x $\epsilon$ |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅)       | 350                    | <0.5x $\epsilon$ |
| N    | 銅合金 - 難以加工/鋁青銅合金           | 300                    | <1x $\epsilon$   |
| N    | 鋁合金 Si < 8%                | 400                    | <1x $\epsilon$   |
| N    | 鑄鋁 Si > 8%                 | 300                    | <1x $\epsilon$   |
| N    | 金，銀                        | 300                    | <1x $\epsilon$   |



該刀具沒有中心切削刃。

對於端面銑削操作， $\epsilon$  值取決於  $\varnothing D_1$ 。



每刃進給

fz [mm]

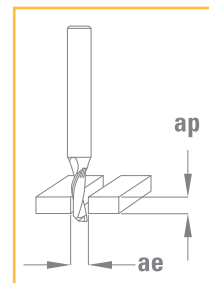
| Ø D <sub>1</sub><br>0.50 | Ø D <sub>1</sub><br>0.80 | Ø D <sub>1</sub><br>1.00 | Ø D <sub>1</sub><br>1.50 | Ø D <sub>1</sub><br>2.00 | Ø D <sub>1</sub><br>3.00 | Ø D <sub>1</sub><br>4.00 | Ø D <sub>1</sub><br>5.00 | Ø D <sub>1</sub><br>6.00 | Ø D <sub>1</sub><br>8.00 | Ø D <sub>1</sub><br>10.00 | Ø D <sub>1</sub><br>12.00 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|
| 0.022                    | 0.035                    | 0.044                    | 0.066                    | 0.088                    | 0.132                    | 0.176                    | 0.220                    | 0.264                    | 0.352                    | 0.440                     | 0.528                     |
| 0.020                    | 0.032                    | 0.040                    | 0.060                    | 0.080                    | 0.120                    | 0.160                    | 0.200                    | 0.240                    | 0.320                    | 0.400                     | 0.480                     |
| 0.022                    | 0.035                    | 0.044                    | 0.066                    | 0.088                    | 0.132                    | 0.176                    | 0.220                    | 0.264                    | 0.352                    | 0.440                     | 0.528                     |
| 0.020                    | 0.032                    | 0.040                    | 0.060                    | 0.080                    | 0.120                    | 0.160                    | 0.200                    | 0.240                    | 0.320                    | 0.400                     | 0.480                     |
| 0.006                    | 0.010                    | 0.012                    | 0.018                    | 0.024                    | 0.036                    | 0.048                    | 0.060                    | 0.072                    | 0.096                    | 0.120                     | 0.144                     |
| 0.016                    | 0.026                    | 0.032                    | 0.048                    | 0.064                    | 0.096                    | 0.128                    | 0.160                    | 0.192                    | 0.256                    | 0.320                     | 0.384                     |
| 0.016                    | 0.026                    | 0.032                    | 0.048                    | 0.064                    | 0.096                    | 0.128                    | 0.160                    | 0.192                    | 0.256                    | 0.320                     | 0.384                     |
| 0.016                    | 0.026                    | 0.032                    | 0.048                    | 0.064                    | 0.096                    | 0.128                    | 0.160                    | 0.192                    | 0.256                    | 0.320                     | 0.384                     |
| 0.012                    | 0.019                    | 0.024                    | 0.036                    | 0.048                    | 0.072                    | 0.096                    | 0.120                    | 0.144                    | 0.192                    | 0.240                     | 0.288                     |
| 0.012                    | 0.019                    | 0.024                    | 0.036                    | 0.048                    | 0.072                    | 0.096                    | 0.120                    | 0.144                    | 0.192                    | 0.240                     | 0.288                     |
| 0.010                    | 0.015                    | 0.019                    | 0.029                    | 0.038                    | 0.058                    | 0.077                    | 0.096                    | 0.115                    | 0.154                    | 0.192                     | 0.230                     |
| 0.014                    | 0.022                    | 0.028                    | 0.042                    | 0.056                    | 0.084                    | 0.112                    | 0.140                    | 0.168                    | 0.224                    | 0.280                     | 0.336                     |
| 0.026                    | 0.042                    | 0.053                    | 0.079                    | 0.106                    | 0.158                    | 0.211                    | 0.264                    | 0.317                    | 0.422                    | 0.528                     | 0.634                     |
| 0.022                    | 0.035                    | 0.044                    | 0.066                    | 0.088                    | 0.132                    | 0.176                    | 0.220                    | 0.264                    | 0.352                    | 0.440                     | 0.528                     |
| 0.026                    | 0.042                    | 0.053                    | 0.079                    | 0.106                    | 0.158                    | 0.211                    | 0.264                    | 0.317                    | 0.422                    | 0.528                     | 0.634                     |
| 0.022                    | 0.035                    | 0.044                    | 0.066                    | 0.088                    | 0.132                    | 0.176                    | 0.220                    | 0.264                    | 0.352                    | 0.440                     | 0.528                     |
| 0.022                    | 0.035                    | 0.044                    | 0.066                    | 0.088                    | 0.132                    | 0.176                    | 0.220                    | 0.264                    | 0.352                    | 0.440                     | 0.528                     |
| <b>0.025</b>             | <b>0.04</b>              | <b>0.05</b>              | <b>0.10</b>              | <b>0.15</b>              | <b>0.20</b>              | <b>0.25</b>              | <b>0.30</b>              | <b>0.35</b>              | <b>0.40</b>              | <b>0.45</b>               | <b>0.50</b>               |

ε value

下載切削條件及外型幾何 (pdf + xls) 與dxf 檔



## 切削條件

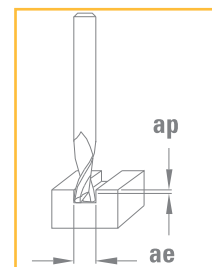


| 加工材質 |                     | 無鍍層        |            | DLC     |             |  |  |
|------|---------------------|------------|------------|---------|-------------|-------------------------------------------------------------------------------------|--|
|      |                     | Vc [m/min] | Vc [m/min] | ap [mm] | ae [mm]     |                                                                                     |  |
| P    | 含鉛快削鋼               | 80         | 100        |         | < 0.7 x ØD1 | 1 x ØD1                                                                             |  |
| N    | 銅合金 - 易於加工（黃銅 - 青銅） | 100        | 130        | 100 130 | < 1 x ØD1   | 1 x ØD1                                                                             |  |
| N    | 鋁合金                 | Si < 8%    | 120 160    | 120 160 | < 1 x ØD1   | 1 x ØD1                                                                             |  |
| N    | 鑄鋁材質                | Si > 8%    | 100 130    | 100 130 | < 1 x ØD1   | 1 x ØD1                                                                             |  |
| N    | 塑料                  |            | 130 200    | 130 200 | < 1.5 x ØD1 | 1 x ØD1                                                                             |  |

根據加工材質，立銑刀(Z = 1)插銑的進給速度(V<sub>fp</sub>)必須減少40%至80%。

## DIXI 7552 - 7572 - 7582

## 切削條件



| 加工材質 |                                  |                              | 無鍍層        |     | TiAlN      |     | DICUT      |     | DIAMANT    |     | ap          |  | ae           |  |
|------|----------------------------------|------------------------------|------------|-----|------------|-----|------------|-----|------------|-----|-------------|--|--------------|--|
|      |                                  |                              | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min] |     | Vc [m/min] |     | [mm]        |  | [mm]         |  |
| P    | 非合金鋼/低合金鋼                        | < 600 N/mm <sup>2</sup>      | 50         | 80  |            |     |            |     |            |     | < 1 x ØD1   |  | < 1 x ØD1    |  |
| P    | 非合金鋼/低合金鋼                        | 600 – 1500 N/mm <sup>2</sup> |            |     | 70         | 100 |            |     |            |     | < 0.5 x ØD1 |  | < 1 x ØD1    |  |
| P    | 高合金鋼                             | 700 – 1500 N/mm <sup>2</sup> |            |     | 40         | 60  |            |     |            |     | < 0.5 x ØD1 |  | < 1 x ØD1    |  |
| K    | 灰鑄鐵/球墨鑄鐵                         | < 250 HB                     | 100        | 170 |            |     |            |     |            |     | < 1 x ØD1   |  | < 1 x ØD1    |  |
| S    | 純鈦/鈦合金                           |                              | 60         | 80  |            |     |            |     |            |     | < 1 x ØD1   |  | < 1 x ØD1    |  |
| N    | 銅合金 - 易於加工（黃銅 - 青銅）              |                              | 80         | 120 |            |     |            |     |            |     | < 1.5 x ØD1 |  | < 1 x ØD1    |  |
| N    | 銅合金 - 難以加工/鋁青銅合金<br>（安普科耐熱耐蝕銅合金） | 鋁青銅                          |            |     |            |     | 100        | 140 |            |     | < 1 x ØD1   |  | < 1 x ØD1    |  |
| N    | 鋁合金                              | Si < 8%                      | 150        | 200 |            |     |            |     |            |     | < 1.5 x ØD1 |  | < 1 x ØD1    |  |
| N    | 鑄鋁材質                             | Si > 8%                      | 100        | 200 |            |     |            |     |            |     | < 1 x ØD1   |  | < 1 x ØD1    |  |
| N    | 石墨                               |                              |            |     |            |     |            |     | 200        | 300 | 3 x ØD1     |  | < 0.30 x ØD1 |  |
| N    | 塑料                               |                              | 100        | 130 |            |     |            |     |            |     | < 2 x ØD1   |  | < 1 x ØD1    |  |
| N    | 金，銀                              |                              | 90         | 130 | 100        | 140 |            |     |            |     | < 0.5 x ØD1 |  | < 1 x ØD1    |  |

$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

毎刃進給

**fz [mm]**

| Ø D <sub>1</sub><br>2.00 - 2.50 | Ø D <sub>1</sub><br>2.50 - 3.00 | Ø D <sub>1</sub><br>3.00 - 4.00 | Ø D <sub>1</sub><br>4.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|--|
| <b>0.010</b> - 0.03             | <b>0.013</b> - 0.04             | <b>0.02</b> - 0.05              | <b>0.02</b> - 0.06              | <b>0.03</b> - 0.07              | <b>0.03</b> - 0.10              | <b>0.04</b> - 0.12               | <b>0.05</b> - 0.17                |  |
| <b>0.014</b> - 0.04             | <b>0.018</b> - 0.05             | <b>0.02</b> - 0.06              | <b>0.03</b> - 0.08              | <b>0.04</b> - 0.09              | <b>0.04</b> - 0.12              | <b>0.06</b> - 0.15               | <b>0.07</b> - 0.21                |  |
| <b>0.014</b> - 0.04             | <b>0.018</b> - 0.05             | <b>0.02</b> - 0.06              | <b>0.03</b> - 0.08              | <b>0.04</b> - 0.09              | <b>0.04</b> - 0.12              | <b>0.06</b> - 0.15               | <b>0.07</b> - 0.21                |  |
| <b>0.014</b> - 0.04             | <b>0.018</b> - 0.05             | <b>0.02</b> - 0.06              | <b>0.03</b> - 0.08              | <b>0.04</b> - 0.09              | <b>0.04</b> - 0.12              | <b>0.06</b> - 0.15               | <b>0.07</b> - 0.21                |  |
| <b>0.020</b> - 0.05             | <b>0.025</b> - 0.06             | <b>0.03</b> - 0.08              | <b>0.04</b> - 0.10              | <b>0.05</b> - 0.12              | <b>0.06</b> - 0.16              | <b>0.08</b> - 0.20               | <b>0.10</b> - 0.28                |  |

毎刃進給

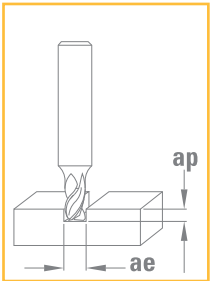
**fz [mm]**

| Ø D <sub>1</sub><br>1.00 - 2.00 | Ø D <sub>1</sub><br>2.00 - 3.00 | Ø D <sub>1</sub><br>3.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 7.00 | Ø D <sub>1</sub><br>7.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 13.00 | Ø D <sub>1</sub><br>13.00 - 16.00 | Ø D <sub>1</sub><br>16.00 - 20.00 |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.014</b> - 0.04             | <b>0.018</b> - 0.05             | <b>0.021</b> - 0.05             | <b>0.025</b> - 0.06             | <b>0.032</b> - 0.08              | <b>0.04</b> - 0.09                | <b>0.04</b> - 0.11                | <b>0.05</b> - 0.12                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |
| <b>0.012</b> - 0.02             | <b>0.018</b> - 0.04             | <b>0.03</b> - 0.06              | <b>0.04</b> - 0.09              | <b>0.07</b> - 0.12               | <b>0.06</b> - 0.14                | <b>0.07</b> - 0.16                | <b>0.08</b> - 0.20                |  |



DIXI 7543

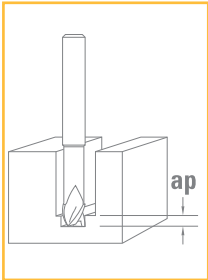
切削條件



| 加工材質 |            |                              | XIDUR      |     |  | ap<br>[mm]  | ae<br>[mm] |
|------|------------|------------------------------|------------|-----|--|-------------|------------|
|      |            |                              | Vc [m/min] |     |  |             |            |
| P    | 非合金鋼/低合金鋼  | < 600 N/mm <sup>2</sup>      | 90         | 110 |  | < 1.0 x ØD1 | 1 x ØD1    |
| P    | 非合金鋼/低合金鋼  | 600 – 1500 N/mm <sup>2</sup> | 70         | 90  |  | < 0.6 x ØD1 | 1 x ØD1    |
| P    | 含鉛快削鋼      |                              | 90         | 110 |  | < 1.0 x ØD1 | 1 x ØD1    |
| P    | 高合金鋼       | 700 – 1500 N/mm <sup>2</sup> | 40         | 55  |  | < 0.3 x ØD1 | 1 x ØD1    |
| M    | 不銹鋼        | 400 – 700 N/mm <sup>2</sup>  | 70         | 90  |  | < 0.8 x ØD1 | 1 x ØD1    |
| K    | 灰鑄鐵/球墨鑄鐵   | < 250 HB                     | 90         | 110 |  | < 0.7 x ØD1 | 1 x ØD1    |
| K    | 合金鑄鐵/球墨鑄鐵  | > 250 HB                     | 70         | 90  |  | < 0.4 x ØD1 | 1 x ØD1    |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵 |                              | 90         | 110 |  | < 0.4 x ØD1 | 1 x ØD1    |
| S    | 純鈦/鈦合金     |                              | 40         | 60  |  | < 0.3 x ØD1 | 1 x ØD1    |

DIXI 7593

切削條件



| DIXI 7593 Z = 3-4 |   | 鋁 ( Vc 400 - 600 m/min ) |                           |                |            |            |            |
|-------------------|---|--------------------------|---------------------------|----------------|------------|------------|------------|
| D <sub>1</sub>    | Z | Vc<br>[m/min]            | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | fz<br>[mm] |
| 6                 | 3 | 400                      | 21220                     | 570            | 3          | 6          | 0.009      |
| 8                 | 3 | 400                      | 15920                     | 570            | 4          | 8          | 0.012      |
| 10                | 3 | 400                      | 12730                     | 760            | 5          | 10         | 0.02       |
| 12                | 3 | 400                      | 10610                     | 760            | 6          | 12         | 0.024      |
| 16                | 3 | 400                      | 7960                      | 760            | 8          | 16         | 0.032      |
| 18                | 3 | 400                      | 7070                      | 760            | 9          | 18         | 0.036      |
| 20                | 4 | 400                      | 6370                      | 1020           | 10         | 20         | 0.04       |



$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給

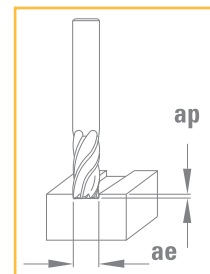
fz [mm]

| Ø D <sub>1</sub><br>1.00 - 1.50 | Ø D <sub>1</sub><br>1.50 -3.00 | Ø D <sub>1</sub><br>3.00 - 5.00 | Ø D <sub>1</sub><br>5.00 - 7.00 | Ø D <sub>1</sub><br>7.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 |  |
|---------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|--|
| 0.002 - 0.01                    | 0.003 - 0.01                   | 0.006 - 0.02                    | 0.010 - 0.02                    | 0.014 - 0.04                     | 0.02 - 0.05                       |  |
| 0.002 - 0.01                    | 0.002 - 0.01                   | 0.005 - 0.01                    | 0.008 - 0.02                    | 0.011 - 0.03                     | 0.02 - 0.04                       |  |
| 0.003 - 0.01                    | 0.004 - 0.01                   | 0.008 - 0.03                    | 0.013 - 0.04                    | 0.018 - 0.05                     | 0.03 - 0.07                       |  |
| 0.002 - 0.01                    | 0.002 - 0.01                   | 0.005 - 0.01                    | 0.008 - 0.02                    | 0.011 - 0.03                     | 0.02 - 0.04                       |  |
| 0.002 - 0.01                    | 0.002 - 0.01                   | 0.005 - 0.01                    | 0.008 - 0.02                    | 0.011 - 0.03                     | 0.02 - 0.04                       |  |
| 0.002 - 0.01                    | 0.003 - 0.01                   | 0.006 - 0.02                    | 0.010 - 0.02                    | 0.014 - 0.04                     | 0.02 - 0.05                       |  |
| 0.002 - 0.01                    | 0.002 - 0.01                   | 0.005 - 0.01                    | 0.008 - 0.02                    | 0.011 - 0.03                     | 0.02 - 0.04                       |  |
| 0.002 - 0.01                    | 0.003 - 0.01                   | 0.006 - 0.02                    | 0.010 - 0.02                    | 0.014 - 0.04                     | 0.02 - 0.05                       |  |
| 0.002 - 0.01                    | 0.002 - 0.01                   | 0.005 - 0.01                    | 0.008 - 0.02                    | 0.011 - 0.03                     | 0.02 - 0.04                       |  |



## DIXI 7563 - 7563-FC - 7565 - 7565-FC

### 切削條件 - 開槽



#### 加工材質

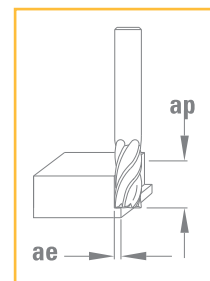
|   |                                    | DIXAL      |     |  |  |  |  | ap<br>[mm]  | ae<br>[mm] |
|---|------------------------------------|------------|-----|--|--|--|--|-------------|------------|
|   |                                    | Vc [m/min] |     |  |  |  |  |             |            |
| N | 銅合金 - 易於加工 (黃銅 - 青銅)               | 150        | 250 |  |  |  |  | < 1 x ØD1   | 1 x ØD1    |
| N | 銅合金 - 難以加工 / 鋁青銅合金<br>(安普科耐熱耐蝕銅合金) | 100        | 180 |  |  |  |  | < 0.7 x ØD1 | 1 x ØD1    |
| N | 鋁合金<br>Si < 8%                     | 400        | 550 |  |  |  |  | < 1 x ØD1   | 1 x ØD1    |
| N | 鑄鋁材質<br>Si > 8%                    | 150        | 250 |  |  |  |  | < 1 x ØD1   | 1 x ØD1    |
| N | 金, 銀                               | 200        | 300 |  |  |  |  | < 1 x ØD1   | 1 x ØD1    |

DIXI 7563-FC - 7565-FC ⇒ Vc +30%

fz +30%

## DIXI 7563 - 7563-FC - 7565 - 7565-FC

### 切削條件 - 側銑



#### 加工材質

|   |                                    | DIXAL      |     |  |  |  |  | ap<br>[mm]  | ae<br>[mm] |
|---|------------------------------------|------------|-----|--|--|--|--|-------------|------------|
|   |                                    | Vc [m/min] |     |  |  |  |  |             |            |
| N | 銅合金 - 易於加工 (黃銅 - 青銅)               | 200        | 300 |  |  |  |  | < 1.5 x ØD1 | 0.45 x ØD1 |
| N | 銅合金 - 難以加工 / 鋁青銅合金<br>(安普科耐熱耐蝕銅合金) | 150        | 200 |  |  |  |  | < 1.5 x ØD1 | 0.3 x ØD1  |
| N | 鋁合金<br>Si < 8%                     | 450        | 650 |  |  |  |  | < 1.5 x ØD1 | 0.45 x ØD1 |
| N | 鑄鋁材質<br>Si > 8%                    | 200        | 300 |  |  |  |  | < 1.5 x ØD1 | 0.35 x ØD1 |
| N | 金, 銀                               | 250        | 350 |  |  |  |  | < 1.5 x ØD1 | 0.45 x ØD1 |

DIXI 7563-FC - 7565-FC ⇒ Vc +30%

fz +30%

$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

每刃進給 fz [mm]

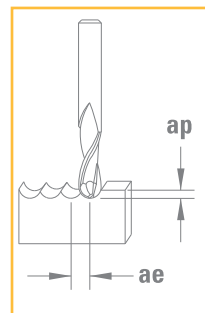
| Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.024</b> - 0.066            | <b>0.036</b> - 0.088            | <b>0.048</b> - 0.100             | <b>0.050</b> - 0.108              | <b>0.048</b> - 0.128              |  |
| <b>0.019</b> - 0.053            | <b>0.029</b> - 0.070            | <b>0.038</b> - 0.080             | <b>0.040</b> - 0.086              | <b>0.038</b> - 0.102              |  |
| <b>0.024</b> - 0.066            | <b>0.036</b> - 0.088            | <b>0.048</b> - 0.100             | <b>0.050</b> - 0.108              | <b>0.048</b> - 0.128              |  |
| <b>0.020</b> - 0.056            | <b>0.031</b> - 0.075            | <b>0.041</b> - 0.085             | <b>0.043</b> - 0.092              | <b>0.041</b> - 0.109              |  |
| <b>0.024</b> - 0.066            | <b>0.036</b> - 0.088            | <b>0.048</b> - 0.100             | <b>0.050</b> - 0.108              | <b>0.048</b> - 0.128              |  |

每刃進給 fz [mm]

| Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.030</b> - 0.083            | <b>0.045</b> - 0.114            | <b>0.060</b> - 0.110             | <b>0.063</b> - 0.132              | <b>0.060</b> - 0.144              |  |
| <b>0.024</b> - 0.066            | <b>0.036</b> - 0.092            | <b>0.048</b> - 0.088             | <b>0.050</b> - 0.106              | <b>0.048</b> - 0.115              |  |
| <b>0.030</b> - 0.083            | <b>0.045</b> - 0.114            | <b>0.060</b> - 0.110             | <b>0.063</b> - 0.132              | <b>0.060</b> - 0.144              |  |
| <b>0.026</b> - 0.070            | <b>0.038</b> - 0.097            | <b>0.051</b> - 0.094             | <b>0.053</b> - 0.112              | <b>0.051</b> - 0.122              |  |
| <b>0.030</b> - 0.083            | <b>0.045</b> - 0.114            | <b>0.060</b> - 0.110             | <b>0.063</b> - 0.132              | <b>0.060</b> - 0.144              |  |



## 切削條件



| DIXI 7532 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 30-45 HRC     |            | ( Vc 400 - 500 m/min ) |  |
|-----------------------|---------------|---------------------------|----------------|------------|------------|---------------|------------|------------------------|--|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm] | fz<br>[mm] |                        |  |
| 0.2 - 1               |               | 90000                     | 1800           | 0.02       | 0.05       | 0.28          | 0.01       |                        |  |
| 1.5                   | 400           | 84890                     | 3400           | 0.04       | 0.06       | 0.48          | 0.02       |                        |  |
| 2                     | 400           | 63660                     | 3820           | 0.05       | 0.09       | 0.62          | 0.03       |                        |  |
| 3                     | 400           | 42440                     | 3400           | 0.07       | 0.13       | 1.08          | 0.04       |                        |  |
| 4                     | 400           | 31830                     | 3180           | 0.09       | 0.15       | 1.20          | 0.05       |                        |  |
| 5                     | 400           | 25470                     | 3570           | 0.15       | 0.25       | 1.71          | 0.07       |                        |  |
| 6                     | 400           | 21220                     | 3400           | 0.20       | 0.30       | 2.15          | 0.08       |                        |  |
| 8                     | 400           | 15920                     | 3180           | 0.25       | 0.35       | 2.78          | 0.10       |                        |  |
| 10                    | 400           | 12730                     | 3820           | 0.30       | 0.50       | 3.41          | 0.15       |                        |  |

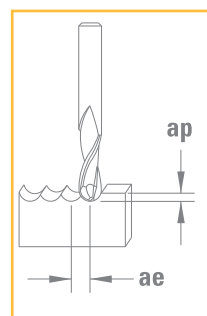
| DIXI 7532 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 45 - 55 HRC   |            | ( Vc 250 - 350 m/min ) |  |
|-----------------------|---------------|---------------------------|----------------|------------|------------|---------------|------------|------------------------|--|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm] | fz<br>[mm] |                        |  |
| 0.2 - 1               | 250           | 79580                     | 1110           | 0.02       | 0.05       | 0.28          | 0.007      |                        |  |
| 1.5                   | 250           | 53050                     | 2120           | 0.03       | 0.07       | 0.42          | 0.02       |                        |  |
| 2                     | 250           | 39790                     | 2390           | 0.04       | 0.09       | 0.56          | 0.03       |                        |  |
| 3                     | 250           | 26530                     | 2120           | 0.05       | 0.11       | 0.77          | 0.04       |                        |  |
| 4                     | 250           | 19890                     | 1990           | 0.07       | 0.15       | 1.04          | 0.05       |                        |  |
| 5                     | 250           | 15920                     | 1910           | 0.12       | 0.20       | 1.53          | 0.06       |                        |  |
| 6                     | 250           | 13260                     | 1860           | 0.15       | 0.25       | 1.87          | 0.07       |                        |  |
| 8                     | 250           | 9950                      | 1790           | 0.20       | 0.30       | 2.50          | 0.09       |                        |  |
| 10                    | 250           | 7960                      | 1750           | 0.25       | 0.40       | 3.12          | 0.11       |                        |  |

| DIXI 7532 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 55 - 65 HRC   |            | ( Vc 100 - 200 m/min ) |  |
|-----------------------|---------------|---------------------------|----------------|------------|------------|---------------|------------|------------------------|--|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm] | fz<br>[mm] |                        |  |
| 0.2 - 1               | 130           | 41380                     | 330            | 0.02       | 0.04       | 0.28          | 0.004      |                        |  |
| 1.5                   | 130           | 27590                     | 390            | 0.03       | 0.05       | 0.42          | 0.007      |                        |  |
| 2                     | 130           | 20690                     | 410            | 0.04       | 0.06       | 0.56          | 0.010      |                        |  |
| 3                     | 130           | 13790                     | 410            | 0.05       | 0.07       | 0.77          | 0.015      |                        |  |
| 4                     | 130           | 10350                     | 520            | 0.06       | 0.10       | 0.97          | 0.025      |                        |  |
| 5                     | 130           | 8280                      | 500            | 0.08       | 0.16       | 1.25          | 0.030      |                        |  |
| 6                     | 130           | 6900                      | 550            | 0.10       | 0.18       | 1.54          | 0.040      |                        |  |
| 8                     | 130           | 5170                      | 520            | 0.15       | 0.20       | 2.17          | 0.050      |                        |  |
| 10                    | 130           | 4140                      | 500            | 0.18       | 0.22       | 2.65          | 0.060      |                        |  |

推薦油霧潤滑，不建議乳化液。

轉數(n)和進給速度(Vf)為建議值。根據要加工的形狀大小（精度和表面粗度），做適度增減。

如果主軸無法達到推薦的轉速，則必須按比例減少Vf。建議盡可能使用順銑。



## 切削條件

| DIXI 7542 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 30-45<br>HRC  | ( Vc 400 - 500 m/min ) |
|-----------------------|---------------|---------------------------|----------------|------------|------------|---------------|------------------------|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm] | fz<br>[mm]             |
| 1                     |               | 90000                     | 1800           | 0.02       | 0.05       | 0.28          | 0.01                   |
| 1.5                   | 320           | 67910                     | 2720           | 0.04       | 0.06       | 0.48          | 0.02                   |
| 2                     | 320           | 50930                     | 3060           | 0.05       | 0.09       | 0.62          | 0.03                   |
| 3                     | 320           | 33950                     | 2720           | 0.07       | 0.13       | 1.08          | 0.04                   |
| 4                     | 320           | 25470                     | 2550           | 0.09       | 0.15       | 1.20          | 0.05                   |
| 5                     | 320           | 20370                     | 2850           | 0.15       | 0.25       | 1.71          | 0.07                   |
| 6                     | 320           | 16980                     | 2720           | 0.20       | 0.30       | 2.15          | 0.08                   |
| 8                     | 320           | 12730                     | 2550           | 0.25       | 0.35       | 2.78          | 0.10                   |
| 10                    | 320           | 10190                     | 3060           | 0.30       | 0.50       | 3.41          | 0.15                   |
| 12                    | 320           | 8490                      | 3400           | 0.40       | 0.60       | 4.31          | 0.20                   |

| DIXI 7542 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 45 - 55<br>HRC | ( Vc 250 - 350 m/min ) |
|-----------------------|---------------|---------------------------|----------------|------------|------------|----------------|------------------------|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm]  | fz<br>[mm]             |
| 1                     | 200           | 63660                     | 890            | 0.02       | 0.05       | 0.28           | 0.007                  |
| 1.5                   | 200           | 42440                     | 1700           | 0.03       | 0.07       | 0.42           | 0.020                  |
| 2                     | 200           | 31830                     | 1910           | 0.04       | 0.09       | 0.56           | 0.030                  |
| 3                     | 200           | 21220                     | 1700           | 0.05       | 0.11       | 0.77           | 0.040                  |
| 4                     | 200           | 15920                     | 1590           | 0.07       | 0.15       | 1.04           | 0.050                  |
| 5                     | 200           | 12730                     | 1530           | 0.12       | 0.20       | 1.53           | 0.060                  |
| 6                     | 200           | 10610                     | 1490           | 0.15       | 0.25       | 1.87           | 0.070                  |
| 8                     | 200           | 7960                      | 1430           | 0.20       | 0.30       | 2.50           | 0.090                  |
| 10                    | 200           | 6370                      | 1400           | 0.25       | 0.40       | 3.12           | 0.110                  |
| 12                    | 200           | 5310                      | 1380           | 0.30       | 0.50       | 3.75           | 0.130                  |

| DIXI 7542 XIDUR Z = 2 |               |                           |                | 熱處理鋼與鑄鐵    |            | 55 - 65<br>HRC | ( Vc 100 - 200 m/min ) |
|-----------------------|---------------|---------------------------|----------------|------------|------------|----------------|------------------------|
| D                     | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm] | ae<br>[mm] | Deff.<br>[mm]  | fz<br>[mm]             |
| 1                     | 100           | 31830                     | 250            | 0.02       | 0.04       | 0.28           | 0.004                  |
| 1.5                   | 100           | 21220                     | 300            | 0.03       | 0.05       | 0.42           | 0.007                  |
| 2                     | 100           | 15920                     | 320            | 0.04       | 0.06       | 0.56           | 0.010                  |
| 3                     | 100           | 10610                     | 320            | 0.05       | 0.07       | 0.77           | 0.015                  |
| 4                     | 100           | 7960                      | 400            | 0.06       | 0.10       | 0.97           | 0.025                  |
| 5                     | 100           | 6370                      | 380            | 0.08       | 0.16       | 1.25           | 0.030                  |
| 6                     | 100           | 5310                      | 420            | 0.10       | 0.18       | 1.54           | 0.040                  |
| 8                     | 100           | 3980                      | 400            | 0.15       | 0.20       | 2.17           | 0.050                  |
| 10                    | 100           | 3180                      | 380            | 0.18       | 0.22       | 2.65           | 0.060                  |
| 12                    | 100           | 2650                      | 420            | 0.20       | 0.25       | 3.07           | 0.080                  |

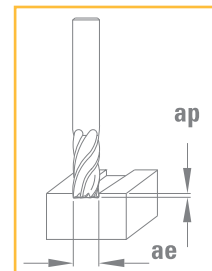
推薦油霧潤滑，不建議乳化液。

轉數(n)和進給速度(Vf)為建議值。根據要加工的形狀大小（精度和表面粗度），做適度增減。

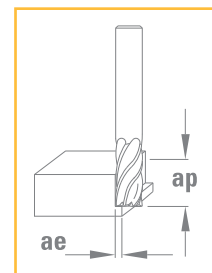
如果主軸無法達到推薦的轉速，則必須按比例減少Vf。建議盡可能使用順銑。

## 切削條件

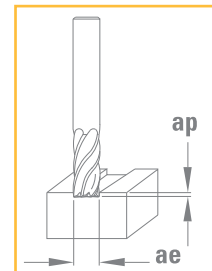
| DIXI 7520 XIDUR Z = 3-12 |    | 熱處理鋼與鑄鐵       |                           |                | 45 - 55 HRC ( Vc 30 - 70 m/min ) |                    |             |
|--------------------------|----|---------------|---------------------------|----------------|----------------------------------|--------------------|-------------|
| D <sub>1</sub>           | Z  | Vc<br>(m/min) | n<br>(min <sup>-1</sup> ) | Vf<br>(mm/min) | ap<br>(mm)                       | ae<br>(mm)         | fz<br>(mm)  |
| 0.4 - 0.9                | 3  | 30            | -                         | -              | 0.03 x D <sub>1</sub>            | 1 x D <sub>1</sub> | 0.001-0.002 |
| 1                        | 4  | 40            | 12800                     | 125            | 0.04                             | 1.00               | 0.002       |
| 1.5                      | 4  | 40            | 8500                      | 125            | 0.05                             | 1.50               | 0.0035      |
| 2                        | 5  | 40            | 6300                      | 125            | 0.07                             | 2.00               | 0.004       |
| 3                        | 5  | 40            | 4240                      | 150            | 0.12                             | 3.00               | 0.007       |
| 4                        | 5  | 40            | 3180                      | 160            | 0.15                             | 4.00               | 0.010       |
| 6                        | 6  | 40            | 2120                      | 190            | 0.20                             | 6.00               | 0.015       |
| 8                        | 6  | 40            | 1590                      | 190            | 0.25                             | 8.00               | 0.020       |
| 10                       | 6  | 40            | 1270                      | 190            | 0.30                             | 10.00              | 0.025       |
| 12                       | 8  | 40            | 1060                      | 210            | 0.40                             | 12.00              | 0.025       |
| 16                       | 10 | 40            | 800                       | 240            | 0.60                             | 16.00              | 0.030       |



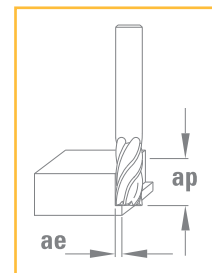
| DIXI 7520 XIDUR Z = 3-12 |    | 熱處理鋼與鑄鐵       |                           |                | 45 - 55 HRC ( Vc 150 - 250 m/min ) |                       |             |
|--------------------------|----|---------------|---------------------------|----------------|------------------------------------|-----------------------|-------------|
| Ø                        | Z  | Vc<br>(m/min) | n<br>(min <sup>-1</sup> ) | Vf<br>(mm/min) | ap<br>(mm)                         | ae<br>(mm)            | fz<br>(mm)  |
| 0.4 - 0.9                | 3  | 150           | -                         | -              | 1 x D <sub>1</sub>                 | 0.03 x D <sub>1</sub> | 0.001-0.002 |
| 1                        | 4  | 200           | 63700                     | 640            | 1.00                               | 0.04                  | 0.002       |
| 1.5                      | 4  | 200           | 42450                     | 640            | 1.50                               | 0.05                  | 0.0035      |
| 2                        | 5  | 200           | 32000                     | 640            | 2.00                               | 0.07                  | 0.004       |
| 3                        | 5  | 200           | 21300                     | 750            | 3.00                               | 0.12                  | 0.007       |
| 4                        | 5  | 200           | 15920                     | 800            | 4.00                               | 0.15                  | 0.010       |
| 6                        | 6  | 200           | 10610                     | 950            | 6.00                               | 0.20                  | 0.015       |
| 8                        | 6  | 200           | 7960                      | 960            | 8.00                               | 0.25                  | 0.020       |
| 10                       | 6  | 200           | 6370                      | 960            | 10.00                              | 0.30                  | 0.025       |
| 12                       | 8  | 200           | 5310                      | 1060           | 12.00                              | 0.40                  | 0.025       |
| 16                       | 10 | 200           | 3980                      | 1190           | 16.00                              | 0.60                  | 0.030       |



| DIXI 7520 XIDUR Z = 3-12 |    | 熱處理鋼與鑄鐵       |                           |                | 55 - 65 HRC ( Vc 12 - 40 m/min ) |                    |             |
|--------------------------|----|---------------|---------------------------|----------------|----------------------------------|--------------------|-------------|
| Ø                        | Z  | Vc<br>(m/min) | n<br>(min <sup>-1</sup> ) | Vf<br>(mm/min) | ap<br>(mm)                       | ae<br>(mm)         | fz<br>(mm)  |
| 0.4 - 0.9                | 3  | 12            | -                         | -              | 0.03 x D <sub>1</sub>            | 1 x D <sub>1</sub> | 0.001-0.002 |
| 1                        | 4  | 15            | 4700                      | 45             | 0.03                             | 1.00               | 0.002       |
| 1.5                      | 4  | 15            | 3180                      | 45             | 0.03                             | 1.50               | 0.0035      |
| 2                        | 5  | 15            | 2300                      | 45             | 0.04                             | 2.00               | 0.004       |
| 3                        | 5  | 15            | 1600                      | 55             | 0.05                             | 3.00               | 0.007       |
| 4                        | 5  | 15            | 1190                      | 60             | 0.06                             | 4.00               | 0.010       |
| 6                        | 6  | 15            | 800                       | 70             | 0.09                             | 6.00               | 0.015       |
| 8                        | 6  | 15            | 600                       | 70             | 0.12                             | 8.00               | 0.020       |
| 10                       | 6  | 15            | 480                       | 70             | 0.15                             | 10.00              | 0.025       |
| 12                       | 8  | 15            | 400                       | 80             | 0.18                             | 12.00              | 0.025       |
| 16                       | 10 | 15            | 300                       | 90             | 0.20                             | 16.00              | 0.030       |



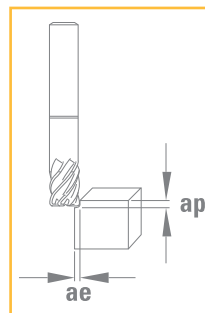
| DIXI 7520 XIDUR Z = 3-12 |    | 熱處理鋼與鑄鐵       |                           |                | 55 - 65 HRC ( Vc 60 - 120 m/min ) |                       |             |
|--------------------------|----|---------------|---------------------------|----------------|-----------------------------------|-----------------------|-------------|
| Ø                        | Z  | Vc<br>(m/min) | n<br>(min <sup>-1</sup> ) | Vf<br>(mm/min) | ap<br>(mm)                        | ae<br>(mm)            | fz<br>(mm)  |
| 0.4 - 0.9                | 3  | 60            | -                         | -              | 1 x D <sub>1</sub>                | 0.03 x D <sub>1</sub> | 0.001-0.002 |
| 1                        | 4  | 80            | 25500                     | 250            | 1.00                              | 0.03                  | 0.002       |
| 1.5                      | 4  | 80            | 17000                     | 250            | 1.50                              | 0.035                 | 0.0035      |
| 2                        | 5  | 80            | 12700                     | 250            | 2.00                              | 0.04                  | 0.004       |
| 3                        | 5  | 80            | 8500                      | 290            | 3.00                              | 0.05                  | 0.007       |
| 4                        | 5  | 80            | 6370                      | 320            | 4.00                              | 0.06                  | 0.010       |
| 6                        | 6  | 80            | 4240                      | 380            | 6.00                              | 0.09                  | 0.015       |
| 8                        | 6  | 80            | 3180                      | 380            | 8.00                              | 0.12                  | 0.020       |
| 10                       | 6  | 80            | 2550                      | 380            | 10.00                             | 0.15                  | 0.025       |
| 12                       | 8  | 80            | 2120                      | 420            | 12.00                             | 0.18                  | 0.025       |
| 16                       | 10 | 80            | 1590                      | 480            | 16.00                             | 0.20                  | 0.030       |



推薦油霧潤滑，不建議乳化液。



## 切削條件



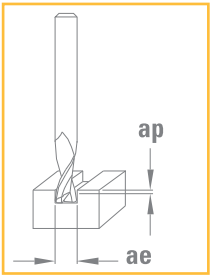
| DIXI 7070 XIDUR Z = 4-6 |   | 熱處理鋼與鑄鐵       |                           |                | 30-45<br>HRC | (Vc 150 - 200 m/min) |            |
|-------------------------|---|---------------|---------------------------|----------------|--------------|----------------------|------------|
| D <sub>1</sub>          | Z | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm]   | ae<br>[mm]           | fz<br>[mm] |
| 3                       | 4 | 150           | 15900                     | 3800           | 0.20         | 0.80                 | 0.06       |
| 4                       | 4 | 150           | 11940                     | 4300           | 0.25         | 0.85                 | 0.09       |
| 5                       | 4 | 150           | 9550                      | 4580           | 0.30         | 0.90                 | 0.12       |
| 6                       | 4 | 150           | 7960                      | 4460           | 0.35         | 1.00                 | 0.14       |
| 8                       | 6 | 150           | 5970                      | 5730           | 0.40         | 1.10                 | 0.16       |
| 10                      | 6 | 150           | 4770                      | 5150           | 0.45         | 1.30                 | 0.18       |
| 12                      | 6 | 150           | 3980                      | 4780           | 0.50         | 1.50                 | 0.20       |

| DIXI 7070 XIDUR Z = 4-6 |   | 熱處理鋼與鑄鐵       |                           |                | 45 - 55<br>HRC | (Vc 130 - 170 m/min) |            |
|-------------------------|---|---------------|---------------------------|----------------|----------------|----------------------|------------|
| D <sub>1</sub>          | Z | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm]     | ae<br>[mm]           | fz<br>[mm] |
| 3                       | 4 | 130           | 13700                     | 2750           | 0.15           | 0.70                 | 0.05       |
| 4                       | 4 | 130           | 10350                     | 3310           | 0.20           | 0.75                 | 0.08       |
| 5                       | 4 | 130           | 8280                      | 3310           | 0.25           | 0.75                 | 0.10       |
| 6                       | 4 | 130           | 6900                      | 3040           | 0.30           | 0.80                 | 0.11       |
| 8                       | 6 | 130           | 5170                      | 3720           | 0.40           | 0.80                 | 0.12       |
| 10                      | 6 | 130           | 4140                      | 3230           | 0.42           | 1.00                 | 0.13       |
| 12                      | 6 | 130           | 3450                      | 2900           | 0.45           | 1.20                 | 0.14       |

| DIXI 7070 XIDUR Z = 4-6 |   | 熱處理鋼與鑄鐵       |                           |                | 55 - 65<br>HRC | (Vc 100 - 130 m/min) |            |
|-------------------------|---|---------------|---------------------------|----------------|----------------|----------------------|------------|
| D <sub>1</sub>          | Z | Vc<br>[m/min] | n<br>[min <sup>-1</sup> ] | Vf<br>[mm/min] | ap<br>[mm]     | ae<br>[mm]           | fz<br>[mm] |
| 3                       | 4 | 100           | 10600                     | 500            | 0.08           | 0.20                 | 0.010      |
| 4                       | 4 | 100           | 7960                      | 640            | 0.10           | 0.25                 | 0.020      |
| 5                       | 4 | 100           | 6370                      | 890            | 0.12           | 0.28                 | 0.035      |
| 6                       | 4 | 100           | 5310                      | 850            | 0.15           | 0.30                 | 0.040      |
| 8                       | 6 | 100           | 3980                      | 1190           | 0.18           | 0.32                 | 0.050      |
| 10                      | 6 | 100           | 3180                      | 1140           | 0.20           | 0.35                 | 0.060      |
| 12                      | 6 | 100           | 2650                      | 1270           | 0.25           | 0.40                 | 0.080      |

DIXI 7215 - 7215-FC

切削條件 - 開槽

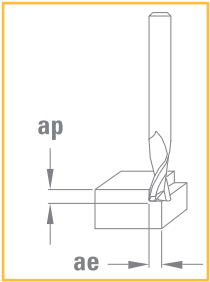


| 加工材質 |                                    | DAC        |  |  | ap<br>[mm]  | ae<br>[mm] |
|------|------------------------------------|------------|--|--|-------------|------------|
|      |                                    | Vc [m/min] |  |  |             |            |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅)               | 150 250    |  |  | < 1.5 x ØD1 | 1 x ØD1    |
| N    | 銅合金 - 難以加工 / 鋁青銅合金<br>(安普科耐熱耐蝕銅合金) | 100 180    |  |  | < 1.2 x ØD1 | 1 x ØD1    |
| N    | 鋁合金<br>Si < 8%                     | 400 550    |  |  | < 1.5 x ØD1 | 1 x ØD1    |
| N    | 鑄鋁材質<br>Si > 8%                    | 150 250    |  |  | < 1.5 x ØD1 | 1 x ØD1    |
| N    | 金, 銀                               | 200 300    |  |  | < 1.5 x ØD1 | 1 x ØD1    |

DIXI 7215-FC ⇒ Vc +30%  
fz +30%

DIXI 7215 - 7215-FC

切削條件 - 側銑



| 加工材質 |                                    | DAC        |  |  | ap<br>[mm]  | ae<br>[mm] |
|------|------------------------------------|------------|--|--|-------------|------------|
|      |                                    | Vc [m/min] |  |  |             |            |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅)               | 200 300    |  |  | < 1.2 x ØD1 | 0.55 x ØD1 |
| N    | 銅合金 - 難以加工 / 鋁青銅合金<br>(安普科耐熱耐蝕銅合金) | 150 200    |  |  | < 1.5 x ØD1 | 0.35 x ØD1 |
| N    | 鋁合金<br>Si < 8%                     | 450 650    |  |  | < 1.5 x ØD1 | 0.55 x ØD1 |
| N    | 鑄鋁材質<br>Si > 8%                    | 200 300    |  |  | < 1.5 x ØD1 | 0.45 x ØD1 |
| N    | 金, 銀                               | 250 350    |  |  | < 1 x ØD1   | 0.55 x ØD1 |

DIXI 7215-FC ⇒ Vc +30%  
fz +30%



$$n \text{ [tr/min]} = \frac{Vc \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$Vf \text{ [mm/min]} = n \text{ [tr/min]} \times fz \text{ [mm]} \times Z$$

每刃進給 fz [mm]

| Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.030</b> - 0.075            | <b>0.039</b> - 0.100            | <b>0.044</b> - 0.105             | <b>0.052</b> - 0.114              | <b>0.054</b> - 0.136              |  |
| <b>0.024</b> - 0.060            | <b>0.031</b> - 0.080            | <b>0.035</b> - 0.084             | <b>0.042</b> - 0.091              | <b>0.043</b> - 0.109              |  |
| <b>0.030</b> - 0.075            | <b>0.039</b> - 0.100            | <b>0.044</b> - 0.105             | <b>0.052</b> - 0.114              | <b>0.054</b> - 0.136              |  |
| <b>0.026</b> - 0.064            | <b>0.033</b> - 0.085            | <b>0.037</b> - 0.089             | <b>0.044</b> - 0.097              | <b>0.046</b> - 0.116              |  |
| <b>0.030</b> - 0.075            | <b>0.039</b> - 0.100            | <b>0.044</b> - 0.105             | <b>0.052</b> - 0.114              | <b>0.054</b> - 0.136              |  |

每刃進給 fz [mm]

| Ø D <sub>1</sub><br>4.00 - 6.00 | Ø D <sub>1</sub><br>6.00 - 8.00 | Ø D <sub>1</sub><br>8.00 - 10.00 | Ø D <sub>1</sub><br>10.00 - 12.00 | Ø D <sub>1</sub><br>12.00 - 16.00 |  |
|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|
| <b>0.038</b> - 0.094            | <b>0.049</b> - 0.130            | <b>0.055</b> - 0.110             | <b>0.065</b> - 0.132              | <b>0.068</b> - 0.144              |  |
| <b>0.030</b> - 0.075            | <b>0.039</b> - 0.104            | <b>0.044</b> - 0.088             | <b>0.052</b> - 0.106              | <b>0.054</b> - 0.115              |  |
| <b>0.038</b> - 0.094            | <b>0.049</b> - 0.130            | <b>0.055</b> - 0.110             | <b>0.065</b> - 0.132              | <b>0.068</b> - 0.144              |  |
| <b>0.032</b> - 0.080            | <b>0.041</b> - 0.111            | <b>0.047</b> - 0.094             | <b>0.055</b> - 0.112              | <b>0.057</b> - 0.122              |  |
| <b>0.038</b> - 0.094            | <b>0.049</b> - 0.130            | <b>0.055</b> - 0.110             | <b>0.065</b> - 0.132              | <b>0.068</b> - 0.144              |  |



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圖示說明



使用方法



切削數據



徑向、斜向、插銑



徑向



徑向、斜向



徑向、插銑



DIN規範



ISO規範



DIXI規範



切斷



開槽



雙螺旋角



不等分割



側固平面



柄部倒角



倒角



R角



直角



$R = D/2$



圓弧公差



刃口薄化



刀刃過中心



$D > \dots$  刀刃過中心



刀刃不過中心



不支援中心出水



中心出水



刀刃出水



貫穿孔



盲孔

P M H K S N 材料分組

$>1500 \text{ N/mm}^2$  材質硬度



資訊

刀具材質

- 無鍍層
- PCD

●

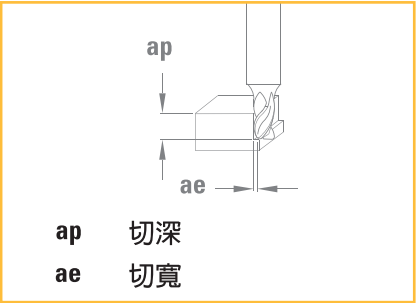
PCD多晶鑽石
- CVD

■

CVD多晶鑽石
- DIA

◆

單晶鑽石



Coatings

- TiAlN

■

TiAlN 鍍層
- DICUT

■

DICUT 鍍層
- XIDUR

■

XIDUR 鍍層
- C-TOP

■

C-TOP 鍍層
- CUTINOX

■

CUTINOX 鍍層
- DAC

■

DAC 鍍層
- DIXAL

■

DIXAL 鍍層
- DLC

■

DLC 鍍層
- DIAMANT

■

鑽石鍍層
- DINAC

■

DINAC 鍍層
- DI-TOP

■

DI-TOP 鍍層
- Z

刃數
- Vc

切削速度
- f

每轉進給
- Vf

進給速度
- n

主軸轉數
- Rm

抗拉強度
- fz

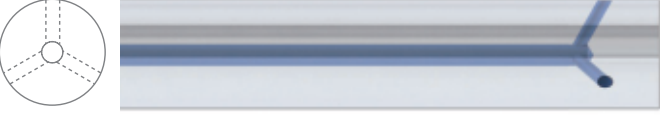
每刃進給
- R

右手切削
- L

左手切削
- P.

頁數

冷卻方式

|                                                                                     | 符號 | 說明     | 刀具類型         | 例子            |
|-------------------------------------------------------------------------------------|----|--------|--------------|---------------|
|  | HH | 螺旋孔    | 標準鑽頭<br>標準銑刀 | DIXI 1145-HH  |
|  | SH | 直孔     | 直刃槽鑽         | DIXI 72420-SH |
|  | TC | 中心出水   | 鉸刀           | POLY 4001-TC  |
|  | FC | 刀刃出水   | 刀刃出水立銑刀      | DIXI 7563-FC  |
|  | PH | 環狀孔出水  | 刀柄環狀出水       | DIXI 1738-PH  |
|  | SC | 刀柄外側出水 | 直刃槽鑽<br>鉸刀   | POLY 4005-SC  |



[μm]

| [mm] |           | D10            | E9             | F7            | F8            | G7           | G9          | H6          | H7          | H8          | H9           | H10          | H11          | H12          | H13          | JS7   | JS9   | K6          | K7           | M6           | M7          | N7           | N9           | P7           | P9            |
|------|-----------|----------------|----------------|---------------|---------------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|-------|-------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|---------------|
| -    | 3         | + 60<br>+ 20   | + 39<br>+ 14   | + 16<br>+ 6   | + 20<br>+ 6   | + 12<br>+ 2  | + 27<br>+ 2 | + 6<br>+ 0  | + 10<br>+ 0 | + 14<br>+ 0 | + 25<br>+ 0  | + 40<br>+ 0  | + 60<br>+ 0  | + 100<br>+ 0 | + 140<br>+ 0 | ± 5   | ±12.5 | - 0<br>- 6  | - 0<br>- 10  | - 2<br>- 8   | - 2<br>- 12 | - 4<br>- 14  | - 4<br>- 29  | - 6<br>- 16  | - 6<br>- 31   |
| 3    | 3 > Ø ≥ 6 | + 78<br>+ 30   | + 50<br>+ 20   | + 22<br>+ 10  | + 28<br>+ 10  | + 16<br>+ 4  | + 34<br>+ 4 | + 8<br>+ 0  | + 12<br>+ 0 | + 18<br>+ 0 | + 30<br>+ 0  | + 48<br>+ 0  | + 75<br>+ 0  | + 120<br>+ 0 | + 180<br>+ 0 | ± 6   | ± 15  | + 2<br>- 6  | + 3<br>- 9   | - 1<br>- 9   | - 0<br>- 12 | - 4<br>- 16  | - 0<br>- 30  | - 8<br>- 20  | - 12<br>- 42  |
| 6    | 10        | + 98<br>+ 40   | + 61<br>+ 25   | + 28<br>+ 13  | + 35<br>+ 13  | + 20<br>+ 5  | + 41<br>+ 5 | + 9<br>+ 0  | + 15<br>+ 0 | + 22<br>+ 0 | + 36<br>+ 0  | + 58<br>+ 0  | + 90<br>+ 0  | + 150<br>+ 0 | + 220<br>+ 0 | ± 7.5 | ± 18  | + 2<br>- 7  | + 5<br>- 10  | - 3<br>- 12  | - 0<br>- 15 | - 4<br>- 19  | - 0<br>- 36  | - 9<br>- 24  | - 15<br>- 51  |
| 10   | 18        | + 120<br>+ 50  | + 75<br>+ 32   | + 34<br>+ 16  | + 43<br>+ 16  | + 24<br>+ 6  | + 49<br>+ 6 | + 11<br>+ 0 | + 18<br>+ 0 | + 27<br>+ 0 | + 43<br>+ 0  | + 70<br>+ 0  | + 110<br>+ 0 | + 180<br>+ 0 | + 270<br>+ 0 | ± 9   | ±21.5 | + 2<br>- 9  | + 6<br>- 12  | - 4<br>- 15  | - 0<br>- 18 | - 5<br>- 23  | - 0<br>- 43  | - 11<br>- 29 | - 18<br>- 61  |
| 18   | 30        | + 149<br>+ 65  | + 92<br>+ 40   | + 41<br>+ 20  | + 53<br>+ 20  | + 28<br>+ 7  | + 59<br>+ 7 | + 13<br>+ 0 | + 21<br>+ 0 | + 33<br>+ 0 | + 52<br>+ 0  | + 84<br>+ 0  | + 130<br>+ 0 | + 210<br>+ 0 | + 330<br>+ 0 | ±10.5 | ± 26  | + 2<br>- 11 | + 6<br>- 15  | - 4<br>- 17  | - 0<br>- 21 | - 7<br>- 28  | - 0<br>- 52  | - 14<br>- 35 | - 22<br>- 74  |
| 30   | 50        | + 180<br>+ 80  | + 112<br>+ 50  | + 50<br>+ 25  | + 64<br>+ 25  | + 34<br>+ 9  | + 71<br>+ 9 | + 16<br>+ 0 | + 25<br>+ 0 | + 39<br>+ 0 | + 62<br>+ 0  | + 100<br>+ 0 | + 160<br>+ 0 | + 250<br>+ 0 | + 390<br>+ 0 | ±12.5 | ± 31  | + 3<br>- 13 | + 7<br>- 18  | - 4<br>- 20  | - 0<br>- 25 | - 8<br>- 33  | - 0<br>- 62  | - 17<br>- 42 | - 26<br>- 88  |
| 50   | 80        | + 220<br>+ 100 | + 134<br>+ 60  | + 60<br>+ 30  | + 76<br>+ 30  | + 40<br>+ 10 |             | + 19<br>+ 0 | + 30<br>+ 0 | + 46<br>+ 0 | + 74<br>+ 0  | + 120<br>+ 0 | + 190<br>+ 0 | + 300<br>+ 0 | + 460<br>+ 0 | ± 15  | ± 37  | + 4<br>- 15 | + 9<br>- 21  | - 5<br>- 24  | - 0<br>- 30 | - 9<br>- 39  | - 0<br>- 74  | - 21<br>- 51 | - 32<br>- 106 |
| 80   | 120       | + 260<br>+ 120 | + 159<br>+ 72  | + 71<br>+ 36  | + 90<br>+ 36  | + 47<br>+ 12 |             | + 22<br>+ 0 | + 35<br>+ 0 | + 54<br>+ 0 | + 87<br>+ 0  | + 140<br>+ 0 | + 220<br>+ 0 | + 350<br>+ 0 | + 540<br>+ 0 | ±17.5 | ±43.5 | + 4<br>- 18 | + 10<br>- 15 | - 6<br>- 28  | - 0<br>- 35 | - 10<br>- 45 | - 0<br>- 87  | - 24<br>- 59 | - 37<br>- 124 |
| 120  | 180       | + 305<br>+ 145 | + 185<br>+ 85  | + 83<br>+ 43  | + 106<br>+ 43 | + 54<br>+ 14 |             | + 25<br>+ 0 | + 40<br>+ 0 | + 63<br>+ 0 | + 100<br>+ 0 | + 160<br>+ 0 | + 250<br>+ 0 | + 400<br>+ 0 | + 630<br>+ 0 | ± 20  | ± 50  | + 4<br>- 21 | + 12<br>- 28 | - 8<br>- 33  | - 0<br>- 40 | - 12<br>- 52 | - 0<br>- 100 | - 28<br>- 68 | - 43<br>- 143 |
| 180  | 250       | + 355<br>+ 170 | + 215<br>+ 110 | + 96<br>+ 50  | + 122<br>+ 50 | + 61<br>+ 15 |             | + 29<br>+ 0 | + 46<br>+ 0 | + 72<br>+ 0 | + 115<br>+ 0 | + 185<br>+ 0 | + 290<br>+ 0 | + 460<br>+ 0 | + 720<br>+ 0 | ± 23  | ±57.5 | + 5<br>- 24 | + 13<br>- 33 | - 8<br>- 37  | - 0<br>- 46 | - 14<br>- 60 | - 0<br>- 115 | - 33<br>- 79 | - 50<br>- 165 |
| 250  | 315       | + 400<br>+ 190 | + 240<br>+ 110 | + 108<br>+ 56 | + 137<br>+ 56 | + 69<br>+ 17 |             | + 32<br>+ 0 | + 52<br>+ 0 | + 81<br>+ 0 | + 130<br>+ 0 | + 210<br>+ 0 | + 320<br>+ 0 | + 520<br>+ 0 | + 810<br>+ 0 | ± 26  | ± 65  | + 5<br>- 27 | + 16<br>- 36 | - 9<br>- 41  | - 0<br>- 52 | - 14<br>- 66 | - 0<br>- 130 | - 36<br>- 88 | - 56<br>- 186 |
| 315  | 400       | + 440<br>+ 210 | + 265<br>+ 125 | + 119<br>+ 62 | + 151<br>+ 62 | + 75<br>+ 18 |             | + 36<br>+ 0 | + 57<br>+ 0 | + 89<br>+ 0 | + 140<br>+ 0 | + 230<br>+ 0 | + 360<br>+ 0 | + 570<br>+ 0 | + 890<br>+ 0 | ±28.5 | ± 70  | + 7<br>- 29 | + 17<br>- 40 | - 10<br>- 46 | - 0<br>- 57 | - 16<br>- 73 | - 0<br>- 140 | - 41<br>- 98 | - 62<br>- 202 |

[μm]

| [mm] |           | d9             | e8             | f7            | g6           | h5          | h6          | h7          | h8          | h9           | h10          | h11          | js5   | js6   | js12  | js13  | js14  | k5          | k6          | m5           | m6           | n5           | n6           | p6           |
|------|-----------|----------------|----------------|---------------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|-------|-------|-------|-------|-------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| -    | 3         | - 20<br>- 45   | - 14<br>- 28   | - 6<br>- 16   | - 2<br>- 8   | - 0<br>- 4  | - 0<br>- 6  | - 0<br>- 10 | - 0<br>- 14 | - 0<br>- 25  | - 0<br>- 40  | - 0<br>- 60  | ± 2   | ± 3   | ± 50  | ± 70  | ± 125 | + 4<br>+ 0  | + 6<br>+ 0  | + 6<br>+ 2   | + 8<br>+ 2   | + 8<br>+ 4   | + 10<br>+ 4  | + 12<br>+ 6  |
| 3    | 3 > Ø ≥ 6 | - 30<br>- 60   | - 20<br>- 38   | - 10<br>- 22  | - 4<br>- 12  | - 0<br>- 5  | - 0<br>- 8  | - 0<br>- 12 | - 0<br>- 18 | - 0<br>- 30  | - 0<br>- 48  | - 0<br>- 75  | ± 2.5 | ± 4   | ± 60  | ± 90  | ± 150 | + 6<br>+ 1  | + 9<br>+ 1  | + 9<br>+ 4   | + 12<br>+ 4  | + 13<br>+ 8  | + 16<br>+ 8  | + 20<br>+ 12 |
| 6    | 10        | - 40<br>- 76   | - 25<br>- 47   | - 13<br>- 28  | - 5<br>- 14  | - 0<br>- 6  | - 0<br>- 9  | - 0<br>- 15 | - 0<br>- 22 | - 0<br>- 36  | - 0<br>- 58  | - 0<br>- 90  | ± 3   | ± 4.5 | ± 75  | ± 110 | ± 180 | + 7<br>+ 1  | + 10<br>+ 1 | + 12<br>+ 6  | + 15<br>+ 6  | + 16<br>+ 10 | + 19<br>+ 10 | + 24<br>+ 15 |
| 10   | 18        | - 50<br>- 93   | - 32<br>- 59   | - 16<br>- 34  | - 6<br>- 17  | - 0<br>- 8  | - 0<br>- 11 | - 0<br>- 18 | - 0<br>- 27 | - 0<br>- 43  | - 0<br>- 70  | - 0<br>- 110 | ± 4   | ± 5.5 | ± 90  | ± 135 | ± 215 | + 9<br>+ 1  | + 12<br>+ 1 | + 15<br>+ 7  | + 18<br>+ 7  | + 20<br>+ 12 | + 23<br>+ 12 | + 29<br>+ 18 |
| 18   | 30        | - 65<br>- 117  | - 40<br>- 73   | - 20<br>- 41  | - 7<br>- 20  | - 0<br>- 9  | - 0<br>- 13 | - 0<br>- 21 | - 0<br>- 33 | - 0<br>- 52  | - 0<br>- 84  | - 0<br>- 130 | ± 4.5 | ± 6.5 | ± 105 | ± 165 | ± 260 | + 11<br>+ 2 | + 15<br>+ 2 | + 17<br>+ 8  | + 21<br>+ 8  | + 24<br>+ 15 | + 28<br>+ 15 | + 35<br>+ 22 |
| 30   | 50        | - 80<br>- 142  | - 50<br>- 89   | - 25<br>- 50  | - 9<br>- 25  | - 0<br>- 11 | - 0<br>- 16 | - 0<br>- 25 | - 0<br>- 39 | - 0<br>- 62  | - 0<br>- 100 | - 0<br>- 160 | ± 5.5 | ± 8   | ± 125 | ± 195 | ± 310 | + 13<br>+ 2 | + 18<br>+ 2 | + 20<br>+ 9  | + 25<br>+ 9  | + 28<br>+ 17 | + 33<br>+ 17 | + 42<br>+ 26 |
| 50   | 80        | - 100<br>- 174 | - 60<br>- 106  | - 30<br>- 60  | - 10<br>- 29 | - 0<br>- 13 | - 0<br>- 19 | - 0<br>- 30 | - 0<br>- 46 | - 0<br>- 74  | - 0<br>- 120 | - 0<br>- 190 | ± 6.5 | ± 9.5 | ± 150 | ± 230 | ± 370 | + 15<br>+ 2 | + 21<br>+ 2 | + 24<br>+ 11 | + 30<br>+ 11 | + 33<br>+ 20 | + 39<br>+ 20 | + 51<br>+ 32 |
| 80   | 120       | - 120<br>- 207 | - 72<br>- 126  | - 36<br>- 71  | - 12<br>- 34 | - 0<br>- 15 | - 0<br>- 22 | - 0<br>- 35 | - 0<br>- 54 | - 0<br>- 87  | - 0<br>- 140 | - 0<br>- 220 | ± 7.5 | ± 11  | ± 175 | ± 270 | ± 435 | + 18<br>+ 3 | + 25<br>+ 3 | + 28<br>+ 13 | + 35<br>+ 13 | + 38<br>+ 23 | + 45<br>+ 23 | + 59<br>+ 37 |
| 120  | 180       | - 145<br>- 245 | - 85<br>- 148  | - 43<br>- 83  | - 14<br>- 39 | - 0<br>- 18 | - 0<br>- 25 | - 0<br>- 40 | - 0<br>- 63 | - 0<br>- 100 | - 0<br>- 160 | - 0<br>- 250 | ± 9   | ±12.5 | ± 200 | ± 315 | ± 500 | + 21<br>+ 3 | + 28<br>+ 3 | + 33<br>+ 15 | + 40<br>+ 15 | + 45<br>+ 27 | + 52<br>+ 27 | + 68<br>+ 43 |
| 180  | 250       | - 170<br>- 285 | - 100<br>- 172 | - 50<br>- 96  | - 15<br>- 44 | - 0<br>- 20 | - 0<br>- 29 | - 0<br>- 46 | - 0<br>- 72 | - 0<br>- 115 | - 0<br>- 185 | - 0<br>- 290 | ± 10  | ±14.5 | ± 230 | ± 360 | ± 575 | + 24<br>+ 4 | + 33<br>+ 4 | + 37<br>+ 17 | + 46<br>+ 17 | + 51<br>+ 31 | + 50<br>+ 31 | + 79<br>+ 50 |
| 250  | 315       | - 190<br>- 320 | - 110<br>- 191 | - 56<br>- 108 | - 17<br>- 49 | - 0<br>- 23 | - 0<br>- 32 | - 0<br>- 52 | - 0<br>- 81 | - 0<br>- 130 | - 0<br>- 210 | - 0<br>- 320 | ±11.5 | ± 16  | ± 260 | ± 405 | ± 650 | + 27<br>+ 4 | + 36<br>+ 4 | + 43<br>+ 20 | + 52<br>+ 20 | + 57<br>+ 34 | + 66<br>+ 34 | + 88<br>+ 56 |
| 315  | 400       | - 210<br>- 350 | - 125<br>- 214 | - 62<br>- 119 | - 18<br>- 54 | - 0<br>- 25 | - 0<br>- 36 | - 0<br>- 57 | - 0<br>- 89 | - 0<br>- 140 | - 0<br>- 230 | - 0<br>- 360 | ±12.5 | ± 18  | ± 285 | ± 445 | ± 700 | + 29<br>+ 4 | + 40<br>+ 4 | + 46<br>+ 21 | + 57<br>+ 21 | + 62<br>+ 37 | + 73<br>+ 37 | + 98<br>+ 62 |



硬度表

| 抗拉強度    | 布氏硬度 | 維氏硬度    | 洛氏硬度  |       |
|---------|------|---------|-------|-------|
| [N/mm²] | [HB] | [HV 30] | [HRB] | [HRC] |
| 370     | 109  | 115     | 66.7  |       |
| 385     | 114  | 120     |       |       |
| 400     | 119  | 125     |       |       |
| 415     | 124  | 130     | 71.2  |       |
| 430     | 128  | 135     |       |       |
| 450     | 133  | 140     |       |       |
| 465     | 138  | 145     | 78.7  |       |
| 480     | 143  | 150     |       |       |
| 495     | 147  | 155     |       |       |
| 510     | 152  | 160     | 81.7  |       |
| 530     | 156  | 165     |       |       |
| 545     | 162  | 170     |       |       |
| 560     | 166  | 175     | 87.1  |       |
| 575     | 171  | 180     |       |       |
| 595     | 176  | 185     |       |       |
| 610     | 181  | 190     | 89.5  |       |
| 625     | 185  | 195     |       |       |
| 640     | 190  | 200     |       |       |
| 660     | 195  | 205     | 92.5  |       |
| 675     | 199  | 210     |       |       |
| 690     | 204  | 215     |       |       |
| 705     | 209  | 220     | 95    |       |
| 720     | 214  | 225     |       |       |
| 740     | 219  | 230     |       |       |
| 755     | 223  | 235     | 98.1  | 20.3  |
| 770     | 228  | 240     |       | 21.3  |
| 785     | 233  | 245     |       |       |
| 800     | 238  | 250     | 99.5  | 22.2  |
| 820     | 242  | 255     | 101   | 23.1  |
| 835     | 247  | 260     |       | 24    |
| 850     | 252  | 265     | 102   | 24.8  |
| 865     | 257  | 270     |       | 25.6  |
| 880     | 261  | 275     |       | 26.4  |
| 900     | 266  | 280     | 104   | 27.1  |
| 915     | 271  | 285     | 105   | 27.8  |
| 930     | 276  | 290     |       | 28.5  |

| 抗拉強度    | 布氏硬度 | 維氏硬度    | 洛氏硬度  |
|---------|------|---------|-------|
| [N/mm²] | [HB] | [HV 30] | [HRC] |
| 950     | 280  | 295     | 29.2  |
| 965     | 285  | 300     | 29.8  |
| 995     | 295  | 310     | 31    |
| 1030    | 304  | 320     | 32.2  |
| 1060    | 314  | 330     | 33.3  |
| 1095    | 323  | 340     | 34.4  |
| 1125    | 333  | 350     | 35.5  |
| 1155    | 342  | 360     | 36.6  |
| 1190    | 352  | 370     | 37.7  |
| 1220    | 361  | 380     | 38.8  |
| 1255    | 371  | 390     | 39.8  |
| 1290    | 380  | 400     | 40.8  |
| 1320    | 390  | 410     | 41.8  |
| 1350    | 399  | 420     | 42.7  |
| 1385    | 409  | 430     | 43.6  |
| 1420    | 418  | 440     | 44.5  |
| 1455    | 428  | 450     | 45.3  |
| 1485    | 437  | 460     | 46.1  |
| 1520    | 447  | 470     | 46.9  |
| 1555    | 456  | 480     | 47.7  |
| 1630    | 475  | 500     | 49.1  |
| 1700    | 494  | 520     | 50.5  |
| 1775    | 513  | 540     | 51.7  |
| 1845    | 532  | 560     | 53    |
| 1920    | 551  | 580     | 54.1  |
| 1995    | 570  | 600     | 55.2  |
| 2070    | 589  | 620     | 56.3  |
| 2145    | 608  | 640     | 57.3  |
|         |      | 660     | 58.3  |
|         |      | 680     | 58.3  |
|         |      | 700     | 60.1  |
|         |      | 720     | 61    |
|         |      | 740     | 61.8  |
|         |      | 760     | 62.5  |
|         |      | 780     | 63.3  |
|         |      | 800     | 64    |



面粗度表

|                                                                                     |     |  |  |  | Ra [μm] | Rt [μm] | Rz [μm] |
|-------------------------------------------------------------------------------------|-----|--|--|--|---------|---------|---------|
| <div>拋光</div> <div>研磨</div> <div>鉸孔</div> <div>銑削</div> <div>車削</div> <div>鑽削</div> | N1  |  |  |  | 0.025   | 0.50    | 0.40    |
|                                                                                     | N2  |  |  |  | 0.05    | 0.80    | 0.63    |
|                                                                                     | N3  |  |  |  | 0.10    | 1.25    | 1.00    |
|                                                                                     | N4  |  |  |  | 0.20    | 2.50    | 2.00    |
|                                                                                     | N5  |  |  |  | 0.40    | 5.00    | 4.00    |
|                                                                                     | N6  |  |  |  | 0.80    | 8.00    | 6.30    |
|                                                                                     | N7  |  |  |  | 1.60    | 16.00   | 10.00   |
|                                                                                     | N8  |  |  |  | 3.20    | 32.00   | 16.00   |
|                                                                                     | N9  |  |  |  | 6.30    | -       | 40.00   |
|                                                                                     | N10 |  |  |  | 12.50   | -       | 63.00   |
|                                                                                     | N11 |  |  |  | 25.00   | -       | 100.00  |
|                                                                                     | N12 |  |  |  | 50.00   | -       | 160.00  |

Machining



精加工



中胚



粗加工



## 材質分組與範例

|   | 材料組別                     | 材料號<br>W.Nr. | 德國標準化學會<br>DIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 美國鋼鐵學院<br>AISI/美國測試<br>和材料協會ASTM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 法國標準協會<br>AFNOR                                                                                                                                                                                                                                                                                                                                                                                | 商用名稱                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                            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| P | 含鉛快削鋼                    | 含鉛<br>快削鋼    | 1.0715<br>1.0718<br>1.0722<br>1.0727<br>1.0736<br>1.0737<br>1.4197                                                                                                                                                                                                                                                                                                                                                                                                               | 9 SMn 28<br>9 SMnPb 28<br>10 SPb 20<br>11SmPb30<br>9 SMn 36<br>9 SMnPb 36<br>X22CrNiMo13 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1213<br>12 L 13<br>11 L 08<br>12L13<br>1215<br>12 L14<br>420F                                                                                                                                                                                                                                                                                                                                  | S250Pb<br>S 250 Pb<br>10 PbF 2<br>S250Pb<br>S 300<br>S 300 Pb<br><br>4C27A<br>FINEMAC                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| P | 非合金鋼/低合金鋼<br>< 600 N/mm² | 鋼            | 1.0201<br>1.0401<br>1.0402<br>1.0406                                                                                                                                                                                                                                                                                                                                                                                                                                             | St36<br>C 15<br>C 22<br>C 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1006<br>M 1015<br>M1020<br>(M) 1025                                                                                                                                                                                                                                                                                                                                                            | Fd 5<br>AF 37 C 12<br>AF 42 C 20<br>C 25                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| P | 非合金鋼/低合金鋼<br>> 600 N/mm² | 低合<br>金鋼     | 1.0473<br>1.0481<br>1.0501<br>1.0503<br>1.0511<br>1.0535<br>1.0562<br>1.0601<br>1.1121<br>1.0605<br>1.1133<br>1.1141<br>1.1151<br>1.1158<br>1.1181<br>1.1186<br>1.1191<br>1.1167<br>1.1203<br>1.1221<br>1.1248<br>1.1274<br>1.2067<br>1.2162<br>1.2311<br>1.251<br>1.2516<br>1.2542<br>1.255<br>1.2711<br>1.2718<br>1.2738<br>1.2744<br>1.2762<br>1.2826<br>1.2842<br>1.5415<br>1.5419<br>1.5637<br>1.5752<br>1.5919<br>1.6523<br>1.6582<br>1.6587<br>1.6657<br>1.7103<br>1.7147 | 19 Mn 6<br>17 Mn 4<br>C 35<br>C 45<br>C 40<br>C 55<br>StE 355<br>C 60<br>Ck 10<br>C 75<br>20 Mn 5<br>Ck 15<br>Ck 22<br>Ck 25<br>Ck 35<br>Ck 40<br>Ck 45<br>36 Mn 5<br>Ck 55<br>Ck 60<br>Ck 75<br>Ck 101<br>100 Cr 6<br>21 MnCr 5<br>40 CrMnMo 7<br>100 MnCrW 4<br>120 WV 4<br>45 WCrV 7<br>60 WCrV 7<br>54 NiCrMo V6<br>55 NiCr 10<br>40 CrMnNiMo 8<br>57 NiCrMoV 7 7<br>75 CrMoNiW 6 7<br>60 MnSiCr 4<br>90 MnCrV 8<br>15 Mo 3<br>22 Mo 4<br>10 Ni 14<br>15 NiCr 13<br>15 CrNi 6<br>21 NiCrMo 2<br>34 CrNiMo 6<br>17 CrNiMo 6<br>14 NiCrMo 13 4<br>67 SiCr 5<br>20 MnCr 5 | A 537 Cl. 1<br>A 516 Gr. 70<br>1035<br>1045<br>1040<br>1055<br>A 633 Gr. C<br>1060<br>1010<br>1074<br>1022<br>1015<br>1020<br>1025<br>1035<br>1040<br>1045<br>1335<br>1055<br>1060<br>1074<br>1095<br>L1 L 3<br>~ P 2<br>~ P 20<br>O 1<br><br>S 1<br>S 1<br><br>~ 6 F 5<br><br>~ S 4<br>~ O 2<br>A 204 Gr. A<br>4419<br>A 350-LF 3<br>3310<br>3115<br>8620<br>4337<br><br>9310<br>5115<br>5120 | A 52 CP ; AP<br>A 48 CP ; AP<br>1 C 35<br>1 C 45<br>1 C 40<br>1 C 55<br>FeE 355 KG N<br>1 C 60<br>XC 10<br><br>20 M 5<br>XC 12<br>2 C 22<br>2 C 25<br>2 C 35<br>2 C 40<br>2 C 45<br>35 M 5<br>2 C 55<br>2 C 60<br>XC 75<br>XC 100<br>Y 100 C 6<br>20 MC 5<br>40 CMD 8<br>90 MWCV 5<br>120 WV 10<br>55 WC 20<br>55 WCS 20<br>55 NCDV 6<br>55 NC 10<br><br><br>90 MCV 8<br>15 D 3<br><br>12 N 14<br>12 NC 15<br>16 NC 6<br>20 NCD 2<br>34 CrNiMo 8<br>18 NCD 6<br>16 NCD 13<br>16MC 4 | 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## 材質分組與範例

| 材料組別 |       | 材料號<br>W.Nr. | 德國標準化學會<br>DIN       | 美國鋼鐵學院<br>AISI/美國測試<br>和材料協會ASTM | 法國標準協會<br>AFNOR  | 商用名稱                 |
|------|-------|--------------|----------------------|----------------------------------|------------------|----------------------|
| P    | 低合金鋼  | 1.7218       | 25 CrMo 4            | 4130                             | 25 CD 4          |                      |
|      |       | 1.7225       | 42 CrMo 4            | 4140                             | 42 CD 4          |                      |
|      |       | 1.7228       | 50 CrMo 4            | 4150                             | 50 CrMo 4        |                      |
|      |       | 1.7258       | 24 CrMo 5            |                                  |                  |                      |
|      |       | 1.7335       | 13 CrMo 4 4          | A 182-F11 ; F12                  | 15 CD 3.5        |                      |
|      |       | 1.7361       | 32 CrMo 12           |                                  | 30 CD 12         |                      |
|      |       | 1.738        | 10 CrMo 9 10         | A 182 F22                        | 12 CD 9.10       |                      |
|      |       | 1.7709       | 21CrMoV5 7           |                                  |                  |                      |
|      |       | 1.7715       | 14 MoV 6 3           |                                  |                  |                      |
|      |       | 1.8159       | 50 CrV 4             | 6145                             | 50 CV 4          |                      |
|      |       | 1.8507       | 34 CrAlMo 5          | A 355 Cl.D                       | 30 CAD 6.12      |                      |
|      |       | 1.8515       | 31 CrMo 12           |                                  | 30 CD 12         |                      |
|      |       | 1.8519       | 31CrMoV9             |                                  |                  |                      |
|      |       | 1.8550       | 34CrAlNi7            |                                  |                  |                      |
|      | 高合金鋼  | 1.2080       | X 210 Cr 12          | ~ D 3                            | Z 200 C 12       | K100                 |
|      |       | 1.2083       | X 42 Cr 13           | 420                              | Z 40 C 14        |                      |
|      |       | 1.2341       | X 6 CrMo 4           | ~ P 4                            |                  | W300                 |
|      |       | 1.2343       | X 38 CrMoV 5 1       | ~ H 11                           | Z 38 CDV 5       |                      |
|      |       | 1.2344       | X 40 CrMoV 5 1       | ~ H 13                           | Z 40 CDV 5       |                      |
|      |       | 1.2363       | X 100 CrMoV 5 1      | A 2                              | Z 100 CDV 5      |                      |
|      |       | 1.2365       | X 32 CrMoV 3 3       | ~ H 10                           | 30 CDV 12-28     | K110                 |
|      |       | 1.2367       | ~ X 40 CrMoV 5 3     |                                  | Z 38 CDV 5-3     |                      |
|      |       | 1.2379       | X 155 CrVMo 12 1     | ~ D 2                            | Z 210 CW 12      |                      |
|      |       | 1.2581       | X 30 WCrV 9 3        | ~ H 21                           | Z 30 WCV 9-3     |                      |
|      |       | 1.2709       | X 3 NiCoMoTi 18 9 5  |                                  | Z 2 NKDT 18-10-5 | M130                 |
|      |       | 1.2764       | X 19 NiCrMo 4        | ~ P 21                           |                  |                      |
|      |       | 1.2767       | X 45 NiCrMo 4        | 6 F 7                            | - 45 NCD 17      |                      |
|      |       | 1.2885       | X 32 CrMoCoV 3 3 3   | (H 10 A)                         | 30 CKDV 28       |                      |
|      |       | 1.3343       |                      |                                  |                  | S600<br>S690PM       |
|      |       | 1.3351       |                      |                                  |                  |                      |
|      |       | 1.4000       | X 6 Cr 13            | 403                              | Z 8 C 12         |                      |
|      |       | 1.4001       | X 7 Cr 14            | 410 S                            | Z 8 C 13 FF      |                      |
|      |       | 1.4016       | X 6 Cr 17            | 430                              | Z 8 C 17         | DURNICO<br>ULTRAFORT |
|      |       | 1.4021       | X 20 Cr 13           | 420                              | Z 20 C 13        |                      |
|      |       | 1.4028       | X 30 Cr 13           | 420 F                            | Z29CF13          |                      |
|      |       | 1.4115       | X90 CrMoV 18         |                                  |                  |                      |
|      |       | 1.4510       | X 6 CrTi 17          | XM 8                             | Z 4 CT 17        |                      |
|      |       | 1.4718       | X 45 CrSi 9 3        | HNV 3                            | Z 45 CS 9        |                      |
|      |       | 1.4724       | X 10 CrAl 13         |                                  | Z 10 C 13        |                      |
|      |       | 1.4731       | X 40 CrSiMo 10 2     |                                  | Z 40 CSD 10      |                      |
|      |       | 1.4742       | X 10 CrAl 18         |                                  | Z 10 CAS 18      |                      |
|      |       | 1.4762       | X 10 CrAl 24         | -446                             | Z 10 CAS 24      |                      |
|      |       | 1.6358       | X2 NiCoMo18 9 5      |                                  |                  | DURNICO<br>ULTRAFORT |
|      |       | 1.6908       | X2NiCrMoTi10 10 5    |                                  |                  |                      |
| M    | 雙相不鏽鋼 | 1.4301       | X 5 CrNi 18 10       | 304                              | Z 6 CN 18-09     |                      |
|      |       | 1.4305       | X 10 CrNiS 18 9      | 303                              |                  |                      |
|      |       | 1.4306       | X 2 CrNi 1911        | 304 L                            | Z 1 CN 18-12     |                      |
|      |       | 1.4308       | G-X 6 CrNi 18 9      | CF-8                             | Z 6 CN 18-10 M   |                      |
|      |       | 1.4310       | X 12 CrNi17 7        | 301                              |                  |                      |
|      |       | 1.4372       |                      |                                  |                  |                      |
|      |       | 1.4401       | X 5 CrNiMo 17 12 2   | 316                              | Z 3 CND 17-11-01 |                      |
|      |       | 1.4404       | X 2 CrNiMo 17 13 2   | 316 L                            | Z 2 CND 17-2     |                      |
|      |       | 1.4408       | G-X 6 CrNiMo 18 10   | CF-8M                            |                  |                      |
|      |       | 1.4418       | X4CrNiMo16-5-1       |                                  | Z6CND16-05-01    |                      |
|      |       | 1.4429       | X 2 CrNiMo 17 13 3   | 316 LN                           | Z 3 CND 17-12 Az |                      |
|      |       | 1.4435       | X 2 CrNiMo 18 14 3   | 316 L                            | Z 3 CND 17-12-03 |                      |
|      |       | 1.4438       | X 2 CrNiMo 18 16 4   | 317 L                            | Z 2 CND 19-15-04 |                      |
|      |       | 1.4441       | X 2 CrNiMo 18 15 3   | 316 VLM                          | Z2 CN 18-14-3    |                      |
|      |       | 1.4529       | X1 NiCrMoCuN 25 20 7 | 904                              |                  |                      |
|      |       | 1.4539       | X1NiCrMoCu 25 20 5   | 904-L                            |                  |                      |

材質分組與範例

| 材料組別 |            | 材料號<br>W.Nr.                                                                                                                             | 德國標準化學會<br>DIN                                                                                                                                                                                                                                       | 美國鋼鐵學院<br>AISI/美國測試<br>和材料協會ASTM                                                                                                                                            | 法國標準協會<br>AFNOR                                                                                                                                     | 商用名稱       |
|------|------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| M    | 不銹鋼        | 1.4571<br>1.4162<br>1.4362<br>1.4410<br>1.4452<br>1.4462                                                                                 | X 6 CrNiMoTi 17 12 2<br>X2CrMnNiN22-5-2<br>X 2 CrNiN 23.4<br>G-X10CrNiMo 18 9<br>X8 CrMnMoN 23 21 1<br>X2CrNiMoN22 5 3                                                                                                                               | 316 Ti                                                                                                                                                                      | Z 6 CNDT 17-12<br><br>Z3CND22-05Az                                                                                                                  | Biodur 108 |
| K    | 灰鑄鐵        | 0.601<br>0.6015<br>0.602<br>0.6025<br>0.6030<br>0.6035<br>0.6040                                                                         | GG 10<br>GG 15<br>GG 20<br>GG 25<br>GG 30<br>GG 35<br>GG40                                                                                                                                                                                           | A48-20 B<br>A48-25 B<br>A48-30 B<br>A48-35 B<br>A48-45 B<br>A48-50 B<br>A48-55 B                                                                                            | Ft 10 D<br>Ft 15 D<br>Ft 20 D<br>Ft 25 D<br>Ft 30 D<br>Ft 35 D<br>Ft 40 D                                                                           |            |
| K    | 球墨鑄鐵       | 0.6652<br>0.6655<br>0.6656<br>0.6660<br>0.6661<br>0.6667<br>0.6680<br>0.7033<br>0.7040<br>0.7043                                         | GGL-NiMn 13 7<br>GGL-NiCuCr 15 6 2<br>GGL-NiCuCr 15 6 3<br>GGL-NiCr 20 2<br>GGL-NiCr 20 3<br>GGL-NiSiCr 20 5 3<br>GGL-NiSiCr 30 5 5<br>GGG-35.3<br>GGG-40<br>GGG 40.3                                                                                | A436 Type 1<br>A436 Type 1b<br>A436 Type 2<br>A436 Type 2b<br><br>A436 Type 4<br><br>60-40-18                                                                               | L-NM 13 7<br>L-NUC 15 6 2<br>L-NUC 15 6 3<br>L-NC 20 2<br>L-NC 20 3<br>L-NSC 20 5 3<br>L-NSC 30 5 5<br><br>FGS 400-12<br>FGS 370-17                 |            |
| K    | 球墨鑄鐵       | 0.7050<br>0.7060<br>0.7070<br>0.7080                                                                                                     | GGG-50<br>GGG 60<br>GGG-70<br>GGG-80                                                                                                                                                                                                                 | 65-45-12<br>80-55-06<br>100-70-03<br>120-90-02                                                                                                                              | FGS 500-7<br>FGS 600-3<br>FGS 700-2<br>FGS 800-2                                                                                                    |            |
| K    | 合金鑄鐵(含肥粒鐵) | 0.7652<br>0.7659<br>0.7660<br>0.7661<br>0.7665<br>0.7670<br>0.7673<br>0.7676<br>0.7677<br>0.7679<br>0.7680<br>0.7683<br>0.7685<br>0.7688 | GGG-NiMn 13 7<br>GGG-NiCrNb 20 2<br>GGG-NiCr 20 2<br>GGG-NiCr 20 3<br>GGG-NiSiCr 20 5 2<br>GGG-Ni 22<br>GGG-NiMn 23 4<br>GGG-NiCr 30 3<br>GGG-NiCr 30 1<br>GGG-NiSiCr 30 5 2<br>GGG-NiSiCr 30 5 5<br>GGG-Ni 35<br>GGG-NiCr 35 3<br>GGG-NiSiCr 35 5 2 | A 439 Type D-2<br>A 439 Type D-2B<br><br>A 439 Type D-2C<br>A 571 Type D-2M<br>A 439 Type D-3<br>A 439 Type D-3A<br><br>A 439 Type D-4<br>A 439 Type D-5<br>A 439 Type D-5B | S-NM 13 7<br><br>S-NC 20 2<br>S-NC 20 3<br>S-NSC 20 5 2<br>S-N 22<br>S-NM 23 4<br>S-NC 30 3<br>S-NC 30 1<br><br>S-NSC 30 5 5<br>S-N 35<br>S-NC 35 3 |            |
| K    | 可鍛鑄鋼       | 0.8035<br>0.8038<br>0.8040<br>0.8045<br>0.8170<br>0.8135<br>0.8165                                                                       | GTW-35-04<br>GTW-35-04<br>GTW-40-05<br>GTW-45-07<br>GTS-70-02<br>GTS-35-10<br>GTS-65-02                                                                                                                                                              | A220-80002<br>32510<br>70003                                                                                                                                                | Mn700-2<br>MN 35-10<br>MP 60-3                                                                                                                      |            |
| K    | 高合金鑄鋼      | 0.9610<br>0.9620<br>0.9625<br>0.9630<br>0.9635<br>0.9640<br>0.9645<br>0.9650<br>0.9655                                                   | G-X 300 NiMo 3 Mg<br>G-X 260 NiCr 4 2<br>G-X 330 NiCr 4 2<br>G-X 300 CrNiSi 9 5 2<br>G-X 300 CrMo 15 3<br>G-X 300 CrMoNi 15 2 1<br>G-X 260 CrMoNi 20 2 1<br>G-X 260 Cr 27<br>G-X 300 CrMo 27 1                                                       |                                                                                                                                                                             |                                                                                                                                                     |            |
| S    | 耐熱不銹鋼      | 1.4718<br>1.4724<br>1.4731                                                                                                               | X 45 CrSi 9 3<br>X 10 CrAl 13<br>X 40 CrSiMo 10 2                                                                                                                                                                                                    | HNV 3                                                                                                                                                                       | Z 45 CS 9<br>Z 10 C 13<br>Z 40 CSD 10                                                                                                               |            |



# 材質分組與範例

| 材料組別 |               | 材料號<br>W.Nr. | 德國標準化學會<br>DIN      | 美國鋼鐵學院<br>AISI/美國測試<br>和材料協會ASTM | 法國標準協會<br>AFNOR   | 商用名稱          |
|------|---------------|--------------|---------------------|----------------------------------|-------------------|---------------|
| S    | 特殊合金          | 1.4742       | X 10 CrAl 18        |                                  | Z 10 CAS 18       |               |
|      |               | 1.4762       | X 10 CrAl 24        | -446                             | Z 10 CAS 24       |               |
|      |               | 1.4828       | X 15 CrNiSi 20 12   | 309                              | Z 15 CNS 20-12    |               |
|      |               | 1.4828 (2)   | X18CrNiSi20-12      |                                  | Z 17 CNS 20-12    |               |
|      |               | 1.4833       | X 7 CrNi 23 14      | 309 S                            | Z 15 CN 24-13     |               |
|      |               | 1.4837       | G-X 40 CrNiSi 25 12 |                                  |                   |               |
|      |               | 1.4841       | X 15 CrNiSi 25 20   | 314                              | Z 12 CNS 25-20    |               |
|      |               | 1.4845       | X 12 CrNi 25 21     | 310 S                            | Z 8 CN 25-20      |               |
|      |               | 1.4848       | G-X 40 CrNiSi 25 20 | HK                               |                   |               |
|      |               | 1.4864       | X 12 NiCrSi 36 16   | 330                              | Z 12 NCS 37-18    |               |
|      |               | 1.4865       | G-X 40 NiCrSi 38 18 |                                  |                   |               |
|      |               | 1.4871       | X 53 CrMnNiN 21 9   | EV 8                             | Z 52 CMN 21-09    |               |
|      |               | 1.4873       | X 45 CrNiW 18 9     |                                  | Z 35 CNWS 14-14   |               |
|      |               | 1.4876       | X 10 NiCrAlTi 32 20 | B 163                            | Z 8 NC 32-21      |               |
|      |               | 1.4878       | X 12 CrNiTi 18 9    | 321                              | Z 6 CNT 18-12 (B) |               |
|      |               | 1.4922       | X 20 CrMoV 12 1     |                                  | Z 20 CDV 12       |               |
|      |               | 1.4980       | X 5 NiCrTi 26 5     |                                  |                   | A286          |
|      |               | 2.4375       | NiCu30Al            | 4676                             |                   | MONEL K500    |
| S    | 鎳基合金          | 2.4603       |                     | 5390A                            | NC22FeD           | HASTELLOY G30 |
|      |               | 2.4631       | NiCr20TiAl          |                                  | NC20TA            | NIMONIC 80 A  |
|      |               | 2.4066       |                     |                                  |                   | NICKEL 200    |
|      |               | 2.4654       |                     |                                  |                   | WASPALLOY     |
|      |               | 2.4663       | NiFe35Cr14MoTi      | 5660                             | ZSNCDT42          | INCONEL 617   |
|      |               | 2.4668       | NiCr19Fe19NbMo      | 5383                             | NC19eNB           | INCONEL 718   |
|      |               | 2.4669       |                     | N 07750                          |                   | INCONEL X470  |
|      |               | 2.4816       | NiCr 15 Fe          | AMS 5540                         |                   | INCONEL 600   |
|      |               | 2.4856       | NiCr22Mo9Nb         | 5666                             | NC22FeDNB         | INCONEL625    |
|      |               | 2.4969       | NiCr 20 Co 18 Ti    |                                  |                   | NIMONIC 90    |
| S    | 鈷基合金          |              | NiCr16Co10WAlTi     | 5712, 5713                       |                   | MAR-M 421     |
|      |               |              | NiCo15Cr15MoAlTi    | 687                              |                   | UDIMET 700    |
|      |               |              | NiCr19Fe19NbMo      | 5583                             |                   | UDIMET 720    |
| S    | 鈦基合金          |              | CoCrW10TaZrB        |                                  |                   | MAR-M 302     |
|      |               |              | CoCr24Ni10WtaZrB    | 670                              |                   | MAR M-509     |
|      |               |              | CoCr20W15Ni         | F75                              |                   | HS 25         |
| S    | 純鈦/鈦合金        |              |                     |                                  |                   | STELLITE 21   |
|      |               |              |                     |                                  |                   | STELLITE 30   |
|      |               |              |                     |                                  |                   | PHYNEX        |
|      |               |              |                     |                                  |                   | HAYNES 25     |
|      |               | 2.4964       | CoCr20Ni16Mo7       | 5537C                            | KC20WN            |               |
|      |               |              | CoCr20W15Ni         |                                  |                   |               |
|      |               | 3.7025       | Ti99.2              | Grade1                           |                   |               |
|      |               | 3.7035       | Ti99.4              | Grade2                           |                   |               |
|      |               | 3.7055       | Ti99.4              | Grade3                           |                   |               |
|      |               | 3.7065       |                     | Grade4                           |                   |               |
|      |               | 3.7025 Pd    |                     |                                  |                   |               |
| N    | 易加工銅合金        | 3.7035 Pd    |                     |                                  |                   |               |
|      |               | 3.7105       |                     | Grade12                          |                   |               |
|      |               | 3.7165       | TiAl6V4             | Grade5                           | T-A6V             |               |
|      |               | 3.7145.7     | TiAl6Sn2Zr4Mo2Si    |                                  |                   |               |
|      |               | 3.7175       | TiAl6V6Sn2          |                                  |                   |               |
|      |               | 2.0331       | Cu Zn 36 Pb 1.5     |                                  | Cu Zn 35 Pb 2     |               |
|      |               | 2.0331       | Cu Zn 36 Pb 1.5     |                                  |                   |               |
|      | 銅合金<br>銀<br>金 | 2.0332       | Cu Zn 37 Pb 0.5     |                                  |                   |               |
|      |               | 2.0371       | Cu Zn 38 Pb 1.5     |                                  | Cu Zn 38 Pb 2     |               |
|      |               | 2.0371       | Cu Zn 38 Pb 1.5     |                                  | Cu Zn 36 Pb 3     |               |
|      |               | 2.0375       | Cu Zn 36 Pb 3       |                                  | Cu Zn 39 Pb 2     |               |
|      |               | 2.0380       | Cu Zn 39 Pb 2       |                                  | Cu Zn 40 Pb 3     |               |
|      |               | 2.0401       | Cu Zn 39 Pb 3       |                                  | Cu Zn 39 Pb 2     |               |
|      |               | 2.0402       | Cu Zn 40 Pb 2       |                                  |                   |               |



材質分組與範例

| 材料組別       |                   | 材料號<br>W.Nr.      | 德國標準化學會<br>DIN      | 美國鋼鐵學院<br>AISI/美國測試<br>和材料協會ASTM | 法國標準協會<br>AFNOR | 商用名稱 |               |
|------------|-------------------|-------------------|---------------------|----------------------------------|-----------------|------|---------------|
| N          | 銅合金<br>銀<br>金     | 2.058             | Cu Zn 40 Mn Pb 1    |                                  | Cu Ni 18 Zn 2   |      |               |
|            |                   | 2.0740            | Cu Ni 18 Zn 20      |                                  |                 |      |               |
|            |                   | 2.0771            | Cu Ni Zn 39         |                                  |                 |      |               |
|            |                   | 2.0771            | Cu Ni 7 Zn 39       |                                  |                 |      |               |
|            |                   | 2.0780            | Cu Ni 12 Zn 30 Pb 1 |                                  |                 |      |               |
|            |                   | 2.0790            | Cu Ni 18 Zn 19 Pb 1 |                                  |                 |      |               |
|            |                   | 2.1546            | Cu Te P             |                                  |                 |      |               |
|            |                   | 2.1016            | CuSn4Pb4Zn4         |                                  |                 |      |               |
|            | 非合金銅，<br>難以加工銅合金  | 難加工<br>銅合金        | 2.0040              | OF-Cu                            |                 |      | DECLAFOR 1015 |
|            |                   |                   | 2.0060              | E-Cu57                           |                 |      |               |
|            |                   |                   | 2.0065              | E-Cu58                           |                 |      |               |
|            |                   |                   | 2.0321              | CuZn37                           |                 |      |               |
|            |                   |                   | 2.0920              | Cu Al8                           |                 |      |               |
|            |                   |                   | 2.1247              | CuZn42<br>CuBe2<br>CuNi7.5Sn5Te  |                 |      |               |
| N          | 鋁合金含矽 < 8%        | 鋁合金<br>含矽<br>< 8% | 3.0205              | Al 99.5                          | A5              |      |               |
|            |                   |                   | 3.0257              | E-AL                             | 1350            |      |               |
|            |                   |                   | 3.0515              | AlMn1                            | 3103            |      |               |
|            |                   |                   | 3.3315              | AlMg1                            | 5005            |      |               |
|            |                   |                   | 3.3525              | AlMg2Mn0.3                       | 5251            |      |               |
|            |                   |                   | 3.3535              | AlMg3                            | 5754            |      |               |
|            |                   |                   | 3.3537              | AlMg2.7Mn                        | 5454            |      |               |
|            |                   |                   | 3.3545              | AlMg4Mn                          | 5086            |      |               |
|            |                   |                   | 3.3547              | AlMg4.5Mn                        | 5083            |      |               |
|            |                   |                   | 3.3211              | AlMg1SiCu                        | 6061            |      |               |
|            |                   |                   | 3.2315              | AlMgSi1                          | 6082            |      |               |
|            |                   |                   | 3.1355              | AlCuMg2                          | 2024            |      |               |
|            |                   |                   | 3.4335              | AlZn4.5Mg1                       | 7020            |      |               |
|            |                   |                   | 3.4365              | AlZnMgCu1.5                      | 7075            |      |               |
| 鋁合金含矽 > 8% | 鋁合金<br>含矽<br>> 8% | 3.2373            | AlSi9Mg             | A-S9G                            |                 |      |               |
|            |                   | 3.2381            | AlSi10Mg            | A-S10G                           |                 |      |               |
|            |                   | 3.2581            | AlSi12CuFe          | A-S13G                           |                 |      |               |
|            |                   | 3.2291            | AlSi20              | A-S20                            |                 |      |               |



鍍層的應用範圍

| 加工材質 |                      |                                 | TiAIN                   |                    | DICUT                   |                    | XIDUR                   |                    | C-TOP                   |                      |
|------|----------------------|---------------------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|----------------------|
|      |                      |                                 | 硬度<br>(HV0.05)<br>3'100 | 耐溫<br>max<br>800°C | 硬度<br>(HV0.05)<br>3'000 | 耐溫<br>max<br>800°C | 硬度<br>(HV0.05)<br>3'100 | 耐溫<br>max<br>900°C | 硬度<br>(HV0.05)<br>3'400 | 耐溫<br>max<br>1'100°C |
| P    | 非合金鋼/低合金鋼            | < 600 N/mm²                     | ○                       |                    | ○                       |                    | ○                       |                    | ◎                       |                      |
| P    | 非合金鋼/低合金鋼            | 600 – 1500 N/mm²                | ○                       |                    | ○                       |                    | ○                       |                    | ◎                       |                      |
| P    | 含鉛快削鋼                |                                 | ○                       |                    | ○                       |                    |                         |                    |                         |                      |
| P    | 高合金鋼                 | 700 – 1500 N/mm²                | ○                       |                    | ○                       |                    | ○                       |                    | ◎                       |                      |
| H    | 熱處理鋼 >50HRC          |                                 | ○                       |                    |                         |                    | ◎                       |                    | ◎                       |                      |
| M    | 不鏽鋼                  | 400 – 700 N/mm²                 | ○                       |                    | ◎                       |                    | ○                       |                    | ◎                       |                      |
| M    | 雙相不鏽鋼                | > 800 N/mm²                     | ○                       |                    | ○                       |                    | ○                       |                    | ◎                       |                      |
| K    | 灰鑄鐵/球墨鑄鐵             | < 250 HB                        | ○                       |                    | ○                       |                    |                         |                    |                         |                      |
| K    | 合金鑄鐵/球墨鑄鐵            | > 250 HB                        | ○                       |                    | ○                       |                    |                         |                    |                         |                      |
| K    | 肥粒鐵鑄鐵/可鍛鑄鐵           |                                 | ○                       |                    | ○                       |                    |                         |                    |                         |                      |
| S    | 特殊合金/耐熱不銹鋼           | Inconel<br>Nimonic<br>Hastelloy |                         |                    | ○                       |                    | ◎                       |                    | ◎                       |                      |
| S    | 純鈦/鈦合金               |                                 |                         |                    |                         |                    |                         |                    | ○                       |                      |
| N    | 銅合金 - 易於加工 (黃銅 - 青銅) |                                 |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 銅合金 - 難以加工/鋁青銅合金     | (CuAlFe)<br>(Ampco)             |                         |                    |                         |                    |                         |                    | ○                       |                      |
| N    | 鋁合金                  | Si < 8%                         |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 鑄鋁材質                 | Si > 8%                         |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 石墨                   |                                 |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 塑料                   |                                 |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 碳纖維強化聚合物複合材          |                                 |                         |                    |                         |                    |                         |                    |                         |                      |
| N    | 金，銀                  |                                 |                         |                    |                         |                    |                         |                    | ○                       |                      |
| N    | 鉑金                   |                                 |                         |                    |                         |                    |                         |                    |                         |                      |

- ✕ 不適用  
○ 良好  
◎ 最佳



| CUTINOX                 |                      | DAC                     |                    | DIXAL                   |                    | DLC                     |                    | DIAMOND                  |                    | 雕刻                      |                    | 攻牙                      |                    |
|-------------------------|----------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|--------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|
| 硬度<br>(HV0.05)<br>3'200 | 耐温<br>max<br>1'000°C | 硬度<br>(HV0.05)<br>1'900 | 耐温<br>max<br>700°C | 硬度<br>(HV0.05)<br>2'100 | 耐温<br>max<br>550°C | 硬度<br>(HV0.05)<br>4'800 | 耐温<br>max<br>500°C | 硬度<br>(HV0.05)<br>10'000 | 耐温<br>max<br>500°C | 硬度<br>(HV0.05)<br>3'250 | 耐温<br>max<br>450°C | 硬度<br>(HV0.05)<br>3'200 | 耐温<br>max<br>450°C |
| ◎                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    | ◎                       |                    |
| ◎                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    |                         |                    |
| ○                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    | ◎                       |                    |
| ◎                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    |                         |                    |                         |                    |
| ◎                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    |                         |                    |
| ◎                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ◎                       |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ○                       |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ○                       |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    | ○                       |                    |                         |                    |
| ○                       |                      |                         |                    |                         |                    | ×                       |                    | ×                        |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    |                          |                    | ○                       |                    |                         |                    |
|                         |                      | ○                       |                    | ○                       |                    | ◎                       |                    |                          |                    | ○                       |                    | ◎                       |                    |
|                         |                      | ○                       |                    | ○                       |                    | ◎                       |                    | ○                        |                    | ○                       |                    | ◎                       |                    |
|                         |                      | ◎                       |                    | ◎                       |                    | ◎                       |                    | ○                        |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    | ◎                        |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    |                         |                    | ◎                        |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    |                          |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    | ◎                        |                    |                         |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    | ○                        |                    | ○                       |                    |                         |                    |
|                         |                      |                         |                    |                         |                    | ○                       |                    | ◎                        |                    |                         |                    |                         |                    |

