



DESIGN . HONESTY . FUTURE

**NEW**

**Special 5 flutes**



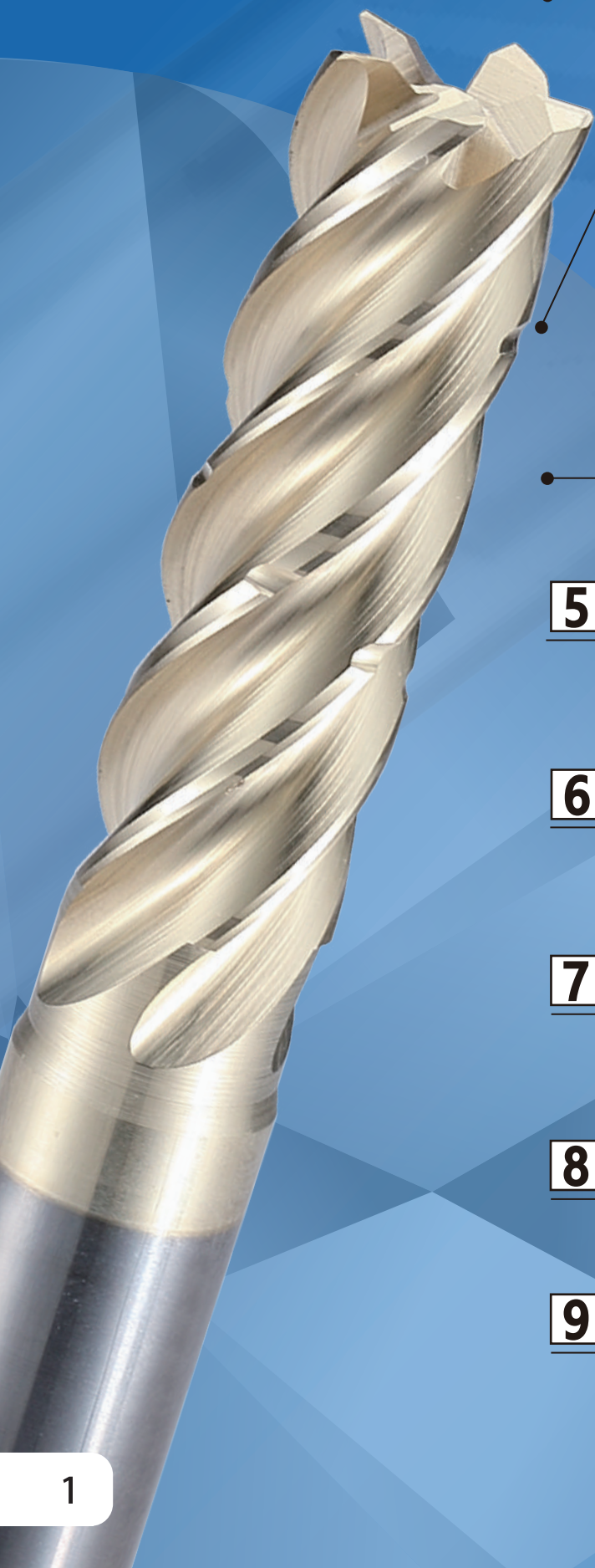
**不等分割  
特殊5刃斷屑設計**

Special five flutes unequal flute spacing design

# 5刃斷屑刀

Special five flutes unequal flute spacing design

## UEF



**1** 特殊的5刃<不等分割設計>、於加工中抗震性更加良好。

Special five flutes unequal flute spacing design improves vibration resistance.

**2** 獨特的<斷屑槽設計>、解決了長條狀鐵削堆積在加工材料上面、排屑更加安全及優化。

Unique chip breaker avoids chip stripes accumulation on the work material and furthermore optimizes chip evacuation.

**3** 各尺寸3D//4D//5D的長刃設計、加深側銑切削深度、創造更高的加工效能。

Each diameter available with 3D, 4D and 5D flute length options. Side milling goes deeper for higher machining performance.

**4** <UEF>採用< G11 >新研發鍍層、刀具壽命更加提升。

New G11 coating significantly extends tool life.

**5** <UEF>採用新製程、刀具表面光滑、排屑性更加順暢、延長刀具壽命。

With new manufacturing process, UEF tool surface is smooth. Better chip evacuation and longer tool life.

**6** 適用於難切削材料及一般鋼材,例如: 不銹鋼 // 鈦合金。

Good for difficult-to-cut material and normal steels, e.g. stainless steel and titanium alloy.

**7** 應用於側銑及擺線加工的<高速高進給>加工、效率佳,亦適用於精銑加工。

Ideal for high speed & high feed side milling and trochoidal milling. Great efficiency. Also suitable for finishing.

**8** <UEF>加工應用Vc值可達200m/min。  
<UEF>刀具壽命高於<LEF>30%以上。

UEF Vc can reach 200(m/min). UEF tool life 30% higher than LEF.

**9** 經DHF應用中心與知名刀具品牌做壽命對比、<UEF>壽命高出1.5倍以上。

Test result by DHF application center shows that UEF's tool life is 50% higher than other well-known tool brands.

# UEF

不等分割斷屑立銑刀  
End Mills



| 型號<br>Type No. | D1 直徑<br>Diameter | L1 刃長<br>Flute Length | L3 全長<br>O.A.L. | D2 柄徑<br>Shank Dia. |
|----------------|-------------------|-----------------------|-----------------|---------------------|
| UEF0605        | 6                 | 18                    | 60              | 6                   |
| UEF0605M       | 6                 | 24                    | 65              | 6                   |
| UEF0605L       | 6                 | 30                    | 75              | 6                   |
| UEF0805        | 8                 | 24                    | 75              | 8                   |
| UEF0805M       | 8                 | 32                    | 75              | 8                   |
| UEF0805L       | 8                 | 40                    | 100             | 8                   |
| UEF1005        | 10                | 30                    | 80              | 10                  |
| UEF1005M       | 10                | 40                    | 100             | 10                  |
| UEF1005L       | 10                | 50                    | 100             | 10                  |
| UEF1205        | 12                | 36                    | 100             | 12                  |
| UEF1205M       | 12                | 48                    | 100             | 12                  |
| UEF1605        | 16                | 50                    | 120             | 16                  |
| UEF1605L       | 16                | 70                    | 150             | 16                  |

附註  
Note

UEF的刀具測試報告詳見P.5。  
Please see page 5 for detailed UEF service life testing report.

# 5刃斷屑刀

Special five flutes unequal flute spacing design

## LEF



**1** 特殊的5刃〈不等分割設計〉、於加工中抗震性更加良好。

Special five flutes unequal flute spacing design improves vibration resistance.

**2** 獨特的〈斷屑槽設計〉、解決了長條狀鐵屑堆積在加工材料上面、排屑更加安全及優化。

Unique chip breaker avoids chip stripes accumulation on the work material and furthermore optimizes chip evacuation.

**3** 各尺寸3D//4D//5D的長刃設計、加深側銑切削深度、創造更高的加工效能。

Each diameter available with 3D, 4D and 5D flute length options. Side milling goes deeper for higher machining performance.

**4** 適用於難切削材料及一般鋼材,例如: 不銹鋼/鈦合金。

Good for difficult-to-cut material and normal steels, e.g. stainless steel and titanium alloy.

**5** 應用於側銑及擺線加工的〈高速高進給〉加工、效率佳,亦適用於精銑加工。

Ideal for high speed & high feed side milling and trochoidal milling. Great efficiency. Also suitable for finishing.

**6** 〈LEF〉加工應用Vc值可達200m/min。

LEF Vc can reach 200(m/min).

**7** 經濟型〈LEF〉、幾何圖形設計同UEF。

LEF geometry same as UEF.

# LEF

## 不等分割斷屑立銑刀 End Mills



| 型號<br>Type No. | D1 直徑<br>Diameter | L1 刃長<br>Flute Length | L3 全長<br>O.A.L. | D2 柄徑<br>Shank Dia. |
|----------------|-------------------|-----------------------|-----------------|---------------------|
| LEF0605        | 6                 | 18                    | 60              | 6                   |
| LEF0605M       | 6                 | 24                    | 65              | 6                   |
| LEF0605L       | 6                 | 30                    | 75              | 6                   |
| LEF0805        | 8                 | 24                    | 75              | 8                   |
| LEF0805M       | 8                 | 32                    | 75              | 8                   |
| LEF0805L       | 8                 | 40                    | 100             | 8                   |
| LEF1005        | 10                | 30                    | 80              | 10                  |
| LEF1005M       | 10                | 40                    | 100             | 10                  |
| LEF1005L       | 10                | 50                    | 100             | 10                  |
| LEF1205        | 12                | 36                    | 100             | 12                  |
| LEF1205M       | 12                | 48                    | 100             | 12                  |
| LEF1605        | 16                | 50                    | 110             | 16                  |
| LEF1605L       | 16                | 70                    | 150             | 16                  |

附註  
Note

LEF的刀具測試報告詳見P.6。  
Please see page 6 for detailed LEF service life testing report.



### DHF應用中心測試設備條件表 Equipment test condition

| 機器<br>Machine | 主軸<br>驅動功率<br>Spindle drive power | 主軸<br>最大扭矩<br>Maximum torque of spindle | 主軸<br>最高轉速<br>Maximum speed of spindle | 控制器<br>Controller | 刀桿型式<br>Shank type |
|---------------|-----------------------------------|-----------------------------------------|----------------------------------------|-------------------|--------------------|
| DMG-635V      | 35/25KW                           | 130/87Nm                                | 18000min                               | Heidenhain-TNC530 | SK40(=BT40=HSK63A) |

| 型號<br>Type NO.              | 被切削材<br>Work Material | 刀具伸長量<br>Extension Length | 切削速度<br>Cutting Speed<br>(m/min) | 迴轉速度<br>Speed<br>(min <sup>-1</sup> ) | 進給速度<br>Feed<br>(mm/min) | 加工深度<br>(Aa)<br>Cut of depth | 加工寬度<br>(Ap)<br>Cut of width | 加工方式<br>Milling Type | 鍍層<br>Coating |
|-----------------------------|-----------------------|---------------------------|----------------------------------|---------------------------------------|--------------------------|------------------------------|------------------------------|----------------------|---------------|
| UEF1005                     | SUS304//<br>1.4301    | 43mm                      | 190                              | 6000                                  | 2000                     | 25                           | 0.8                          | 側銑<br>Side milling   | G11           |
| 歐洲他品牌<br>Competitor's brand | SUS304//<br>1.4301    | 43mm                      | 190                              | 6000                                  | 2000                     | 25                           | 0.8                          | 側銑<br>Side milling   | X             |

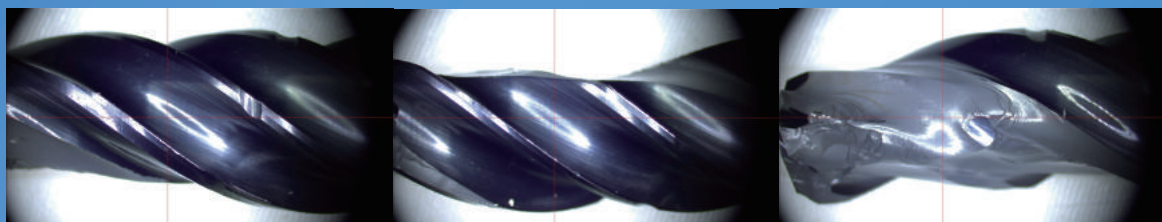
### 測試結果 Test Results

| 型號<br>Type NO.              | 壽命百分比<br>Tool life | 較佳冷卻方式<br>The best coolant way | 總測試加工時間<br>Total test time     |
|-----------------------------|--------------------|--------------------------------|--------------------------------|
| UEF1005                     | 100%               | 濕式 Wet                         | 480min                         |
| 歐洲他品牌<br>Competitor's brand | 70%                | 濕式 Wet                         | 405min<br>(斷刀 The tool breaks) |

### 刀具磨耗後影像照片 Tool photo after machining



UEF1005



歐洲他品牌  
Competitor's brand

被切削材  
Work Material沃斯田鐵系不銹鋼  
SUS304//1.4301DHF應用中心測試設備條件表  
Equipment test condition

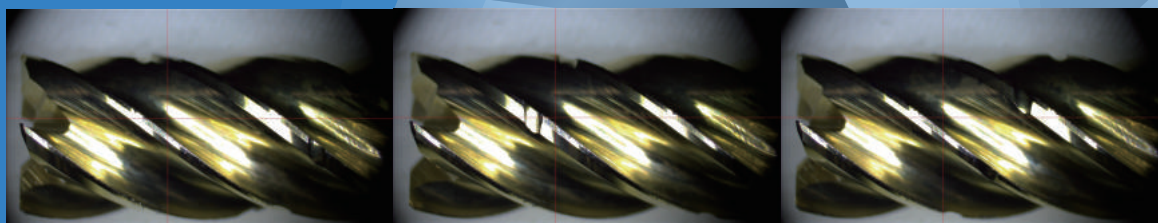
| 機器<br>Machine | 主軸<br>驅動功率<br>Spindle drive power | 主軸<br>最大扭矩<br>Maximum torque of spindle | 主軸<br>最高轉速<br>Maximum speed of spindle | 控制器<br>Controller | 刀桿型式<br>Shank type |
|---------------|-----------------------------------|-----------------------------------------|----------------------------------------|-------------------|--------------------|
| DMG-635V      | 35/25KW                           | 130/87Nm                                | 18000min                               | Heidenhain-TNC530 | SK40(=BT40=HSK63A) |

| 型號<br>Type NO. | 被切削材<br>Work Material | 刀具伸長量<br>Extension Length | 切削速度<br>Cutting Speed<br>(m/min) | 迴轉速度<br>Speed<br>(min <sup>-1</sup> ) | 進給速度<br>Feed<br>(mm/min) | 加工深度<br>(Aa)<br>Cut of depth | 加工寬度<br>(Ap)<br>Cut of width | 加工方式<br>Milling Type | 鍍層<br>Coating |
|----------------|-----------------------|---------------------------|----------------------------------|---------------------------------------|--------------------------|------------------------------|------------------------------|----------------------|---------------|
| UEF0605        | SUS304//<br>1.4301    | 30mm                      | 150                              | 8000                                  | 1500                     | 18                           | 0.4                          | 側銑<br>Side milling   | G11           |
| LEF0605        | SUS304//<br>1.4301    | 30mm                      | 150                              | 8000                                  | 1500                     | 18                           | 0.4                          | 側銑<br>Side milling   | G10           |

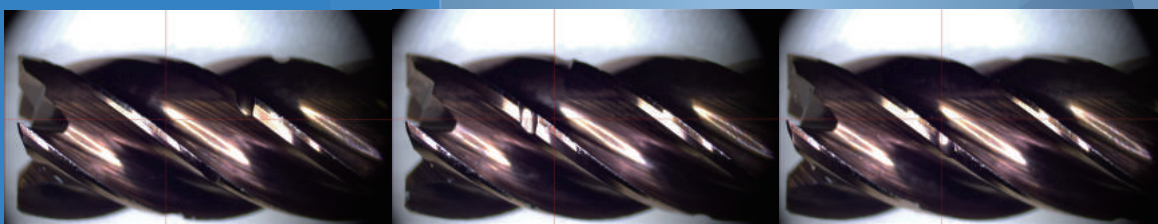
## 測試結果 Test Results

| 型號<br>Type NO. | 壽命百分比<br>Tool life | 較佳冷卻方式<br>The best coolant way | 總測試加工時間<br>Total test time |
|----------------|--------------------|--------------------------------|----------------------------|
| UEF0605        | 100%               | 濕式 Wet                         | 360min                     |
| LEF0605        | 70%                | 濕式 Wet                         | 360min                     |

## 刀具磨耗後影像照片 Tool photo after machining



UEF0605



LEF0605



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