

# 益詮切削刀具

ECHAINTOOL Cutting Tools



## ECHAIN®



台灣精品 2008  
TAIWAN EXCELLENCE



設計優良產品  
GOOD DESIGN PRODUCT



第21屆小巨人獎  
The 21st Peking Star Award



亞洲中小企業  
發展獎  
The Asia Small Enterprise  
Development Award



住友精工 中國一級代理  
Sumitomo Agent in China

## 鎢鋼端銑刀系列

CARBIDE END MILL SERIES



Our web



益詮精密股份有限公司 ECHAINTOOL PRECISION CO., LTD.

# 材質銑削推薦表

Recommend Cutting List

◎第一推薦 First recommend

○第二推薦 Second recommend

| 塗層材質分類<br>Coating<br>Material<br>Classification                     | 適用領域建議 Suit Filed Suggestion |                      |                         | P<br>一級鋼<br>Steel | M<br>合金鋼<br>Alloy Steel | K<br>碳鋼<br>Carbon Steel | X<br>不銹鋼<br>Stainless Steel | N<br>鑄鐵<br>Cast | H<br>銅<br>Copper | S<br>鋁<br>Aluminum | H<br>高硬度材<br>High Hardness Material | S<br>難切削材<br>Hard To Cut Material |
|---|------------------------------|----------------------|-------------------------|-------------------|-------------------------|-------------------------|-----------------------------|-----------------|------------------|--------------------|-------------------------------------|-----------------------------------|
|   | 高精度<br>High Precision        | 輕切削<br>Light Cutting | 重切削<br>Roughing Cutting |                   |                         |                         |                             |                 |                  |                    |                                     |                                   |
| 平刀塗層<br>Fleak Coating<br>(PVD)                                      |                              | MUH-IGM              |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     | ○                                 |
|   |                              | MUH-IEM              |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     | ○                                 |
|   |                              | MUH-FPM              |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     | ○                                 |
|   |                              | MUH-IMM              |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     | ○                                 |
|   |                              | MUH-IPM              |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     | ○                                 |
|   |                              | MUH-GMM              |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | MU-GMM               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | MU-EMM               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | EMM                  |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | EPM                  |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   | GMM                          |                      | ◎                       | ◎                 | ○                       | ◎                       | ◎                           |                 |                  |                    |                                     |                                   |
| 圓鼻刀塗層<br>Corner Radius<br>Coating<br>(PVD)                          |                              | DMR                  |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | PH-FMR               |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     |                                   |
|   |                              | PH-FPR               |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     | ○                                 |
| 球頭刀塗層<br>Ball Nose<br>Type Coating<br>(PVD)                         |                              | EMB                  |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | DMB                  |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     |                                   |
|   |                              | EPB                  |                         | ◎                 | ◎                       | ◎                       | ○                           | ◎               |                  |                    |                                     |                                   |
| 倒角刀塗層<br>Countersink<br>Coating<br>(PVD)                            |                              | DR-DMC               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  | ○                  | ○                                   |                                   |
|   |                              | DC-DMC               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  | ○                  | ○                                   |                                   |
|   |                              | CC-AMC               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  | ○                  | ○                                   |                                   |
|   |                              | CR-AMC               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  | ○                  | ○                                   |                                   |
| 粗銑刀塗層<br>Roughing Cutter<br>Coating<br>(PVD)                        |                              | FM-CMM               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
|   |                              | RM-CMM               |                         | ◎                 | ◎                       | ○                       | ◎                           | ◎               |                  |                    |                                     |                                   |
| 鋁用銑刀<br>(無塗層)<br>Aluminum<br>Carbide<br>End Mill<br>Without Coating |                              | GMA                  |                         |                   |                         |                         |                             |                 |                  | ○                  | ◎                                   |                                   |
|   |                              | HMA                  |                         |                   |                         |                         |                             |                 |                  | ○                  | ◎                                   |                                   |
|   |                              | MU2-GMA              |                         |                   |                         |                         |                             |                 |                  | ○                  | ◎                                   |                                   |
|   |                              | MU2-HMA              |                         |                   |                         |                         |                             |                 |                  | ○                  | ◎                                   |                                   |
|   |                              | MU3-JMA              |                         |                   |                         |                         |                             |                 |                  | ○                  | ◎                                   |                                   |

## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

### MUH-IGM 4000 圓溝不等分割不等螺旋4刃鎢鋼立銑刀

Round land Unequal Spiral Unequal Division 4 Flutes Carbide End Mill

- ◆ 全新 I G M 材質，高耐磨、高韌性，可加工高硬度 HRC 50' ~ 60'  
New IGM series with high abrasion resistance, high ductility material HRC50' ~ 60'.
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division is beneficial to enhance seismic performance of high speed feed.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle prevents tipping of high speed processing.
- ◆ 刀刃採用分割角及螺旋角不相等  
The flute edge with unequal spiral and unequal division.
- ◆ 改變每刀進給量，使每刀的銑削波形不再相同  
Changing the processing feed so that milling waveform isn't same anymore.
- ◆ 可有效降低或避免刀具進行側銑時的切削震動紋路  
It can reduce or avoid the cutting vibration pattern effectively when the tool is processing on side milling.
- ◆ 有利於獲得高質量的加工表面和提高刀具壽命  
Conducive to high quality machining surfaces and improved tool life.
- ◆ 特殊 U 型溝槽設計，利於插銑加工時排屑優良，減少工件產生端口毛刺  
Special U-shaped groove design, which is good for chip removal during plunge milling and reduces port burr on workpiece.



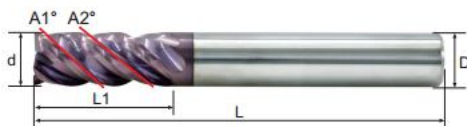
斜度啮走銑削  
Angular Plunge Grinding



全開槽  
Full Slot



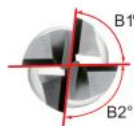
直角開槽  
Right Angle Slotted



不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

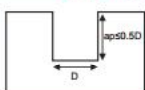
| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MUH-IGM4040     | 4                | 10                    | 6                 | 50            |
| MUH-IGM4040L112 | 4                | 12                    | 6                 | 50            |
| MUH-IGM4060     | 6                | 15                    | 6                 | 50            |
| MUH-IGM4060L118 | 6                | 18                    | 6                 | 50            |
| MUH-IGM4080     | 8                | 20                    | 8                 | 60            |
| MUH-IGM4080L124 | 8                | 24                    | 8                 | 60            |
| MUH-IGM4100     | 10               | 25                    | 10                | 75            |
| MUH-IGM4100L130 | 10               | 30                    | 10                | 75            |
| MUH-IGM4120     | 12               | 30                    | 12                | 100           |
| MUH-IGM4120L136 | 12               | 36                    | 12                | 100           |

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$

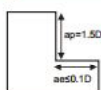


切深量深度 Depth (D : F.D)

開槽  
Slotted



側邊  
Side



適用材質：鋼、不銹鋼、鑄鐵  
Material : Steel、Stainless steel、Iron cast

切削參數 The Cutting Data For MUH-IGM 4000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 6000     | 420        | 1100    |
| 6       | 4000     | 420        | 800     |
| 8       | 2900     | 420        | 950     |
| 10      | 2400     | 420        | 750     |
| 12      | 1900     | 420        | 500     |
| 16      | 1500     | 420        | 480     |
| 20      | 1200     | 420        | 400     |



## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

### MUH-IEM 4000 圓溝不等分割不等螺旋4刃鎢鋼立銑刀

Round land Unequal Spiral Unequal Division 4 Flutes Carbide End Mill

- ◆ 全新 I E M 材質，高耐磨、高韌性，可加工高硬度 HRC 55' ~ 65'  
New IEM series with high abrasion resistance, high ductility material HRC55' ~ 65'.
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division is beneficial to enhance seismic performance of high speed feed.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle prevents tipping of high speed processing.
- ◆ 刀刃採用分割角及螺旋角不相等  
The flute edge with unequal spiral and unequal division.
- ◆ 改變每刀進給量，使每刀的銑削波形不再相同  
Changing the processing feed so that milling waveform isn't same anymore.
- ◆ 可有效降低或避免刀具進行側銑時的切削震動紋路  
It can reduce or avoid the cutting vibration pattern effectively when the tool is processing on side milling.
- ◆ 有利於獲得高質量的加工表面和提高刀具壽命  
Conducive to high quality machining surfaces and improved tool life.
- ◆ 特殊 U 型溝槽設計，利於插銑加工時排屑優良，減少工件產生端口毛刺  
Special U-shaped groove design, which is good for chip removal during plunge milling and reduces port burr on workpiece.



斜度啮走銑削  
Angular Plunge Grinding



全開槽  
Full Slot



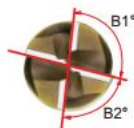
直角開槽  
Right Angle Slotted



不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

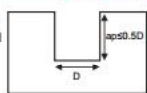
| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MUH-IEM4040     | 4                | 10                    | 6                 | 50            |
| MUH-IEM4040L112 | 4                | 12                    | 6                 | 50            |
| MUH-IEM4060     | 6                | 15                    | 6                 | 50            |
| MUH-IEM4060L118 | 6                | 18                    | 6                 | 50            |
| MUH-IEM4080     | 8                | 20                    | 8                 | 60            |
| MUH-IEM4080L124 | 8                | 24                    | 8                 | 60            |
| MUH-IEM4100     | 10               | 25                    | 10                | 75            |
| MUH-IEM4100L130 | 10               | 30                    | 10                | 75            |
| MUH-IEM4120     | 12               | 30                    | 12                | 100           |
| MUH-IEM4120L136 | 12               | 36                    | 12                | 100           |

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$

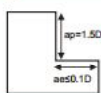


切深量深度 Depth (D : F.D)

開槽  
Slotted



側邊  
Side



適用材質：合金鋼、碳鋼  
Material : Alloy steel / Carbon steel

切削參數 The Cutting Data For MUH-IEM 4000 Series

進給速度 Vf (mm/min)

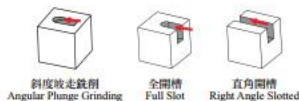
| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 6000     | 420        | 1100    |
| 6       | 4000     | 420        | 800     |
| 8       | 2900     | 420        | 950     |
| 10      | 2400     | 420        | 750     |
| 12      | 1900     | 420        | 500     |
| 16      | 1500     | 420        | 480     |
| 20      | 1200     | 420        | 400     |

## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

### MUH-FPM 4000 圓溝不等分割不等螺旋4刃鎢鋼立銑刀

Round Land Unequal Spiral & Unequal Division 4 Flutes Carbide End Mill

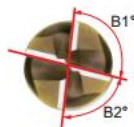
- ◆ 合金鋼及碳鋼專用特殊塗層  
Special coating for alloy steel and carbon steel.
- ◆ 螺旋角採用 $35^\circ/38^\circ$ 設計  
Helix angle  $35^\circ/38^\circ$
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division to improve seismic resistance of high-speed feed machining.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle to improve high tree processing resistance to chipping.
- ◆ 刀刀採用分割角及螺旋角不相等，改變每刀進給量，使每刀的銑削波形不再相同  
Cutting edge inconsistent with the helix angle, the feed amount per blade is changed so that the milling waveform of each edge is no longer the same.
- ◆ 可有效降低或避免刀具進行側銑時的切削震動紋路，有利於獲得高質量的加工表面和提高刀具壽命  
It can effectively reduce and avoid the vibration mode generated during the side milling process, conducive to high quality machining surfaces and improved tool life.
- ◆ 特殊U型溝槽設計，利於插銑加工時排屑優良，減少工件產生端口毛刺  
Special U-shaped groove design Makes the commissioner with excellent chip removal effect during the plunge milling process reduce workpiece generation port burrs.



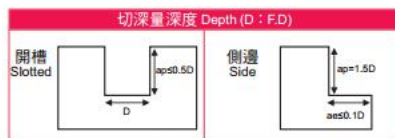
不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MUH-FPM4050L115 | 5                | 15                    | 6                 | 50            |
| MUH-FPM4060     | 6                | 15                    | 6                 | 50            |
| MUH-FPM4080     | 8                | 20                    | 8                 | 60            |
| MUH-FPM4100     | 10               | 25                    | 10                | 75            |
| MUH-FPM4120     | 12               | 30                    | 12                | 75            |
| MUH-FPM4160     | 16               | 40                    | 16                | 100           |
| MUH-FPM4200     | 20               | 50                    | 20                | 100           |

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$



#### 切削參數 The Cutting Data For MUH-FPM 4000 Series



適用材質：合金鋼、碳鋼  
Material: Alloy steel, Carbon steel

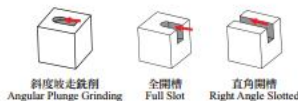
| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |         |
|---------|----------|------------------|---------|
|         |          | 開槽 Slotted       | 側邊 Side |
| 6       | 4000     | 420              | 800     |
| 8       | 2900     | 420              | 950     |
| 10      | 2400     | 420              | 750     |
| 12      | 1900     | 420              | 500     |
| 16      | 1500     | 420              | 480     |
| 20      | 1200     | 420              | 400     |

## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

### MUH-IMM 4000 不等分割不等螺旋4刃鎢鋼立銑刀

4 Flutes Unequal Spiral & Unequal Division Carbide End Mill

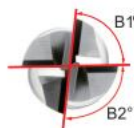
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division is beneficial to enhance seismic performance of high speed feed.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle prevents tipping of high speed processing.
- ◆ 刀刃採用分割角及螺旋角不相等  
The flute edge with unequal spiral and unequal division.
- ◆ 改變每刀進給量，使每刀的銑削波形不再相同  
Changing the processing feed so that milling waveform isn't same anymore.
- ◆ 可有效降低或避免刀具進行側銑時的切削震動紋路  
It can reduce or avoid the cutting vibration pattern effectively when the tool is processing on side milling.
- ◆ 有利於獲得高質量的加工表面和提高刀具壽命  
Conducive to high quality machining surfaces and improved tool life.
- ◆ 特殊U型溝槽設計，利於插銑加工時排屑優良，減少工件產生端口毛刺  
Special U-shaped groove design, which is good for chip removal during plunge milling and reduces port burr on workpiece.



不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

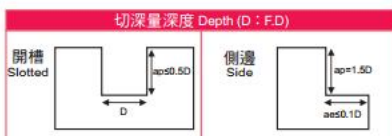
| 產品型號 Model No     | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-------------------|------------------|-----------------------|-------------------|---------------|
| MUH-IMM4040       | 4                | 10                    | 4                 | 50            |
| MUH-IMM4040L112D6 | 4                | 12                    | 6                 | 50            |
| MUH-IMM4060       | 6                | 15                    | 6                 | 50            |
| MUH-IMM4060L118   | 6                | 18                    | 6                 | 50            |
| MUH-IMM4070L121   | 7                | 21                    | 8                 | 60            |
| MUH-IMM4080       | 8                | 20                    | 8                 | 60            |
| MUH-IMM4080L124   | 8                | 24                    | 8                 | 60            |
| MUH-IMM4100       | 10               | 25                    | 10                | 75            |
| MUH-IMM4100L130   | 10               | 30                    | 10                | 75            |
| MUH-IMM4120       | 12               | 30                    | 12                | 75            |
| MUH-IMM4120L136   | 12               | 36                    | 12                | 75            |
| MUH-IMM4120L145H  | 12               | 45                    | 12                | 100           |
| MUH-IMM4120L155H  | 12               | 55                    | 12                | 100           |
| MUH-IMM4140       | 14               | 35                    | 16                | 100           |
| MUH-IMM4150       | 15               | 37.5                  | 16                | 100           |
| MUH-IMM4160       | 16               | 48                    | 16                | 100           |
| MUH-IMM4200       | 20               | 50                    | 20                | 100           |

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$



切削參數 The Cutting Data For MUH-IMM 4000 Series  
進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 6       | 4000     | 420        | 800     |
| 8       | 2900     | 420        | 950     |
| 10      | 2400     | 420        | 750     |
| 12      | 1900     | 420        | 500     |
| 16      | 1500     | 420        | 480     |
| 20      | 1200     | 420        | 400     |



適用材質：合金鋼、不銹鋼、鑄鐵  
Material : Alloy steel · Stainless steel · Iro cast

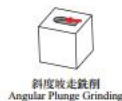


## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

## MUH-IPM 3000L1 不等分割不等螺旋3刃抗震鎢鋼銑刀

3 Flutes Unequal Spiral &amp; Unequal Division Seismic Performance Carbide End Mill

- ◆ 合金鋼、碳鋼專用特殊塗層  
Special coating for alloy steel and carbon steel.
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division facilitates high-speed feed machining shock resistance.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle facilitates high speed machining resistance to chipping.
- ◆ 特殊U型溝槽設計，刀刀採用分割角及螺旋角不相等  
Special U-shaped groove design, the cutting edge adopts the division angle and the spiral angle are not equal.
- ◆ 改變每刀進給量，使每刀的銑削波形不再相同  
Change the feed per edge so that the milling waveform for each edge is no longer the same.
- ◆ 可有效抗震獲得高質量的加工表面，插銑加工時排屑優良並延長刀具加工壽命  
It can effectively reduce or avoid the cutting vibration pattern when the tool is side milling, conducive to high quality machining surfaces and improved tool life.



## 加大容屑槽於銑削加工時排屑更優良

Which is good for chip removal during plunge milling.



不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

不等分割 Unequal division

$B1^\circ \neq B2^\circ \neq B3^\circ$

| 產品型號 Model No     | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-------------------|------------------|-----------------------|-------------------|---------------|
| MUH-IPM3040L112   | 4                | 12                    | 4                 | 50            |
| MUH-IPM3040L112D6 | 4                | 12                    | 6                 | 50            |
| MUH-IPM3050L115   | 5                | 15                    | 6                 | 50            |
| MUH-IPM3060L118   | 6                | 18                    | 6                 | 50            |
| MUH-IPM3080L124   | 8                | 24                    | 8                 | 60            |
| MUH-IPM3100L130   | 10               | 30                    | 10                | 75            |
| MUH-IPM3120L136   | 12               | 36                    | 12                | 75            |
| MUH-IPM3160L148   | 16               | 48                    | 16                | 100           |

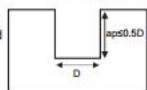
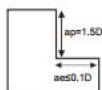


## 切削參數 The Cutting Data For MUH-IPM 3000L1 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 6000     | 360        | 540     |
| 6       | 4000     | 360        | 480     |
| 8       | 2900     | 300        | 480     |
| 10      | 2400     | 300        | 480     |
| 12      | 1900     | 280        | 400     |
| 16      | 1500     | 230        | 400     |
| 20      | 1200     | 230        | 400     |

## 切深量深度 Depth (D : F.D)

開槽  
Slotted側邊  
Side

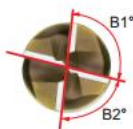
適用材質：合金鋼、碳鋼  
Material : Alloy steel、Carbon steel

## 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

### MUH-IPM 4000 不等分割不等螺旋4刃鎢鋼立銑刀

4 Flutes Unequal Spiral & Unequal Division Carbide End Mill

- ◆ 合金鋼及碳鋼專用特殊塗層  
Special coating for alloy steel and carbon steel.
- ◆ 不等角分割利於高速進給加工抗震性  
Unequal division is beneficial to enhance seismic performance of high speed feed.
- ◆ 不等螺旋角利於高速加工抗崩裂性  
Unequal helix angle prevents tipping of high speed processing.
- ◆ 刀刃採用分割角及螺旋角不相等  
The flute edge with unequal spiral and unequal division.
- ◆ 改變每刀進給量，使每刀的銑削波形不再相同  
Changing the processing feed so that milling waveform isn't same anymore.
- ◆ 可有效降低或避免刀具進行側銑時的切削震動紋路  
It can reduce or avoid the cutting vibration pattern effectively when the tool is processing on side milling.
- ◆ 有利於獲得高質量的加工表面和提高刀具壽命  
Conducive to high quality machining surfaces and improved tool life.
- ◆ 特殊U型溝槽設計，利於插銑加工時排屑優良，減少工件產生端口毛刺  
Special U-shaped groove design, which is good for chip removal during plunge milling and reduces port burr on workpiece.



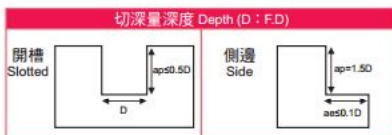
不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$

| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L | 產品型號 Model No    | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|------------------|------------------|-----------------------|-------------------|---------------|
| MUH-IPM4040     | 4                | 10                    | 4                 | 50            | MUH-IPM4120      | 12               | 30                    | 12                | 75            |
| MUH-IPM4060     | 6                | 15                    | 6                 | 50            | MUH-IPM4120L136  | 12               | 36                    | 12                | 75            |
| MUH-IPM4060L118 | 6                | 18                    | 6                 | 50            | MUH-IPM4160      | 16               | 48                    | 16                | 100           |
| MUH-IPM4080     | 8                | 20                    | 8                 | 60            | MUH-IPM4160L155  | 16               | 55                    | 16                | 100           |
| MUH-IPM4080L124 | 8                | 24                    | 8                 | 60            | MUH-IPM4200      | 20               | 50                    | 20                | 100           |
| MUH-IPM4090     | 9                | 22.5                  | 10                | 75            | MUH-IPM4200L160M | 20               | 60                    | 20                | 150           |
| MUH-IPM4100     | 10               | 25                    | 10                | 75            | MUH-IPM4200L170M | 20               | 70                    | 20                | 150           |
| MUH-IPM4100L130 | 10               | 30                    | 10                | 75            | MUH-IPM4200L180M | 20               | 80                    | 20                | 150           |

#### 切削參數 The Cutting Data For MUH-IPM 4000 Series

進給速度 Vf (mm/min)



適用材質：合金鋼、碳鋼  
Material: Alloy steel / Carbon steel

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 6000     | 480        | 720     |
| 6       | 4000     | 350        | 640     |
| 8       | 2900     | 350        | 580     |
| 10      | 2400     | 300        | 580     |
| 12      | 1900     | 300        | 580     |
| 16      | 1500     | 300        | 480     |
| 20      | 1200     | 300        | 400     |



# 圓溝不等分割銑刀 Rounded Land Irregular Pitch End Mill

## MUH-GMM 4000 不等分割4刃鎢鋼立銑刀

4 Flutes Unequal Division Carbide End Mill



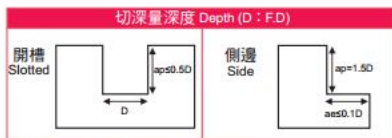
- ◆ 螺旋角採用45°設計  
Helix angle 45°
- ◆ 透過刀刃的分割比例，有效控制削屑排出頻率  
By blades split evenly ratio, it can control chip removal with excellent effect.
- ◆ 加強抑制加工中的細微振動，增加加工表面光滑度  
Strengthen the suppression of fine vibration when carbide end mill processing, Improve the processing smoothly of the surface.
- ◆ 特殊U型圓溝刀設計，適用於高速粗精銑削  
Special design of round land U type, suit to process on high speed roughing and finishing.



| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MUH-GMM4040     | 4                | 10                    | 4                 | 50            |
| MUH-GMM4060     | 6                | 15                    | 6                 | 50            |
| MUH-GMM4070     | 7                | 17.5                  | 8                 | 60            |
| MUH-GMM4080     | 8                | 20                    | 8                 | 60            |
| MUH-GMM4080L124 | 8                | 24                    | 8                 | 60            |
| MUH-GMM4100     | 10               | 25                    | 10                | 75            |
| MUH-GMM4100L130 | 10               | 30                    | 10                | 75            |
| MUH-GMM4100H    | 10               | 25                    | 10                | 100           |
| MUH-GMM4120     | 12               | 30                    | 12                | 75            |
| MUH-GMM4120L136 | 12               | 36                    | 12                | 75            |
| MUH-GMM4160     | 16               | 48                    | 16                | 100           |
| MUH-GMM4200     | 20               | 50                    | 20                | 100           |

### 切削參數 The Cutting Data For MUH-GMM 4000 Series 進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 6000     | 420        | 1100    |
| 6       | 4000     | 420        | 800     |
| 8       | 2900     | 420        | 950     |
| 10      | 2400     | 420        | 750     |
| 12      | 1900     | 420        | 500     |
| 16      | 1500     | 420        | 480     |
| 20      | 1200     | 420        | 400     |



適用材質：合金鋼、不銹鋼、鑄鐵  
Material : Alloy steel、Stainless steel、Iro cast

## 圓溝銑刀 Rounded Land End Mill

### MU-GMM 4000 4刃圓溝鎢鋼立銑刀

4 Flutes Rounded Land Carbide End Mill



- ◆ 採用全新進口棒材，加工工件硬度HRC55度以下  
Using the latest import carbide rod, it can process on hardness up to 55HRC.
- ◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度  
International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.
- ◆ 採用圓形刃帶，大幅提高了耐震性和耐崩損性  
Using round flute improve the shock resistance and resistance to collapse.
- ◆ 通過減少切削阻力，實現了高速高進給加工  
By reducing cutting resistance to achieve high speed and feeding processing.



| 產品型號 Model No    | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|------------------|------------------|-----------------------|-------------------|---------------|
| MU-GMM4020       | 2                | 5                     | 4                 | 50            |
| MU-GMM4030       | 3                | 7.5                   | 4                 | 50            |
| MU-GMM4030L109   | 3                | 9                     | 4                 | 50            |
| MU-GMM4030D6     | 3                | 7.5                   | 6                 | 50            |
| MU-GMM4031L1093  | 3.1              | 9.3                   | 4                 | 50            |
| MU-GMM4032L1096  | 3.2              | 9.6                   | 4                 | 50            |
| MU-GMM4033L1099  | 3.3              | 9.9                   | 4                 | 50            |
| MU-GMM4034L1102  | 3.4              | 10.2                  | 4                 | 50            |
| MU-GMM4035L1105  | 3.5              | 10.5                  | 4                 | 50            |
| MU-GMM4036L1108  | 3.6              | 10.8                  | 4                 | 50            |
| MU-GMM4037L1111  | 3.7              | 11.1                  | 4                 | 50            |
| MU-GMM4038L1114  | 3.8              | 11.4                  | 4                 | 50            |
| MU-GMM4039L1117  | 3.9              | 11.7                  | 4                 | 50            |
| MU-GMM4040       | 4                | 10                    | 4                 | 50            |
| MU-GMM4040D6     | 4                | 10                    | 6                 | 50            |
| MU-GMM4040L112   | 4                | 12                    | 4                 | 50            |
| MU-GMM4040L112D6 | 4                | 12                    | 6                 | 50            |
| MU-GMM4041L1123  | 4.1              | 12.3                  | 6                 | 50            |
| MU-GMM4042L1126  | 4.2              | 12.6                  | 6                 | 50            |
| MU-GMM4043L1129  | 4.3              | 12.9                  | 6                 | 50            |
| MU-GMM4044L1132  | 4.4              | 13.2                  | 6                 | 50            |
| MU-GMM4045L1135  | 4.5              | 13.5                  | 6                 | 50            |
| MU-GMM4046L1138  | 4.6              | 13.8                  | 6                 | 50            |
| MU-GMM4047L1141  | 4.7              | 14.1                  | 6                 | 50            |
| MU-GMM4048L1144  | 4.8              | 14.4                  | 6                 | 50            |
| MU-GMM4049L1147  | 4.9              | 14.7                  | 6                 | 50            |
| MU-GMM4050       | 5                | 12.5                  | 6                 | 50            |
| MU-GMM4050L115   | 5                | 15                    | 6                 | 50            |

| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MU-GMM4050L120H | 5                | 20                    | 6                 | 100           |
| MU-GMM4051L1153 | 5.1              | 15.3                  | 6                 | 50            |
| MU-GMM4052L1156 | 5.2              | 15.6                  | 6                 | 50            |
| MU-GMM4053L1159 | 5.3              | 15.9                  | 6                 | 50            |
| MU-GMM4054L1162 | 5.4              | 16.2                  | 6                 | 50            |
| MU-GMM4055      | 5.5              | 13.75                 | 6                 | 50            |
| MU-GMM4055L1165 | 5.5              | 16.5                  | 6                 | 50            |
| MU-GMM4056L1168 | 5.6              | 16.8                  | 6                 | 50            |
| MU-GMM4057L1171 | 5.7              | 17.1                  | 6                 | 50            |
| MU-GMM4058L1174 | 5.8              | 17.4                  | 6                 | 50            |
| MU-GMM4059L1177 | 5.9              | 17.7                  | 6                 | 50            |
| MU-GMM4060      | 6                | 15                    | 6                 | 50            |
| MU-GMM4060L118  | 6                | 18                    | 6                 | 50            |
| MU-GMM4060E1    | 6                | 15                    | 6                 | 75            |
| MU-GMM4061L1183 | 6.1              | 18.3                  | 8                 | 60            |
| MU-GMM4062L1186 | 6.2              | 18.6                  | 8                 | 60            |
| MU-GMM4063L1189 | 6.3              | 18.9                  | 8                 | 60            |
| MU-GMM4064L1191 | 6.4              | 19.1                  | 8                 | 60            |
| MU-GMM4064L1192 | 6.4              | 19.2                  | 8                 | 60            |
| MU-GMM4065      | 6.5              | 16.25                 | 8                 | 60            |
| MU-GMM4065L1195 | 6.5              | 19.5                  | 8                 | 60            |
| MU-GMM4066L1198 | 6.6              | 19.8                  | 8                 | 60            |
| MU-GMM4067L1201 | 6.7              | 20.1                  | 8                 | 60            |
| MU-GMM4068L1204 | 6.8              | 20.4                  | 8                 | 60            |
| MU-GMM4069L1207 | 6.9              | 20.7                  | 8                 | 60            |
| MU-GMM4070      | 7                | 17.5                  | 8                 | 60            |
| MU-GMM4070L121  | 7                | 21.0                  | 8                 | 60            |
| MU-GMM4071L1213 | 7.1              | 21.3                  | 8                 | 60            |

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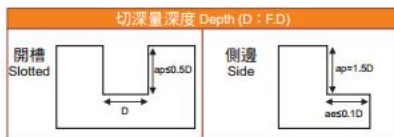
## 圓溝銑刀 Rounded Land End Mill

### MU-GMM 4000 4刃圓溝鎢鋼立銑刀

4 Flutes Rounded Land Carbide End Mill

| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MU-GMM4072L1216 | 7.2              | 21.6                  | 8                 | 60            |
| MU-GMM4073L1219 | 7.3              | 21.9                  | 8                 | 60            |
| MU-GMM4074L1222 | 7.4              | 22.2                  | 8                 | 60            |
| MU-GMM4075      | 7.5              | 18.75                 | 8                 | 60            |
| MU-GMM4075L1225 | 7.5              | 22.5                  | 8                 | 60            |
| MU-GMM4076L1228 | 7.6              | 22.8                  | 8                 | 60            |
| MU-GMM4077L1231 | 7.7              | 23.1                  | 8                 | 60            |
| MU-GMM4078L1234 | 7.8              | 23.4                  | 8                 | 60            |
| MU-GMM4079L1237 | 7.9              | 23.7                  | 8                 | 60            |
| MU-GMM4080      | 8                | 20                    | 8                 | 60            |
| MU-GMM4080E1    | 8                | 20                    | 8                 | 75            |
| MU-GMM4080H     | 8                | 20                    | 8                 | 100           |
| MU-GMM4080M     | 8                | 20                    | 8                 | 150           |
| MU-GMM4080L124  | 8                | 24                    | 8                 | 60            |
| MU-GMM4081L1243 | 8.1              | 24.3                  | 10                | 75            |
| MU-GMM4082L1246 | 8.2              | 24.6                  | 10                | 75            |
| MU-GMM4083L1249 | 8.3              | 24.9                  | 10                | 75            |
| MU-GMM4084L1252 | 8.4              | 25.2                  | 10                | 75            |
| MU-GMM4085L1255 | 8.5              | 25.5                  | 10                | 75            |
| MU-GMM4086L1258 | 8.6              | 25.8                  | 10                | 75            |
| MU-GMM4087L1261 | 8.7              | 26.1                  | 10                | 75            |
| MU-GMM4088L1264 | 8.8              | 26.4                  | 10                | 75            |
| MU-GMM4089L1267 | 8.9              | 26.7                  | 10                | 75            |
| MU-GMM40900     | 9                | 22.5                  | 10                | 75            |

| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MU-GMM4090L127  | 9                | 27                    | 10                | 75            |
| MU-GMM4091L1273 | 9.1              | 27.3                  | 10                | 75            |
| MU-GMM4092L1276 | 9.2              | 27.6                  | 10                | 75            |
| MU-GMM4093L1279 | 9.3              | 27.9                  | 10                | 75            |
| MU-GMM4094L13   | 9.4              | 30                    | 10                | 75            |
| MU-GMM4094L1282 | 9.4              | 28.2                  | 10                | 75            |
| MU-GMM4095L1285 | 9.5              | 28.5                  | 10                | 75            |
| MU-GMM4096L1288 | 9.6              | 28.8                  | 10                | 75            |
| MU-GMM4097L1291 | 9.7              | 29.1                  | 10                | 75            |
| MU-GMM4098L1294 | 9.8              | 29.4                  | 10                | 75            |
| MU-GMM4099L1297 | 9.9              | 29.7                  | 10                | 75            |
| MU-GMM4100      | 10               | 25                    | 10                | 75            |
| MU-GMM4100H     | 10               | 25                    | 10                | 100           |
| MU-GMM4100L130  | 10               | 30                    | 10                | 75            |
| MU-GMM4100L130H | 10               | 30                    | 10                | 100           |
| MU-GMM4110      | 11               | 27.5                  | 12                | 75            |
| MU-GMM4120      | 12               | 30                    | 12                | 75            |
| MU-GMM4120L136  | 12               | 36                    | 12                | 75            |
| MU-GMM4120H     | 12               | 30                    | 12                | 100           |
| MU-GMM4120L155H | 12               | 55                    | 12                | 100           |
| MU-GMM4140      | 14               | 35                    | 16                | 100           |
| MU-GMM4160      | 16               | 48                    | 16                | 100           |
| MU-GMM4160M     | 16               | 48                    | 16                | 150           |
| MU-GMM4200      | 20               | 50                    | 20                | 100           |



適用材質：合金鋼、不鏽鋼、鑄鐵  
Material: Alloy steel、Stainless steel、Iro cast

#### 切削參數 The Cutting Data For MU-GMM 4000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 270        | 950     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |
| 12      | 1600     | 240        | 550     |
| 16      | 1200     | 270        | 400     |
| 20      | 950      | 270        | 320     |



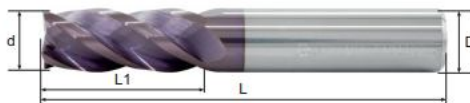
# 圓溝銑刀 Rounded Land End Mill

## MU-EMM 4000 4刃圓溝鎢鋼立銑刀

4 Flutes Rounded Land Carbide End Mill



- ◆ 特殊U型圓溝刃設計，適用於高速粗精銑削  
Special design of U type round land and it can process on high speed roughing, finishing cutting.
- ◆ 採用螺旋角35°  
Helix angle 35°.
- ◆ 刃口強度提升，提升加工切削排屑流暢，增加穩定度  
Enhance hardness of edge, enhance chip removal effect and increase the stability.

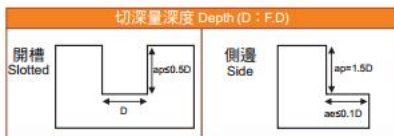


| 產品型號 Model No    | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|------------------|------------------|-----------------------|-------------------|---------------|
| MU-EMM4030       | 3                | 7.5                   | 4                 | 50            |
| MU-EMM4030L109D6 | 3                | 9                     | 6                 | 50            |
| MU-EMM4030D6     | 3                | 7.5                   | 6                 | 50            |
| MU-EMM4040       | 4                | 10                    | 4                 | 50            |
| MU-EMM4040D6     | 4                | 10                    | 6                 | 50            |
| MU-EMM4040L112   | 4                | 12                    | 4                 | 50            |
| MU-EMM4040L112D6 | 4                | 12                    | 6                 | 50            |
| MU-EMM4050       | 5                | 12.5                  | 6                 | 50            |
| MU-EMM4050L115   | 5                | 15                    | 6                 | 50            |
| MU-EMM4060       | 6                | 15                    | 6                 | 50            |
| MU-EMM4060L118   | 6                | 18                    | 6                 | 50            |
| MU-EMM4060E1     | 6                | 15                    | 6                 | 75            |
| MU-EMM4070       | 7                | 17.5                  | 8                 | 60            |

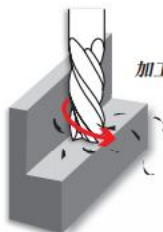
| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------------|------------------|-----------------------|-------------------|---------------|
| MU-EMM4070L121  | 7                | 21                    | 8                 | 60            |
| MU-EMM4080      | 8                | 20                    | 8                 | 60            |
| MU-EMM4080L124  | 8                | 24                    | 8                 | 60            |
| MU-EMM4090      | 9                | 22.5                  | 10                | 75            |
| MU-EMM4090L127  | 9                | 27                    | 10                | 75            |
| MU-EMM4100      | 10               | 25                    | 10                | 75            |
| MU-EMM4100L130  | 10               | 30                    | 10                | 75            |
| MU-EMM4120      | 12               | 30                    | 12                | 75            |
| MU-EMM4120L136  | 12               | 36                    | 12                | 75            |
| MU-EMM4140      | 14               | 35                    | 16                | 100           |
| MU-EMM4160      | 16               | 40                    | 16                | 100           |
| MU-EMM4160L160M | 16               | 60                    | 16                | 150           |
| MU-EMM4200      | 20               | 50                    | 20                | 100           |

### 切削參數 The Cutting Data For MU-EMM 4000 Series 進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 270        | 950     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |
| 12      | 1600     | 240        | 550     |
| 16      | 1200     | 270        | 400     |
| 20      | 950      | 270        | 320     |



適用材質：合金鋼、不銹鋼、鑄鐵  
Material: Alloy steel、Stainless steel、Iro cast



加工排屑流暢

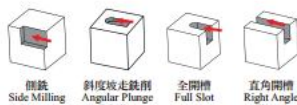
特殊U型圓溝刃槽設計  
有利排屑順暢



# 平刀 Square

## EMM 2000 2刃鎢鋼立銑刀

2 Flutes Carbide End Mill



- ◆ 可側銑、可插槽  
Can be side milling and slot.
- ◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.
- ◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing. Improve tool life, enhance the effect of remove chip.



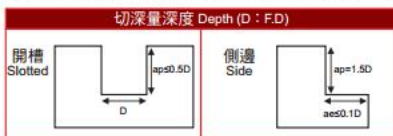
| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM2010       | 1             | 2.5                | 4              | 50         |
| EMM2011L1033  | 1.1           | 3.3                | 4              | 50         |
| EMM2011L1033  | 1.1           | 3.3                | 4              | 50         |
| EMM2012L1036  | 1.2           | 3.6                | 4              | 50         |
| EMM2013L1039  | 1.3           | 3.9                | 4              | 50         |
| EMM2014L1042  | 1.4           | 4.2                | 4              | 50         |
| EMM2015       | 1.5           | 3.75               | 4              | 50         |
| EMM2015L1045  | 1.5           | 4.5                | 4              | 50         |
| EMM2016L1048  | 1.6           | 4.8                | 4              | 50         |
| EMM2017L1051  | 1.7           | 5.1                | 4              | 50         |
| EMM2018L1054  | 1.8           | 5.4                | 4              | 50         |
| EMM2019L1057  | 1.9           | 5.7                | 4              | 50         |
| EMM2020       | 2             | 5                  | 4              | 50         |
| EMM2020D6     | 2             | 5                  | 6              | 50         |
| EMM2020L106   | 2             | 6                  | 4              | 50         |
| EMM2021L1063  | 2.1           | 6.3                | 4              | 50         |
| EMM2022L1066  | 2.2           | 6.6                | 4              | 50         |
| EMM2023L1069  | 2.3           | 6.9                | 4              | 50         |
| EMM2024L1072  | 2.4           | 7.2                | 4              | 50         |
| EMM2025       | 2.5           | 6.25               | 4              | 50         |
| EMM2025D6     | 2.5           | 12.5               | 6              | 50         |
| EMM2030       | 3             | 7.5                | 4              | 50         |
| EMM2030D6     | 3             | 7.5                | 6              | 50         |
| EMM2035       | 3.5           | 8.75               | 4              | 50         |
| EMM2035D6     | 3.5           | 8.75               | 6              | 50         |
| EMM2036       | 3.6           | 9                  | 4              | 50         |
| EMM2038       | 3.8           | 9.5                | 4              | 50         |
| EMM2040       | 4             | 10                 | 4              | 50         |
| EMM2040D6     | 4             | 10                 | 6              | 50         |
| EMM2040E1     | 4             | 10                 | 4              | 75         |
| EMM2045       | 4.5           | 11.25              | 6              | 50         |
| EMM2047       | 4.7           | 11.75              | 6              | 50         |
| EMM2050       | 5             | 12.5               | 6              | 50         |

| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM2050E1     | 5             | 12.5               | 6              | 75         |
| EMM2050H      | 5             | 12.5               | 6              | 100        |
| EMM2055       | 5.5           | 13.75              | 6              | 50         |
| EMM2057       | 5.7           | 14.25              | 6              | 50         |
| EMM2060       | 6             | 15                 | 6              | 50         |
| EMM2060E1     | 6             | 15                 | 6              | 75         |
| EMM2060H      | 6             | 15                 | 6              | 100        |
| EMM2064       | 6.4           | 16                 | 8              | 60         |
| EMM2068       | 6.8           | 17                 | 8              | 60         |
| EMM2070       | 7             | 17.5               | 8              | 60         |
| EMM2071       | 7.1           | 17.75              | 8              | 60         |
| EMM2073       | 7.3           | 18.25              | 8              | 60         |
| EMM2075       | 7.5           | 18.75              | 8              | 60         |
| EMM2080       | 8             | 20                 | 8              | 60         |
| EMM2080E1     | 8             | 20                 | 8              | 75         |
| EMM2080H      | 8             | 20                 | 8              | 100        |
| EMM2080M      | 8             | 20                 | 8              | 150        |
| EMM2080T030   | 8             | 20                 | 8              | 60         |
| EMM2090       | 9             | 22.5               | 10             | 75         |
| EMM2100       | 10            | 25                 | 10             | 75         |
| EMM2100H      | 10            | 25                 | 10             | 100        |
| EMM2100L130   | 10            | 13                 | 10             | 75         |
| EMM2100M      | 10            | 25                 | 10             | 150        |
| EMM2120       | 12            | 30                 | 12             | 75         |
| EMM2120H      | 12            | 30                 | 12             | 100        |
| EMM2120M      | 12            | 30                 | 12             | 150        |
| EMM2140       | 14            | 35                 | 16             | 100        |
| EMM2160       | 16            | 48                 | 16             | 100        |
| EMM2160M      | 16            | 48                 | 16             | 150        |
| EMM2160R      | 16            | 48                 | 16             | 200        |
| EMM2200       | 20            | 50                 | 20             | 100        |
| EMM2200M      | 20            | 50                 | 20             | 150        |
| EMM2200R      | 20            | 50                 | 20             | 200        |

切削參數 The Cutting Data For EMM 2000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 135        | 475     |
| 6       | 3100     | 120        | 325     |
| 8       | 2300     | 120        | 375     |
| 10      | 1900     | 120        | 375     |
| 12      | 1600     | 120        | 275     |
| 16      | 1200     | 135        | 200     |
| 20      | 950      | 135        | 165     |



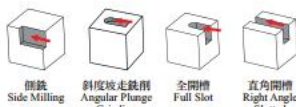
適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel, Stainless steel, Iro cast



# 平刀 Square

## EMM 2000L1 2刃3倍刃長鎢鋼立銑刀

2 Flutes With Triple Flute Length Carbide End Mill



◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.

◆ 可側銑、可插槽  
Can be side milling and slot.

◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing, Improve tool life, enhance the effect of remove chip.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| EMM2010L103   | 1                | 3                     | 4                 | 50            |
| EMM2011L1033  | 1.1              | 3.3                   | 4                 | 50            |
| EMM2012L1036  | 1.2              | 3.6                   | 4                 | 50            |
| EMM2013L1039  | 1.3              | 3.9                   | 4                 | 50            |
| EMM2014L1042  | 1.4              | 4.2                   | 4                 | 50            |
| EMM2015L1045  | 1.5              | 4.5                   | 4                 | 50            |
| EMM2016L1048  | 1.6              | 4.8                   | 4                 | 50            |
| EMM2017L1051  | 1.7              | 5.1                   | 4                 | 50            |
| EMM2018L1054  | 1.8              | 5.4                   | 4                 | 50            |
| EMM2019L1057  | 1.9              | 5.7                   | 4                 | 50            |
| EMM2020L106   | 2                | 6                     | 4                 | 50            |
| EMM2020L106D6 | 2                | 6                     | 6                 | 50            |
| EMM2021L1063  | 2.1              | 6.3                   | 4                 | 50            |
| EMM2022L1066  | 2.2              | 6.6                   | 4                 | 50            |
| EMM2023L1069  | 2.3              | 6.9                   | 4                 | 50            |
| EMM2024L1072  | 2.4              | 7.2                   | 4                 | 50            |
| EMM2025L1075  | 2.5              | 7.5                   | 4                 | 50            |
| EMM2026L1078  | 2.6              | 7.8                   | 4                 | 50            |
| EMM2027L1081  | 2.7              | 8.1                   | 4                 | 50            |
| EMM2028L1084  | 2.8              | 8.4                   | 4                 | 50            |
| EMM2029L1087  | 2.9              | 8.7                   | 4                 | 50            |
| EMM2030L109   | 3                | 9                     | 4                 | 50            |
| EMM2030L109D6 | 3                | 9                     | 6                 | 50            |
| EMM2031L1093  | 3.1              | 9.3                   | 4                 | 50            |
| EMM2032L1096  | 3.2              | 9.6                   | 4                 | 50            |
| EMM2033L1099  | 3.3              | 9.9                   | 4                 | 50            |
| EMM2034L1102  | 3.4              | 10.2                  | 4                 | 50            |
| EMM2035L1105  | 3.5              | 10.5                  | 4                 | 50            |
| EMM2036L1108  | 3.6              | 10.8                  | 4                 | 50            |
| EMM2037L1111  | 3.7              | 11.1                  | 4                 | 50            |
| EMM2038L1114  | 3.8              | 11.4                  | 4                 | 50            |
| EMM2039L1117  | 3.9              | 11.7                  | 4                 | 50            |
| EMM2040L112   | 4                | 12                    | 4                 | 50            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| EMM2040L112D6 | 4                | 12                    | 6                 | 50            |
| EMM2041L1123  | 4.1              | 12.3                  | 6                 | 50            |
| EMM2042L1126  | 4.2              | 12.6                  | 6                 | 50            |
| EMM2043L1129  | 4.3              | 12.9                  | 6                 | 50            |
| EMM2044L1132  | 4.4              | 13.2                  | 6                 | 50            |
| EMM2045L1135  | 4.5              | 13.5                  | 6                 | 50            |
| EMM2046L1138  | 4.6              | 13.8                  | 6                 | 50            |
| EMM2047L1141  | 4.7              | 14.1                  | 6                 | 50            |
| EMM2048L1144  | 4.8              | 14.4                  | 6                 | 50            |
| EMM2049L1147  | 4.9              | 14.7                  | 6                 | 50            |
| EMM2050L115   | 5                | 15                    | 6                 | 50            |
| EMM2051L1153  | 5.1              | 15.3                  | 6                 | 50            |
| EMM2052L1156  | 5.2              | 15.6                  | 6                 | 50            |
| EMM2053L1159  | 5.3              | 15.9                  | 6                 | 50            |
| EMM2054L1162  | 5.4              | 16.2                  | 6                 | 50            |
| EMM2055L1165  | 5.5              | 16.5                  | 6                 | 50            |
| EMM2056L1168  | 5.6              | 16.8                  | 6                 | 50            |
| EMM2057L1171  | 5.7              | 17.1                  | 6                 | 50            |
| EMM2058L1174  | 5.8              | 17.4                  | 6                 | 50            |
| EMM2059L1177  | 5.9              | 17.7                  | 6                 | 50            |
| EMM2060L118   | 6                | 18                    | 6                 | 50            |
| EMM2061L1183  | 6.1              | 18.3                  | 8                 | 60            |
| EMM2062L1186  | 6.2              | 18.6                  | 8                 | 60            |
| EMM2063L1189  | 6.3              | 18.9                  | 8                 | 60            |
| EMM2064L1192  | 6.4              | 19.2                  | 8                 | 60            |
| EMM2065L1195  | 6.5              | 19.5                  | 8                 | 60            |
| EMM2066L1198  | 6.6              | 19.8                  | 8                 | 60            |
| EMM2067L1201  | 6.7              | 20.1                  | 8                 | 60            |
| EMM2068L1204  | 6.8              | 20.4                  | 8                 | 60            |
| EMM2069L1207  | 6.9              | 20.7                  | 8                 | 60            |
| EMM2070L121   | 7                | 21                    | 8                 | 60            |
| EMM2071L1213  | 7.1              | 21.3                  | 8                 | 60            |
| EMM2072L1216  | 7.2              | 21.6                  | 8                 | 60            |

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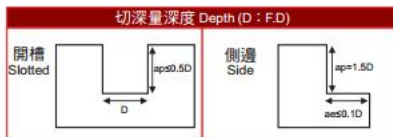


## EMM 2000L1 2刃3倍刃長鎢鋼立銑刀

2 Flutes With Triple Flute Length Carbide End Mill

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| EMM2073L1219  | 7.3              | 21.9                  | 8                 | 60            |
| EMM2074L1222  | 7.4              | 22.2                  | 8                 | 60            |
| EMM2075L1225  | 7.5              | 22.5                  | 8                 | 60            |
| EMM2076L1228  | 7.6              | 22.8                  | 8                 | 60            |
| EMM2077L1231  | 7.7              | 23.1                  | 8                 | 60            |
| EMM2078L1234  | 7.8              | 23.4                  | 8                 | 60            |
| EMM2079L1237  | 7.9              | 23.7                  | 8                 | 60            |
| EMM2080L124   | 8                | 24                    | 8                 | 60            |
| EMM2081L1243  | 8.1              | 24.3                  | 10                | 75            |
| EMM2082L1246  | 8.2              | 24.6                  | 10                | 75            |
| EMM2083L1249  | 8.3              | 24.9                  | 10                | 75            |
| EMM2084L1252  | 8.4              | 25.2                  | 10                | 75            |
| EMM2085L1255  | 8.5              | 25.5                  | 10                | 75            |
| EMM2086L1258  | 8.6              | 25.8                  | 10                | 75            |
| EMM2087L1261  | 8.7              | 26.1                  | 10                | 75            |
| EMM2088L1264  | 8.8              | 26.4                  | 10                | 75            |
| EMM2089L1267  | 8.9              | 26.7                  | 10                | 75            |
| EMM2090L127   | 9                | 27                    | 10                | 75            |
| EMM2091L1273  | 9.1              | 27.3                  | 10                | 75            |
| EMM2092L1276  | 9.2              | 27.6                  | 10                | 75            |
| EMM2093L1279  | 9.3              | 27.9                  | 10                | 75            |
| EMM2094L1282  | 9.4              | 28.2                  | 10                | 75            |
| EMM2095L1285  | 9.5              | 28.5                  | 10                | 75            |
| EMM2096L1288  | 9.6              | 28.8                  | 10                | 75            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| EMM2097L1291  | 9.7              | 29.1                  | 10                | 75            |
| EMM2098L1294  | 9.8              | 29.4                  | 10                | 75            |
| EMM2099L1297  | 9.9              | 29.7                  | 10                | 75            |
| EMM2100L130   | 10               | 30                    | 10                | 75            |
| EMM2101L1303  | 10.1             | 30.3                  | 12                | 75            |
| EMM2102L1306  | 10.2             | 30.6                  | 12                | 75            |
| EMM2103L1309  | 10.3             | 30.9                  | 12                | 75            |
| EMM2104L1312  | 10.4             | 31.2                  | 12                | 75            |
| EMM2105L1315  | 10.5             | 31.5                  | 12                | 75            |
| EMM2106L1318  | 10.6             | 31.8                  | 12                | 75            |
| EMM2107L1321  | 10.7             | 32.1                  | 12                | 75            |
| EMM2108L1324  | 10.8             | 32.4                  | 12                | 75            |
| EMM2109L1327  | 10.9             | 32.7                  | 12                | 75            |
| EMM2110L133   | 11               | 33                    | 12                | 75            |
| EMM2111L1333  | 11.1             | 33.3                  | 12                | 75            |
| EMM2112L1336  | 11.2             | 33.6                  | 12                | 75            |
| EMM2113L1339  | 11.3             | 33.9                  | 12                | 75            |
| EMM2114L1342  | 11.4             | 34.2                  | 12                | 75            |
| EMM2115L1345  | 11.5             | 34.5                  | 12                | 75            |
| EMM2116L1348  | 11.6             | 34.8                  | 12                | 75            |
| EMM2117L1351  | 11.7             | 35.1                  | 12                | 75            |
| EMM2118L1354  | 11.8             | 35.4                  | 12                | 75            |
| EMM2119L1357  | 11.9             | 35.7                  | 12                | 75            |
| EMM2120L136   | 12               | 36                    | 12                | 75            |



適用材質：鋼、不銹鋼、鑄鐵  
Material : Steel、Stainless steel、Iro cast

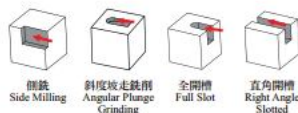
### 切削參數 The Cutting Data For EMM 2000L1 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |         |
|---------|----------|------------------|---------|
|         |          | 開槽 Slotted       | 側邊 Side |
| 4       | 4800     | 135              | 475     |
| 6       | 3100     | 120              | 325     |
| 8       | 2300     | 120              | 375     |
| 10      | 1900     | 120              | 375     |
| 12      | 1600     | 120              | 275     |
| 16      | 1200     | 135              | 200     |
| 20      | 950      | 135              | 165     |

# 平刀 Square

## EMM 2000T00 2刃斜度鎢鋼立銑刀

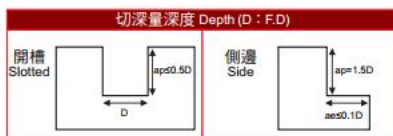
2 Flutes Tapered Carbided End Mill



| 產品型號 Model No | 刃斜角 $\alpha^\circ$<br>Taper Angle | 直徑 d<br>Diameter | 粗端徑 d1<br>Processing diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|-----------------------------------|------------------|-------------------------------|-----------------------|-------------------|---------------|
| EMM 2025T030  | 3°                                | 2.5              | 3.34                          | 8                     | 4                 | 50            |
| EMM 2040T030  | 3°                                | 4.0              | 5.57                          | 15                    | 6                 | 50            |
| EMM 2060T030  | 3°                                | 6.0              | 7.89                          | 18                    | 8                 | 60            |
| EMM 2080T030  | 3°                                | 8.0              | 10.62                         | 25                    | 12                | 75            |
| EMM 2100T030  | 3°                                | 10.0             | 13.67                         | 35                    | 16                | 100           |

### 切削參數 The Cutting Data For EMM 2000T00 Series 進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 135        | 475     |
| 6       | 3100     | 120        | 325     |
| 8       | 2300     | 120        | 375     |
| 10      | 1900     | 120        | 375     |
| 12      | 1600     | 120        | 275     |
| 16      | 1200     | 120        | 275     |

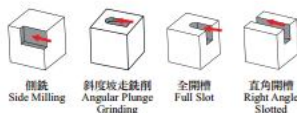


適用材質：鋼、不鏽鋼、鑄鐵  
Material : Steel、Stainless steel、Iro cast

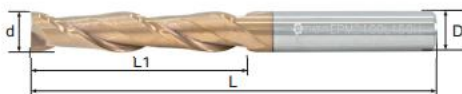
# 平刀 Square

## EPM 2000L1 2刃3倍刃長鎢鋼立銑刀

2 Flutes With Triple Flute Length Carbide End Mill



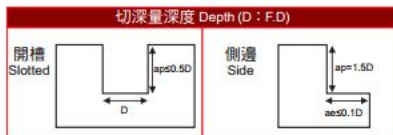
- ◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.
- ◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing, Improve tool life, enhance the effect of remove chip.
- ◆ 可側銑、可插槽  
Can be side milling and slot.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| EPM2010L103   | 1                | 3                     | 4                 | 50            |
| EPM2020L106   | 2                | 6                     | 4                 | 50            |
| EPM2020L106D6 | 2                | 6                     | 6                 | 50            |
| EPM2030L109   | 3                | 9                     | 4                 | 50            |
| EPM2030L109D6 | 3                | 9                     | 6                 | 50            |
| EPM2040L112   | 4                | 12                    | 4                 | 50            |
| EPM2040L112D6 | 4                | 12                    | 6                 | 50            |
| EPM2050L115   | 5                | 15                    | 6                 | 50            |
| EPM2060L118   | 6                | 18                    | 6                 | 50            |
| EPM2070L121   | 7                | 21                    | 8                 | 60            |
| EPM2080L124   | 8                | 24                    | 8                 | 60            |
| EPM2080L124H  | 8                | 24                    | 8                 | 100           |
| EPM2090L127   | 9                | 27                    | 10                | 75            |
| EPM2100L130   | 10               | 30                    | 10                | 75            |
| EPM2110L133   | 11               | 33                    | 12                | 75            |
| EPM2120L136   | 12               | 36                    | 12                | 75            |
| EPM2120L150M  | 12               | 36                    | 12                | 150           |

### 切削參數 The Cutting Data For EPM 2000L1 Series

進給速度 Vf (mm/min)



通用材質：合金鋼、碳鋼

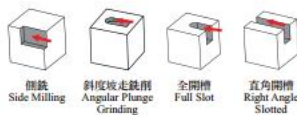
Material: Alloy steel、Carbon steel

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 135        | 475     |
| 6       | 3100     | 120        | 325     |
| 8       | 2300     | 120        | 375     |
| 10      | 1900     | 120        | 375     |
| 12      | 1600     | 120        | 275     |
| 16      | 1200     | 135        | 200     |
| 20      | 950      | 135        | 165     |



## EMM 3000 3刃鎢鋼立銑刀

3 Flutes Carbide End Mill



- ◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.

- ◆ 可側銑、可插槽  
Can be side milling and slot

- ◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing. Improve tool life, enhance the effect of remove chip.



| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM3050       | 5             | 12.5               | 6              | 50         |
| EMM3055L1165  | 5.5           | 16.5               | 6              | 50         |

| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM3060       | 6             | 15                 | 6              | 50         |
| EMM3080       | 8             | 20                 | 8              | 60         |
| EMM3100       | 10            | 25                 | 10             | 75         |

適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel、Stainless steel、Iro cast



切削參數 The Cutting Data For EMM 3000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 5       | 3800     | 230        | 650     |
| 5.5     | 3500     | 230        | 650     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |

## EMML 4000 長刃型4刃鎢鋼立銑刀

Long Flute 4 Flutes Carbide End Mill



| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM4030L109D6 | 3             | 9                  | 6              | 50         |
| EMM4040L120E1 | 4             | 20                 | 4              | 75         |
| EMM4050L125E1 | 5             | 25                 | 6              | 75         |
| EMM4060L125E1 | 6             | 25                 | 6              | 75         |
| EMM4060L130H  | 6             | 30                 | 6              | 100        |
| EMM4080L130E1 | 8             | 30                 | 8              | 75         |
| EMM4080L135H  | 8             | 35                 | 8              | 100        |
| EMM4080L140M  | 8             | 40                 | 8              | 150        |
| EMM4100L130   | 10            | 30                 | 10             | 75         |
| EMM4100L140H  | 10            | 40                 | 10             | 100        |
| EMM4100L150M  | 10            | 50                 | 10             | 150        |
| EMM4120L136   | 12            | 36                 | 12             | 75         |

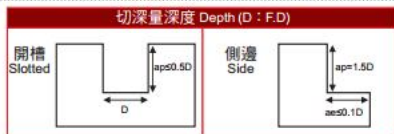
| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|
| EMM4120L145H  | 12            | 45                 | 12             | 100        |
| EMM4120L150M  | 12            | 50                 | 12             | 150        |
| EMM4130L139   | 13            | 39                 | 16             | 100        |
| EMM4140L142   | 14            | 42                 | 16             | 100        |
| EMM4160L170M  | 16            | 70                 | 16             | 150        |
| EMM4200L180M  | 20            | 80                 | 20             | 150        |

適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel、Stainless steel、Iro cast

切削參數 The Cutting Data For EMM 3000 Series

進給速度 Vf (mm/min)

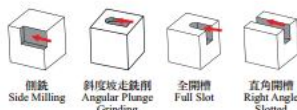
| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 270        | 950     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |
| 12      | 1600     | 240        | 550     |
| 16      | 1200     | 270        | 400     |
| 20      | 950      | 270        | 320     |



# 平刀 Square

## EMM 4000 4刃鎢鋼立銑刀

4 Flutes Carbide End Mill



- ◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.

- ◆ 可側銑、可插槽  
Can be side milling and slot

- ◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing, Improve tool life, enhance the effect of remove chip.



| 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L | 產品型號 Model No | 直徑 d Diameter | 刃長 L1 Flute Length | 柄徑 D Shank Dia | 全長 L O.A.L |
|---------------|---------------|--------------------|----------------|------------|---------------|---------------|--------------------|----------------|------------|
| EMM4010       | 1             | 2.5                | 4              | 50         | EMM4060H      | 6             | 15                 | 6              | 100        |
| EMM4010D6     | 1             | 2.5                | 6              | 50         | EMM4070       | 7             | 17.5               | 8              | 60         |
| EMM4015       | 1.5           | 3.75               | 4              | 50         | EMM4080       | 8             | 20                 | 8              | 60         |
| EMM4015D6     | 1.5           | 3.75               | 6              | 50         | EMM4080E1     | 8             | 20                 | 8              | 75         |
| EMM4020       | 2             | 5                  | 4              | 50         | EMM4080H      | 8             | 20                 | 8              | 100        |
| EMM4020D6     | 2             | 5                  | 6              | 50         | EMM4080M      | 8             | 20                 | 8              | 150        |
| EMM4025       | 2.5           | 6.25               | 4              | 50         | EMM4100       | 10            | 25                 | 10             | 75         |
| EMM4030       | 3             | 7.5                | 4              | 50         | EMM4100H      | 10            | 25                 | 10             | 100        |
| EMM4030E1     | 3             | 7.5                | 4              | 75         | EMM4100L130   | 10            | 30                 | 10             | 75         |
| EMM4030D6     | 3             | 7.5                | 6              | 50         | EMM4100L140H  | 10            | 40                 | 10             | 100        |
| EMM4030L109D6 | 3             | 9                  | 6              | 50         | EMM4100M      | 10            | 25                 | 10             | 150        |
| EMM4035       | 3.5           | 8.75               | 4              | 50         | EMM4120       | 12            | 30                 | 12             | 75         |
| EMM4035D6     | 3.5           | 8.75               | 6              | 50         | EMM4120H      | 12            | 30                 | 12             | 100        |
| EMM4040       | 4             | 10                 | 4              | 50         | EMM4120L136   | 12            | 36                 | 12             | 75         |
| EMM4040D6     | 4             | 10                 | 6              | 50         | EMM4120M      | 12            | 30                 | 12             | 150        |
| EMM4040E1     | 4             | 10                 | 4              | 75         | EMM4130L139   | 13            | 39                 | 16             | 100        |
| EMM4040H      | 4             | 10                 | 4              | 100        | EMM4140       | 14            | 35                 | 16             | 100        |
| EMM4045       | 4.5           | 11.25              | 6              | 50         | EMM4140L142   | 14            | 42                 | 16             | 100        |
| EMM4050       | 5             | 12.5               | 6              | 50         | EMM4160       | 16            | 48                 | 16             | 100        |
| EMM4050E1     | 5             | 12.5               | 6              | 75         | EMM4160M      | 16            | 48                 | 16             | 150        |
| EMM4050H      | 5             | 12.5               | 6              | 100        | EMM4160R      | 16            | 48                 | 16             | 200        |
| EMM4055       | 5.5           | 13.75              | 6              | 50         | EMM4200       | 20            | 50                 | 20             | 100        |
| EMM4060       | 6             | 15                 | 6              | 50         | EMM4200M      | 20            | 50                 | 20             | 150        |
| EMM4060E1     | 6             | 15                 | 6              | 75         | EMM4200R      | 20            | 50                 | 20             | 200        |



適用材質：鋼、不鏽鋼、鑄鐵  
Material : Steel、Stainless steel、Iro cast

### 切削參數 The Cutting Data For EMM 4000 Series

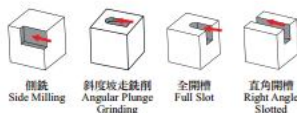
進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 270        | 950     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |
| 12      | 1600     | 240        | 550     |
| 16      | 1200     | 270        | 400     |
| 20      | 950      | 270        | 320     |

# 平刀 Square

## GMM 4000 4刃鎢鋼立銑刀

4 Flutes Carbide End Mill



- ◆ 全新鎢鋼刀，獨特刀體結構設計  
The newest carbide end mills, unique blade structure design.
- ◆ 降低加工震動，提升刀具使用壽命，加強排屑效率  
Reduce the vibration generated during processing, Improve tool life, enhance the effect of remove chip.
- ◆ 可側銑、可插槽  
Can be side milling and slot.



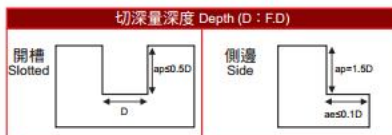
| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| GMM4010       | 1                | 2.5                   | 4                 | 50            |
| GMM4010L103   | 1                | 3                     | 4                 | 50            |
| GMM4015       | 1.5              | 3.75                  | 4                 | 50            |
| GMM4015L104   | 1.5              | 4                     | 4                 | 50            |
| GMM4020       | 2                | 5                     | 4                 | 50            |
| GMM4020L106   | 2                | 6                     | 4                 | 50            |
| GMM4025       | 2.5              | 6.25                  | 4                 | 50            |
| GMM4025L107   | 2.5              | 7                     | 4                 | 50            |
| GMM4025L1075  | 2.5              | 7.5                   | 4                 | 50            |
| GMM4030       | 3                | 7.5                   | 4                 | 50            |
| GMM4030L112D6 | 3                | 12                    | 6                 | 50            |
| GMM4030L18    | 3                | 8                     | 4                 | 50            |
| GMM4035       | 3.5              | 8.75                  | 4                 | 50            |
| GMM4040       | 4                | 10                    | 4                 | 50            |
| GMM4040L112   | 4                | 12                    | 4                 | 50            |
| GMM4045       | 4.5              | 11.25                 | 6                 | 50            |
| GMM4050       | 5                | 12.5                  | 6                 | 50            |
| GMM4050L115   | 5                | 15                    | 6                 | 50            |
| GMM4055       | 5.5              | 13.75                 | 6                 | 50            |
| GMM4060       | 6                | 15                    | 6                 | 50            |
| GMM4065       | 6.5              | 16.25                 | 8                 | 60            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| GMM4070       | 7                | 17.5                  | 8                 | 60            |
| GMM4075       | 7.5              | 18.75                 | 8                 | 60            |
| GMM4080       | 8                | 20                    | 8                 | 60            |
| GMM4085       | 8.5              | 21.25                 | 10                | 75            |
| GMM4090       | 9                | 22.5                  | 10                | 75            |
| GMM4095       | 9.5              | 23.75                 | 10                | 75            |
| GMM4100       | 10               | 25                    | 10                | 75            |
| GMM4105       | 10.5             | 26.25                 | 12                | 75            |
| GMM4110       | 11               | 27.5                  | 12                | 75            |
| GMM4115       | 11.5             | 28.75                 | 12                | 75            |
| GMM4120       | 12               | 30                    | 12                | 100           |
| GMM4130       | 13               | 32.5                  | 16                | 100           |
| GMM4140       | 14               | 35                    | 16                | 100           |
| GMM4150       | 15               | 37.5                  | 16                | 100           |
| GMM4160       | 16               | 48                    | 16                | 100           |
| GMM4170       | 17               | 42.5                  | 20                | 100           |
| GMM4180       | 18               | 45                    | 20                | 100           |
| GMM4190       | 19               | 47.5                  | 20                | 100           |
| GMM4200       | 20               | 50                    | 20                | 100           |
| GMM4220       | 22               | 55                    | 25                | 100           |
| GMM4250       | 25               | 62.5                  | 25                | 100           |

### 切削參數 The Cutting Data For GMM 4000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 4800     | 270        | 950     |
| 6       | 3100     | 240        | 650     |
| 8       | 2300     | 240        | 750     |
| 10      | 1900     | 240        | 750     |
| 12      | 1600     | 240        | 550     |
| 16      | 1200     | 270        | 400     |
| 20      | 950      | 270        | 320     |
| 25      | 800      | 230        | 320     |



適用材質：鋼、不銹鋼、鑄鐵  
Material : Steel、Stainless steel、Iro cast



# 圓鼻銼刀 Corner Radius

## DMR 2000 圓鼻2刃鎢鋼立銼刀

2 Flutes Corner Radius Carbide End Mill



仿型銼削  
Profile Milling



曲面銼削  
Surface Milling



R溝槽  
R Slot



R角圓銼  
R Corner Side Milling



R角開槽  
R Corner Slotted

- ◆ 採用全新進口棒材，加工工件硬度HRC55度以下  
Using the latest import carbide rod, it can process on hardness up to 55HRC.
- ◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度  
International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.
- ◆ 採用圓形刃帶，大幅提高了耐震性和耐崩損性  
Using round flute improve the shock resistance and resistance to collapse.
- ◆ 通過減少切削阻力，實現了高速高進給加工  
By reducing cutting resistance to achieve high speed and feeding processing.



| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius<br>(1/2d) | 刃長 L1<br>Flute<br>Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|--------------------------|--------------------------|-------------------|---------------|
| DMR2010R02    | 1                | 0.2                      | 2.5                      | 4                 | 50            |
| DMR2015R02    | 1.5              | 0.2                      | 3.75                     | 4                 | 50            |
| DMR2020R02    | 2                | 0.2                      | 5                        | 4                 | 50            |
| DMR2020R05    | 2                | 0.5                      | 5                        | 4                 | 50            |
| DMR2025R02    | 2.5              | 0.2                      | 6.25                     | 4                 | 50            |
| DMR2030R02    | 3                | 0.2                      | 7.5                      | 4                 | 50            |
| DMR2030R02E1  | 3                | 0.2                      | 7.5                      | 4                 | 75            |
| DMR2030R05    | 3                | 0.5                      | 7.5                      | 4                 | 50            |
| DMR2030R05E1  | 3                | 0.5                      | 7.5                      | 4                 | 75            |
| DMR2030R10    | 3                | 1                        | 7.5                      | 4                 | 50            |
| DMR2030R10E1  | 3                | 1                        | 7.5                      | 4                 | 75            |
| DMR2040R02    | 4                | 0.2                      | 10                       | 4                 | 50            |
| DMR2040R02E1  | 4                | 0.2                      | 10                       | 4                 | 75            |
| DMR2040R02H   | 4                | 0.2                      | 10                       | 4                 | 100           |
| DMR2040R05    | 4                | 0.5                      | 10                       | 4                 | 50            |
| DMR2040R05E1  | 4                | 0.5                      | 10                       | 4                 | 75            |
| DMR2040R05H   | 4                | 0.5                      | 10                       | 4                 | 100           |
| DMR2040R10    | 4                | 1                        | 10                       | 4                 | 50            |
| DMR2040R10E1  | 4                | 1                        | 10                       | 4                 | 75            |
| DMR2040R10H   | 4                | 1                        | 10                       | 4                 | 100           |
| DMR2060R02    | 6                | 0.2                      | 15                       | 6                 | 50            |
| DMR2060R02E1  | 6                | 0.2                      | 15                       | 6                 | 75            |
| DMR2060R02H   | 6                | 0.2                      | 15                       | 6                 | 100           |
| DMR2060R05    | 6                | 0.5                      | 15                       | 6                 | 50            |
| DMR2060R05E1  | 6                | 0.5                      | 15                       | 6                 | 75            |
| DMR2060R05H   | 6                | 0.5                      | 15                       | 6                 | 100           |
| DMR2060R10    | 6                | 1                        | 15                       | 6                 | 50            |

| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius<br>(1/2d) | 刃長 L1<br>Flute<br>Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|--------------------------|--------------------------|-------------------|---------------|
| DMR2060R10E1  | 6                | 1                        | 15                       | 6                 | 75            |
| DMR2060R10H   | 6                | 1                        | 15                       | 6                 | 100           |
| DMR2080R05    | 8                | 0.5                      | 20                       | 8                 | 60            |
| DMR2080R05E1  | 8                | 0.5                      | 20                       | 8                 | 75            |
| DMR2080R05H   | 8                | 0.5                      | 20                       | 8                 | 100           |
| DMR2080R10    | 8                | 1                        | 20                       | 8                 | 60            |
| DMR2080R10E1  | 8                | 1                        | 20                       | 8                 | 75            |
| DMR2080R10H   | 8                | 1                        | 20                       | 8                 | 100           |
| DMR2100R05    | 10               | 0.5                      | 25                       | 10                | 75            |
| DMR2100R05H   | 10               | 0.5                      | 25                       | 10                | 100           |
| DMR2100R10    | 10               | 1                        | 25                       | 10                | 75            |
| DMR2100R10H   | 10               | 1                        | 25                       | 10                | 100           |
| DMR2120R05    | 12               | 0.5                      | 30                       | 12                | 75            |
| DMR2120R05H   | 12               | 0.5                      | 30                       | 12                | 100           |
| DMR2120R10    | 12               | 1                        | 30                       | 12                | 75            |
| DMR2120R10H   | 12               | 1                        | 30                       | 12                | 100           |

### 切削參數 The Cutting Data For DMR 2000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 260              |
| 6       | 4300     | 280              |
| 8       | 3200     | 285              |
| 10      | 2600     | 270              |
| 12      | 2200     | 270              |

適用材質：鋼、不銹鋼、鑄鐵  
Material: Steel、Stainless steel、Iron cast

## 圓鼻銑刀 Corner Radius

### DMR 2000-00-00L2 圓鼻2刃鎢鋼立銑刀

2 Flutes Corner Radius Carbide End Mill



仿型銑削  
Profile Milling



曲面銑削  
Surface Milling



R溝槽  
R Slot



R角圓銑  
R Corner Side Milling



R角開槽  
R Corner Slotted



| 產品型號 Model No  | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 有效長 L2<br>E.L. | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L. |
|----------------|------------------|-----------------------|-----------------------|----------------|-------------------|----------------|
| DMR2030R02L203 | 3                | 0.2                   | 7.5                   | 3              | 4                 | 50             |
| DMR2030R05L203 | 3                | 0.5                   | 7.5                   | 3              | 4                 | 50             |
| DMR2040R02L204 | 4                | 0.2                   | 10                    | 4              | 4                 | 50             |
| DMR2040R05L204 | 4                | 0.5                   | 10                    | 4              | 4                 | 50             |
| DMR2060R02L206 | 6                | 0.2                   | 15                    | 6              | 6                 | 50             |
| DMR2060R05L206 | 6                | 0.5                   | 15                    | 6              | 6                 | 50             |
| DMR2060R10L206 | 6                | 1                     | 15                    | 6              | 6                 | 50             |
| DMR2080R05L210 | 8                | 0.5                   | 20                    | 10             | 8                 | 60             |
| DMR2080R10L210 | 8                | 1                     | 20                    | 10             | 8                 | 60             |
| DMR2100R05L212 | 10               | 0.5                   | 25                    | 12             | 10                | 75             |
| DMR2100R10L212 | 10               | 1                     | 25                    | 12             | 10                | 75             |
| DMR2120R05L214 | 12               | 0.5                   | 30                    | 14             | 12                | 75             |
| DMR2120R10L214 | 12               | 1                     | 30                    | 14             | 12                | 75             |

#### 切削參數 The Cutting Data For DMR 2000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 260              |
| 6       | 4300     | 280              |
| 8       | 3200     | 285              |
| 10      | 2600     | 270              |
| 12      | 2200     | 270              |

適用材質：鋼、不鏽鋼、鑄鐵

Material : Steel、Stainless steel、Iron cast

## 圓鼻銼刀 Corner Radius

### DMR 4000 圓鼻4刃鎢鋼立銼刀

4 Flutes Corner Radius Carbide End Mill



仿型銼削  
Profile Milling



曲面銼削  
Surface Milling



R溝槽  
R Slot



R角側銼  
R Corner Side Milling



R角開槽  
R Corner Slotted

- ◆ 採用全新進口棒材，加工工件硬度HRC55度以下  
Using the latest import carbide rod, it can process on hardness up to 55HRC.
- ◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度  
International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.
- ◆ 採用圓形刃帶，大幅提高了耐震性和耐崩損性  
Using round flute improve the shock resistance and resistance to collapse.
- ◆ 通過減少切削阻力，實現了高速高進給加工  
By reducing cutting resistance to achieve high speed and feeding processing.



| 產品型號 Model No  | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|----------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| DMR4010R02     | 1                | 0.2                   | 2.5                   | 4                 | 50            |
| DMR4010R02L103 | 1                | 0.2                   | 3                     | 4                 | 50            |
| DMR4015R02     | 1.5              | 0.2                   | 3.75                  | 4                 | 50            |
| DMR4015R02L104 | 1.5              | 0.2                   | 4                     | 4                 | 50            |
| DMR4020R02     | 2                | 0.2                   | 5                     | 4                 | 50            |
| DMR4020R02L106 | 2                | 0.2                   | 6                     | 4                 | 50            |
| DMR4020R05     | 2                | 0.5                   | 5                     | 4                 | 50            |
| DMR4020R05L106 | 2                | 0.5                   | 6                     | 4                 | 50            |
| DMR4025R02     | 2.5              | 0.2                   | 6.25                  | 4                 | 50            |
| DMR4030R02     | 3                | 0.2                   | 7.5                   | 4                 | 50            |
| DMR4030R02L106 | 3                | 0.2                   | 6                     | 4                 | 50            |
| DMR4030R02L108 | 3                | 0.2                   | 8                     | 4                 | 50            |
| DMR4030R02E1   | 3                | 0.2                   | 7.5                   | 4                 | 75            |
| DMR4030R05     | 3                | 0.5                   | 7.5                   | 4                 | 50            |
| DMR4030R05E1   | 3                | 0.5                   | 7.5                   | 4                 | 75            |
| DMR4030R05L108 | 3                | 0.5                   | 8                     | 4                 | 50            |
| DMR4030R10     | 3                | 1                     | 7.5                   | 4                 | 50            |
| DMR4030R10E1   | 3                | 1                     | 8                     | 4                 | 75            |
| DMR4030R10D6   | 3                | 1                     | 7.5                   | 6                 | 50            |
| DMR4040R02     | 4                | 0.2                   | 7.5                   | 4                 | 50            |
| DMR4040R02E1   | 4                | 0.2                   | 10                    | 4                 | 75            |
| DMR4040R02H    | 4                | 0.2                   | 10                    | 4                 | 100           |
| DMR4040R05     | 4                | 0.5                   | 10                    | 4                 | 50            |
| DMR4040R05E1   | 4                | 0.5                   | 10                    | 4                 | 75            |
| DMR4040R05H    | 4                | 0.5                   | 10                    | 4                 | 100           |
| DMR4040R10     | 4                | 1                     | 10                    | 4                 | 50            |
| DMR4040R10E1   | 4                | 1                     | 10                    | 4                 | 75            |
| DMR4040R10H    | 4                | 1                     | 10                    | 4                 | 100           |
| DMR4040R15     | 4                | 1.5                   | 10                    | 4                 | 50            |



## 圓鼻銑刀 Corner Radius

### DMR 4000 圓鼻4刃鎢鋼立銑刀

4 Flutes Corner Radius Carbide End Mill



仿型銑削  
Profile Milling



曲面銑削  
Surface Milling



R溝槽  
R Slot



R角側銑  
R Corner Side Milling



R角開槽  
R Corner Slotted

| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 軸徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| DMR4040R15    | 4                | 1.5                   | 10                    | 4                 | 50            |
| DMR4050R05    | 5                | 0.5                   | 12.5                  | 6                 | 50            |
| DMR4060R02    | 6                | 0.2                   | 15                    | 6                 | 50            |
| DMR4060R02E1  | 6                | 0.2                   | 15                    | 6                 | 75            |
| DMR4060R02H   | 5                | 0.2                   | 15                    | 6                 | 100           |
| DMR4060R05    | 6                | 0.5                   | 15                    | 6                 | 50            |
| DMR4060R05E1  | 6                | 0.5                   | 15                    | 6                 | 75            |
| DMR4060R05H   | 6                | 0.5                   | 15                    | 6                 | 100           |
| DMR4060R10    | 6                | 1                     | 15                    | 6                 | 50            |
| DMR4060R10E1  | 6                | 1                     | 15                    | 6                 | 75            |
| DMR4060R10H   | 6                | 1                     | 15                    | 6                 | 100           |
| DMR4060R20    | 6                | 2                     | 15                    | 6                 | 50            |
| DMR4080R05    | 8                | 0.5                   | 20                    | 8                 | 60            |
| DMR4080R05E1  | 8                | 0.5                   | 20                    | 8                 | 75            |
| DMR4080R05H   | 8                | 0.5                   | 20                    | 8                 | 100           |
| DMR4080R10    | 8                | 1                     | 20                    | 8                 | 60            |
| DMR4080R10E1  | 8                | 1                     | 20                    | 8                 | 75            |
| DMR4080R10H   | 8                | 1                     | 20                    | 8                 | 100           |
| DMR4080R15    | 8                | 1.5                   | 20                    | 8                 | 60            |
| DMR4100R05    | 10               | 0.5                   | 25                    | 10                | 75            |
| DMR4100R05H   | 10               | 0.5                   | 25                    | 10                | 100           |
| DMR4100R10    | 10               | 1                     | 25                    | 10                | 75            |
| DMR4100R10H   | 10               | 1                     | 25                    | 10                | 100           |
| DMR4100R15    | 10               | 1.5                   | 25                    | 10                | 75            |
| DMR4100R20    | 10               | 2                     | 25                    | 10                | 75            |
| DMR4120R05    | 12               | 0.5                   | 30                    | 12                | 75            |
| DMR4120R05H   | 12               | 0.5                   | 30                    | 12                | 100           |
| DMR4120R10    | 12               | 1                     | 30                    | 12                | 75            |
| DMR4120R10H   | 12               | 1                     | 30                    | 12                | 100           |
| DMR4120R15    | 12               | 1.5                   | 30                    | 12                | 75            |
| DMR4120R20    | 12               | 2                     | 30                    | 12                | 75            |

#### 切削參數 The Cutting Data For DMR 4000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 520              |
| 6       | 4300     | 560              |
| 8       | 3200     | 570              |
| 10      | 2600     | 540              |
| 12      | 2200     | 540              |

適用材質：鋼、不銹鋼、鑄鐵

Material : Steel、Stainless steel、Iron cast

## 圓鼻銼刀 Corner Radius

### PH-FMR 4000 不等分割不等螺旋非圓溝圓鼻4刀鎢鋼立銼刀

4 Flutes Unequal Division Unequal Helix Non-Round Land Design Corner Radius End Mill

- ◆ 可有效抑制加工所產生的震動，減少刀具因震動的崩損  
The design of unequal flute division end mill can improve vibration generated during processing, it also reduce the damage of vibration.
- ◆ 更有優良的加工表面，提升刀具使用時間壽命  
The PH-FMR series corner radius end mills make the material with excellent surface, enhance the end mills life.



切型銼削  
Profile Milling



曲面銼削  
Surface Milling

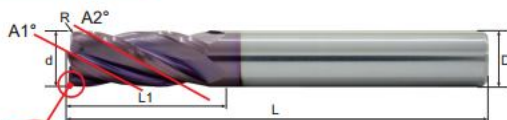


R角側銼  
R Corner Side Milling



R角開槽  
R Corner Slotted

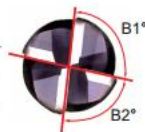
不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$



特殊設計 Special design

可保護圓鼻刀刀尖  
It can protect the top of Radius tip

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$



| 產品型號 Model No     | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-------------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| PH-FMR4040R05     | 4                | 0.5                   | 10                    | 4                 | 50            |
| PH-FMR4040R10     | 4                | 1                     | 10                    | 4                 | 50            |
| PH-FMR4060R05     | 6                | 0.5                   | 15                    | 6                 | 50            |
| PH-FMR4060R10     | 6                | 1                     | 15                    | 6                 | 50            |
| PH-FMR4080R05     | 8                | 0.5                   | 20                    | 8                 | 60            |
| PH-FMR4080R10     | 8                | 1                     | 20                    | 8                 | 60            |
| PH-FMR4100R05     | 10               | 0.5                   | 25                    | 10                | 75            |
| PH-FMR4100R10     | 10               | 1                     | 25                    | 10                | 75            |
| PH-FPR4100R10L130 | 10               | 1                     | 30                    | 10                | 75            |
| PH-FMR4120R05     | 12               | 0.5                   | 30                    | 12                | 75            |
| PH-FMR4120R10     | 12               | 1                     | 30                    | 12                | 75            |

切削參數 The Cutting Data For PH-FMR 4000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 520              |
| 6       | 4300     | 560              |
| 8       | 3200     | 570              |
| 10      | 2600     | 540              |
| 12      | 2200     | 540              |
| 16      | 1600     | 510              |
| 18      | 1400     | 410              |
| 20      | 1300     | 370              |

適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel、Stainless steel、Iron cast

## 圓鼻銼刀 Corner Radius

### PH-FPR 4000 不等分割不等螺旋非圓溝圓鼻4刃鎢鋼立銼刀

4 Flutes Unequal Division Unequal Helix Non-Round Land Design Corner Radius End Mill

- ◆ 合金鋼及碳鋼專用特殊塗層  
For the particular coating with Alloy steel and Carbon steel.
- ◆ 不等刀分割、不等螺旋圓鼻銼刀，可有效抑制加工所產生的震動  
It can avoid the cutting vibration pattern effectively and reduce crumbling on workpiece due to vibration.
- ◆ 減少刀具因震動的崩損，更有優良的加工表面，提升刀具使用時間壽命  
There is high quality machining surfaces and enhance tool life.



不等螺旋  
Unequal spiral  
 $A1^\circ \neq A2^\circ$

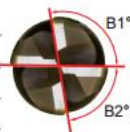


特殊設計 Special design

可保護圓鼻刀刀尖  
It can protect the top of Radius tip

不等分割  
Unequal division  
 $B1^\circ \neq B2^\circ$

| 產品型號 Model No     | 直徑 d<br>Diameter | 半徑 R<br>Radius(1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-------------------|------------------|----------------------|-----------------------|-------------------|---------------|
| PH-FPR4040R05     | 4                | 0.5                  | 10                    | 4                 | 50            |
| PH-FPR4040R10     | 4                | 1                    | 10                    | 4                 | 50            |
| PH-FPR4060R05     | 6                | 0.5                  | 15                    | 6                 | 50            |
| PH-FPR4060R10     | 6                | 1                    | 15                    | 6                 | 50            |
| PH-FPR4080R05     | 8                | 0.5                  | 20                    | 8                 | 60            |
| PH-FPR4080R10     | 8                | 1                    | 20                    | 8                 | 60            |
| PH-FPR4100R05     | 10               | 0.5                  | 25                    | 10                | 75            |
| PH-FPR4100R10     | 10               | 1                    | 25                    | 10                | 75            |
| PH-FPR4100R10L130 | 10               | 1                    | 30                    | 10                | 75            |
| PH-FPR4120R30L136 | 12               | 3                    | 36                    | 12                | 75            |
| PH-FPR4120R05     | 12               | 0.5                  | 30                    | 12                | 75            |
| PH-FPR4120R10     | 12               | 1                    | 30                    | 12                | 75            |



#### 切削參數 The Cutting Data For PH-FPR 4000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 520              |
| 6       | 4300     | 560              |
| 8       | 3200     | 570              |
| 10      | 2600     | 540              |
| 12      | 2200     | 540              |

適用材質：鋼、不銹鋼、鑄鐵  
Material: Steel, Stainless steel, Iron cast



## 球頭銑刀 Ball Nose

### S-EMB 2000 微小徑鎢鋼2刃球頭立銑刀

Micor Diameter Carbide 2 Flutes Ball Nose End Mill



仿型銑削  
Profile Milling



山面銑削  
Surface Milling



R溝槽  
R Slot

- ◆ 可加工小型精密模具

It can process small precision molds.



| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| S-EMB2003     | 0.3              | 0.15                  | 0.6                   | 4                 | 50            |
| S-EMB2004     | 0.4              | 0.20                  | 0.8                   | 4                 | 50            |
| S-EMB2005     | 0.5              | 0.25                  | 1                     | 4                 | 50            |
| S-EMB2006     | 0.6              | 0.30                  | 1.2                   | 4                 | 50            |
| S-EMB2007     | 0.7              | 0.35                  | 1.4                   | 4                 | 50            |
| S-EMB2008     | 0.8              | 0.40                  | 1.6                   | 4                 | 50            |
| S-EMB2009     | 0.9              | 0.45                  | 1.8                   | 4                 | 50            |

### EMB 2000L2 長頸型2刃鎢鋼球頭立銑刀

Long Neck Short Flute 2 Flutes Ball Nose End Mill

- ◆ 螺旋角採用35°設計，尺寸穩定、精度高

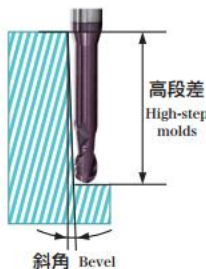
Helix angle 35°, with stable dimensions and high precision.

- ◆ 適用於高段差模具或曲面仿型加工

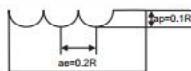
Suitable for high-step molds or workpiece surface profiling.



| 產品型號 Model No  | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 有效長 L2<br>Effective Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|----------------|------------------|-----------------------|-----------------------|----------------------------|-------------------|---------------|
| EMB2060L220    | 6                | 3                     | 6                     | 20                         | 6                 | 50            |
| EMB2060L235HD8 | 6                | 3                     | 6                     | 35                         | 8                 | 100           |
| EMB2060L240MD8 | 6                | 3                     | 6                     | 40                         | 8                 | 150           |



切深量深度 Depth (R: 半徑Radius)



切削參數 The Cutting Data For S-EMB 2000  
EMB 2000L2 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 235              |
| 6       | 4300     | 245              |
| 8       | 3200     | 275              |

適用材質：鋼、不鏽鋼、鑄鐵

Material : Steel、Stainless steel、Iro cast

# 球頭銑刀 Ball Nose

## EMB 2000 2刃鎢鋼球頭立銑刀

2 Flutes Carbide Ball Nose End Mill



仿形銑削  
Profile Milling



曲面銑削  
Surface Milling



R溝槽  
R Slot

◆ 採用全新進口棒材，加工工件硬度HRC55度以下  
Using the latest import carbide rod, it can process on hardness up to 55HRC.

◆ 採用圓形刀帶，大幅提高了耐震性和耐崩損性  
Using round flute improve the shock resistance and resistance to collapse.

◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度  
International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.

◆ 通過減少切削阻力，實現了高速高進給加工  
By reducing cutting resistance to achieve high speed and feeding processing.



| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| EMB2010       | 1                | 0.5                   | 2                     | 4                 | 50            |
| EMB2015       | 1.5              | 0.75                  | 3                     | 4                 | 50            |
| EMB2015D6     | 1.5              | 0.75                  | 3                     | 6                 | 50            |
| EMB2020       | 2                | 1                     | 4                     | 4                 | 50            |
| EMB2020D6     | 2                | 1                     | 4                     | 6                 | 50            |
| EMB2025       | 2.5              | 1.25                  | 5                     | 4                 | 50            |
| EMB2025D6     | 2.5              | 1.25                  | 5                     | 6                 | 50            |
| EMB2030       | 3                | 1.5                   | 6                     | 4                 | 50            |
| EMB2030D6     | 3                | 1.5                   | 6                     | 6                 | 50            |
| EMB2032       | 3.2              | 1.6                   | 6.4                   | 4                 | 50            |
| EMB2035       | 3.5              | 1.75                  | 7                     | 4                 | 50            |
| EMB2035D6     | 3.5              | 1.75                  | 7                     | 6                 | 50            |
| EMB2035E1     | 3.5              | 1.75                  | 7                     | 4                 | 75            |
| EMB2035E1D6   | 3.5              | 1.75                  | 7                     | 6                 | 75            |
| EMB2040       | 4                | 2                     | 8                     | 4                 | 50            |
| EMB2040D6     | 4                | 2                     | 8                     | 6                 | 50            |
| EMB2040E1     | 4                | 2                     | 8                     | 4                 | 75            |
| EMB2040E1D6   | 4                | 2                     | 8                     | 6                 | 75            |
| EMB2040H      | 4                | 2                     | 8                     | 4                 | 100           |
| EMB2040HD6    | 4                | 2                     | 8                     | 6                 | 100           |
| EMB2042       | 4.2              | 2.1                   | 8.4                   | 6                 | 50            |
| EMB2049       | 4.9              | 2.45                  | 9.8                   | 6                 | 50            |
| EMB2050       | 5                | 2.5                   | 10                    | 6                 | 50            |
| EMB2050E1     | 5                | 2.5                   | 10                    | 6                 | 75            |
| EMB2050H      | 5                | 2.5                   | 10                    | 6                 | 100           |
| EMB2060       | 6                | 3                     | 12                    | 6                 | 50            |
| EMB2060E1     | 6                | 3                     | 12                    | 6                 | 75            |
| EMB2060H      | 6                | 3                     | 12                    | 6                 | 100           |
| EMB2060M      | 6                | 3                     | 12                    | 6                 | 150           |
| EMB2065       | 6.5              | 3.25                  | 13                    | 8                 | 60            |
| EMB2069       | 6.9              | 3.45                  | 13.8                  | 8                 | 60            |
| EMB2080       | 8                | 4                     | 16                    | 8                 | 60            |

| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius (1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-----------------------|-------------------|---------------|
| EMB2080E1     | 8                | 4                     | 16                    | 8                 | 75            |
| EMB2080H      | 8                | 4                     | 16                    | 8                 | 100           |
| EMB2080M      | 8                | 4                     | 16                    | 8                 | 150           |
| EMB2080R      | 8                | 4                     | 16                    | 8                 | 200           |
| EMB2100       | 10               | 5                     | 20                    | 10                | 75            |
| EMB2100H      | 10               | 5                     | 20                    | 10                | 100           |
| EMB2100M      | 10               | 5                     | 20                    | 10                | 150           |
| EMB2100R      | 10               | 5                     | 20                    | 10                | 200           |
| EMB2120       | 12               | 6                     | 24                    | 12                | 75            |
| EMB2120H      | 12               | 6                     | 24                    | 12                | 100           |
| EMB2120M      | 12               | 6                     | 24                    | 12                | 150           |
| EMB2120R      | 12               | 6                     | 24                    | 12                | 200           |
| EMB2160       | 16               | 8                     | 32                    | 16                | 100           |
| EMB2160M      | 16               | 8                     | 32                    | 16                | 150           |
| EMB2160R      | 16               | 8                     | 32                    | 16                | 200           |
| EMB2200       | 20               | 10                    | 40                    | 20                | 100           |
| EMB2200M      | 20               | 10                    | 40                    | 20                | 150           |
| EMB2200R      | 20               | 10                    | 40                    | 20                | 200           |

切深量深度 Depth (R: 半徑Radius)



### 切削參數 The Cutting Data For EMB 2000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 235              |
| 6       | 4300     | 245              |
| 8       | 3200     | 275              |
| 10      | 2600     | 275              |
| 12      | 2200     | 255              |
| 16      | 1600     | 230              |
| 20      | 1300     | 205              |

適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel, Stainless steel, Iro cast

## 球頭銑刀 Ball Nose

### EMB 4000 4刃鎢鋼球頭立銑刀

4 Flutes Carbide Ball Nose End Mill



仿型銑削  
Profile Milling



曲面銑削  
Surface Milling



R溝槽  
R Slot

- ◆ 採用全新進口棒材，加工工件硬度HRC55度以下

Using the latest import carbide rod, it can process on hardness up to 55HRC.

- ◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度

International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.

- ◆ 採用圓形刃帶，大幅提高了耐震性和耐崩損性

Using round flute improve the shock resistance and resistance to collapse.

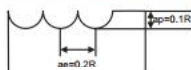
- ◆ 通過減少切削阻力，實現了高速高進給加工

By reducing cutting resistance to achieve high speed and feeding processing.



| 產品型號      | Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius(1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|-----------|----------|------------------|----------------------|-----------------------|-------------------|---------------|
| EMB4010   |          | 1                | 0.5                  | 2                     | 4                 | 50            |
| EMB4015   |          | 1.5              | 0.75                 | 3                     | 4                 | 50            |
| EMB4020   |          | 2                | 1                    | 4                     | 4                 | 50            |
| EMB4030   |          | 3                | 1.5                  | 6                     | 4                 | 50            |
| EMB4035   |          | 3.5              | 1.75                 | 7                     | 4                 | 50            |
| EMB4040   |          | 4                | 2                    | 8                     | 4                 | 50            |
| EMB4050   |          | 5                | 2.5                  | 10                    | 6                 | 50            |
| EMB4060   |          | 6                | 3                    | 12                    | 6                 | 50            |
| EMB4060E1 |          | 6                | 3                    | 12                    | 6                 | 75            |
| EMB4060H  |          | 6                | 3                    | 12                    | 6                 | 100           |
| EMB4080   |          | 8                | 4                    | 16                    | 8                 | 60            |
| EMB4080E1 |          | 8                | 4                    | 16                    | 8                 | 75            |
| EMB4080H  |          | 8                | 4                    | 16                    | 8                 | 100           |
| EMB4100   |          | 10               | 5                    | 20                    | 10                | 75            |
| EMB4100H  |          | 10               | 5                    | 20                    | 10                | 100           |
| EMB4100M  |          | 10               | 5                    | 20                    | 10                | 150           |
| EMB4120   |          | 12               | 6                    | 24                    | 12                | 75            |
| EMB4120H  |          | 12               | 6                    | 24                    | 12                | 100           |
| EMB4120M  |          | 12               | 6                    | 24                    | 12                | 150           |
| EMB4160   |          | 16               | 8                    | 32                    | 16                | 100           |
| EMB4160M  |          | 16               | 8                    | 32                    | 16                | 150           |
| EMB4200   |          | 20               | 10                   | 40                    | 20                | 100           |

切深量深度 Depth (R: 半徑Radius)



適用材質：鋼、不銹鋼、鑄鐵  
Material: Steel, Stainless steel, Iro cast

切削參數 The Cutting Data For EMB 4000 Series

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 235              |
| 6       | 4300     | 245              |
| 8       | 3200     | 275              |
| 10      | 2600     | 275              |
| 12      | 2200     | 255              |
| 16      | 1600     | 230              |
| 20      | 1300     | 205              |



## 球頭銑刀 Ball Nose

### DMB 2000 2刃鎢鋼球頭立銑刀

2 Flutes Carbide Ball Nose End Mill



仿型銑削  
Profile Milling

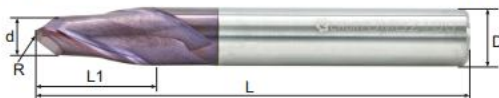


山面銑削  
Surface Milling



R溝槽  
R Slot

- ◆ 採用全新進口棒材，加工工件硬度HRC55度以下  
Using the latest import carbide rod, it can process on hardness up to 55HRC.
- ◆ 採用圓形刃帶，大幅提高了耐震性和耐崩損性  
Using round flute improve the shock resistance and resistance to collapse.
- ◆ 採用國際公差標準h5，公差範圍控制在 $\mu$ 級精度  
International tolerance standard h5, tolerance range control at  $\mu$  level accuracy.
- ◆ 通過減少切削阻力，實現了高速高進給加工  
By reducing cutting resistance to achieve high speed and feeding processing.



適用材質：鋼、不銹鋼、鑄鐵  
Material: Steel, Stainless steel, Iron cast

| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius(1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|----------------------|-----------------------|-------------------|---------------|
| DMB2030       | 3                | 1.5                  | 6                     | 4                 | 50            |
| DMB2040       | 4                | 2                    | 8                     | 4                 | 50            |
| DMB2050       | 5                | 2.5                  | 10                    | 6                 | 50            |
| DMB2060       | 6                | 3                    | 12                    | 6                 | 50            |
| DMB2080       | 8                | 4                    | 16                    | 8                 | 60            |
| DMB2100       | 10               | 5                    | 20                    | 10                | 75            |
| DMB2120       | 12               | 6                    | 24                    | 12                | 75            |

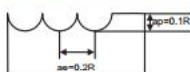
### EPB 2000 2刃鎢鋼球頭立銑刀

2 Flutes Carbide Ball Nose End Mill



| 產品型號 Model No | 直徑 d<br>Diameter | 半徑 R<br>Radius(1/2d) | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|----------------------|-----------------------|-------------------|---------------|
| EPB2020       | 2                | 1                    | 4                     | 4                 | 50            |
| EPB2030       | 3                | 1.5                  | 6                     | 4                 | 50            |
| EPB2040       | 4                | 2                    | 8                     | 4                 | 50            |
| EPB2050       | 5                | 2.5                  | 10                    | 6                 | 50            |
| EPB2060       | 6                | 3                    | 12                    | 6                 | 50            |
| EPB2080       | 8                | 4                    | 16                    | 8                 | 60            |
| EPB2100       | 10               | 5                    | 20                    | 10                | 75            |
| EPB2120       | 12               | 6                    | 24                    | 12                | 75            |
| EPB2160       | 16               | 8                    | 32                    | 16                | 100           |
| EPB2200       | 20               | 10                   | 40                    | 20                | 100           |

切深量深度 Depth (R: 半徑Radius)



適用材質：合金鋼、碳鋼  
Material: Alloy steel, Carbon steel

切削參數 The Cutting Data For DMB 2000 Series EPB 2000

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 4       | 6400     | 235              |
| 6       | 4300     | 245              |
| 8       | 3200     | 275              |
| 10      | 2600     | 275              |
| 12      | 2200     | 255              |
| 16      | 1600     | 230              |
| 20      | 1300     | 205              |

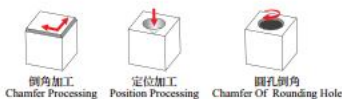
## 倒角刀 Chamfer

### DR-DMC 2000 2刃定位鑽

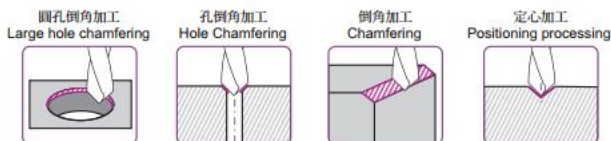
2 Flutes Positioning Drill

- ◆ 螺旋角採用30°設計  
Helix angle 30°.

- ◆ NC銑床專用定位鑽、倒角刀具  
For NC milling machine position drill countersink.



DR系列夾角120°  
DR Series 120° angle



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L. |
|---------------|------------------|-----------------------|-------------------|----------------|
| DR-DMC2030    | 3                | 8                     | 3                 | 50             |
| DR-DMC2040    | 4                | 12                    | 4                 | 50             |
| DR-DMC2050    | 5                | 20                    | 5                 | 50             |
| DR-DMC2060    | 6                | 20                    | 6                 | 60             |
| DR-DMC2080    | 8                | 25                    | 8                 | 60             |
| DR-DMC2100    | 10               | 25                    | 10                | 75             |
| DR-DMC2120    | 12               | 30                    | 12                | 75             |
| DR-DMC2160    | 16               | 35                    | 16                | 100            |
| DR-DMC2200    | 20               | 40                    | 20                | 100            |

### DC-DMC 2000 2刃定位鑽

2 Flutes Positioning Drill



DC系列夾角90°  
DC Series 90° angle



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L. |
|---------------|------------------|-----------------------|-------------------|----------------|
| DC-DMC2030    | 3                | 8                     | 3                 | 50             |
| DC-DMC2040    | 4                | 12                    | 4                 | 50             |
| DC-DMC2040E1  | 4                | 12                    | 4                 | 75             |
| DC-DMC2050    | 5                | 20                    | 5                 | 50             |
| DC-DMC2060    | 6                | 20                    | 6                 | 60             |
| DC-DMC2080    | 8                | 25                    | 8                 | 60             |
| DC-DMC2100    | 10               | 25                    | 10                | 75             |
| DC-DMC2120    | 12               | 30                    | 12                | 75             |
| DC-DMC2160    | 16               | 35                    | 16                | 100            |
| DC-DMC2200    | 20               | 40                    | 20                | 100            |

適用材質：鋼、不銹鋼、鑄鐵  
Material: Steel、Stainless steel、Iro cast

切削參數 The Cutting Data For DR-DMC 2000 Series  
DC-DMC 2000

| 直徑 (mm) | 轉速 (min) | 進給速度 Vf (mm/min) |
|---------|----------|------------------|
| 3       | 7400     | 300              |
| 4       | 5500     | 220              |
| 5       | 4400     | 180              |
| 6       | 3700     | 150              |
| 8       | 2800     | 120              |
| 10      | 2300     | 90               |
| 12      | 1900     | 80               |
| 16      | 1400     | 60               |
| 20      | 1100     | 45               |

## 倒角刀 Chamfer

### CC-AMC V型鳩尾槽銑刀

V-Type Chamfer Cutter



倒角加工  
Chamfer  
Processing



定位加工  
Position  
Processing



圓孔倒角  
Chamfer Of  
Rounding Hole



側面倒角  
Side  
Chamfering



背面倒角  
Back  
Chamfring



側面V槽  
Side V Groove  
Processing

- ◆ 特殊倒角加工刀具，雙刃鳩尾設計

Special chamfering tool, double-edged and tailed design.

- ◆ 可滿足各種角度的倒角需求，有效減少加工時間及刀架成本

it can meet various angle chamfering requirements, effectively reducing machining time and tools costs.



CC系列夾角90°  
CC Series 90° angle



| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 頸長 L2<br>Length Of Neck | 頸徑 Nd<br>Neck Dia | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L | 刃數<br>INO |
|-----------------|------------------|-----------------------|-------------------------|-------------------|-------------------|---------------|-----------|
| CC-AMC4060L1028 | 6                | 2.8                   | 7                       | 2.8               | 6                 | 60            | 4         |
| CC-AMC6080L1038 | 8                | 3.8                   | 9                       | 3.8               | 8                 | 60            | 6         |
| CC-AMC6100L1048 | 10               | 4.8                   | 11                      | 4.8               | 10                | 75            | 6         |
| CC-AMC6120L1058 | 12               | 5.8                   | 13                      | 5.8               | 12                | 75            | 6         |

### CR-AMC V型鳩尾槽銑刀

V-Type Chamfer Cutter



CR系列夾角60°  
CR Series 60° angle



| 產品型號 Model No   | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 頸長 L2<br>Length Of Neck | 頸徑 Nd<br>Neck Dia | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L | 刃數<br>INO |
|-----------------|------------------|-----------------------|-------------------------|-------------------|-------------------|---------------|-----------|
| CR-AMC4060L1018 | 6                | 1.8                   | 6                       | 2.7               | 6                 | 60            | 4         |
| CR-AMC6080L1024 | 8                | 2.4                   | 8                       | 3.6               | 8                 | 60            | 6         |
| CR-AMC6100L1031 | 10               | 3.1                   | 10                      | 4.5               | 10                | 75            | 6         |
| CR-AMC6120L1037 | 12               | 3.7                   | 12                      | 5.4               | 12                | 75            | 6         |

適用材質：鋼、不鏽鋼、鑄鐵  
Material : Steel、Stainless steel、Iro cast

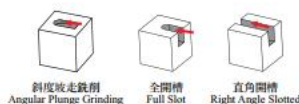


## 精加工粗銑刀 Fine Pitch & Roughing End Mill

### FM-CMM 4000 4刃鎢鋼精加工粗銑刀

4 Flutes Carbide Fine Pitch & Finishing Roughing End Mill

- ◆ 粗鋸齒狀設計，高耐磨塗層，可減少磨損  
Waveform sawtooth design, wear-resistant coating reduce wear.
- ◆ 極細微粒碳化鎢刀身，採用含鈷量為12%  
Tungsten carbide rod, 12% cobalt content.
- ◆ 採用螺旋角25°，排屑穩定，流暢，適合粗糙表面粗加工，效果極佳  
Helix angle 25° with ideal chip flow, processing on roughing with remarkable effect.



| 產品型號 Model No  | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|----------------|------------------|-----------------------|-------------------|---------------|
| FM-CMM4060     | 6                | 15                    | 6                 | 50            |
| FM-CMM4080     | 8                | 20                    | 8                 | 60            |
| FM-CMM4100     | 10               | 25                    | 10                | 75            |
| FM-CMM4120     | 12               | 30                    | 12                | 75            |
| FM-CMM4120L136 | 12               | 36                    | 12                | 75            |
| FM-CMM4160     | 16               | 48                    | 16                | 100           |

### RM-CMM 4000 4刃鎢鋼精加工粗銑刀

4 Flutes Carbide Fine Pitch & Finishing Roughing End Mill

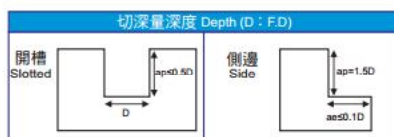


| 產品型號 Model No  | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|----------------|------------------|-----------------------|-------------------|---------------|
| RM-CMM4050     | 5                | 12.5                  | 6                 | 50            |
| RM-CMM4060     | 6                | 15                    | 6                 | 50            |
| RM-CMM4080     | 8                | 20                    | 8                 | 60            |
| RM-CMM4100     | 10               | 25                    | 10                | 75            |
| RM-CMM4120     | 12               | 30                    | 12                | 75            |
| RM-CMM4120L136 | 12               | 36                    | 12                | 75            |
| RM-CMM4160     | 16               | 48                    | 16                | 100           |

切削參數 The Cutting Data For FM-CMM 4000 Series  
RM-CMM 4000

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 6       | 3100     | 120        | 325     |
| 8       | 2300     | 120        | 375     |
| 10      | 1900     | 120        | 375     |
| 12      | 1600     | 120        | 275     |
| 16      | 1200     | 135        | 200     |



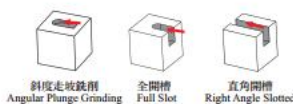
適用材質：鋼、不鏽鋼、鑄鐵  
Material: Steel, Stainless steel, Iron cast

## 鋁合金專用銑刀 Aluminum

### GMA 2000 鋁合金專用2刃銑刀

For Aluminum Alloy 2 Flutes End Mill

- ◆ 螺旋角採用45°設計  
Helix angle 45°.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| GMA2060       | 6                | 18                    | 6                 | 50            |
| GMA2080       | 8                | 24                    | 8                 | 60            |
| GMA2100       | 10               | 30                    | 10                | 75            |

### GMA 3000 鋁合金專用3刃銑刀

For Aluminum Alloy 3 Flutes End Mill

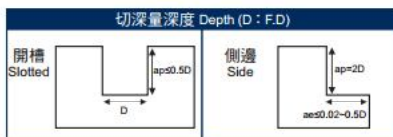


| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L | 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|---------------|------------------|-----------------------|-------------------|---------------|
| GMA3010       | 1                | 3                     | 4                 | 50            | GMA3060H      | 6                | 18                    | 6                 | 100           |
| GMA3015       | 1.5              | 4.5                   | 4                 | 50            | GMA3080       | 8                | 24                    | 8                 | 60            |
| GMA3020       | 2                | 6                     | 4                 | 50            | GMA3080H      | 8                | 24                    | 8                 | 100           |
| GMA3025       | 2.5              | 7.5                   | 4                 | 50            | GMA3080M      | 8                | 24                    | 8                 | 150           |
| GMA3030       | 3                | 9                     | 4                 | 50            | GMA3100       | 10               | 30                    | 10                | 75            |
| GMA3030H      | 3                | 9                     | 4                 | 100           | GMA3100M      | 10               | 30                    | 10                | 150           |
| GMA3040       | 4                | 12                    | 4                 | 50            | GMA3120       | 12               | 36                    | 12                | 75            |
| GMA3040H      | 4                | 12                    | 4                 | 100           | GMA3120H      | 12               | 36                    | 12                | 100           |
| GMA3040D6     | 4                | 12                    | 6                 | 50            | GMA3120M      | 12               | 36                    | 12                | 150           |
| GMA3050       | 5                | 15                    | 6                 | 50            | GMA3160       | 16               | 48                    | 16                | 100           |
| GMA3050H      | 5                | 15                    | 6                 | 100           | GMA3200       | 20               | 50                    | 20                | 100           |
| GAM3060       | 6                | 18                    | 6                 | 50            |               |                  |                       |                   |               |

切削參數 The Cutting Data For GMA 2000 Series  
GMA 3000 Series

進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 15500    | 800        | 1200    |
| 6       | 10500    | 900        | 1400    |
| 8       | 8000     | 1000       | 1600    |
| 10      | 6400     | 1100       | 1700    |
| 12      | 5400     | 950        | 1500    |
| 16      | 3900     | 950        | 1500    |
| 20      | 3200     | 900        | 1300    |



適用材質：鋁  
Material: Aluminum

## 鋁合金專用銼刀 Aluminum

### HMA 3000 鋁合金專用3刃銼刀

For Aluminum Alloy 3 Flutes End Mill



- ◆ 螺旋角採用45°設計 Helix angle 45°.



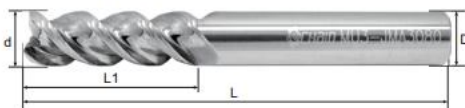
| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| HMA3010       | 1                | 3                     | 4                 | 50            |
| HMA3015       | 1.5              | 4.5                   | 4                 | 50            |
| HMA3020       | 2                | 6                     | 4                 | 50            |
| HMA3025       | 2.5              | 7.5                   | 4                 | 50            |
| HMA3030       | 3                | 9                     | 4                 | 50            |
| HMA3040       | 4                | 12                    | 4                 | 50            |
| HMA3050       | 5                | 15                    | 6                 | 50            |
| HMA3060       | 6                | 18                    | 6                 | 50            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| HMA3070       | 7                | 21                    | 8                 | 60            |
| HMA3080       | 8                | 24                    | 8                 | 60            |
| HMA3090       | 9                | 27                    | 10                | 75            |
| HMA3100       | 10               | 30                    | 10                | 75            |
| HMA3110       | 11               | 33                    | 12                | 75            |
| HMA3120       | 12               | 36                    | 12                | 75            |
| HMA3160       | 16               | 48                    | 16                | 100           |
| HMA3200       | 20               | 60                    | 20                | 100           |

### MU3-JMA 3000 3刃圓溝3離隙鋁合金專用銼刀

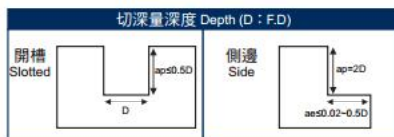
3 Flute round land and 3 Relief aluminum type

- ◆ 刀口採3離隙研磨，提升切削性能，有更良好的加工表面  
The cutting edge is triple embossed for improved cutting performance while also providing a superior machined surface.
- ◆ 圓溝全拋光處理，有效抑制加工產生熱能  
The fully polished round table surface effectively reduces the heat generated by the machining, smoothly removes the chips.
- ◆ 使斷屑穩定、排屑順暢，延長加工時間壽命  
And the stable chip breaking increases the service life of the tool.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU3-JMA3040   | 4                | 12                    | 4                 | 50            |
| MU3-JMA3050   | 5                | 15                    | 6                 | 50            |
| MU3-JMA3060   | 6                | 18                    | 6                 | 50            |
| MU3-JMA3060E1 | 6                | 18                    | 6                 | 75            |
| MU3-JMA3080   | 8                | 24                    | 8                 | 60            |
| MU3-JMA3080E1 | 8                | 24                    | 8                 | 75            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU3-JMA3100   | 10               | 30                    | 10                | 75            |
| MU3-JMA3100H  | 10               | 30                    | 10                | 100           |
| MU3-JMA3120   | 12               | 36                    | 12                | 75            |
| MU3-JMA3160   | 16               | 48                    | 16                | 100           |
| MU3-JMA3200   | 20               | 60                    | 20                | 100           |



適用材質：鋁  
Material: Aluminum

切削參數 The Cutting Data For HMA 3000 Series  
MUH3-JMA 3000  
進給速度 Vf (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 15500    | 800        | 1200    |
| 6       | 10500    | 900        | 1400    |
| 8       | 8000     | 1000       | 1600    |
| 10      | 6400     | 1100       | 1700    |
| 12      | 5400     | 950        | 1500    |
| 16      | 3900     | 950        | 1500    |
| 20      | 3200     | 900        | 1300    |



## 鋁合金專用銑刀 Aluminum

### MU2-GMA 3000 鋁合金專用3刃圓溝2離隙立銑刀

For Aluminum Alloy 3 Flutes Rounded Land Double Edge End Mill



- ◆ 刃口採雙離隙研磨，提升切削能力，減少因阻抗而產生的震動  
The edge with double edge grinding and enhance the cutting efficiency also improving the processing vibration.
- ◆ 刃口拋光處理，排屑流暢，有更良好的加工面粗糙度  
The edge with polishing treatment, Chip remove smoothly, update the surface processing effect.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU2-GMA3040   | 4                | 12                    | 4                 | 50            |
| MU2-GMA3040D6 | 4                | 12                    | 6                 | 50            |
| MU2-GMA3050   | 5                | 15                    | 6                 | 50            |
| MU2-GMA3060   | 6                | 18                    | 6                 | 50            |
| MU2-GMA3080   | 8                | 24                    | 8                 | 60            |
| MU2-GMA3080E1 | 8                | 24                    | 8                 | 75            |
| MU2-GMA3080H  | 8                | 24                    | 8                 | 100           |
| MU2-GMA3080M  | 8                | 24                    | 8                 | 150           |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU2-GMA3100   | 10               | 30                    | 10                | 75            |
| MU2-GMA3100M  | 10               | 30                    | 10                | 150           |
| MU2-GMA3120   | 12               | 36                    | 12                | 75            |
| MU2-GMA3120H  | 12               | 36                    | 12                | 100           |
| MU2-GMA3120M  | 12               | 36                    | 12                | 150           |
| MU2-GMA3160   | 16               | 48                    | 16                | 100           |
| MU2-GMA3200   | 20               | 60                    | 20                | 100           |

### MU2-HMA 3000 3刃圓溝2離隙鋁合金專用銑刀

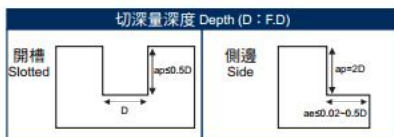
3 Flute round land and 3 Relief aluminum type

- ◆ 刃口採 2 離隙研磨，提升切削性能，有更良好的加工表面  
The cutting edge is triple embossed for improved cutting performance while also providing a superior machined surface.
- ◆ 圓溝全拋光處理，有效抑制加工產生熱能  
The fully polished round table surface effectively reduces the heat generated by the machining, smoothly removes the chips.
- ◆ 使斷屑穩定、排屑順暢，延長加工時間壽命  
And the stable chip breaking increases the service life of the tool.



| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU2-HMA3040   | 4                | 12                    | 4                 | 50            |
| MU2-HMA3060   | 6                | 18                    | 6                 | 50            |
| MU2-HMA3080   | 8                | 24                    | 8                 | 60            |

| 產品型號 Model No | 直徑 d<br>Diameter | 刃長 L1<br>Flute Length | 柄徑 D<br>Shank Dia | 全長 L<br>O.A.L |
|---------------|------------------|-----------------------|-------------------|---------------|
| MU2-HMA3100   | 10               | 30                    | 10                | 75            |
| MU2-HMA3120   | 12               | 36                    | 12                | 75            |



適用材質：鋁  
Material: Aluminum

切削參數 The Cutting Data For MU2-GMA 3000 Series  
MU2-HMA 3000  
進給速度 V<sub>f</sub> (mm/min)

| 直徑 (mm) | 轉速 (min) | 開槽 Slotted | 側邊 Side |
|---------|----------|------------|---------|
| 4       | 15500    | 800        | 1200    |
| 6       | 10500    | 900        | 1400    |
| 8       | 8000     | 1000       | 1600    |
| 10      | 6400     | 1100       | 1700    |
| 12      | 5400     | 950        | 1500    |
| 16      | 3900     | 950        | 1500    |
| 20      | 3200     | 900        | 1300    |