



# KK Series



獲德國專利 字號：Nr.20 2006 014 089.1  
 Patent of Germany No:Nr.20 2006 014 089.1  
 多國專利申請中  
 Apply in the multinational patent.



獲日本專利 字號：Nr.3145278  
 Patent of Japan No:Nr.3145278  
 多國專利申請中  
 Apply in the multinational patent.



獲中國專利 字號：ZL 2006 2 0124295.4  
 Patent of China No:ZL 2006 2 0124295.4  
 多國專利申請中  
 Apply in the multinational patent.



獲台灣專利 字號：新型第 M 303075 號  
 Patent of Taiwan No:M 303075  
 多國專利申請中  
 Apply in the multinational patent.

# Features 產品特點



Two flutes with four teeth, Four flutes with eight teeth, High performance, High efficient, double tooling life, saving time and cost.

Adding second cutting teeth near the major cutting teeth will improve the cutting performance greatly. The meaning of this new development is like the second razor blade innovating the shaving experience. KK is developed according to the innovation of razor. The characteristic of KK endmill is 2 flutes with 4, 3 flutes with 6 teeth, 4 flutes with 8 teeth, 5 flutes with 10 teeth. Geometric appearance of endmill creates longer tooling life, low vibration, high feed rate, and smooth surface. The reason of longer tooling life is when the major tooth wear, the second tooth is still shape. Longer tooling life also benefit to reduce the horizontal vibration. Close distance between two teeth make the cutting edge produce irregular touch with working material and reduce harmful resonance. It contributes to control vibration that changes of helix angle between every group tooth

Reduction of cutting load of per teeth, 2 teeth enable increase feed rate (for each group tooth, the cutting load of second tooth is less than first tooth so the cutting area of econd is smaller than first ones)

Low vibration and cutting flute sharpness with more lasting edge make a contribution to improvement of surface accuracy.

Stocked item: Dia 6mm~25mm  
Coating: KKH nACo  
KKM Si  
KKF、KKR nACro

二槽四刃、四槽八刃、多刃成精、效率加倍、壽命加倍、省時省力如果在這種傳統的刀具上離原來那個切削刃距離較近的地方加上第二個切削刃，將會極大地改善此類端銑刀的性能。這個發明帶來的意義正像剃鬚刀的第二塊刀片革新了剃須的體驗樣。根據這個發明生產出來的端銑刀如附圖所示。

這種“KK系列”端銑刀特徵是二槽四刃、三槽六刃、四槽八刃或五槽十刃。這種幾何表面為端銑刀提供了更長的刀具壽命、更低的振動、更高的進給量、更高的表面光潔度。刀具壽命的延長，是由於主刃磨損時，第二刃依然保持相對的鋒利。刀具壽命的延長同樣也受益於切削過程中振動水平的降低。兩齒間比較近的距離，使得齒與加工件間產生無規律接觸，從而極大地減少產生有害振動的諧波。每組切削刃之間變化的螺旋角也有助於控制振動。

因為為每一切削刃切屑量減少，刃刃的加倍能使進給量成比例地增長。  
(對每一副切削刃而言，第二刃的切屑量確實比第一齒要少。當然，第二刃產生的切屑尺寸也相對較小)。低振動及切削刃更持久的鋒利度為表面加工精度的提高做出了貢獻。這種端銑刀目前可提供直徑6mm到25mm的規格。  
在最後完成工序時會塗上一層塗層。

First Diameter (Roughing) 第一外徑 (粗胚)		Scenod Diameter (Finishing) 第二外徑 (精銑)
Diameter 刃 徑	Tolerance (Unit : mm ) 公差 (單位 : mm )	Tolerance (Unit : mm ) 公差 (單位 : mm )
6mm	-0.08~-0.10	+0.00~-0.02
8mm	-0.10~-0.12	+0.00~-0.02
10mm	-0.12~-0.15	+0.00~-0.02
12mm	-0.15~-0.18	+0.00~-0.02
16mm	-0.20~-0.24	+0.00~-0.02
20mm	-0.24~-0.30	+0.00~-0.02