切削参数参考表
Recommended Milling Conditions

加工材料 Work Material		高硬度钢 Hardened Steels STAVAX・SKD61 (~52HRC)				高硬度钢 Hardened Steels SKD11 (~62HRC)				高速钢 High Speed Steels SKH・HAP (~68HRC)			
(R)球头半径 Radius	颈长 Under Neck Length	切深量 Depth of Cut		进给速度 Feed	主轴转速 Spindle Speed	切深量 Depth of Cut		进给速度 Feed	主轴转速 Spindle Speed	切深量 Depth of Cut		进给速度 Feed	主轴转速 Spindle Speed
		ap mm	ae mm	mm/min	min^{-1}	ap mm	ae mm	mm/min	min^{-1}	ap mm	ae mm	mm/min	min^{-1}
0.1	0.3	0.005	0.005	720		0.005	0.005	540		0.003	0.003	360	
0.15	0.3	0.005	0.01	1,400		0.005	0.01	800		0.005	0.005	500	
	0.5	0.005	0.005	1,200		0.005	0.005	640		0.003	0.005	460	
	0.75	0.005	0.005	1,000		0.005	0.005	540		0.003	0.005	400	
0.2	0.5	0.01	0.01	1,800		0.01	0.01	1,200		0.005	0.01	640	
	0.75	0.005	0.01	1,600		0.005	0.01	1,000		0.005	0.01	540	
	1	0.005	0.01	1,400		0.005	0.01	900		0.005	0.005	460	
0.25	1	0.015	0.015	1,800	50,000	0.01	0.015	1,500	50,000	0.01	0.01	1,100	50,000
0.3	1.5	0.02	0.03	2,000		0.01	0.02	2,000		0.01	0.02	1,500	
0.4	2	0.03	0.05	2,000		0.02	0.03	2,000		0.01	0.03	1,500	
0.5	2.5	0.05	0.05	3,000		0.03	0.05	3,000		0.02	0.03	2,000	
0.6	3	0.05	0.05	3,000		0.03	0.05	3,000		0.02	0.03	2,000	
0.75	3.8	0.05	0.1	4,000		0.05	0.05	4,000		0.02	0.05	3,000	
1	4	0.1	0.1	5,000		0.05	0.05	5,000		0.03	0.05	3,000	
	5	0.1	0.1	5,000		0.05	0.05	5,000		0.03	0.05	3,000	

备 注 Notes

※1 切深量为中精加工、精加工时的最大值。
※2 切深量的ap表示轴向切深量，ae表示步距量。
※3 建议使用油雾冷却方式。
※4 请以相同的比率调整主轴转速和进给速度。
※5 加工参数会因切深量和机床刚性的状况而有所不同。请每次调整后再使用。
※6 请根据需要控制刀具的伸出量。

※1 Depth of Cut shows the maximum value for semi-finishing and finishing.
※2 Depth of Cut: ap = Axial Depth of Cut / ae = Radial Depth of Cut.
※3 We recommend using oil mist coolant.
※4 Adjust both spindle speed and feed at the same rate.
※5 Adjust milling conditions according to the volume of Depth of Cut and rigidity of machine.
※6 Length of tool overhang must be as short as possible.

使用注意事项 Points in Use

加工环境 *Advice on Cutting Environment*

- 刀具偏摆量越小越好。
  Minimize the deflection of cutting edge.
- 掌握机床主轴的伸缩量以及机床的水平状态，需要时采取恰当的措施。
  To understand the nature of the expansion of the main spindle and machine posture transformation, and take measures against them.

精加工量(余量) *Advice on Finishing Allowance (stock amount)*

- 使用小径CBN铣刀时，**精加工量(余量)均匀性非常重要**。
  When using small CBN End Mill, uniform finishing allowance (stock amount) is important.
- 粗加工・中精加工使用刀具磨损过大时，中精加工和精加工的余量会变大，从而影响刀具寿命和加工精度，所以**预加工时留有均匀的加工余量非常重要**。
  When tool is used on roughing and semi-finishing and it has a big abrasion, finishing allowance (stock amount) on semi-finishing and finishing is increasing and it affects tool life and cutting accurary. Therefore, it is important to get uniform stock amount in the pre-stage cutting.