

切削参数参考表

Recommended Milling Conditions

加工材料 Work Material	调质钢・高硬度钢 Prehardened Steels・Hardened Steels NAK・STAVAX・SKD11・PD613 (~62HRC)				
	切深量 Depth of Cut		进给速度 Feed	进刀速度 Approaching Feed	主轴转速 Spindle Speed
(R)球头半径 Radius	ap mm	ae mm	mm/min	mm/min	min ⁻¹
0.01	0.0005	0.001	5	3	80,000
0.02	0.001	0.001	30	5	80,000
0.03	0.001	0.002	70	10	80,000
0.04	0.002	0.003	100	30	80,000
0.05	0.002	0.005	200	30	80,000
备 注 Notes	※1 切深量的ap表示轴向切深量，ae表示步距量。 ※2 拆装或者预调刀具时请务必小心。 ※3 建议使用油雾冷却方式。 ※4 请尽量抑制刀具的偏摆量。 (可能的话，请确认所用主轴转速下的动态偏摆精度。) ※5 进刀角度请设在3°以下。 ※6 增加切深量会导致刀具折断。特别须注意ap值的设定。 ※1 Depth of Cut: ap=Axial Depth of Cut / ae=Radial Depth of Cut. ※2 Handle with care when exchanging and presetting tool. ※3 We recommend using oil mist coolant. ※4 Minimize chucking runout. (Recommend to measure actual runout at activated spindle speed.) ※5 Tool approaching angle must be 3 degrees or below. ※6 Increase of Depth of Cut may cause a tool breakage, especially careful for Axial Depth of Cut.				

全刃长
Full Cutting Length

球头

无涂层
Non-Coating

Ball

使用注意事项

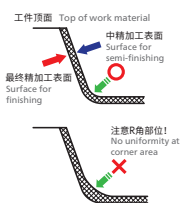
Points in Use

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)

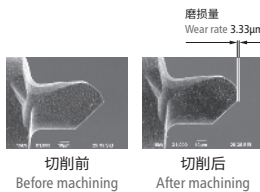
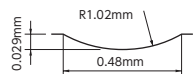
- 使用小径CBN铣刀时，精加工量(余量)均匀性非常重要。
When using small CBN End Mill, uniform finishing allowance (stock amount) is important.
- 粗加工・中精加工使用刀具磨损过大时，中精加工和精加工的余量会变大，从而影响刀具寿命和加工精度，所以预加工时留有均匀的加工余量非常重要。
When tool is used on roughing and semi-finishing and it has a big abrasion, finishing allowance (stock amount) on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



P	调质钢 Prehardened Steel	○
H	~52高硬度钢 HRC Hardened Steel	○
H	~60高硬度钢 HRC Hardened Steel	○
H	~65高硬度钢 HRC Hardened Steel	○
H	~70高硬度钢 HRC Hardened Steel	○

加工案例2 Machining Case 2

R0.03 透镜阵列模型 Lens array model



加工材料 Work material	PD613 60HRC	
主轴转速 Spindle speed	80,000min ⁻¹	
进给速度 Feed	粗加工: 50mm/min Roughing	精加工: 30mm/min Finishing
切深量 Depth of cut	粗加工: 1μm×2μm Roughing (ap×ae)	精加工: 1μm×1μm Finishing (ap×ae)
加工时间 Machining time	4小时 4hr	
加工长度 Machining length	10.4m	
冷却方式 Coolant	油雾 Oil mist	

- 粗加工和精加工使用同一刀具进行。
Full process done by one tool.