

## 切削参数参考表

Recommended Milling Conditions

加工材料 Work Material			高硬度钢 Hardened Steels SKD61 · STAVAX (~52HRC)				高硬度钢 Hardened Steels DC53 · ELMAX · PD613 (~62HRC)				高速钢 High Speed Steels DRM3 · YXR3 (~68HRC)			
外径 Dia.	角半径 Corner 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 <sup>-1</sup>	ap mm	ae mm	mm/min	min <sup>-1</sup>	ap mm	ae mm	mm/min	min <sup>-1</sup>
0.1	0.02 · 0.03	0.2	0.002	0.015	200	50,000	0.002	0.01	150	50,000	0.001	0.01	100	50,000
		0.3	0.002	0.015	150	50,000	0.001	0.01	100	50,000	0.001	0.01	50	50,000
		0.5	0.002	0.01	150	50,000	0.001	0.01	100	50,000	0.001	0.01	50	50,000
0.15	0.02 · 0.03	0.2	0.003	0.02	250	50,000	0.003	0.02	200	50,000	0.002	0.015	150	50,000
		0.3	0.003	0.02	200	50,000	0.003	0.02	150	50,000	0.002	0.015	100	50,000
		0.5	0.002	0.02	200	50,000	0.002	0.02	150	50,000	0.001	0.015	100	50,000
0.2	0.02 · 0.03 · 0.05	0.3	0.003	0.03	400	50,000	0.003	0.03	350	50,000	0.002	0.02	250	50,000
		0.5	0.003	0.03	300	50,000	0.003	0.03	300	50,000	0.002	0.02	200	50,000
		1	0.003	0.02	200	50,000	0.003	0.02	200	50,000	0.002	0.01	100	50,000
0.3	0.02 · 0.03 · 0.05	0.5 · 0.75 · 1	0.003	0.05	500	50,000	0.003	0.05	400	50,000	0.002	0.03	300	50,000
		1.5 · 2	0.003	0.03	400	50,000	0.003	0.03	300	50,000	0.002	0.02	200	50,000
0.4	0.02 · 0.03 · 0.05 · 0.1	0.5 · 1	0.005	0.1	700	50,000	0.005	0.1	600	50,000	0.003	0.03	400	50,000
		1.5 · 2	0.005	0.05	500	50,000	0.005	0.05	400	50,000	0.003	0.02	300	50,000
0.5	0.02 · 0.03	0.5 · 1 · 1.5	0.005	0.2	600	50,000	0.005	0.2	600	50,000	0.003	0.1	500	50,000
		2.5	0.005	0.1	600	50,000	0.005	0.1	600	50,000	0.003	0.05	500	50,000
		0.5 · 1 · 1.5	0.01	0.2	600	50,000	0.01	0.2	600	50,000	0.005	0.2	500	50,000
	0.05	2.5	0.01	0.1	600	50,000	0.01	0.1	600	50,000	0.005	0.1	500	50,000
		0.5 · 1 · 1.5	0.02	0.2	800	50,000	0.02	0.2	800	50,000	0.01	0.1	700	50,000
		2.5	0.01	0.1	800	50,000	0.01	0.1	800	50,000	0.01	0.05	700	50,000
0.6	0.02 · 0.03	0.5 · 1 · 1.5	0.005	0.2	600	50,000	0.005	0.2	600	50,000	0.003	0.1	500	50,000
		2.5	0.005	0.1	600	50,000	0.005	0.1	600	50,000	0.003	0.05	500	50,000
	0.05	0.5 · 1 · 1.5	0.01	0.2	600	50,000	0.01	0.2	600	50,000	0.005	0.2	500	50,000
		2.5	0.01	0.1	600	50,000	0.01	0.1	600	50,000	0.005	0.1	500	50,000
	0.1	0.5 · 1 · 1.5	0.02	0.2	1,000	50,000	0.02	0.2	1,000	50,000	0.01	0.1	700	50,000
		2.5	0.01	0.1	1,000	50,000	0.01	0.1	1,000	50,000	0.01	0.05	700	50,000
0.8	0.02 · 0.03	1.5 · 2.5	0.005	0.2	800	50,000	0.005	0.2	800	50,000	0.003	0.1	600	40,000
		5	0.005	0.1	800	50,000	0.005	0.1	800	50,000	0.003	0.05	600	40,000
	0.05	1.5 · 2.5	0.02	0.3	1,000	50,000	0.02	0.2	1,000	50,000	0.01	0.1	700	40,000
		5	0.01	0.2	1,000	50,000	0.01	0.1	1,000	50,000	0.01	0.05	700	40,000
	0.1	1.5 · 2.5	0.02	0.3	1,400	50,000	0.02	0.2	1,200	50,000	0.01	0.1	1,000	40,000
		5	0.01	0.2	1,400	50,000	0.01	0.1	1,200	50,000	0.01	0.05	1,000	40,000



- ◎ 高硬度钢~52  
Hardened Steel HRC H
- ◎ 高硬度钢~60  
Hardened Steel HRC H
- ◎ 高硬度钢~65  
Hardened Steel HRC H
- ◎ 高硬度钢~70  
Hardened Steel HRC H

CBN  
核心系列  
CBN  
Core Line

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			ap mm	ae mm	mm/min	min <sup>-1</sup>	ap mm	ae mm	mm/min	min <sup>-1</sup>	ap mm	ae mm	mm/min	min <sup>-1</sup>
1	0.02 · 0.03	1 · 2	0.005	0.4	800	48,000	0.005	0.3	800	48,000	0.005	0.2	600	32,000
	0.05		0.01	0.4	1,000	48,000	0.01	0.3	1,000	48,000	0.01	0.2	800	32,000
	0.1 · 0.2 · 0.3		0.03	0.4	1,500	48,000	0.03	0.3	1,200	48,000	0.01	0.2	1,000	32,000
	0.02 · 0.03	3 · 5	0.005	0.3	800	48,000	0.005	0.2	800	48,000	0.005	0.1	600	32,000
	0.05		0.01	0.3	1,000	48,000	0.01	0.2	1,000	48,000	0.01	0.1	800	32,000
	0.1 · 0.2 · 0.3		0.02	0.3	1,500	48,000	0.02	0.2	1,200	48,000	0.01	0.1	1,000	32,000
1.5	0.02 · 0.03	2	0.005	0.7	1,200	32,000	0.005	0.6	1,100	32,000	0.005	0.3	900	20,000
	0.05		0.02	0.7	1,200	32,000	0.01	0.6	1,100	32,000	0.01	0.3	900	20,000
	0.1 · 0.2 · 0.3		0.04	0.7	2,400	32,000	0.04	0.6	1,800	32,000	0.01	0.3	1,300	20,000
	0.02 · 0.03	3 · 4.5	0.005	0.7	1,000	32,000	0.005	0.6	1,000	32,000	0.005	0.3	800	20,000
	0.05		0.02	0.7	1,000	32,000	0.01	0.6	1,000	32,000	0.01	0.3	800	20,000
	0.1 · 0.2 · 0.3		0.04	0.7	2,000	32,000	0.04	0.6	1,500	32,000	0.01	0.3	1,200	20,000
	0.02 · 0.03	7.5	0.005	0.5	1,000	32,000	0.005	0.4	1,000	32,000	0.005	0.2	800	20,000
	0.05		0.02	0.5	1,000	32,000	0.01	0.4	1,000	32,000	0.01	0.2	800	20,000
	0.1 · 0.2 · 0.3		0.03	0.5	2,000	32,000	0.03	0.4	1,500	32,000	0.01	0.2	1,200	20,000
	2	0.02 · 0.03	3	0.005	0.8	1,200	24,000	0.005	0.7	1,100	24,000	0.005	0.5	900
0.05		0.02		0.8	1,200	24,000	0.01	0.7	1,100	24,000	0.01	0.5	900	16,000
0.1 · 0.2 · 0.3 · 0.5		0.05		0.8	2,400	24,000	0.05	0.7	1,800	24,000	0.01	0.5	1,300	16,000
0.02 · 0.03		4 · 6	0.005	0.8	1,000	24,000	0.005	0.7	1,000	24,000	0.005	0.5	800	16,000
0.05			0.02	0.8	1,000	24,000	0.01	0.7	1,000	24,000	0.01	0.5	800	16,000
0.1 · 0.2 · 0.3 · 0.5			0.05	0.8	2,000	24,000	0.05	0.7	1,500	24,000	0.01	0.5	1,200	16,000
0.02 · 0.03		10	0.005	0.6	1,000	24,000	0.005	0.5	1,000	24,000	0.005	0.3	800	16,000
0.05			0.02	0.6	1,000	24,000	0.01	0.5	1,000	24,000	0.01	0.3	800	16,000
0.1 · 0.2 · 0.3 · 0.5			0.03	0.6	2,000	24,000	0.03	0.5	1,500	24,000	0.01	0.3	1,200	16,000
备注 Notes			※1 切深量为中精加工、精加工时的最大值。请根据机床刚性和要求精度进行调整。 ※2 切深量的ap表示轴向切深量，ae表示径向切深量。 ※3 轴向进刀建议采用螺旋进刀及倾斜进刀方式。 ※4 建议使用油雾冷却方式。 ※5 请以相同的比率调整主轴转速和进给速度。 ※6 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。 ※7 请根据需要控制刀具的伸出量。 ※8 建议使用刚性较大的铣刀刀柄和机床。 ※1 Depth of Cut shows the maximum value for semi-finishing and finishing. Adjust milling conditions depending on the rigidity of the machine and desired accuracy. ※2 Depth of Cut: ap = Axial Depth of Cut / ae = Radial Depth of Cut. ※3 Recommend to apply helical or ramping for approaching into axial direction. ※4 We recommend using oil mist coolant. ※5 Adjust both spindle speed and feed at the same rate. ※6 Adjust milling conditions according to the volume of Depth of Cut and rigidity of machine. ※7 Length of tool overhang must be as short as possible. ※8 Machine, tool chuck must be sufficiently accurate.											

长颈  
Long Neck无涂层  
Non-Coating圆鼻  
Corner Radius

Corner Radius

H ~52高硬度钢  
HRC Hardened SteelH ~60高硬度钢  
HRC Hardened SteelH ~65高硬度钢  
HRC Hardened SteelH ~70高硬度钢  
HRC Hardened Steel