

## 切削参数参考表 Recommended Milling Conditions

技术资料 K-032

CBN铣刀 Cubic Boron Nitride	PCD·多晶金刚石 P.C.D.·Diamond	刃径 Dia	螺距 Pitch	螺旋R Helical R	NS推荐 加工方向 Recommended Process	碳素钢 Carbon Steels S50C			不锈钢 Stainless Steels SUS304			钛合金 Titanium Alloy Ti-6Al-4V			铝合金 Aluminum Alloy A5052						
						主轴转速 Spindle Speed	进给速度 Feed	每刃进给量 feed per tooth	主轴转速 Spindle Speed	进给速度 Feed	每刃进给量 feed per tooth	主轴转速 Spindle Speed	进给速度 Feed	每刃进给量 feed per tooth	主轴转速 Spindle Speed	进给速度 Feed	每刃进给量 feed per tooth				
						min <sup>-1</sup>	mm/min	mm/tooth	min <sup>-1</sup>	mm/min	mm/tooth	min <sup>-1</sup>	mm/min	mm/tooth	min <sup>-1</sup>	mm/min	mm/tooth				
CBN铣刀 Diamond	涂层 Coating	M1	M1	0.72	0.25	R0.155	逆铣 Up-cut	35,000	600	0.004	35,000	600	0.004	18,000	150	0.002	45,000	1,000	0.006		
		M1	M1.1	0.72	0.25	R0.205	逆铣 Up-cut	35,000	600	0.004	35,000	600	0.004	18,000	150	0.002	45,000	1,000	0.006		
		M1.2	M1.2	0.92	0.25	R0.155	逆铣 Up-cut	27,000	600	0.005	27,000	600	0.005	14,000	160	0.003	35,000	1,000	0.007		
平底铣刀 Square End Mill	涂层 Coating	M1.4	M1.4	1.05	0.3	R0.195	逆铣 Up-cut	24,000	600	0.006	24,000	600	0.006	12,000	180	0.004	30,000	1,000	0.008		
		M1.6	M1.6	1.2	0.35	R0.22	逆铣 Up-cut	21,000	600	0.007	21,000	600	0.007	10,000	220	0.005	26,000	1,000	0.01		
		M1.7	M1.7	1.3	0.35	R0.22	逆铣 Up-cut	20,000	600	0.007	20,000	600	0.007	10,000	250	0.006	24,000	1,000	0.01		
长颈平底 铣刀 Long Neck Square End Mill	无涂层 Non-Coating	M1.7	M1.8	1.3	0.35	R0.27	逆铣 Up-cut	20,000	600	0.007	20,000	600	0.007	10,000	250	0.006	24,000	1,000	0.01		
		M2	M2	1.5	0.4	R0.28	顺铣 Down-cut	12,000	600	0.008	12,000	600	0.008	10,000	500	0.008	20,000	1,200	0.01		
		M2	M2.3	1.5	0.4	R0.43	顺铣 Down-cut	12,000	600	0.008	12,000	600	0.008	10,000	500	0.008	20,000	1,200	0.01		
球头铣刀 Ball End Mill	涂层 Coating	M2.5	M2.5	1.95	0.45	R0.305	顺铣 Down-cut	12,000	600	0.008	12,000	600	0.008	10,000	500	0.008	16,000	1,200	0.012		
		M2.5	M2.6	1.95	0.45	R0.355	顺铣 Down-cut	12,000	600	0.008	12,000	600	0.008	10,000	500	0.008	16,000	1,200	0.012		
		M3	M3	2.36	0.5	R0.36	顺铣 Down-cut	8,000	600	0.012	8,000	600	0.012	8,000	500	0.01	10,000	1,200	0.02		
长颈球头 铣刀 Long Neck Ball End Mill	无涂层 Non-Coating	M4	M4	3.08	0.7	R0.5	顺铣 Down-cut	5,700	400	0.012	5,700	400	0.012	4,600	350	0.013	7,000	800	0.019		
		M5	M5	3.97	0.8	R0.555	顺铣 Down-cut	4,000	400	0.017	4,000	400	0.017	3,200	350	0.018	5,500	800	0.024		
		M6	M6	4.72	1	R0.68	顺铣 Down-cut	3,200	400	0.021	3,200	400	0.021	3,000	350	0.019	4,500	800	0.03		
圆鼻铣刀 Radius End Mill	涂层 Coating	备注 Notes						※ 本公司网站免费提供NC程序软件。 ※ 本切削参数是使用水溶性切削油，分2次进行加工时的参考基准。 ※ 必须事先使用钻头等进行底孔。 ※ 请以每刃进给量为基准，根据加工环境因素调整主轴转速和进给速度，以及路径和加工方向等。 ※ 螺旋R是最终切削时的R值，为螺纹加工提供参考，M1.4以下为5H，M1.6以上为6H(与传统的JIS等级相当)。 ※ 使用参数表中的螺旋R值时，必须设定底孔直径，避免颈部与底孔发生干涉。 ※ 如加工形状发生锥度状况时，请再次原位零切深加工。 ※ 请使用适合加工材料的冷却方式。 ※ Software for generating NC program Will be provided on NS web site. ※ The above Recommended Milling Conditions is provided as a guide for cutting when the depth of cut is divided into twice with water soluble cutting fluid. ※ Recommend making pilot hole in advance by using drill, etc. ※ Depending on environment, adjustments of spindle speed based on feed per tooth, feed, number of paths and cutting direction are needed. ※ Helical R, 5H for M1.4 and under and 6H for more than M1.6, is a guideline for thread milling and it is R value in the final cutting. ※ When use helical R in the Recommended Milling Conditions, set pilot hole dia. for avoiding interference between the area of under neck and pilot hole. ※ Add zero-cut process in case completed thread left deflection angle. ※ Choose appropriate coolant for each working material.													
								长颈圆鼻 铣刀 Long Neck Radius End Mill	无涂层 Non-Coating												
锥形铣刀 Taper End Mill	涂层 Coating																				
		锥形球头 铣刀 Taper Ball End Mill	无涂层 Non-Coating																		
倒角刀 Chamfering End Mill	无涂层 Non-Coating																				

备注  
Notes

※ 本公司网站免费提供NC程序软件。  
 ※ 本切削参数是使用水溶性切削油，分2次进行加工时的参考基准。  
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 ※ 请以每刃进给量为基准，根据加工环境因素调整主轴转速和进给速度，以及路径和加工方向等。  
 ※ 螺旋R是最终切削时的R值，为螺纹加工提供参考，M1.4以下为5H，M1.6以上为6H(与传统的JIS等级相当)。  
 ※ 使用参数表中的螺旋R值时，必须设定底孔直径，避免颈部与底孔发生干涉。  
 ※ 如加工形状发生锥度状况时，请再次原位零切深加工。  
 ※ 请使用适合加工材料的冷却方式。  
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 ※ Recommend making pilot hole in advance by using drill, etc.  
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 ※ When use helical R in the Recommended Milling Conditions, set pilot hole dia. for avoiding interference between the area of under neck and pilot hole.  
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