MRB230

切削参数参考表 Recommended Milling Conditions

加工材料 Work Material			碳素钢·调质钢 Carbon Steels·Prehardened Steels S50C·NAK·HPM-1 (~44HRC)				淬火钢 Hardened Steels SKD·STAVAX·HPM-38 (46~55HRC)				淬火钢 Hardened Steels SKD11 (56~62HRC)				铜合金 Copper			
(R)半径 Radius	有效长 Effective Length	刃径与有效长的比例 L/D	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	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}	ap mm	ae mm	mm/min	min^{-1}
0.05	0.3	3	0.005	0.005	80	20,000~50,000	0.003	0.003	60	20,000~50,000	0.003	0.003	50	20,000~50,000	0.005	0.005	80	20,000~50,000
	0.5	5	0.003	0.003	70	20,000~50,000	0.003	0.003	40	20,000~50,000	0.003	0.003	40	20,000~50,000	0.005	0.005	70	20,000~50,000
0.075	0.3	2	0.005	0.015	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.005	90	20,000~50,000	0.008	0.01	150	20,000~50,000
	0.5	3.33	0.004	0.007	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.005	90	20,000~50,000	0.007	0.008	150	20,000~50,000
	1	6.67	0.003	0.005	100	20,000~50,000	0.002	0.003	70	20,000~50,000	0.001	0.003	60	20,000~50,000	0.005	0.007	100	20,000~50,000
0.1	0.5	2.5	0.01	0.02	250	20,000~50,000	0.01	0.01	210	20,000~50,000	0.007	0.007	170	20,000~50,000	0.01	0.02	250	20,000~50,000
	0.75	3.75	0.007	0.01	250	20,000~50,000	0.005	0.01	210	20,000~50,000	0.004	0.007	170	20,000~50,000	0.01	0.015	250	20,000~50,000
	1	5	0.005	0.01	250	20,000~50,000	0.003	0.005	210	20,000~50,000	0.002	0.004	170	20,000~50,000	0.008	0.015	250	20,000~50,000
	1.25	6.25	0.003	0.01	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.004	100	20,000~50,000	0.005	0.015	150	20,000~50,000
	1.5	7.5	0.003	0.01	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.004	100	20,000~50,000	0.005	0.015	150	20,000~50,000
	1.75	8.75	0.003	0.007	150	20,000~50,000	0.002	0.005	120	20,000~50,000	0.002	0.003	100	20,000~50,000	0.005	0.01	150	20,000~50,000
	2	10	0.003	0.005	100	20,000~50,000	0.002	0.003	80	20,000~50,000	0.002	0.003	70	20,000~50,000	0.005	0.007	100	20,000~50,000
	2.5	12.5	0.003	0.005	100	20,000~50,000	0.002	0.003	80	20,000~50,000	0.002	0.003	70	20,000~50,000	0.005	0.007	100	20,000~50,000
	3	15	0.002	0.003	80	20,000~50,000	0.002	0.002	60	20,000~50,000	0.002	0.002	50	20,000~50,000	0.003	0.004	80	20,000~50,000
0.15	0.5	1.7	0.01	0.02	250	20,000~50,000	0.01	0.015	210	20,000~50,000	0.007	0.01	170	20,000~50,000	0.012	0.025	250	20,000~50,000
	0.6	2	0.01	0.02	250	20,000~50,000	0.01	0.015	210	20,000~50,000	0.007	0.01	170	20,000~50,000	0.012	0.025	250	20,000~50,000
	0.75	2.5	0.008	0.015	250	20,000~50,000	0.007	0.01	210	20,000~50,000	0.005	0.007	170	20,000~50,000	0.01	0.02	250	20,000~50,000
	1	3.3	0.007	0.01	250	20,000~50,000	0.005	0.01	210	20,000~50,000	0.004	0.007	170	20,000~50,000	0.01	0.02	250	20,000~50,000
	1.25	4.2	0.005	0.01	250	20,000~50,000	0.005	0.005	210	20,000~50,000	0.004	0.004	170	20,000~50,000	0.008	0.015	250	20,000~50,000
	1.5	5	0.005	0.01	200	20,000~50,000	0.005	0.005	170	20,000~50,000	0.004	0.004	140	20,000~50,000	0.008	0.015	200	20,000~50,000
	1.75	5.8	0.005	0.01	200	20,000~50,000	0.005	0.005	170	20,000~50,000	0.004	0.004	140	20,000~50,000	0.008	0.015	200	20,000~50,000
	2	6.7	0.003	0.01	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.003	100	20,000~50,000	0.005	0.012	150	20,000~50,000
	2.25	7.5	0.003	0.01	150	20,000~50,000	0.003	0.005	120	20,000~50,000	0.002	0.003	100	20,000~50,000	0.005	0.012	150	20,000~50,000
	2.5	8.3	0.003	0.007	150	20,000~50,000	0.003	0.003	120	20,000~50,000	0.002	0.002	100	20,000~50,000	0.005	0.01	150	20,000~50,000
	2.75	9.2	0.003	0.007	150	20,000~50,000	0.003	0.003	120	20,000~50,000	0.002	0.002	100	20,000~50,000	0.005	0.01	150	20,000~50,000
	3	10	0.003	0.005	150	20,000~50,000	0.003	0.003	120	20,000~50,000	0.002	0.002	100	20,000~50,000	0.005	0.007	150	20,000~50,000
	3.5	11.7	0.003	0.005	100	20,000~50,000	0.003	0.003	80	20,000~50,000	0.002	0.002	70	20,000~50,000	0.005	0.007	100	20,000~50,000
	4	13.3	0.003	0.005	100	20,000~50,000	0.003	0.003	80	20,000~50,000	0.002	0.002	70	20,000~50,000	0.005	0.007	100	20,000~50,000
	4.5	15	0.003	0.003	80	20,000~50,000	0.003	0.003	80	20,000~50,000	0.002	0.002	50	20,000~50,000	0.005	0.005	80	20,000~50,000
	5	16.7	0.003	0.003	80	20,000~50,000	0.003	0.003	80	20,000~50,000	0.002	0.002	50	20,000~50,000	0.005	0.005	80	20,000~50,000
0.2	0.5	1.25	0.02	0.05	800	20,000~50,000	0.02	0.03	650	20,000~50,000	0.015	0.02	560	20,000~50,000	0.03	0.07	800	20,000~50,000
	0.75	1.9	0.02	0.05	800	20,000~50,000	0.02	0.03	650	20,000~50,000	0.015	0.02	560	20,000~50,000	0.03	0.07	800	20,000~50,000
	1	2.5	0.02	0.05	800	20,000~50,000	0.02	0.03	650	20,000~50,000	0.015	0.02	560	20,000~50,000	0.03	0.07	800	20,000~50,000
	1.5	3.8	0.02	0.03	700	20,000~50,000	0.01	0.02	600	20,000~50,000	0.007	0.015	490	20,000~50,000	0.03	0.05	700	20,000~50,000
	2	5	0.015	0.02	600	20,000~50,000	0.01	0.015	500	20,000~50,000	0.007	0.01	420	20,000~50,000	0.02	0.03	600	20,000~50,000
	2.5	6.3	0.015	0.02	450	20,000~50,000	0.01	0.015	380	20,000~50,000	0.007	0.01	310	20,000~50,000	0.02	0.03	450	20,000~50,000
	3	7.5	0.01	0.02	400	20,000~30,000	0.01	0.01	340	20,000~30,000	0.007	0.007	280	20,000~30,000	0.015	0.03	400	20,000~30,000
	3.5	8.8	0.01	0.015	350	20,000~30,000	0.01	0.01	300	20,000~30,000	0.007	0.007	240	20,000~30,000	0.015	0.02	350	20,000~30,000
	4	10	0.005	0.01	250	20,000~30,000	0.005	0.007	210	20,000~30,000	0.004	0.004	170	20,000~30,000	0.008	0.015	250	20,000~30,000
	4.5	11.3	0.005	0.007	200	20,000~30,000	0.005	0.005	170	20,000~30,000	0.004	0.004	140	20,000~30,000	0.008	0.01	200	20,000~30,000
	5	12.5	0.003	0.005	150	20,000~30,000	0.003	0.005	120	20,000~30,000	0.002	0.003	100	20,000~30,000	0.005	0.007	150	20,000~30,000
	5.5	13.8	0.003	0.005	100	20,000~30,000	0.003	0.005	80	20,000~30,000	0.002	0.003	70	20,000~30,000	0.005	0.007	100	20,000~30,000
	6	15	0.003	0.003	80	20,000~30,000	0.003	0.003	60	20,000~30,000	0.002	0.002	50	20,000~30,000	0.005	0.005	80	20,000~30,000
0.25	1	2	0.03	0.05	800	20,000~50,000	0.02	0.05	680	20,000~50,000	0.015	0.035	560	20,000~50,000	0.045	0.07	800	20,000~50,000
	1.5	3	0.03	0.05	700	20,000~50,000	0.02	0.04	600	20,000~50,000	0.015	0.03	490	20,000~50,000	0.04	0.07	700	20,000~50,000
	2	4	0.02	0.04	600	20,000~50,000	0.02	0.03	510	20,000~50,000	0.015	0.02	420	20,000~50,000	0.03	0.06	600	20,000~50,000
	2.5	5	0.015	0.04	600	20,000~50,000	0.01	0.03	510	20,000~50,000	0.007	0.02	420	20,000~50,000	0.02	0.06	600	20,000~50,000
	3	6	0.015	0.035	500	20,000~50,000	0.01	0.025	420	20,000~50,000	0.007	0.015	350	20,000~50,000	0.02	0.05	500	20,000~50,000
	3.5	7	0.015	0.03	400	20,000~50,000	0.01	0.02	340	20,000~50,000	0.007	0.015	280	20,000~50,000	0.02	0.045	400	20,000~50,000

加工材料 Work Material			碳素钢・调质钢 Carbon Steels-Prehardened Steels S50C・NAK・HPM-1 (~44HRC)				淬火钢 Hardened Steels SKD・STAVAX・HPM-38 (46~55HRC)				淬火钢 Hardened Steels SKD11 (56~62HRC)				铜合金 Copper			
(R)刃料粒 Radius	有效长 Effective Length	刃径与有效长的比例 L/D	切深量 Depth of Cut		进给速 Feed	主轴转速 Spindle Speed	切深量 Depth of Cut		进给速 Feed	主轴转速 Spindle Speed	切深量 Depth of Cut		进给速 Feed	主轴转速 Spindle Speed	切深量 Depth of Cut		进给速 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}	ap mm	ae mm	mm/min	min^{-1}
0.25	4	8	0.012	0.02	400	20,000~50,000	0.005	0.01	340	20,000~50,000	0.004	0.007	280	20,000~50,000	0.018	0.03	400	20,000~50,000
	4.5	9	0.008	0.01	320	20,000~50,000	0.005	0.005	270	20,000~50,000	0.004	0.004	220	20,000~50,000	0.012	0.015	320	20,000~50,000
	5	10	0.005	0.01	250	20,000~30,000	0.005	0.005	210	20,000~30,000	0.003	0.003	170	20,000~30,000	0.008	0.015	250	20,000~30,000
	5.5	11	0.005	0.007	200	20,000~30,000	0.003	0.003	170	20,000~30,000	0.002	0.002	140	20,000~30,000	0.008	0.01	200	20,000~30,000
	6	12	0.005	0.005	150	20,000~30,000	0.003	0.003	120	20,000~30,000	0.002	0.002	100	20,000~30,000	0.008	0.008	150	20,000~30,000
	7	14	0.003	0.005	120	20,000~30,000	0.003	0.003	100	20,000~30,000	0.002	0.002	80	20,000~30,000	0.005	0.008	120	20,000~30,000
	8	16	0.003	0.003	120	20,000~30,000	0.002	0.002	100	20,000~30,000	0.002	0.002	80	20,000~30,000	0.005	0.005	120	20,000~30,000
	9	18	0.002	0.002	100	18,000~24,000	0.002	0.002	80	18,000~24,000	0.002	0.002	70	18,000~24,000	0.003	0.003	100	18,000~24,000
	10	20	0.002	0.002	80	18,000~24,000	0.002	0.002	60	18,000~24,000	0.002	0.002	50	18,000~24,000	0.003	0.003	80	18,000~24,000
0.3	1	1.7	0.05	0.1	1,200	20,000~50,000	0.05	0.07	1,000	20,000~50,000	0.035	0.05	840	20,000~50,000	0.07	0.12	1,200	20,000~50,000
	1.5	2.5	0.05	0.1	1,200	20,000~50,000	0.05	0.07	1,000	20,000~50,000	0.035	0.05	840	20,000~50,000	0.07	0.12	1,200	20,000~50,000
	2	3.3	0.05	0.1	1,200	20,000~50,000	0.04	0.07	1,000	20,000~50,000	0.028	0.05	840	20,000~50,000	0.07	0.12	1,200	20,000~50,000
	2.5	4.2	0.035	0.1	1,200	20,000~50,000	0.03	0.06	1,000	20,000~50,000	0.02	0.04	840	20,000~50,000	0.05	0.12	1,200	20,000~50,000
	3	5	0.025	0.1	1,000	20,000~50,000	0.03	0.05	850	20,000~50,000	0.02	0.035	700	20,000~50,000	0.04	0.1	1,000	20,000~50,000
	3.5	5.8	0.025	0.08	1,000	20,000~50,000	0.02	0.05	850	20,000~50,000	0.015	0.035	700	20,000~50,000	0.04	0.1	1,000	20,000~50,000
	4	6.7	0.025	0.05	800	20,000~50,000	0.02	0.04	680	20,000~50,000	0.015	0.03	560	20,000~50,000	0.035	0.08	800	20,000~50,000
	4.5	7.5	0.025	0.05	750	20,000~50,000	0.01	0.03	630	20,000~50,000	0.007	0.02	520	20,000~50,000	0.035	0.08	750	20,000~50,000
	5	8.3	0.02	0.04	500	20,000~30,000	0.01	0.02	420	20,000~30,000	0.007	0.015	350	20,000~30,000	0.03	0.06	500	20,000~30,000
	5.5	9.2	0.013	0.02	500	20,000~30,000	0.01	0.01	420	20,000~30,000	0.007	0.007	350	20,000~30,000	0.02	0.03	500	20,000~30,000
	6	10	0.01	0.02	450	20,000~30,000	0.005	0.01	380	20,000~30,000	0.004	0.007	310	20,000~30,000	0.015	0.03	450	20,000~30,000
	6.5	10.8	0.008	0.02	450	20,000~30,000	0.005	0.005	380	20,000~30,000	0.004	0.004	310	20,000~30,000	0.012	0.03	450	20,000~30,000
	7	11.7	0.008	0.02	400	20,000~30,000	0.005	0.005	340	20,000~30,000	0.004	0.004	280	20,000~30,000	0.012	0.03	400	20,000~30,000
	7.5	12.5	0.005	0.02	350	20,000~30,000	0.003	0.005	300	20,000~30,000	0.003	0.004	250	20,000~30,000	0.008	0.03	350	20,000~30,000
	8	13.3	0.005	0.01	300	18,000~24,000	0.003	0.005	250	18,000~24,000	0.002	0.004	210	18,000~24,000	0.008	0.015	300	18,000~24,000
	8.5	14.2	0.005	0.01	250	18,000~24,000	0.003	0.003	210	18,000~24,000	0.002	0.002	170	18,000~24,000	0.008	0.015	250	18,000~24,000
	9	15	0.005	0.01	250	18,000~24,000	0.003	0.003	210	18,000~24,000	0.002	0.002	170	18,000~24,000	0.007	0.015	250	18,000~24,000
	9.5	15.8	0.005	0.005	200	18,000~24,000	0.003	0.003	170	18,000~24,000	0.002	0.002	140	18,000~24,000	0.007	0.008	200	18,000~24,000
	10	16.7	0.003	0.005	150	18,000~24,000	0.002	0.003	120	18,000~24,000	0.002	0.002	100	18,000~24,000	0.005	0.008	150	18,000~24,000
	11	18.3	0.003	0.003	110	16,000~20,000	0.002	0.002	90	16,000~20,000	0.002	0.002	80	16,000~20,000	0.005	0.005	110	16,000~20,000
	12	20	0.003	0.003	80	16,000~20,000	0.002	0.002	60	16,000~20,000	0.002	0.002	50	16,000~20,000	0.005	0.005	80	16,000~20,000
0.35	2	2.9	0.08	0.12	1,800	20,000~50,000	0.07	0.08	1,300	20,000~50,000	0.04	0.06	1,000	20,000~30,000	0.1	0.15	1,500	20,000~30,000
	4	5.7	0.05	0.11	1,300	20,000~50,000	0.03	0.06	1,100	20,000~50,000	0.02	0.04	700	20,000~30,000	0.06	0.12	1,200	20,000~30,000
	6	8.6	0.03	0.05	700	20,000~30,000	0.01	0.02	600	20,000~30,000	0.008	0.015	450	20,000~30,000	0.04	0.07	600	20,000~30,000
	8	11.4	0.005	0.01	400	18,000~24,000	0.003	0.005	330	18,000~24,000	0.002	0.003	250	14,000~21,000	0.008	0.01	400	18,000~24,000
0.4	2	2.5	0.1	0.15	2,000	20,000~50,000	0.1	0.12	1,700	20,000~50,000	0.07	0.085	1,400	14,000~35,000	0.15	0.2	2,000	20,000~50,000
	3	3.8	0.07	0.15	1,800	20,000~50,000	0.07	0.1	1,500	20,000~50,000	0.05	0.07	1,200	14,000~35,000	0.12	0.2	1,800	20,000~50,000
	4	5	0.05	0.12	1,500	20,000~50,000	0.05	0.08	1,300	20,000~50,000	0.035	0.055	1,000	14,000~35,000	0.1	0.2	1,500	20,000~50,000
	5	6.3	0.05	0.1	1,200	20,000~50,000	0.04	0.07	1,000	20,000~50,000	0.03	0.05	840	14,000~35,000	0.08	0.15	1,200	20,000~50,000
	6	7.5	0.05	0.08	900	20,000~30,000	0.03	0.05	750	20,000~30,000	0.02	0.035	630	14,000~21,000	0.07	0.12	900	20,000~30,000
	7	8.8	0.03	0.05	700	20,000~30,000	0.02	0.03	600	20,000~30,000	0.015	0.02	490	14,000~21,000	0.05	0.08	700	20,000~30,000
	8	10	0.015	0.03	500	18,000~24,000	0.01	0.01	420	18,000~24,000	0.007	0.007	350	12,600~16,800	0.02	0.05	500	18,000~24,000
	9	11.3	0.005	0.01	400	18,000~24,000	0.003	0.005	340	18,000~24,000	0.002	0.003	280	12,600~16,800	0.008	0.01	400	18,000~24,000
	10	12.5	0.005	0.01	350	18,000~24,000	0.003	0.005	300	18,000~24,000	0.002	0.003	240	12,600~16,800	0.008	0.008	350	18,000~24,000
	12	15	0.005	0.005	250	16,000~20,000	0.003	0.003	210	16,000~20,000	0.002	0.002	170	11,200~14,000	0.008	0.008	250	16,000~20,000
0.45	2	2.2	0.15	0.2	2,500	20,000~50,000	0.1	0.2	2,000	20,000~50,000	0.07	0.15	1,800	14,000~35,000	0.2	0.3	2,800	20,000~50,000
	4	4.4	0.1	0.2	2,000	20,000~50,000	0.05	0.12	1,500	20,000~50,000	0.04	0.08	1,100	14,000~35,000	0.15	0.25	2,000	20,000~50,000
	6	6.7	0.07	0.15	1,300	20,000~30,000	0.035	0.05	1,000	20,000~30,000	0.025	0.035	650	14,000~21,000	0.1	0.2	1,300	20,000~30,000
	8	8.9	0.035	0.05	800	20,000~30,000	0.025	0.04	700	20,000~30,000	0.015	0.025	550	12,600~16,800	0.055	0.08	800	18,000~24,000

MRB230

切削参数参考表 Recommended Milling Conditions

加工材料 Work Material			碳素钢·调质钢 Carbon Steels·Prehardened Steels S50C·NAK·HPM-1 (~44HRC)				淬火钢 Hardened Steels SKD·STAVAX·HPM-38 (46~55HRC)				淬火钢 Hardened Steels SKD11 (56~62HRC)				铜合金 Copper			
(R)圆鼻 Radius	有效长 Effective Length	刃径与有效长的比例 L/D	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	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}	ap mm	ae mm	mm/min	min^{-1}
0.5	2	2	0.25	0.35	3,200	20,000~50,000	0.12	0.3	2,500	20,000~50,000	0.085	0.2	2,300	14,000~35,000	0.25	0.4	3,500	20,000~50,000
	2.5	2.5	0.25	0.3	3,000	20,000~50,000	0.12	0.3	2,500	20,000~50,000	0.08	0.2	2,300	14,000~35,000	0.25	0.4	3,200	20,000~50,000
	3	3	0.2	0.3	3,000	20,000~50,000	0.12	0.3	2,500	20,000~50,000	0.08	0.2	2,100	14,000~35,000	0.25	0.4	3,000	20,000~50,000
	4	4	0.15	0.25	2,500	20,000~50,000	0.1	0.2	2,100	20,000~50,000	0.07	0.14	1,700	14,000~35,000	0.2	0.4	2,500	20,000~50,000
	5	5	0.1	0.25	2,000	20,000~50,000	0.08	0.17	1,700	20,000~50,000	0.055	0.12	1,400	14,000~35,000	0.15	0.35	2,000	20,000~50,000
	6	6	0.1	0.2	1,500	20,000~50,000	0.07	0.12	1,200	20,000~50,000	0.05	0.085	1,000	14,000~35,000	0.15	0.3	1,500	20,000~50,000
	7	7	0.08	0.2	1,300	20,000~30,000	0.06	0.1	1,100	20,000~30,000	0.04	0.07	910	14,000~21,000	0.12	0.3	1,300	20,000~30,000
	8	8	0.05	0.1	1,200	20,000~30,000	0.05	0.08	1,000	20,000~30,000	0.035	0.055	840	14,000~21,000	0.08	0.15	1,200	20,000~30,000
	9	9	0.04	0.06	1,000	20,000~30,000	0.05	0.05	850	20,000~30,000	0.035	0.035	700	14,000~21,000	0.06	0.1	1,000	20,000~30,000
	10	10	0.03	0.05	800	20,000~30,000	0.03	0.05	680	20,000~30,000	0.02	0.035	560	14,000~21,000	0.05	0.08	800	20,000~30,000
	12	12	0.015	0.025	600	16,000~20,000	0.01	0.03	510	16,000~20,000	0.007	0.02	420	11,200~14,000	0.02	0.04	600	16,000~20,000
	13	13	0.012	0.025	600	16,000~20,000	0.007	0.02	450	16,000~20,000	0.005	0.01	400	11,200~14,000	0.015	0.03	600	16,000~20,000
	14	14	0.01	0.02	500	16,000~20,000	0.005	0.01	420	16,000~20,000	0.004	0.007	350	11,200~14,000	0.015	0.03	500	16,000~20,000
	16	16	0.005	0.01	250	12,000~16,000	0.005	0.01	210	12,000~16,000	0.004	0.007	170	8,400~11,200	0.01	0.015	250	12,000~16,000
	18	18	0.005	0.005	150	12,000~16,000	0.003	0.003	120	12,000~16,000	0.002	0.002	100	8,400~11,200	0.008	0.01	150	12,000~16,000
	20	20	0.005	0.005	100	12,000~16,000	0.003	0.003	80	12,000~16,000	0.002	0.002	70	8,400~11,200	0.008	0.008	100	12,000~16,000
	22	22	0.003	0.005	80	12,000~16,000	0.002	0.003	60	12,000~16,000	0.002	0.002	50	8,400~11,200	0.005	0.008	80	12,000~16,000
0.6	2.4	2	0.25	0.35	3,400	20,000~30,000	0.12	0.3	2,500	20,000~30,000	0.09	0.21	2,500	14,000~21,000	0.3	0.45	3,400	20,000~30,000
	4	3.3	0.2	0.3	3,000	20,000~30,000	0.12	0.3	2,500	20,000~30,000	0.085	0.21	2,100	14,000~21,000	0.28	0.45	3,000	20,000~30,000
	6	5	0.1	0.25	2,000	20,000~30,000	0.08	0.17	1,700	20,000~30,000	0.055	0.12	1,400	14,000~21,000	0.15	0.4	2,000	20,000~30,000
	8	6.7	0.08	0.2	1,300	20,000~30,000	0.06	0.15	1,100	20,000~30,000	0.04	0.1	910	14,000~21,000	0.12	0.3	1,300	20,000~30,000
	10	8.3	0.05	0.1	1,200	14,000~20,000	0.03	0.08	1,000	14,000~20,000	0.02	0.055	840	9,800~14,000	0.08	0.15	1,200	14,000~20,000
	12	10	0.03	0.05	800	14,000~20,000	0.02	0.04	680	14,000~20,000	0.015	0.03	560	9,800~14,000	0.05	0.08	800	14,000~20,000
	14	11.7	0.015	0.025	600	14,000~20,000	0.01	0.02	510	14,000~20,000	0.007	0.015	420	9,800~14,000	0.02	0.04	600	14,000~20,000
	16	13.3	0.01	0.02	400	14,000~20,000	0.01	0.01	340	14,000~20,000	0.007	0.007	280	9,800~14,000	0.015	0.03	400	14,000~20,000
	18	15	0.005	0.01	250	12,000~18,000	0.005	0.01	210	12,000~18,000	0.005	0.005	170	8,400~12,600	0.012	0.015	250	12,000~18,000
	20	16.7	0.005	0.007	200	12,000~18,000	0.005	0.005	170	12,000~18,000	0.003	0.003	140	8,400~12,600	0.01	0.01	200	12,000~18,000
	24	20	0.005	0.005	100	12,000~18,000	0.003	0.003	80	12,000~18,000	0.002	0.002	70	8,400~12,600	0.008	0.01	100	12,000~18,000
0.7	8	5.7	0.1	0.3	2,500	20,000~30,000	0.1	0.2	2,100	20,000~30,000	0.07	0.14	1,700	14,000~21,000	0.15	0.45	2,500	20,000~30,000
	12	8.6	0.07	0.12	1,200	14,000~20,000	0.05	0.1	1,000	14,000~20,000	0.035	0.07	840	9,800~14,000	0.1	0.18	1,200	14,000~20,000
	16	11.4	0.03	0.05	600	14,000~20,000	0.015	0.03	510	14,000~20,000	0.01	0.02	420	9,800~14,000	0.05	0.08	600	14,000~20,000
0.75	3	2	0.2	0.35	4,000	20,000~30,000	0.15	0.3	3,400	20,000~30,000	0.1	0.18	2,800	14,000~21,000	0.3	0.5	4,000	20,000~30,000
	4	2.7	0.2	0.3	4,000	20,000~30,000	0.15	0.25	3,400	20,000~30,000	0.09	0.15	2,800	14,000~21,000	0.3	0.45	4,000	20,000~30,000
	6	4	0.15	0.3	3,000	20,000~30,000	0.12	0.2	2,500	20,000~30,000	0.07	0.12	2,100	14,000~21,000	0.2	0.45	3,000	20,000~30,000
	8	5.3	0.1	0.25	2,400	20,000~30,000	0.08	0.18	2,000	20,000~30,000	0.05	0.11	1,700	14,000~21,000	0.15	0.4	2,400	20,000~30,000
	10	6.7	0.08	0.2	1,800	20,000~30,000	0.06	0.12	1,500	20,000~30,000	0.035	0.07	1,200	14,000~21,000	0.12	0.3	1,800	20,000~30,000
	12	8	0.07	0.13	1,200	18,000~24,000	0.05	0.09	1,000	18,000~24,000	0.03	0.055	840	12,600~16,800	0.1	0.2	1,200	18,000~24,000
	14	9.3	0.06	0.1	1,200	18,000~24,000	0.04	0.07	1,000	18,000~24,000	0.025	0.04	840	12,600~16,800	0.1	0.15	1,200	18,000~24,000
	16	10.7	0.05	0.08	800	12,000~18,000	0.035	0.06	680	12,000~18,000	0.02	0.035	560	8,400~12,600	0.07	0.12	800	12,000~18,000
	18	12	0.03	0.05	500	12,000~18,000	0.02	0.04	420	12,000~18,000	0.012	0.025	350	8,400~12,600	0.05	0.08	500	12,000~18,000
	20	13.3	0.02	0.04	400	12,000~18,000	0.015	0.03	340	12,000~18,000	0.01	0.02	280	8,400~12,600	0.03	0.06	400	12,000~18,000
	22	14.7	0.01	0.02	250	10,000~14,000	0.005	0.005	210	10,000~14,000	0.003	0.003	170	7,000~9,800	0.02	0.03	250	10,000~14,000
	30	20	0.005	0.005	100	10,000~14,000	0.003	0.005	80	10,000~14,000	0.002	0.003	70	7,000~9,800	0.01	0.008	100	10,000~14,000
0.8	4	2.5	0.2	0.3	4,000	18,000~24,000	0.17	0.25	3,400	18,000~24,000	0.1	0.15	2,800	12,600~16,800	0.3	0.45	4,000	18,000~24,000
	8	5	0.1	0.3	3,000	18,000~24,000	0.09	0.2	2,500	18,000~24,000	0.055	0.12	2,100	12,600~16,800	0.15	0.45	3,000	18,000~24,000
	12	7.5	0.07	0.15	1,800	18,000~24,000	0.06	0.12	1,500	18,000~24,000	0.035	0.07	1,300	12,600~16,800	0.1	0.25	1,800	18,000~24,000
	16	10	0.05	0.1	650	12,000~18,000	0.035	0.07	550	12,000~18,000	0.02	0.04	450	8,400~12,600	0.08	0.15	650	12,000~18,000
	20	12.5	0.03	0.05	450	12,000~18,000	0.02	0.04	380	12,000~18,000	0.01	0.025	310	8,400~12,600	0.05	0.08	450	12,000~18,000

加工材料 Work Material			碳素钢・调质钢 Carbon Steels・Prehardened Steels S50C・NAK・HPM-1 (~44HRC)				淬火钢 Hardened Steels SKD・STAVAX・HPM-38 (46~55HRC)				淬火钢 Hardened Steels SKD11 (56~62HRC)				铜合金 Copper			
(R)刃料粒 Radius	有效长 Effective Length	刃径与有效长的比例 L/D	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	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}	ap mm	ae mm	mm/min	min^{-1}
0.9	8	4.4	0.15	0.3	2,500	16,000~20,000	0.12	0.2	2,100	16,000~20,000	0.07	0.12	1,750	11,200~14,000	0.2	0.45	2,500	16,000~20,000
	12	6.7	0.1	0.2	1,800	12,000~16,000	0.07	0.15	1,500	12,000~16,000	0.04	0.09	1,300	8,400~11,200	0.15	0.3	1,800	12,000~16,000
	16	8.9	0.08	0.13	1,600	10,000~14,000	0.06	0.1	1,400	10,000~14,000	0.035	0.06	1,100	7,000~9,800	0.12	0.2	1,600	10,000~14,000
	20	11.1	0.05	0.1	1,000	8,000~12,000	0.04	0.08	850	8,000~12,000	0.025	0.05	700	5,600~8,400	0.08	0.15	1,000	8,000~12,000
1	3	1.5	0.3	0.5	4,000	20,000~30,000	0.2	0.5	3,400	20,000~30,000	0.12	0.3	2,800	14,000~21,000	0.45	0.7	4,000	20,000~30,000
	4	2	0.3	0.5	4,000	20,000~30,000	0.2	0.45	3,400	20,000~30,000	0.12	0.27	2,800	14,000~21,000	0.45	0.7	4,000	20,000~30,000
	6	3	0.25	0.5	3,000	20,000~30,000	0.2	0.4	2,500	20,000~30,000	0.12	0.24	2,100	14,000~21,000	0.38	0.7	3,000	20,000~30,000
	8	4	0.2	0.3	2,500	16,000~20,000	0.15	0.3	2,100	16,000~20,000	0.09	0.18	1,700	11,200~14,000	0.3	0.45	2,500	16,000~20,000
	10	5	0.15	0.3	2,500	16,000~20,000	0.1	0.2	2,100	16,000~20,000	0.06	0.12	1,700	11,200~14,000	0.23	0.45	2,500	16,000~20,000
	12	6	0.13	0.2	1,800	12,000~16,000	0.1	0.15	1,500	12,000~16,000	0.06	0.09	1,300	8,400~11,200	0.2	0.3	1,800	12,000~16,000
	13	6.5	0.12	0.2	1,800	12,000~16,000	0.08	0.13	1,500	12,000~16,000	0.05	0.08	1,300	8,400~11,200	0.2	0.3	1,800	12,000~16,000
	14	7	0.1	0.2	1,800	12,000~16,000	0.07	0.13	1,500	12,000~16,000	0.04	0.08	1,300	8,400~11,200	0.15	0.3	1,800	12,000~16,000
	16	8	0.1	0.15	1,600	10,000~14,000	0.06	0.11	1,400	10,000~14,000	0.035	0.065	1,100	7,000~9,800	0.15	0.25	1,600	10,000~14,000
	18	9	0.07	0.12	1,600	10,000~14,000	0.05	0.1	1,400	10,000~14,000	0.03	0.06	1,100	7,000~9,800	0.1	0.2	1,600	10,000~14,000
	20	10	0.06	0.1	1,000	8,000~12,000	0.05	0.07	850	8,000~12,000	0.03	0.04	700	5,600~8,400	0.1	0.15	1,000	8,000~12,000
	22	11	0.05	0.1	1,000	8,000~12,000	0.04	0.06	850	8,000~12,000	0.025	0.035	700	5,600~8,400	0.08	0.15	1,000	8,000~12,000
	25	12.5	0.03	0.05	800	8,000~12,000	0.03	0.04	680	8,000~12,000	0.02	0.025	560	5,600~8,400	0.05	0.08	800	8,000~12,000
	30	15	0.02	0.04	420	6,000~10,000	0.02	0.04	360	6,000~10,000	0.01	0.025	300	4,200~7,000	0.03	0.06	420	6,000~10,000
	35	17.5	0.02	0.03	140	6,000~10,000	0.015	0.02	120	6,000~10,000	0.01	0.01	100	4,200~7,000	0.03	0.04	140	6,000~10,000
	40	20	0.007	0.01	100	6,000~10,000	0.004	0.007	80	6,000~10,000	0.002	0.004	70	4,200~7,000	0.01	0.015	100	6,000~10,000
1.25	6	2.4	0.35	0.5	4,000	16,000~20,000	0.3	0.4	3,400	16,000~20,000	0.18	0.24	2,800	11,200~14,000	0.5	0.8	4,000	16,000~20,000
	10	4	0.2	0.5	3,000	16,000~20,000	0.25	0.35	2,500	16,000~20,000	0.15	0.21	2,100	11,200~14,000	0.3	0.8	3,000	16,000~20,000
	15	6	0.15	0.3	2,500	16,000~20,000	0.1	0.2	2,100	16,000~20,000	0.06	0.12	1,700	11,200~14,000	0.25	0.45	2,500	16,000~20,000
	20	8	0.1	0.2	1,800	12,000~16,000	0.08	0.15	1,500	12,000~16,000	0.05	0.09	1,300	8,400~11,200	0.15	0.3	1,800	12,000~16,000
	25	10	0.075	0.14	1,100	10,000~14,000	0.05	0.1	930	10,000~14,000	0.03	0.06	770	7,000~9,800	0.1	0.2	1,100	10,000~14,000
	30	12	0.04	0.08	800	8,000~12,000	0.02	0.06	680	8,000~12,000	0.012	0.035	560	5,600~8,400	0.06	0.15	800	8,000~12,000
	35	14	0.03	0.07	450	6,000~10,000	0.01	0.03	380	6,000~10,000	0.006	0.018	310	4,200~7,000	0.05	0.1	450	6,000~10,000
1.5	6	2	0.35	0.6	4,000	16,000~20,000	0.25	0.5	3,400	16,000~20,000	0.15	0.3	2,800	11,200~14,000	0.5	1	4,000	16,000~20,000
	8	2.7	0.3	0.5	4,000	16,000~20,000	0.2	0.5	3,400	16,000~20,000	0.12	0.3	2,800	11,200~14,000	0.45	0.8	4,000	16,000~20,000
	10	3.3	0.3	0.5	4,000	16,000~20,000	0.2	0.45	3,400	16,000~20,000	0.12	0.27	2,800	11,200~14,000	0.45	0.8	4,000	16,000~20,000
	12	4	0.2	0.4	3,000	16,000~20,000	0.2	0.4	2,500	16,000~20,000	0.12	0.24	2,100	11,200~14,000	0.3	0.6	3,000	16,000~20,000
	14	4.7	0.2	0.4	3,000	16,000~20,000	0.15	0.35	2,500	16,000~20,000	0.09	0.21	2,100	11,200~14,000	0.3	0.6	3,000	16,000~20,000
	15	5	0.15	0.4	3,000	16,000~20,000	0.13	0.35	2,500	16,000~20,000	0.08	0.21	2,100	11,200~14,000	0.23	0.6	3,000	16,000~20,000
	16	5.3	0.15	0.35	3,000	16,000~20,000	0.13	0.35	2,500	16,000~20,000	0.07	0.21	2,100	11,200~14,000	0.23	0.5	3,000	16,000~20,000
	20	6.7	0.15	0.3	1,800	12,000~16,000	0.1	0.2	1,500	12,000~16,000	0.06	0.12	1,300	8,400~11,200	0.23	0.45	1,800	12,000~16,000
	25	8.3	0.13	0.27	1,200	12,000~16,000	0.1	0.16	1,000	12,000~16,000	0.06	0.09	840	8,400~11,200	0.2	0.4	1,200	12,000~16,000
	30	10	0.1	0.2	800	8,000~12,000	0.07	0.12	680	8,000~12,000	0.04	0.07	560	5,600~8,400	0.15	0.3	800	8,000~12,000
	35	11.7	0.07	0.15	600	8,000~12,000	0.05	0.1	510	8,000~12,000	0.03	0.06	420	5,600~8,400	0.1	0.2	600	8,000~12,000
	40	13.3	0.05	0.1	460	6,000~10,000	0.05	0.07	390	6,000~10,000	0.03	0.04	320	4,200~7,000	0.08	0.15	460	6,000~10,000
1.75	10	2.9	0.35	0.6	4,000	16,000~20,000	0.25	0.5	3,400	16,000~20,000	0.15	0.3	2,800	11,200~14,000	0.5	1	4,000	16,000~20,000
	15	4.3	0.3	0.4	4,000	16,000~20,000	0.2	0.45	3,400	16,000~20,000	0.12	0.27	2,800	11,200~14,000	0.45	0.6	4,000	16,000~20,000
	20	5.7	0.2	0.3	2,400	14,000~18,000	0.13	0.35	2,000	14,000~18,000	0.08	0.21	1,680	9,800~12,600	0.3	0.45	2,400	14,000~18,000
	25	7.1	0.17	0.3	2,000	14,000~18,000	0.1	0.3	1,800	14,000~18,000	0.08	0.15	1,400	8,400~9,800	0.25	0.42	2,000	14,000~18,000
	30	8.6	0.15	0.27	1,600	8,000~12,000	0.1	0.2	1,400	8,000~12,000	0.06	0.12	1,120	5,600~8,400	0.23	0.4	1,600	8,000~12,000
	35	10	0.1	0.2	1,200	8,000~12,000	0.07	0.15	1,000	8,000~12,000	0.05	0.08	800	5,600~8,400	0.15	0.3	1,200	8,000~12,000
	40	11.4	0.07	0.13	800	6,000~10,000	0.05	0.1	680	6,000~10,000	0.03	0.06	560	4,200~7,000	0.1	0.2	800	6,000~10,000
	45	12.9	0.05	0.1	800	6,000~10,000	0.05	0.05	680	6,000~10,000	0.03	0.03	560	4,200~7,000	0.08	0.15	800	6,000~10,000

MRB230

切削参数参考表 Recommended Milling Conditions

加工材料 Work Material			碳素钢·调质钢 Carbon Steels·Prehardened Steels S50C·NAK·HPM-1 (~44HRC)				淬火钢 Hardened Steels SKD·STAVAX·HPM-38 (46~55HRC)				淬火钢 Hardened Steels SKD11 (56~62HRC)				铜合金 Copper			
(R)圆角半径 Radius	有效长 Effective Length	刃径与有效长的比例 L/D	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	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}	ap mm	ae mm	mm/min	min^{-1}
2	10	2.5	0.35	0.8	4,000	16,000~20,000	0.25	0.7	3,400	16,000~20,000	0.15	0.42	2,800	11,200~14,000	0.55	1.2	4,000	16,000~20,000
	12	3	0.35	0.7	4,000	16,000~20,000	0.25	0.7	3,400	16,000~20,000	0.15	0.42	2,800	11,200~14,000	0.53	1	4,000	16,000~20,000
	14	3.5	0.3	0.6	4,000	16,000~20,000	0.2	0.5	3,400	16,000~20,000	0.12	0.3	2,800	11,200~14,000	0.45	1	4,000	16,000~20,000
	15	3.8	0.25	0.55	3,500	16,000~20,000	0.2	0.4	3,000	16,000~20,000	0.12	0.24	2,500	11,200~14,000	0.38	0.8	3,500	16,000~20,000
	16	4	0.2	0.5	3,500	16,000~20,000	0.2	0.3	3,000	16,000~20,000	0.12	0.18	2,500	11,200~14,000	0.3	0.8	3,500	16,000~20,000
	20	5	0.2	0.35	3,300	16,000~20,000	0.15	0.3	2,800	16,000~20,000	0.09	0.18	2,300	11,200~14,000	0.3	0.5	3,300	16,000~20,000
	25	6.3	0.15	0.3	2,600	12,000~16,000	0.12	0.25	2,200	12,000~16,000	0.07	0.15	1,800	8,400~11,200	0.23	0.45	2,600	12,000~16,000
	30	7.5	0.12	0.25	2,600	12,000~16,000	0.1	0.2	2,200	12,000~16,000	0.06	0.12	1,800	8,400~11,200	0.2	0.4	2,600	12,000~16,000
	35	8.8	0.12	0.2	1,800	10,000~14,000	0.07	0.15	1,500	10,000~14,000	0.04	0.09	1,300	7,000~9,800	0.18	0.3	1,800	10,000~14,000
	40	10	0.1	0.15	1,200	10,000~14,000	0.07	0.12	1,000	10,000~14,000	0.04	0.07	840	7,000~9,800	0.15	0.2	1,200	10,000~14,000
	45	11.3	0.07	0.12	800	10,000~14,000	0.05	0.1	700	10,000~14,000	0.03	0.05	600	4,200~7,000	0.1	0.17	800	10,000~14,000
	50	12.5	0.07	0.1	600	6,000~10,000	0.05	0.07	500	6,000~10,000	0.03	0.04	420	4,200~7,000	0.1	0.15	600	6,000~10,000
2.5	10	2	0.4	1.2	4,000	16,000~20,000	0.3	1	3,400	16,000~20,000	0.18	0.6	2,800	11,200~14,000	0.6	1.8	4,000	16,000~20,000
	15	3	0.35	1	4,000	16,000~20,000	0.3	0.9	3,400	16,000~20,000	0.18	0.54	2,800	11,200~14,000	0.55	1.5	4,000	16,000~20,000
	20	4	0.3	0.7	4,000	16,000~20,000	0.25	0.7	3,400	16,000~20,000	0.15	0.42	2,800	11,200~14,000	0.45	1	4,000	16,000~20,000
	25	5	0.25	0.6	3,000	14,000~16,000	0.2	0.5	2,500	14,000~16,000	0.12	0.3	2,100	9,800~11,200	0.38	0.9	3,000	14,000~16,000
	30	6	0.2	0.5	2,400	14,000~16,000	0.15	0.4	2,000	14,000~16,000	0.09	0.24	1,700	9,800~11,200	0.3	0.8	2,400	14,000~16,000
	35	7	0.15	0.4	1,600	10,000~14,000	0.15	0.3	1,400	10,000~14,000	0.09	0.18	1,100	7,000~9,800	0.23	0.6	1,600	10,000~14,000
	40	8	0.15	0.3	1,200	8,000~12,000	0.12	0.2	1,000	8,000~12,000	0.07	0.12	840	5,600~8,400	0.23	0.45	1,200	8,000~12,000
	45	9	0.12	0.2	1,000	8,000~12,000	0.1	0.15	850	8,000~12,000	0.06	0.09	700	5,600~8,400	0.18	0.3	1,000	8,000~12,000
	50	10	0.1	0.15	680	6,000~10,000	0.07	0.1	570	6,000~10,000	0.04	0.06	470	4,200~7,000	0.15	0.25	680	6,000~10,000
3	10	1.7	0.5	1.5	4,000	14,000~18,000	0.35	1.2	3,400	14,000~18,000	0.21	0.72	2,800	9,800~12,600	0.75	2.3	4,000	14,000~18,000
	15	2.5	0.5	1.3	4,000	14,000~18,000	0.35	1.2	3,400	14,000~18,000	0.21	0.68	2,800	9,800~12,600	0.75	2	4,000	14,000~18,000
	20	3.3	0.5	1.2	4,000	14,000~18,000	0.35	1.1	3,400	14,000~18,000	0.21	0.66	2,800	9,800~12,600	0.75	1.8	4,000	14,000~18,000
	25	4.2	0.4	1	4,000	14,000~18,000	0.3	0.8	3,400	14,000~18,000	0.18	0.48	2,800	9,800~12,600	0.6	1.5	4,000	14,000~18,000
	30	5	0.35	0.7	3,000	8,000~12,000	0.25	0.6	2,500	8,000~12,000	0.15	0.36	2,100	5,600~8,400	0.53	1	3,000	8,000~12,000
	35	5.8	0.35	0.5	2,500	8,000~12,000	0.2	0.5	2,100	8,000~12,000	0.12	0.3	1,700	5,600~8,400	0.53	0.8	2,500	8,000~12,000
	40	6.7	0.25	0.4	2,300	8,000~12,000	0.2	0.4	1,900	8,000~12,000	0.12	0.24	1,600	5,600~8,400	0.38	0.6	2,300	8,000~12,000
	45	7.5	0.25	0.4	1,500	6,000~8,000	0.2	0.35	1,200	6,000~8,000	0.12	0.21	1,000	4,200~5,600	0.38	0.6	1,500	6,000~8,000
	50	8.3	0.2	0.4	1,500	6,000~8,000	0.2	0.3	1,200	6,000~8,000	0.12	0.18	1,000	4,200~5,600	0.3	0.6	1,500	6,000~8,000

备 注 Notes

※本切削参数仅供参考。请根据实际的加工形状及使用机床等调整切削参数。
※切深量的ap表示轴向切入量，ae表示步距。
※发生振刀时，请以相同的比率降低主轴转速和进给速度。此外，主轴转速过低时，也以相同的比率调整。
※L（有效长）/D（刃径）超过15倍时，受加工形状等因素的影响可能会较大，必须进行调整。
※加工淬火钢时，建议使用油雾冷却方式。
※Recommend to use the milling condition as just reference. Adjust milling conditions according to machining shape and machine status.
※Depth of Cut : ap=Axial Depth of Cut / ae=Radial Depth of Cut.
※Reduce both spindle speed and feed at same rate for chattering and also for insufficient spindle speed of a machine.
※In case L/D exceeds 15, find an adequate condition considering machining profile.
※Oil mist coolant is recommended for the machining of hardened steels.