MACHINING CONDITIONS

RCMT 0803 M0 LT 1000

T0001915

Material Group		SAPPHIRE CUTTING TOOLS Group	Material Example	Hardness	D.O.C		Feed		Amax	Vc		Advised D.O.C	Advised Feed	Advised Vc
					min[mm]	max[mm]	min[mm/t]	max [mm/t]	[mm^2]	min [m/min]	max [m/min]	[mm]	[mm/t]	[m/min]
Steel	Non Alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	2.4	0.15	0.4	0.77	180	330	1.2	0.35	240
				190 HB	0.5	2.4	0.15	0.4	0.77	180	280	1.2	0.35	220
				250 HB	0.5	1.8	0.15	0.35	0.67	180	250	1.2	0.3	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	2.4	0.15	0.35	0.58	120	250	1.2	0.3	180
				280 HB	0.5	2.4	0.15	0.35	0.48	120	210	1.2	0.3	150
				180 HB	0.5	2.4	0.15	0.35	0.67	120	280	1.2	0.3	200
				350 HB	0.5	1.8	0.15	0.35	0.43	120	180	1.2	0.3	130
	High Alloyed	3	X40CrM0V5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.4	0.13	0.35	0.58	70	190	1.2	0.3	140
				280 HB	0.5	2.4	0.13	0.3	0.48	70	150	1.2	0.28	120
				320 HB	0.5	1.8	0.13	0.3	0.38	70	130	1.2	0.28	100
				350 HB	0.5	1.8	0.13	0.3	0.31	70	110	1.2	0.24	90
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	2.4	0.14	0.35	0.38	170	270	1.2	0.3	220
				240 HB	0.5	2.4	0.14	0.32	0.38	160	220	1.2	0.29	190
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	1.8	0.13	0.3	0.36	80	150	1.2	0.28	100
				310 HB	0.5	1.8	0.13	0.3	0.36	70	140	1.2	0.28	90
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	2.4	0.15	0.35	0.38	170	250	1.2	0.25	210
				42 HRc	0.5	2.4	0.15	0.3	0.36	120	190	1.2	0.22	140
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	2.4	0.11	0.45	0.84	170	250	1.2	0.35	200
				200 HB	0.5	2.4	0.11	0.45	0.78	160	230	1.2	0.35	180
				250 HB	0.5	2.4	0.11	0.45	0.72	150	210	1.2	0.35	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	2.4	0.11	0.35	0.72	120	250	1.2	0.3	180
				200 HB	0.5	2.4	0.11	0.35	0.6	120	230	1.2	0.3	160
				250 HB	0.5	2.4	0.11	0.35	0.54	120	190	1.2	0.3	140
NiTi Alloy	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.5	1.8	0.13	0.3	0.36	30	50	1.2	0.28	35
			Inconel 700	250 HB	0.5	1.8	0.13	0.3	0.36	30	50	1.2	0.28	30
			Stellite 21	350 HB	0.5	1.8	0.13	0.3	0.36	30	50	1.2	0.28	30
	Ti Based	10	T40	-	0.5	1.8	0.13	0.3	0.36	40	60	1.2	0.28	45
			TiAl6V4	-	0.5	1.8	0.13	0.32	0.38	50	70	1.2	0.3	55
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.3	1	0.05	0.14	0.12	30	50	0.7	0.12	40
			Ni-Hard 2	400 HB	0.5	1.4	0.05	0.22	0.2	40	60	1.1	0.18	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.4	0.05	0.22	0.24	50	100	1.1	0.18	80
				50 HRc	0.5	1.2	0.05	0.18	0.2	40	90	0.8	0.16	70
				55 HRc	0.3	1	0.05	0.14	0.14	40	80	0.7	0.12	60
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.5	2.4	0.15	0.4	0.84	200	400	1.2	0.35	280