MACHINING CONDITIONS

RCMT 0602 M0 LT 10

FT000090

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	0.15	0.4	0.64	180	330	1	0.35	240
				190 HB	0.5	2	0.15	0.4	0.64	180	280	1	0.35	220
				250 HB	0.5	1.5	0.15	0.35	0.56	180	250	1	0.3	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	2	0.15	0.35	0.48	120	250	1	0.3	180
				280 HB	0.5	2	0.15	0.35	0.4	120	210	1	0.3	150
				180 HB	0.5	2	0.15	0.35	0.56	120	280	1	0.3	200
				350 HB	0.5	1.5	0.15	0.35	0.36	120	180	1	0.3	130
	High Alloyed	3	X40CrM0V5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2	0.13	0.35	0.48	70	190	1	0.3	140
				280 HB	0.5	2	0.13	0.3	0.4	70	150	1	0.28	120
				320 HB	0.5	1.5	0.13	0.3	0.32	70	130	1	0.28	100
				350 HB	0.5	1.5	0.13	0.3	0.26	70	110	1	0.24	90
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	2	0.14	0.35	0.32	170	270	1	0.3	220
				240 HB	0.5	2	0.14	0.32	0.32	160	220	1	0.29	190
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	1.5	0.13	0.3	0.3	80	150	1	0.28	100
				310 HB	0.5	1.5	0.13	0.3	0.3	70	140	1	0.28	90
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	2	0.15	0.35	0.32	170	250	1	0.25	210
				42 HRc	0.5	2	0.15	0.3	0.3	120	190	1	0.22	140
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	2	0.11	0.45	0.7	170	250	1	0.35	200
				200 HB	0.5	2	0.11	0.45	0.65	160	230	1	0.35	180
				250 HB	0.5	2	0.11	0.45	0.6	150	210	1	0.35	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	2	0.11	0.35	0.6	120	250	1	0.3	180
				200 HB	0.5	2	0.11	0.35	0.5	120	230	1	0.3	160
				250 HB	0.5	2	0.11	0.35	0.45	120	190	1	0.3	140
NiTi Alov	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.5	1.5	0.13	0.3	0.3	30	50	1	0.28	35
			Inconel 700	250 HB	0.5	1.5	0.13	0.3	0.3	30	50	1	0.28	30
			Stellite 21	350 HB	0.5	1.5	0.13	0.3	0.3	30	50	1	0.28	30
	Ti Based	10	T40	-	0.5	1.5	0.13	0.3	0.3	40	60	1	0.28	45
			TiAl6V4	-	0.5	1.5	0.13	0.32	0.32	50	70	1	0.3	55
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.3	0.8	0.05	0.14	0.1	30	50	0.6	0.12	40
			Ni-Hard 2	400 HB	0.5	1.2	0.05	0.22	0.17	40	60	0.9	0.18	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.2	0.05	0.22	0.2	50	100	0.9	0.18	80
				50 HRc	0.5	1	0.05	0.18	0.17	40	90	0.7	0.16	70
				55 HRc	0.3	0.8	0.05	0.14	0.12	40	80	0.6	0.12	60
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.5	2	0.15	0.4	0.7	200	400	1	0.35	280