MACHINING CONDITIONS

ODMT 0504 ZZTR LT 3000

FM003399

Material Group		SAPPHIRE TOOLS	Material Example	Hardness	D.O.C		Feed		Vc		Advised D.O.C	Advised Feed	Advised Vc
					min[mm]	max[mm]	min[mm/t]	max[mm/t]	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	3.5	0.22	0.51	190	330	2.4	0.37	250
				190 HB	0.5	3.5	0.22	0.51	190	300	2.4	0.37	220
				250 HB	0.5	3.5	0.22	0.51	190	250	2.4	0.37	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	3.5	0.18	0.4	150	210	2.4	0.32	180
				280 HB	0.5	3.5	0.18	0.35	130	190	2.4	0.29	150
				180 HB	0.5	3.5	0.18	0.4	150	240	2.4	0.32	200
				350 HB	0.5	3.5	0.18	0.35	130	170	2.4	0.29	140
	High Alloyed	3	X40CrM0V5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.5	0.14	0.35	90	150	1.8	0.29	130
				280 HB	0.5	2.5	0.14	0.35	90	130	1.8	0.29	120
				320 HB	0.5	2.5	0.14	0.29	60	110	1.8	0.26	100
				350 HB	0.5	2.5	0.14	0.29	60	90	1.8	0.26	80
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	3.5	0.18	0.35	190	250	2.4	0.29	220
				240 HB	0.5	3.5	0.14	0.32	160	210	2.4	0.29	190
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	2.5	0.14	0.29	70	130	1.8	0.26	100
				310 HB	0.5	2.5	0.14	0.29	70	120	1.8	0.26	90
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	3.5	0.18	0.35	150	210	2.4	0.29	190
				42 HRc	0.5	2.5	0.18	0.32	90	150	1.8	0.26	130
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	3.5	0.22	0.51	150	240	2.4	0.37	200
				200 HB	0.5	3.5	0.22	0.51	150	220	2.4	0.37	180
				250 HB	0.5	3.5	0.22	0.51	150	190	2.4	0.37	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	3.5	0.18	0.45	100	200	2.4	0.32	180
				200 HB	0.5	3.5	0.18	0.45	100	180	2.4	0.32	150
				250 HB	0.5	3.5	0.18	0.45	100	150	2.4	0.32	130
NiTi Alloy	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.5	2.5	0.14	0.29	30	50	1.8	0.26	32
			Inconel 700	250 HB	0.5	2.5	0.14	0.29	30	50	1.8	0.26	30
			Stellite 21	350 HB	0.5	2.5	0.14	0.29	30	50	1.8	0.26	30
	Ti Based	10	T40	-	0.5	2.5	0.14	0.29	30	60	1.8	0.26	40
			TiAl6V4	-	0.5	2.5	0.14	0.32	40	70	1.8	0.29	55
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.4	0.8	0.12	0.22	30	60	0.6	0.19	40
			Ni-Hard 2	400 HB	0.4	1	0.12	0.29	40	80	0.9	0.22	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.4	1.3	0.12	0.29	40	80	1.2	0.22	60
				50 HRc	0.4	1	0.12	0.26	40	70	0.9	0.21	55
				55 HRc	0.4	0.8	0.12	0.22	40	60	0.6	0.19	50
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.5	3.5	0.22	0.51	200	400	2.4	0.4	280