



# MACHINING CONDITIONS

ODMT 060508 TN LT 3000

M0002219

Material Group	SAPPHIRE TOOLS	Material Example	Hardness	D.O.C		Feed		Vc		Advised D.O.C [mm]	Advised Feed [mm/t]	Advised Vc [m/min]	
				min[mm]	max[mm]	min[mm/t]	max [mm/t]	min [m/min]	max [m/min]				
Steel	Non Alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	4	0.22	0.54	190	330	2.5	0.39	250
				190 HB	0.5	4	0.22	0.54	190	300	2.5	0.39	220
				250 HB	0.5	4	0.22	0.54	190	250	2.5	0.39	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	4	0.18	0.43	150	210	2.5	0.34	180
				280 HB	0.5	4	0.18	0.37	130	190	2.5	0.31	150
				180 HB	0.5	4	0.18	0.43	150	240	2.5	0.34	200
				350 HB	0.5	4	0.18	0.37	130	170	2.5	0.31	140
	High Alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.8	0.14	0.37	90	150	1.9	0.31	130
				280 HB	0.5	2.8	0.14	0.37	90	130	1.9	0.31	120
				320 HB	0.5	2.8	0.14	0.31	60	110	1.9	0.27	100
				350 HB	0.5	2.8	0.14	0.31	60	90	1.9	0.27	80
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	4	0.18	0.37	190	250	2.5	0.31	220
				240 HB	0.5	4	0.14	0.34	160	210	2.5	0.31	190
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	2.8	0.14	0.31	70	130	1.9	0.27	100
Cast Iron	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	310 HB	0.5	2.8	0.14	0.31	70	120	1.9	0.27	90
				200 HB	0.5	4	0.18	0.37	150	210	2.5	0.31	190
	Grey	7	GG20, GG40, EN-GJL-250, N030B	42 HRc	0.5	2.8	0.18	0.34	90	150	1.9	0.27	130
				150 HB	0.5	4	0.22	0.54	150	240	2.5	0.39	200
NTi Alloy	Fe, Ni & Co Based	8	GGG40, GGG70, 50005	200 HB	0.5	4	0.22	0.54	150	220	2.5	0.39	180
				250 HB	0.5	4	0.22	0.54	150	190	2.5	0.39	160
				150 HB	0.5	4	0.18	0.48	100	200	2.5	0.34	180
	Ti Based	10	T40	-	0.5	2.8	0.14	0.31	30	60	1.9	0.27	40
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	TiAl6V4	-	0.5	2.8	0.14	0.34	40	70	1.9	0.31	55
			G-X300CrMo15	55 HRc	0.4	0.9	0.12	0.24	30	60	0.6	0.2	40
			Ni-Hard 2	400 HB	0.4	1.1	0.12	0.31	40	80	0.9	0.24	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.4	1.4	0.12	0.31	40	80	1.3	0.24	60
				50 HRc	0.4	1.1	0.12	0.27	40	70	0.9	0.22	55
Aluminium	AI (>8%Si)	12	AISI12	130 HB	0.5	4	0.22	0.54	200	400	2.5	0.43	280