



MACHINING CONDITIONS

OFER 070405 TN LT 3000

M0003401

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	4.5	0.22	0.51	190	330	3	0.37	250
			190 HB	0.5	4.5	0.22	0.51	190	300	3	0.37	220
			250 HB	0.5	4.5	0.22	0.51	190	250	3	0.37	200
	Low Alloyed	2 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	4.5	0.18	0.4	150	210	3	0.32	180
			280 HB	0.5	4.5	0.18	0.35	130	190	3	0.29	150
			180 HB	0.5	4.5	0.18	0.4	150	240	3	0.32	200
			350 HB	0.5	4.5	0.18	0.35	130	170	3	0.29	140
	High Alloyed	3 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	3.2	0.14	0.35	90	150	2.2	0.29	130
			280 HB	0.5	3.2	0.14	0.35	90	130	2.2	0.29	120
			320 HB	0.5	3.2	0.14	0.29	60	110	2.2	0.26	100
			350 HB	0.5	3.2	0.14	0.29	60	90	2.2	0.26	80
	Stainless Steel	Austentic	4 304, 316, X5CrNi18-9	180 HB	0.5	4.5	0.18	0.35	190	250	3	0.29
240 HB				0.5	4.5	0.14	0.32	160	210	3	0.29	190
Duplex		5 X2CrNiN23-4, S31500	290 HB	0.5	3.2	0.14	0.29	70	130	2.2	0.26	100
			310 HB	0.5	3.2	0.14	0.29	70	120	2.2	0.26	90
Ferritic & Martensitic		6 410, X6Cr17, 17-4 PH, 430	200 HB	0.5	4.5	0.18	0.35	150	210	3	0.29	190
			42 HRc	0.5	3.2	0.18	0.32	90	150	2.2	0.26	130
Cast Iron	Grey	7 GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	4.5	0.22	0.51	150	240	3	0.37	200
			200 HB	0.5	4.5	0.22	0.51	150	220	3	0.37	180
			250 HB	0.5	4.5	0.22	0.51	150	190	3	0.37	160
	Malleable & Nodular	8 GGG40, GGG70, 50005	150 HB	0.5	4.5	0.18	0.45	100	200	3	0.32	180
			200 HB	0.5	4.5	0.18	0.45	100	180	3	0.32	150
			250 HB	0.5	4.5	0.18	0.45	100	150	3	0.32	130
NITI Alloy	Fe, Ni & Co Based	9 Incoloy 800 Inconel 700 Stellite 21	240 HB	0.5	3.2	0.14	0.29	30	50	2.2	0.26	32
			250 HB	0.5	3.2	0.14	0.29	30	50	2.2	0.26	30
			350 HB	0.5	3.2	0.14	0.29	30	50	2.2	0.26	30
	Ti Based	10 T40 TiAl6V4	-	0.5	3.2	0.14	0.29	30	60	2.2	0.26	40
			-	0.5	3.2	0.14	0.32	40	70	2.2	0.29	55
	Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11 G-X300CrMo15 Ni-Hard 2	55 HRc	0.4	1	0.12	0.22	30	60	0.7	0.19
400 HB				0.4	1.3	0.12	0.29	40	80	1.1	0.22	50
X100CrMo13, 440C, G-X260NiCr42			45 HRc	0.4	1.6	0.12	0.29	40	80	1.5	0.22	60
			50 HRc	0.4	1.3	0.12	0.26	40	70	1.1	0.21	55
			55 HRc	0.4	1	0.12	0.22	40	60	0.7	0.19	50
Aluminium	Al (>8%Si)	12 AlSi12	130 HB	0.5	4.5	0.22	0.51	200	400	3	0.4	280