



# MACHINING CONDITIONS

SPMG 060204 NN LT 30

M3002913

Material Group	SAPPHIRE CUTTING TOOLS Group	Material Example	Hardness	Feed		Vc		Advised Feed [mm/t]	Advised Vc [m/min]	
				min[mm/t]	max [mm/t]	min [m/min]	max [m/min]			
Steel	Non Alloyed	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.04	0.09	180	270	0.07	225	
			190 HB	0.04	0.09	180	230	0.07	205	
			250 HB	0.04	0.09	180	200	0.07	190	
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.04	0.09	120	190	0.07	155
				280 HB	0.04	0.09	100	170	0.06	135
				180 HB	0.04	0.09	120	230	0.07	175
				350 HB	0.04	0.09	100	150	0.06	125
	High Alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.05	0.09	70	170	0.07	120
				280 HB	0.05	0.09	70	150	0.07	110
				320 HB	0.05	0.08	60	130	0.07	95
				350 HB	0.05	0.08	60	100	0.07	80
	Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.04	0.09	170	230	0.06
240 HB					0.05	0.09	120	210	0.07	165
Duplex		5	X2CrNiN23-4, S31500	290 HB	0.05	0.08	70	120	0.07	95
				310 HB	0.05	0.08	70	120	0.07	95
Ferritic & Martensitic		6	410, X6Cr17, 17-4 PH, 430	200 HB	0.05	0.08	100	150	0.07	125
				42 HRc	0.04	0.07	60	100	0.05	80
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.07	0.1	150	230	0.09	190
				200 HB	0.07	0.1	150	210	0.09	180
				250 HB	0.07	0.1	150	170	0.09	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.07	0.1	120	200	0.09	160
				200 HB	0.07	0.1	120	170	0.09	145
				250 HB	0.07	0.1	120	150	0.09	135
NITI Alloy	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.04	0.07	30	40	0.05	30
			Inconel 700	250 HB	0.04	0.07	30	40	0.05	30
			Stellite 21	350 HB	0.04	0.07	20	40	0.05	29
	Ti Based	10	T40	-	0.04	0.07	30	40	0.05	34
TiAl6V4			-	0.04	0.07	40	60	0.05	45	
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.04	0.07	30	50	0.05	40
			Ni-Hard 2	400 HB	0.04	0.07	40	60	0.05	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.04	0.07	50	90	0.05	70
				50 HRc	0.04	0.07	40	70	0.05	55
				55 HRc	0.04	0.07	30	60	0.05	45
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.04	0.09	200	400	0.07	300