

MACHINING CONDITIONS



SAPPHIRE CUTTING TOOLS

WCMX 06T308 NN – LT 30

Material Group	Gr. N°	VDI Group	Material Examples	Hardness	Feed [mm/rev]		V _c [m/min]		Suggested Starting Parameters	
					min	max	min	max	Feed	V _c
P Non Alloyed Low Alloyed High Alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.06	0.12	180	270	0.09	225
		2		190 HB				230		205
		3		250 HB				200		190
	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr06	180 HB	0.06	0.12	120	230	0.09	175
		4,6		230 HB				190		155
		5,7		280 HB				170		135
		8		350 HB				150		125
	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.08	0.12	70	170	0.10	120
				280 HB				150		110
		11		320 HB	0.08	0.11	60	130	0.09	95
350 HB	100	80								
M Austenitic Duplex Ferritic & Martensitic	4	14	304, 316, X5CrNi18-9	180 HB	0.06	0.12	170	0.09	200	
				240 HB			120		165	
	5	14	X2CrNiN23-4, S31500	290 HB	0.08	0.11	70	120	0.09	95
				310 HB						
6	12	410, X6Cr17, 17-4PH, 430	200 HB	0.08	0.11	100	150	0.09	125	
			42 HRc						60	100
K Grey Malleable & Nodular	7	15	GG20, GG40, EN-GJL-250, N030B	150 HB	0.09	0.13	150	230	0.11	190
				200 HB				210		180
				250 HB				170		160
	8	17,19	GGG40, GGG70, 50005	150 HB	0.09	0.13	120	200	0.11	160
				200 HB				170		145
				250 HB				150		135
S Fe, Ni & Co based Ti based	9	31,32	Incoloy 800	240 HB	0.06	0.10	30	0.08	30	
				250 HB			30		40	30
				350 HB			20		29	
	10	37	Ti40	-	0.06	0.10	40	0.08	45	
				-			30		40	34
H Steel Chilled Cast Iron White Cast Iron	11	38	X100 CrMo13, 440C, G-X260NiCr42	45 HRc	0.06	0.10	50	0.08	70	
				50 HRc			40		70	55
				55 HRc			30		60	45
	40	Ni-Hard 2	400 HB	400 HB	0.06	0.10	40	0.08	50	
				55 HRc			30		50	40
41	G-X300CrMo15	55 HRc	0.06	0.10	30	50	0.08	40		
NF Aluminium	12	25	AISI12	130 HB	0.10	0.12	200	400	0.11	300