

# TNMG 160404 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [mm]		Feed [mm/rev]		Amax [mm <sup>2</sup> ]	V <sub>c</sub> [m/min]		Optimal cutting conditions			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.2	3.0	0.11	0.23	0.60	180	330	2.0	0.18	300	
		2		190 HB		2.5		0.22	0.52		280			260	
		3		250 HB		2.5		0.20	0.48		250			240	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.2	2.5	0.10	0.20	0.50	120	280	2.0	0.15	260	
		4,6		230 HB		2.5		0.20	0.48		250			240	
		5,7		280 HB		2.0		0.18	0.40		210			200	
		8		350 HB		2.0		0.18	0.36		180			180	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.2	2.5	0.09	0.18	0.40	70	190	2.0	0.12	180	
		10		280 HB		2.5		0.16	0.40		150			140	
		11		320 HB		2.0		0.14	0.32		130			120	
		11		350 HB		2.0		0.14	0.26		110			110	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.2	2.5	0.10	0.18	0.32	170	270	2.0	0.12	260	
		14		240 HB		2.5		0.18	0.26		160			210	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.2	2.0	0.09	0.14	0.20	80	150	2.0	0.12	140	
		14		310 HB		2.0		0.14	0.20		70			140	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.2	2.5	0.10	0.18	0.32	170	250	2.0	0.15	240	
		13		42 HRC		2.0		0.16	0.26		120			190	180
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.2	3.0	0.08	0.20	0.64	170	250	2.0	0.18	240	
		7		200 HB		3.0		0.20	0.60		160			230	220
		16		250 HB		3.0		0.20	0.60		150			210	200
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.2	2.5	0.08	0.18	0.48	120	250	2.0	0.15	240	
		17,19		200 HB		2.5		0.18	0.40		230			220	
18,20	250 HB	2.5	0.18	0.40	190	180									
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.2	2.0	0.09	0.15	0.26	25	50	2.0	0.12	40	
		33		250 HB		2.0		0.15	0.26		25			45	35
		34		350 HB		2.0		0.15	0.26		23			45	35
	Ti based	10	TiAl6V4, T40	-	0.2	2.0	0.09	0.16	0.32	45	65	2.0	0.15	60	
37		-		2.0		0.14		0.26	35		60			50	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.2	1.8	0.05	0.12	0.20	50	100	1.5	0.11	90	
		38		50 HRC		1.5		0.10	0.17		40			90	80
		38		55 HRC		1.4		0.09	0.13		40			80	70
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.2	1.6	0.05	0.12	0.17	40	60	1.2	0.11	50	
White Cast Iron	41	G-X300CrMo15	55 HRC	0.2	1.4	0.05	0.09	0.13	30	50	1.0	0.07	40		
NF	Al (>8%Si)	12	25	AISI12	130 HB	0.2	4.0	0.10	0.30	0.70	200	400	2.0	0.20	350