

## WNGM 080404 NN LT 10 &amp; 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	0.16	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	220	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							
		15		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	50	40		
		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	1.2	0.09	80
38			55 HRc		1.4										0.09	0.13	40	80	1.0	0.07	70
Chilled Cast Iron White Cast Iron		40	Ni-Hard 2, G-X300CrMo15	400 HB	0.2	1.6	0.05	0.12	0.17	40	60	1.2	0.11	50							
		41		55 HRc										1.4	0.09	0.13	30	50	1.0	0.07	40
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.2	4.0	0.10	0.30	0.70	200	400	2.0	0.20	350						