

# CNMM 120412 NR 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	0.5	7.0	0.21	0.60	3.60	180	330	5.0	0.46	240	
				190 HB		7.0		0.60	3.24		280		0.42	220	
				250 HB		7.0		0.54	2.70		250		0.40	200	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	7.0	0.21	0.54	2.88	120	280	5.0	0.38	200	
				230 HB		5.6	0.21	0.54	2.52		250		0.38	180	
				280 HB		5.6	0.18	0.48	2.16		210		0.36	150	
				350 HB		4.9	0.18	0.48	1.80		180		0.36	130	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	5.6	0.18	0.48	2.16	70	190	4.1	0.36	140	
				280 HB		5.6		0.48	2.16		150		0.36	120	
				320 HB		4.2		0.42	1.44		130		0.34	100	
				350 HB		4.2		0.18	0.42		1.44		110	0.34	90
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	7.0	0.20	0.48	2.16	170	250	5.0	0.32	190	
				240 HB		7.0		0.48	1.98	160	220		0.30	170	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	5.6	0.18	0.42	1.62	80	150	4.1	0.25	100	
				310 HB		5.6	0.18	0.42	1.62	70	140		90		
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	7.0	0.22	0.48	2.16	170	250	5.0	0.32	190	
				42 HRC		5.6		0.48	2.16	120	190	4.1	0.30	130	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	7.0	0.15	0.72	3.60	170	250	5.0	0.42	200	
				200 HB		7.0		0.72	3.24	160	230		180		
				250 HB		7.0		0.66	3.24	150	210		160		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	7.0	0.15	0.60	2.70	120	230	5.0	0.36	160	
				200 HB		7.0		0.60	2.34	190	140				
				250 HB		7.0		0.60	2.16	190	140				
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.5	4.2	0.20	0.42	1.40	25	50	3.3	0.34	32	
				250 HB		4.2		0.42	1.40	25	50		30		
				350 HB		4.2		0.42	1.30	23	45		28		
	Ti based	10	TiAl6V4, T40	-	0.5	4.9	0.20	0.48	1.60	45	65	3.3	0.38	55	
				-		4.2		0.42	1.30	35	60		45		
				-		4.2		0.42	1.30	35	60				
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.5	3.5	0.11	0.36	1.08	50	100	3.3	0.30	80	
				50 HRC		2.8		0.30	0.90	40	90		2.5	0.24	70
				55 HRC		2.2		0.24	0.54	40	80		1.7	0.22	60
	Chilled Cast Iron	40	2.8	0.11	0.30	0.90	40	60	2.5	0.22	50				
	White Cast Iron	41	2.2	0.11	0.24	0.54	30	50	1.7	0.18	40				
NF	Al (>8%Si)	12	AISI12	130 HB	0.5	8.4	0.20	0.72	3.60	200	400	5.0	0.48	280	