

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]		Suggested Starting Parameters			
					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	2.0	0.15	0.40	0.64	180	330	1.0	0.35	240	
		2		190 HB	0.5	2.0	0.15	0.40	0.64	180	280	1.0	0.35	220	
		3		250 HB	0.5	1.5	0.15	0.35	0.56	180	250	1.0	0.30	200	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	2.0	0.15	0.35	0.56	120	280	1.0	0.30	200
			4,6		230 HB	0.5	2.0	0.15	0.35	0.48	120	250	1.0	0.30	180
			5,7		280 HB	0.5	2.0	0.15	0.35	0.40	120	210	1.0	0.30	150
			8		350 HB	0.5	1.5	0.15	0.35	0.36	120	180	1.0	0.30	130
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.0	0.13	0.35	0.48	70	190	1.0	0.30	140
			10		280 HB	0.5	2.0	0.13	0.30	0.40	70	150	1.0	0.28	120
			11		320 HB	0.5	1.5	0.13	0.30	0.32	70	130	1.0	0.28	100
			11		350 HB	0.5	1.5	0.13	0.30	0.26	70	110	1.0	0.28	90
	Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	2.0	0.14	0.35	0.32	170	270	1.0	0.32	220
240 HB					0.5	2.0	0.14	0.32	0.32	160	220	1.0	0.32	190	
Duplex		5	X2CrNiN23-4, S31500	290 HB	0.5	1.5	0.13	0.30	0.30	80	150	1.0	0.28	100	
				310 HB	0.5	1.5	0.13	0.30	0.30	70	140	1.0	0.28	90	
Ferritic & Martensitic		6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	2.0	0.15	0.35	0.32	170	250	1.0	0.32	210	
				42 HRc	0.5	2.0	0.15	0.30	0.30	120	190	1.0	0.28	140	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	2.0	0.11	0.45	0.70	170	250	1.0	0.35	200	
				200 HB	0.5	2.0	0.11	0.45	0.65	160	230	1.0	0.35	180	
				250 HB	0.5	2.0	0.11	0.45	0.60	150	210	1.0	0.35	160	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	2.0	0.11	0.35	0.60	120	250	1.0	0.30	180	
				200 HB	0.5	2.0	0.11	0.35	0.50	120	230	1.0	0.30	160	
				250 HB	0.5	2.0	0.11	0.35	0.45	120	190	1.0	0.30	140	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.5	1.5	0.13	0.30	0.30	25	50	1.0	0.28	33
			33	Inconel 700	250 HB	0.5	1.5	0.13	0.30	0.30	25	50	1.0	0.28	30
			34	Stellite 21	350 HB	0.5	1.5	0.13	0.30	0.30	23	45	1.0	0.28	28
	Ti based	10	36	TiAl6V4	-	0.5	1.5	0.13	0.32	0.32	45	65	1.0	0.30	55
37			T40	-	0.5	1.5	0.13	0.30	0.30	35	60	1.0	0.28	45	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.2	0.05	0.22	0.20	50	100	0.9	0.18	80	
				50 HRc	0.5	1.0	0.05	0.18	0.17	40	90	0.7	0.16	70	
				55 HRc	0.3	0.8	0.05	0.14	0.12	40	80	0.6	0.12	60	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.5	1.2	0.05	0.22	0.17	40	60	0.9	0.18	50	
White Cast Iron	41	G-X300CrMo15	55 HRc	0.3	0.8	0.05	0.14	0.10	30	50	0.6	0.12	40		
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.5	2.0	0.15	0.40	0.70	200	400	1.0	0.35	280