

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	2.5	0.21	0.50	1.17	180	330	2.2	0.35	240	
		2		190 HB	0.5	2.5	0.21	0.50	1.17	180	280	2.2	0.35	220	
		3		250 HB	0.5	2.5	0.21	0.45	0.98	180	250	2.2	0.35	200	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.5	2.5	0.21	0.45	0.78	120	280	2.2	0.32	200	
		4,6		230 HB	0.5	2.0	0.21	0.45	0.78	120	250	1.8	0.32	180	
		5,7		280 HB	0.5	2.0	0.18	0.40	0.78	120	210	1.8	0.30	150	
		8		350 HB	0.5	1.8	0.18	0.40	0.65	120	180	1.6	0.30	130	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	2.0	0.18	0.40	0.78	70	190	1.8	0.30	140	
		10		280 HB	0.5	2.0	0.18	0.40	0.78	70	150	1.8	0.30	120	
		11		320 HB	0.5	1.5	0.18	0.35	0.52	70	130	1.5	0.28	100	
		11		350 HB	0.5	1.5	0.18	0.35	0.52	70	110	1.5	0.28	90	
	Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.5	2.5	0.20	0.40	0.78	170	270	2.2	0.35	190
14			240 HB		0.5	2.5	0.20	0.40	0.65	160	220	2.2	0.32	170	
Duplex		5	X2CrNiN23-4, S31500	290 HB	0.5	2.0	0.18	0.35	0.52	80	150	1.8	0.28	100	
		14		310 HB	0.5	2.0	0.18	0.35	0.52	70	140	1.8	0.28	90	
Ferritic & Martensitic		6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	2.5	0.22	0.40	0.65	170	250	2.2	0.32	190	
		13		42 HRc	0.5	2.0	0.22	0.40	0.65	120	190	2.0	0.32	130	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.5	2.5	0.15	0.60	1.30	170	250	2.2	0.35	200	
		15		200 HB	0.5	2.5	0.15	0.60	1.17	160	230	2.2	0.35	180	
		16		250 HB	0.5	2.5	0.15	0.55	1.17	150	210	2.2	0.35	160	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	2.5	0.15	0.50	0.98	120	250	2.2	0.30	180	
		17,19		200 HB	0.5	2.5	0.15	0.50	0.85	120	230	2.2	0.30	160	
		18,20		250 HB	0.5	2.5	0.15	0.50	0.78	120	190	2.2	0.30	140	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.5	1.5	0.20	0.35	0.46	25	45	1.5	0.28	32
		33	Inconel 700	250 HB	0.5	1.5	0.20	0.35	0.46	25	45	1.5	0.28	30	
		34	Stellite 21	350 HB	0.5	1.5	0.20	0.35	0.46	23	40	1.5	0.28	28	
	Ti based	10	36	TiAl6V4	-	0.5	2.0	0.20	0.40	0.52	45	65	1.5	0.33	55
		37	T40	-	0.5	1.5	0.20	0.35	0.46	35	55	1.5	0.30	45	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	1.6	0.11	0.30	0.39	50	100	1.5	0.25	80	
		38		50 HRc	0.5	1.3	0.11	0.25	0.26	40	90	1.0	0.20	70	
		38		55 HRc	0.5	1.3	0.11	0.20	0.20	40	80	1.0	0.18	60	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.5	1.3	0.11	0.25	0.26	40	60	1.0	0.18	50	
White Cast Iron	41	G-X300CrMo15	55 HRc	0.5	1.3	0.11	0.20	0.20	30	50	1.0	0.15	40		
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.5	3.0	0.20	0.60	1.80	200	400	2.2	0.40	280