

Recommended Cutting Speeds Vc [m/min] and Feed f [mm/tooth]

HCN

Material Group	Vargus No.	Material		Hardness Brinell HB	Vc(m/min)		Feed [mm/tooth]
					HCN		
					VTH		
P Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	50-180		0.03-0.08
	2		Medium Carbon (C=0.25-0.55%)	150	50-140		0.03-0.08
	3		High Carbon (C=0.55-0.85%)	170	50-120		0.03-0.06
	4	Low Alloy Steel (alloying elements ≤5%)	Non Hardened	180	60-170		0.03-0.07
	5		Hardened	275	60-160		0.03-0.07
	6		Hardened	350	60-150		0.02-0.04
	7	High Alloy Steel (alloying elements >5%)	Annealed	200	40-90		0.03-0.07
	8		Hardened	325	30-70		0.02-0.05
	9	Cast Steel	Low Alloy (alloying elements <5%)	200	70-200		0.03-0.06
	10		High Alloy (alloying elements >5%)	225	60-150		0.03-0.06
M Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	50-140		0.02-0.05
	12		Hardened	330	50-110		0.01-0.03
	13	Stainless Steel Austenitic	Austenitic	180	60-130		0.02-0.05
	14		Super Austenitic	200	50-120		0.02-0.05
	15	Stainless Steel Cast Ferritic	Non Hardened	200	50-150		0.02-0.05
	16		Hardened	330	50-100		0.02-0.03
	17	Stainless Steel Cast Austenitic	Austenitic	200	50-140		0.02-0.06
	18		Hardened	330	50-90		0.01-0.03
K Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130	60-150		0.03-0.08
	29		Pearlitic (long chips)	230	80-100		0.03-0.06
	30	Grey Cast Iron	Low Tensile Strength	180	50-140		0.03-0.06
	31		High Tensile Strength	260	40-110		0.02-0.05
	32	Nodular Sg Iron	Ferritic	160	40-100		0.03-0.07
	33		Pearlitic	260	40-90		0.02-0.05
N Non-Ferrous Metals	34	Aluminum Alloys Wrought	Non Aging	60	150-250		0.05-0.15
	35		Aged	100	100-220		0.03-0.1
	36	Aluminum Alloys	Cast	75	80-150		0.05-0.15
	37		Cast & Aged	90	90-160		0.03-0.1
	38	Aluminum Alloys	Cast Si 13-22%	130	150-250		0.05-0.15
	39	Copper and Copper Alloys	Brass	90	150-250		0.05-0.15
	40		Bronze And Non Leaded Copper	100	100-220		0.03-0.1
S Heat Resistant Material	19	High Temperature Alloys	Annealed (iron based)	200	30-50		0.02-0.04
	20		Aged (iron based)	280	20-40		0.01-0.03
	21		Annealed (nickel or cobalt based)	250	15-30		0.01-0.03
	22		Aged (nickel or cobalt based)	350	15-25		0.01-0.03
	23	Titanium Alloys	Pure 99.5 Ti	400Rm	30-70		0.01-0.03
	24		α+β Alloys	1050Rm	20-45		0.01-0.02
H Hardened Material	25	Extra Hard Steel	Hardened & Tempered	45-50HRC	-	-	
	26			51-55HRC	-	-	