

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

Material Group	Vargus No.	Material		Hardness Brinell HB	Vc [m/min]	Feed f [mm/tooth]		
					VH4	D2≤4 mm	D2≤8 mm	D2>8 mm
P Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	80-250	0.04-0.08	0.09-0.13	0.06-0.20
	2		Medium Carbon (C=0.25-0.55%)	150	80-230	0.04-0.08	0.09-0.13	0.06-0.20
	3		High Carbon (C=0.55-0.85%)	170	80-200	0.04-0.08	0.09-0.13	0.06-0.20
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	60-180	0.04-0.08	0.09-0.13	0.06-0.20
	5		Hardened	275	60-170	0.04-0.08	0.09-0.13	0.06-0.20
	6	High Alloy Steel (alloying elements>5%)	Annealed	350	60-160	0.03-0.06	0.05-0.10	0.06-0.12
	7		Hardened	200	40-100	0.04-0.08	0.09-0.13	0.06-0.20
	8	Cast Steel	Low Alloy (alloying elements <5%)	325	30-80	0.03-0.06	0.05-0.10	0.06-0.12
	9		High Alloy (alloying elements >5%)	200	80-250	0.04-0.08	0.09-0.13	0.06-0.20
	10	Stainless Steel Ferritic	Non Hardened	225	60-170	0.04-0.08	0.09-0.13	0.06-0.20
M Stainless Steel	11		Hardened	200	60-150	0.03-0.06	0.05-0.10	0.06-0.12
	12	Stainless Steel Austenitic	Austenitic	330	60-120	0.015-0.03	0.03-0.05	0.02-0.06
	13		Super Austenitic	180	60-140	0.04-0.08	0.09-0.13	0.06-0.20
	14	Stainless Steel Cast Ferritic	Non Hardened	200	60-130	0.03-0.06	0.05-0.10	0.06-0.12
	15		Hardened	200	60-160	0.03-0.06	0.05-0.10	0.06-0.12
	16	Stainless Steel Cast Austenitic	Austenitic	330	60-110	0.03-0.06	0.05-0.10	0.06-0.12
	17		Hardened	200	60-150	0.03-0.05	0.05-0.10	0.05-0.11
	18	Malleable Cast Iron	Ferritic (short chips)	330	60-100	0.015-0.03	0.03-0.05	0.02-0.06
K Cast Iron	28		Pearlitic (long chips)	200	60-70	0.04-0.08	0.09-0.13	0.06-0.20
	29	Grey Cast Iron	Low Tensile Strength	230	60-150	0.04-0.08	0.09-0.13	0.06-0.20
	30		High Tensile Strength	180	70-160	0.04-0.08	0.09-0.13	0.06-0.20
	31	Nodular Sg Iron	Ferritic	260	40-120	0.03-0.06	0.05-0.10	0.06-0.12
	32		Pearlitic	160	40-110	0.04-0.08	0.09-0.13	0.06-0.20
	33	Aluminum Alloys Wrought	Non Aging	260	40-100	0.03-0.06	0.05-0.10	0.06-0.12
N Non-Ferrous Metals	34		Aged	60	200-300	0.06-0.11	0.10-0.17	0.09-0.20
	35	Aluminum Alloys	Cast	100	150-250	0.03-0.09	0.05-0.12	0.05-0.14
	36		Cast & Aged	75	100-200	0.06-0.11	0.10-0.17	0.09-0.20
	37	Aluminum Alloys	Cast Si 13-22%	90	120-220	0.03-0.09	0.05-0.12	0.05-0.14
	38		Brass	130	200-300	0.06-0.11	0.10-0.17	0.09-0.20
	39	Copper and Copper Alloys	Pure 99.5 Ti	90	200-300	0.06-0.11	0.10-0.17	0.09-0.20
	40		α+β Alloys	100	150-250	0.03-0.09	0.05-0.12	0.05-0.14
	41	High Temperature Alloys	Annealed (iron based)	200	30-60	0.03-0.06	0.05-0.10	0.06-0.12
S Heat Resistant Material	19		Aged (iron based)	280	20-50	0.015-0.03	0.03-0.05	0.02-0.06
	20	Titanium Alloys	Annealed (nickel or cobalt based)	250	15-35	0.015-0.03	0.03-0.05	0.02-0.06
	21		Aged (nickel or cobalt based)	350	15-30	0.015-0.03	0.03-0.05	0.02-0.06
	22	Titanium Alloys	Pure 99.5 Ti	400Rm	40-80	0.015-0.03	0.03-0.05	0.02-0.06
	23		α+β Alloys	1050Rm	20-50	0.015-0.03	0.03-0.05	0.02-0.06
	24	Titanium Alloys	Pure 99.5 Ti	400Rm	40-80	0.015-0.03	0.03-0.05	0.02-0.06
	25		α+β Alloys	1050Rm	20-50	0.015-0.03	0.03-0.05	0.02-0.06

Pitch		No. of Passes	
mm	TPI		
≤1.75	≤14	1	
≥1.75-2.0	≥14-12	2	
≥2.0	≥12	Multi-passes	

To use higher feed from the range, the depth of the pre-drilled hole is recommended to be increased by 2-3 pitches of thread.

Grade	Application	Sample
VH4	High wear resistance for general purpose applications. TiCN PVD Coating	