

Recommended Cutting Data

Thread Turning

ISO	Material		Tensile strength [N/mm²]	Cutting speed Vc [m/min]				
				AL100	AM7C	AM15C	AK20(P)	HSS-TiN
P	Unalloyed steel and cast steel	ca. 0,15% C	350	115 - 190	-	140 - 200	-	20 - 50
		ca. 0,45% C	650	100 - 190	-	130 - 180	-	20 - 40
		ca. 0,75% C	1000	70 - 160	-	80 - 160	-	15 - 25
	Low alloyed steel and cast steel		600	85 - 145	-	100 - 155	-	20 - 45
			900	75 - 140	-	90 - 145	-	10 - 25
			1200	70 - 135	-	80 - 135	-	10 - 25
	High alloyed steel, high alloyed tool steel and cast steel	annealed	700	70 - 110	-	70 - 115	-	-
		hardened and tempered	1100	50 - 100	-	50 - 100	-	-
	Stainless steel and cast steel	ferritic / martensitic, annealed	700	75 - 140	-	-	-	25 - 50
		martensitic, hardened and tempered	1000	60 - 120	-	-	-	20 - 40
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450 - 600	70 - 130	70 - 150	70 - 120	-	-
		chilled	600 - 900	40 - 110	40 - 120	40 - 90	-	-
K	Cast iron	pearlitic, ferritic	500 - 700	70 - 130	-	-	-	-
		pearlitic, martensitic	700 - 850	60 - 120	-	-	-	-
			800 - 1100	60 - 115	-	-	-	-
	Cast iron with nodular graphite	ferritic	550	125 - 160	-	-	-	-
		pearlitic	800	90 - 120	-	-	-	-
	Malleable cast iron	ferritic	450	80 - 180	-	70 - 150	70 - 95	-
		pearlitic	750	-	-	-	-	-
N	Aluminum alloys, long chipping	not heat treatable	200	100 - 365	-	100 - 240	100 - 250	30 - 60
		heat treatable, heat treated	350	80 - 220	-	80 - 170	80 - 160	25 - 50
	Casted aluminum alloys	≤ 12% Si, hardened	250	200 - 400	-	-	80 - 120	25 - 50
		≤ 12% Si, heat treatable, heat treated	300	200 - 280	-	-	70 - 100	20 - 40
		≤ 12% Si, not heat treatable	450	60 - 180	-	-	50 - 120	15 - 30
	Copper and copper alloys (brass/bronze)	Lead alloys, Pb > 1%	400	80 - 200	120 - 200	100 - 250	110 - 190	15 - 35
		Brass, bronze	300	80 - 225	-	80 - 200	70 - 170	15 - 35
		Aluminum bronze	500	-	-	-	-	15 - 30
		Copper and electrolyte copper	200	120 - 240	120 - 300	100 - 250	110 - 190	15 - 35
	Non-ferrous materials	Duroplastics		-	-	-	-	-
		Reinforced plastics		-	-	-	-	-
		Hard rubber		-	-	-	-	-
S	High temperature resistant alloys	Fe-alloyed annealed	700	45 - 60	-	-	30 - 50	-
		Fe-alloyed hardened	950	30 - 50	-	-	25 - 40	-
		Ni- oder Co- based annealed	800	20 - 30	-	-	20 - 30	-
		Ni- oder Co- based casting	1100	-	-	-	-	-
		Ni- oder Co- based hardened	1200	15 - 25	-	-	15 - 25	-
	Titanium alloys, high strength	Pure titanium	500 - 700	140 - 170	-	-	60 - 100	-
	Alpha- and beta-alloys, hardened		700 - 1000	50 - 70	-	-	40 - 60	-
H	Hardened steel	hardened and tempered	1000 - 1350	-	-	-	-	-
		hardened and tempered	1350 - 1700	-	-	-	-	-
	Hard cast iron	casting	1350	-	-	-	-	-
	Hardened cast iron	hardened and tempered	1900	45 - 60	-	45 - 60	-	-

The datas cutting speeds given are approximate values. It is necessary to adjust them to the individual machining operation.