

Cutting data recommendations

The cutting data recommendations in the table are guide values and depend to a high degree on the stability of the machine, fixture and workpiece.

Cutting groups	Material group	Composition / structure	Tensile strength RM (MPa)	Hardness HB HRC	Cutting speed V _C m/min	recom. Cutting grade	feed rate fz mm/z					
							Insert type					
							W 1733-	W 8003-	W 8005-	W 8008-	W 8012-	W 5506-
1.1		C = 0.1 -0.25 annealed, long cutt.	420	125	100-160	H26/H02	0.02-0.10	0.02-0.08	0.04-0.12	0.05-0.15	0.07-0.25	0.04-0.12
1.2		C = 0.1 -0.25 annealed, short chip	420	125	100-160	↓						
2.1	Unalloyed steel	C = 0.25-0.55 annealed, long cutt.	620	190	90-150							
2.2	Cast steel	C = 0.25-0.55 annealed, short chip	640	190	100-160							
3	Machining steel	C = 0.25 -0.55 tempered	850	250	90-150							
4		C = 0.25 -0.8 annealed	915	270	80-140							
5		C = 0.25 -0.8 tempered	1020	300	75-125							
6		annealed	610	180	90-140							
7	Low-alloy steel	tempered	930	275	60-110							
8	Cast steel											
8	Machining steel	tempered	1020	300	60-110							
9		tempered	1190	350	60-100							
10	High-alloy steel	annealed	680	200	60-110							
	Cast steel											
11	High alloy tool steel	hardened and tempered	1100	325	50-90							
12-13	Stainless steel and cast steel	ferritic/martensitic annealed	680	200	50-90	↓						
		martensitic	810	240	40-80	↓						
14.1	Stainless steel	austenitic quenched	610	180	40-80	H26/H02						
14.2		austenitic/ferritic (duplex)	880	260	40-80	↓						
15	Grey cast iron	perlitic/ferritic		180	110-160	H02/K10						
16		perlitic (martensitic)		260	100-150	↓						
17	Cast iron with nodular cast iron	ferritic		160	80-130	H26/H06/H02						
18		perlitic		250	70-120	↓						
19	Malleable	ferritic		130	90-150	H26/H06						
20		perlitic		230	80-140	↓						
21	Aluminium	not heat treatable		60	-1000	K10/PKD						
22	forging alloys	heat treatable/heat treated		100	-800	↓						
23	Aluminium	<12% Si not heat treatable		75	-800	↓						
24	casting alloys	<12% Si heat treatable/ heat treated		90	-800	↓						
25		>12% Si not heat treatable		130	-1000	PKD						
26	Copper	machined alloys, Pb >1%		110	70-120	H02/K10						
27	copper alloy (bronze, brass)	CuZn, CuSnZn		90	70-120	↓						
28		Cu, lead free copper/electrolyte copper		100	70-120	↓						
29	Non metallic materials	Duroplastic			-200	K10/PKD						
30		Reinforced materials			-200	↓						
31	Heat resistand alloys	Fe-based annealed		200	30-50	H26/H06						
32		heat treated		230	30-50	↓						
33		Ni- or Co-based annealed		250	20-40	↓						
34		heat treated		350	20-40	↓						
35		cast		320	20-40	↓						
36	Titanium alloys	Pure titanium	400		20-40	K10						
37		Alpha-beta alloys	1050		20-30	↓						
38	Hardened steels			50-62	80-150	PCBN						
39												