

Caution: General safety regulations and directions of machine manufacturers must be observed at any time!

Material description	W-Nr. German	AISI/SAE	Tensile strength	Hardness	Carbide																				
					uncoated		coated																		
					TPHT 1102.. ER/L	TPHT 1102.. FR/L	TPHW 1102.. EN	TPHW 1102.. FN	TPGT 16T3.. EN	TPGT 16T3.. -25	TPHT 16T3.. ER/L	TPHT 16T3.. FR/L	TPHW 16T3.. EN	TPHW 16T3.. FN	TPHW 16T3.. SN	TPMW 16T3.. FN	DX2	P25	DP25	DP35 DP55 DP57	DX20	DX30 DX50 DX52			
					90°																				
					**)																				
					Rm (N/mm ²) HB																				
					fz (ipt) *)																				
					Vc (sfm)																				
1 Low Carbon Steel	1.0035 1.0038 1.0401 1.0050	1010 1045 1015 1050	- 500	- 160	.0008 + .0059	.0020 + .0079			.0059 + .0118	.0008 + .0079	.0020 + .0118	.0059 + .0118							400 + 500	660 + 860	790 + 1025				
2 Alloy Steel	1.0501 1.1141 1.5732 1.7225	1035 1115 3415 4140	500 - 700	140 - 200	.0008 + .0059	.0020 + .0079			.0059 + .0118	.0008 + .0079	.0020 + .0118	.0059 + .0118								590 + 760	690 + 925				
3 Tool Steel	1.1221 1.3505 1.7225 1.5141	1060 52100 4140 -	900 - 1100	170 - 275	.0008 + .0039	.0020 + .0059			.0059 + .0118	.0008 + .0063	.0020 + .0079	.0059 + .0118								560 + 625	660 + 760				
4 Alloy Tool Steel	1.1191 1.7225 1.2080 1.7220	4140 4142 D3 4135	700 - 900	250 - 325	.0008 + .0039	.0020 + .0059			.0059 + .0079	.0008 + .0063	.0020 + .0079	.0059 + .0079								600 + 660	690 + 790				
5 Alloy Cast Steel	1.6582 1.8159 1.2367 1.7361	4340 6150 AZ 4145	1'100 - 1'500 800 - 1'000	325 - 450 250 - 300 330 - 390	.0008 + .0039	.0020 + .0039			.0059 + .0079	.0008 + .0051	.0020 + .0079	.0059 + .0079								425 + 560	525 + 660				
6 Stainless Steel	1.4006 1.4057 1.4034 1.4005	403 431 420 416	- 800	- 250	.0008 + .0059	.0020 + .0079			.0020 + .0118	.0012 + .0020	.0008 + .0079	.0020 + .0118								600 + 725	690 + 860				
7 Stainless Steel - Austenitic, Martensitic	1.4300 1.4301 1.4435 1.4542	302 304 (304H) 316 17-4 ph	500 - 1100	200 - 325	.0008 + .0039	.0020 + .0059			.0020 + .0079	.0012 + .0059	.0008 + .0059	.0020 + .0079								425 + 600	500 + 700				
8 Grey Cast Iron	0.6010 0.6015 0.6020	A48-20B A48-25B A48-30B	- 250	- 200	.0008 + .0051	.0020 + .0079	.0020 + .0080		.0039 + .0118	.0008 + .0059	.0020 + .0112	.0020 + .0118	.0020 + .0098						400 + 500	330 + 400	560 + 860	660 + 1025	660 + 860	790 + 1025	
9 Cast Iron Malleable	0.6025 0.8135 0.8140 0.7050	A48-35B A48-40B A48-45B 80-55-06	250 - 350	200 - 250	.0008 + .0039	.0020 + .0059	.0020 + .0059		.0039 + .0118	.0008 + .0039	.0020 + .0079	.0020 + .0079	.0020 + .0098							330 + 425	260 + 400	460 + 725	560 + 860	660 + 725	790 + 860
10 Copper Alloys	2.0331 2.0401 2.1030 2.0920	B121 B121 B103 CuAl 8	450 - 650	120 - 180	.0012 + .0079	.0004 + .0079	.0020 + .0118		.0020 + .0118	.0012 + .0118	.0004 + .0118	.0020 + .0118	.0020 + .0157							660 + 1320	660 + 1320	1150 + 2310	1320 + 2640	1150 + 2310	1320 + 2640
11 Aluminium Alloys	3.2582.05 3.3541.01 3.2315 3.0205	383.2 (ALSI-12) 514.0 (AlMg 3) 413.0 (AlMgSi 1) 1200 (AL 99)	250 - 350	200 - 300	.0004 + .0079				.0020 + .0157		.0004 + .0079									1320 + >3300			1980 + >6600	1980 + >6600	

*) in function of stability of tool & workpiece

**) Above mentioned Cutting Data are valid for angle $\chi = 90^\circ$! For angles mentioned hereafter please multiply the feed rate by the corresponding factor F_χ:

$\chi = 30^\circ \rightarrow F_{30^\circ} = 2,5$	$\chi = 45^\circ \rightarrow F_{45^\circ} = 1,6$	$\chi = 60^\circ \rightarrow F_{60^\circ} = 1,3$	$\chi = 75^\circ \rightarrow F_{75^\circ} = 1,1$

