

**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
1 Low Carbon Steel	1.0035	1010	- 500	- 160
	1.0038	1045		
	1.0401	1015		
	1.0050	1050		
2 Alloy Steel	1.0501	1035	500 - 700	140 - 200
	1.1141	1115		
	1.5732	3415		
	1.7225	4140		
3 Tool Steel	1.1221	1060	900 - 1100	170 - 275
	1.3505	52100		
	1.7225	4140		
	1.5141	-		
4 Alloy Tool Steel	1.1191	4140	700 - 900	250 - 325
	1.7225	4142		
	1.2080	D3		
	1.7220	4135		
5 Alloy Cast Steel	1.6582	4340	1'100 - 1'500 800 - 1'000	325 - 450 250 - 300
	1.8159	6150		
	1.2367	AZ		
	1.7361	4145		
6 Stainless Steel	1.4006	403	- 800	- 250
	1.4057	431		
	1.4034	420		
	1.4005	416		
7 Stainless Steel - Austenitic, Martensitic	1.4300	302	500 - 1100	200 - 325
	1.4301	304 (304H)		
	1.4435	316		
	1.4542	17-4 ph		
8 Grey Cast Iron	0.6010	A48-20B	- 250	- 200
	0.6015	A48-25B		
	0.6020	A48-30B		
9 Cast Iron Malleable	0.6025	A48-35B	250 - 350	200 - 250
	0.8135	A48-40B		
	0.8140	A48-45B		
	0.7050	80-55-06		
10 Copper Alloys	2.0331	B121	450 - 650	120 - 180
	2.0401	B121		
	2.1030	B103		
	2.0920	CuAl 8		
11 Aluminium Alloys	3.2582.05	383.2 (AL-SI-12)	250 - 350	200 - 300
	3.3541.01	514.0 (ALMg 3)		
	3.2315	413.0 (ALMgSi 1)		
	3.0205	1200 (AL 99)		

Material description	W-Nr. German	AISI/SAE	Tensile strength	Hardness	90° **)	Carbide																	
						uncoated		coated															
						DX2	P25	DP25	DP35 DP55 DP57	DX20	DX30 DX50 DX52												
					fz (ipt) *)												Vc (sfm)						
1 Low Carbon Steel						.0008 +	.0020 +	.0059 +	.0008 +	.0020 +	.0059 +							400 +	660 +	790 +			
						.0059	.0079	.0118	.0079	.0118	.0118							500	860	1025			
2 Alloy Steel						.0008 +	.0020 +	.0059 +	.0008 +	.0020 +	.0059 +								590 +	690 +			
						.0059	.0079	.0118	.0079	.0118	.0118							760	925				
3 Tool Steel						.0008 +	.0020 +	.0059 +	.0008 +	.0020 +	.0059 +								560 +	660 +			
						.0039	.0059	.0118	.0063	.0079	.0118							625	760				
4 Alloy Tool Steel						.0008 +	.0020 +	.0059 +	.0008 +	.0020 +	.0059 +								600 +	690 +			
						.0039	.0059	.0079	.0063	.0079	.0079							660	790				
5 Alloy Cast Steel						.0008 +	.0020 +	.0059 +	.0008 +	.0020 +	.0059 +								425 +	525 +			
						.0039	.0039	.0079	.0051	.0079	.0079							560	660				
6 Stainless Steel						.0008 +	.0020 +	.0020 +	.0008 +	.0020 +	.0020 +								600 +	690 +			
						.0059	.0079	.0118	.0020	.0079	.0118							725	860				
7 Stainless Steel - Austenitic, Martensitic						.0008 +	.0020 +	.0020 +	.0008 +	.0020 +	.0020 +								425 +	500 +			
						.0039	.0059	.0079	.0059	.0079	.0079							600	700				
8 Grey Cast Iron						.0008 +	.0020 +	.0020 +	.0008 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +		400 +	330 +	560 +	660 +	660 +	790 +
						.0051	.0079	.0080	.0059	.0112	.0118							500	400	860	1025	860	1025
9 Cast Iron Malleable						.0008 +	.0020 +	.0020 +	.0008 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +		330 +	260 +	460 +	560 +	660 +	790 +
						.0039	.0059	.0059	.0039	.0079	.0079							425	400	725	860	725	860
10 Copper Alloys						.0012 +	.0004 +	.0020 +	.0020 +	.0012 +	.0004 +	.0020 +	.0020 +	.0020 +	.0020 +	.0020 +		660 +	660 +	1150 +	1320 +	1150 +	1320 +
						.0079	.0079	.0118	.0039	.0118	.0118	.0118	.0118	.0118	.0118	.0157		1320 +	1320 +	2310	2640	2310	2640
11 Aluminium Alloys						.0004 +	.0004 +	.0020 +	.0020 +	.0004 +	.0004 +										1980 +	1980 +	
						.0079	.0079	.0157	.0079	.0079	.0079										>6600	>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<sub>χ</sub>:

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

