

# KODIERUNG – CODIFICATION

**DC**-Gewindebohrer

**DC** Taps

Beispiel - Example



Normale Werkstoffe	Normal materials	<b>N</b>
Weiche Werkstoffe	Soft materials	<b>W</b>
Zähe Werkstoffe	Tough materials	<b>Z</b>
Alu-Bronze-Legierungen	Alu-bronze alloys	<b>ZX</b>
Hochfeste Werkstoffe	High tensile materials	<b>H</b>
Sonderlegierte Werkstoffe	Special alloys	<b>S</b>
Sonderlegierte Werkstoffe (Aero)	Special alloys (Aero)	<b>SA</b>
Titanlegierungen (Aero)	Titanium alloys (Aero)	<b>TL</b>
Grauguss und Alu-Guss	Cast iron and aluminium casting	<b>GG</b>
Allrounder	Allrounder	<b>QTAP</b>
Synchron-Gewindeschneiden	Rigid Tapping	<b>RTS</b>
Spanbrecher	Swarf breaker	<b>K</b>
MEGA-Gewindegrößen	MEGA tap sizes	<b>MA</b>
Spezialausführung	Special execution	<b>3</b>
Kurzer DIN-Schaft verstärkt	DIN short - reinforced shank	<b>1</b>
Kurzer DIN-Schaft durchfallend	DIN short - reduced shank	<b>2</b>
Langer DIN-Schaft verstärkt	DIN long - reinforced shank	<b>3</b>
Langer DIN-Schaft durchfallend	DIN long - reduced shank	<b>4</b>
Extra-langer DIN-Schaft verstärkt	DIN extra-long - reinforced shank	<b>5</b>
Extra-langer DIN-Schaft durchfallend	DIN extra-long - reduced shank	<b>6</b>
DC-Werksnorm	DC standards	<b>9</b>
Kurzer ISO-Schaft verstärkt	ISO short - reinforced shank	<b>11</b>
Kurzer ISO-Schaft durchfallend	ISO short - reduced shank	<b>12</b>
Gerade Nuten	Straight flutes	<b>1</b>
Gerade Nuten und Schälanschnitt	Straight flutes with spiral point	<b>2</b>
Schälanschnitt	Spiral point	<b>3</b>
Spiralnuten mit Linksdrall < 27°	< 27° left-hand slow spiral flutes	<b>4</b>
Spiralnuten mit Rechtsdrall < 27°	< 27° right-hand slow spiral flutes	<b>5</b>
Spiralnuten mit Rechtsdrall > 27°	> 27° right-hand fast spiral flutes	<b>6</b>
Spiralnuten mit Rechtsdrall > 40°	> 40° right-hand fast spiral flutes	<b>7</b>
Spiralnuten mit Rechtsdrall 10°, Schälän.	10° right-hand slow spiral flutes, spiral point	<b>9</b>
Standardausführung	Standard	<b>0</b>
Ausgesetzte Zähne	Interrupted thread	<b>1</b>
Verjüngtes Führungsgewinde	Truncated thread	<b>2</b>
Innenkühlung	Internal coolant	<b>3</b>
Ausgesetzte Zähne, Innenkühlung	Interrupted thread, internal coolant	<b>4</b>
Verjüngtes Führungsgewinde, Innenkühlung	Truncated thread, internal coolant	<b>5</b>
"V"-Oberflächenbehandlung	"V" surface treatment	<b>V</b>
VS-Verschleisschutzschicht, generell	VS wear-protective coating, general	<b>VS</b>
VX-Beschichtung für rostfreie Stähle und Nickelleg.	VX coating for stainless steels and Nickel alloys	<b>VX</b>
Titanitrid-Beschichtung (TiN)	Titanium-nitride coating (TiN)	<b>TN</b>
Titancarbonitrid-Beschichtung (TiCN)	Titanium carbonitride coating (TiCN)	<b>TG</b>
Plasmanitrierung + "V"-Oberflächenbehandlung	Plasma nitriding + "V" surface treatment	<b>NV</b>
DLC-Beschichtung	DLC-coating	<b>DL</b>
Vorschneider	Taper tap	<b>-1</b>
Mittelschneider	Second tap	<b>-2</b>
Fertigschneider / 2 - 3 Gewindegänge	Bottoming tap / 2 - 3 chamfered threads	<b>-3</b>
3.5 - 5.5 Gewindegänge, Schälanschnitt	3.5 - 5.5 chamfered threads, spiral point	<b>-4</b>
1.5 - 2 Gewindegänge	1.5 - 2 chamfered threads	<b>-5</b>
6 - 8 Gewindegänge	6 - 8 chamfered threads	<b>-8</b>
Gewindebohrer-Satz	Thread taps set	<b>-S</b>

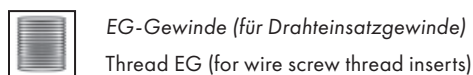
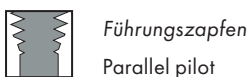
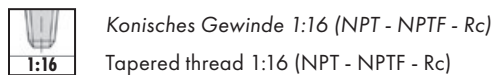
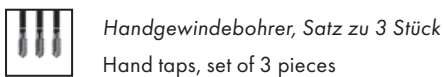
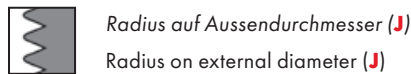
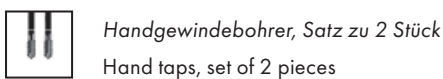
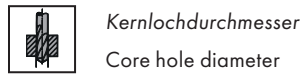
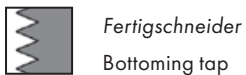
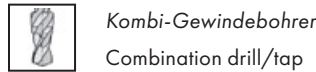
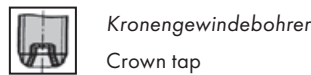
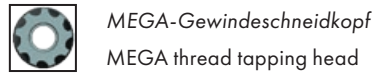
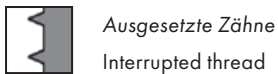
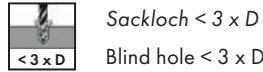
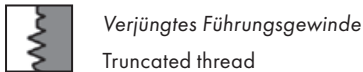
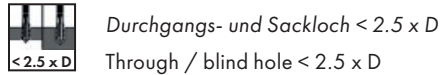
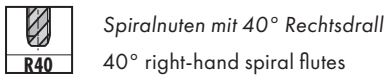
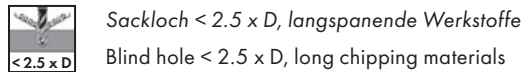
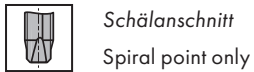
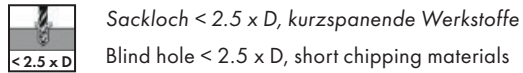
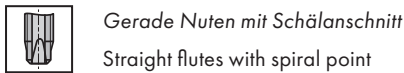
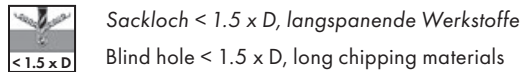
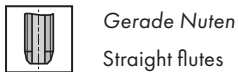
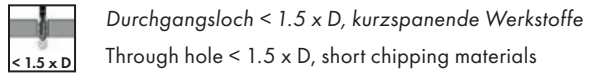
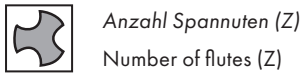
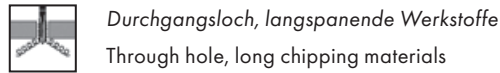
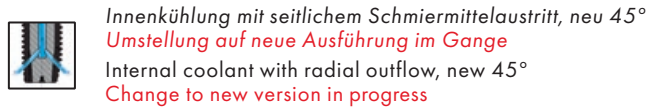
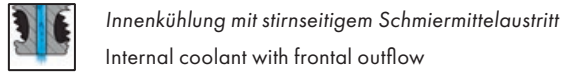
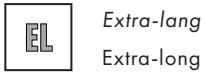
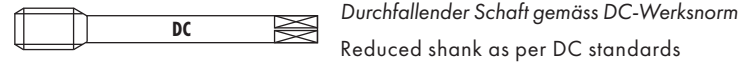
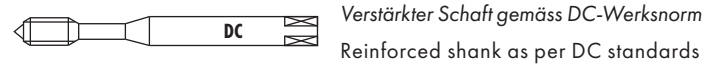
# PIKTOGRAMME — PICTOGRAPHS






















Für Werkstoffgruppen gemäss **DC**-Anwendungstabelle  
 For material groups as per **DC** application chart

<b>12</b>	
1.0037	Si37-2 (S235JR)
1.0050	St50-2 (E295)
1.0060	St60-2 (E335)
1.5919	15CrNi6
1.7131	16MnCr5

<b>22</b>	
1.4301	X5CrNi18-10
1.4406	X2CrNiMoN17-12-2
1.4435	X2CrNiMo18-14-3
1.4541	X6CrNiTi18-10
1.4571	X6CrNiMoTi17-12-2



# PIKTOGRAMME — PICTOGRAPHS

	Linksgewinde Left-hand thread		Lagerartikel Stock item
	3.5 - 5.5 Gewindegänge, Anschnitt Form B 3.5 - 5.5 chamfered threads, lead form B		Kurzfristig lieferbar Available at short notice
	2 - 3 Gewindegänge, Anschnitt Form C 2 - 3 chamfered threads, lead form C		Ab Lager lieferbar solange Vorrat Available from stock, while stock lasts
	1.5 - 2 Gewindegänge, Anschnitt Form E 1.5 - 2 chamfered threads, lead form E		
	Toleranzklasse ISO 2 6H Tolerance class ISO 2 6H		
	Toleranzklasse ISO 2 6H + 0.1 mm Tolerance class ISO 2 6H + 0.1 mm		
	Toleranzklasse ISO 3 6G Tolerance class ISO 3 6G		
	DC-"V"-Oberflächenbehandlung DC "V" surface treatment		
	DC-"VS"-Verschleisschutzschicht für den allgemeinen Einsatz DC "VS" wear-protective coating for general use		
	DC-"VX"-Verschleisschutzschicht für rostfreie Stähle und Nickellegierungen DC "VX" wear-protective coating for stainless steels and Nickel alloys		
	Titannitrid-Beschichtung Titanium-nitride coating		
	Titancarbonitrid-Beschichtung Titanium-carbonitride coating		
	Plasmanitrierung + "V"-Oberflächenbehandlung Plasma nitriding + "V" surface treatment		
	DLC-Beschichtung DLC-coating		
	Hardlube-Beschichtung Hardlube-coating		
	Spanfragmente / regelmässige Spanaufteilung Swarf fragments / consistant chips		
	Für synchrones Gewindeschneiden For Rigid Tapping		
	Für klassisches Gewindeschneiden For Classic Tapping		

# ANWENDUNGSGRUPPEN

## Beispiele für Anwendungsgruppen

Referenz: DIN

<b>11</b> Automatenstahl 1.0711 9S20 1.0715 9SMn28 1.0718 9SMnPb28 1.0726 35S20 1.0737 9SMnPb36	<b>12</b> Baustahl, Einsatzstahl 1.0037 S137-2 (S235JR) 1.0050 S150-2 (E295) 1.0060 S160-2 (E335) 1.5919 15CrNi6 1.7131 16MnCr5	<b>13</b> Kohlenstoffstahl 1.0503 C45 1.0535 C55 1.0601 C60 1.1545 C105W1 1.2067 102Cr6 (100Cr6)	<b>14</b> Stahl legiert < 850 N/mm <sup>2</sup> 1.2363 X100CrMoV5-1 1.3551 80MoCrV42-16 1.7218 25CrMo4 1.7220 34CrMo4 1.7225 42CrMo4	<b>15</b> Stahl legiert / vergütet > 850 - < 1150 N/mm <sup>2</sup> 1.3553 X82WMoCrV6-5-4 1.6580 30CrNiMo8 1.7220 34CrMo4 1.7225 42CrMo4 1.8507 34CrAlMo5
<b>16</b> Hochfester Stahl ≤ 44 HRC EN-GJS-1200-2 1.6582 34CrNiMo6v 1.7225 42CrMo4v 1.7228 50CrMo4v 1.8515 31CrMo12v	<b>17</b> Stahl vergütet > 44 - ≤ 54 HRC > 44 - ≤ 54 HRC	<b>18</b> Stahl gehärtet > 54 - ≤ 63 HRC > 54 - ≤ 63 HRC	<b>21</b> Rostfreier Stahl, geschwefelt 1.4005 X12CrS13 1.4104 X14CrMoS17 1.4305 X10CrNiS18-9	<b>22</b> Austenitisch 1.4301 X5CrNi18-10 1.4406 X2CrNiMoN17-12-2 1.4435 X2CrNiMo18-14-3 1.4541 X6CrNiTi18-10 1.4571 X6CrNiMoTi17-12-2
<b>23</b> Ferritisch, martensitisch < 850 N/mm <sup>2</sup> 1.4112 X90CrMoV18 1.4540 X4CrNiCuNb16-4 1.4582 X4CrNiMoNb25-7 1.4762 X10CrAl24 1.4922 X20CrMoV11-1	<b>24</b> Ferritisch, martensitisch > 850 - < 1150 N/mm <sup>2</sup> 1.4057 17CrNi16-2 1.4125 X105CrMo17 1.4542 X5CrNiCuNb16-4 1.4548 X5CrNiCuNb17-4-4 1.4748 X85CrMoV18-2	<b>31</b> Grauguss 0.6015 GJL-150 0.6020 GJL-200 0.6025 GJL-250 0.6030 GJL-300	<b>32</b> Kugelgraphitguss, Temperguss 0.7040 GJS 400-15 0.7043 GJS 400-18 0.7050 GJS 500-7 0.7060 GJS 600-3 0.7080 GJS 800-2	<b>41</b> Reintitan 3.7024 Grad1 3.7034 Grad2 3.7055 Grad3 3.7065 Grad4
<b>42</b> Titanlegierung 3.7124 TiCu2.5 TiAl7Nb 3.7164 TiAl6V4 (Grad5) 3.7174 TiAl6V6Sn2	<b>51</b> Nickellegierung 1 ≤ 850 N/mm <sup>2</sup> 1.3912 Ni36 (Invar) 2.4360 NiCu30Fe (Monel 400) 2.4816 NiCr15Fe (Inconel 600) 1.4876 X10NiCrAlTi32-20	<b>52</b> Nickellegierung 2 > 850 - ≤ 1150 N/mm <sup>2</sup> 2.4375 NiCu30Al (MonelK500) 2.4631 NiCr20TiAl (Nimonic 80) NiCr19NbMo (Inconel718) 2.4668	<b>53</b> Nickellegierung 3 > 1150 - ≤ 1600 N/mm <sup>2</sup> 2.4631 NiCr20TiAl (Nimonic80) 2.4668 NiCr19NbMo (Inconel718)	<b>61</b> Reinkupfer (Elektrolytkupfer) 2.0060 E-Cu57 (E-Cu)
<b>62</b> Messing, Bronze, Rotguss (kurzspanend) 2.0401 CuZn39Pb3 (Ms58) 2.0402 CuZn40Pb2 (Ms58) 2.1030 CuSn8 (Bz) 2.1096 G-CuSn5ZnPb	<b>63</b> Messing (langspanend) 2.0240 CuZn15 (Ms85) 2.0265 CuZn30 (Ms70) 2.0321 CuZn37 (Ms63)	<b>64</b> Messing bleifrei CuZn21Si3P (ECOBRESS®) CuZn35 CuZn42	<b>71</b> Al unlegiert 3.0205 Al99 3.0255 Al99.5	<b>72</b> Al legiert Si < 1.5 % 3.1255 AlCuSiMn 3.1355 AlCuMg2 3.2315 AlMgSi1 3.3206 AlMgSi0.5 3.4345 AlZnMgCu0.5
<b>73</b> Al legiert Si > 1.5 % - < 10 % 3.2161 G-AlSi8Cu3 3.2162 GD-AlSi8Cu3 3.2341 G-AlSi5Mg 3.2371 G-AlSi7Mg	<b>74</b> Al legiert Si > 10 %, Mg-Legierungen 3.2381 G-AlSi10Mg 3.2382 GD-AlSi10Mg 3.2581 G-AlSi12 3.2583 G-AlSi12 (Cu)	<b>81</b> Thermoplaste Delrin (POM) Teflon Nylon	<b>82</b> Duroplaste Bakelit Novopan	<b>83</b> Faserverstärkte Kunststoffe Glasfaserverstärkte Thermo- und Duroplaste
<b>91</b> Gelbgold 2N18 Au585AgCu205 3N18 Au917AgCu44	<b>92</b> Rotgold 4N18 5N18 Au585CuAg325 Au750AgCu Au917Cu83	<b>93</b> Weissgold Au750PdCu125 Au750PdCu150 Au585PdCu150 Au925Pd75	<b>94</b> Silber Ag999 Ag800Cu Ag925Cu	



# APPLICATION GROUPS

## Examples for application groups

Reference:  
AISI/ASTM/UNS

11	Free-cutting steels
1.0711	1212
1.0715	1213
1.0718	12L13
1.0726	1140
1.0737	12L14

12	Structural, cementation steels
1.0037	1015
1.0050	A570 Gr.50
1.0060	A572 Gr.55
1.5919	4617
1.7131	5115

13	Carbon steels
1.0503	1045
1.0535	1055
1.0601	1060
1.1545	W110
1.2067	L 3

14	Alloy steels < 850 N/mm <sup>2</sup>
1.2363	A2
1.3551	M50
1.7218	4130
1.7220	4135
1.7225	4140

15	Alloy steels hard./temp. > 850 - < 1150 N/mm <sup>2</sup>
1.3553	-
1.6580	4340
1.7220	4135
1.7225	4140
1.8507	A355CLD (K23510)

16	High tensile alloy steels ≤ 44 HRC
EN-GJS-1200-2	
1.6582	4340
1.7225	4140
1.7228	4150
1.8515	-

17	Alloy steels tempered > 44 - ≤ 54 HRC
> 44 - ≤ 54 HRC	

18	Alloy steels hardened > 54 - ≤ 63 HRC
> 54 - ≤ 63 HRC	

21	Free machining stainless steels
1.4005	416
1.4104	430F
1.4305	303

22	Austenitic stainless steels
1.4301	304
1.4406	316LN
1.4435	316L
1.4541	321
1.4571	316Ti

23	Ferritic and martensitic < 850 N/mm <sup>2</sup>
1.4112	440B
1.4540	XM12
1.4582	-
1.4762	446
1.4821	4922

24	Ferritic and martensitic > 850 - < 1150 N/mm <sup>2</sup>
1.4057	431
1.4125	440C
1.4542	630 (17-4PH)
1.4748	-

31	Cast iron
0.6015	A48-25B
0.6020	A48-30B
0.6025	A48-35B
0.6030	A48-45B

32	Spheroidal graphite + malleable cast iron
0.7040	65-45-12
0.7043	60-40-18
0.7050	80-55-06
0.7060	70-60-03
0.7080	120-90-02

41	Pure titanium
3.7024	Gr.1
3.7034	Gr.2
3.7055	Gr.3
3.7065	Gr.4

42	Titanium alloys
3.7124	Alloy 230
	F-1295
3.7164	Gr.5
3.7174	-

51	Nickel alloys 1 ≤ 850 N/mm <sup>2</sup>
1.3912	K93600
2.4360	N04400
2.4816	N06600
1.4876	N08800

52	Nickel alloys 2 > 850 - ≤ 1150 N/mm <sup>2</sup>
2.4375	N05500 (B865)
2.4631	N07080 (B637)
2.4668	N07718 (B637)

53	Nickel alloys 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>
2.4631	N07080 (B637)
2.4668	N07718 (B637)

61	Pure copper (electrolytic copper)
2.0060	C11000

62	Short chip brass, phosphor-bronze, gun metal
2.0401	C38500
2.0402	C37800
2.1030	C52100
2.1096	-

63	Long chip brass
2.0240	C23000
2.0265	C26000
2.0321	C27200

64	Lead free brass
CuZn21Si3P (ECOBRESS®)	
CuZn35	
CuZn42	

71	Al unalloyed
3.0205	1200
3.0255	1050A

72	Al alloyed Si < 1.5 %
3.1255	2014
3.1355	2024
3.2315	6082
3.3206	6060
3.4345	7022

73	Al alloyed Si > 1.5 % - < 10 %
3.2161	327
3.2162	-
3.2341	-
3.2371	356

74	Al alloyed Si > 10 %, Mg-alloys
3.2381	A360
3.2382	-
3.2581	A413
3.2583	413.1

81	Thermoplastics
Delrin (POM)	
Teflon	
Nylon	

82	Duroplastics
Bakelit	
Novopan	

83	Glass fibre reinforced plastics
Glass fibre reinforced, Thermo and Duroplastics	

91	Yellow gold
2N18	
Au585AgCu205	
3N18	
Au917AgCu44	

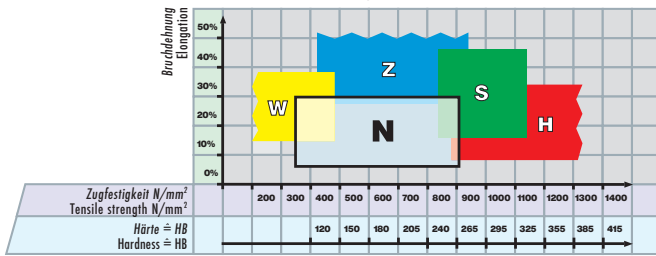
92	Red gold
4N18	
5N18	
Au585CuAg325	
Au750AgCu	
Au917Cu83	

93	White gold
Au750PdCu125	
Au750PdCu150	
Au585PdCu150	
Au925Pd75	

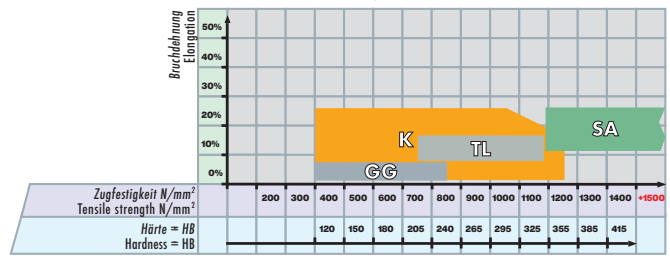
94	Silver
Ag999	
Ag800Cu	
Ag925Cu	

# ANWENDUNGSTABELLE — APPLICATION CHART

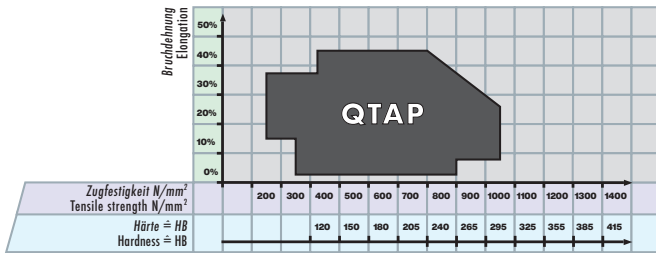
## Gewindeschneiden Thread cutting



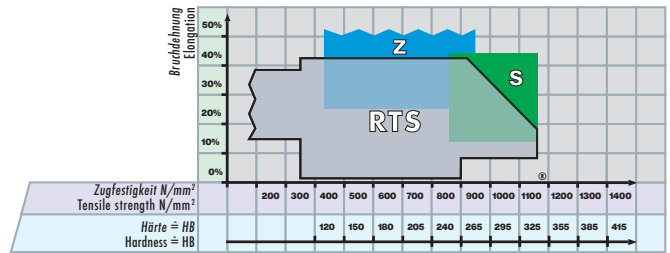
## Gewindeschneiden Thread cutting



## Gewindeschneiden klassisch und synchron Thread cutting classic and rigid



## Synchron-Gewindeschneiden Rigid Tapping



## DC -Anwendungsgruppen

## DC Material classification

Werkstoff-Gruppen Material groups	Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm <sup>2</sup> )	Dehnung Elongation A (%)
<b>10</b> Stahl Steels	11 Automatenstahl	Free-cutting steels	< 200	< 700	< 10
	12 Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
	13 Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
	14 Stahl legiert < 850 N/mm <sup>2</sup>	Alloy steels < 850 N/mm <sup>2</sup>	< 250	< 850	< 30
	15 Stahl legiert / vergütet > 850 - < 1150 N/mm <sup>2</sup>	Alloy steels hard. / temp. > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850	< 30
	16 Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
	17 Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
	18 Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
<b>20</b> Rostfreier Stahl Stainless steels	21 Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
	22 Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
	23 Ferritisch, martensitisch < 850 N/mm <sup>2</sup>	Ferritic and martensitic < 850 N/mm <sup>2</sup>	< 250	< 850	> 20
	24 Ferritisch, martensitisch > 850 - < 1150 N/mm <sup>2</sup>	Ferritic and martensitic > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850	> 15
<b>30</b> Guss Cast iron	31 Grauguss	Cast iron	< 250	< 850	< 10
	32 Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
<b>40</b> Titan Titanium	41 Reintitan	Pure titanium	< 250	< 850	> 20
	42 Titanlegierung	Titanium alloys	> 250	> 850	< 20
<b>50</b> Nickel Nickel	51 Nickellegierung 1 ≤ 850 N/mm <sup>2</sup>	Nickel alloys 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850	> 25
	52 Nickellegierung 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Nickel alloys 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850	< 25
	53 Nickellegierung 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Nickel alloys 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150	< 20
<b>60</b> Kupfer Copper	61 Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
	62 Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
	63 Messing (langspanend)	Long chip brass	< 200	< 700	> 12
	64 Messing bleifrei	Lead free brass	< 220	< 700	> 15
<b>70</b> Aluminium Magnesium Aluminium Magnesium	71 Al unlegiert	Al unalloyed	< 100	< 350	> 15
	72 Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
	73 Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
	74 Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
<b>80</b> Kunststoff Plastic compounds	81 Thermoplaste	Thermoplastics	-	-	-
	82 Duroplaste	Duroplastics	-	-	-
	83 Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-	-
<b>90</b> Edelmetalle Precious metals	91 Gelbgold	Yellow gold	-	-	-
	92 Rotgold	Red gold	-	-	-
	93 Weissgold	White gold	-	-	-
	94 Silber	Silver	-	-	-

# KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING



Ab Seite: From page:	SA Sonderlegierte Werkstoffe Special alloys		
MJ / M	47	47	46
MF	140	140	139
UNJC / UNC / UNC(J)	49	49	48
UNJF / UNF / UNF(J)	51	51	50
UNEF / UN / UNS			
G / Rp / Rc / W / SV			
NPT / NPTF			
PG / TR			
EG M / EG UNC / EG UNF	228	228	229



V <sub>c</sub> (m/min)	SA.20			SA.50			SA.90			
	< Ø 20 mm Guide Line									
Standard +V / +NV	Beschichtet Coated TN / TC / DL / VS									

11	10 - 15	25 - 35			
12	10 - 15	25 - 35			
13	8 - 12	16 - 24			
14	8 - 12	16 - 24			
15	3 - 5	6 - 12			
16	3 - 5	3 - 5			
17	2 - 4				
18					
21	10 - 15	20 - 30			
22	3 - 6	6 - 12			
23	3 - 6	6 - 12			
24		4 - 8			
31	10 - 15	20 - 30			
32	10 - 15	20 - 30			
41	4 - 8	4 - 8			
42	3 - 5	3 - 5			
51		6 - 12			
52	4 - 8	4 - 8			
53	2 - 4				
61	8 - 12	12 - 16			
62	20 - 30	30 - 40			
63	16 - 24				
64	16 - 24				
71	10 - 15	20 - 40			
72	20 - 30	20 - 40			
73	10 - 15	20 - 30			
74	10 - 15	20 - 30			
81	20 - 30	30 - 50			
82	8 - 16	16 - 24			
83		8 - 16			
91	20 - 30				
92		12 - 16			
93		4 - 8			
94		16 - 24			

**E** Geeignet mit Emulsion  
Suitable with emulsion

**A** Optimal mit Luft  
Optimal with air

**A** Geeignet mit Luft  
Suitable with air

Bedingt geeignet  
Limited